

LOAN DOCUMENT

AD-A229 439	DTIC ACCESSION NUMBER	PHOTOGRAPH THIS SHEET	DTIC FILE COPY	INVENTORY 1												
		LEVEL	<p style="font-size: 1.2em; margin: 0;">ON THE EFFECTIVENESS OF MILITARY INSTITUTIONS: Vol. III WORLD WAR II</p> <p style="font-size: 0.8em; margin: 0;">DOCUMENT IDENTIFICATION</p> <p style="font-size: 1.2em; margin: 0;">APRIL 1986</p>													
		<div style="border: 1px solid black; padding: 5px; margin: 0 auto; width: 80%;"> <p style="margin: 0;">DISTRIBUTION STATEMENT A</p> <p style="margin: 0;">Approved for public release; Distribution Unlimited</p> </div>														
<p style="font-size: 0.7em; margin: 0;">ACCESSION FOR</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border: 1px solid black;">NTIS</td> <td style="width: 50%; border: 1px solid black;">GRAB</td> </tr> <tr> <td style="border: 1px solid black;">DTIC</td> <td style="border: 1px solid black;">TRAC</td> </tr> <tr> <td style="border: 1px solid black;">UNANNOUNCED</td> <td style="border: 1px solid black;"><input type="checkbox"/></td> </tr> <tr> <td style="border: 1px solid black;">JUSTIFICATION</td> <td style="border: 1px solid black;"></td> </tr> </table> <p style="font-size: 0.7em; margin: 5px 0;">BY</p> <p style="font-size: 0.7em; margin: 0;">DISTRIBUTION/</p> <p style="font-size: 0.7em; margin: 0;">AVAILABILITY CODES</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border: 1px solid black;">DISTRIBUTION</td> <td style="width: 50%; border: 1px solid black;">AVAILABILITY AND/OR SPECIAL</td> </tr> <tr> <td style="border: 1px solid black; height: 40px; vertical-align: bottom;">A-1</td> <td style="border: 1px solid black;"></td> </tr> </table>		NTIS	GRAB	DTIC	TRAC	UNANNOUNCED	<input type="checkbox"/>	JUSTIFICATION		DISTRIBUTION	AVAILABILITY AND/OR SPECIAL	A-1		<p style="font-size: 0.8em; margin: 0;">DISTRIBUTION STATEMENT</p> <div style="border: 1px solid black; padding: 10px; margin: 0 auto; width: 80%;"> <p style="font-size: 2em; margin: 0; text-align: center;">DTIC</p> <p style="font-size: 1.5em; margin: 0; text-align: center;">ELECTE</p> <p style="font-size: 1.2em; margin: 0; text-align: center;">DEC 07 1990</p> <p style="font-size: 3em; margin: 0; text-align: center;">S E D</p> </div> <p style="font-size: 0.8em; margin: 5px 0;">DATE ACCESSIONED</p> <div style="border: 1px solid black; height: 60px; margin: 0 auto; width: 80%;"></div> <p style="font-size: 0.8em; margin: 5px 0;">DATE RETURNED</p> <div style="border: 1px solid black; height: 60px; margin: 0 auto; width: 80%;"></div> <p style="font-size: 0.8em; margin: 5px 0;">REGISTERED OR CERTIFIED NUMBER</p>		
NTIS	GRAB															
DTIC	TRAC															
UNANNOUNCED	<input type="checkbox"/>															
JUSTIFICATION																
DISTRIBUTION	AVAILABILITY AND/OR SPECIAL															
A-1																
<p style="font-size: 0.8em; margin: 0;">DISTRIBUTION STAMP</p> <p style="font-size: 1.2em; margin: 5px 0;">Statement "A"; report date April 1986 per telecon Glenna Hughes. OSD/NA, The Pentagon, Room 3A930. Washington, DC 20301-2950.</p> <p style="font-size: 0.8em; margin: 0;">VHG</p>		<div style="border: 1px solid black; border-radius: 50%; width: 60px; height: 60px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <p style="font-size: 0.7em; margin: 0;">QUALITY INFORMATION 3</p> </div> <p style="font-size: 1.5em; margin: 10px 0;">12/07/90</p>														
<div style="border: 1px solid black; padding: 10px; margin: 0 auto; width: 80%;"> <p style="font-size: 2em; margin: 0;">90 12 7 045</p> </div> <p style="font-size: 0.8em; margin: 5px 0;">DATE RECEIVED IN DTIC</p>		<p style="font-size: 0.8em; margin: 0;">PHOTOGRAPH THIS SHEET AND RETURN TO DTIC-FDAC</p>														

HANDLE WITH CARE

*On The Effectiveness Of
Military Institutions:*

*Historical Case Studies From
World War I, The Interwar Period,
and World War II*

Volume III World War II

Edited by Allan Millett and Williamson Murray

AD-A229 439

*Mershon Center
The Ohio State University*

TABLE OF CONTENTS

	PAGE
MILITARY ORGANIZATIONAL EFFECTIVENESS/THE EFFECTIVENESS OF THE JAPANESE MILITARY ESTABLISHMENT IN WORLD WAR II	1
Alvin D. Coox, San Diego State University	
MILITARY ORGANIZATIONAL EFFECTIVENESS/THE UNITED STATES ARMED FORCES IN WORLD WAR II	87
Allan R. Millett, The Ohio State University	
BRITISH MILITARY EFFECTIVENESS IN WORLD WAR II	173
Williamson Murray, The Ohio State University	
THE ITALIAN ARMED FORCES, 1940-43	267
MacGregor Knox, The University of Rochester	
THE DYNAMICS OF VOLKSGEMEINSCHAFT THE EFFECTIVENESS OF THE GERMAN MILITARY ESTABLISHMENT IN THE SECOND WORLD WAR	351
Jürgen E. Förster, Militärgeschichtliches Forschungsamt, Freiburg, Federal Republic of Germany	
BITTER VICTORY: FRENCH MILITARY EFFECTIVENESS DURING THE SECOND WORLD WAR	433
Ronald Chalmers Hood III	
THE SOVIET ARMED FORCES IN THE GREAT PATRIOTIC WAR, 1941-1945	501
John E. Jessup	
MILITARY EFFECTIVENESS IN WORLD WAR II	543
Earl F. Ziemke, University of Georgia	
CHALLENGE AND RESPONSE AT THE OPERATION AND TACTICAL LEVELS 1914-1945	623
Lieutenant General John H. Cushman, U.S. Army, Retired	
THE POLITICAL AND STRATEGIC DIMENSIONS OF MILITARY EFFECTIVENESS	669
Russell F. Weigley, Temple University	

MILITARY ORGANIZATIONAL EFFECTIVENESS
THE EFFECTIVENESS OF THE JAPANESE MILITARY
ESTABLISHMENT IN WORLD WAR II

Alvin D. Coox
San Diego State University

Introduction

Although World War II began years earlier for Imperial Japan than it did for the European powers or the United States, the West was dismally ignorant, in civilian as well as military circles, of Japan's military proficiency on the eve of the Pacific War. Partly, this was due to Japan's own siege mentality and exclusionist tradition, evidenced by its strict prewar policy of limiting foreign observation of its armed forces, and by its conduct of tight police surveillance of residents and travelers. What might have been seen or read about was further curtailed by the difficulty of the Japanese ideographic language and, in the case of the United States, by the Americans' modest investment in personnel assigned to Japan as language officers, attachés, or exchange officers. In the 22 years between 1920 and 1941, for example, the U.S. Army assigned 7 attachés and 42 language officers to Tokyo. Only one of the language officers (Rufus Bratton, 1922-1926) ever became an attaché in

Japan (1933-1937). Sidney Mashbir, a language officer in 1922-1924, was able to put his skills to good use during and after World War II.¹ In overall terms, U.S. military intelligence personnel were very few in number in 1941, and most were engaged in "human source intelligence." It has been estimated that "less than a dozen U.S. Army and Navy intelligence officers were qualified to make a credible estimate of enemy capability based upon what little information did arrive."²

Consequently, the Japanese armed forces were shallowly evaluated; they were underrated at best, despised at worst. For example, Japanese troops -- characteristically unshaven for days even in peacetime -- seemed "untidy and slovenly," an impression reinforced by the sight of "boots much patched and quite unpolished, clothes badly fitting and badly patched, and dirty buttons ... the very antithesis of tidiness, so far as ... turnout is concerned."³ Only the rare professional could penetrate the surface and perceive that Japanese discipline and devotion were exceptional, and that the Japanese soldier was a first class fighting man.

On the eve of World War II, Western ignorance and contempt spawned a stereotype of the Japanese male that was a model of ethnic condescension, depicting him as a slow-witted, scrawny runt with spectacles and poor, protruding teeth, a wretched shot by day and blind at night. The folklore lingered long. U.S. Marine Corps General Holland M. Smith asserts that the battle of Tarawa, fought in November 1943, some two years after Pearl Harbor "taught us more about the character of the enemy than all the textbooks and intelligence reports at staff disposal."⁴

The very success of the Japanese at the outset of the Pacific War had caused an initial reversal in evaluation by the Allies; for a while, the Japanese seemed to be "a kind of mechanical juggernaut." A second

flipflop ensued. General A. A. Vandegrift reveals the exultation that suffused him and his Marines after the American victory at the Tenaru on Guadalcanal: "... today we had beaten the Jap. The Jap no longer seemed superhuman. The Jap was a physical thing, a soldier in uniform, carrying a rifle and firing machine guns. We stopped this Jap, decimated his ranks"⁵

One last feature typified the war in the Pacific and colored the way it was fought by the Allies: feelings of racial contempt and hatred that far exceeded those vented against the Axis in Europe. From a vast literature, the wartime remarks of a U.S. Army Air Corps fighter pilot, Colonel Robert Scott, reveal the depth of emotion felt by foes of the Japanese at the tactical level. "They're little, warped-brained savages, with an inbred persecution complex," wrote Scott. In a passage that had to be sanitized in postwar editions of his book, Colonel Scott described his joy at strafing enemy troops or "[blowing] a Jap pilot to hell out of the sky": "I just laughed in my heart and knew that I had stepped on another black-widow spider or scorpion."⁶

At the strategic, comparative level, postwar observations by Air Force General Carl Spaatz provide rare insight into the matter of wartime U.S. attitudes:⁷

... we had not the same urge, or the same feeling, as far as bombing Germany is concerned, as we had for the Japs who first attacked at Pearl Harbor We didn't hear any complaints from the American people about mass bombing of Japan; as a matter of fact, I think they felt the more we did the better. That was our feeling toward the Japanese at that time.

General Curtis LeMay explains why the B-29 offensive against Japan was rushed, unwisely and prematurely, from the China-Burma-India theater in 1944: "... our entire Nation howled like a pack of wolves for an attack on the Japanese homeland. The high command yielded [though] nothing was ready."⁸

In short, the Allied war against Japan differed markedly from the war in other theaters: objectively, in terms of the time frame; subjectively, in terms of the perception of and attitudes toward the enemy, involving a mixture of complacency and preconception, hatred and disdain, underestimation and overestimation, chauvinism and sheer racism. It is against this backdrop that we proceed to assess the military organizational effectiveness of the one Asian power examined in this volume - that of the Japanese military establishment in World War II or, as the Japanese styled it officially, the Greater East Asia War.⁹

I. Political Effectiveness

To assess the extent to which the military organization could assure itself of a significant and regular share of the national budget, it is important to note that, in the case of Japan, the country had entered a period of domestic military domination de facto, if not dictatorship de jure, by the year 1941. Invocation of the magic formula of "operational necessity" stifled public debate. Neither the parliamentary organs (the Imperial Diet) nor the civilian ministers of state (the Prime Minister and the civilian members of the cabinet) were in a position effectively to control or oversee the activities of a military organization that possessed and prided itself on unique attributes: the right of direct access to the Commander-in-Chief (the Emperor), and the ability to make or break governments by a "majority of one" in cabinets -- that is, by authorizing or withholding approval of the military or naval members of cabinets (ministers of Army and Navy, always uniformed officers of at least lieutenant general or vice admiral rank in this period).

To all intents, political parties had been suppressed or eliminated as a significant moderating element. The prime minister and the cabinet were barred from consideration of strategic matters. Asked about the effect of the Diet in military administration, one former War Minister, Field Marshal Hata Shunroku, replied in gist: "Nil". For its part, the Army brought down the Yonai Cabinet by withdrawing Hata as war minister.¹⁰

Within the fiscal framework of the government's general-accounts budget (which Diet committees could address in strictly technical terms), the parameters were essentially those dictated by the over-all availability of national funding. In the unlikely event that the Diet dared to reduce the annual appropriations level in peacetime below that demanded by the services, such action would have been regarded as a contravention of the Imperial prerogative, specifically Article 12 of the Meiji Constitution, which stated that "the Emperor determines the organization and peacetime standing of the Army and Navy."¹¹ In time of emergency or of actual war, it was unthinkable that the Diet would spurn the demands of "national necessity."

As in all authoritarian states, fiscal data on Japanese national-defense expenditures were masked. To cite but one example: In a special allocation made by the Diet in February 1942, the Army got 9,600 million yen, but a further 600 million yen earmarked for the Army are found embedded in the Finance Ministry's reserve account. In a representative fiscal year (1939-1940), the published figures show the ordinary and extraordinary general-account budget for the Army as about 16 percent and the Navy as more than 19 percent. But it was admitted by Finance Ministry authorities that, starting in 1939-1940, the "Temporary War Expenditure Special Accounts" (introduced in September 1937) exceeded ordinary accounts for the first time. In the case of the Army, this excess for 1939-1940 amounted to 314 percent of its ordinary budget; for the Navy, 98 percent.¹²

The Temporary War Expenditure Special Accounts continued to rise as the Pacific War approached and then erupted: allocated in 1940 -- a two-service and reserve budget totalling 4,460 million yen; in 1941 -- four supplements totalling 12,480 million yen. Starting in 1942, all the

customary general accounts for military and naval expenses were transferred to the Temporary War Expenditure Special Accounts, with certain exceptions. The special account for the two services in 1942 amounted to 18,000 million yen; in 1943 -- 27,000 million yen; in 1944 - two supplements totalling 63,000 million yen; and in February 1945 -- a final 85,000 million yen.¹³

Reducing these complicated figures to simple percentages, we find that, ever since the outbreak of the conflict in China in 1937, Japan's total military and naval budget, as a fraction of over-all governmental expenditures, never was less than 60 percent per year. In 1938-1939, it was 75.4 percent; in 1939-1940, 72.5 percent; in 1940-1941, 65.9 percent.¹⁴ Wartime data are hard to come by, but the best estimates are 61 percent for 1941-1942; 66 percent for 1942-1943; 73 percent for 1943-1944; and a staggering 85 percent for 1944-1945.¹⁵

Perusal of a typical IJA budget, the one for 1941-1942, reveals the emphasis on new military expenses. The lion's share (65 percent) went to build up armaments output. Another 21 percent was assigned to the expansion of productive capacity; 7 percent, to support for military personnel; and 4 percent, for economic controls. The remaining 3 percent was allocated to trade enhancement, encouragement of science and technology, and improvement of maritime transportation and civil aviation. In the 1942-1943 budget, the categories of new expenses included not only the expansion of productive capability but also the limitation of costs and the reorganization of production, as well as the storage of vital resources and a relatively small fraction for air defense.¹⁶

It goes without saying that the enormous wartime expenditures, loyally and expeditiously approved by the Diet, had to be supported by deficit financing, and that the public debt soared accordingly. The

military budget of 1943 was five times larger than that of 1938, and ten times larger than budgets preceding the China conflict. By 1944, national war expenditures were double the total of national income.¹⁷

Foreign observers had long predicted that Japanese public finances could not weather protracted hostilities on such a scale, but the Japanese financial authorities somehow kept the ship afloat to the end, and did their best to meet the services' requests for funds. The Finance Ministry devised clever ways of recycling capital, stressing the control of inflation, exchange-rate stability, economies in consumption, and "extraordinary tax adjustments." Encouraged by a national policy that called for material sacrifices to be borne by people not serving at the front, the armed forces had only each other to contend with in striving to carve a favorable slice from the "pie" of national resources. First, the individual service determined its fiscal desiderata through its own internal channels; then it struggled, via general staff and service ministry officers, to maximize its share of funding during unofficial and official conferences with the other service (and eventually with Finance Ministry officials). According to one IJA insider, at the interservice negotiations "each side sounded out the other, entangling itself in 'the ideology of parity' and face, and grappling with matters of budget and amassment of materials, in the course of which, many a dirty trick was played."¹⁸

In short, there was almost no public scrutiny of the military organization's system for converting resources into militarily useful forms. The basic effectiveness-research for highest-level deliberation was performed by agencies which, in practice, were detached from political control and were instruments of the military. In particular, the (Cabinet) Planning Board (Kikakuin) had the ostensible mandate of

evaluating the national requirements for mobilization of resources. Retired Lt. General Suzuki Teiichi became the head of this bureau in April 1941. Within the War Ministry, the Consolidation Bureau (Seibikyoku) had responsibility for military assessments. The preceding organs had significant input in the secret examination of areas of budget, industrial and technological resources, and manpower.

As for the extent to which the military organization has access to industrial and technological resources necessary to produce the equipment it needs, the industrial revolution in modern Japan had, from its beginnings in the 19th Century, always been fostered by military necessity. In terms of productive value, the manufacturing industry became the biggest enterprise, by 1937 accounting for 78 percent of the value of the output of all industries, up 250 percent in one decade. But since the development of heavy industry was patently insufficient at the time the China conflict broke out in 1937, the civilian authorities worked closely with the armed forces to restructure the economy and generate new emphases. From 1938 governmental control, in the service of the needs of national defense, became more and more evident, attending the passage of the Temporary Fund Adjustment Act, the Temporary Export and Import Control Act and, perhaps most important of all, the General Mobilization Law. While strict efforts were made to stem the flow of materials, capital, and labor into what were regarded as nonessential industries (such as rayon, paper, spinning, and cement), government sponsored legislation stimulated the aggregate productive capacity of war-related producers of motor vehicles, rolling stock, iron and steel, petroleum, metals and minerals, machine tools, vessels and aircraft. The avowed purpose of these programs was to achieve self-sufficiency in vital categories and avoid dependence on sources outside of Japan, Manchukuo,

and occupied China.

The scale of the projected buildup of the Japanese Military-Industrial Complex is suggested by the targets set for the close of 1941, as a percentage of the production levels of 1938: synthetic gasoline, up 3,000 percent; alcohol, up 1,300 percent; magnesium, up 1,000 percent; and motor vehicles, up 670 percent. By 1942, heavy industry reached 73 percent of total industrial output, up from 38 percent in 1930.¹⁹

The improvement in the actual level of production in war-related industries was considerable in relative terms, especially when viewed against the limited resources available. Compared to an output of 445 aircraft in 1930, and 1,181 in 1937, Japan turned out 5,100 planes in 1941, 8,900 in 1942, 16,700 in 1943, and a peak of 28,200 in 1944. Whereas 1,100 aircraft engines were produced in 1937, the figure for 1940 was 5,500; for 1941, 12,200; for 1942, 17,000; for 1943, 28,600; and for 1944, 46,500. These achievements are particularly impressive because the wartime planes were heavier and of improved performance, while the ratio of combat aircraft increased vs. trainers and transports; for example, in the peak year of 1944, the combat fraction of airplane production amounted to 75 percent.²⁰

Only 500 motor vehicles were manufactured in Japan in 1930. Not until 1938 did domestic output (30,900 trucks, cars, and buses) exceed imports (18,600 vehicles, still representing 40 percent of the total number). There was no further importation, and domestic production increased from 41,300 in 1939 to a peak of 47,900 in 1941. Military requirements accounted for about two-thirds of motor-vehicle manufacture from 1942.²¹

In 1934, only 16,800 total tons of naval ship construction were delivered to the Japanese Navy. By 1941 the figure was 225,200 tons, and

the peak of 408,400 tons was achieved in 1944.²² Steel merchant-ship construction, which had dwindled to 20,000-30,000 tons per year in the 1920s and was still only 85,000 tons in 1931, reached 442,000 tons in 1937. After falling off again until 1942, annual deliveries grew to a peak of 1,600,000 tons in 1944.²³

A few other representative annual figures provide evidence of the enhanced productive capacity of Japan, in comparative terms, by the year 1943: aluminum-ingot production -- 141,100 tons (19 tons in 1933); ingot steel -- 7,800,000 tons (1,800,000 in 1931); coal -- 55,600,000 tons (27,900,000 in 1931). As early as 1940, organic high explosives were being turned out in greater amounts than in the United States.²⁴

The armed forces' requirements for clothing, foodstuffs, and medical supplies were largely addressed by civilian factories operating under military contract. Military ordnance was turned out by a combination of government-owned and civilian facilities. Like the Navy, the Japanese Army possessed an extensive array of arsenal districts and supporting factories. By 1944, civilian factories accounted for 55 percent of the manufacture of weapons. Civil-military responsibilities for output varied per product. Government arsenals and factories fabricated 69 percent of the artillery, 63 percent of light and automatic weapons, 94 percent of the gunpowder, and 97 percent of special military vehicles. But civilian factories turned out 67 percent of the ammunition, 91 percent of signal equipment, 85 percent of optical instruments for navigation purposes, and 100 percent of the military trucks. Data for 1945 follow, exclusive of six research institutes and of installations in Manchukuo and Korea:

Name of Arsenal	Number of Factories	Number of Workers	Main Production Items
Tokyo No. 1	7	53,000	ammunition, fuzes, optical and signal equipment
Tokyo No. 2	11	31,000	gunpowder
Sagami	2	15,000	shells, bombs, special vehicles
Nagoya	8	43,000	rifles, machine guns, artillery, ammunition
Osaka	6	74,000	artillery, fuzes, ammunition
Kokura	5	41,000	automatic machine cannon, rifles, ammunition
Total	39	257,000	

The land area of the IJA ordnance manufacturing facilities totalled fifteen million square tsubo (@ 3.952 square yards per tsubo), and the building space amounted to 1.1 million square tsubo. Main machines numbered about 56,000. There were also 1,030 civilian factories, including those facilities designated for military production and others under direct IJA control. Some 350,000 workers were employed in the civilian factories, which contained 55,000 machines. The Finance Ministry's special-account expenditures for IJA arsenals rose from 69.3 million yen in 1937-1938 to 1,510.9 million yen in 1940-1941.

Comparable figures for expenditure on naval dockyards, explosives factories, and fuel depots increased from 84.3 million yen in 1937-1938 to 302.9 million yen in 1940-1941. In the twenty-four to twenty-seven shipyards engaged in naval ship construction during the war, a total of 162,400 workers were employed on average in 1941, and 312,000 - almost twice as many -- in 1944.²⁵

As for military aviation, the Army operated air arsenals only for the purpose of prototype manufacture, and depended entirely on civilian factories for serial production, i.e., the Mitsubishi, Nakajima, Hitachi, Kawasaki, Tachikawa, and Nihon Kokusai Kōkū Kōgyō plants. Of these, the first three were shared with the Navy.²⁶

In sum, the factor of access to industrial-technical resources posed no obstacles per se for the Japanese armed forces. Their unyielding problem in this regard centered on the country's limited economic foundations, and this fact caused a serious degree of interservice competition and squabbling, as will be seen. But the rapid improvement in the base of the Japanese economy, most apparent in militarily critical production sectors, had enormous domestic ramifications. Not only was heady self-confidence fostered at the national level, but the prosperous development of income and output also "cemented firmly the union between the conservative, big business wing of Japan's political life, and the aggressive radical elements of the army and navy."²⁷ Despite later protestations of duress and coercion, the civilian component of Japan's Military-Industrial Complex went to the altar not entirely unwillingly.

In terms of access to manpower, the Japanese armed forces were able, until close to the end of the war, to squeeze optimum numbers of men from the country's demographic pool. They started with a self-perceived edge, unabashedly trumpeted by the prewar and wartime authorities: "... the unique nature of the Japanese polity and the peculiar psychology of the Nipponese people who are not only willing, but deem it the highest honor, to serve in the army and the navy." Draft-dodging was never a significant problem. Opposition to wartime policy was individual and sporadic.²⁸

The national census of 1940 put the population of the Japanese homeland at 73,114,000, of whom 50 percent (36,566,000) were males. The Navy had 311,000 personnel on active duty at the time the Pacific War broke out in 1941. In the Army, 2,287,000 men were in service at the same time, deployed as follows: in Japan and Formosa -- 512,000; in Korea -- 120,000; in Manchuria -- 649,000; in China -- 612,000; and, poised to strike in the South -- 394,000. Another 4,680,000 men were in Army reserve status.²⁹

According to conscription records for the fiscal year of 1942-1943, from 649,000 men scheduled to take the medical examination, it was expected that 60 percent would be approved for active duty: 339,000 for the Army, 53,000 for the Navy. Addition of the next category - men judged to be qualified as conscript-replacements -- would bring the total passed to 508,000, or more than three-fourths of those reporting from the class of 1942-1943 for the draft physical.³⁰

Navy records reveal the ratio of IJN enlisted volunteers to the grand total of men enrolled per year. Between 1937 and 1941 inclusive, about one third of the new sailors were volunteers; the rest were draftees. Once the Pacific War was underway, not only were many more men inducted annually, but the number of volunteers also increased dramatically, especially among those opting to enter the naval air corps. In 1942, 54.1 percent (63,629) of the Navy's total of enlisted inductees (117,667) were volunteers, including 8,100 aviation aspirants. The figures for 1943 were 67.8 percent volunteers (111,739, including 42,339 aviation) from a total of 164,739 new men. In 1944, the volunteers numbered 60.6 percent (208,660, including 106,660 aviation), among a total of 344,640 enlisted men. The last year of the war, truncated by capitulation, saw a volunteer increment of 66.9 percent

(177,600 including 88,600 air force), from a grand total of 265,600 new sailors.³¹

The national census for the Japanese homeland in 1944 gave the civilian population as 74,433,000. The number of males had dropped to 35,440,000 (46.3 percent). But the Navy had been built up to a strength of 1,295,000. On active duty in the Army there were 1,479,000 regulars and 2,600,000 draftees, for a total of 4,079,000 IJA troops, actually 100,000 over authorized strength.

Next year, at war's end in 1945, the population in the homeland (excluding both Okinawa and the Northern Islands) had declined to 72,147,000, of whom 47.2 percent (34,054,000) were males. The final overall strength of the Navy was 1,693,000; of the Army, 5,500,000 men.³²

The peak figure for Japanese military and naval manpower mobilization therefore comes to some 7,200,000 men by the close of the war - 10 percent of the national population, or 21 percent of the total male component in the homeland. Germany, with approximately the same male population as Japan, had mobilized a top strength of 10,200,000 in the armed forces -- over 40 percent higher than the Japanese peak figure. In military casualties, the Germans sustained enormously larger losses than the Japanese. The most conservative estimates of German losses are in the range of 10,100,000 military dead and wounded. IJA losses have been given as 1,466,200 killed and 53,028 wounded -- a total of 1,519,228; IJN losses as 457,800 killed and 13,342 wounded -- a total of 471,142. Thus Japan's military and naval losses amounted to a grand total of 1,990,370 men.³³

The most useful point to be made in presenting the Japanese and German mobilization and casualty figures was to compare the wartime

scales of effort invested and cost incurred by the main Axis powers. Only recently has it become possible to obtain inside documentation providing fuller comprehension of the extent of the tribulations encountered by the Japanese military organization, despite a number of successes, in dealing with the question of securing access to indigenous manpower resources.

For example, it is not widely known that the drafting process, whether it produced conscripts for the Army or the Navy, was always under the administrative jurisdiction of the War Ministry and the Home Ministry; local details were handled by the regimental recruitment zone commander. This meant, in practice, that the Navy could not stipulate the number of conscripts it wanted. The Navy Minister would have to obtain the War Minister's concurrence with the Navy's proposal. But the Army did not need to consult the Navy or establish the latter's intentions. In the peacetime period before the outbreak of the conflict in China, this system posed no acute problem; but later, when the Army underwent a giant increase from 500,000 men in 1937 to 2,100,000 in 1941 and 3,100,000 in 1943, it proved very difficult for the Navy to compete for the still-finite base of manpower. Though the two services expended much time and energy in trying to reach accommodation of their positions, the Navy representatives typically came away dissatisfied and tended to think in makeshift terms. The vigorous program of volunteer enlistment, mentioned earlier, was one approach; but that source of manpower was not unlimited, and it was always necessary to come back to the conscription device.³⁴

Manpower demands accelerated greatly from early 1944. In an effort to meet the rising recruitment needs of the armed forces while maintaining the number of workers required by industry, the Japanese

authorities tinkered with broader age limits, lower criteria for induction, and consolidated categories of service. As early as April 1940, the Army had been encouraging the training of youngsters to become noncommissioned officers in specialized elements such as the air force, military police, tank corps, and military bands. At the end of 1943, a system of recruiting "special military cadets," between the ages of 15 and 20, was instituted, with emphasis on technical branches involving aviation, shipping, and communications. Accelerated promotions were prescribed for the better lads.

The Military Service Law was revised, effective from April 1941, to terminate the system of a "second replenishment service." In late 1943, the effective conscription age for Japanese males was lowered from 20 to 19, starting from 1944, and the upper age limit was raised to 45 from 40. Medical standards were also eased. But it was in the hitherto sacrosanct precincts of higher education that the most dramatic change was decreed on 1 November 1943: the abolition of student deferments from military service. The authorities expected that the new source of manpower would yield 96,000 individuals of draft age and would breed high-quality, well-educated officers for both services, buttressing the air forces in particular.³⁵

It had become evident that the Japanese armed forces were suffering from a number of deep-seated qualitative problems. The beneficial but long-range effects of the lowered draft age would not be felt until after the autumn of 1944, when a huge number of young conscripts would enter service from a double-size class of 1,400,000 nineteen- and twenty-year-olds first eligible for examination. Until then, the military regarded the age of its regulars and reservists as too high. Training was desperately behind schedule. Of the more than seven million

men in the armed forces in 1945, it was estimated that only about one million were fully trained. There were particular shortages of men in categories where job skills were most urgent, such as antiaircraft, signal, shipping, and aviation units.

Officers were in especially short supply in the armed forces, at the very time that the services were larger and more complicated than ever. Of a potential pool of 123,000 Army officers, 95,000 were in uniform in 1945. But the Army's tables of organization called for 142,000 officers -- 102,000 in line assignments and 40,000 on desk duty. Yet there was only a sprinkling of regular officers -- 34,000, including 15,700 commissioned from the Military Academy, and 6,000 probationary second lieutenants.

In IJA line units there were merely enough regular officers to fill 20 percent of the posts; for desk work, 30 percent. One result was the servicewide need to fill officers' slots, starting with those of major generals, from the next lower rank. Fifteen percent of line colonels' posts were held by lieutenant colonels; forty percent of lieutenant colonels' by majors; and seventy percent of majors' by captains. As a result, the Army was short of 26,000 captains -- about eighty percent of the authorized number. Most line companies had to be commanded by first lieutenants. As for the staffs of the ground divisions, a mere thirty-five percent were products of the Army War College.

The situation was even more troublesome in desk posts, where there was a shortfall of 50 major generals and where the reliance on lower-ranking officers was becoming chronic: lieutenant colonels filled sixty percent of billets calling for a colonel; majors, ninety percent of lieutenant colonels' posts; captains, eighty-five percent of majors'; lieutenants, ninety percent of captains'. The healthiest situation was

that of slots for second and first lieutenants in line or desk work, since there was adequate input at that rank from the Military Academy and from the promotion of seasoned noncommissioned officers.³⁶

There were numerous well-trained ex-servicemen in the Zaiqō Gunjin association, but they were often locked into crucial war jobs. In December 1941, 270,000 of 4,680,000 ex-servicemen were listed as draft-deferred; in November 1944, the figure was 1,553,000 deferments among 5,855,000 ex-servicemen. Admittedly, many of the veterans were elderly or in ill-health, but the Army found its own manpower needs obstructed by the fact that, as of 1944, eighty-seven percent of draft-age males were classified as vital to the war effort, especially those engaged in food production and munitions manufacture.³⁷

After the war, American analysts pointed out that "the demands of the [Japanese] armed forces were the primary factor conditioning the labor supply up to the spring of 1945, both in regard to quality, and in 1944 and 1945, in quantity." Though critics charge that "the Japanese had not drawn their manpower belt tightly at all," it is admitted that "an outcry arose from industry during 1944 that production could not continue if able-bodied and skilled men continued to be taken [by the armed forces] in such numbers." Under these pressures, the authorities began to view students and females as the last realistic sources of labor potential. The female share of the labor force did increase moderately from thirty-five percent in 1930 to forty-two percent in 1944. By the end of the war, over 3,000,000 students were shifted into industry.³⁸

By 1945, the armed forces had retreated from their old policy of indiscriminate conscription. About 850,000 permanent and 1,600,000 temporary deferments were issued. Indeed, some skilled workers were even released from military service and allowed to enter essential war

work.³⁹ It was apparent that serious contradictions existed in the manpower requirements of Japan's national defense, pitting the claims of the tortured economy against those of the reeling military organization.

II. Strategic Effectiveness

Japanese national goals were devised essentially by the military-naval component at the decisionmaking level. In practice, they were the shapers, not the tools of political policy. As one foreign observer discerned in the 1930s, "the Army acts not as an instrument of state policy, subservient to the will of any civilian government, but in theory under a direct delegation of power from the Emperor -- its commander-in-chief." The more vehement Army officers considered politicians to be "no better than so many 'frogs in the well.'"⁴⁰ A Japanese publicist wrote before the war: "Our soldiers ... stand outside the pale of contemptible politics. They are responsible directly to the Emperor, in no sense obligated to heed the barkings of the Diet or the snobberies of the administration."⁴¹

Repeatedly during the approach to hostilities in 1941, the tractable approach of a moderate prime minister (such as Konoé) or foreign minister (such as Tōgō) would collide with the hawkish attitudes of a uniformed service minister. The latter's resolve ordinarily carried the day, ostensibly to achieve the larger political objectives of the country. At a conference held on 30 June 1941, General Tōjō -- then war minister -- expressed his unhappiness with what he called the "abstract" proposals he was hearing. During a cabinet conference on 14 October, Tojo gave vent to his exasperation, decrying the government's policy of trying to negotiate the unnegotiable with the Americans. Compromise after compromise, he argued, amounted to disgraceful, unilateral

capitulation, not diplomacy. Tojo wanted the parleys to be terminated, preparations for early hostilities to continue, and the cabinet to resign. Prime Minister Konoe's position was rendered untenable by the War Minister's obduracy, which presumably mirrored the final stand by the senior Army leadership. In fact, dialogue between Konoe and Tōjō became impossible. It is said that Tōjō refused to converse with Konoe again because "If I see him, I may not be able to control myself." Konoe gave up on 16 October and resigned. His private secretary, Ushiba, told an American diplomat that civilian statesmen -- even if there were any of sufficient eminence -- would not assume the post in which Konoe had failed. On 18 October, Tōjō announced the new government which he had been invited to form. Some felt that his cabinet "reeked of gunpowder."⁴²

The military organization's jumbling of strategic objectives with domestic political considerations ran counter to the ostensible credo of the armed forces themselves, as expressed in the constantly reiterated Imperial Precepts of 1882 addressed to all soldiers and sailors. Yet, by all accounts, the Army in particular strayed from the Emperor Meiji's admonitions. IJN staff officers are especially insistent their service's contribution to national policy was far inferior to that of the Army, at least until late in the war. Captain Ōhmae, attached to the Naval General Staff in January 1945, went so far as to say that "the Navy had no voice in the formulation of national policies; the Army had the most influence." Ōhmae attributed this predominance until 1941 to the previous IJA successes in Manchuria and China.⁴³ Admiral Toyoda, who served both as Commander in Chief of the Combined Fleet (May 1944) and Chief of the Naval General Staff (May 1945), agreed that it was the Army which possessed "great political power."⁴⁴ Japan's last prewar

ambassador to the United States, Admiral Nomura, shared the view that the Army was "much stronger than the Navy in politics." Nomura provided the following explanation:⁴⁵

[The Army] had organizations of men stationed throughout the country, in every gun (county), city and village, and had direct influence on prefectural governments and even down to the local police. The Navy, on the other hand, was centered in a few locations such as at Yokosuka and Kure, and didn't have much to do with the government of the prefecture.

They kept their hands out of politics. Therefore, upon comparison I feel that the Army had far more influence on public opinion and in politics.

Army staff officers have generally responded that the Navy is too modest about its input into policy decisions, and that in the climactic year of 1941 Navy leaders were far more aggressive, or at least more acquiescent with Army views, than was claimed after the war. This mutual recrimination reflects the fundamental fact that in case of war the two services always envisaged different main national enemies: Russia and/or China vs. the Army; the United States and/or Britain vs. the Navy. In other words, the Army's prospective foes were deployed primarily on the land mass of Asia, while the Navy's hypothetical enemies were great sea powers. Under the circumstances, the naval outlook came to be characterized as "defense in the north, advance to the south."

As a result of the Navy's growing prewar interest in the resources of Southeast Asia, the British were added to the list of national enemies

in the revision of the master plan in 1936, though operational details, involving the neutralization of Hong Kong and Singapore, were not articulated until 1939. Anti-Dutch operations in the area of the East Indies were not included in the contingency plans until 1941. As for the Army, it was obliged, after 1939, to devote greater attention to the United States, but its operational planning did not progress beyond the visualization of attacks against the Philippines and Guam, basically designed to command the waters of the western Pacific.⁴⁶

"Risk," as a correlate of strategic objectives, stakes, and consequences, is not a word that one finds in the ordinary vocabulary of the Japanese military. At a liaison meeting on 1 November 1941, Finance Minister Kaya repeatedly tried to get the IJN Chief of Staff to say whether he thought the U.S. Fleet would sortie against Japan in three years -- if peace could be maintained that long; and whether the Japanese Navy would prevail if the Americans did come. The military secretary at that meeting wrote in his notes: "[Kaya] could not very well ask the Supreme Command whether we would lose." But the evasive responses which the Finance Minister elicited do not mean that the military organization plunged heedlessly into hostilities in 1941. The balance-of-strength equation was very much on the minds of the Army and Navy planners. "We would not have gone to war," says an AGS Operations staff officer, "if we had been convinced beforehand that we were going to lose." The highest-level secret discussions of the summer and fall of 1941 are replete with references to psychological as well as tangible concerns. On 12 July Foreign Minister Matsuoka asserted that the United States was regarding Japan as "either her protectorate or her dependency; it is characteristic of Americans to be high-handed toward the weak. . . I think there is no hope . . ."⁴⁷ That time was working against Japan --

another oft-heard theme -- implies that there were consequences of failure. On 24 July Admiral Nagano, the IJN Chief of Staff, tellingly presented the Navy's outlook on the prospects for a war against the United States:

Although there is now a chance of achieving victory, the chances will diminish as time goes on. By the latter half of next year [1942] it will already be difficult for us to cope with the United States; after that the situation will become increasingly worse. The United States will probably prolong the matter until her defenses have been built up, and then try to settle it. Accordingly, as time goes by, the Empire will be put at a disadvantage. If we could settle things without war, there would be nothing better. But if we conclude that conflict cannot ultimately be avoided then I would like you to understand that as time goes by we will be in a disadvantageous position.

Home Minister Hiranuma had already given his opinion, on 12 July, that "if we let things go on this way, we will be fighting on two fronts. Our resources will be exhausted, and we will probably be unable to continue a great war." The AGS Operations staff officer agrees: "Probably there would have been no war if the United States had not inflicted embargoes on Japan" - the freezing of funds, restrictions on the export of petroleum, and a cutoff of shipments of iron and steel scrap. "To put matters in strongest terms: We went to war because our material stocks were being used up. Japan was compelled to resort to

arms." The Deputy Chief of the Army General Staff wrote privately on 1 November, "One reaches the unavoidable conclusion that we must go to war."⁴⁸

The factor of national interests at stake, as perceived by the military organization, came to overwhelm detached appraisal. On 7 September 1941, Tōjō said that peace on American terms would mean the gradual impoverishment of Japan, without a doubt, whereas war offered at least a 50-50 possibility of victory. That would be better, argued Tōjō, than to be "ground down without doing anything." In the famous exchange on 14 October between Tōjō and Premier Konoe, the former asserted that "a man sometimes must dare to leap boldly from the towering stage of Kiyomizu Temple." Konoe retorted that nations dared not endanger their existence rashly. On 30 October, it was concluded in essence that the cost of proceeding without war was prohibitive in terms of Japan's long-term position. Admiral Nagano insisted at the 17-hour marathon liaison meeting of 1 November that "the time for war will not come later!" When the Imperial Conference of 5 November convened, Tōjō observed that, though the early stages of hostilities posed no problem for Japan, by 1943 there would be no petroleum for military use, and ships would stop moving. There was "no end of difficulties," but Tōjō could think of no other method, under the circumstances. "I fear," he said, "that we would become a third-class nation after two or three years if we merely sat tight." When the decision for war was finalized at the Imperial Conference of 1 December, Tōjō asserted that the United States had "not only belittled the dignity of our Empire and made it impossible for us to harvest the fruits of the China Incident, but also threatened the very existence of our Empire." In view of the enormous and increasing economic and military pressure being applied to Japan by the

United States, Britain, the Netherlands, and China, war was the only answer "in order to resolve the present crisis and assure survival."

Japan was quite prepared for a long war, concluded Tōjō.⁴⁹

The edge of shrillness that appeared in Japan's final decision is reflected in the exasperation with the American stance, as expressed by Hara, the President of the Privy Council. "The United States," he said, "is being utterly conceited, obstinate, and disrespectful. It is regrettable indeed. We simply cannot tolerate such an attitude." Foreign Minister Togo used the word "carefree" to describe the attitude of the High Command once the fateful decision had been reached.⁵⁰

Several observations become relevant at this point: (1) The ancient Way of the Warrior (Haqakure) exhorted the samurai to "dash forward bravely and with joy when meeting difficult situations. ... 'The more the water, the higher the boat.'" And: "No matter what it is, there is nothing that cannot be done. If one manifests the determination, [one] can move heaven and earth." After all, "Common sense will not accomplish great things. Simply become desperate and 'crazy to die.'"⁵¹ (2) It has been said that the Japanese suffer from a "siege psychology" (rojo shinri) -- "a prevalent impression that Japan is under attack by other countries."⁵² (3) As a Japanese editor once told American writer Robert Christopher: "You always have to remember that we Japanese are hysterics." Though Christopher regards this as an overstatement, he notes that "there is undeniably a traditional highly emotional Japanese response to a continuing pattern of slights and injuries. That response is to bear one's grievances quietly, even courteously, for a prolonged period ... and then to explode in a frenzy of destructive rage with no heed for consequences."⁵³ (4) In the final analysis the notion of victory or defeat, to the Japanese, transcended logic and embraced

faith and fatalism. A veteran IJA general officer observed that commanders strove to do their best first, but then "prayed for the grace of Heaven and divine intervention."⁵⁴

With respect to the military organization's ability to communicate with and influence the political leadership, it can be said with confidence that Japanese military goals essentially equalled national goals: "What was good for the military was good for the country." Neither the nominal (Emperor) nor executive (Premier and Cabinet) nor parliamentary (Diet) authorities infused much substantive input into what were, for all practical purposes, predetermined military-naval strategic decisions. For a decade since 1931, Japan lived in an era of constant crisis justifying invocation of the all-powerful dictum of "national security." Given the historical Independence of the Supreme Command Prerogative, the military organization needed only to petition the Throne for sanction of the most important matters affecting the general staffs and ministries of the two services. Usually it was not difficult for the services to obtain the desired funding authorizations from the Diet, as we saw. Rarely did a parliamentarian (such as Ozaki Yukio) ever dare to stand up to the military openly.

Of course, there was a governmental and command structure for consultation and for the certification of decisions. In the period before Pearl Harbor, the deliberative bodies which figure most prominently are the Imperial Conferences held in the presence of the monarch (Gozen Kaiqi) and the IGHQ-Government Liaison Conferences (Daihon'ei Seifu Renraku Kaiqi). Between July 1941 and the attack on Hawaii, working Liaison Conferences met about forty-two times; largely pro-forma Imperial Conferences, three times. Although both bodies included uniformed members, consensus always dominated the decisionmaking

process.

But, until the great Army mutiny of February 1936, the military had another way of influencing the political leadership: by murdering or threatening to murder objectionable public figures -- what has been termed Government by Assassination. Even after the Control Group (Tōsei-ha) in the Army brought most outrages under control, the threat of direct-action suasion continued, to the point that the lives of Prince Konoe, Admiral Yamamoto, and even Tōjō were threatened at various times before and during the war. The armed forces had their own terms of generalized opprobrium for those they disliked: parasitic businessmen, opportunistic politicians, and weak-kneed diplomats. As Hagakure put it, "Calculating people are contemptible ... [for] calculation deals with loss and gain, and the loss and gain mind never stops. Death is considered loss, and life is considered gain. Thus, death is something that such a [wretched] person does not care for Furthermore, scholars and their like are men who with wit and speech hide their own true cowardice and greed."⁵⁵

The result of such an atmosphere was that in practice, as admitted by an IJA lieutenant colonel who served for many years on the Planning Board and in the Munitions Ministry, "all the civilian ministries were utterly blind regarding trends in the war situation and military strategy." Yet, if the civilian ministries needed to undertake a program of their own, especially during the later stages of the war when there were grave shortages of transportation and material for civil use, those ministries had to beseech the Army and Navy for assistance. The above-mentioned IJA lieutenant colonel wrote after the war: "From the bottom of our hearts, we prayed for a great statesman to appear, one who would be able to [balance the demands], integrate political and military

strategy, and handle material mobilization suitably; but our prayers were never answered." Prime Minister Konoe constantly complained about being left out of the picture by the armed forces.

According to Admiral Yonai, who was Deputy Prime Minister as well as Navy Minister in 1944-1945, even the Jūshin (Senior Statesmen - former Premiers) were "told nothing as to what is going on in the government" or the High Command; "consequently, whether the trend of the country is toward war or against it, the so-called Senior Statesmen are in no position to know." Others have charged that even the Emperor was misled by the armed forces on a number of occasions, and was chronically bereft of military intelligence. Overweening domination over the civilian ministries by the military organization is attested to by Foreign Minister Tōgō, who long remembered his "fields of combat by disputation," such as "heated conflicts with militarists" in November-December 1941, and a three-hour altercation with Tōjō in September 1942.⁵⁶ These instances do not bespeak a substantial interface or communality between the military organization and the political leadership in terms of mutual communication and influence.

Illustrative of the military organization's realistic modelling of force size and structure to achieve national objectives are the Japanese war plans of 1941. That year, the entire Japanese Army numbered 51 divisions and 138 air squadrons. To conquer the Philippines, Guam, Hong Kong, Malaya, Burma, Java, Sumatra, the Celebes, Borneo, the Bismarck Islands, and Timor, a basic strength of eleven ground divisions, nine tank regiments, two air groups, and three directly-attached brigades was assigned to the IJA core force -- General Terauchi Hisaichi's Southern Army, based in Saigon. Under Terauchi, the 25th Army was given the mission of reducing Malaya; commanded by Lt. General Yamashita Tomoyuki,

it had the first priority of the campaign. The 14th Army (under Lt. General Homma Masaharu) would operate against the Philippines; the 16th Army (Lt. General Imamura Hitoshi), against the Dutch East Indies; the 15th Army (Lt. General Iida Shōjirō), against Burma, as well as "maintaining stability" in Thailand and Indo-China. The 3rd Air Wing (under Lt. General Sugawara Michio) lent support with 430 planes -- four fighter, one scout, three light bomber, and three heavy bomber groups. The 5th Air Wing (Lt. General Obata Eiryō) deployed another 150 airplanes -- two fighter, one scout, three light bomber, and two heavy bomber groups. One infantry division, loaned by Japanese forces in China, would be committed to the Hong Kong operation. Against Guam and the Bismarcks, a South Seas Detachment would be formed, built around three infantry battalions. After seizing Rabaul, the Detachment would shift its efforts against the area of Palau. The main logistic base for the southern operations was Indo-China; the intermediate relay base was Taiwan; the ancillary relay facility was the Canton area.

The Army was determined to conduct the operations planned against both Malaya and the Philippines, even if the Japanese Combined Fleet had to intercept the main U.S. Fleet. In the event the Soviet Union entered the war, alone or in concert with the United States, necessary Japanese reinforcements would be rushed to Manchuria from the homeland and from China. The powerful Kwantung Army in Manchuria, which had been built to a peak of readiness since July 1941, still possessed six army corps, thirteen infantry divisions, a tank corps, various garrison and supporting units, and an air division. The neighboring Korea Army included two ground divisions. All the while, Japanese military operations would continue against China, where twenty-one divisions, twenty-one brigades, and many other ground and air units were deployed.

Indeed, it was argued that success in insular and continental Southeast Asia would contribute greatly to the settlement of the China conflict.⁵⁷

On 5 November 1941, the Army Chief of Staff, General Sugiyama Gen, provided the timetable for the projected operations: to complete the Philippines campaign -- 50 days; Malaya -- 100 days; East Indies -- 50 days. The entire operation should be over within five months after the opening of hostilities. In case of an American Navy sortie or an unlikely Soviet intervention, the timetable would "probably have to be extended." In the worst case, army corps would be transferred to the south from Japan and the China theater.

As for the Navy, the IJN ratio of strength against that of the United States was estimated at 7 1/2 to 10; but 40 percent of the U.S. fleet was in the Atlantic. Though existing elements of the U.S. Navy in the Pacific might be able to interfere with Japanese operations in Southeast Asia, enemy strength would undoubtedly be insufficient to engage in a decisive battle until naval reinforcements arrived from the Atlantic, and that would take considerable time. Britain might be able to send a small flotilla to Singapore, but there was no reason to lack confidence in victory, should the Anglo-Saxon Powers combine their forces. Even if the enemy navies were destroyed in decisive battle, however, the war would continue for a long time after the operations in the south. The Navy was prepared to incur considerable losses. Apart from sinkings of merchant ships, there might be losses of aircraft as great as one-third or one-half.⁵⁸

Regarding the composition and prospects of the IJN strike force against Pearl Harbor, map exercises were conducted by a special study team at the Naval War College in Tokyo in mid-September 1941. Admiral Yamamoto's scheme was gamed with inconclusive results. Once the hypothet-

ical raid proved successful. A second time, the results were poor and the attackers lost two of six carriers sunk and two damaged, and 127 planes shot down. Yamamoto had to threaten to resign before serious IJN resistance to the plan was overcome; the admiral got to keep all six fleet carriers that he had wanted for the operation: the large carriers Akagi (flag) and Kaga, the light carriers Sōryū and Hiryū, the brand-new Shōkaku and Zuikaku. Each carrier bore about 70 aircraft; 183 planes participated in the first wave, 167 in the second wave, 39 flew combat air patrol over the carriers, and 40 were held in reserve. The rest of the task force included two screening battleships, three cruisers, nine destroyers, and three patrol submarines. Sent ahead were twenty-seven submarines, five of which carried midget subs, and eleven of which bore launch-planes. After refuelling the task force, eight tankers were sent back.⁵⁹

The phenomenal scope and speed of IJA and IJN operations by land, sea, and air in the Pacific between December 1941 and the spring of 1942 are well-known. The successful strike against Pearl Harbor cost the Japanese a total combat loss of nine fighters, fifteen divebombers, and five torpedo planes, largely in the second wave. Of all the IJN aircraft which returned from the raids, 74 had been holed. Fifty planes crashed on landing, of which twenty were destroyed. Operations in Southeast Asia proceeded so well that, as early as the end of 1941, General Sugiyama was able to step up his schedule for the invasion of Java by one month. Only in the Philippines could U.S.-Filipino forces put up sufficient resistance to hold the last bastions at Bataan and Corregidor until April-May 1942, a slowdown of IJA plans that cost General Homma his command but did not seriously delay the acquisition of Japan's main objectives in the south.⁶⁰

With Allied opposition so rapidly crushed, and with the Russians refusing to enter the Pacific War while fighting for survival in Europe, the Japanese High Command had no need to increase its force levels. Indeed, forces were withdrawn from the south in early 1942 and shifted to Manchuria and China. Only with the reversal in Japan's fortunes starting with the battles of the Coral Sea in May 1942 and Midway in June did the redeployment and reconstitution of Japanese forces begin. In 1944 and 1945, the once-elite Kwantung Army was bled of men and equipment for the benefit of other theaters. The firepower of the forces left in Manchuria was cut by a half to two-thirds.

Loss of aircraft and veteran pilots and shortages of fuel led to a reliance on suicidal Kamikaze units by 1944, made up largely of green, ill-trained aviators and a melange of planes. By 1944-1945, the Japanese were finally obliged to dip deeply into their manpower barrel in order to replace casualties and create new formations, especially in the Army. All men in the lowest physical category of the non-exempt, and above, were now being drafted. Whereas before the war, 60 percent of Army enlisted men were regulars, by 1945 the figure had fallen below 15 percent.⁶¹

The Japanese Army had had many hopes of quantitative as well as qualitative improvement to cope with strategic goals. For example, armored formations began to attract more serious attention after 1937, and a mechanized headquarters was finally set up in April 1941. There was talk of forming ten fully-equipped tank divisions on a crash basis. The Moloch of the Pacific War, however, and the many defeats after 1942 prevented the attainment of almost all such expansionary programs. Not one armored division had been activated by December 1941.

By war's end, though the Navy had been shattered, Japan still possessed a very impressive number of men and planes. In August 1945 the core of the Army was made up of 169 infantry divisions, four tank divisions, and fifteen air divisions, including air divisions established from training units. Total personnel strength approximated 5,500,000 officers and men, including 2,350,000 in Japan. There were some 9,000 Army and Navy aircraft, including 6,000 for use in the defense of the homeland.

In Manchuria in 1945, the Kwantung Army possessed the largest (but qualitatively weakest) number of infantry divisions in its 40-year-old history: 24 divisions intended to bluff the Russians. Personnel strength was 780,000 but there were only fifty first-line planes. Seven more divisions and 260,000 men were stationed in Korea. Forces in China numbered 1,050,000, grouped in one air force, one tank, and twenty-two infantry divisions.⁶²

Drawing upon their force level of 1945, the Japanese High Command devised operational plans designed to exact a fearsome price from the expected invaders of the homeland. Both Japanese and Anglo-American sources agree that the landings would have been extremely costly for both sides, as already foretold by the fierce battles for Japanese-held island bastions in the South and Southwest Pacific. Eventually, Allied invasion of Japan proved unnecessary. In Manchuria the anticlimactical Soviet irruption of August 1945 was more a promenade than a combat campaign. To this day, the Japanese say that the the Kwantung Army therefore achieved its primary mission, almost till the end of its existence: fending off the Russians and preventing the Communization of Northeast Asia.

The most irrational aspect of the Japanese military organization's approach to war is found in the incompatibility of strategic objectives

with the logistical infrastructure and national industrial-technical base. An overpopulated, have-not country, Japan possessed a pygmy economy by the standards of advanced industrial powers, and little appreciation of the totality of modern war in coping with the huge civil and military requirements it set for itself. Productive capacity, vulnerable and essentially unenlarged, was insufficient to support wartime demand; the military services never obtained their main productive targets. An AGS planner has remarked that the Pacific War began with Japan's need for raw materials and ended the same way. It has been argued that the real cause of the war can be traced to one crucial shortage: oil. Vice Admiral Hoshina, chief of the Naval Affairs Bureau in 1945, said as much: Without oil imports, Japan could not win the war against China or, for that matter, survive as a nation.⁶³

Among the oil-producing countries of the world, Japan ranked twenty-second. In 1941, 4,000 domestic wells produced 1,941,000 barrels, scarcely 0.1 percent of the global total. The United States' 400,000 wells were producing 1,403,784,000 barrels -- more than 700 times Japan's total. Japanese oil production never matched the peak year of 1937 (2,470,000 barrels) and output continued to decline throughout the war. In fact, Japan was importing approximately 80 percent of its crude oil (in increasing amounts) and refined stocks (in decreasing amounts) from the United States. Another 10 percent came from the Netherlands East Indies. In 1940, Japan managed to import a record total of 37,160,000 barrels, but there were few dependable outside sources that could be drawn upon: the Sakhalin concession -- 315,000 barrels per year, terminated by the Russians in March 1944; and Taiwan -- a mere 37,000 barrels annually.

Heroic domestic economies were instituted by the Japanese as soon as 1938, when the government imposed gasoline rationing. Next, civilian use of motor gasoline was stopped, and allocations of fuel and lubricants were cut back for civil factories. Almost all civilian motor vehicles, including busses and taxis, were removed from the roads; operators of essential services were obliged to install wood or charcoal. The result was that civilian consumption of gasoline went down from 6,323,000 barrels in 1940 to 1,583,000 in 1941. Manufacturing of passenger cars was stopped in 1944.

The refining capability went up during the war but ambitious plans for synthetic oil production proved very disappointing. These considerations, however, were entirely secondary to the oil riches expected to be brought to Japan, once the Dutch and British were defeated, from Sumatra, Java, and Borneo. These islands had a prewar combined production capacity of an average 180,000 barrels of crude oil per day, and a refining potential of 197,000 barrels a day. Japan's early successes in Southeast Asia caused Premier Tōjō to tell the cabinet in February 1942 that the country's oil supplies had been secured and the home oil industry could no longer be termed an "essential industry."

While home production virtually stagnated thereafter, the N.E.I. received prime attention as the Japanese sought to create an autarkic position in oil. Production of crude oil in the Southern Zone, which had amounted to 65,100,000 barrels in 1940 but to only 25,927,000 in 1942, rose to a peak of 49,614,000 barrels in 1943 and then fell off to 39,916,000 in 1944 and 6,545,000 in the first seven months of 1945. Refinery output was less impressive: 1940 - 63,955,000 barrels; 1942 - 13,870,000; 1943 - 28,398,000; 1944 - 26,845,000; 1945 - 4,448,000. Whereas the 10,524,000 barrels of oil that were hauled to Japan in 1942

constituted 40 percent of the production of the Southern Zone, the 14,500,000 barrels imported in 1943 amounted to 29 percent. By 1944 the figure was only 13.5 percent. Almost no oil got through from the South in 1945. Tojo's early assurances had given way to a situation wherein, as was often said, oil became more precious than blood.⁶⁴

Central to the importation of resources from Southeast Asia was the need for a giant merchant fleet and open sea lanes to the homeland. Neither prerequisite could be met as the wartime years went by. Since Japan had 6,350,000 tons of available merchant shipping in 1941 -- double the minimum amount deemed necessary -- new construction remained relatively low. By the end of 1942, about 1,250,000 tons had already been lost to enemy action, a scale of decrease which grew steadily worse: 2,560,000 tons were lost in 1943, 3,480,000 tons in 1944. By war's end, Japan had only 1,600,000 tons of shipping left, of which one-third was unserviceable. According to Admiral Toyoda, commander of the Combined Fleet, "By the time of the Saipan operation [in 1944], the greatest hindrance to the drafting of the operation plans was the fact that we did not have sufficient tankers to support it." At most the Japanese had 834,000 tanker tons afloat in December 1943; by the end of the war, only 248,000, despite new construction. Premier Higashikuni told the Imperial Diet in September 1945 that "the basic cause of defeat was the loss of transport shipping." As U.S. Strategic Bombing Survey analysts said, the Japanese oil industry was "already defunct" because of a lack of crude oil by the time the B-29's began their raids in 1944.⁶⁵

The declining fate of the vital oil industry was largely replicated across the board in terms of basic materials, throughout the war years, whether reference is made to iron ore, aluminum, ferro-alloy ores, organic glass, magnesium, crude rubber, superphosphates, copper, zinc,

lead, tin, coal, ammonia, nitric acid, chlorine, or oxygen, etc. One statistic dramatizes the realities. In 1939, Japan was able to import 2,555,000 tons of scrap steel and iron; in 1945, 1,000 tons. In 1939, there was a stockpile of 5,791,000 tons of scrap; in 1945 a mere 308,000 tons.⁶⁶

The most direct consequences of Japan's economic and demographic constraints were found in the levels of ammunition, ordnance, arms, and equipment that could be fabricated against the armed forces' desiderata. Selected categories follow, providing peak figures and end-of-war:⁶⁷

Smokeless powder: February 1945 -- 2,344 tons (peak);

July 1945 -- 1,369 tons.

Organic high explosives: March 1945 -- 4,279 tons; July

1945 -- 1,720 tons. (Comparative figures: Japan, 1944

-- 44,000 tons; U.S.A., 1944 -- 1,143,000 tons. Japan,

1945 -- 9,000 tons, U.S.A., 1945 -- 551,000 tons.)

Explosives: March 1945 -- 6,535 tons; July 1945 -

3,089 tons.

The Navy took delivery of a peak annual output of 468,000 tons of warships between April 1944 and March 1945. In the last reporting period, April-July 1945, the figure was 67,000 tons. In major categories, 2 battleships were delivered during the war (none in 1944-1945); 18 carriers (4 in 1944-1945); 6 cruisers (1 in 1944-1945); 70 destroyers (37 in 1944-1945); and 132 submarines (59 in 1944-1945). But in 1944-1945, special attack vessels (suicide boats, small submarines, and manned torpedoes) were first delivered: 5,121 in 1944; 1,733 in the last year of the war.

Production of armored fighting vehicles for the Army reached an annual peak of 544 medium tanks in 1943, and 708 light tanks in 1940; final output was 89 medium and 5 light tanks in 1945. The Army possessed the miniscule number of 62,500 organic motor vehicles in 1941. More than 95 percent of finished vehicle production flowed from three civilian companies, including Nissan and Toyota.

Japanese aircraft production peaked in 1944: 13,811 fighters, 5,100 bombers, 2,147 scouts, 6,147 trainers, and 975 miscellaneous planes (including flying boats, transports, and kamikaze); total for year 28,180. In 1945, aircraft output amounted to 5,474 fighters, 1,934 bombers, 855 scouts, 2,523 trainers, and 280 miscellaneous; total for year 11,066 planes.

Inevitably, then, the military organization's strategic objectives were degraded by the country's unsubstantial logistical infrastructure and industrial-technical base. Over the long haul, Japan could hardly hope to compete militarily against a superpower like the United States in crucial sectors (to mention only two) such as munitions manufacture, where the adverse ratio was 1:10 at best, and steel and coal production was perhaps 1:13. Nevertheless, the Japanese armed forces invested immense effort in the production of vital armaments such as aircraft. American analysts generously concluded after the war that "the results were not inconsiderable. ... In view of the essential limitations within which the Japanese economy had to operate, this achievement cannot be minimized."⁶⁸

The Japanese were unsuccessful in integrating their strategic objectives with those of their allies. In World War II Japan's allies were her partners in the Anti-Comintern Pact and Tripartite Alliance -- Nazi Germany the senior European member of the Axis, Fascist Italy the

junior member. Germanophile elements in the Japanese Army were the driving force behind the partnership. The Navy was far less enthusiastic, though some IJN officers shared the overestimation of German power and hoped that the Germans would not only knock England out of the war but would also seriously divert the United States from applying its strength to the Far East.

The Japanese-German relationship was a failure in terms of the integration of strategic objectives. Hitler would have liked Japan to attack Siberia at various times, but he provided only oblique hints of his intention to invade the Soviet Union in June 1941. For their part, the Japanese did not let the Germans into their operational plans for attacking the Western Powers in the Pacific in December of the same year. The Japanese thrust to the south, although it engaged the Western European enemies of Germany, did nothing to further Hitler's anti-Soviet campaign. The nearest that the Japanese came to correlating objectives was the rather academic notion of linking operational spheres in the area of South Asia, with the Japanese invading India while the Germans took the Suez Canal under attack from two directions -- from Egypt and the Caucasus. In January 1942 representatives of the three Axis navies did agree to draw an operational line of demarcation west of Bombay affecting mainly submarine activities. Powerful Japanese naval task forces did sweep the Bay of Bengal but had to be diverted to the western Pacific to cope with the resurgent U.S. Navy.⁶⁹

Serious efforts were made to exchange intelligence, techniques, equipment, and commodities. The Germans required raw materials available from Japanese-occupied Southeast Asia, such as rubber, quinine, tin, wolfram, tungsten, and molybdenum, as well as hemp, hides, and vegetable oil. The Japanese also sent sophisticated oxygen torpedoes and launching

tubes, but needed scientific know-how and the advanced technology of the Third Reich, including such varied items as industrial diamonds, Atabrine drugs; lead and mercury; ball bearings and ground radar; blueprints of rockets, a glider bomb, recoilless weapons, antitank and antiaircraft guns, machine pistols, and rifles; acoustic buoys, engines, aerial cameras, ciphering machines, and torpedoes.

The Allies, however, largely by their success in breaking the Axis codes, were able to shatter the mainly-German surface blockade-runner operations from Europe to Asia. Between August 1942 and March 1943, only four of fifteen westbound ships reached their destination; more than 93,000 tons of "special cargo" were lost. The Germans then went over to cargo-carrying submarines. Again, the Allies were able to wreck the effort. Of fifty-six cargo submarines that engaged in the traffic from 1942 or 1943, twenty-nine were sunk, three abandoned their voyages, and one was interned. A full one-way trip was thus completed by twenty-three submarines, but nine were then sunk, two interned, and seven taken over by or given to the Japanese. This means that only five submarines were able to make it to their home port. Again, the losses of special cargo were severe.⁷⁰

Five large Japanese cargo-carrying submersibles were used on the route to Germany. The Japanese say they were particularly pleased with the information they obtained from the Germans regarding anti-radar devices and methods. But four of the five IJN cargo submarines were eventually lost, and by 1944 (after having possessed a glut of raw materials at the outset of the war) the Japanese had nothing further to send.⁷¹ A number of German and Japanese technical experts and diplomats, and even the Indian nationalist Chandra Bose, did get through by submarine. The technicians included radar, ordnance, and antiaircraft

specialists and engineers, but, as one writer put it, "this was the small change of a relationship which, theoretically, should have produced ... enormous practical benefits for the two partners."⁷²

Japanese confidence in German victory in Europe was slow to erode. A team of officers from the Army and the Navy, accompanied by a Foreign Ministry official, visited Germany in the spring and summer of 1943. They concluded that German national strength was lower than anticipated. Still, the most that Japanese Army officers in the homeland would say was that they were "somewhat inclining to pessimism" so far as Germany was concerned. Objective IJA analyses of German capabilities did not commence till the autumn of 1943. It was too late, says Colonel Hayashi -- "like sighting a lighthouse after your ship has been wrecked. The Japanese Army committed a great error by placing excessive confidence in Germany." Only after D-Day in Normandy in June 1944 and the assassination plot against Hitler in July did the Japanese Army leadership finally conclude that "Germany possessed scant prospects for victory."⁷³

As an IJN admiral stated, concrete joint operations between Japan and Germany were nearly impossible. There was no particular joint policy other than a broad notion of collaboration envisaging mutual checking of the Anglo-Saxon powers, accomplished by waging two separate wars.⁷⁴ Germany and Italy were ideologically compatible with Japan, but the European and Asian partners were a world apart, geographically and practically speaking.

One tends to take greater risks against an enemy who is despised. Though the Japanese Navy never lost its admiration for the British Navy and certainly did not denigrate the U.S. Navy, the Japanese Army had little use for all its actual and potential foes. In general they

regarded the Chinese Army as little better than bandits in uniform; the Soviet Russians as sluggish, unmotivated successors to the Tsars' clods; the British, French, and Dutch as gin-and-tonic warriors best at chasing Zulus and Moroccans in the Riff; and the Americans as reckless on the attack but helpless on the defense. "The amateurishness of other armies -- except the German Army," remarks a British observer, "never ceased to astound the Japanese." It was not difficult to draft strategic plans and set objectives that set a low value on hostile armies in the field and on enemy powers of recuperation.⁷⁵

Japanese intelligence knew that, since the outbreak of World War II in Europe, the Allies had been increasing the number of troops and aircraft stationed in the Far East. As of 5 November 1941, the manpower buildup was estimated at 800 percent in Malaya, 400 percent in the Philippines, and 250 percent in Burma. But the fighting ability of those armies was inferior in general, for they contained only thirty percent white soldiers from their homeland, the rest being made up of ill-educated and poorly trained natives. One good thing could be said of them: they were thoroughly adapted to tropical conditions. Enemy air forces were undoubtedly better than the ground elements, for aircraft quality was excellent and the pilots were "comparatively skillful." The appraisal of the air dimension is significant: the Americans had only 200 combat planes in the Philippines, of which two-thirds were operational. Admiral Tomioka later admitted that "If MacArthur had an air force of 500 planes or more, we would not have ventured to strike the Philippines. Long experience had taught us that a 3 to 1 ratio was necessary to attain air supremacy."⁷⁶

Reports of further Allied ground reinforcements sent to Singapore, Hong Kong, and Burma by 1 December 1941 did not faze the Japanese High

Command. "We have assumed in our planning ... that something like this would occur," General Sugiyama assured the Imperial Conference. "It will have no effect on our operations, since we have set up everything in such a way that an increase of this magnitude will be of no consequence." Similarly, NGS Chief Nagano asserted that although the British were known to be sending battleships into the Indian Ocean, there was no call for Japanese redeployment; "it will have no effect on our operations."⁷⁷

Whenever the slightest negativism appeared as to the strength of the military organization, the greater afflictions of the enemy were propounded. Tōjō felt that Prince Konoe was excessively pessimistic, "probably because he knew the weaknesses of Japan extremely well;" but one should not forget that the United States had weaknesses too. At a liaison conference on 12 November 1941, Tōjō argued that the Americans would never have agreed to converse with the Japanese unless they had some serious weaknesses of their own: forces split between two oceans, "incomplete domestic setup," and only enough war materiel to last a year.⁷⁸

Less known is the fact that the Japanese leadership in 1941 gave particular credence to reports of alleged disunity within the United States, especially regarding support for England. Congressional opposition supposedly included Democrats as well as Republicans, expressed in bitter opposition to the policies of President Roosevelt. Gallup polls were reassuring to the Japanese, indicating that the American man-in-the-street opposed involvement in any overseas conflict. In the presidential race of 1940, both Roosevelt and Wendell Willkie had even made statements that were discouraging to the British and encouraging to the Axis. The Japanese paid particular attention to the pronouncements of reportedly influential, "hard-headed," and highly vocal

prewar "leaders" such as Charles Lindbergh, Herbert Hoover, and Senators Wheeler, Taft, and Nye. Financial panic was deemed near within an isolated and isolationist United States, which was dominated by a business-as-usual outlook rather than a determination to fight. Lastly, the Japanese entertained exaggerated views, undoubtedly encouraged by Nazi German counsel, of American racial and minority divisions. Tokyo conveyed instructions to its agents in the United States to exploit these rifts, especially among workers in war industries in Southern California. American counterintelligence agencies were kept busy, but the war effort was never slowed. After the U.S. crackdown on known or suspected Japanese agents in December 1941, Japanese intelligence relied to a large degree on Spanish operatives, whose transmissions, as we now know, were largely penetrated by Allied cryptanalysts.⁷⁹

III. Operational Effectiveness

The Japanese armed forces were no better integrated between 1941 and 1945, despite immense wartime stresses, than they had been before the war. They visualized different enemies and fought different wars. Although a shadowy Imperial General Headquarters (Daihon'ei) had been re-established in 1937, the lack of cooperation between the services was critical. The Army, as we saw, struggled to prevent the Navy from devouring the finite fiscal and material resources of the country. The Navy was determined to maintain a co-equal stance in every way, while preventing the Army from going its own way (dokusō) or running wild (bōsō). Prime Ministers were helpless, and the Emperor did not intervene, though some in the Army felt that the sovereign showed marked favoritism toward the Navy. Again and again, the services clashed over questions of allocation of raw materials and manufactures. In 1943, for example, the Navy Minister threatened to resign if he could not have the mere 50,000 tons of steel the Navy needed.⁸⁰

During the war there was repeated discussion of uniting the two services. "This was a problem of long standing," says Colonel Hayashi, "but due to the old conventions of both parties, the solution had been deemed almost hopeless." As the decisive campaign to defend the homeland neared in 1945, the question was resurrected with pressing relevance, especially since the Navy had been largely reduced to men without ships, and the Army's main force was still intact. The last War Minister, General Anami, and his staff argued for combining the High Command, but

were willing to leave the War and Navy ministries as they were, without being transformed into a National Defense Ministry. If possible, the portfolios of Minister and Vice Minister should be held concurrently by either the War Minister or the Navy Minister. Anami said he would be content to serve as Vice Minister; Admiral Yonai could be Navy Minister and War Minister at the same time. No progress toward bridging the differences was made, reportedly because of Yonai's opposition.⁸¹

Today, one Japanese military analyst is attempting to explore the history of IJA-IJN joint operations. "There's nothing much to study," he complains. "It's like a desert country, where they have no word for 'umbrella' since it never rains. The same thing can be said for 'joint operations' in wartime Japan." Cases of significant subordination of forces, in practice, can be counted on one hand: the Southeast Detachment (Nankai Shitai) went under the 8th Fleet in the Solomons; the 31st Army, under the Combined Fleet in the Central Pacific; the 6th Air Force, under the Combined Fleet in the Okinawa campaign; and the 5th Air Force, under the same Fleet, in the homeland. One disgusted IJA officer called the incidence of interservice conflict and disagreement, "the worst in the history of the world." After the war, Admiral Yonai provided the following explanation for the failure to unify the air forces in 1944 -- on IJN terms:⁸²

I felt that the Navy was superior to the Army in all phases of air activity, and therefore felt that it would be to mutual advantage for the Navy to take control of all aspects of air effort ... I think it boils down to a question of [Army] pride. They didn't like to give up part of their own forces to the Navy. I believe that

there were numerous instances when the Navy felt that this or that should be the principal objective of a combined air attack. The Army would disagree, considering that some other point should be made the butt of a combined air attack; and because the chain of command of the two forces was completely divided, the Navy could not persuade the Army to bring their air force to support the Navy effort, and vice versa.

Under such circumstances, one can conclude that on occasion each service was capable of rising to the challenge of mobility and flexibility at the operational level. They were most comfortable, however, while operating separately.

The previously-discussed fiscal and material realities, coupled with a general backwardness in science and technology, imposed very real limits on the implementation of operational concepts and decisions. Though the Japanese did good work in the areas of torpedo fabrication (the famous Long Lance), Diesel-engine application to armored fighting vehicle construction, and the design and arming of superbattleships, they were very anxious to obtain advanced information from Germany on such top-secret projects as guided missiles, radar, and rocket propulsion. It required an order by Hitler, in January 1945, to get the information released, but few of the belated consignments ever reached the Far East. Complete specimens and details of the ME-163 rocket fighter were to be sent to Japan, but only undetailed information ever got there. In 1944 the Germans showed interest in acquiring anything useful from Japan to counter Allied bomber aircraft in Europe, but the Japanese "had no suggestions of any kind to offer." The Germans anticipated little

technical assistance, and in fact, beyond torpedo technology, the Japanese could contribute little more than raw materials.

Development of a Japanese nuclear program for military use was seriously underfunded and ultimately unsuccessful. A thermal-ray project also failed. IJA submarines, from which much had been expected, were not used much against merchant shipping, and proved to be a dismal failure; the U.S. Fleet was always deemed "the one logical target." IJA tanks were not in the same league as their Russian, German, or American counterparts. Japanese notions of developing a very long range heavy bomber of their own that would be capable of striking North America did not advance beyond prototype design late in the war. Apart from the raid on Pearl Harbor, the best the Japanese could do was to send carrier planes against Darwin and Townsville in Australia and against Colombo and Trincomalee in Ceylon; a few submersibles against Sydney Harbor and Santa Barbara; and swarms of strange little balloon bombs, carrying incendiary devices, against the forests of North America. The feebleness of technology and the desperation of the strategists are demonstrated by the wasteful and indecisive commitment of thousands of kamikaze pilots in the Okinawa campaign.⁸³

Operations was paramount in Japanese staff work. The other staff elements were theoretically of equal importance, but that was paper equality in practice. In the area of operations, the German influence on the Army was particularly pronounced, in the form of almighty staff officers wearing the braided cord. The role of logistics, "unglamorous," was secondary. At least until the early Showa era of the 1920s and 1930s, Japanese Military Academy cadets typically opted first for the sabers and the smart uniforms of the horse cavalry, though there were usually three times as many volunteers for this branch as there were

openings. There is a certain connection between planning weaknesses in logistics and the fact that, in the Navy, perhaps the greatest shortcoming was a dearth of fuel and ammunition. It has been suggested that "the [Japanese] Navy's confidence in a quick victory in a decisive fleet encounter contributed to its ultimate lack of an adequate, sustained support force."⁸⁴

The Army, too, was chronically plagued by ammunition shortages, coupled with problems of communication and transportation, apart from inferiority of firepower. This, it is often said, stemmed from the absence of important combat experience in World War I, and even a lack of top-notch reporting of the little that had been observed of that war. An IJA Southern Army staff officer in the Imphal campaign in 1944 reportedly remarked bitterly that the Japanese army commander in Burma "would fling his troops anywhere if he thought it would bring him publicity. How they are to be supplied he only thinks about afterwards."⁸⁵

Intelligence was another area to be accorded a secondary role. Like logistics officers, intelligence people worried too much. With rare exceptions, only "plodders" went into intelligence. Collection activities were generally better than analysis and estimation. Much of the reason for the low estate of intelligence, like logistics, was the tendency to equate prudence with timidity; impetuosity and zeal, with heroism and strength of character. The historian finds it difficult to separate aggressiveness from recklessness.

Communications were chronically poor in the Army. Wheeled and tracked transportation was scant and primitive by Western standards. The medical service was plagued by a wartime shortage of drugs, a wretched system for casualty evacuation, and indeed a cavalier attitude toward the non-ambulatory soldier, who was regarded as having lost his *raison d'être*.

The Army's lack of modernization, however, did not produce unacceptable costs. It was, after all, "a naval war," as Admiral Yonai later claimed. Once again, the differing approaches of the two services thwarted correlation of operational concept with strategic objectives. Lieutenant General Kawabe, the last chief of the Army General Staff, provided a frank and illuminating explanation of High Command mind-set, seen through IJA eyes:³⁶

Very basically, the general plan for the defense of the nation was: where the Continent was concerned it was the Army's duty, and where the Pacific was concerned it was the Navy's duty. Both from the standpoint of desire and from effort, it was always well known by most people that Japan couldn't carry out war on the scale that it actually did. It was materially impossible to employ our entire Army on the Continent while at the same time using our entire Navy in the Pacific. That such a situation should not be allowed to arise was one of the basic principles. From the Army man's standpoint, I felt that any kind of a campaign on the Continent could be carried out entirely by the Army alone, that we needed no cooperation or assistance from the Navy. Since both the Straits of Shimonoseki and the Tsugaru Straits were quite freely navigated, we didn't have to call on the Navy at all to carry on Continental warfare, but if war was to be carried out in the Pacific, we would leave that entirely to the Navy. I felt that with the Japanese naval strength the Western Pacific could be

adequately held by the Japanese Navy alone; that is, strictly the Western Pacific; I don't know about anything further. This war was the kind of war which should have been avoided at all cost according to theory. But right after the opening of the war, the Navy did rush down very fast and obtain all that area, and so I felt that I was justified in my earlier belief that the Navy did have the strength necessary to look out for the whole Western Pacific. So after the first line was established, I thought it was the wisest thing to stop there. Moreover, I thought that was the plan, that they were going to stop there and stabilize their position, consolidate their position and build up defenses. Then after that, when they started such things as the Midway Campaign and the Solomons Campaign, I personally was very much surprised. Then when the sort of a turning point came, when they started to retreat, they didn't have any position consolidated enough on the original line that they could hold and carry out successful defensive warfare. I feel that the naval losses that were suffered during that time had a great effect on the unfortunate termination of the war. If the Army had had a bit more strength, if they had been able to pour in more troops and more strength in New Guinea and all those various island bases, possibly they would have been able to hold that perimeter. If I were to try to say who was responsible, the Army or the Navy, for the final defeat, I would say it was mutual. They

both didn't have the power to carry out the war to a successful termination. I feel, looking back on it now, that had Japan been prepared for the eventuality of such a war on the scale of this one, then we might have had a better chance. The national potential wouldn't allow Japan to build up a military force adequate for a war on this scale, so the bold beginning at the outbreak of this war was just a very unfortunate thing.

General Kawabe's remarks point up the disharmony between Japanese wartime strategic objectives and operational concepts -- the language of perimeters vs. the reality of overextension. The capitulation of Italy in September 1943, presaging the release of Allied forces to the Far East, caused IGHQ to reconsider its estimates of enemy counter-offensive capabilities. An Imperial Conference decided on new operational guidelines on September 30. The most noteworthy change was apparent in the high command's delimitation of an Absolute National Defense Sphere for the first time. It encompassed the Kuril Islands, the Bonins, the Inner South Sea Islands, western New Guinea, the Sunda Islands, and Burma. The most pressing problems were regarded as the reinforcement of the zone of absolute national defense, holding operations around the Northern Solomons and New Guinea, and preparations for counteraction north of Australia. The Americans were designated the primary national enemy.⁸⁷

The shift to this strategic posture cannot obscure the overconfidence that continued to affect Japanese leadership. They continued to assume that the hostilities could be resolved by military action, not by diplomacy. It had not been until the end of August 1943

that Premier Tōjō even considered feelers toward Chungking or efforts toward mediating the German-Soviet War. The Japanese government and military chiefs were losing sight of the fact that Admiral Yamamoto's scheme of 1941 had only been designed to buy time for Japan -- time to construct a defensible zone and to negotiate a settlement of hostilities favorable to Japan, not time to fight a long war. Tōjō's response to Japanese reverses was to redouble his efforts, tighten his control, promote optimism, and suppress dissent. As General Homma later said, "Tōjō believed that he could win such a complicated modern war simply by intensifying the people's spirit or by enhancing morale."⁸⁸

For the most part, the final two years of the Pacific War were characterized by Japanese strategic passivity. The military initiative had shifted to the Allies. Enemy counteroffensives were developing sooner and were far better articulated than ICHQ had anticipated. The enormous economic and industrial resources of America began to have an overpowering impact on the fighting. Whereas the Japanese were unable to replace the four fleet carriers lost at Midway in 1942, American shipyards were turning out dozens of fleet carriers which became the core of task forces assaulting Japanese bastions across the Pacific. The U.S. strategy also surprised the Japanese high command by choosing to bypass certain well-defended islands, to leap-frog across the Central and Southwest Pacific, and to let isolated Japanese garrisons like those at Rabaul and Truk wither on the vine.

The Japanese outer perimeter in the South Pacific began to collapse in the summer of 1943 after the disengagement from Guadalcanal and the Aleutians. In the Central Pacific the islands of Makin and Tarawa in the Gilberts, though fiercely contested, were lost in November 1943. Kwajalein and Roi in the Marshall Islands fell in February 1944. The

high command was especially unnerved by the powerful U.S. air and naval bombardment of Truk that month, for it proved that IJN aviation was no longer a match for the enemy. For the first time in the Pacific War, IGHQ ordered divisions pulled out of the Kwantung Army in Manchuria and transferred to the south. As Kawabe's commentary has suggested, IJA leaders blamed the Navy for lack of concern about ground warfare and for a narrow outlook on jurisdiction in the Pacific, whose defense was a naval responsibility. Symbolic of the enfeebled Japanese hold of Pacific areas was the U.S. ambush of Admiral Yamamoto's aircraft during an inspection tour of Bougainville in April 1943. Guided by intercepted intelligence, American P-38 fighter planes shot down and killed Japan's most audacious strategist.⁸⁹

If defense of isolated atolls and islands posed insuperable logistical difficulties and precluded maneuver, land operations seemed to offer some hope of success. In 1944 the high command focused new attention on the China theater, where the Nationalist regime remained cut off but where U.S. air power was growing more active, even posing a threat of B-29 raids against the Japanese homeland. By May 1944 the Japanese succeeded in linking the northern and central fronts, and a number of U.S. air installations were overrun in the summer. But it proved impossible to neutralize B-29 long-range bomber bases in Szechwan, and the American bombers struck at targets in northern Kyushu, South Manchuria, and Korea, until the B-29's could be transferred to bases in the Marianas, nearer to Japan, in 1945.⁹⁰

Some IGHQ staff officers saw prospects for victory in the Burma theater. The Japanese planners were thinking of seizing Indian territory in the Imphal area, establishing a puppet government, and undermining the British raj. The Burma Area Army Headquarters was formed under General

Kawabe Masakazu in March 1943, and the 15th Army was assigned the offensive mission, which got under way in early March 1944. Making light of the enemy and almost ignoring logistics, the 15th Army Commander, Lt. General Mutaguchi Renya, had hoped to achieve his primary objectives in two weeks but, after initial progress, the offensive bogged down within sight of Imphal by early April. Soon afterward, torrential monsoon rains began. Having lost half of its personnel en route to the front, the 15th Army ran short of ammunition, supplies, and food. Mutaguchi ordered the troops to devour their pack oxen and eat grass, and he sacked all three of his division commanders for a lack of fighting spirit. The Anglo-Indian forces, ably commanded by General Slim and well supported by aerial resupply, cleared the road from Imphal and smashed the Japanese on every front in Burma. The 15th Army disintegrated from sickness, hunger, lack of ammunition and antitank weapons, and inadequate air support.

The Japanese commanders, Generals Kawabe and Mutaguchi, deserve blame for inflexibility, unwillingness to withdraw, and reckless, emotional, and mediocre conduct of operations. IGHQ is also to be censured for lack of resolution, especially after it had become clear there was no hope of success. The Japanese were routed in Burma by the time they lost Rangoon in early May 1945. The Burma campaign of 1944-1945, one of the worst debacles of the Pacific War, cost Kawabe more than 100,000 men.⁹¹

If euphoria described the mood of Japan during Tōjō's early days as prime minister, then disillusionment bordering on despair characterized it by 1944. The Americans continued to land at will on Japanese-held islands in the Pacific. In April 1944, U.S. forces came ashore in western New Guinea, seizing the best air bases on the island. Trying to shuffle forces, IGHQ appeared to lack an overall plan and meddled in

operational details. U.S. landings on Biak Island enabled the Americans to dominate the skies over Halmahera, the Strait of Molucca, and the Makassar Channel.

At the time, the Japanese Army and Navy high commands had been giving serious thought to checking the Allied advance by a decisive battle in the zone of the Marianas, the western Carolines, and New Guinea. As soon as Biak Island was attacked, the Navy shifted sizable air strength to that sector, much to the annoyance of the Army. With Biak lost, Saipan and Tinian in the northern Marianas were invaded in June 1944 and overwhelmed by early July. At the end of a hard-fought defense, the Japanese commander reported that his men had not eaten for days but were fighting to the end, devouring tree roots and snails.

The defeat of the Japanese Navy in June 1944 in the Battle of the Philippine Sea, also known as the Battle of the Marianas, contributed to the isolation and destruction of the Japanese garrison on Saipan, which Tōjō had foolishly called impregnable. Army war direction officers now reached the conclusion that the war was lost and that hostilities must be ended soon, particularly since Germany's days were numbered. Despite a reputation as a human dynamo, the narrowminded and overconfident Tōjō could not cope with the pressures of supreme commandship and of fundamental national weakness. Plans to unify the Army and Navy air forces came to naught, as did plans to consolidate the two services under a single commander. Tōjō struggled cunningly to retain power, but he finally resigned as prime minister on July 18, 1944.⁹²

During the succeeding administration of General Koiso and Admiral Yonai, IGHQ sought to strengthen sea defenses from the Philippines to Taiwan, the Ryukyus, the homeland, and the Kurils; to combine Army, Navy, and air strength to engage an enemy offensive against any of those

districts; to continue offensive operations in China and to offset the uncertain maritime routes by using transportation facilities on the Asian Continent; and to select offshore sea routes to protect shipping. Battle plans were prepared to fend off attacks against the Philippines, the Taiwan-Ryukyu area, and the home islands. Landings in Japan were envisaged at such places as South and Southwest Kyushu, southern Shikoku, and a number of sites in Honshu.

When U.S. forces overwhelmed the garrisons at Morotai and Peleliu-Angaur in mid-September 1944, the high command concluded that the next enemy objective would be the Philippines, and Army commands were established to meet the threat. In a fierce air war, U.S. Navy planes whittled down the air strength the Japanese were feeding into the Philippines theater. General MacArthur's main landings began at Leyte on October 20. The biggest naval engagement ensued -- the naval and air clashes known as the Battle of Leyte Gulf. When the combat was over, the IJA carrier fleet had been destroyed, and other major elements had been crippled. The once-mighty Japanese Navy would never again play an important role in the Pacific War.⁹³

The Japanese ground command in the Philippines was brand-new; General Yamashita, the recently appointed 14th Area Army commander, only reached Manila on October 6. Defense of the region was continuously complicated by disagreements among IGHQ, the Southern Army, and Yamashita's Area Army. Muddled planning was worsened by logistical weakness. For example, eighty percent of Japanese shipping bound for the Philippines had been sunk since the summer of 1944.

The fate of Leyte was virtually sealed when Ormoc fell on December 11. U.S. forces landed on Mindoro, northwest of Leyte, four days later. Yamashita's defense of Leyte delayed the American invasion of

Luzon at Lingayen by about three weeks, until 9 January 1945. By February 3 the U.S. troops were outside Manila. Much of the city was destroyed in the one-month battle that followed. Corregidor fell to the Americans by February 26. Manila harbor was open to shipping by mid-March. Yamashita's mauled units fell back into the mountains. The Americans were basically in control of Luzon by mid-June. In the campaign for the Philippines in 1944-1945, the Japanese lost much of their air strength and most of their navy, and also incurred at least 317,000 casualties.⁹⁴

By early 1945, IGHQ began to subordinate all strategic considerations to the defense of the homeland. Once the Americans had retaken the Philippines, it was thought that they would proceed to Okinawa, or would occupy the Bonins and strike at Okinawa or Taiwan. The nearness of the island of Iwo to Japan -- 660 miles to Tokyo -- marked it as a likely early objective. After laying down severe naval and air bombardments, the Americans began landing on Iwo in mid-February 1945. By March 26 the remnants of the garrison were annihilated, at great cost to both sides. With the seizure of Iwo, U.S. fighter planes were able to escort Tinian-based B-29's bound for Japan.⁹⁵

Unsure where the Americans would strike next, IGHQ decided to build up the garrison on Taiwan, even weakening Okinawa for that purpose. But it was Okinawa which was invaded on 1 April 1945, provoking the largest ground campaign fought in the insular Pacific. By the time the Americans broke through to the southern edge of Okinawa on June 21, Japanese casualties reached about 135,000. In defending the Ryukyus, the Japanese had assigned new emphasis to the use of Special Attack (Tokkō) units, the suicidal attack forces which first saw service in the Philippines campaign. Known as Kamikaze or Divine Wind, these attackers struck in

spectacular and massive force. The Americans counted 896 air raids against Okinawa and another 1,000 against the fleet, especially destroyer and escort pickets and anchored aircraft carriers. In all, the U.S. Navy lost 36 ships sunk and 366 damaged, as well as 763 planes knocked out by all causes. The grand total of Japanese aircraft downed is estimated at 7,830. Additionally, the Japanese Navy sacrificed the last of its surface strength: the 72,000 ton superbattleship Yamato, one light cruiser, and four of eight destroyers that had sortied in a vain, one-way operation of largely symbolic import.⁹⁶

Koiso stepped down as premier in early April 1945, to be succeeded by Japan's last wartime prime minister, Admiral Suzuki Kantarō. Though Nazi Germany was falling, the Supreme War Direction Council agreed formally on April 30 to continue hostilities.⁹⁷ Reason played no part in this decision. B-29 incendiary raids were in the process of devastating 66 congested, flammable cities; with the introduction of low-level night raids, blind bombing had supplanted attacks against strictly military targets. IGHQ was expecting enemy offensives against Central and perhaps South China, Taiwan, Hainan, South Korea, and the Kurils. Japan itself was being choked off from the Asian Continent and Southeast Asia, and the attrition of production resources had commenced. The main naval, air, and field forces were being engaged and destroyed, and the homeland was within range of warships and land-based fighters too. Defensive preparations in the homeland were deplorable. Interservice controversy complicated the situation, particularly concerning air defense operations. The best IGHQ could do in the spring and summer of 1945 was to activate new ground and air units, drawing on the dregs of manpower and materiel; to bring some forces home from the Kwantung Army, and to transfer others from China to Korea and Manchuria; to husband

precious fuel and planes; and to try to improve fortified belts. A proposal from the Japanese expeditionary army in China to be allowed to launch a "last push" against Chungking was turned down.

There was much talk of a "bamboo spear psychology" and the fostering of a metaphysical will, above all a vigorous spirit of attack. The public was exhorted to pit flesh against iron, spirit against material, in the Japanese tradition despising surrender. Defensive plans centered on the mass use of special-attack tactics by regulars and guerrillas, and aggressive beachline defense and death-defying combat. If by welding together the entire population, the Japanese could force the Americans to comprehend the tremendous manpower costs of invasion, it might be possible to end the war on terms better than unconditional surrender. After all, the home islands were not the little atolls that had already cost the enemy dearly. The Japanese military knew every cranny in the homeland and could prepare in depth beforehand against a foe of questionable stamina whose supply lines would be stretched to the maximum.

Public pessimism was taboo, but privately Japanese military leaders were far from sanguine. Despite boasts about chances for a successful defense, they had no real confidence of defeating second and third waves launched continuously, even if the initial U.S. landing could be frustrated. When they appraised conditions objectively, Japanese staff officers sensed that it would be impossible to beat off an invasion because Japan lacked weapons, ammunition, fuel, and foodstuffs. Indeed, they realized that only one battle, the struggle for Kyushu, could be waged in practice. The Army actually feared most that the enemy would not invade, and would instead strangle the country by bombardment and blockade. But although, by the summer of 1945, the high command

comprehended that national strength and combat effectiveness were insufficient to go on with the war, the authorities in Tokyo, intimidated by the military, dared not move rapidly to terminate hostilities, even after the United States, Britain, and China issued a last warning from Potsdam on July 26 demanding unconditional surrender. A false hope was even nurtured that the Soviet Union, which had not co-authored the Potsdam Declaration, might serve as honest broker and intermediary.⁹⁸

The consequences were calamitous for the Japanese. Whether from misunderstanding or from search for a pretext, both the Americans and the Russians seized upon the presumable rejection of the Potsdam ultimatum to justify unlimited violence unleashed against tottering Japan. On August 6, a single B-29 aircraft dropped the world's first atomic bomb on Hiroshima. The city was obliterated. On the 9th, the Russians invaded Manchuria, and the Americans dropped a second atomic weapon, this time on Nagasaki. Even then, the Japanese military was averse to the acceptance of demeaning terms from the Allies. But the Emperor, desirous of peace in order to preserve the national polity and to save the population from extinction, managed to exact compliance from the senior Army and Navy officers. On the night of August 14, the monarch signed and affixed his seal to the rescript ending the war. Despite an attempted coup that night, next day at noon the voice of the Emperor was broadcast to the nation, conveying to the public, in elliptical language, word of the decision to lay down arms instead of defending the country to the death. V-J Day was 2 September 1945.⁹⁹

IV. Tactical Effectiveness

Japan's national policy had been expansionist and anti-Communist on the Asian Continent, into the 1930s, and strongly southward from 1940, when the Western empires in Southeast Asia crumbled. In support of these strategic objectives, both the Japanese Army and Navy were geared to the tactical offensive. The methods employed were simple (e.g., main thrust plus diversion) and repetitive. Battles fought during the China conflict and the Pacific War are eerily reminiscent of the wars of 1894-95 and 1904-1905. What was effective against the Romanov and Ching dynasties ought to be similarly effective against the foes of the mid-20th Century, with a certain amount of improved materiel to supplement the platoon leader leading the charge with saber in hand or the fighter pilot engaging in dogfights like Richthofen and Guynemer.

The services built their tactical concepts upon demonstrated operational capabilities. Tacticians and planners could be sure that their tough forces would always obey any order that was issued to them without a whimper, in the knowledge that "duty is heavier than any mountain; death, lighter than a feather." Air ace Sakai Saburō, regarding the matter from the standpoint of the subordinate, said that "We never dared to question orders, to doubt authority, to do anything but immediately carry out all the commands of our superiors. We were automats who obeyed without thinking."¹⁰⁰

By land, sea, and air, the Japanese forces relied on notions of "spiritual strength" and cold steel -- often termed "the alpha factor" --

to make up for material deficiencies. In combat, the Japanese were known for such psychologically-tinged tactics as banzai charges, kamikaze sacred warriors of the Divine Wind, and nikudan (human bullets). Operational capabilities were predicated on "faith in certain victory" (hisshō no shinnen).

Air-ground cooperation was rudimentary, partly because of poor communications and partly because pilots were still enthralled with the one-on-one combat of the ancient warrior. Team combat tactics were slow to be accepted. Artillery support of ground actions was generally poor, largely because of quantitative weakness, modest firing range, and ammunition shortages. Small raiding parties were sometimes used as a substitute for counter-battery fire. Armored forces were feeble in tank-vs.-tank combat (which did not figure in the conflict in China anyhow), and lacked the striking power of Western armies. Tank tacticians found it difficult to work closely with the IJA "Queen of Battle," the infantry. Typically, the foot soldier still fought with his obsolescent Type 38 (Sanpachi) rifle, machine guns, and grenades without significant air or artillery support and without trucks. His American enemy faulted the tendency for "unity of command ... to break down in larger attacks because of lack of coordination between units." The Japanese simply did not have the time to "work out many of the practical details of such highly involved questions as infantry-tank-artillery liaison, control by higher commanders, and logistics of mechanized forces."¹⁰¹

Melding historical traditions and the supposedly unique "qualities of the race," the Japanese armed forces emphasized surprise attacks, approach with secrecy and stealth, and battle at dusk, dawn, and night. The restricted U.S. Army handbook on the Japanese military, issued in

October 1944, stressed that "Surprise is a cardinal principle of all Japanese action. It is accomplished through rapidity of advance, deception of all kinds, and infiltration and demonstrations in the enemy rear; in short, all means available are utilized, and speed is greatly emphasized."¹⁰²

These prescriptions apply not only to the Japanese Army but also to the Navy, as the Pearl Harbor strike demonstrated. Though the plans for and course of the raid need not be retold here, it should be noted that Admiral Yamamoto expressed early concern lest no differentiation be made between the achievement of surprise and the launching of an attack warning. Even in a night assault during feudal days, the Japanese samurai warrior would never have lopped the head of a sleeping enemy; he would at least have awakened him by kicking his pillow. Not until 29 November, little more than a week before the Navy struck Oahu, was X-Day revealed reluctantly to Foreign Minister Tōgō by the Navy Command. The Japanese envoys and attachés in Washington were deliberately sacrificed to the need for secrecy; they were told nothing specific in advance.¹⁰³

As for IJA tactical practice in surprise attack, the ground frontage was usually narrow, the objective limited and well-defined, and the direction preferably uphill. But, weak in motorization and mechanization, the Army's dreams of pursuit were larger than the capability in practice. Troops have to break through before they can get into the open. The Japanese were much better at the painful process of point-penetration than they were at the heady task of exploitation, which they stressed in theory.

The fundamental precepts laid down by the Emperor Meiji told the soldiers and sailors that "the supreme command of Our forces is in Our hands, and although We may entrust subordinate commands to Our subjects,

yet the ultimate authority We Ourself shall hold and never delegate to any subject. ... We are Your supreme Commander-in-Chief. ... We rely upon you as Our limbs and you look up to Us as your head. ... Inferiors should regard the orders of their superiors as issuing directly from Us."

The Japanese services never shook off entirely the character of being the private forces of the monarchy, partly by historical accident but largely by design. By linking all ranks to the Son of Heaven, a blind and mystical obedience could be invoked in both the Army and the Navy -- the "teeth and claws of the Royal House." The ethics textbooks pointed out that the Emperor "cherished His subjects as though they were His children." Even the lowliest saw omnipresent evidence of the imperial presence in the royally bestowed regimental colors (qunki), in the daily recitations of Meiji's Precepts, in the compulsory obeisance in the direction of the Imperial Palace in Tokyo, wherever one might be stationed, and in the orders emanating from anybody higher in the chain of command. To abuse a rifle (which bore the Imperial insignia) was regarded as "a desecration of the military spirit and ... an act of irreverence toward the Emperor."¹⁰⁴

Inside the military organization, there were many unpleasant developments. Impersonal duty was marked by iron discipline and cruel physical punishments for the smallest infractions. Particular butts of the vicious "hazings" were new soldiers and alleged misfits such as physically and psychologically weak intellectuals. Critics spoke of the mechanical and isolated life of the military, which stifled originality, ruined initiative, and was characterized by unreality and nonsense. Most of this carping was of course voiced privately, and the resistance was passive, but it became the practice before the war to oblige every entering recruit to sign and stamp an oath of absolute and unquestioning

obedience to superiors' orders. The few recalcitrants were soon persuaded. Sakai remembers noncoms who were "absolute tyrants" and "sadistic brutes" who treated enlisted men as "human cattle."¹⁰⁵

Sensitive to the dangers of excess in such a pyramidal system, the better leaders in the military organization argued that "true military discipline cannot be sustained unless the surroundings are warm and fraternal." A "homelike atmosphere" was imperative in the barracks. In the Army, company commanders were likened to fathers, NCO's to mothers, and drill instructors to older brothers. Before their unit went to the front, good commanders often saw to it that their men wrote to their parents and prepared last wills and testaments. Indeed, it has been argued that such paternalism generated an abnormal psychology, in that commanders did not mind sacrificing subordinates although they were "as dear to them as their children." A kamikaze commander is quoted as saying to his men: "I always regard you with deep affection, as a parent cares for his children, often thinking, 'what dears they are.' I have always thought of you and tried to find a good opportunity for you to make yourselves useful." On a happier note, superior officers might serve as go-betweens in matchmaking or even assist with the placement of men honorably discharged from the service. It should not be surprising, then, that there was a pronounced tendency toward disorganization in combat situations whenever a commander became a casualty.¹⁰⁶

The military organization invested enormous effort to train officers and men. No one who met the Japanese soldier in action ever put him down as a fighting man. Marshal Zhukov said the IJA troops he saw in combat were "well trained, especially for fighting at close quarters." They were "well disciplined, dogged in combat, especially in defense. Junior commanding officers are well trained and fanatically persistent in

battle." "The strength of the Japanese Army lay," according to Marshal Slim, "not in its higher leadership ... but in the spirit of the individual Japanese soldier. ... It was [the] combination of obedience and ferocity that made the Japanese Army, whatever its condition, so formidable, and which would make any army formidable. It would make a European Army invincible."¹⁰⁷

All of the points of inculcation already mentioned, and others, came together in the training cycles: hand-to-hand fighting skills; exploitation of degrees of darkness; total obedience; physical hardiness. IJA tactical training emphasized expected themes: security, envelopment, point-penetration, meeting engagements, raids. The features most particular to Japanese training, however, centered on the policy prohibiting surrender and the emphasis on the offensive. With respect to the former, a memorable comment was voiced by the British in Burma: "Everyone talks about fighting to the last man and last round, but only the Japanese actually do it." As for the latter, there is a reverse side of the coin: the Japanese detested the defensive - an attitude that suffused their teachings. Defense was deemed to be a "negative" type of combat, and one to be avoided particularly because it allowed an enemy to concentrate heavy firepower that they themselves lacked. On many occasions, IJA soldiers would leap from their positions and charge the attacking enemy with their bayonets. The Japanese system of defense stressed counterattack, maneuver, and surprise.¹⁰⁸

Despite being criticized as arbitrary, narrow, inflexible, and stifling of originality, IJA training was recognized even by their foes as "progressive, thorough, and modern." The thorough training of the soldiery -- who held up well till the debacles of 1944-1945 -- was attributable to the similarly thorough training of their officers and

noncoms.¹⁰⁹ Nevertheless, the well-developed system of service academies and war colleges did not yield the best of generalship, as three senior Allied commanders in World War II agree. During the climacteric of the Pacific War, in September 1944, General MacArthur remarked:¹¹⁰

Japanese troops still fight with the greatest tenacity. The military quality of the rank and file remains of the highest. Their officer corps, however, deteriorates as you go up the scale. It is fundamentally based upon a caste and feudal system and does not represent strict professional merit. Therein lies Japan's weakness. Her sons are strong of limb and stout of heart but weak in leadership. Gripped inexorably by a military hierarchy, that hierarchy is now failing the nation. It has had neither the imagination nor the foresighted ability to organize Japanese resources for a total war.

Marshal Slim felt that Japanese commanders had "an unquenchable will, which rarely allowed in their narrow administrative margin for any setback or delay."¹¹¹ This was especially dangerous for the Japanese, since ...

the fundamental fault of [IJA] generalship was a lack of moral, as distinct from physical, courage. They were not prepared to admit that they had made a mistake, that their plans had misfired and needed recasting. ... Rather than confess that, they passed on to their subor-

dinates, unchanged, the orders they had themselves received, well knowing that with the resources available the tasks demanded were impossible. Time and again this blind passing of responsibility ran down a chain of disaster from the commander in chief to the lowest levels of leadership. ... The hardest test of generalship is to hold [a] balance between determination and flexibility. In this the Japanese failed. They scored highly by determination; they paid heavily for lack of flexibility.

From what Zhukov had observed of the Japanese in combat, their officers, "especially senior officers ... lack initiative and are apt to act according to the crammed rulebook."¹¹²

Swinson sums matters up neatly: The Japanese martial system not only "produced courage and loyalty, but also stupidity and rigidity. It led to great daring and the acceptance of risks but also to bad staff work and administrative blunders. It led also to a form of 'double talk'."¹¹³

Support capabilities constituted the Achilles heel of the Japanese armed forces. We have already noted the grievous lacks in line support, with rare exceptions. But tactical systems cannot function effectively without the provision of daily maintenance requirements. Rations and ammunition, of course, are vital. The IJA field ration was around four pounds per day -- about two-thirds of the American ration. The daily IJA ammunition requirement in the Southwest Pacific was as low as one pound per day, even for "active operations." Other deficiencies of an irreducible nature are often overlooked, however, such as fuel stocks,

medical and veterinary care (including aid stations and casualty clearing centers), road and runway maintenance, bridging, land and sea transportation.

On paper, the Japanese possessed a full array of support services and extremely detailed regulations governing their use. In practice, the quantity of support was scant or nonexistent, and the quality varied from satisfactory to abominable. The Japanese were always willing to accept an exorbitant rate of casualties, causing their enemies to regard them as contemptuous of life. As the U.S. Army's technical manual phrased it: "They place a low value on human life and do not count the cost in taking an objective." The loss rate incurred by the Japanese as the result of their tactical system was worsened enormously and eventually fatally by the insufficiencies of support.¹¹⁴

At the level of tactical effectiveness, the Japanese Navy did not underrate the British and the Americans, but the Army had, or professed to have, a veritable "scoring system" to indicate the level of contempt they felt for their enemies. This was expressed, subjectively of course, by the number of Chinese, Russians, Americans, Britons, or Dutchmen that one Japanese soldier could thrash in battle. To have admitted to inferiority was unthinkable to the Japanese. IJA officers who fought in China told how one Japanese regiment could maul a Chinese division. The latter was numerically small, but even Chinese sources confess to the validity of the early IJA claims. During World War II, when the Japanese began to suffer defeats, they usually rationalized their reversals by references to superior Allied materiel. The most that a Japanese veteran might admit was that an enemy fought well enough to be compared favorably to the Japanese. Such an outlook at the tactical level conceived only of adversaries' weaknesses and friendly strengths.

Despite elements of truth in such appraisals, the net result was to attempt to achieve objectives that were impossible by universal standards of military reality. The reason for the reliance on the offensive, often launched in uncoordinated and piecemeal fashion, and in inferior numbers, was to enhance the morale of friendly units while unnerving and unhinging a contemptible and unworthy opponent, who could be expected to "weep and flee" once the gleaming blade of a Japanese sword appeared. In short, the mystical typically dominated the logistical in Japanese tactical philosophy. Put another way, Japanese commanders concentrated chronically on determining how, with the men available, they could carry out an order, rather than coolly calculating the probability of success.¹¹⁵

Conclusion

Assessment of the effectiveness of the Japanese armed forces in World War II is affected by a number of overriding features. After easily winning the early rounds (including the superbly executed operations against Hawaii and Southeast Asia), Japan fell to one knee and suffered a technical knockout by the time the fight was over. The thrashing was administered by a global coalition, whereas Japan fought essentially alone. There was an appalling disparity between ends and means. While it is figuratively true that, in demographic and economic terms, have-not Japan was somehow able to squeeze blood from a turnip, it is also true that strategy and politics featured grandiosity, fragmentation, and unreality. Operational quality was generally undistinguished and unimaginative, intelligence estimation was often self-hypnotized and ill-founded, and commandship puerile and unscientific.

Nevertheless, the human stuff with which the Japanese military organization had to work was first-rate. "Strong of limb and stout of heart," as MacArthur aptly put it, the Japanese fighting man was fond of the tactically dramatic and seemingly inhuman in his tenacity, valor, and willingness to die. The shortage of raw materials and the feeble productive capacity were undoubtedly driving forces behind national policy, but they also generated tactics that drew upon values, attitudes, and behavior unique to Japanese society. For example, a people accustomed to treat life cheaply must inevitably spawn a military that regards men as expendable, death as a sublime rebirth, and spiritualism

and determination as superior to conventional human intellect. These prescriptions smack more of rationale than doctrine. Reaffirmation of faith in moral attributes and psychological drives amounted to a callous evasion (but not total ignorance) of the realities of modern firepower, mechanization, and aviation. From this evasion flowed the Japanese invention of an "alpha factor" emphasizing assets cheaper than materiel: absolute obedience, strict training, superb fighting spirit and teamwork, spiritual endurance, self-confidence, and reliance on surprise and night tactics.

Japanese performance in World War II was characterized by calculated risk, intuition, and poorly defined objectives, as well as by a lack of flexibility and resilience. One cultural factor of moment was the tendency of the Japanese, island dwellers inhabiting a land more famous for crags than for plains, to "think small," and to project their delicate 17th Century thinking onto mighty industrial and technological adversaries of the 20th Century. Indeed, in the sense of being alien to proper historical time, the Japanese military organization of World War II was in many ways an anachronism. From our examination of its effectiveness, we cannot quite escape the impression that we have been dealing with medieval samurai warriors masquerading as practitioners of modern military science.

Notes

1. Utsunomiya Naokata, Amerika "S" hakentai (Tokyo, 1983), pp. 189-90; General Maxwell D. Taylor, Swords and Plowshares (New York, 1972), pp. 31-36.
2. Col. Roy M. Stanley II, USAF, Prelude to Pearl Harbor: War in China, 1937-41: Japan's Rehearsal for World War II (New York, 1982), p. 1.
3. Captain M. D. Kennedy, The Military Side of Japanese Life (London, 1924), p. 81.
4. General Holland M. Smith, Coral and Brass (New York, 1948), p. 142.
5. Once a Marine: The Memoirs of General A. A. Vandegrift, as told to Robert B. Asprey (New York, 1964), pp. 142-43.
6. The sanitized version is Col. Robert L. Scott, Jr., God Is My Co-Pilot (New York, 1956), pp. 189-90. Prof. Fred G. Notehelfer of UCLA called the unexpurgated version of 1943 to my attention.
7. General Carl A. Spaatz, U.S. Air Force Oral History Interview, No. 755, 19 May 65, pp. 21-22 (Albert F. Simpson Historical Research Center, Air University).
8. General Curtis E. LeMay, with Mackinlay Kantor, Mission with LeMay: My Story (Garden City, N.Y., 1965), p. 322.
9. The official history series treating World War II (Senshi sōshō) issued by the Japanese Defense Agency (Bōei-chō Bōei Kenshū-sho Senshibu: BBKS) between 1966 and 1979 (Tokyo: Asagumo Shinbunsha) 'solves' the problem of nomenclature by a

parenthetical compromise in overall titling: Daitōa sensō: Taiheiyō sensō, or "Greater East Asia War (Pacific War)."

10. Interview with the author. The Yonai Cabinet fell in July 1940.
11. The Japan-Manchoukuo Year Book 1940 (Tokyo, 1939), p. 96.
12. *Ibid.*, pp. 255-56; Société des Nations, Annuaire Militaire 1939/40 (Geneva, 1940), p. 259; BBKS, vol. 33, Rikugun gunju doin (2) (1970), pp. 286, 519. The "ordinary" military and naval budget included general account and routine supplementary infusions.
13. There were even further extraordinary allocations: a reserve fund and two supplements totalling 517 million yen to defray the cost of the "North China Incident" of 1937; and two "over-budget" allocations, beyond the reserve fund, in November 1941, amounting to 193 million yen. Shibata Ryūichi and Nakamura Kenji, Rikugun keiribu (Tokyo, 1981), pp. 564-67; BBKS, vol. 33, Rikugun gunju doin (2), pp. 361, 437-38.
14. See Jerome B. Cohen, Japan's Economy in War and Reconstruction (Minneapolis, 1949), p. 5.
15. Hayashi Shigeru, ed., Nihon shūsenshi, 3 vols. (Tokyo, 1962), vol. 3, p. 186. For publicly released and thus understated data on IJA-IJN expenditures as a percentage of total national outgo, see The Orient Year Book 1942 (Tokyo, 1942), p. 401.
16. BBKS, vol. 33, Rikugun gunju dōin (2), pp. 362 (1940-41), 438 (1941-42), 519 (1942-43), 603-4 (1943-44).
17. Hayashi Shigeru gives the figure of wartime expenditure in 1944 as 158,200 million yen, and total income as 76,800 million yen. Nihon shūsenshi, vol. 3, p. 184. Also see Cohen, Japan's Economy, chap. 1; Japan-Manchoukuo 1940, chap. 21; BBKS, vol. 33, Rikugun gunju dōin (2), p. 604.

18. Hara Shirō, Daihon'ei rikugunbu: Daitōa sensō kaisen ni kansuru kōsatsu (Tokyo, 1976), p. 70.
19. Japan-Manchoukuo 1940, pp. 368-39; United States Strategic Bombing Survey (USSBS), The Effects of Strategic Bombing on Japan's War Economy (Washington, D.C., 1946), p. 12.
20. BBKS, vol. 33, Rikugun gunju dōin (2), p. 822; USSBS, The Japanese Aircraft Industry (1947), pp. 1-2.
21. USSBS, Japanese Motor Vehicle Industry (1946), pp. 1-7.
22. USSBS, Japanese Naval Shipbuilding (1946), p. 1.
23. USSBS, Japanese Merchant Shipbuilding (1947), pp. 1-3, 44.
24. See Japan-Manchoukuo 1940, chap. 30; USSBS, Coals and Metals in Japan's War Economy (1947), pp. 9-18, 117-24; Cohen, Japan's Economy, pp. 1-3.
25. BBKS, vol. 33, Rikugun gunju dōin (2), Table 9; Japan-Manchoukuo 1940, pp. 238-39; USSBS, Japanese Naval Shipbuilding, pp. 7-8.
26. BBKS, vol. 33, Rikugun gunju dōin (2), p. 824.
27. USSBS, Effects of Strategic Bombing, pp. 11-12.
28. The Japan Year Book 1944-45 (Tokyo, 1945), p. 202; Alvin D. Coox, "Evidence of Antimilitarism in Prewar and Wartime Japan," Pacific Affairs, Winter 1973/74, pp. 502-14.
29. Japan Statistical Yearbook 1982 (Tokyo, 1982), pp. 14-15; BBKS, vol. 99, Rikugun gunsenbi (1979), p. 340; BBKS, vol. 88, Kaikun gunsenbi (2) (1975), chart 2.
30. BBKS, vol. 99, Rikugun gunsenbi, p. 340; Sanbō Honbu, eds., Haisen no kiroku (Tokyo, 1967), p. 128.
31. Based on BBKS, vol. 88, Kaikun gunsenbi (2), chart 2.
32. I have attempted to reconcile the differing data found in BBKS, vol. 99, Rikugun gunsenbi, pp. 413, 452; USSBS, Effects of

- Strategic Bombing, p. 98; Japan Statistical Yearbook 1962, pp. 14-15; The Japan Year Book 1949-52 (Tokyo, 1952), p. 26; Sanbō Honbu, eds., Haisen no kiroku, p. 128; and BBKS, vol. 88, Kaigun gensenbi (2), chart 2. Also see Saburo Hayashi in collaboration with Alvin D. Coox, Kōgun: The Japanese Army in the Pacific War (Quantico, Va., 1959), p. 182.
33. R. Ernest Dupuy and Trevor N. Dupuy, The Encyclopedia of Military History (New York, 1970), pp. 1,198; Gendai shi shiryō (GSS) (Tokyo: Misuzu Shobo), vol. 39, Taiheiyō sensō (5) (1975), p. 821; BBKS, Kaigun gensebi (2), chart 2. Cohen's data on Japan's active military strength are acceptable, but his figures on casualties are fragmentary; Japan's Economy, pp. 288-90. Sanematsu Yuzuru lists military killed, missing, crippled, and sick as: IJA 1,524,721, IJN 428,605, total 1,953,326. Yonai Mitsumasa (Tokyo, 1966), p. 58.
34. BBKS, vol. 88, Kaigun gensenbi (2), p. 191; Terada Chikao, ed., Shōwa no rikugun (Tokyo, 1981), pp. 28-34.
35. BBKS, Vol. 99, Rikugun gensenbi, pp. 299, 324-85, 406-7, 415; Japan Year Book 1944-45, pp. 208-10; Cohen, Japan's Economy, p. 288. For IJN volunteer youth programs, see BBKS, vol. 88, Kaigun gensenbi (2), p. 192.
36. BBKS, vol. 99, Rikugun gensenbi, pp. 414-15, 454.
37. BBKS, vol. 99, Rikugun gensenbi, pp. 340, 413-14, 452.
38. USSBS, Effects of Strategic Bombing, p. 53; Cohen, Japan's Economy, pp. 289-90.
39. USSBS, Effects of Strategic Bombing, pp. 30-31. The Japanese military also authorized the use of prisoners of war and jailed criminals in the labor force, but the small numbers involved bear

no resemblance to the Germans' huge practice in Europe.

40. Hillis Lory, Japan's Military Masters: The Army in Japanese Life (New York, 1943), pp. 79, 101, 138.
41. Akimoto Shunkichi, The Manchuria Scene (Tokyo, 1933), p. 25.
42. Alvin D. Coox, Tōjō (New York, 1975), pp. 73-74, 90-91, 98.
43. Ōhmae Toshikazu, USSBS, Interrogation No. 43, 30 Oct. 1945.
44. Toyoda Soemu, USSBS, Interrogation Nav. No. 75, 13-14 Nov. 1945.
45. Nomura Kichisaburō, USSBS, Interrogation Nav. No. 90, 8 Nov. 1945.
46. GSS, vol. 8, Nitchū sensō (1) (Tokyo, 1964), pp. 686-91; BBKS, vol. 91, Daihon'ei kaigunbu rengō kantai (1) (1975), pp. 173-79, 343-50, 466-78, 500-8; BBKS, vol. 8, Daihon'ei rikugunbu (1) (1971), chap. 1; Takagi Sōkichi, Taiheiyō sensō to riku-kaigun no kōsō (Tokyo, 1967), pp. 191-96.
47. Takayama Shinobu, Sanbō honbu sakusenka (Tokyo, 1979), p. 339; Nobutaka Ike, transl. & ed., Japan's Decision for War: Records of the 1941 Policy Conferences (Stanford, Calif., 1967), pp. 99-101, 201.
48. Ike, Japan's Decision, pp. 101, 106; Takayama, Sanbō, p. 340.
49. Ike, Japan's Decision, pp. 196, 199, 202, 211, 238, 282-83.
50. Ike, Japan's Decision, pp. 281-82; Tōgō Shigenori, The Cause of Japan, transl. & ed. Tōgō Fumihiko and Ben Bruce Blakeney (New York, 1956), p. 198; Coox, Tōjō, pp. 87-89.
51. Yamamoto Tsunetomo, Hagakure: The Book of the Samurai, transl. William S. Wilson (Tokyo, 1979), pp. 45, 171.
52. Kariya Ryūtarō, "Ureba miya senka," Gendai Keizai, Spring 1979, quoted by Kenneth B. Pyle, "Japan Besieged: The Textbook Controversy," J. Japanese Studies, Summer 1983, p. 297.

53. Robert C. Christopher, The Japanese Mind: The Goliath Explained (London, 1984), p. 28.
54. Lt. General Nakai Ryōtarō (1943), cited by Hiroshi Minami, Psychology of the Japanese People, transl. Albert R. Ikoma (Tokyo, 1971), pp. 108-9.
55. Yamamoto, Haqakure, p. 44; Alvin D. Coox, "Chrysanthemum and Star: Army and Society in Modern Japan," The Military and Society: Proceedings of the Fifth Military History Symposium, USAF Academy, 1972 (Washington, D.C., 1975), pp. 49-52.
56. BBKS, vol. 33, Rikuqun qunju dōin (2), pp. 832-33, citing Lt. Col. Tanabe Toshio; Tōgō, Cause, p. 223; Yonai Mitsumasa, USSBS, Interrogation Nav. No. 75, 17 Nov. 1945; Hosokawa Morisada, Jōhō Tennō ni tassezu (Tokyo, 1953), 2 vols.
57. Hayashi Saburō, Kōqun, pp. 25, 30-35.
58. Ike, Japan's Decision, pp. 232-35.
59. Alvin D. Coox, "Pearl Harbor," in Decisive Battles of the Twentieth Century, ed. Noble Frankland and Christopher Dowling (London, 1976), pp. 144-46.
60. Coox, "Pearl Harbor," p. 147; Hayashi Saburō, Kōqun, p. 38.
61. Hayashi Saburō, Kōqun, pp. 153-54.
62. *Ibid.*, pp. 160-61, 167, 171-73, 182.
63. Hoshina Zenshirō, in USSBS, Oil in Japan's War (1946), p. 29; Takayama, Sanbō, p. 377; James G. Zumwalt, "Oil and Japan's Decision to Invade the Netherlands East Indies," M.A. Thesis, San Diego State University, 1967.
64. USSBS, Oil in Japan's War, pp. 11-50, 52; USSBS, Effects of Strategic Bombing, pp. 134-44.

65. USSBS, Oil in Japan's War, pp. 50-57, 115; USSBS, Effects of Strategic Bombing, pp. 206-9.
66. USSBS, Effects of Strategic Bombing, pp. 108-72.
67. *Ibid.*, pp. 28, 214-15, 220-23.
68. *Ibid.*, pp. 25.
69. Yamamoto Chikao, Daihon'ei kaigunbu (Tokyo, 1982), p. 262; Hayashi Saburō, Kōgun, pp. 68-69; Alvin D. Coox, "Japanese Foreknowledge of the Soviet-German War, 1941," Soviet Studies, April 1972, pp. 554-72.
70. Ronald Lewin, The American Magic: Codes, Ciphers and the Defeat of Japan (New York, 1982), pp. 204-17; USSBS, Japanese Air Weapons and Tactics (1947), p. 5.
71. Iura Shōjirō, Sensui kantai (Tokyo, 1983), pp. 222-34; Miwa Shigeyoshi, USSBS, Interrogations of Japanese Officials, vol. 2, pp. 293, 297 (10 Oct. 1946); Rear Adm. Paul W. Wenneker, USSBS, Interrogation Nav. No. 78, 11 Nov. 1945.
72. Lewin, American Magic, pp. 211, 215.
73. Hayashi Saburō, Kōgun, p. 70.
74. Yamamoto, Daihon'ei, pp. 261-73.
75. Hayashi Saburō, Kōgun, p. 178; Arthur Swinson, Four Samurai: A Quartet of Japanese Army Commanders in the Second World War (London, 1968), p. 25.
76. Ike, Japan's Decision, p. 225; Charles A. Willoughby and John Chamberlain, MacArthur, 1941-1951 (New York, 1954), pp. 26-27.
77. Ike, Japan's Decision, pp. 280-81.
78. Coox, Tōjō, p. 89; Ike, Japan's Decision, p. 238.
79. Arisue Seizō, Statements of Japanese Officials on World War II (GHQ-FEC, MIS-GS/ATIS), vol. 1, pp. 25-26 (1949); Frederick Moore,

- With Japan's Leaders (New York, 1942), pp. 128, 161-62, 203. Also see Jeffery M. Dorwart, Conflict of Duty: The U.S. Navy's Intelligence Dilemma, 1919-1945 (Annapolis, Md., 1983).
80. Interview with Col. Imaoka Yutaka, IJA (1984); Hara, Daihon'ei rikugunbu, p. 73.
 81. Hayashi Saburō, Kōgun, pp. 152-53; Hara, Daihon'ei rikugunbu, p. 73.
 82. Interview with Col. Tazaki Hideyuki, GSDF (1994); Yonai Mitsumasa, USSBS, Interrogation Nav. No. 76, 17 Nov. 1945. For IJA demurral, see Hayashi Saburō, Kōgun, p. 117.
 83. Hayashi Saburō, Kōgun, pp. 118-19; Wenneker, USSBS, Interrogation, Nav. No. 78, 11 Nov. 1945. Also see Robert K. Wilcox, Japan's Secret War: Japan's Race Against Time to Build Its Own Atomic Bomb (New York, 1985).
 84. James E. Auer, The Postwar Rearmament of Japanese Maritime Forces 1945-71 (New York, 1973), p. 22.
 85. The reference is to Lieutenant General Mutaguchi. Swinson, Four Samurai, p. 123, n.
 86. Kawabe Torashirō, USSBS, Interrogation Nav. No. 98, 26 Nov. 1945.
 87. BBKS, vol. 62, Chūbu Taiheiyō hōmen kaigun sakusen (2) (1973), part 4, chaps. 1, 4 (2); BBKS, vol. 12, Mariana oki kaisen (1968), chaps. 1 (2), 2-3.
 88. Coox, Tōjō, p. 125.
 89. BBKS, vol. 62, Chūbu Taiheiyō hōmen kaigun sakusen (2), part 3, chaps. 4, 5 (2), 6 (4), 8 (4), and part 4, chaps. 2, 4 (5); Agawa Hiroyuki, Yamamoto Isoroku (Tokyo, 1966), pp. 306-27.
 90. Horiba Kazuo, Shina Jihen sensō shidō shi (Tokyo, 1962), pp. 707-40; Usui Katsumi, Nitchū sensō (Tokyo, 1967), pp. 162-200.

91. BBKS, vol. 5, Biruma koryaku sakusen (1967), pp. 271-74; BBKS, vol. 15, Inpāru sakusen (1968), parts 1-3; BBKS, vol. 25, Iraweji kaisen (1969), parts 1-2; BBKS, vol. 32, Shittan mei-qō sakusen (1969), part 1; Shōwa shi no tennō [SSMT] (Tokyo, 1967-75), vol. 9, *passim*.
92. BBKS, vol. 6, Chūbu Taiheiyō rikugun sakusen (1) (1967), part 3; BBKS, Chūbu Taiheiyō hōmen kaigun sakusen (2), part 4, chap. 3 (3); BBKS, Mariana oki kaisen, chaps. 4-6.
93. Gaimushō, ed., Shūsen shiroku (Tokyo, 1952), chap. 9; BBKS, vol. 37, Kaigun Shō-qō sakusen (1) (1970), part 3; *ibid.* (92), parts 1-2; Hara Tameichi, Teikoku kaigun no saigo (Tokyo, 1967), pp. 180-228; Kusaka Ryūnosuke, Renqō kantai sanbōchō no kaisō (Tokyo, 1979), pp. 208-347.
94. BBKS, vol. 41, Shō-qō rikugun sakusen (1) (1970), parts 1-3; *ibid.* (2), chaps. 1-10.
95. BBKS, vol. 13, Chūbu Taiheiyō rikugun sakusen (2) (1968), parts 1-3; BBKS, vol. 85, Hondo hōmen kaigun sakusen (1975), part 3, chap. 3.
96. BBKS, vol. 11, Okinawa hōmen rikugun sakusen (1968), chaps. 1-14; BBKS, vol. 17, Okinawa hōmen kaigun sakusen (1968), chaps. 1-13; BBKS, vol. 85, Hondo hōmen kaigun sakusen, part 4, chap. 1 (4); BBKS, vol. 51, Hondo kessen junbi (1), pp. 286-90.
97. Gaimushō, Shūsen shiroku, chaps. 17, 19; Shimomura Kainan, Shusenki (Tokyo, 1948), pp. 3-13; Tōgō, Cause, pp. 268-71; SSMT, vol. 1, pp. 292-336. The Supreme War Direction Council (Saikō sensō shidō kaigi), made up of the highest civilian, military, and naval leaders, had been established in August 1944. It met in the presence of the Emperor on crucial occasions.

98. BBKS, vol. 51, Hondo kessen junbi (1), chaps. 2-11; ibid., (2), chaps. 2-7; BBKS, vol. 85, Hondo hōmen kaigun sakusen, part 4, chap. 3; Hayashi Saburō, Kōgun, chaps. 19, 21 (3).
99. Hayashi Shigeru, Nihon shūsenshi 3: 52-65; Hayashi Saburō, Kōgun, p. 242; SSMT, vol. 2, pp. 19-22; ibid., vol. 3, pp. 247-412; Gaimushō, Shūsen shiroku, chaps. 35-36, 44, 46, 50; Tōgō, Cause, pp. 304-14; Shimomura, Shūsenki, pp. 87-94.
100. Saburo Sakai, Samurai!, with Martin Caidin and Fred Saito (New York, 1965), p. 19.
101. U.S. War Department, Handbook on Japanese Military Forces, TM-E 30-480 (Washington, D.C., 1944), p. 121.
102. Ibid.
103. Coox, "Pearl Harbor," in Frankland and Dowling, Decisive Battles, p. 146.
104. Minami, Psychology, p. 141, citing Iizuka Kōji.
105. Sakai, Samurai!, p. 19.
106. Alvin D. Coox, "The Japanese Army Experience," in Russell F. Weigley, ed., New Dimensions in Military History (San Rafael, Calif., 1975), pp. 131-34; Alvin D. Coox, Year of the Tiger (Tokyo and Philadelphia, 1964), pp. 79-80, citing a monograph by Maj. General Ugaki Matsushirō and Satō Kenryō's Tōjō Hideki to Taiheiyo Sensō (Tokyo, 1960), pp. 37-39; Coox, "Chrysanthemum and Star," pp. 43-44; Philip Warner, Japanese Army of World War II (Reading, U.K., 1979), pp. 5-9; TM-E 30-480, p. 121; Minami, Psychology, p. 164, citing Inoguchi and Nakajima.
107. The Memoirs of Marshal Zhukov (New York, 1969), pp. 168-69; Field Marshal the Viscount Slim, Defeat into Victory (New York, 1961), p. 447.

108. Warner, Japanese Army, p. 13; TM-E 30-480, pp. 99, 102-3.
109. TM-E 30-480, p. 6.
110. GHQ, SWPA, Press Release, 15 Sept. 1944, in Reports of General MacArthur, 4 vols. (Washington, D.C., 1966), vol. 1, p. 178.
111. Slim, Defeat, p. 446.
112. Zhukov, Memoirs, p. 169.
113. Swinson, Four Samurai, p. 12.
114. TM-E 30-480, pp. 127, 176-77; A. J. Barker, Japanese Army Handbook, 1939-1945 (New York, 1979), pp. 115-17.
115. Author's interviews with a number of IJA combat veterans, including officers Sakata Hideru, Ichimoto Yoshirō, and Iwakuro Hideo, Also see TM-E 30-480, p. 86.

MILITARY ORGANIZATIONAL EFFECTIVENESS
THE UNITED STATES ARMED FORCES IN WORLD WAR II

Allan R. Millett
The Ohio State University

Introduction

The effectiveness of the United States armed forces reflected the complex factors that shaped American national security policy before 1945. The United States believed that its geographic isolation between the world's two largest moats and its relative economic self-sufficiency allowed it to avoid alliances and other commitments to foreign nations. Its peacetime military policy provided only for small naval and military constabulary forces designed to police its national domain, to patrol its continental borders, to provide a small base for wartime expansion, and to protect its diplomats and merchant fleet abroad. Historically, the United States chose to avoid the political and economic costs of large standing forces and assume the risks of its basic policy: to rely upon its large population and industrial capacity to provide the resources for military forces mobilized after the nation went to war. World War II proved no exception to this policy, only its most dramatic expression played on a global stage.

In World War II the policy of mobilization for a simultaneous war against Japan and the German-Italian alliance created the parameters for

organizational effectiveness. The American war effort fell into three broad phases, each characterized by different official and public perceptions of the military challenge and the requirements for successful American policy. Although the United States made some effort at rearmament before the outbreak of World War II, it did not make an appreciable change in military emphasis until after the German invasion of Poland in September, 1939. In fact, the fall of France proved a greater stimulus to American mobilization in the pre-belligerency period, limited by both political will and industrial inefficiency, extended only about eighteen months, July 1940 to December 7, 1941. Still hoping that it could avoid open warfare, the United States in terms of its eventual military effectiveness lost eleven months' work in preparing its armed forces for war despite the fact that in 1940 it went to "full mobilization," i.e. the mobilization of its existing reserves and a dramatic effort to man, train, and equip its expanded regular forces .

The period of active belligerency should be divided into two phases, the first from December, 1941 until the end of 1943 and the second from early 1944 until the end of the war against Japan in September, 1945. Despite the fact that the United States went to "total mobilization" after Pearl Harbor, the American war effort proceeded for another eighteen months before the nation's political and military leadership could see a reasonably clear picture of the political, strategic, operational and tactical requirements for eventual victory. Between December, 1941 and the winter of 1943-1944, the United States faced a pyramiding set of problems that limited its military effectiveness at almost every level. The fundamental sources of the nation's partial effectiveness were three-fold: Axis military operations in 1942-1943, which pinned the United States to the Western Hemisphere,

Great Britain, and the peripheral theaters of the South Pacific and the southern rim of the Eurasian land mass; the demands of the principal allies, Great Britain and the Soviet Union, that the United States accept their definitions of strategic priorities and the reality that their priorities were incompatible; and the self-imposed constraints that retarded American mobilization. These domestic constraints spread their influence throughout the American war effort and included organizational and priority confusion among the civilian agencies managing the war effort, defects in interservice and internal military organization both in the United States and in the field, technical and physical limitations in producing war material in the quantity and quality the war demanded, and public illusions about the degree of sacrifice in lives and treasure that victory required.

A series of events in 1943 brought the American war effort into clearer focus and laid the foundation for the major campaigns of 1944-1945 that represented the apogee of the American war effort. In early 1943 President Franklin D. Roosevelt announced the "unconditional surrender" formula, which committed the United States to a coalition war that would destroy the Axis political systems and armed forces through conquest and occupation. Through complex politico-military negotiations culminating with the Tehran Conference (November, 1943), the American armed forces, represented by the Joint Chiefs of Staff, won allied approval and presidential support for their two principal strategic concepts: (1) a strategic bombing campaign against industrial Germany and an Anglo-American air-ground campaign against the Wehrmacht in northwestern Europe and (2) a war of air-sea economic strangulation and a naval campaign in the central Pacific against Japan. In more precise terms the American war effort in 1944 focused on the combined Bomber

Offensive in Europe, the invasion and liberation of France and the Low Countries, a submarine and bomber offensive against the economy of the Japanese empire, and the conquest of the Marianas and the Philippines, which produced the end of conventional Japanese air and naval operations. These campaigns, in concert with the Red Army's drive to the borders of prewar Germany, should have ended the war, but unanticipated changes in the Axis war effort (e.g., the Ardennes Counteroffensive and the introduction of the kamikaze) and the structural weaknesses of the American war effort (e.g., the inadequate numbers of ground combat divisions and the uneven performance of American weapons) prolonged the war for almost another year. V-E and V-J Days came just ahead of a potential wave of war-weariness and diminished military effectiveness.

Although any comparative statistical analysis of America's major wartime mobilizations must be qualified, World War II remains the nation's most demanding war effort in scope. Comparing the last year of prewar military effort with the maximum wartime year of military effort for the Civil War and the two World Wars, the United States in World War II increased its military spending 800 percent and the size of its armed forces 350 percent. Only the wartime expansion of the Union armed forces (370 percent) is comparable.

	<u>Federal Spending</u>	<u>Manpower</u>
Civil War (Union only)	\$28 million (1860)	27,000 (1860)
	\$1.5 billion (1865)	1 million (1865)
World War I	\$305 million (1916)	180,000 (1916)
	\$13.5 billion (1919)	2.9 million (1918)
World War II	\$1 billion (1939)	334,000 (1939)
	\$82 billion (1945)	12 million (1945)

The pace and scope of the American war effort does not fully explain the degree of complexity that shaped the nation's military effectiveness. Unlike its two principal allies, the United States waged massive military campaigns against both its major enemies on a wide variety of battlefields: two oceans, the skies over the Pacific and the European continent, the Mediterranean Sea and its African and European littoral, Pacific islands of varied size and topography, and the cities and wooded farmlands of northwestern Europe. Unlike the Civil War it had to conduct operations thousands of miles from North America. Unlike World War I it had to send military forces of greater size and complexity simultaneously to different theaters and against appreciably different enemy armed forces. Except for the possible exception of the British Commonwealth armed forces, no military establishment fought in so many different environments so far from its homeland, and British operations outside Europe did not approach American operations in scope. In addition, the United States fought as a late-arriving member of an allied coalition, and one of those allies, Great Britain, had a major influence on American policy, strategy, and military organization in the war against Germany. Last, the American armed forces fought within a domestic political context that stressed consistent civilian control by a democratic government in which the executive and legislative branches shared the responsibility of shaping policy, an emphasis upon the quantitative and qualitative exploitation of industrial technology as a substitute for human lives, and the conviction that even World War II did not demand the militarization of American civilian institutions and values.

I. Political Effectiveness

Historically, the American armed forces starve in peacetime and gorge in wartime, and World War II proved no exception. On the eve of the war the process of military budgeting followed its routine pattern; the War Department and Navy Department produced annual estimates based on a rough calculus of the military threat facing the nation and some consideration of what the economy and political climate would bear. The President -- meaning the Bureau of the Budget -- would routinely reduce the request, which would be trimmed again by Congress despite the careful advocacy of the service secretaries and the service chiefs. The force requirements of the Joint Army-Navy Board's contingency plans of the 1930's, especially for a war with Japan, had little political persuasiveness despite the shocks of war in China (1937), the Munich Crisis (1938), and the German invasion of Poland (1939). In 1939 the United States spent about two percent of its GNP on the armed forces, a figure comparable to most of the nineteenth century when the nation existed in splendid military isolation from all but Canada and Mexico.

The growing world crisis, however, did produce one important development: the conversion of President Franklin D. Roosevelt to rearmament and close consultation with his service secretaries and service chiefs. Invoking his constitutional powers as commander-in-chief in July, 1939, Roosevelt issued Military Order No. 1, which transferred the Joint Army-Navy Board, the Joint Army-Navy Munitions Board, and some related joint procurement agencies to the Executive Office of the

President. In practical terms, the reorganization allowed the service chiefs greater freedom to discuss their financial needs with FDR. Access did not, however, produce dramatic increases of military spending, only a sense of heightened anxiety in the service chiefs, General George C. Marshall and Admiral Harold R. Stark.¹

Even with the President more sympathetic to the Army and Navy's definition of their needs, the gap between the requirements of hemispheric and colonial defense and defense spending widened after the outbreak of war. In 1939-1940 the United States spent about \$5 billion for defense, but after the Fall of France both the public and Congress supported higher spending, and in 1941 the services spent \$20 billion. By contrast, the two major statements of military needs on the eve of Pearl Harbor, the "Two-Ocean Navy Act" (1940) and the War Department's "Victory Program" (1941), would have required spending in excess of \$100 billion. In 1941 the federal government still spent more of its budget for domestic programs and debt service than it did for defense.

After December 7, 1941, the Army and Navy's budget requests acquired instant political legitimacy, and throughout the rest of the war the two service departments were swamped with appropriations. For the first time defense spending exceeded government domestic spending and did so by a factor of five. As the armed forces rapidly expanded in 1943 and industrial mobilization matured, defense spending reached high and stable levels: \$75 billion (1943) and \$82 billion (1944 and 1945). At war's end the federal government was spending 42 percent of GNP on the war effort. In setting military spending levels and receiving broad latitude on how they managed their appropriations, the service departments received broad discretion from both the President and Congress. The result was a fiscal "honeymoon" unknown in American military history.

made no less dazzling by its short duration.

The broad legitimacy of military spending, however, rested upon some special characteristics of the American economy and political atmosphere as well as public policy. In 1939 the United States remained in an economic depression with agricultural prices severely depressed and farm income low, some nine million people unemployed, and plant capacity only half in use. The war effort set off an economic boom -- fueled with federal dollars -- that more than doubled GNP in five years. Unlike the other belligerents whose homelands suffered the direct ravages of the war, the United States actually increased consumer spending during the war despite the limitation upon durable goods, home construction, and some types of food and clothing. Wage levels remained well ahead of inflation, and fully a third of American families moved from near poverty into the middle class in terms of family income. Unemployment among the employable virtually disappeared, and nearly eight million new workers entered the labor market. Public policy, forged by the executive branch and Congress, ensured that a mix of rationing, taxation, price controls, and borrowing protected the civilian population and economic structure from intolerable deprivation and unwanted change. Even though the United States paid for its part in World War II (\$316 billion) with the highest percentage of current revenues in its history (some 40 percent), the government borrowed the remainder from the public, thus creating a level of savings and deferred demand unusual in American economic history. In sum, the armed forces fought the war within a public atmosphere of economic optimism that temporarily eliminated the classical "guns or butter" arguments so common to American political discourse. If anything, World War II probably left the armed forces with unreasonable fiscal expectations.²

As the United States learned in 1917-1918, high promises and fast appropriations did not convert easily into military capability, but the lesson had to be relearned in 1939-1943. Although the War and Navy departments eventually had full access to the industrial and technological capacity and creativity of the United States, the departments and their suppliers went through several painful experiences in reaching full effectiveness in equipping the armed forces. Some of the problems stemmed from the military department's attitudes and organization, but the basic difficulties occurred outside the military influence and, given American devotion to civilian control, could not be corrected by the armed services alone. At the heart of the mobilization problems were inherent political conflicts: the rivalry of the president and Congress, the volatile state of public opinion, the aggressiveness of special interest lobbies, and the question of centralized power within the executive branch and within the federal government. The traditional clash of Jeffersonian values and Hamiltonian values did not end with Pearl Harbor.

The very nature of the American economy -- so fruitful if erratic in peace, so hard to move in war -- ensured that the armed forces, not noted for their admiration of corporation executives and labor leaders, would find it impossible to dominate industrial mobilization. As Secretary of War Henry Stimson observed, "If you are going to try to go to war, or to prepare for war, in a capitalistic country, you have got to let business make money out of the process or business won't work."³ Coalition war did not make the problem of military procurement easier, for the American armed forces shared \$50 billion of foreign military sales and Lend-Lease assisted with the allies, reluctantly so in the war's early stages. Even though war materiel received the highest

priority, military production and distribution never operated under the autonomous control of the military departments.⁴

Before the collapse of the Allied position in western Europe in 1940, the federal government did little to face the economic implications of increased military spending. Still bound by bureaucratic routine and legal restrictions on contracting, the War and Navy departments conducted their procurement business through their existing technical services (Army) and bureaus (Navy). The services' primary concerns were coordinating their own procurement through the Joint Army-Navy Munitions Board and winning some relief from competitive bidding. As the gap between raw material availability, appropriate plant capacity, and escalating military orders widened -- exacerbated by aid to the allies and continued domestic consumption -- the administration created one after another civilian agency to attack each emerging problem. Although the Office of Production Management (1940) was supposed to provide centralized coordination, in truth neither FDR nor Congress could abide the prospect of concentrated economic power, despite warnings from the Army and Navy that even worse confusion lay ahead. By the end of 1941 the military departments faced a coalition of competitors: the Office of Production Management, which was supposed to stimulate industrial conversion to war work; the Office of Price Administration and Civilian Supply and the Supply Priorities and Allocation Board, which guarded domestic interests; the Office of Defense Transportation; and the Office of Lend-Lease Administration. The Office of Scientific Research and Development pushed past the services in leading the nation's technological pioneering in military technology and engineering, largely by mobilizing the nation's academic and corporate laboratories with

contracts and protected civilian personnel.

After Pearl Harbor, FDR and Congress faced the obvious need for greater economic regulation, and Congress gave the President wide authority over the economy in the First (December, 1941) and Second (March, 1942) War Powers Acts. The President, however, did not in turn pass his authority to the War and Navy Departments, but empowered a new agency, the War Production Board, to manage mobilization. In fact, the services had also recognized that their own procurement houses were not in order. The Army in 1942 created a Service of supply (subsequently retitled the Army Services Forces) on a co-equal status with the Army Ground Forces and Army Air Forces and gave it the responsibility to bring central direction to the Army's relations with the rest of the government and its suppliers. Centralization in the Navy Department did not move as far since the new Commander in Chief U.S. Fleet and Chief of Naval Operations, Ernest J. King, wanted to consolidate the bureaus under his control. Secretary of the Navy Frank Knox, ably assisted by Under Secretary James V. Forrestal, organized an Office of Procurement and Material, but kept out of King's hands -- with FDR's explicit blessing. For another year the reorganizational circus continued -- but not to enhance the power of the Army and Navy. When the WPB proved limited in its ability to integrate military and civilian requirements, FDR created the Office of War Mobilization, another civilian agency directed by a former senator and Supreme Court Justice, James F. Byrnes. Military war managers worked as collaborators in the mobilization, not commanders.

The basic substantive features of the industrial mobilization did not fit the prewar military models, whether that model was the War Department's highly-centralized War Resources Administration or the Navy's decentralized bureau-driven model. Instead, market incentives --

not military commands -- spurred the economy. The government shifted almost completely to negotiated contracts that guaranteed suppliers a profit above production costs, generous provisions for tax relief and debt amortization, the establishment of public corporations, and the development of government-owned and privately-operated factories. The Controlled Materials Plan (1943), designed to bring order to the allocation of scarce raw materials, placed the services in a competitive, not dominant position in deciding which requirements would be filled first and how fast. The critical problem of shipping involved not just the Navy Department, but the U. S. Maritime Commission and the War Shipping Administration. Any Army plan to use compulsory national service or a labor draft to drive workers into war factories (such plans existed in 1939 in the Industrial Mobilization Plan) died in the arena of public and labor politics. By and large the armed forces had their hands full with their own procurement problems and had no taste for running the national economy even if they had such an opportunity. Although the military leaders generally received what they requested -- if time and cost considerations are ignored -- they did not believe that the nation had surrendered any serious control of the economy to the armed forces.

Largely because of the enormity of the industrial mobilization and their self-imposed restraint in defining their human needs, the American armed forces accepted rather than dictated political decisions on the quantity and quality of the men and women who served in uniform in World War II. The services, especially the Army, might have been more assertive in estimating and filling their manpower needs, but without any central authority other than FDR and Congress to make definitive final decisions about human resources, the armed forces had to persuade and negotiate for personnel. Civilian agencies -- principally the War

Production Board, the War Manpower Commission, and the Selective Service System -- competed with the military in defining what the armed forces could expect in manpower strength from the nation's adult male population. (The 350,000 women who served did so as volunteers.) Like the fluid estimates on industrial production, civilian agencies guessed that military-suitable males available for service ranged between 10 and 16 million or about one-third of the 36 million who registered for the draft, 1940-1945. The major limitations on the available manpower pool were age, physical fitness, occupational deferments for essential war-work, and family dependency. Since the number of Americans who eventually served in uniform (16.1 million) approached the upper limit of the estimated available male population, military requirements seem to have received highest priority. But the Army and Navy seldom shaped their estimates free of what they imagined manpower limitations to be, so the manpower picture is far more complex.⁵

Military manpower plans developed in concert with materiel readiness projections and strategic plans. Only the Army's "Victory Program" (September, 1941) attempted to project service needs for a two-front, coalition war that would last several years, and in rough terms the "Victory Program" proved accurate. The Army planners estimated a maximum troop ceiling of 8.4 million with 6.7 million in its ground and service forces and 2 million in the Army Air Forces (AAF). At war's end the Army numbered 8.2 million with 5.9 million in the ground forces and 2.3 million in the AAF. To meet these force levels 11.2 million soldiers donned uniforms during the war. The Army staff, however, in 1943 estimated that it could prosecute the war with fewer than 8 million soldiers and maintained this estimate even though Congress wondered if the numbers were sufficient. The Navy Department's projections proved

even more elusive since both the Navy and Marine Corps continued to increase their requirements into 1944 when they settled on ceilings of 3.2 million sailors and 559,000 Marines. At war's end the navy numbered 3.4 million and the Marine Corps 484,000, force levels that meant that 4.8 million fought the war in the two naval services. Of those who served about 10 million went through the Selective Service induction, and 6 million enlisted in the regular forces or their reserve components until voluntary enlistments were ended by law in late 1942.

The important factor in manpower mobilization was not who served, but who didn't. Almost 5 million men could not meet the armed forces' physical standards, which were judged far too rigorous by civilian manpower experts. Of the 4-Fs (medically unfit) the majority of 2.7 million who failed their examinations were disqualified for poor teeth, hernias, eyesight problems, flat feet, deafness, and other minor and correctable defects. Another 1.5 million men failed examinations to test their "emotional stability" and intelligence. Not until 1943 did the Selective Service System accept illiterates. In sum, exaggerated physical requirements, especially for a force in which only one-quarter of the men actually did the fighting, exempted a third of the manpower pool even though manpower experts estimated that only 500,000 men were absolutely disqualified from service. The armed forces established the physical and mental standards and resisted any attempt to liberalize them until 1943 when manpower shortfalls of all sorts became critical.

The most obvious way to find troops was to cut into other protected categories, primarily occupational and dependency deferments. The former by 1943 numbered 1.1 million, the latter 15 million. Another change -- advocated by the armed forces -- allowed the services to enlist seventeen- year-olds and draft eighteen-year-olds, but the fear of public

disfavor of such a policy restrained the Army (but not the Navy and Marine Corps) from accepting youths and sending them into combat. The major target for making up manpower shortages became not the deferred fathers, but young workers (first 26 and under, then the 26-29 group) with occupational deferments. The War and Navy Departments advocated this policy, but their demands withered under the counterarguments of industrial planners. The Navy and Marine Corps managed to work towards their force goals by manipulating the Selective Service System and setting up attractive training programs for junior officers and enlisted technicians, but the ground Army found itself bedeviled by the AAF's quantity and quality requirements and its own personnel management problems. In the war's closing year the War Department had a real need for more men, but its early optimism about its needs and its profligate use of service troops reduced the Army's ability to enlarge its ranks from the remaining manpower pool. Neither Admiral King nor General Marshall felt as if the services' true needs received adequate attention from FDR and his civilian advisers, and both worried that their credibility in manpower matters had diminished, not increased, as the war progressed.⁶

America's participation in World War II brought the political effectiveness of the armed forces to a new wartime high. Measured by the gap between the military's own estimated resource needs and the federal government's willingness to meet military-defined requirements, the wartime mobilization consistently gave the military leadership what it requested -- but not completely or thoughtlessly so. The sources of the military's success are not difficult to identify. At least after Pearl Harbor, the government, the public, and the armed forces shared a similar sense of risk from the Axis powers and shared a similar determination to

end the threat with military victory. No one knew exactly what the cost of victory would be, but the planning staffs of the Army and Navy had given their resource needs greater thought than anyone else, and in the interwar period they had developed a methodology that at least gave their estimates some rational structure. The combination of contingency planning, war-gaming, force-structuring, and doctrine-writing gave the military a persuasive method of assessing the probable result of future operations or, at least, identified the unknowns and range of probable outcomes. What is significant about the development of "military and naval science" in the twentieth century is not whether military planning could be truly scientific -- it could not but that the responsible civilian politicians recognized that military expertise did exist.

The political force of military advice, however, also depended upon the self-denial of broad political power by the nation's senior officers. After World War I the only general or admiral who entertained political ambition was Douglas MacArthur. During the war the members of the Joint Chiefs of Staff (Marshall, King, Admiral William D. Leahy, and General H. H. Arnold) avoided political partisanship, assisted by the fact that their civilian superiors in the service departments were either Republicans or conservative-internationalist Democrats. Significantly, the executive branch allowed the services to carry on ambitious public relations programs, which also translated into political power. Although the "public information" programs the armed forces developed had multiple purposes -- to legitimize the nation's war aims and sacrifices, to support recruiting and conscription, and to enhance the image of the armed forces -- the JCS profited from the generally improved reputation of the professional officer corps that flowed from the public relations effort. The JCS used its political influence, however, within functional

areas that it desired and the nation's political leaders approved. Resource allocation was not one of those areas in which the JCS sought a dominant role. Instead the JCS saw itself as a partner in the mobilization process and believed that its access to officials in the executive and legislative branches was sufficient for its purposes, even if the process could be time-consuming and frustrating.

Even if the JCS had sought greater political effectiveness, it would have faced insurmountable barriers. Neither FDR nor Congress showed any inclination to surrender their constitutional responsibilities, either to the JCS or to the other branch of government. Moreover, the organizational pattern FDR approved within the executive branch caused the multiplication of civilian agencies and the diffusion of administrative power, which forced the service departments into a restricted, adversarial position in the search for resources. The absence of a single department of defense and a single civilian secretary -- or single military chief -- contributed to the sharing of political power. The JCS also faced a formidable competitor in the British, who linked the personal magnetism of Winston Churchill with the arrogant assertiveness of the Chiefs of Staff Committee. Throughout the war the JCS found its requirements scrutinized by the British, who often offered alternative evaluations of such matters as merchant and amphibious shipping construction, the allocation of food and petroleum, and the size and structure of the American armed forces. The British were not the only alternative military voices, for the military command system the Allies developed for a global, coalition war also positioned the joint and combined theater commanders as potential sources of political challenge. Fortunately, the only rogue general was MacArthur, but Generals Dwight D. Eisenhower and Joseph W. Stilwell might have complicated the role of the

JCS if they had chosen to exploit their access to foreign leaders. Negotiating with theater commanders on operations proved such an arduous process that the JCS had reduced energy in dealing with resource allocation issues. Instead it focused on strategic and operational problems, which clearly fell within its professional expertise.

II. Strategic Effectiveness

The strategic effectiveness of the American armed forces in World War II increased with the parallel translation of national policies into military operations against the Axis, the growth of the American armed forces, and the mounting professional skill and persuasiveness of the Joint Chiefs of Staff. Although the JCS never escaped Presidential review of its plans or its difficulties in dealing with the British, its success in strategic planning mounted between 1943 and 1945 in direct proportion to the size and type of forces it directed. In two earlier periods -- the pre-Pearl Harbor era of support for the Allies (1939-1941) and the era of British strategic dominance (1942-1943) -- the American military had few successes, and those successes normally conformed to preferences held independently by the British and by FDR, whose own attitudes were shaped by Churchill's advice, domestic mobilization, and partisan politics. As early as 1940-1941 Army and Navy military planners developed their own strategic preferences for victory over the Axis, expressed in varied form in RAINBOW 5, Plan "Dog," Air War Plans Division 1, and the coalition strategic memorandum of understanding, ABC-1. The essence of these plans centered on the problem of fighting two wars simultaneously in two widely separated theaters, Europe and the Pacific. As the most dangerous member of the Axis coalition, Germany would receive primary attention as a foe with Italy and Japan attacked as opportunities and forces developed. The planners assumed that Germany would have to be attacked, its armed forces destroyed, and its government replaced in

order for the Allies to meet their war aims. Offensive campaigns, mounted from secure bases in England or other enclaves on or near the continent, seemed essential. Army air and ground planners predicted that some combination of strategic bombing and a major ground campaign would defeat Germany, but they disagreed about the relative importance of these campaigns.⁷

"Germany First" did not mean "Germany Only" for the JCS. When Japan expanded its Asian war to the Pacific, the United States accepted its six months of defeat as a temporary setback, not the preliminary for a negotiated peace. Again, the JCS stressed an offensive campaign -- largely naval and air -- to destroy the Japanese armed forces, to sever Japan from its sources of raw materials, and to force unconditional surrender through some combination of economic blockade, strategic bombardment, and invasion. For several reasons, the JCS did not attach much importance to a major land campaign in Asia against the Japanese army. For one thing, the Allied coalition had little strength in the theater, for Britain and Russia had more than enough problems with Germany. Nationalist China could not muster the political will or military capacity to do more than defend its inland enclaves. American interest in Asia stemmed from China's potential as a base for bomber operations against Japan and more tangential operations like rescuing pilots, collecting weather information, and harassing Japanese divisions with partisan operations. Although the war against Japan did not develop as prewar planners anticipated in terms of timing and geographic setting, the combination of public outrage after Pearl Harbor and the services' traditional interest in a war in the Pacific tended to give the Japanese military threat more importance than might have been justified in purely logical terms.

A strategy of offensive campaigns outside the western hemisphere carried serious risks, although the United States was not in immediate danger of military attack and occupation. Of all the belligerents only the United States did not risk the prospect of total defeat, a condition that may explain the generally prudent approach of FDR and the JCS. For all the problems of massing forces, choosing theaters, timing operations, and assessing enemy actions, the United States did not cast its irrevocable "strategic dice" until the Marianas and Normandy campaigns of 1944. The sole exception to this pattern of strategic prudence was the commitment to the Combined Bomber Offensive against Germany in 1943. The other major gamble was the effort to begin the build-up in England, Operation BOLERO, in 1942 before the war against the German U-boat force had been won, but Britain's desperate condition seemed to make this risk unavoidable. Even potentially desperate measures -- like the plan to invade France in 1942 in order to open an eleventh-hour "Second Front" if Russia appeared defeated -- would have involved so few American forces that in the physical sense a defeat would not have been catastrophic.

Nevertheless, minimal strategic risk may not translate into minimal political risk. FDR, for example, remained keenly aware that early signs of failure that could not be explained by America's lack of preparedness (e.g., the loss of the Philippines) might force a fundamental change in strategy. FDR insisted that American forces enter the European war in 1942 -- even in minimal form -- so that he could bring greater urgency to industrial mobilization and avoid public pressure for a "Japan First" strategy. With less justification, the president also thought an Anglo-American campaign in 1942 would convince the Soviets to fight on in the face of Germany's second successful offensive in Russia. (In retrospect, Stalin had no other choice if the Communist regime was to survive.) By

and large, the JCS understood FDR's insistence that coalition diplomacy and domestic politics took precedence over strategic theory, even if it meant taking more risks than the JCS liked.

The relative caution of strategic planning had its roots in the military's disconcerting experiences with FDR in 1939-1940 when General Marshall and Admiral Stark found themselves continuously overruled by the president. The basic issues were support for Great Britain and Russia and the conflicting imperatives of hemispheric defense. Throughout 1940 and 1941, the president approved plans largely suggested by the British or his civilian advisers that he thought would deter Japan and support the Allies. In many cases FDR's decisions actually reduced real military readiness, much to his service chiefs' dismay. Among these short-of-war measures were sharing aircraft production equally with Britain, the introduction of Lend-Lease, the occupation of Iceland, the exchange of Atlantic bases for destroyers, the permanent transfer of the Fleet to Pearl Harbor, operational assistance to the British in the U-boat war, and the formation and reinforcement of United States Army Forces Far East, MacArthur's command in the Philippines. FDR's harshest critics among his senior officers thought his pre-Pearl Harbor decisions actually hastened war; more moderate officers believed that his policies slowed military mobilization and dispersed those forces that might be needed for deployment to the Caribbean and Latin America. The rapid expansion of the armed forces in 1941, propelled by the execution of the 1940 draft and National Guard mobilization and the growth of the Fleet, made it difficult for the Army and the Navy to man and equip those forces their contingency plans required and those committed to FDR's "military diplomacy."

Once the United States entered the war, the JCS became more successful in winning FDR's approval for its plans to defeat the Axis, but its persuasiveness depended upon its ability to negotiate with the British. Until 1943 FDR and his civilian advisers, like Harry Hopkins, gave Allied strategic preferences greater attention than the JCS's, and throughout the war, the JCS had to pay special attention to integrating its plans with those of the Allies. The JCS's persuasive powers grew in direct proportion to the size of the American armed forces and the military's ability to present more attractive strategic alternatives than those presented by the Allies. Part of the JCS's success stemmed from the forcefulness of General Marshall and Admiral King, part from the competence of its two principal subordinates, General Dwight D. Eisenhower and Admiral Chester W. Nimitz. Military staff skill increased JCS effectiveness, particularly the work of the joint and combined committees who had to balance strategic proposals with force availability. Despite his haphazard leadership style, FDR understood strategic analysis, and he had, too, the advantage of two skilled tutors, his personal chief of staff (Admiral William D. Leahy) and the senior British liaison officer (Field Marshal Sir John Dill), who generally supported the JCS.

Inter-coalition strategic integration varied from theater to theater, campaign to campaign, and from ally to ally. Anglo-American integration developed rapidly, largely through British insistence. When "Germany First" had to be translated into long-range plans for offensive operations, the British showed scant enthusiasm for a premature invasion of France. Although less enamored than Churchill with a strategy of bombardment, limited operations along the periphery of Festung Europa, subversion, and economic warfare, the British military planners dominated the bargaining of 1942 and 1943. Two early plans, the Combined Bomber

Offensive and the sea control battle in the Atlantic, received early approval because they attracted coalition support at the political (FDR-Churchill) and the military (USAAP-RAP, USN-RN) levels. Army commanders also approved since they recognized that control of the air and sea were essential prerequisites for any major land campaign. The third plan -- the expansion of the British campaign to control the Mediterranean and to eliminate Vichy France and Italy from the war -- did not strike the JCS as any more than political and strategic opportunism that would slow the eventual climactic campaign against the Wehrmacht. FDR, however, approved the North African campaign because he wanted to stop the pull of the Pacific war, to direct public attention to the main task of defeating Germany and to open a "Second Front" even if strategic bombing and a Mediterranean campaign did not impress Stalin. The JCS did not fight the decision for varied reasons, principally because Italian bases might contribute to the air war, the Army ground forces were not yet well enough trained for a major campaign, and the submarine threat still made the build-up in England prohibitively costly. Admiral King had an additional reason: the delay in the invasion of France improved the prospects of a larger war against Japan.

The war against Germany in 1943 reflected the Anglo-American compromises of 1942 and the renaissance of the Russian armed forces, which shifted to the strategic offensive after the Stalingrad campaign. It also showed the improvement in convoy security, the growth of the Army's ground and air combat formations and logistical base in England, and the Navy's confidence that it could mount amphibious operations without serious naval and air opposition. By the end of 1943 the Anglo-American planners had convinced themselves of the feasibility of a cross-Channel invasion and land campaign in northwestern Europe. FDR

and Stalin insisted that a "real" Second Front could no longer be deferred in favor of additional operations in Italy or the Balkans, and the only American concession to the British was that a second invasion of France from the south would have to wait since shipping shortages would prohibit simultaneous allied invasions. Nevertheless, the JCS received FDR's blessing for DRAGOON, the Riviera invasion, which may have been the ultimate test of its strategic persuasiveness since the military rationale for the invasion was just as tenuous as many of the earlier British proposals that the JCS had challenged. Although the JCS doubted that British proposals for invasions at the head of the Adriatic or in the Balkans would destroy German forces that would not be otherwise neutralized by Russian operations, it profited from FDR's reluctance to assume any American responsibility for the political future of eastern Europe. In this case, American political and military preferences coincided with Soviet interest in dominating postwar eastern Europe, a coincidence fully appreciated by some American planners at the time.⁸

Interallied strategic plans integration reached its highest level of development in the war with Germany, despite the fact that the Soviets would not allow more than the general coordination of offensive campaigning. In the war with Japan the Allies did far less to cooperate, largely because the American approach to the war varied in both war aims and strategic approaches from the other major participants, Britain and Nationalist China. Actually, the United States and Russia shared the common strategic vision, a direct assault upon the Japanese armed forces on mainland northern Asia and the Pacific ocean, but the Russians did not enter the war until it was virtually over. The British strategy had its roots in Churchill's conviction that the war should reestablish the raj in India, Burma, and Malaya, but the war against Germany did not allow

much strategic initiative in Asia. The Nationalist Chinese position was even more unpalatable, and by the end of 1943 FDR had (he thought) disabused Chiang Kai-Shek of the notion that China had some special draw upon Allied resources. Nationalist armies had proven so uncooperative that American military commanders (General Claire Chennault excepted) saw little profit in arming a government that showed less inclination to fight the Japanese than its warlord and Communist rivals. In the long run, the United States was the only power that had the resources to mount major offensives against Japan, and it chose to do so in the theater (the Pacific ocean) that bore the least political risk and maximized the effect of American naval and air power. In this case, the lack of Allied strategic cooperation reflected the diversion of political goals and military capabilities.⁹

The JCS strategic preferences remained sensitive to the size and structure of the American armed forces throughout the war, but the ultimate relationship between plans and forces proved uneven and ripe with risk in 1944 and 1945, the very time the United States expected to dominate the war against the Axis. The eventual match between plans and forces for the war with Japan proved far superior to the match in the war with Germany, an ironic reversal of strategic priorities. At the heart of the problem of the strategy-forces mismatch was the different character of the offensive campaigns the JCS envisioned, not the permutations of strategy created by the South Pacific and Mediterranean commitments of 1942-1943. When evaluated by service, the Navy's war against both Germany and Japan showed less need for adaptation -- and room for error -- because of the different nature of the enemy's military power and geographic position. Even though the Navy had to divert resources from its air and surface combat forces in order to fight the

U-boats, the fleet expansion building programs in place in December, 1941 continued to produce Essex-class fast carriers, light and escort carriers, North Carolina-class fast battleships, and new classes of cruisers and destroyers built and armed for anti-air fleet defense as well as traditional missions. The Navy's most serious misestimate of its needs came in the area of amphibious shipping, especially the whole family of beaching ships and craft so essential to putting mechanized and heavily-armed amphibious forces ashore. (The shortage in LSTs bedeviled planners throughout the war and proved critical in reorganizing, postponing, and cancelling several amphibious operations.) The combat element of the Marine Corps -- the Fleet Marine Force -- eventually expanded to the six divisions, corps troops, and four aircraft wings it needed for its Pacific operations.¹⁰

The Army had larger organizational problems that eventually caused it more difficulties in the war with Germany than the war with Japan. In the Pacific theater the Army provided twenty-one combat divisions and fifty-four USAAF air groups adequate for all its operations in two major campaigns, MacArthur's return to the Philippines and the central Pacific campaign that ended at Okinawa. Whether it would have provided adequate forces for the invasion of the Home Islands is a matter of honest debate; certainly it could not have invaded Japan without a major redeployment of forces from Europe. Although the Army modified its force structure throughout the war, its first major estimate for a two-front coalition war (the "Victory Program" of September, 1941) demonstrated an expert appreciation of the Army's likely needs for both ground and air combat formations. The air force requirements proved the most stable. In 1941 the Army thought it would need 195 groups, and it ended the war with 243 groups. The internal estimate of types of groups proved equally

stable; the 54 estimated fighter groups of 1941 increased to 71 in May, 1945, and the 107 bomber groups of all types increased to 125 in the same period. Army ground forces requirements, however, fluctuated dramatically and eventually proved a major problem in the war with Germany. Although the "Victory Program" envisioned a ground combat force of 213 divisions -- roughly the size of the German army -- the Army Ground Forces eventually fielded only eighty-nine divisions, all but one of which had been in combat at War's end. Basing its plans on 1943 assumptions that the USAAF and the Russian army had made a large ground army unnecessary the War Department adopted a ninety-division program that it maintained into 1945.¹¹

Several measures suggest that the War Department badly misjudged the requirements of a major land campaign in Europe and its ability to manage personnel. The distribution of Army personnel demonstrates the relative deprivation of the Army Ground Forces, a condition recognized and deplored by the commander of the AGF, Lt. Gen. Leslie J. McNair:

Army Personnel Distribution
(Rounded percentages)

	December, 1942	May, 1945
Ground Forces	36%	23%
Service Forces	34	22
Air Forces	24	28
Other*	06	27

*"Other" includes personnel in training, transit, and otherwise not accountable in units. Most of these soldiers could be located in "administrative overhead" in the United States and overseas theaters.

When measured by the numbers of all ground troops to the numbers of troops in comparable divisions, at the American "division slice" in World War II numbered 67,201 soldiers or about a 1:4 ratio between active

combatants and support troops. No other force except the Canadian army had a larger "division slice."**

If the Army's limited divisions had been the well-trained, superbly manned, and optimally-equipped forces that General Marshall thought they would become the ground force structure gamble might have succeeded, but in manpower policy alone the Army's ground forces lost a series of important battles. Throughout the war the Navy, the Marine Corps, and the Army Air Forces received a disproportionate share of the quality manpower that donned uniforms. Just how individual servicemen entered a particular service and a particular job within each service depended upon a complex set of variables; the principal criteria were age, physical fitness, civilian occupational skills, and mental aptitude.

**By counting only theater-level troops and excluding pooled corps-controlled combat units, the "division slice" falls to 32,000.

Even though volunteering officially ended in December, 1942, the ACP still received a meager share of the best men, for the Navy and AAF argued that their emphasis upon technical skill and high-stress assignments (e.g., flying, submarine duty) demanded superior personnel. Through a variety of programs, the AAF, for example, skimmed off a majority of the most intelligent enlisted men in the Army for aircrew or maintenance assignments. The Marine Corps, on the other hand, set age and physical criteria for enlisted personnel that, fused with elitest attractions, also cut into the pool of potential combatants. Even though the Army did not fully appreciate the relationship between intelligence and combat skills, General McNair correctly predicted as early as 1943 that Army combat divisions not only had too few trained replacements, but that their substandard enlisted personnel would limit their combat power and increase their casualties. Not until late 1944, having suffered prohibitive casualties in France, did the Army cull some 250,000 high quality personnel from other assignments and place them in combat billets. Only draconian reassignments kept the infantry and armored divisions in Europe competitive with the German army.¹²

Unlike their battle with the Japanese, the American ground forces did not have any appreciable superiority in weapons in their battle with the Germans. For an army that had built itself for a major ground campaign in northern Europe, the American divisions did not enjoy gun-for-gun advantages except in rifles. In terms of effectiveness, German crew-served weapons (machineguns and mortars), submachine guns, anti-tank weapons, artillery, self-propelled guns, and tanks proved more destructive than their American counterparts. Only in field artillery employment did American divisions prove superior to the Germans, and professional evaluations by the Allies and the Germans emphasized that

American divisions could not attack successfully without overwhelming artillery barrages on frontline units and airstrikes on German reserves unless they enjoyed local infantry superiority of around 4:1. In other words, Army ground combat divisions depended on the advantage of numbers, numbers they did not always enjoy in the European Theater of Operations.¹³

If the Army Ground Forces proved a flawed instrument for its strategic tasks in Europe, the USAAF strategic bombing campaign on Germany proved equally debatable, for it threw the cream of the USAAF aircrews and heavy bomber force into a battle won only at the highest cost, some 40,000 dead airmen, 6,000 destroyed aircraft, and \$43 billion. In fact, the USAAF's overestimation of the results of strategic bombardment and its underestimation of its eventual cost may be the most serious gap in the strategy-force structure balance. On the one hand, the bombers of the 8th and 15th Air Forces forced the German armed forces to divert a significant portion of their aircraft and flak units to air defense, stripping the ground battlefields of Luftwaffe squadrons by the end of 1943; pilot losses proved irreplaceable; the destruction of petro-chemical resources and the German transportation system worked real hardship on the Wehrmacht. On the other hand, the USAAF's Combined Bomber Offensive has never been subjected to a convincing cost effectiveness analysis, only the most ardent bomber enthusiasts have argued that the campaign fulfilled its strategic promise.¹⁴

The force structure for the Pacific war, however, fitted the strategy of a naval campaign designed to destroy the Japanese naval and air forces and to subject the Japanese people to the twin ravages of economic blockade and strategic bombing. After reducing Japanese forces in a war of attrition in the South Pacific (1942-1943), a campaign that

eliminated the Japanese base system south of the Equator, the American armed forces opened a dual drive that carried MacArthur's joint command to the Philippines and Nimitz's joint command to Okinawa. In the meantime, the Navy's submarine force attacked the Japanese merchant fleet with increasing effectiveness, supplemented in 1944 by USAAF tactical aviation and the Navy's carrier forces. After the seizure of bases in the Marianas, the USAAF opened its strategic bombing campaign with long-range B-29s in late 1944, a campaign that ended with two nuclear weapons in August, 1945. The Navy's air and surface forces destroyed the Imperial Japanese Fleet while Army and Marine Corps infantry divisions mounted one successful amphibious operation after another, thus opening a base system for more operations to the west. Tactical air and submarines played havoc with Japanese efforts to reinforce and resupply their isolated bases. The interdiction and isolation campaign proved especially productive in destroying high quality Japanese army divisions without meeting them in ground combat; drowning and starvation killed as surely as bullets and demanded fewer American lives. Even though inter-theater disputes and interservice conflict in each theater gave the American war effort an unpleasant tinge, the strategic concepts the United States applied to Japan proved well-matched to American capabilities and Japanese vulnerabilities.¹⁵

American strategic preferences required the projection of military forces across two oceans and thousands of miles into four major theaters of war (two against Germany and Italy, two against Japan) and to do so in the face of two serious threats. The first threat was the German U-boat force, which extracted heavy losses on trans-Atlantic convoys into 1943. The second threat was climatic and geographic, for the battlefields of equatorial South Pacific (mountainous, volcanic islands covered with

thick rainforests) put enormous strains on the armed forces' logistical capacity. In addition, port facilities in the Pacific and Mediterranean defied efficient unloading operations, even without battle damage. With the exception of the base system in the United Kingdom, the American armed forces had to create their own bases as they moved outside the western hemisphere, and before the end of the war they had created 3,000 overseas bases and depots. Another logistical challenge at the strategic level was the scarcity of materials for foreign purchase; with the exception of some food, Middle Eastern oil, and some construction materials, the armed forces had to take everything with them, largely by ship. Last, the American emphasis on air and naval warfare -- and mobile land warfare rich with artillery fire -- created staggering logistical requirements. For example, the Army estimated that it had to ship 4.5 tons of materiel for each soldier deployed overseas and one ton a month thereafter to support him; the 250,000 vehicles in the American army in France consumed more than 7,000 tons of gas a day; the 105-mm. howitzers of each infantry division could fire 48,000 shells a month in moderate combat. Navy warships, depending on their size, could consume between 200 and 1,000 gallons of oil a day in normal cruising. Procurement and maintenance created complementary demands, for, despite the impression that the United States created a "throw away" military in World War II, the armed forces struggled to keep their weapons in operating condition, simply because it was so time-consuming and costly to ship replacements abroad. The Army, for example, in 1942-1944 spent \$2 billion a month for procurement, \$1 billion a month for maintenance for a force that included 83,000 tanks and 2.5 million motor vehicles. The Navy alone procured over 80,000 aircraft before the war ended and created a multi-million dollar requirement for new facilities and spares from Adak

to Bora Bora. Although enemy commanders might disparage the fighting qualities of American combat formations, they uniformly testified to the awesome quality of American logistics.¹⁶

Strategy and logistics for the United States meant meeting its shipping requirements for overseas deployment. The war was across the oceans. As Churchill pointed out to FDR, the Atlantic and Pacific had once been America's greatest defenses, giant moats that confounded potential enemies. But these same oceans would be prisons unless the Allies won the war against the U-boat and greatly increased ship construction. Both challenges ended in an Allied victory in which the United States played the decisive role. In December, 1941, the Allied merchant marine (less tankers) could carry 45 million deadweight tons, only 12 million in American vessels; despite crippling losses to the Germans, the Allied merchant marine in 1945 reached 68 million deadweight tons, 39 million American. Eighty percent of new wartime construction of ships and tankers came from American yards. The tanker force, for example, increased from 5,600 to 15,000 vessels. The shipping success became evident in the great campaigns of 1944 just as shipping shortages shaped the campaigns of 1942-1943. The Army, whose shipments used half of all Allied shipping 1944, sent almost 2 million tons a month to Europe, while the Navy shipped half a million tons of supplies a month to the Pacific in the same year.

As the war progressed the JCS showed increased expert appreciation of the time-space factors that shaped the war's logistical requirements. Initially, however, the armed forces probably held an exaggerated view of the productivity of American industry, shipping requirements, and basing needs. The armed forces consistently underestimated their engineering and construction requirements. Inventory control remained a lost art.

Even by their own profligate standards, the armed forces did not suffer from shortages at the strategic level once industrial production hit its peak in 1943. Logistics was one of the armed forces' stronger elements in strategic effectiveness.

American strategic plans generally tried to match the predicted strengths of the U. S. armed forces against Axis vulnerabilities in the geo-political sense. Keenly aware that the militaristic traditions of Japan and Germany and the power of a police state would make it unlikely that the Axis armed forces (less Italy) would collapse for morale reasons, the JCS saw few alternatives to destroying them in battle. The other basic option was to attack the enemy's industrial capacity through air-sea-undersea economic interdiction and strategic bombing and thus "disarm" the enemy in the material sense. A war upon the Axis industrial plant seemed especially appropriate since it exploited American technological prowess in building and employing naval and air forces, manned by elite personnel. The concept of global exploitation of air and naval power also reflected some geo-political realities: that the U. S. would have to cross two oceans to win its war; that its own industrial and agricultural capacity (and the work force to run it) was critical to Allied success; that the United States could meet the logistical requirements of a global war, but probably not the political test of the human casualties on the same proportional scale accepted by the other major belligerents; and that it would take probably two years to raise, train, and equip a ground army capable of destroying the heart of the Axis armies on the battlefield.

The American strategic predispositions -- formally expressed by the Joint Chiefs of Staff -- fit the war with Japan better than they did the war with Germany. By attacking Japanese aviation and the Imperial

Japanese fleet -- and bases upon which both depended -- the American armed forces opened Japan to a devastating campaign of economic isolation and destruction from the air and sea. Interdiction also limited the redeployment of Japanese ground forces from Asia to the Pacific; only in the Philippines and Okinawa did the United States face field armies of major proportions. The Pacific war exploited American material excellence in air and naval war and limited the need for extended ground combat, in which the Americans were comparatively less superior.

The American war with Germany proved less satisfactory at the strategic level for two major reasons, the exaggerated commitment to the Combined Bomber Offensive and the British-inspired diversion to the Mediterranean theater. German civilian morale and industrial production held firm through 1944, and the Allied strategic air effort, which cost around 80,000 lives and 10,000 aircraft, used high-value resources that might have been applied to tactical aviation, which proved to be a major force-multiplier against the Wehrmacht. The invasion of North Africa led "logically" to a major campaign on the Italian peninsula that provided few dividends other than bases for the Combined Bomber Offensive. As the Russians argued, the Italian campaign did not hurt the German army even to the degree that the Combined Bomber Offensive punished the Luftwaffe. The American insistence upon a major campaign in northern Europe reflected a correct estimate that the Germans would have to be destroyed on the battlefield, but for a number of reasons -- personnel planning, training, numbers of divisions, and ordnance decisions -- the Anglo-American armies of 1944-1945 experienced a campaign of operational feast or famine until the Germans' losses on the Eastern Front and in the Ardennes counter offensive ended any chance of a negotiated peace. Given the cohesiveness and capacity for suffering of the Wehrmacht and the

German people -- whether voluntary or coerced by the Nazi regime -- there was no real alternative to a war of attrition in Europe. Although victory in the Battle of the Atlantic and Allied excellence in amphibious operations opened the door to the Third Reich, the whole house of Nazi Germany had to be fought for room by room.

III. Operational Effectiveness

Given the variety of enemy forces and physical environments they faced, the United States armed forces must be judged by criteria more diverse than the state of mobilization at the time a particular campaign occurred. It is tempting to relate operational effectiveness to the size, state of training, armament, and experience of the American armed forces in World II and to assume that as the mobilization mounted, so too did operational effectiveness. For the United States military in World War II, the reality, however, is far more complex. Although the relative balance between Axis and American combat power in 1942 to a large degree ensured that the first American operations would be relatively ineffective, particularly in the first six months of the Pacific war, the shift of combat power toward the United States in 1943 did not necessarily produce across-the-board improvements in military effectiveness. In some cases, material weakness obscured doctrinal and organizational problems. Even when operational flaws became obvious, the armed services did not necessarily correct them, often because they felt that the shock of change might be more severe than the cost of pursuing a second best, but known operational doctrine. As the combat power of the Axis forces dwindled, the price the American armed forces paid for their operational problems diminished in relation to the ultimate outcome of battle, if not always to its proportionate costs. Even when military commanders were keenly aware of their operational limitations, they tended to minimize them for fear of opening their strategic choices to

equal criticism.

As American commanders learned, World War II required operational force integration to a degree unparalleled in modern military history at the campaign level. Just as strategy is sometimes difficult to separate from policy and war aims, the boundary between strategy, operations, and tactics also may appear indistinct, but operations or doctrinal concepts can be regarded as the how of strategy or the way in which armed forces execute strategic plans by fighting a major enemy force (or target system in the case of bombing) over extended periods of time, over extended areas, and over many separate engagements. For the American armed forces in World War II, military operations in varying degrees required not just single service arms integration (e.g., infantry-artillery coordination) but combined (interallied) and joint (interservice) force integration. The campaigns against Germany required a high degree of Allied interoperability within the already difficult problem of joint operations. The war with Japan demanded less coalition interoperability, largely because of the Allies' strategic preferences, force size, and characteristics. Theater separation reduced the potential benefits and risks of combined force integration. Nevertheless, geography, topography, and technology made every major campaign the United States fought an air-sea operation or a land-air operation. Since every major American offensive campaign started with an amphibious landing, the most prominent characteristic of the American war at the operational level was its demand for air force-ground force-naval force integration, whether those forces came from one or several nations.

Anglo-American force integration varied widely and fits no easy theater or service pattern. The least integration occurred in the Combined Bomber Offensive despite the fact that the dominant leaders of

the RAF and USAF shared a common faith in strategic bombardment. Doctrine and force-structure, however, limited cooperation, for Bomber Command waged a night-bombing war against urban area targets designed to destroy German civilian morale while the 8th and 15th Bomber Commands attacked the German industrial system with daylight raids. Although the two bomber forces shared weather, enemy air defense, and target information, they did not vary from their basic operational concepts, even though the bomber commanders pressured each other to change. Since both forces suffered with equal grievousness from German air defenses, loss reduction provided no persuasive evidence for change, and the criteria for bombing destructiveness (imprecisely measured at best) were so different that neither bomber force accepted the other's doctrine except as a temporary measure. The closest integration of Allied bombers came in operations neither the RAF nor the USAAF sought: the bombing of German submarine bases, the pre-D-Day bombing of the German and French rail and road transportation systems, and the carpet-bombing that opened several Allied ground offensives in northern Europe. In fact, air operations that either complemented the Combined Bomber Offensive or supported the ground war produced greater force integration. Building on their lackluster performance in the early stages of the Mediterranean campaign, Anglo-American tactical aviation forces -- eventually organized under a common air commander -- shared the responsibilities for air superiority operations, theater and battlefield interdiction, reconnaissance, and airborne and aerial resupply operations. Neither the RAF nor the USAAF relished close air support missions, and the communications and organizational problems of air-ground operations virtually dictated that each force support its own armies rather than attempt true interoperability.¹⁷

Anglo-American naval and ground force operational integration followed a similarly mixed pattern with relatively more naval integration than ground force integration. Since the Royal Navy had neutralized the Axis surface threat by 1942, the principal coalition missions became convoy-protection and amphibious landings. The Allied anti-submarine war in the Atlantic produced close USN-RN cooperation in all its operational aspects. The reasons for such interoperability were many: the shared values and skills of all mariners, high level political and military agreement on the nature of the German threat, common experience in World War I against the same enemy, the cooperative dispositions (less Admiral King) of the principal Allied admirals, and a common awareness of the importance of ASW technology, operational analysis, intelligence assessment, and the synergistic relationship between air patrols, surface escorts, and friendly submarine operations. Only in the value of "hunter-killer" offensive operations did the two navies differ -- and then not much as the U. S. Navy learned its limitations. In amphibious operations, coalition naval cooperation benefited by pre-TORCH British experience, most of it unhappy. Questions like air superiority, naval gunfire support, single command, the technical requirements of the ship-to-shore movement, and amphibious engineering and beach management received powerful validation at Narvik and Dieppe, and the lessons coincided concern, dramatized by his creation of the joint Directorate of Combined Operations, ensured high-level political interest in force integration. For example, the two navies shared in the design and construction of a family of beaching ships and assault craft that ranged in size from the 4,000-ton Landing Ship Tank (LST) to the 390-ton Landing Craft Infantry (LCI) as well as specialized shore bombardment vessels like the "monitor" battleship and the rocket-firing LSR. Even in

operational concepts that they eventually abandoned -- e.g., the efficacy of the night landing -- the navies shared dual responsibility. In more traditional naval operations, however, the U. S. Navy and Royal Navy had its own procedures well developed and forced the Royal Navy to conform to its doctrine.¹⁸

Anglo-American ground forces integration at the operational level is difficult to assess because of the dominant role of Field Marshal Bernard L. Montgomery in every major coalition ground campaign except the Italian campaigns of 1944-1945. In the organizational sense, Anglo-American ground forces at one time or another served with each other at the corps, army, and army group level and, occasionally, in smaller special units (e.g., the 1st Special Service Force). At the doctrinal level little separated the two armies. They both favored offensive operations, heavy artillery support, the use of armored forces in both the attack and exploitation phases of offensive operations, the utility of airborne operations to complement ground offensives, and the value of close air support. Neither proved very skilled at night operations (although the British probably had the edge), and neither showed much adeptness in sophisticated mobile defensive operations. From the Tunisian campaign to the final drive into Western Germany, however, Army field commanders faced Montgomery's compulsion to offer "alternative" operational concepts. The phenomenon is too complex to fit neatly into "broad" front or "narrow" front approaches or "set-piece" battle or "opportunistic" exploitation since Montgomery's operational concepts involved his own unique personality, the honor of his army, and his wide swings from caution (the Sicilian campaign and the Normandy landing) to risk-taking (GOODWOOD and MARKET-GARDEN. The power of Montgomery's patrons -- Churchill and CIGS Lord Alanbrooke -- and his public

reputation in Great Britain forced the Americans to take him more seriously than he deserved, and this concern for Montgomery's views, which he forced relentlessly on the overdiplomatic Eisenhower, complicated ground force operations throughout the European war. The American and British armies seemed to have worked best in emergencies (e.g., containing German counter-offensives) rather than planned offensives, when Montgomery's arrogance and obdurance too often prevailed. Although some American generals, notably Patton and Stilwell, made coalition integration occasionally difficult, neither had Montgomery's power to shape ground operations at the theater level.¹⁹

Interallied operational cooperation posed its share of challenges and the Chinese Nationalists surpassed the British as a reluctant ally -- but the American armed forces also faced a wide range of problems at the interservice and intraservice level, a condition that put heavy responsibilities upon joint commanders. In the war with Germany the USAAF made force integration difficult after it won pre-war doctrinal approval of its position that ground and air war should be co-equal in importance. Since resources consumed by the Combined Bomber Offensive by definition affected the capabilities of the tactical air forces, tactical air commanders argued that their scarce units be directed by a theater air commander answerable only to the theater commander. Force integration occurred only where both these senior officers agreed on the priority of air functions. Ground and air generals could agree on the importance of air superiority; they could argue but often agree on the importance of interdicting the movement of reinforcing Axis combat units; they could argue and often disagree about the value of interdicting enemy supply systems; and they could disagree with fervor about the value of close air support, a function the USAAF performed only under duress and

hedged with complex preconditions on procedure and mission control. Army and USAAP planners also viewed airborne operations from different operational perspectives, but in this instance Army ground views prevailed, which accurately reflected the rather low political power of the troop carrier commands within the tactical air forces. Even in airborne operations the Army's view -- which held that elite, but lightly-armed airborne divisions should be used only when a ground link-up was imminent -- became compromised by a penchant for night-drops, a sure way to maximize both air and ground confusion that was not abandoned until September, 1944. In the case of close air support, an Army intraservice dispute complicated coordination, for artillery officers at the division and corps level insisted that they rather than G-3s (normally infantry or armor officers) control fire support coordination. On the other hand, there is little evidence that ground commanders designed their own operations in order to maximize the damage tactical aviation might do to moving enemy units. Such opportunities surely occurred in Europe, but most often as a happy by-product of a successful ground defense, e.g., the Mortain operation and the elimination of the Ardennes "bulge."²⁰

Ironically, the best air-ground operational integration occurred in the theater of least strategic importance -- the Southwest Pacific -- under a commander who had the least integrated headquarters and who argued that his genius was strategic, not operational -- Douglas MacArthur. From the American perspective -- Australians do not remember their extended jungle mop-ups with much affection -- MacArthur orchestrated air superiority and interdiction operations with amphibious landings and limited land campaigns with exemplary skill, if not modesty. Even when he faced significant Japanese forces on Leyte and

Luzon, MacArthur still managed operations with such expertise that his forces inflicted the most favorable ratio of enemy casualties to friendly losses in the entire war. MacArthur's success came not from some divine personal gift, but his willingness to follow the advice of Lt. Gen. George C. Kenney, his combined and joint air commander. MacArthur's operations developed standard characteristics that held until the invasion of Leyte in October, 1944. His landbased air forces seized air superiority over the projected area of ground operations, which seldom exceeded the range of allied fighter-bombers; tactical air forces interdicted the objective area and intercepted Japanese air and sea reinforcements; allied amphibious operations proceeded without serious Japanese opposition except on the ground, where Allied ground forces ultimately prevailed. Air and naval forces ensured that bypassed Japanese bases received no succor, and MacArthur could claim that more Japanese drowned or starved in his theater than they did in the central Pacific. MacArthur, of course, enjoyed some advantages he did not always publicize. The large islands of Melanesia provided him with his alternative objectives since the anchorages and bases the Japanese could use -- and that he could use -- were more numerous than they were in the central Pacific. At the same time the Japanese had to contest the area since MacArthur's axis of advance menaced the oil-rich Dutch East Indies and the sea routes to Southeast Asia. In addition, after its fleet and air losses in the Solomons, the Japanese Navy did not challenge the 7th Fleet, MacArthur's special purpose amphibious naval force. In sum, MacArthur's optimal use of his available forces (never enough, he said) proved that relative force-deprivation might inspire skilled force integration.²¹

At the service level the Army Ground Forces and Army Air Forces experienced other problems of force integration. Although artillery-infantry and artillery-armor coordination received generally high marks from friend and foe alike, tank and infantry cooperation in infantry divisions showed chronic defects in the European theater of operations. Part of the difficulty was organizational, for infantry divisions had neither organic tank nor tank destroyer battalions and the process of "pooling" and then "attaching" tank battalions never satisfied the standards of operational and communications compatibility such operations required. Armored force officers also felt a general distaste for working with infantry, which they regarded as undependable and expendable. They insisted that shock action and mobility -- the "cavalry heritage" -- was their true metier, not the role of rolling pillbox. Interestingly, tank-infantry cooperation in the Pacific theater by both soldiers and Marines reached high standards of performance, probably because of the limited opportunities offered by the jungles of New Georgia and the sands of Iwo Jima for armored drives. (The only such operation was the 1st Cavalry Division's race for Manila.) On the other hand, Army armored divisions -- especially after the 1st Armored Division's fatal "charges" in Tunisia -- did appreciate the importance of combined arms operations as long as the infantry and artillery were mechanized, called "armored," and included in the armored division's organic structure.²²

The air war against Germany provided other force integration issues at the intraservice level. The Combined Bomber Offensive provided the most dramatic example, 8th Air Force's eventual adoption of P-47 and P-51 fighter-bombers as long-range bomber escorts. Stunned by its losses in October 1943, during deep penetration raids into Germany, 8th Air Force

limited its subsequent raids until it could provide adequate fighter-escorts for its bomber force. In a technical sense, belly-tanks extended the fighters range, but an institutional crises provided the energy for doctrinal adaptation, for bomber aircrews had reached a level of attrition and demoralization that endangered the USAAF's thirst for victory and independence. Under the whip of none other than Gen. H. H. Arnold, commander of the USAAF, the fighter-escort problem for the first time received highest priority in research and development, allocation of pilots and aircraft, materiel attention, and doctrinal approval. The change of emphasis returned dividends in March, 1944, when USAAF fighters drove the Luftwaffe over the edge toward destruction in air-to-air combat while 8th Bomber Command's change in target priorities to the petrochemical industry ensured in part that Luftwaffe pilots could not receive enough solo-time in training to match their American counterparts. Yet, the escort-fighter episode was basically an internal USAAF problem, solved through the collaboration of senior officers who had matured together in the Army Air Corps. After the debacle of Pearl Harbor, one can honestly wonder if the fundamentally untested collaboration of the USAAF and the Army's anti-aircraft corps, an AGF organization, would have proved as successful. The German V-1 attacks on Allied ports in Europe and England suggest that they might have, but Anglo-American air defense remained principally a British operational responsibility.²³

The American naval services had their greatest success in force integration in the naval campaign against Japan, but they too, produced an uneven record. At the operational level, the submarine war against the Japanese merchant fleet required the least integration, and the Pacific submarine force carried on its commerce raiding without ignoring its skirmishing and scouting role in fleet engagements. The submarine

force, however, did not fully exploit its assets for offensive mine warfare in restricted Japanese waters, one of its most effective but marginal efforts. In the campaign against the Japanese Combined Fleet, the U. S. Navy depended primarily upon its carrier-based aviation for offensive striking power and upon aircraft and anti-aircraft escort ships for fleet defense. Until the kamikaze attacks of 1944-1945, fleet defense showed a high degree of force effectiveness, superior in many ways to the Navy's offensive operations. If anything, the 3d and 5th Fleets became too airplane-dependent. With the exception of night engagements in the Solomons (largely tactical defeats) and in the Battle of Leyte Gulf (a major success), the fleet did not exploit the potential power of its surface warships, particularly its fast battleships and heavy cruisers. Instead, it preferred to keep all its vessels concentrated in carrier groups for defensive purposes and to engage the Japanese with dive-bomber and torpedo-plane attacks. Offensive operations thus depended largely upon the fighting power of carrier air groups, aircraft ranges, weather conditions, and daylight. The U.S. Navy enjoyed a special advantage: after the close-run naval campaign in the Solomons and before the introduction of the kamikaze, it fought a mirror-image enemy who could not eventually match it in trained manpower and operational warships.²⁴

For the Marine Corps the war with Japan brought twenty years of planning, training, and doctrinal development to fruition. Even though the Pacific war was the only war it fought--a distinct advantage over the other services--the Fleet Marine Force, which eventually fielded two amphibious corps of six divisions and an aviation force of four aircraft wings, had its own force integration problems. Although its aviation component was supposed to be optimized for the assault phase of

amphibious operations, the FMF had to depend upon fleet aviation because Marine squadrons were not equipped and trained for carrier operations -- and the Navy would not create special purpose close air support carriers until the war's closing stages. Part of the difficulty, which also affected the ground FMF, stemmed from the fact that doctrine for a naval campaign assigned Marines the role of base defense. Well into 1944 the FMF provided aviation groups, ground defense forces, and anti-aircraft battalions to advanced naval bases in the Pacific, bases that faced a rapidly diminishing threat from the Japanese. The special demands of the amphibious assault, however, forced the FMF to specialize in integrating the fire and maneuver of ground combat divisions, naval gunfire, and close air support. The FMF carried its doctrine and techniques into extended ground combat, supporting not only Marine divisions, but also Army divisions in the Philippines and in the battle for Okinawa with close air support. The Navy and Marine Corps also made naval gunfire support a potent weapon -- within the range and ballistic/ordnance characteristics of ships guns. The critical problem for both close air support and naval gunfire was communication and training -- and service conviction that both provided essential fire support.²⁵

Combined and joint force integration demanded a high degree of organizational mobility and flexibility. The American armed forces in World War II performed with greater physical mobility than they did intellectual flexibility, but they did show substantial adaptiveness throughout the war. Physical mobility, thanks to the full industrial exploitation of the marine steam and internal combustion engines, became especially impressive at the global and theater levels. Physical mobility, especially the exploitation of sea avenues-of-approach, created an operational tempo that became the equivalent of surprise at the

theater level. (The massing of forces and obvious planning factors like aircraft ranges and topography made strategic surprise difficult.) The development of a global radio and radio-telegraphic system made it possible for the JCS and theater commanders to control their forces at great distance on a daily basis, especially during the planning phase of an operation. Theater and theater service component staffs showed great skill in the managerial sense in moving forces into contact with the enemy. American force deployment reached a level of excellence that, compared with the work of its allies and enemies, rivaled the advantages the Napoleonic armies held over their opponents a century and a half earlier.

Force employment at the operational or doctrinal level proved less impressive for a variety of reasons. One barrier to doctrinal adaptiveness stemmed from the phenomenon of mobilization and the early diversion of forces to the South Pacific and Mediterranean campaigns. Military commanders often believed that the operational trials they experienced came from the relative weakness of their forces; more units would make questionable doctrine work. Although the USAAF strategic bombing forces in Europe provide the most striking example of a doctrinal faith sustained by the "too few forces" rationale, the 8th Air Force did not monopolize this American trait. Surface warship admirals and airborne generals, for example, found force structure explanations for their operational problems in the war's early stages. Another barrier to adaptation was the military's fears that theater-specific forces (e.g., divisions trained and organized for desert, jungle, and mountain warfare) and elite units formed for narrowly specialized functions (amphibious assaults and major raids) would prove less effective than "standard" formations. In practice, the Marine Corps and Army created special

purpose units -- in part to satisfy FDR and the British, in part to meet pressing operational requirements -- but field commanders normally erred in the opposite direction. Marine raider battalions and Army airborne divisions and regiments spent too much time in combat for their manning and equipping levels to sustain. Another common failing, based upon logistical prudence and a penchant for centralized planning, was the armed forces' inability to exploit operational success in a timely fashion. The number of major decisions to exploit success are few enough to be memorable: the opening stages of the South Pacific campaign, Nimitz's decision to strike directly at Eniwetok, MacArthur's cancellation of the Mindanao landing, Bradley's decision to exploit the Remagen bridgehead. There are equally notable examples of great caution: Spruance's conduct of the Battle of the Philippine Sea, Bradley's reluctance to turn east from Brittany, the conduct of the Anzio operation, and the failure to trap German forces on Sicily. Operational opportunism did not characterize the American war effort, especially in Europe where Allied coordination also complicated operations.

Operational caution reflected senior commanders' awareness that the expanding force structure of 1943-1944 would reduce future risk, even in areas where doctrine had already proved sound. In some areas, the armed forces properly decided that high-risk operations (e.g., night amphibious landings and airborne assaults) did not bring proportional results and exacerbated the normal tensions of joint operations. Another inhibition in the 1944-1945 campaigns, particularly in northern Europe, was that the state of training of replacements and newly-arrived divisions reduced the likelihood of mounting offensive operations that required a high degree of operational initiative. Both in the Pacific and Europe the ground

force casualties of 1944 also induced caution and persuaded commanders to rely on indirect fire support even where it could not be of much help, (e.g., Iwo Jima) or to avoid schemes of maneuver that complicated fire support planning (e.g., the 10th Army's failure to turn Japanese defenses in southern Okinawa with an amphibious assault). Operational planning in the war's late stages became inflicted with eleventh-hour proposals to take places like Berlin and Korea that might play a role in postwar relations with the Russians. The difficulty for American commanders was that presidential direction faltered in 1945 as FDR failed and Harry S. Truman recovered from the shock of his succession. Civilian turnover in the Departments of State, War, and Navy contributed to the vacuum, and the military quite properly avoided operations that might bring politically unapproved changes in strategy.²⁶

The American armed forces recognized that their operational options in the war's early stages would be limited by the relative obsolescence of their deployed weapons, but they believed that the weapons they had in prototype or in the earliest stages of distribution would eventually give them a technological edge over their enemies. Certainly they expected to have the arms and equipment to wage war against any enemy in any operational environment. In fact, most of the weapons with which the United States fought World War II already existed in developmental form or had entered production before Pearl Harbor, including the B-29 and the atomic bomb. If anything, the armed forces probably had an overoptimistic view of the nation's ability to develop superior military technology. In some areas, the armed forces were already competitive on a global basis because of their prior military production in peacetime; the Navy, for example, believed its warship design and construction matched the British and Japanese. In some cases, peacetime civilian

applications assisted development; trucks and multi-engine aircraft fit this category. Wartime access to British technology proved valuable, although the Army, for example, probably did not fully exploit British combat engineering technology. By the end of the war all the services had deployed an awesome range of weapons and equipment: heavy bombers, fighter-attack aircraft, air transports, surface warships, aircraftcarriers, amphibious assault ships and craft, small arms, motor vehicles, field and anti-aircraft artillery, bridging equipment, ordnance, radar, and electronic warfare instruments. The demands of force expansion inhibited the willy-nilly adoption of equipment that pushed state-of-the-art technology, and the armed forces did not depend on "super weapons" as the Germans did. Powerful new coalitions of civilian and military technical experts in the service departments and industry ensured that the armed forces remained on the cutting edge of technological innovation.²⁷

The operational characteristics of American weapons, however, did not show uniform superiority for offensive operations. Some shortcomings came from the assumption that American factories could outproduce the Axis -- even without strategic bombing. Another factor was haste, to accept some technological disadvantages in favor of quick, mass production and to put equipment in the hands of inexperienced troops that they could use and maintain. On a global scale, this approach worked. In one area -- armored and anti-armored combat operations -- it did not for reasons that still defy simple explanation. The Army began and ended the war behind the Germans in the development of tanks, other armored fighting vehicles, and anti-armor weapons. Certainly the Germans profited from their own operational experience in 1940-1943 and moved to heavier guns and armor sooner than the western Allies, but the structure

of the Army Ground Forces and the doctrinal preferences of the AGF commander, General McNair, probably inhibited armor and anti-armor development because armored force officers did not have the voice they deserved in the War Department. In the field the Army fought with the M-4 "Sherman" and the M-10 "Wolverine" tank destroyer, neither of which matched the 1944-1945 family of panzers and jagdpanzers the Germans employed. The Army's 90mm anti-aircraft gun, which might have equalled the German 88mm gun as a tank killer, did not appear at the front; Army towed anti-tank guns proved too light for German armor while German PAK guns opened Allied tanks like tin cans; and American infantry preferred the panzerfaust to their own 2.36-inch bazooka. Before the appearance of the M-26 "Pershing" and its 90mm gun in 1945, the only Allied adaptation of significance (made first by the British) was to regun the "Sherman" with a high-velocity 17-pounder gun rather than the standard 75mm or 76mm short gun. Such equipment deficiencies probably reinforced the Army's operational caution in northern Europe, the one theater where the Army really wanted to conduct offensive operations.²⁸

Another technological limitation that influenced mobile operations by ground forces was the design of radio equipment. To coordinate the maneuver of mobile units with effective fire support required time-urgent and secure radio communications since wire-laying parties (and alternative means like messengers) seldom could keep pace with armored units. In the days of the vacuum tube and the weak chemical battery, ground units had difficulty reporting their status and position, especially when they also faced a considerable German skill in jamming and electronic target-acquisition. (A radio transmission that exceeds thirty seconds invites a deluge of artillery fire on any CP within range.) Complicated by the limitations of VHF frequency range and

line-of-sight transmissions, operational communications did not allow easy inter-unit coordination. The alternative means, which dated from World War I, focused on pre-arranged plans that inhibited flexibility: time schedules, boundaries, and phase-lines. Some commanders used their communications problems to advantage and seized the operational initiative while pleading ignorance of their superiors' orders. In the U. S. Army such rare generals and colonels did so at their own risk.

The American armed forces often compensated for their operational flaws with logistical abundance. They proved especially adept at building fixed depots and dumps or finding appropriate substitutes like the Navy's service squadrons -- or "fleet train" -- that could either work at an anchorage or conduct underway replenishment. USAAF and naval aviation units employed base support groups and engineer units with great effect, and Navy aviation technicians could perform a full range of maintenance tasks in their hanger-deck shops. With the passing of the threat of enemy interdiction in 1943 the armed forces felt reasonably certain that theater and inter-theater shipping would put equipment and supplies close to the site of active operations. Where airfields or drop-zones could be fashioned, aerial resupply operations, usually to meet some emergency call for ammunition, gave commanders additional flexibility. The most formidable support problems occurred in ground operations where battle damage and terrain created barriers to railroad and truck systems, so essential to major operations. Often supply distribution became a matter of scale, not difficulty. For example, amphibious operations in every theater suffered from the scarcity of equipment adequate to move supplies across the beaches to inland dumps; too many men worked along the surf, scattering supplies, slowing vehicles, and offering attractive artillery and air targets. Jungles,

deep sand, heavy surf, and cliffs only compounded the problems. Aware of the difficulties of beach unloading, military planners looked for easy access to ports, which, of course, limited operational planning. The abundance of American supplies, however, heartened American troops and demoralized the enemy.

The logistical effort, nevertheless, placed great strain on personnel planners and service force organizers, who never quite caught up with theater demands for more people and bases. The failure to open a major port, e.g., Antwerp in 1944, could place inordinate demands upon service organizations, exacerbated by the fact the operational commanders seldom fully appreciated logistical problems. For example, the Army's dependence upon truck-borne supplies in France carried with it a complementary demand to create pipelines since the truck fleet rapidly exhausted the very gas it was supposed to be carrying to stalled armored divisions. Trucks that carried only gas, of course, could not carry ammunition and spare parts, and, indeed, the U. S. 1st Army went through several shell shortages. In addition, the elaborate system of dumps and maintenance shops tended to shift the logistical momentum toward the rear echelons who had the most motor transport, not forward to the infantry divisions, who had the fewest trucks. In one area -- casualty evacuation and emergency treatment -- the Army and Navy medical services performed excellent work, but frontline units still bore the major responsibility of getting their wounded back to the jeep-ambulances. By World War I standards, however, American wounded had a higher chance of survival, a humane policy that enhanced morale and also improved effectiveness since many of the wounded could be treated and returned to duty. The medical services also turned a corner in their battle against disease: for the first time the armed forces lost fewer dead (113,842) to disease and

accidents than to the enemy (291,557). Medical services, of course, required an elaborate logistical organization.²⁹

Although the American operational commanders required different sorts of intelligence for different missions, all of them had some requirement for information about enemy intentions and capabilities, about terrain and hydrography, and about the weather and light conditions. They also needed to know what their parallel and superior commanders were planning, a process sometimes more demanding than forecasting the weather or estimating a sea state. The scarcity of information, like the scarcity of supplies, seemed to grow with proximity to the enemy. The higher the headquarters, the greater the perceived need for information and access to the instruments of collection: human agents, radio intercept and analysis units, aerial photography squadrons, meteorological and topographical agencies, skilled interrogators and document analysts, and cryptographic specialists. Intelligence analysis tended to flow laterally at higher headquarters rather than down to corps and divisions, bomber wings, and naval task groups. Part of the constricted flow of information stemmed from security concerns, some from the technical limitations inherent in distributing information in the pre-computer and micro-circuit era. Part of the problem was institutional. Neither the Army nor Navy had given much emphasis to intelligence activities before the war, and intelligence experts (especially communications intelligence and foreign-language specialists) were few in number and more eager for line commands than staff duties. The true professionals tended to collect at the theater level, which helps explain a recurring phenomenon: the enemy seldom surprised theater commanders (especially those blessed with "Ultra" and "Magic" intercepts), but they shocked the operational units they first attacked. After Pearl Harbor, Clark Field,

Savo Island, and Kasserine Pass, it is understandable why operational commanders favored cautious courses-of-action.³⁰

For the most part, American theater commanders, strategic bombing commanders, and major army, air force, and fleet commanders used their forces for the operations for which they were designed and consistent with the strategies adopted by the JCS. Of course, American strategies reflected the operations the JCS -- as a committee of service chiefs -- thought their forces should and could perform. There were adaptations, some more inspired than others. For example, Pacific submarine commanders preferred commerce-raiding to attacking Japanese warships, their doctrinal targets. So did Admiral Nimitz, a submariner who appreciated the danger and difficulty of submerged attacks. A less successful operational concept was the use of heavy bombers against Japanese invasion fleets. Although it had lobbied for the role and sincerely believed in its efficacy, the USAAF abandoned the role in 1942 after a series of futile missions, but the Navy insisted that it send bombers to the Pacific for this function into 1943. When the United States shifted to offensive operations, ground and naval commanders argued that heavy bombers should be used for interdiction and close air support missions for which they were slightly more suitable. Bomber commanders in Europe objected strenuously against such diversions. In the Pacific the arguments were less heated because the bombers could not reach Japan until 1944 and by then, tactical aviation commanders preferred air superiority and interdiction missions to close air support, even in the Fleet Marine Force. Another force-mission mismatch occurred in the European theater where army and army group commanders committed special operational forces (e.g., airborne divisions, ranger battalions, the one mountain division) to extended and conventional ground combat;

the same phenomenon occurred in the CBI where one long-range penetration regimental combat team ("Merrill's Marauders") collapsed after its exhaustion in conventional offensive operations.

By and large, however, the United States armed forces used operational concepts that matched their strategy, in part because military operational doctrine ("the principles of war") tended to define strategic concepts as much or more than political guidance. In broad terms American operations against Japan matched strategic preferences better than operations against Germany. Although it is easier to wax rhapsodic about the fighting qualities of the German army than to question Army and USAAF force structure and operational practice or to argue that the British lead the Americans astray, the fact remains that the Army's senior commanders allowed the USAAF's strategic bombing offensive to starve both tactical aviation and the ground forces of quality personnel and equipment. (For example, probably three-quarters of the USAAF's combat deaths worldwide occurred in the 8th and 15th Air Forces.) The fighting quality of American ground combat divisions in the ETO with a few notable exceptions did not match the Germans. The critical factor was the limited number of divisions. Allowed too little time to absorb replacements and to train between major offensive commitments--an advantage both Army and Marine divisions enjoyed in the Pacific--the divisions of the ETO suffered more pain than they inflicted until 1945. The valor of American soldiers is not in question. What can be questioned is the skill of the officers who organized, equipped, trained, and led them in battle.

American operational doctrine and practice sought to exploit enemy weakness, largely by maintaining a high operational tempo and destroying high-value enemy units (especially naval and air forces) with such

rapidity and thoroughness that Axis military capability would disintegrate. The demoralization and subversion of Axis political leadership (Italy excepted) and the moral collapse of enemy units and civilians did not characterize American operational aims. Given the military prowess and dedication of the German and Japanese forces, any alternative to battlefield destruction appeared unlikely to all senior military commanders except the leaders of the USAAF. For most planners -- even some officers in the USAAF - the attack upon the Axis industrial base and domestic economy appeared complementary to the war between the rival armed forces. Basically, the United States knew that Germany and Japan faced irretrievable shortcomings in manpower and modern materiel and would lose a war of attrition. Although American ground force performance might have been better, air and naval operations, except the Combined Bomber Offensive, worked as they were designed after the predictable defeats and frustrations of 1942. To be sure, the tension between Hitler and his generals and the operational arrogance of the Japanese sometimes played into American hands, but in the long run the United States had no easy alternative to taking the war to the enemy and ending the Axis coalition through battlefield victory, whatever its cost.

IV. Tactical Effectiveness

Although American tactical performance in land, air, and sea combat produced mixed results, the doctrinal emphasis upon attacking enemy forces (i.e., holding the initiative in time and place and the advantage of superior forces at the point at which an engagement begins) coincided with the offensive orientation of American strategic and operational concepts. Fighting on the defensive usually indicated a temporary disadvantage in combat power or an effort to conserve forces for attacks in other locations. Operational doctrine viewed defensive battles as transitional periods between attacks, not as a more effective way of destroying enemy mobile units. All the services planned to take the fight to the enemy. In theory, they believed that they had impressive advantages: intelligent and well-trained officers and men who would show initiative and valor in battle; superior weapons; logistical support that would ensure that American units would never suffer material disadvantages; effective command through electronic communications and information processing (e.g., radar); and the massed application of shocking firepower. Like the Axis forces they faced, the American armed forces believed that the operational initiative demanded an emphasis on the attack at the tactical level.

Theoretical coherence and logical consistency do not always provide happy results in the real world of military operations, for the character of the enemy's forces and the limitations of one's own units may confound doctrine. In World War II the United States military

services found their tactical doctrine defective in several ways. Some of the defects could be remedied during the war. Others could not. The easiest problems to solve were doctrinal and technological; the least tractable were defects in personnel assignment policy and force structure. Although the rapidity and scope of the American mobilization in 1942-1944 could excuse some of the tactical defects, not all of the problems can be tied directly to the relationship between the dramatic increase in the armed forces' size and technical complexity. Instead they emerged from the actual test of battle and revealed a need for rapid adaptation that the armed forces could not easily perform within a strategic context that stressed a rising crescendo of offensive operations. The pace of combat against both Germany and Japan in 1944 meant that casualties among American ground combat divisions made tactical improvement a difficult task; for air and naval forces the challenge was less dramatic, but nevertheless real, especially after the Japanese introduced kamikaze operations in the western Pacific. Ironically, the American armed forces showed the most skill in defensive tactics and least skill in offensive tactics, the sine qua non for offensive operations.

The American armed forces all recognized in theory that successful attacks required the combining of arms, but they were more successful in integrating arms readily available within their own services than in coordinating the use of weapons employed by sister services or, in some cases, weapons used by different arms of the same service. The arms integration problem was most acute in ground combat in every theater. Tactics for Army and Marine infantry regiments stressed that direct and indirect fire crew-served weapons (machineguns and mortars) should provide the fire superiority required for successful assaults by rifle

companies. The most persistent problem in infantry tactics was ensuring that riflemen used their weapons; Army studies indicated that only a minority of infantrymen actually did any shooting in a firefight. Combat leaders -- junior officers and NCOs -- carried an inordinate burden in battle as they attempted to mass fire on targets, encourage and control their men, and fire their own weapons. Their exposure to battle produced crippling casualties among the leaders of infantry battalions, whether those battalions fought in the Hurtgen Forest or among the caves of Iwo Jima. Over the course of the war American infantry units employed larger numbers of automatic weapons in order to increase their firepower. Nevertheless, they still required substantial assistance from supporting weapons.³¹

Artillery fire gave American infantry units the edge over their opponents, and, if anything, they became too artillery-dependent. The key development in artillery use was the employment of the frontline ground forward observer and the airborne artillery spotter, both of whom used reasonably reliable radios to contact artillery fire direction centers. By the end of the war, infantry-artillery integration had reached highly efficient levels. To ensure maximum integration, infantry battalions formed fire support coordination centers (FSCC) that worked in concert with the battalion operations officer. The artillery representative tended to dominate FSCC operations, but, depending upon the attached units, the FSCC might include tank, anti-tank, naval gunfire, and air representatives. The difficulty with artillery was that it sometimes could not overcome its limitations in range, trajectory, and ordnance effects. For example, enemy field fortifications often defied indirect fire weapons and had to be assaulted with tanks, self-propelled artillery, anti-tank guns, bazookas, flamethrowers, satchel-charges, and

hand and rifle grenades. All of these weapons required that infantry close with the objective. Not all infantry units had the requisite skill or ardor to do so, at least not until more artillery had been called. In triple-canopy jungle rainforests, steep hills pocked with caves and bunkers, and masonry villages, artillery fire often had little effect, which the Germans and Japanese fully appreciated. Attacks on fortified positions often cost American infantry dearly because such attacks required precisely timed fire and maneuver. Tank-infantry cooperation, for example, became a premium skill in such attacks, and often the units had not trained together for such attacks. Another persistent problem in fire support coordination stemmed from the fact that American forces in 1943-1945 were most often in the attack, which increased the likelihood that friendly artillery concentrations and air strikes would strike advancing infantry and armor. "Amicide," which may have caused as many as two percent of all American casualties in World War II, was twice as likely to occur during offensive operations, and the attendant demoralization of such incidents often halted attacks and dampened the willingness of frontline troops to request fire support.³²

Close air support for ground operations improved during the war, but still proved less successful than ground officers hoped. The examples of accurate, timely close air support for ground attacks were few enough to be memorable: the support by XIX Tactical Air Command for the U.S. 3d Army in 1944; the attacks by Marine air on Peleliu; the Marines' support for the U.S. 6th and 8th Armies in the Philippines. Part of the problem was that the air components of every service ranked close air support behind air superiority and interdiction operations when they organized and trained their fighter-bomber and dive bomber squadrons. Air-ground communications posed additional problems,

especially in identifying targets and friendly troops' positions. In an institutional sense the only service that paid persistent attention to improving communications and deploying trained forward air controllers was the Marine Corps, primarily because Marine leaders appreciated the limitations of naval gunfire in the amphibious assault. Army air-ground operations depended primarily upon the effectiveness of airborne controllers provided by the USAAF. By and large, Navy and USAAF air commanders ensured that their central agencies for directing air operations did not relinquish any operational control of aviation units to ground commanders, which in practice meant that close air support attacks could not be requested with the same surety as artillery bombardments.³³

The other major variant of ground combat -- armored warfare at the tactical level -- had its limitations in the attack because of the technical inferiority in 1944-1945 of American tanks and tank destroyers. Mission confusion and a development process plagued by false starts doomed Army armored units to battle the Germans with inferior armor and ordnance.³⁴ Since the M-4 "Sherman" and M-10 "Wolverine" did not have gyro-stabilized guns and relied upon direct optical ranging, firing while moving produced few compensatory dividends. Moving by bounds and covered by artillery, American tanks still proved vulnerable to German tank and anti-tank fire. Crews often abandoned their vehicles after the first hit since thin American armor and gas ammunition storage problems meant that few hits would really be trivial. Even German infantry, who were armed with the panzerfaust and supported by the PAK-family AT guns as well as the ubiquitous 88mm high velocity gun, could blunt an American armored attack. Japanese armored vehicles gave American tanks and AT guns few problems, and the Japanese soon resorted

to human demolitions teams to stop American vehicles. The Germans, on the other hand, preferred the use of landmines and AT-barriers, which caused American infantry and combat engineers severe problems. As in infantry combat, armored attacks succeeded best when numerical superiority was assured and accurate artillery fire could be delivered in massive volumes. These requirements virtually eliminated night attacks and made improvised exploitation or infiltration attacks impossible except for the most skilled troops.

American ground troops, on the other hand, proved tenacious in defensive operations, even when outnumbered and outgunned by their foes. Except for the Battle of Kasserine Pass, American combat units proved that they could stop and delay enemy attacks with skilled defensive battles, using both artillery and every direct fire weapon they could employ. The number of examples of desperate and successful stands are legion. Against the Germans they include the defense of the beaches of Sicily, Salerno, and Anzio and the defeat of the Mortain and Ardennes counterattacks. In the Pacific war they range from the defense of Bataan to the stands on Guadalcanal, Saipan, Guam and Okinawa against banzai charges. When the Germans and Japanese relied primarily upon the positional defense -- as they did at Cassino, Iwo Jima, and along the Siegfried Line -- they, too, inflicted heavy losses, which suggests that for all the physical mobility the gas engine gave World War II armies positional defense still remained the strongest tactical option.

In aerial combat USAAP, Navy, and Marine Corps pilots proved very adept in the tactical sense as soon as they received aircraft that could compare with the best fighters flown by the Japanese and Germans. Using loose formations based on flights of four and lead-wingman pairs, American pilots showed their prowess as early as the Solomons and

Mediterranean campaigns. In the European theater the USAAF reached technical parity with the Luftwaffe in fighter types in 1944 with the modification of both the P-47 "Thunderbolt" and the P-51 "Mustang" for air superiority operations. Adopting fighter tactics appropriate to their aircraft, USAAF pilots shot down their German foes at a ratio of 3:1 in air-to-air combat. Auxiliary tanks extended the fighters' range, and increased numbers of fighters allowed the Americans to range far from the bomber formations they escorted, their principle mission in the air campaign. Able to engage the Luftwaffe at altitudes and positions favorable to surprise attacks (most pilots never saw the enemy that shot them down), USAAF fighter squadrons acquired a broad competence in dogfighting and aerial gunnery that confounded even German jet-fighters late in the war--and did so with loss rates that USAAF training commands could easily overcome. In the Pacific war the U.S. Navy's fighter squadrons received a superior aircraft, the Grumman F6F "Hellcat," in mid 1943. The "Hellcat" proved nearly invincible in aerial combat and easy to maintain. The "Hellcat" helped modify a reality of air combat: while many can fly, only some can fly and shoot. (The Navy's thirty-six leading aces destroyed 448 Japanese aircraft, losing only one of their number KIA.) The "Hellcat" allowed Navy pilots to survive ninety percent of an estimated 5,000 dogfights in 1943-1945, insuring that the experience level (and effectiveness) of carrier pilots would climb as the war continued.

The most significant problems in aerial combat arose from the imprecision of optical bombing and the limited ability of heavy and medium bombers to defend themselves from fighters and to avoid ack-ack at lower altitudes while bombing moving or small area targets. Even at the end of the war, the B-29s of XXI Bomber Command - escorted by fighters

-- took worrisome losses until they switched to nighttime fireraids against Japan. Against ships, level-flight bombing proved too inaccurate, and dive and skip bombing -- not exactly the forte of the B-17 and B-24 -- became the preferred technique for hitting moving targets. Low-level torpedo attacks by carrier air did not work especially well either, even after the Navy replaced the vulnerable TBD with the more capable TBF. USAAP medium bombers and USN-USMC fighter-bombers and dive bombers, on the other hand, scourged merchant shipping and could penetrate naval ack-ack to sink warships if they were spared the need to fight enemy interceptors. In fleet and base defense, American fighters showed consistent superiority after the services organized ground and shipboard radar-based fighter direction centers that could vector the interceptors with speed and accuracy.³⁵

American naval tactics varied with the missions naval forces performed. In fleet action the Navy became airplane-dependent with surface combatants and submarines used in a supplementary role. After its embarrassments in 1942-1943 in the South Pacific the Navy showed considerable caution in engaging the Japanese except during daylight when carrier air reigned supreme. As elements of the 7th Fleet proved at the Battle of the Surigao Strait (October 1944), radar-directed gunnery gave the Navy a potent alternative to carrier air strikes. The least successful offensive option the Navy attempted was the surface torpedo attack, whether delivered by destroyers or torpedo boats. Even when the guidance and detonation problems of American torpedoes were solved - a difficulty that also plagued submarines and aircraft -- Navy commanders regarded the torpedo attack as a desperate act since the range and guidance problems still endangered the launching ship and boat. In the war against Japanese shipping, the Navy not only enlarged, but diversi-

fied its effort. The most effective tactic was for submarines to make shallow submerged or night surface attacks on merchantmen and tankers. The Navy and USAAF made low-level air attacks on shipping. Both submarines and aircraft laid mines in narrow waters that bedeviled Japanese ships. In the battle against German U-boats, aircraft proved indispensable in locating U-boats and made the majority of U-boat kills by the U.S. Navy. None of these tactical measures enjoyed prewar doctrinal emphasis.³⁶

The American armed forces found it difficult to achieve tactical surprise or to exploit battlefield success for a variety of reasons, and what surprise they achieved came most often in naval and air warfare, not in land battles. Naval and air combat benefited from the use of radar and radio intelligence as well as aerial photography. The Navy tracked and located enemy fleet units with radio intelligence and sometimes achieved tactical surprise with air and submarine attacks that exploited that information. Those attacks came upon Japanese convoys, Japanese warships, and German submarines. The USAAF used the inherent speed and destructiveness of its medium bombers and fighter-bombers, guided by air intelligence staffs' analysis of enemy positions and transportation schedules, to strike enemy military targets and supply systems. Air units also adopted radar-guided bombing systems late in the war and employed metallic "chaff" to deceive enemy radar. The radar-activated proximity fuze ravaged enemy air attacks and ground troops. In land combat the best example of tactical surprise was the artillery time-on-target fire mission, which allowed guns of different calibers at different locations to concentrate their fire on one target with sudden, devastating effect. Infantry and armored attacks, on the other hand, seldom depended upon or sought surprise attacks that might reduce the

effect of preparatory artillery fire and sacrifice American advantages in logistical support. The engineering problems that attended the penetration of German and Japanese prepared positions also inhibited surprise attacks, especially at night. The best example of tactical surprise in land combat came in the U.S. 12th Army Group's eventual skill in river crossings, accompanied by the rapid emplacement of pontoon and Bailey bridges for tanks, mobile artillery, and mechanized infantry.

The tactical effectiveness of the American naval and air forces stemmed from conditions of personnel assignment, training, and employment that enhanced morale and unit and crew cohesion. War and Navy Department personnel policies ensured that aviation and naval forces received a disproportionate share of the intelligent, mature, physically-fit, skilled, and motivated men who entered military service. Aircrews and submarine crews were especially screened and trained for their duties and benefited from special duty pay and enhanced rank and promotion opportunities. All were essentially volunteers. Between 1939-1945 the USAAF qualified almost 200,000 pilots, but washed out forty percent of its candidates, many of whom then served as aircrewmen. Pre-employment training for pilots lasted almost a year, including some twenty weeks of operational training. The training syllabus for naval aviation personnel (about 500,000 officers and men) proved as rigorous. At the height of the war (1944) American pilots had about three times more pre-combat solo time than their German and Japanese counterparts. Officer and enlisted relations in the USAAF and USN were relaxed by international and American pre-war standards, largely because of the shared conditions of service and narrow gaps in skill and age. In addition, the tempo of air and naval operations allowed relief from combat's dangers, if not boredom and discomfort. The only times the USAAF and USN had major morale problems

came in the 1943 strategic bombing campaign, early submarine operations when torpedo failures plagued the Pacific submarine force, and the kamikaze battles off Okinawa. Casualties to an aircrew or ships crews tended to be few or almost complete; the USAAF and USN by and large replaced crews as units rather than individuals. Survivors of a sunk ship, for example, had extensive opportunities for leave and training before returning to sea. The USAAF also had a mission quota that provided the possibility of relief from combat when aircrews reached their theoretical limits of mental confidence and physical fitness. Creature comforts for air and ships crews sometimes approached civilian standards, even in war zones.³⁷

For ground combat units, particularly Army and Marine infantry regiments, tactical effectiveness became mortgaged to the perils of battle and the overcommitment of infantry and armored divisions in the major campaigns of 1944 and early 1945. The Army Ground Forces faced problems of major proportions. Early in the war Headquarters AGF decided that divisions and corps combat support units should conduct their own unit training; by the end of the war central AGF specialist schools had trained only 569,000 of the more than 6 million soldiers that served in the Army. The length of training that preceded assignment to an operational unit was not very long. Basic training averaged twelve weeks, and advanced specialist training averaged about the same except for anti-aircraft artillery specialists. Combat arms officer candidate schools, which rejected twenty-five percent of their students, lasted about seventeen weeks. Replacement Training Centers put soldiers through thirteen weeks training beyond basic before sending their graduates to units. Although combat leaders worried about the survivability of both original unit members and replacements, they generally thought that

pre-combat training was about as good as any training could be; Army infantry officers in 1944 thought that their troops' problems were three times more likely to come from physical and mental exhaustion and anxiety rather than training defects. On the battlefield, Army officers thought that their units performed poorly because of over-confidence and an intrinsic lack of time for fire-support planning and adequate reconnaissance. The real sources of infantry combat effectiveness were more complicated. Although the Army did not realize it until late in the war, the relative mental dulness of ground combat soldiers doomed infantry battalions to consistent problems of initiative and combat motivation. For infantry replacements in the Pacific -- whether Army or Marine -- the problems of high losses in junior officers and NCOs (often eighty percent in a single campaign) could be redressed in post-battle training and reorganization since divisions often had months between amphibious assaults. In the European theater infantry and armored divisions seldom had enough time to integrate replacements and restore unit cohesiveness. The emotional ravages of a sustained combat were magnified in terms of tactical effectiveness because of the difficulty of replacing junior leaders, who played a crucial role in sustaining unit morale and setting high standards for combat participation. American officers and NCOs led at the front and suffered accordingly; attitudinal problems came from combat unit-service unit rivalry, not officer-enlisted or class and ethnic differences. In sum, ground combat divisions still played a crucial role in battle, but did not receive their full share of the human talent in the armed forces. And their tactical effectiveness suffered accordingly.³⁸

Using fixed bases or mobile logistical units, American naval and aviation units did not suffer serious logistical problems, but ground

combat units had difficulties with ammunition and gasoline, especially in northern Europe, because a truck-based distribution system could not keep up with the unit-of-fire and daily allowances prescribed for American divisions. Infantrymen normally carried excessive loads in every theater, principally ordnance and special equipment. Tank, mechanized infantry, and artillery battalions had adequate organic transportation to carry consumables with them and had mobile maintenance units available within their parent divisions and corps. Replacement vehicles were normally plentiful. The distribution of supplies posed the most pressing problems for Army and Marine infantry regiments, which had limited lift. Marine Corps problems were simplified somewhat by the relatively short distances between beachhead logistical support areas and the front, although the movement of supplies from ship to shore could be disrupted by weather and enemy action. In the northern European theater the Army adopted several expedients, including air delivery and special truck routing, but some organizations like the 83rd Infantry Division motorized themselves with vehicles commandeered from friend and foe alike. Casualty evacuation and treatment also posed problems because of the lack of ambulances near the front, but compared with World War I, casualty handling became a model of efficiency. In retrospect, however, combat units lost too many men in evacuating their own dead and wounded.³⁹

Conclusion

The effectiveness of the American armed forces in World War II has been undervalued for several reasons, among them British and German military analysts' apologies for their own nations' military performance. Europeans argue that the United States inundated its friends and foes alike with millions of men and millions of tons of materiel, which it threw with primitive skill into the air and land battles for Europe. The Japanese, who have perhaps the best reason to know, remain impressed by American military performance in every area, including the physical and moral courage of its fighting men. Given the sacrifices and confusions of the American war effort in the pre-belligerency era and first period of mobilization, the performance of the United States armed forces compares favorably in all areas of activity and was clearly superior in many. The United States defeated Japan virtually by itself and became the second most important contributor to the defeat of Nazi Germany. Senior American military commanders and mobilization managers understood the shortcomings of the war effort and admitted their misjudgments and lack of omniscience. On the whole, they demonstrated considerable adaptability. Most of the operational shortcomings were addressed before the war ended. Much like other American wartime forces, the World War II military needed only time, experience, and the human and material resources to forge armed forces of impressive scope and skill.

Notes

1. For Roosevelt, see William R. Emerson, "F. D. R. (1941-1945)" in Ernest R. May, ed., The Ultimate Decision: The President as Commander in Chief (New York, 1960), pp. 135-77, and James MacGregor Burns, Roosevelt: The Soldier of Freedom, 1940-1945 (New York, 1970). The experience of the Chiefs of the Army and Navy may be drawn from Forrest C. Pogue, George C. Marshall: Ordeal and Hope, 1939-1942 (New York, 1965) and George C. Marshall: Organizer of Victory, 1939-1945 (New York, 1973); B. Mitchell Simpson III, "Harold Raynsford Stark," and Robert W. Love, Jr., "Ernest Joseph King," in Robert W. Love, Jr., ed. The Chiefs of Naval Operations (Annapolis, 1980), pp. 119-80, and Thomas B. Buell, Master of Sea Power: A Biography of Fleet Admiral Ernest J. King (Boston, 1980). For a sound review of the American experience, see A. Russell Buchanan, The United States and World War II (2 vols., New York, 1964).
2. Harold U. Faulkner, American Economic History (8th ed., New York, 1960), pp. 696-711.
3. Quoted in Richard Polenberg, War and Society: The United States, 1941-1945 (Philadelphia, 1972), p. 12.
4. Polenberg, War and Society, pp. 5-36. The Navy experience is analyzed in Robert H. Connery, The Navy and the Industrial Mobilization in World War II (Princeton, NJ, 1951) and the Army's in John D. Millett, The Organization and Role of the Army Service

Forces in the United States Army in World War II (Washington, D.C., 1954). The best single source of data and administrative history is Bureau of the Budget, The United States at War (Washington, DC, 1946). See also James L. Abrahamson, The American Home Front (Washington, DC, 1983), pp. 131-69.

5. Bureau of the Budget, The United States at War, pp. 173-202 and 429-460; Byron Fairchild and Jonathan Grossman, The Army and Industrial Manpower in United States Army in World War II (Washington, DC, 1959); Second Report of the Director of Selective Service, 1941-1942, Selective Service in Wartime (Washington, DC, 1943); Third Report of the Director of Selective Service, 1943-1944, Selective Service as the Tide of War Turns (Washington, DC, 1945); Fourth Report of the Director of Selective Service, 1944-1947, Selective Service and Victory, (Washington, DC, 1948); Albert A. Blum, Drafted or Deferred (Ann Arbor, 1967); George Q. Flynn, The Mess in Washington: Manpower Mobilization in World War II (Westport, Conn., 1979); Eli Ginzberg, The Ineffective Soldier (New York, 1959).
6. U. S. Selective Service System, Problems of Selective Service, Special Monograph No. 16, Vol. I (Washington, 1952). Pogue, Marshall, Organizer of Victory, 354-358; Buell, King, pp. 313-19; Office of the Chief of Staff, Biennial Report of the Chief of Staff of the United States Army, July 1, 1943 to June 30, 1945 (Washington, DC, 1945), pp. 101-07; J. A. Furer, Administration of the Navy Department in World War II (Washington, DC, 1959), pp. 269-282, 559-575.

7. Kent Roberts Greenfield, American Strategy in World War II (Baltimore, 1963); Maurice Matloff and Edwin M. Snell, Strategic Planning for Coalition Warfare, 1941-1942 (Washington, DC, 1959); Grace Person Hayes, The History of the Joint Chiefs of Staff in World War II: The War Against Japan (Annapolis, 1982); Kent Roberts Greenfield, ed., Command Decisions (Washington, DC, 1960).
8. Herbert Feis, Churchill, Roosevelt, Stalin: The War They Waged and the Peace They Sought (Princeton, NJ, 1957).
9. Christopher Thorne, Allies of a Kind: The United States, Britain, and the War Against Japan, 1941-1945 (New York, 1978).
10. For a one volume history of the Pacific war, see John Costello, The Pacific War, 1941-1945 (New York, 1982).
11. Kent Roberts Greenfield, Robert R. Palmer, and Bell I. Wiley, The Organization of Ground Combat Troops (Washington, DC, 1947); Marvin A. Kreidberg and Merton G. Henry, History of Military Mobilization in the United States Army, 1775-1945 (Washington, DC, 1955), pp. 541-653.
12. Robert R. Palmer, Bell I. Wiley, and William R. Keast, The Procurement and Training of Ground Combat Troops (Washington, DC, 1948).
13. Biennial Report of the Chief of Staff of the United States Army (July 1, 1943 to June 30, 1945) to the Secretary of War (Washington, DC, 1945), pp. 95-100. See George Forty, U. S. Army Handbook, 1939-1945 (New York, 1979) and W. J. K. Davis, German Army Handbook, 1939-1945 (New York, 1973) for organizational and ordnance comparisons. The most detailed recent appraisal is Martin von Creveld, Fighting Power: German and U. S. Army Performance, 1939-1945 (Westport, CT, 1982).

14. The U. S. Strategic Bombing Survey, Over-all Report (European War), September 30, 1945; Haywood S. Hansell, Jr., The Air Plan That Defeated Hitler (Atlanta, GA, 1972); Robert J. Putrell, Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1967 (Maxwell AFB, AL, 1974), pp. 63-94. For the USAAF experience in World War II, see Wesley Frank Craven and James L. Cates, eds., The Army Air Forces in World War II (7 vols., Chicago, IL, 1948-1958).
15. Ronald Spector, Eagle Against the Sun: The American War With Japan (New York, 1984); Sabaro I. Ienaga, The Pacific War: World War II and the Japanese, 1931-1945 (New York, 1978); S. Woodburn Kirby, The War Against Japan, Vol. V., The Surrender of Japan (London, 1969), pp. 377-435 and Appendices 8-12.
16. HQ Army Service Forces, Statistical Review: World War II (War Department, 1946); The United States at War, pp. 135-72; James A. Huston, The Sinews of War: Army Logistics, 1775-1953, (Washington, DC, 1966), pp. 455-516; Furer, Administration of the Navy Department in World War II, pp. 691-736; Richard M. Leighton and Robert W. Coakley, Global Logistics and Strategy, 1940-1943 (Washington, DC, 1968).
17. Wesley P. Craven and James L. Cates, eds., Europe: Torch to Pointblank August 1942 to December 1945 (Chicago, IL, 1949) and Europe: Argument to VE-Day, January 1944 to May 1945 (Chicago, IL, 1951), Vols. II and III in The Army Air Forces in World War II; Harry L. Coles, Participation of the Ninth and Twelfth Air Forces in the Sicilian Campaign (AAF Historical Study No. 96, 1953); Thomas J. Maycock, The Twelfth Air Force in the North African Campaign, 11 November 1942 to the Reorganization of 10 February

1943 (AAF Historical Study No. 114, 1946); David MacIsaac, Strategic Bombing in World War II (New York, 1976) and comp. and ed., The United States Strategic Bombing Survey (reissue, 10 vols., New York, 1976); Anthony Verrier, The Bomber Offensive (New York, 1968); and R. J. Overy, The Air War, 1939-1945 (London, 1980).

18. Samuel Eliot Morison, History of United States Naval Operations in World War II (15 vols., Boston, 1947-1962); Stephen W. Roskill, The War at Sea, 1939-1945 (4 vols., London, 1954-1961); Jurgen Rohwer, "The U-Boat War Against the Allied Supply Lines," in H. A. Jacobsen and J. Rohwer, eds., Decisive Battles of World War II: The German View (New York, 1965), pp. 259-315; Kenneth J. Clifford, Amphibious Warfare Development in Britain and America, 1920-1940 (Laurens, NY, 1983), Bernard Fergusson, The Watery Maze: The Story of Combined Operations (New York, 1961); Division of Naval Intelligence, USN, Allied Landing Craft of World War Two (Annapolis: Naval Institute Press, 1985). For ASW operations, see Ladislav Farago, The Tenth Fleet (New York, 1962); William T. Y'Blood, Hunter-Killer: U. S. Escort Carriers in the Battle of the Atlantic (Annapolis, 1983); and Alfred Price, Aircraft Versus Submarine (Annapolis, 1973).

19. Charles B. MacDonald, The Mighty Endeavor: American Armed Forces in the European Theater of Operations in World War II (New York, 1969); Stephen E. Ambrose, The Supreme Commander: The War Years of General Dwight D. Eisenhower (Garden City, NY, 1969); Russell F. Weigley, Eisenhower's Lieutenants: The Campaigns of France and Germany, 1944-1945 (Bloomington, IN, 1981); Shelford Bidwell and Dominick Graham, Fire-Power: British Army Weapons and Theories of War, 1904-1945 (London, 1982), pp. 205-281; Nigel Hamilton, Master of the Battlefield: Monty's War Years, 1942-1944 (New York, 1983);

Forrest C. Pogue, European Theater of Operations: The Supreme Command (Washington, DC, 1954).

20. Thomas A. Haycock, "Notes on the Development of AAF Tactical Air Doctrine," Military Affairs 14 (Winter, 1950), pp. 186-91; James A. Huston, "Tactical Use of Air Power in World War II: The Army Experience," Military Affairs 14 (Winter, 1950), pp. 166-85; William A. Jacobs, "Tactical Air Doctrine and AAF Close Air Support in the European Theater, 1944-1945," Aerospace Historian 27 (Spring, 1980), pp. 35-49; Kent Roberts Greenfield, "Army Ground Forces and the Air-Ground Battle Team," 1948, Historical Section, Army Ground Forces, copy in the U. S. Army Center of Military History; Riley Sunderland, "Evolution of Command and Control Doctrine for Close Air Support," Office of Air Force History, HQ USAF, March, 1973; F. M. Sallager, Operations "Strangle" (Italy, Spring, 1944): A Case Study of Tactical Air Interdiction, The Rand Corporation, R-851-PR, 1972; Office of Air Force History, USAF, Condensed Analysis of the Ninth Air Force in the European Theater of Operations (Washington, DC, 1984); James A. Huston, Out of the Blue: "U" Airborne Operations in World War II (West Lafayette
21. D. Clay, n. c. Five Years of MacArthur, 1941-1945 (Boston, 1975); Wesley P. Craven and James L. Cates, eds., The Pacific: Guadalcanal to Saipan, August 1942 to July 1944 (Chicago, IL, 1950), and The Pacific: Matterhorn to Nagasaki, June 1944 to August 1945 (Chicago, IL, 1953); Daniel E. Barbey, MacArthur's Amphibious Navy: Seventh Amphibious Force Operations 1943-1945 (Annapolis, 1969).

22. Greenfield, Palmer, and Wiley, The Organization of Ground Combat Troops, pp. 261-434; John K. Mahon, Infantry, Part I., Regular Army in the Army Lineage Series (Washington, DC, 1972), pp. 58-70; Mary Lee Stubbs and Stanley R. Connor, Cavalry-Armor, Part I, Regular Army and Reserve in the Army Lineage Series (Washington, DC, 1969), pp. 52-74; Weigley, Eisenhower's Lieutenants, pp. 8-28; Russell P. Weigley, History of the U.S. Army (New York, 1967), pp. 461-77; Charles B. MacDonald and Sidney T. Matthews, Arnaville, Altuzzo, and Schmidt: Three Battles in U. S. Army in World War II series (Washington, D.C., 1952); Martin Blumenson, ed. The Patton Papers, vol. II, 1940-1945 (Boston, 1974).
23. William Emerson, "Operation Pointblank: A Tale of Bombers and Fighters," the 4th Harmon Memorial Lecture, U. S. Air Force Academy, 1962; Bernard L. Boylan, "The Development of the American Long-Range Escort Fighter," unpublished Ph.D. dissertation, University of Missouri, 1955; John Ramsey, The War Against the Luftwaffe: AAF Counter-Air Force Operations, April 1943 - June 1944, AAF Historical Study No. 110, 1945.
24. Clark G. Reynolds, The Fast Carriers: The Forging of an Air Navy (New York, 1968); James H. and William M. Belote, Titans of the Seas: The Development and Operations of Japanese and American Carrier Task Forces During World War II (New York, 1975); Malcolm Muir, Jr., "The Capital Ship Program in the United States Navy, 1934-1945," unpublished Ph.D. dissertation, Ohio State University, 1976; Clay Blair, Jr., Silent Victory: The U. S. Submarine War Against Japan (Philadelphia, 1975); Gregory K. Hartman, Weapons That Wait: Mine Warfare in the U. S. Navy (Annapolis, MD, 1979); Barrett Tillman, Hellcat: The F6F in World War II (Annapolis, MD,

1979).

25. Henry I. Shaw, et. al., History of U. S. Marine Operations in World War II (5 vols., Washington, DC, 1958-1971); Jeter A. Isley and Philip A. Crowl, The U. S. Marines and Amphibious War (Princeton, NJ, 1951); Robert Sherrod, History of Marine Corps Aviation in World War II (Washington, DC, 1952); Historical Section, HQMC, "Marine Corps Administrative History," 1946, and Twining Board, Report: "An Evaluation of Air Operations Affecting the U. S. Marine Corps in World War II," both mss. histories, Marine Corps Historical Center, Washington, DC.
26. Robert R. Smith, "Luzon versus Formosa" and Forrest C. Pogue, "The Decision to Halt at the Elbe," in Kent Roberts Greenfield, ed., Command Decisions, pp. 461-92; Stephen E. Ambrose, Eisenhower and Berlin, 1945 (New York, 1967); Pogue, Marshall Organizer of Victory, pp. 391-585; and Buell, King, pp. 448-98. For sound descriptions of major campaigns, see Hanson W. Baldwin, Battles Lost and Won (New York, 1966).
27. For an overview of World War II weaponry, see Bernard and Fawn H. Brodie, From Crossbow to H-Bomb (rev. ed., Bloomington, IN, 1973), Chapter 8. The Navy's technological efforts are described in the bureau histories in Purer, Administration of the Navy Department in World War II as well as such special studies as Naval Historical Division, History of Naval Weapons Center, China Lake, 2 vols. to date (Washington, DC, 1971-); Taylor Peck, Round-Shot to rockets: The Story of Washington Navy Yard and Naval Gun Factory (Annapolis, MD, 1949); Albert H. Taylor, The First Twenty-Five Years of the Naval Research Laboratory (Washington, DC, 1948); Linwood S. Howeth, History of Communications-Electronics in the

United States Navy (Washington, D.C., 1963); Buford Rowland and William B. Boyd, U. S. Navy Bureau of Ordnance in World War II (Washington, DC, 1954); Ralph B. Baldwin, The Deadly Fuze (San Raphael, CA, 1980).

The basic source for USAAP research and development is Wesley F. Craven and James L. Cates, eds., Men and Planes, Vol. VII of The Army Air Forces in World War II (Chicago, IL, 1955) Chapters 5-12; and I. B. Holley, Jr., Buying Aircraft: Materiel Procurement for the Army Air Forces (Washington, DC, 1964).

The Army's official histories of World War II, the renowned U. S. Army in World War II, are the best source for ground force materiel analysis; these studies include three volumes on the Chemical Warfare Service, three on the Ordnance Department, three on the Corps of Engineers, four on the Quartermaster Corps, two on the Medical Department, three on the Signal Corps, and three on the Transportation Corps. See also John Kirk and Robert Young, Jr., Great Weapons of World War II (New York, 1961).

28. A. J. Barker, British and American Infantry Weapons of World War II (New York, 1978); Jac Weller, Weapons and Tactics (London, 1966); Duncan Crow, Tanks of World War II (London, 1979).
29. Huston, The Sinews of War, pp. 517-559; John M. Coleman, The Development of Tactical Services in the Army Air Forces (New York, 1950); Duncan S. Ballentine, U. S. Naval Logistics in the Second World War (Princeton, NJ, 1947); W. R. Carter, Beans, Bullets and Black Oil: The Story of Fleet Logistics Afloat During the Second World War (Washington, DC, 1953); Roland G. Ruppenthal, Logistical Support of the Armies, May 1941 - September 1944 (Washington, DC, 1953) and Logistical Support of the Armies, September 1944 - May

1945 (Washington, DC, 1959).

30. On electronic warfare, see Ronald Lewin, ULTRA Goes to War (New York, 1978) and The American MAGIC (New York, 1982); Patrick Beesly, Very Special Intelligence (Garden City, NY, 1978); W. J. Holmes, Double-Edged Secrets: U. S. Naval Intelligence in the Pacific During World War II (Annapolis, 1979); Harold C. Deutch, "The Historical Impact of Revealing the ULTRA Secret," and "The Influence of ULTRA on World War II," in Parameters 7 (1977), 16-22, and 8 (December, 1978), 2-15; and Ralph Bennett ULTRA in the West: The Normandy Campaign of 1944-45 (New York, 1979).
31. John Ellis, The Sharp End: The Fighting Man in World War II (New York, 1980); John A. English, A Perspective on Infantry (New York, 1981), pp. 155-239; S. L. A. Marshall, Men Against Fire (New York, 1947); T. N. Dupuy, Numbers, Predictions, and War (Indianapolis, IN, 1979), pp. 57-110.
32. Historical Branch, Programs Division, Combat Developments Command, U. S. Army, "Historical Survey of Army Fire Support," 18 March 1963, copy in U. S. Army Center of Military History, Washington, D. C.; Lt. Col. Charles R. Shrader, Armicide: The Problem of Friendly Fire in Modern War (Ft. Leavenworth, KN, 1982).
33. Greenfield, "Army Ground Forces and the Air-Ground Battle Team," previously cited.
34. Charles M. Bailey, Faint Praise: American Tanks and Tank Destroyers During World War II (Hamden, CT, 1983); Christopher R. Gabel, Seek, Strike, and Destroy: U.S. Army Tank Destroyer Doctrine in World War II (Ft. Leavenworth, Kansas: Combat Studies Institute, USAC&GSC, 1985).

35. Edward Jablonski, Airwar (4 vols., Garden City, NY, 1971-1972); Edward H. Sims, Fighter Tactics and Strategy 1914-1970 (New York, 1972); Barrett Tillman, The Dauntless Dive Bomber of World War II (Annapolis, MD, 1976) and Hellcat: the P6P in World War II (Annapolis, MD, 1979) and Corsair: the P4U in World War II and Korea (Annapolis, MD, 1979); Peter C. Smith, The History of Dive Bombing (Annapolis, MD, 1981); John Landstrom, The First Team: Pacific Naval Air Combat from Pearl Harbor to Midway (Annapolis, MD, 1984); David Brown, Carrier Operations in World War II (2 vols., Annapolis, MD, 1974); Mike Spick, Fighter Pilot Tactics (New York, 1983)
36. Samuel Eliot Morison, The Two-Ocean War, (Boston, 1963).
37. Craven and Cates, eds., Men and Planes, Vol. VI, in The Army Air Forces in World War II, pp. 557-700; Furer, Administration of the Navy Department in World War II, pp. 282-95, 382-90; Archibald D. Turnbull and Clifford L. Lord, History of United States Aviation (reprint, New York, 1972), pp. 308-23; Norman R. Pyle, Bureau of Aeronautics, Navy Department, "Aviation Personnel and Training," 1957, mss. history, Naval Historical Division Operational Archives; Bureau of Naval Personnel, "Officer Personnel," 4 vols., 1945, and "Training Activity," 4 vols., 1946, Ibid. ; Commander, U. S. Atlantic Fleet, "Commander Fleet Operational Training Command," 1946, Ibid.; Commander in Chief, U. S. Pacific Fleet, "History of the Fleet Operational Training Command, Pacific," 2 vols., 1946, Ibid.

38. Palmer, Wiley, and Keast, The Army Ground Forces: The Procurement and Training of Ground Combat Troops. Bruce Jacobs, Soldiers (New York, 1958), pp. 169-560; Stouffer, et al., The American Soldier: Combat and its Aftermath (New York, 1965); Kenneth W. Condit, Gerald Diamond, and Edwin T. Turnbladh, "Marine Corps Ground Training in World War II," 1956, mss. history, Marine Corps Historical Center Library.
39. S. L. A. Marshall, The Soldiers Load and the Mobility of a Nation (Washington, DC, 1980).

BRITISH MILITARY EFFECTIVENESS

IN WORLD WAR II

Williamson Murray
The Ohio State University

Introduction

On September 3, 1939 Britain declared war on Nazi Germany in response to the invasion of Poland and to her belief that Hitler was seeking continental hegemony. That realization had begun to dawn on Britain's leadership in March 1939 with the German occupation of Prague in flagrant disregard of the Munich agreement. The belated response reflected the terrible shadow cast by World War I -- a shadow that persuaded British politicians that almost any alternative was better than war.¹ The memory of that war, of the Somme, of Ypres, and of Passchendaele persisted through the coming conflict and played an important role in the formulation and execution of British strategy, operations and tactics in World War II.

The most direct impact of political attitudes that regarded war as unthinkable was a gross underfunding of Britain's defenses beginning in the 1920s and lasting well into the 1930s.² Admittedly, the low level of defense spending resulted from serious economic problems as well as from an underestimation of the German danger. Whatever the cause, the

impact was serious. The RAF suffered least, because the Chamberlain government forced the air staff to buy the less costly air defense program rather than that service's desired bomber fleet. Strategic factors played little role in the government's decision, but the support rendered Fighter Command enabled it to win the Battle of Britain. The Navy's financial difficulties made a serious strategic situation (with commitments in Far Eastern, Mediterranean, and European waters) worse. The impact on the Army, however, was catastrophic. The government of the late 1930s simply refused to prepare any land forces for service on the continent.

Yet, while much of the blame for the lack of preparedness rests on the political leadership, there remains the question of how well the services prepared intellectually for war. As Michael Howard has suggested:

The evidence is strong that the Army was still as firmly geared to the pace and perspective of regimental soldiering as it had been before 1914; that too many of its members looked on soldiering as an agreeable and honorable occupation rather than a serious profession demanding no less intellectual dedication than that of the doctor, lawyer or the engineer.³

For wartime leaders that truth was only too obvious. The Chief of the Imperial General Staff (CIGS), Lord Alanbrooke confided in his diary in 1942 that.

Furthermore it [the military performance of the Army] is made worse by the lack of good military commanders. Half our Corps and Division Commanders are totally unfit for their appointments, and yet if I were to sack them, I could find no better! They lack character, imagination, drive, and power of leadership.⁴

In a direct fashion the First World War saw a significant decline in Britain's economic and financial strength. As the Treasury warned in April 1939, Britain's economic position could not support a long war for "the position had radically changed for the worse from 1914." It argued that not only was internal financial stability not as great but also that sufficient foreign exchange and capital resources did not exist to make purchases similar to those made in 1915 and 1916 in foreign markets⁵ Moreover, the decline in critical industries such as shipbuilding was clear.⁶ Yet, World War I may only have masked an incipient decline that had begun before 1914 and which, given the vastness of strategic commitments, had made the Empire a losing proposition in the long run.⁷

Compounding British difficulties in the coming conflict was the fact that World War II confronted Britain with strategic threats in far flung theaters on a far greater scale than in the previous war. In World War I Britain, sheltering behind the French and Russian armies in 1914 and 1915, had been able to gather her forces against an opponent who was largely confined to Central Europe. However, from the early 1920s the Royal Navy had had to regard Japan as a potential enemy. That prospect, considering distances to the Far East, was daunting enough. After 1933 with the fall of the Weimar Republic and the emergence of an aggressive

Nazi Germany, Britain confronted a dangerous potential opponent on the continent. In 1935 the shambles of British policy during the Abyssinian crisis completed the wreckage. Britain now in the late 1930s confronted the threat of Germany on the continent, a hostile Italy lying across her lines of communication to the Far East, and an aggressive Japan at the end of those long lines. As the Chiefs of Staff summed up the depressing strategic equation in 1938: "Without overlooking the assistance we could hope to obtain from France and possibly other allies, we cannot foresee the time when our defense forces will be strong enough to safeguard our territory, trade, and vital interests against Germany, Italy, and Japan simultaneously."⁸ While Britain never faced the combination of Axis powers alone, the dark days of 1941 certainly lived up to military expectations as to Britain's strategic vulnerabilities.

Given the range of strategic problems and threats that came with the war, the British did remarkably well in determining the threat, allocating their scarce resources, and executing a sensible strategy. The conduct of the war was a long and painful one, but in the end Britain did see through to victory, at admittedly terrible cost but one that considering the alternatives was worth the price. The nature of the far flung threats, the paucity of resources, the lack of preparation (intellectual as well as material), and the problems of mobilizing a democratic society, all suggest lessons applicable to other democracies in other eras. Britain's record in this war is generally an effective one -- a record that for the most part stands out as superior, at least on the strategic level, to her performance in the first great war against Germany.

I. Political Effectiveness

The general effectiveness of the British political-military response to World War II rested on one of the most efficient decision making systems of the major powers involved in the conflict. That system had emerged during World War I, but had largely been completed in the interwar period by Sir Maurice Hankey. Hankey's biographer quite justifiably credits his subject's bureaucratic system as being a major factor in Britain's survival in World War II.⁹ Moreover, the British enjoyed a political system in which the Prime Minister controlled both legislative and executive branches of government, and unlike World War I the Prime Minister for most of the war, Winston Churchill, enjoyed the support of a cohesive, strong coalition -- one that allowed him to present a unified, strong front in dealing with the military.

On the other hand, Hankey's system allowed the government's military and diplomatic advisors to examine thoroughly the strategic alternatives and the operational realities of the issues facing Britain during the war. Underneath the Prime Minister and War Cabinet was a layering of committees with specific responsibilities and tasks. Directly under the Prime Minister were the War Cabinet and the Committee of Imperial Defense. The latter brought together military, economic, and political centers of power to provide guidance to the Cabinet and Prime Minister. After May 10, 1940, when Churchill became Defense Minister, as well as Prime Minister, the Chiefs of Staff had direct access to him as head of the government. Working under the Chiefs (the Chief of Air Staff

[CAS]; the Chief of Naval Staff [CNS], and the Chief of the Imperial General Staff [CIGS]) were committees to examine in greater detail strategic and operational problems. The Deputy Chiefs of Staff handled peripheral strategic problems, while the Joint Planning Committee, consisting of the chief planning officers of the services, provided the staff work required to flesh out proposals. The system proved particularly adept at examining the Empire's strategic problems. It also proved responsive and competent in its utilization of the intelligence provided by the services and the outstanding cryptological success in breaking of German codes (the so-called "Ultra" information).

The triumph of Hankey's system owed much to Churchill's driving personality and intelligence.¹⁰ The system had not worked well before the war, when the Prime Minister and Cabinet had lacked a depth of knowledge on military and strategic matters. Civilian ignorance, combined with military sloth, had resulted in muddle and confusion in strategic decision making that in effect allowed the Germans to escape from their serious difficulties in the late 1930s.¹¹ The Permanent Secretary of the Foreign Office quite aptly summed up the bureaucracy's penchant for choking itself on a flood of paperwork.

It seems clear to me that all the machinery here contemplated will involve the maximum delay and accumulation of papers. We surely do not want any more written "European Appreciations." We have been snowed under with papers from the Committee of Imperial Defense for years. Moreover, this procedure by stages implies a certain leisureliness which is not what we want at the present moment.¹²

Yet, with Churchill in control the system worked with extraordinary efficiency. With his drive, bureaucratic sense, and intellectual strength Churchill hammered his advisers and the system into effectively allocating and utilizing available resources and into making timely decisions.

The acquisition by the services of the financial, economic, and technological resources that they required was not initially a major problem once the war had broken out. In response to the seizure of Prague, public opinion had forced Chamberlain to expand the defense budget and to provide the services with resources that his policies had for so long denied them.¹³ There was considerable economic slack and, at least in 1939 and 1940, substantial financial resources were available to fund a massive program of rearmament. Nevertheless, as late as July 1939, the Treasury was fighting a rear guard action to slow down increases in defense spending.¹⁴ Sir John Simon, Chancellor of the Exchequer, warned the Chief of Naval Staff in April 1939 that military efforts should not impinge on economic resources so as to render Britain powerless "through incapacity to command vital imports to bring a long war, or indeed any war, to a successful conclusion."¹⁵ The outbreak of war five months later, of course, ended Treasury's efforts to reduce service requests.

In May 1940 Winston Churchill came to power. That fact combined with the catastrophe on the continent to allow a massive mobilization of all economic resources for the defense effort. The fall of France, the threat of air attacks by the Luftwaffe and the possibility of an invasion of the British Isles allowed no other alternative. By late summer the British production rate for fighter aircraft, pushed upwards by pressure from Lord Beaverbrook, was nearly twice the rate of single engine

fighters produced by German industry.¹⁶ Even in tank and truck production the British were outstripping German production by fall 1940.¹⁷ Again the demand not just to equip new formations but also to make good the losses suffered in France helped to motivate the British. Churchill and his advisers were clearly taking a serious risk, because the financial well was rapidly running dry, but the RAF's performance in the air in the Battle of Britain and the performance of the Navy and the Army in the Mediterranean in the fall justified such a risk. British successes persuaded the American leadership that Britain was serious about fighting the Germans to the finish. Churchill quite rightly described the Lend-Lease program, passed by Congress and signed by Franklin Roosevelt in March 1941 as "so great an event in the history of our two nations."¹⁸ It substantively removed the threat of insolvency from Britain's war effort and it allowed her to complete the mobilization of her resources and manpower to the greatest extent possible.

That mobilization of resources by the British government was the most extensive of any nation involved in the Second World War with the possible exception of the Soviet Union. A report of late 1944 best captures the depth and extent of that effort:

The British civilian has had five years of blackout and four years of intermittent blitz. The privacy of his home has been periodically invaded by soldiers or evacuees or war workers requiring billets. In five years of drastic labor mobilization, nearly every man and every woman under fifty without young children has been subject to direction to work, often far from home. The hours of work average fifty-three for men and fifty

overall; when work is done, every citizen who is not excused for reasons of family circumstances, work, etc. has had to do forty-eight hours a month duty in the Home Guard or Civil Defense. Supplies of all kinds have been progressively limited by shipping and manpower shortage; the queue is part of normal life. Taxation is probably the severest in the world, and is coupled with continuous pressure to save. The scarce supplies, both of goods and services, must be shared with hundreds of thousands of United States, Dominion, and Allied troops; in the preparation of Britain first as the base and then as the bridgehead, the civilian has inevitably suffered hardships spread over almost every aspect of his daily life.¹⁹

The statistical indicators for that mobilization stand as a tribute to the level of national sacrifice demanded by the government and accepted by the British people (see Table I²⁰).

TABLE I (in million £)

	<u>1938</u>	<u>1940</u>	<u>1941</u>	<u>1944</u>
National Income	4,707	6,066	6,978	8,310
Government Expenditure:				
a. military	327	2,600	3,643	4,481
% of national income	6.9%	42.9%	52.2%	53.9%
b. other	440	484	497	536
% of national income	9.3%	8%	7.1%	6.5%

The shift in the distribution of the work force from the civilian to the military services is equally impressive (see Table II²¹).

TABLE II
Allocation of Labor (in thousands)

	<u>Mid-1939</u>	<u>Mid-1943</u>	<u>Mid-1945</u>
Total Labor Force	19,750	22,286	21,649
Armed Forces and Civil Defense	560	5,085	5,217
% of Labor Force	2.8%	22.8%	24.1%
Military Production	1,270	5,121	3,830
% of Labor Force	6.4%	23.0%	17.7%
Manufacture for Export	1,150	264	422
% of Labor Force	5.8%	1.2%	1.9%

If the British were willing to devote much of their GNP to the war effort, the problem of allocating those resources among the services remained. The collapse of France and the threat to the British Isles in summer 1940 made the initial priorities simple and clear. Thereafter, allocation depended on the discussion between service chiefs and their supporting staffs on one hand, and Churchill and the War Cabinet on the other, to determine a balance that considered the strategic and operational realities along with the means at hand. With the benefit of hindsight one can quibble over individual decisions. In particular, Churchill and the air barons have received substantial criticism for the costs of the strategic bombing offensive. In fairness, in summer 1940 no one understood the complexities and difficulties that would be involved in such a campaign, while Churchill himself never accepted the wilder hopes of some strategic bombing advocates. In September 1941 he minuted to the Chief of Air Staff that:

It is very disputable whether bombing by itself will be a decisive factor in the present war. On the contrary, all that we have learned since the war began shows that its effects, both physical and moral, are generally exaggerated. There is no doubt that the British people have been stimulated and strengthened by the attack made upon them thus far. Secondly, it seems very likely that the ground defense and night fighters will overtake the air attack. Thirdly, in calculating the number of bombers necessary to achieve hypothetical and indefinite tasks, it should be noted that only a quarter of our bombs hit the targets [The] most we can say is that it [the bomber offensive] will be a heavy and, I trust, a seriously increasing annoyance.²²

In the long run Churchill's view proved correct and the bombing campaign was one of several major factors in the defeat of Nazi Germany, no more, no less.²³ Historians have argued that a greater allocation of the four engine bomber production to the Atlantic would have won the battle against the submarine earlier. That assertion is unprovable and the growing weight of evidence indicates that "Ultra" was the essential, decisive element in the victory over the U-boat danger.²⁴

Britain's resource allocation in World War II reflected a conflict that stretched the Empire and the nation to the breaking point. As is to be expected the services were not entirely foresighted in estimating requirements. Thus, the Royal Navy found itself burdened in early World War II by pre-war failure to prepare to meet the submarine danger. Moreover, it did not shift resources quickly enough to meet that terrible

danger about which Churchill wrote: "How willingly would I have exchanged a full-scale invasion for this shapeless, measureless peril, expressed in charts, curves, and statistics!"²⁵ But generally the government provided the military with an adequate level of support through allocation of Britain's own scarce resources, the Lend-Lease provided by the United States, and the Empire's contributions. The services then with the help of the Prime Minister and an efficient system of joint service responsibility arrived at a sensible division of resources.

What translated those resources into effective weapons of war was the military's ability to draw on Britain's technological and industrial resources. Here the record was generally excellent.²⁶ On the industrial side, Britain's world position had declined substantially from 1914. Therefore, the problem was more than possessing access to the nation's industrial resources. In some cases the base was woefully weak; Britain's shipbuilding best represents that significant decline in industrial capacity. Even America's entrance into the war only mitigated the weaknesses in that sector. Torn between the strategic demands of building up surface forces, the expansion of anti-submarine units to meet the growing U-boat threat, the need for replacement tonnage for merchant shipping lost, and the thousands of landing craft required for combined operations, the British industry could simply not meet the demand. In fact, most of the landing craft burden had to be shifted to American industry, as much of Britain's capacity produced anti-submarine vessels for the Battle of the Atlantic.²⁷ As a result, the United States controlled a substantial portion of landing craft assets available to the Allies. Such a state of affairs had serious repercussions in Lord Mountbatten's South East Asia theater and even more on the British

efforts to conduct an independent campaign in the Aegean in late 1943.

One area of pre-war preparation to expand industrial capacity helped substantially in the production of weapons in 1940. Unwilling to fund the RAF's big bomber schemes, the Chamberlain government devoted significant financial resources to the creation of "shadow" factories -- factories that could rapidly convert from peace time purposes to aircraft production when needed.²⁸ Consequently, the British were able to accelerate the production of fighter aircraft in 1940 to nearly twice the German rate and to push bomber production up by 1942 to the point where Bomber Command could do substantial damage to the Reich.

In the early war the military had access to an underutilized industrial capacity that allowed for rapid increases in armament production. However, acquisition of sufficient raw materials would have represented an unmanageable problem without Lend-Lease and American financial backing to remove the obstacle of shrinking British financial resources. Nevertheless, the mobilization of manpower for military and industrial purposes and of industry created a situation by 1943 where the British held virtually no capacity to expand the economic and military effort. The government had reduced civilian demand to basic levels (well below what Germany reached until late 1944)²⁹ Industrial production had reached maximum level and virtually no manpower sources existed for further expansion of military forces or production. Ernest Bevin, Minister of Labour, put it simply in May 1942:

The chief conclusion which I draw from these figures is that we have now deployed our main forces and drawn heavily upon our reserves Further demands for the Forces must in the main be met from production. To make

this good and maintain essential service, as well as increase production, something can still be obtained from [the] redistribution of labour within the field of industry and services, but our main reliance must be upon increased efficiency in management to secure the best use of the resources we have.³⁰

The situation appeared even grimmer in November 1942 when Sir John Anderson reported that the cabinet would have to:

face the fact that our manpower resources do not match our present programmes. We cannot at the same time, meet the essential needs of the Navy, build up an Army of 100 Divisions and expand the Air Force to a total of over 600 operational squadrons Since America's entry into the war, we have now to face the necessity of supplying from our resources a vast proportion of the equipment we had expected to be able to draw from the United States; and we are thus compelled to retain in our munitions industry the manpower on which we had counted It follows that substantial cuts must be made in the present programmes of the Forces. Strategical considerations must determine where the reductions should be made.³¹

The manpower allocations actually made in 1943 compared to the demands urged in 1942 by Britain's production overseers underline Bevin's and Anderson's comments. (see Table III³²).

TABLE III

Manpower Allocations (in thousands)

	Industry Demands July 1942	Cuts December 1942	Allocations Authorized December 1942	Revised Allocations July 1943
Admiralty (Supply)	186	75	111	111
Ministry of Supply (Army)	148	226	-78	-165
Ministry of Aircraft Production (RAF)	<u>603</u>	<u>100</u>	<u>503</u>	<u>259</u>
Total Allocations	937	401	536	205

As Wolfe noted before Quebec, "War is an option of difficulties." Indeed, modern war with its attendant supply and logistic problems is doubly so. With an intelligent political and military leadership, the British performed excellently in allocating scarce industrial and manpower resources, but there were real limits to what was possible.

World War II thus underlines the critical importance of economic and manpower resources to the conduct of war in the modern world (as World War I had). It also suggested that technological resources (scientific, research and development, and the capacity to transfer scientific and R & D conceptions into battlefield weapons) were crucial. Here, the British base in 1939 was undoubtedly inferior to those of Germany and the United States, but Britain proved willing and able to draw her technological and scientific community into the war effort. Of considerable aid were the intimate relationships among British scientists as well as the Oxford-Cambridge connection with the establishment. Consequently, British science was readily available to the military to support the war effort.³³ The British proved particularly adept at including the intellectual community in the intelligence effort and the

mathematical and scientific communities provided crucial help in breaking the German Enigma codes and then passing the information to the services in usable and digestable form.³⁴

II. Strategic Effectiveness

The initial goals with which Great Britain embarked on war seemed reasonable considering the available means. Clearly, the Chamberlain government would have been satisfied with the removal of Hitler and his replacement with a "less aggressive" Nazi such as Göring.³⁵ Ironically, as the German tide was sweeping all before it in May 1940, Britain's new Prime Minister, Winston Churchill, was enunciating goals for which the means available seemed less and less realistic:

You ask, what is our policy? I will say: It is to wage war, by sea, land and air, with all our might and with all the strength that God can give us; to wage war against a monstrous tyranny, never surpassed in the dark, lamentable catalogue of human crime. That is our policy.

You ask, what is our aim? I can answer in one word: it is victory, victory at all costs, victory in spite of all terror, victory, however long and hard the road may be³⁶

The mismatch between British aims and resources, defiantly expressed by Churchill after the shattering collapse of France and of Britain's continental strategic position, is all too clear. But the Prime Minister's calculations rested on the strategic beliefs that the

United States and the Soviet Union could not remain outside the European struggle and that Hitler could not refrain long from adding to his list of opponents. For the time being, Britain must resist, defend her strategic base alongside the continent, and look for strategic chinks in Germany's armor. In 1940 there was considerable wishful thinking -- but given the situation some self-delusion as to Nazi Germany's weaknesses was necessary just to continue the struggle. The Air Staff hoped that strategic bombing represented a relatively easy means to defeat Germany and that hope became a significant element in strategic policy. Churchill, himself, became enamored with the twin ideas of hounding the Germans by raids on the coastal periphery and by setting Europe afire through support extended to guerrilla movements within the conquered nations. Both ideas had a long range and beneficial impact on the war's conduct: the first led to creation of a combined operations capability, the second to the Special Operations Executive (SOE) that supported continental resistance groups. But in early 1941 both ideas represented more wishful thinking than anything else.

The hopes required to avoid recognizing the mismatch between the goal of overthrowing Nazi Germany and available resources had serious consequences in the Mediterranean in 1941. There, the disastrously incompetent³⁷ Italian invasion of Greece in October 1940 eventually enticed the British into committing sizeable forces to Greece and into breaking off their advance in Libya at precisely the moment that Rommel's Afrika Korps arrived. Churchill did have initial hesitations and cabled Anthony Eden and General Sir Archibald Wavell (in Athens to study the extension of ground support to the Greeks): "Do not consider yourselves obligated to a Greek enterprise if in your hearts you feel it will only be another Norwegian fiasco. If no good plan can be made, please say

so. But of course you know how valuable success would be.³⁸ In the end, Churchill and his senior advisers found the attraction of supporting Greece irresistible and consequences were lamentable in Greece, Crete, and North Africa. The decision was not just Churchill's but was one with which senior advisers in London as well as in the Mediterranean concurred.³⁹ While the results of this move were serious for the strategic position in the Middle East, Germany's Balkan campaign had serious consequences for German forces on the southern wing of "Barbarossa."

With Germany's invasion of Russia, Britain faced a substantially altered strategic situation. The Chiefs of Staff at first underestimated the Red Army's capacity to withstand the invasion, but "Ultra" (decodes of German message traffic) information from mid July on indicated that the Wehrmacht had run into serious difficulties.⁴⁰ America's entrance further solidified the strategic situation, but it also resulted in a subtle shift in Britain's strategic conduct of the war. Before June 22, 1941 Britain had assumed an enormously risky strategic position just in remaining in the war. Thus, both the military and the political leadership undertook some extraordinary risks to counter their opponents' superiority. The most obvious was the movement of a substantial portion of the armored strength in summer 1940 from a Britain lying under the threat of invasion to Egypt to meet slow moving but apparently powerful Italian forces in the desert. Initial discussions for the Mediterranean reinforcement took place as early as July and by August the decision had been taken. By the end of August, the convoys (which Churchill had wished sent directly through the Mediterranean) were on their way around the Cape.⁴¹

In assuming that strategic risk to remain in the war after the French collapse, Churchill recognized that in terms of political values and culture Britain's survival depended on the complete defeat of the Nazi regime. Consequently, acceding to Hitler's terms would be as deadly to Britain's survival as fighting to the end. This recognition lay at the heart of Churchill's opposition to Nazi Germany, for he understood that the German danger was both strategic and moral. By summer 1940 the British people as well as the political and military leadership were in substantial agreement with this perception.

After the entrance of the United States and the Soviet Union there was less reason to assume strategic or operational risks. In the long run, the overwhelming economic power of the Allies would wear Germany down. Thus, the British became less willing to take risks and more unwilling to commit forces unless operations enjoyed an overwhelming chance of success. Undoubtedly, the strain on manpower and economic resources also impacted on the willingness to take risks. One explanation of Montgomery's hesitant and careful conduct of operations in Normandy lies in the fact that his Army represented the last of Britain's field armies.

Britain had by 1944 reached the bottom of the manpower barrel. So short of trained infantry replacements was the Army during the Normandy campaign that at the end of August, the Twenty-First Army Group had to break up the 59th Infantry Division to provide soldiers for other divisions; in October the 50th Division was likewise broken up.⁴² In addition, the desperate shortage of infantrymen in 1944 forced the RAF to agree to considerable transfers of airmen to the Army: 1,500 from the RAF regiment in May 1944; 5,000 in July; and a further 20,000 in December.⁴³

The manpower problem had another manifestation in terms of the quality of soldier at the sharp end -- combat. So many of the best and most intelligent were drawn off to fight and support the technological side of the British war effort that the quality of manpower available to the infantry, as in the case of the United States, showed serious deficiency. The result as noted by Major General James Elliot, a World War II division commander, was a very high level of "battle absenteeism:"

The subject of Battle Absenteeism was of profound interest to all British divisions who saw lengthy periods of fighting in Africa and Europe. Casualties from this source were higher than killed and sometimes even higher than wounded for individual actions. It was at times common for some 20 men in a Battalion to become Battle Absentees in a given section. About 400 men were Battle Absentees in the average division in 1943-1944 in a period of 6 months. When it is realized that these men came almost entirely from the rifle companies of infantry battalions, the numbers became serious.⁴⁴

After the war Elliot described the "Battle Absentees" as men "who go absent with intent to avoid service; from the man who goes absent from a draft going up to a unit to the man who disappears in the middle of action;" he broke the Battle Absentees into the following categories: "(a) men recently joined, put into battle too quickly, 10%; (b) put back into battle too quickly, 4%; (c) good men worn thin, 10%; (d) men with low standards and weak characters, 56%; (e) whole skimmers, 20%." The last two groups consisted of individuals, Elliot estimated, whose

upbringing had "not given them a high standard of responsibilities to others or to themselves."⁴⁵ The appearance of such large numbers of men in front line infantry units directly reflected national manpower priorities that led Elliot in April 1944 to comment in the following terms on the quality of infantry being sent out to his division: "these men have always been the worst paid in the Army and drawn from halfway down the entry. Some men now joining the infantry are pitiful specimens."⁴⁶

Such a state of affairs did not encourage the taking of strategic risks. And there were strategic opportunities. However, a combination of the pressures of alliance strategy (particularly in the Mediterranean) and the conservatism of the military leadership did not lend itself to a complete exploitation of Germany's strategic weaknesses.

Churchill, of course, possessed a fertile mind that saw strategic opportunities and did not shrink from action, if the balance between risk and gain were right. The relationship between his overpowering personality and the government's military advisers is critical to an understanding of British strategic effectiveness in the war. Between Prime Minister and military advisers, there was mutual respect, although not necessarily affection. Hastings Ismay provided much of the oil that smoothed the relationship between Churchill and the military. As he told Claude Auchinleck, the new commander-in-chief of the Mediterranean, about Churchill in 1941:

The idea that he was rude, arrogant, and self-seeking was entirely wrong. He was none of those things. He was certainly frank in speech and writing, but he expected others to be equally frank with him. To a

young brigadier from Middle East Headquarters who had asked if he might speak freely, he replied: 'Of course. We are not here to pay each other compliments' He had a considerable respect for a trained military mind, but refused to subscribe to the idea that generals were infallible or had any monopoly of the military art. He was not a gambler, but never shrank from taking a calculated risk if the situation so demanded I begged Auchinleck not to allow himself to be intimidated by these never-ending messages, but to remember that Churchill, as Prime Minister and Minister of Defense, bore the primary responsibility for ensuring that all available resources in shipping, man-power, equipment, oil, and the rest were apportioned between the Home Front and the various theaters of war, in the best interests of the war effort as a whole. Was it not reasonable that he should wish to know exactly how all these resources were being used before deciding on the allotment to be given to this or that theater?⁴⁷

Ismay in fact insured that misunderstandings did not permanently affect working relationships.⁴⁸ As another military assistant characterized the change from Chamberlain to Churchill: "The days of mere 'coordination' were out for good and all We were now going to get direction, leadership, action with a snap in it." Churchill himself remarked that the old system had represented "the maximum of study and the minimum of action. It was all very well to say that everything had been thought of. The crux of the matter was -- had anything been done?"⁴⁹

What Churchill demanded from the military was careful, well reasoned advice. As another wartime adviser noted:

"it was vital that Churchill should be firmly harnessed to a strong and capable military staff. This he found ... in the British Chiefs of Staff. He provided the flow of ideas, the stimulus and drive, and the political guidance. They turned all this into a consistent military policy and saw to it that plans were matched by resources."⁵⁰

If they were not in agreement on a particular line of approach that Churchill advocated, then the COS had better have deep and carefully thought out reasons for opposition. The CIGS for much of the war, Lord Alanbrooke, clearly found the task of working with Churchill the most onerous of his wartime duties. His diaries reveal an unfortunate tendency to let out bile after the pressure of working with the Prime Minister.⁵¹ But the adversary relationship ensured that none of the Prime Minister's rasher ideas were forced on Britain's military forces. On the other hand, Churchill's fertile mind provided a flood of memos and directives that provided impetus. In few cases did he overrule his military advisers and impose an operational or strategic approach to which they were opposed.⁵²

What Churchill would not tolerate was the bureaucratic inertia that had characterized the strategic decision making process of prewar governments.⁵³ "Action this day" on Churchill's memoranda demanded immediate attention from the recipient and an efficient organization of the Prime Minister's secretariat insured that such matters did not drop

out of sight. Unlike Chamberlain, Churchill refused to allow inaction when the arguments were inadequate. In the collapsing Mediterranean situation of May 1941, the revolt of Iraqi nationalists and Luftwaffe support for the movement flown through Syria (under the control of Vichy France) was particularly worrisome. This represented a terrible threat to Britain's oil supplies. Despite pressure from London, Wavell, C-in-C in the Middle East, refused to budge and put forth innumerable reasons why he possessed insufficient forces to deal with either threat.⁵⁴ Despite his opposition, Churchill demanded action, and in the case of both Iraq and Syria, British forces quickly removed significant strategic threats. Wavell's relief soon followed.

Churchill's relationship with his military advisers raises the question of their selection -- in particular his role in selecting military leaders for key positions. Churchill, unlike some dominant personalities, placed strong individuals both within his entourage and in positions of authority under him. Within a short time of assuming office, he brought a new CIGS and CAS into office. Churchill also strove to bring imaginative and intelligent officers forward. It was largely his doing that the pioneer armored expert, Percy Hobart, was plucked from obscurity as a Home Guard corporal and returned to active service. Churchill faced the determined opposition from the CIGS, Dill, and the future CIGS, Alanbrooke. Churchill minuted:

I am not at all impressed by the prejudices against him in certain quarters. Such prejudices attach frequently to persons of strong personality and original view. In this case General Hobart's original views have been only too tragically borne out. The neglect by the General

Staff even to devise proper patterns of tanks before the war has robbed us of all the fruits of this invention We should therefore remember that this was an officer who had the root of the matter in him and also vision.⁵⁵

Churchill first offered Hobart the position of Inspector of Armored Forces, but Hobart turned down the offer because he felt the charge was not broad enough and opposition to his appointment within the War Office too entrenched.⁵⁶ Nevertheless, Hobart's return to active service allowed him to provide valuable service both as an armored division commander and as commander of specialized armored vehicles that helped so much in Normandy.

Similarly, Churchill, despite sustained opposition from the Air Ministry, kept Dowding as commander of fighter command during the Battle of Britain. Afterwards he unsuccessfully attempted to employ Dowding on a number of occasions.⁵⁷ The Dowding case is particularly interesting because Churchill had met steadfast opposition from Fighter Command to his efforts to supply more fighter squadrons to the French in 1940. Nevertheless, the Prime Minister, clearly admiring Dowding's tenacity of purpose, warned the Air Minister in summer 1940 to leave him in position as he was "one of the very best men you have got In fact he has my full confidence."⁵⁸ Churchill's ability to pick men even over military opposition, such as in the cases of Mountbatten and Wingate, represented a major plus for Britain's conduct of the war.

The conduct of strategy in World War II from Burma to the Mediterranean to the Atlantic and to the invasion of Northwest Europe involved creation of a massive logistic infrastructure. Even early in

the war, logistical concerns in the Mediterranean were daunting enough with the great sea journey around the Cape. In the last half of 1940 the British moved no less than 76,000 troops from the British Isles and 49,000 troops from east of Bombay along with their supporting equipment.⁵⁹ In the first half of 1941 (until the end of July) that movement had increased to 239,000 troops and over a million tons of supplies (equivalent to 5,000 tons per day unloaded in Egyptian ports).⁶⁰ Complicating logistical problems were changing strategic and operational demands. Generally, the British industrial base was able to supply, outfit, and maintain the services. There were, of course, weaknesses. In 1942 after a relative period of success against U-boats (largely due to "Ultra") Britain faced a swelling wave of merchant shipping losses that threatened her existence. The anti-submarine vessel construction was accelerated, but remained well behind the increasing threats. Moreover, demands for anti-submarine vessels hampered landing craft production, the long range requirement for which had just been increased by the Dieppe failure. Generally, however, the services received the basic requirements necessary to meet strategic obligations. Admittedly, they were often dependent on America to fill shortages. When that was not forthcoming, the British had to scale down strategic objectives in subsidiary theaters such as Burma or the Eastern Mediterranean (in late 1943).

This dependence on American supplies, industrial support, and military backing underlines a critical element in Britain's wartime strategic performance: her ability to cooperate effectively with allies. The opening of the war did not see a propitious introduction to coalition warfare. The brief romance between Britain and France from March 1939 to May 1940 was not long enough or successful enough to

assuage the traces of two decades of mistrust and misunderstanding.⁶¹ Once in power Churchill fully understood, as his predecessor had not, the significance of the United States and attempted to establish a special relationship with Roosevelt. That relationship was of decisive importance in cementing the bond between the allies. But the success of the Anglo-American effort rested on more than just a personal relationship between leaders. Despite differences in background, a common language and similarity in outlook created the basis for effective common strategy planning. While Dill had proven rather ineffective as CIGS, his assignment to Washington was enormously helpful in providing a smooth liaison between the chiefs of staff.

In dealing with Americans, the British military chiefs proved particularly effective in the Alliance's early period in bringing the Americans around to a common viewpoint. With their disastrous experiences in Europe against the Wehrmacht still fresh and with the current reality of North Africa in mind, the British were less than enthusiastic for American proposals in favor of a landing on the coast of France in 1942 or 1943. Since they held the bulk of the troops required for such a venture, they were able to ward off such American proposals. Nevertheless, only through Roosevelt's intervention in summer 1942 could the British draw the Americans into "Torch" and the Mediterranean theater. For Churchill the move represented enticing possibilities:

If, however, we move from "Gymnast" northward into Europe, a new situation must be surveyed. The flank attack may become the main attack, and the main attack a holding operation in the early stages. Our second front will, in fact, comprise both the Atlantic and

Mediterranean coasts of Europe, and we can push either right-handed, left-handed, or both-handed as our resources and circumstances permit.⁶²

The American chiefs were, however, never persuaded of the validity of Churchill's opportunistic approach. Nevertheless, the careful, well-prepared briefs of the British Chiefs of Staff at Casablanca brought the Americans around to a limited Mediterranean strategy for at least 1943. In 1944 on the other hand, the Americans, with their industrial and military potential fully developed and deployed in European dominated the process of making strategy. On the whole, the hammering out of Anglo-American strategy in the 1941-1944 period worked to the benefit of both nations.

Relationships with other allies varied from nation to nation. The most important ally outside of the United States was obviously Soviet Russia. Ally may in fact be an incorrect usage of the word; cobelligerent is perhaps more appropriate. Despite massive diversions of aid from summer 1941 on (the diversions in 1941 contributed to disasters in South East Asia), despite a flow of intelligence information from Britain to Russia, despite efforts to keep the Soviets informed of British strategic plans, the British received in reply only incessant demands for a second front, continual requests for more aid, and silence on Soviet military operations and plans. Ironically, the British received nearly all of their information on the conduct of operations on the Eastern front from "ultra" decrypts of Enigma messages between German formations. The British consistently made that information available to the Russians (although carefully disguising its source). The use to which the Russians put that information is best summed up by the October 1941

disaster at Bryansk and Vyazma (in which over 600,000 Soviet troops were killed, wounded, or captured). Having decrypted German message traffic indicating the onset of "Operation Typhoon" (the assault on Moscow), the British immediately made the information available to the Soviets.⁶³ The Soviet system swallowed the intelligence and only four days after the offensive began did it awake to the mortal peril: when Hitler announced the offensive on Berlin radio, authorities in Moscow could not raise their units on the western front for confirmation. They had all been cut off.⁶⁴ Thus, it is hard to speak of an alliance, when the Soviets believed that they should only take, while the British should only give.

Britain's relationships with her small allies were generally useful, although not decisive to the conduct of war. Churchill once described De Gaulle as his "Cross of Lorraine," but the Frenchman provided a rallying point early in the war for Frenchmen who refused to play the collaborationist game. Various exile governments proved a useful conduit for help in SOE's clandestine intelligence and resistance activities. Generally, the British showed sympathy as well as understanding for those in exile wishing to overthrow collaborationist regimes and to destroy the Nazi occupation.

The second most important bloc of allies after the United States were the Commonwealth Dominions. Having won their spurs in World War I, Canada, Australia, New Zealand, and South Africa had emerged as independent nations by 1939. A major concern of the Chamberlain government in its pre-war policy had been the degree of Dominion support should Britain face war with Germany.⁶⁵ In the event, the Dominions, except for the Irish Republic, stood by the mother country. Nevertheless, relations between Britain and the Dominions remained

touchy. They were perhaps easiest with the Canadians whose location was so critical to the Battle of the Atlantic. The obvious location for deploying New Zealand and Australian forces before December 1941 was in the Middle East. The conduct of operations there had already by summer 1941 raised serious questions within Anzac governments and the looming Japanese threat in the Far East did little to assuage doubts about British leadership. The collapse of the strategic position in South East Asia in the dark days of 1941 and 1942 substantively moved both nations from their orbit of dependence on Britain toward the United States.

In summing up strategic effectiveness in the war, one must recognize British priorities as well as their execution of overall strategy. Was Britain in fact able to place her strengths against the weaknesses of her opponents? The first eight months represent a depressing episode in British strategic history. Germany did possess serious strategic vulnerabilities in 1939 and early 1940. But the Chamberlain government, buttressed in its inaction by the advice of its military advisers, refused to undertake any significant military operation to attack those German weaknesses.⁶⁶ As a result the Germans husbanded their scanty resources for one great effort in the West -- and the result was a shattering collapse of Britain's continental strategic position.

When Churchill became Prime Minister there were no strategic alternatives to a desperate defense of the home base against the Luftwaffe and perhaps an invasion across the Channel. Once there appeared hope of thwarting the Luftwaffe, Churchill was willing to send substantial reinforcements to the Middle East. This was done as much to protect communications and petroleum sources as for offensive prospects against the Italians. But Germany's junior partner made such a dreadful

hash of its "parallel war" that Britain was offered substantial opportunities. Churchill made it clear that the primary objective was the Italian Army in the Libyan desert and not Ethiopia or the Dodecanese.⁶⁷ But Wavell would not keep his eye on the mark and transferred out of North Africa the experienced 4th Indian division to a meaningless campaign against the Italians who had so conveniently interned themselves in Ethiopia.⁶⁸ Then, unfortunately, Churchill and the Chiefs of Staff (and the Mediterranean commanders) embarked on major commitments in the Balkans.

The addition of the Soviet Union and the United States against Germany substantially solved many of Britain's strategic problems. The Red Army's sacrifice on the eastern battlefields began the process of wearing down German ground strength. Nevertheless, the attendant problem of supplying war materials to the Soviet Union increased the drain on British stockpiles and production and significantly increased the strain on the Royal Navy. There was no choice but to meet the threat of Dönitz's U-boats head on -- for the Germans were able to place strength against British weakness. In that campaign to protect the great convoys, on which Anglo-American military power depended, the British showed adaptability and flexibility. As we now know strategic and operational intelligence (namely "Ultra") played a crucial role in the eventual victory. But the threat came perilously close to breaking the sea lines of communications and only by the most desperate expedients did the British master the threat.

British air strategy represented an attempt to place the strength of British aircraft production against the technological problems of creating an effective night defense against bombers (believed to be insoluble). But the nighttime problems of finding and hitting targets

effectively over the distances at which Bomber Command operated proved intractable. In the end, events bore Churchill out that the bombing offensive would prove at best an enormous "annoyance" and distraction to the German war effort. It distorted and reduced Germany's wartime production and caused immense inconvenience, but it could not win the war by itself.⁶⁹

For the war's last years, the British faced the daunting prospect of grappling with the Germans on the continent. They successfully persuaded the Americans to leave the effort in the Mediterranean for 1943 -- in retrospect a wise decision that continued the process of wearing down German military strength. The massive assault on June 6, 1944 represented the culmination of a process that had begun four years before. Nevertheless, the question still stands out forty years later: why did it take the Anglo-American allies in June 1944, possessing such overwhelming material strength and superior firepower, so long to break the resistance of a weary, battered, and severely attritted German Army?

Until now we have not addressed British strategy in the Far East for it remained a peripheral issue in the formulation of strategic plans throughout the war. Churchill greeted the entrance of the United States into the war because of his recognition that America's participation with her economic potential doomed the Axis powers. He did not foresee the disaster that befell British military forces and prestige in the Far East. His underestimation of Japan's military potential reflected a general European (and American) perception, shared by his military advisers, that the Japanese would not come up to the mark against a first class military power.⁷⁰ The catastrophe that followed rivaled the worst disasters in British military history. It reflected terrible leadership, faulty planning, sloppy operational performance, and

arrogance that quickly turned to panic when the Japanese proved very good at the business of war. Once the British were back on the frontier of India, they faced immense logistical as well as tactical difficulties. The Americans were only peripherally interested in the theater as a means to open up supply routes to China, while the British COS, at times expressing interest in Burma, did not possess the resources required to support the theater until late in the war. Thus, Burma represented British weakness up against Japanese weakness. Ironically, the shortages in the backwater theater may have played a considerable role in making the ground forces in Burma the most adaptive, flexible, and tactically innovative of British Army units involved in the war.

III. Operational Effectiveness

The operational effectiveness of military forces depends on their ability to coordinate and integrate their action at a decisive point. There are two parts to the issue: first, the extent to which the different services coordinate and integrate their forces for a unified imposition of military power; second by how well individual services integrate the various combat arms and weapon systems so that the result is greater than the sum of its parts. On the macro level of interservice cooperation, the British were performing at an outstanding level by the war's end. The beginning, given the shortages and lack of funding, was most difficult. Army-RAP cooperation in the realm of close air support was almost non-existent before 1941. After the pre-war combined Army-Air Force exercise, Wavell commented that the RAP had obviously given no thought to supporting ground forces and that therefore its pilots had received no training in that role.⁷¹ He was quite right. An Air Staff position paper, written after the fall of Poland, makes the RAP's position clear:

Briefly the Air Staff view -- which is based on a close study of the subject over many years -- is as follows: The true function of bomber aircraft in support of an Army is to isolate the battlefield from reinforcement and supply, to block and delay the movement of reserves, and generally to create disorganization and confusion

behind the enemy front But neither in attack nor in defense should bombers be used on the battlefield itself, save in exceptional circumstances All experiences in war proves that such action is not only very costly in casualties, but is normally uneconomical and ineffective.⁷²

The RAF's view in North Africa came to be quite different. There, far away from strategic bombing's allure and in an environment where Rommel's rampaging forces could and often did overrun air bases, RAF commanders showed considerable inclination to cooperate with the Army. Under the leadership of Tedder and Coningham the British had by late 1942 evolved a system of direct air support for the Army that was timely and effective although two years behind the Germans.⁷³ Considerable problems yet remained in operating in a mobile environment, as the break out from El Alamein showed. During periods of rapid movement British fighter bombers still had trouble in distinguishing targets from their own ground forces. The Army was also less able to request close air support once movement began (8th Army called for air support only five times on November 5, 1942).⁷⁴ But, the problem was recognized and both services cooperated to find a solution.

The most important contribution that integration of the British services made to the war effort lay in combined operations -- the amphibious assaults on Axis held territory in the European theater of operations (one must not minimize American contributions, for both sides worked closely, but the British took the initial steps in Europe). A landing on the continent posed different problems than those that were raised by operations in the Pacific. In Europe the Germans could rapidly

reinforce defending forces that faced a lodgement made by the Allies -- something the Japanese could not do on their island garrisons in the Pacific. Thus, one had not only to dislodge the defenders on the coast, but also to gain the depth and breadth to win the second stage: that of building up the combat and logistical forces to meet those that the enemy could bring up.

Pre-war preparation had been generally nonexistent. Some serious thinking had occurred at the Naval War College at Greenwich, but the services were unreceptive. The Army position was that combined operations, given airpower and enemy reinforcement capabilities by road and rail, would not occur in the next war. The Air Staff argued that things had worked well enough at Gallipoli and therefore one need not work on the problem.⁷⁵ The future CNS, Andrew Cunningham, summed up the Navy's position in the following terms: "at the present time [the Admiralty] could not visualize any particular combined operation taking place and they were, therefore, not prepared to devote any considerable sum of money to equipment for combined training."⁷⁶ The Norwegian fiasco ended such complacency.

Before the war the services did establish an inter-service development center (the Inter-Services Training and Development Center) to examine basic problems inherent in combined operations. Underfunded in peacetime and disbanded at the war's outbreak for a short period of time, the I.S.T.D.C. got off to a slow start (it had to apply to the Deputy Chiefs of Staff to expend £26 for an assault ladder and hand cart).⁷⁷ The prestige of the center and of combined operations in general rose rapidly with Winston Churchill's arrival. Despite the dark strategic situation of the summer of 1940, the new Prime Minister refused to give the Germans rest on the periphery of their newly conquered

domains. As early as July 7, 1940 he asked the Ministry of Supply as to what it was doing to design and produce vessels that could land tanks on enemy shores.⁷⁸ His appointment of Admiral Lord Keyes, hero of World War I's Zeebrugge raid, as "Director of Combined Operations," reflected a desire to raid German held Europe as soon as possible. The Dakar operation quickly showed Keyes' weakness in a position that demanded tact and political savvy, if the coordination among the three services were to work. Drive and leadership Keyes possessed in abundance, but he wished his position to be supra rather than intra the services. His contribution lay in providing the I.S.T.D.C. the resources to begin the arduous task of creating a combined operations capability.

In August 1941 Churchill made one of his more inspired wartime moves by replacing Keyes with Lord Louis Mountbatten. The latter received the title of "Adviser on Combined Operations" rather than "Director." This change underlined that the position was under the Chiefs of Staff. Mountbatten provided political sense that Keyes had lacked, as well as toughness to insure that he received the resources for research and development and for the production requirements of major operations against Axis-held Europe. By October 1941, Mountbatten's organization had requested no less than 2,250 landing craft for tanks and vehicles from the United States.⁷⁹ Mountbatten was also adept at drawing in scientists to help solve problems confronting creation of a combined operations capability.⁸⁰ While some conservative officers after the war ridiculed some schemes, such as Habakkuk, the contribution of such minds was considerable.

Mountbatten was particularly important in his ability to get the three services to pull together. One soldier who served in Mountbatten's combined services headquarters recalled:

But there can be little doubt that the grouping together so early in the war of a number of officers from each service -- all of an age not ashamed to be enthusiastic and not ashamed eventually to work for inter-Service ideals at the expense of narrow one-Service views -- gave a tremendous impetus and fillip to the vital combined approach to the appalling problems that faced us in those days

It took time and tribulation to develop mutual confidence and to evolve the formulae which later on allowed the planners to calculate quickly and accurately the number of ships, landing-craft, and this, that and the other required for any ploy that might be put to them.

It took time to convince the sailors and airmen of the helplessness of the soldier throughout the assault phase until he is properly established ashore with his armor and his artillery support.

It took time to make them appreciate that -- until that stage was reached -- complete and absolute reliance had to be placed on naval and air support, and that this could only be provided in the volume and way required if both sailors and airmen were prepared to undertake tasks which were disagreeable to them and contrary to the roles they were accustomed to regard as traditional.

It took time also for the soldier to learn what were possible and were impossible demands. By and large, out of the labors grew a highly skilled staff -- brimful of

ideas, prepared to think and plan on a generous inter-Service basis, and surprisingly little trammelled by purely Service foibles and customs.⁸¹

Mountbatten's contribution was not just confined to relations among the British services: Inclusion of Americans in planning and executing the great amphibious operations was as necessary as obvious. By June 1944 experimentation and work, begun in 1940, bore fruit with the landing on the Normandy beaches. Within twenty-four hours of the first landings no less than 75,215 British and Canadian and 57,000 Americans were ashore, while a further 7,900 British and 15,500 American airborne troops had landed behind the beaches.⁸² By June 30 that number had increased to no less than 850,279 troops landed on the French coast along with 148,803 vehicles and 570,505 tons of supplies.⁸³ Those numbers represented an awesome combined operation capability.

The problem of integration, however, is not just confined to questions of intra-Service cooperation; it clearly involves how well individual services integrate their weapons systems and combat arms in executing military operations. The Royal Navy's handling of this problem was by far the best of the services. This may have reflected the fact that wartime conditions can more easily be duplicated in peacetime naval exercise. Perhaps it reflected the Royal Navy's dissatisfaction with its performance in World War I. Whatever the cause, the operational performance of the Royal Navy rested on its ability to integrate its surface units throughout the war. From operations off Calabria in July 1940, to protecting convoys from German surface raiders (the holding off of the Admiral Scheer and Lützow from a convoy in December 1942 by British destroyers may be the best example), to the conduct,

coordination, and integration of the varied and diverse elements that went into winning the Battle of the Atlantic, the Royal Navy did an outstanding job throughout the war.

The RAF also is open to little criticism in this area. Because of the nature of air combat and of the night bombing offensive against Germany, the British air war did not involve a great amount of integration of differing forces. One area perhaps does deserve criticism: the conduct of the Battle of Berlin over winter 1943/1944. Arthur Harris, Bomber Command's C-in-C, undertook this campaign in the belief that "we can wreck Berlin from end to end if the USAAF will come in on it. It will cost us between 400-500 aircraft. It will cost Germany the war."⁸⁴ Harris based his assumption on the belief that "Window" ("chaff") had rendered German air defenses, including night fighters, ineffective. Harris was wrong and in the battle of Berlin the German night fighters savaged his command. The evidence is now clear not only that Bomber Command in fall 1943 had clear warnings that German night defenses were rapidly recovering from the summer disasters, but also that British intelligence, including "Ultra," provided Bomber Command with explicit warnings of how rocky the road would be. Until the Germans had virtually shot his command to pieces, Harris showed little inclination to heed intelligence warnings.⁸⁵ As the official historians suggest about the situation in March 1944: "The implication was ... clear. The German [night] fighter force had interposed itself between Bomber Command and its strategic objective" For Harris the lesson was late but obvious: Bomber Command needed the "provision of [Fighter Command's] night fighter support on a substantial scale."⁸⁶

The Army's integration of combat arms raises the most serious question about British operational effectiveness in World War II. The

results in terms of shattered, burnt-out hulks of tanks, beaten armies in the desert, and the Malayan collapse are easily discernible. Their causes, however, are more difficult to unravel. An obvious place to start lies with the pre-war Army -- not necessarily with the Colonel Blimps but rather with the underlying faults. The lack of professionalism alluded to by Michael Howard was a symptom, not necessarily a cause. Nevertheless, the regimental system did foster a "we-them" syndrome made worse by certain proclivities of the Army's class structure. One appalling incident, suggesting such narrowness of view (admittedly extreme), occurred at El Alamein when a cavalry brigadier attempted to refuse the attachment to his command of a regiment of the Royal Artillery. "We," he exclaimed, "only accept support of the Royal Horse Artillery."⁸⁷ The basic problem with the regimental system, abetted by the severe delineation between branches, was its encouragement of a parochialism that was in marked contrast to the combined arms approach that the German system fostered.⁸⁸

Further exacerbating the problem of learning mechanized warfare was the fact that the expansion of motorized forces in the late 1930s was largely turned over to those portions of the Army least used to intellectual attainments, hard work, and serious study: namely, the cavalry regiments. During his efforts in 1938 to train such regiments into what became the 7th Armored Division, Hobart wrote to his wife from Egypt that :

I had the cavalry CO's in and laid my cards on the table. They are such nice chaps, socially. That's what makes it so difficult. But they're so conservative of their spurs and swords and regimental tradition, etc.,

and so certain that the good old Umpteenth will be all right ... , so easily satisfied with an excuse if things aren't right, so prone to blame the machine or machinery. And unless one upsets all their polo, etc. for which they have paid heavily -- it's so hard to get anything more into them or any more work out of them. Three days a week they come in six miles to Gezirah Club for polo. At 5 pm it's getting dark: they are sweaty and tired. Not fit for much and most of them full up of socials in Cairo. Take their clothes and change at the Club Non-polo days it's tennis or something.⁸⁹

It was not that the cavalry regiments were not able to get men to fight bravely. The matter was, as Lord Tedder noted, that the Army suffered in 1941 and 1942 from "an excess of bravery and a shortage of brains."⁹⁰ Tedder's acid comment is backed up by Robert Crisp, a direct participant in armored operations in Cyrenaica:

Other officers told me how they had seen the Hussars charging into the Jerry tanks, sitting on top of their turrets more or less with their whips out. It looked like the run-up to the first fence at a point-to-point, the adjutant described it. This first action was very typical of a number of those early encounters involving cavalry regiments. They had incredible enthusiasm and dash, and sheer exciting courage which was only curbed by the rapidly decreasing stock of dashing officers and tanks.⁹¹

But it is wrong to blame the lack of a combined arms integration entirely on the stupidity of a few regiments. Crisp's account of his experience in the desert contains an important hint on the nature of the problem. It is clear from Crisp that by the "Crusader" battles of late 1941 the British had a clear sense of German tactics: that they were based on a close coordination of anti-tank guns, infantry, and armor.⁹² Crisp's memory is supported by descriptions of German operations contained in the tactical notes ("Current Reports from Overseas Notes") published in London and based on materials supplied by Headquarters Middle East.⁹³ Nevertheless, Crisp's account contains the following description of a scratch force which he was ordered to lead:

I was distinctly worried about the composition of this little force. There was nothing that the armored cars could do in the way of reconnaissance that the Honeys couldn't do equally well Nor could I foresee any possible situation, unless we were completely surrounded, in which the anti-tank guns could be properly brought into action.⁹⁴

The root of the matter is that even intelligent and observant officers like Crisp did not possess the background to cooperate fully with other branches because they were not trained to do so.

Lord Carver, future C-in-C of the British Army, served as a junior officer during the war. He describes British tactical conceptions as follows:

Our real weakness was the failure to develop tactics for a concentrated attack employing tanks, artillery, and infantry in depth on a narrow front. Time and time again the tanks motored or charged at the enemy on a broad front until the leading troops were knocked out by enemy tanks or anti-tank guns: the momentum of the attack immediately failed. Such artillery as was supporting the tanks indulged in some splattering of the enemy ... after which the tanks motored about or charged again with the same results as before ... the infantry not taking part, their tasks being to follow up and occupy the objective after it had been captured by the tanks.⁹⁵

Unfortunately, this description of muddled operational integration continued right through the Normandy fighting.⁹⁶

The problem was partially a result of the role that training played in the Army. It was not that combat training did not form an important part of the Army's time when off operations. But training never played the same role as it did in the German Army. Clearly as the "Current Reports from Overseas" indicate, the Army in the Middle East understood what the Germans were doing. But the necessary links within the Army's chain of command were not there. On one hand, there was no common doctrinal center in the Army as was the case with the Germans. Consequently, there was no consistent battle doctrine. Moreover, there was no means of ensuring that the many decentralized training programs reflected similar approaches (since there was no basic doctrine).

This last point deserves amplification. British observers during the war and official historians since have noted how hard and well the Germans trained.⁹⁷ What the British needed, as Henry Pownall noted, was: "Training must be harder, exercises must not be timed to suit meal times. Infantry shouldn't be allowed to say that they are tired. Our teaching of officers must be designed to produce leaders, rather than polished staff officers ...".⁹⁸ When German units were not in the line they trained long and hard. On the other hand, the crack 9th Australian Division after its relief from Tobruk went to Syria to build fortifications and was engaged in that exercise for over half a year. The official historian records that it arrived back in Egypt in July 1942 "not in suitable training for very mobile operations."⁹⁹ One cannot imagine such an incident occurring in the German Army. Nor is it any easier not to be shocked by the official historian's description of the state of cooperation between British armored and infantry divisions in November 1942: "It is fair to say that cooperation between an armored division and one or more infantry divisions had not been studied and had certainly not been practiced."¹⁰⁰ The result is summed up by Montgomery's report on the state of the 8th Army in August 1942: "The condition of Eighth Army as described above ... was almost unbelievable Gross mismanagement, faulty command, and bad staff work Divisions were split into bits and pieces all over the desert; the armor was not concentrated; the gunners had forgotten the art of employing artillery in a concentrated form."¹⁰¹

At least, Montgomery repaired some of the worst training and doctrinal deficiencies. In fact, a partial explanation for his cautious handling of British troops and his unwillingness to engage the Germans in a mobile environment lay in his sense of the limitations of the forces

under his command. While cooperation between the different arms improved steadily during the remainder of the war (especially between the infantry and the artillery),¹⁰² it never reached the level attained by the Germans.

The above discussion has suggested certain weaknesses within the Army's operational approach to war. The lack of an integrated all-arms conception, trained hard into the Army's various components, made efforts to counter German mobility and flexibility in the desert a disaster. There were problems with command and control, but the real problem lay in an inability of commanders to display initiative. The lack of initiative partially resulted from the enormous expansion occurring after March 1939. The German Army had entered the war six years after its expansion program had begun; the British scarcely six months (and six years later would see the end of the war). But the problem also reflected the nature of training -- German training sought to create the unexpected; the British less so.

The ability to adapt and move on the battlefield improved as the war progressed but only by degrees. From El Alamein the Army proved able to break into German positions but not out of them. An "after-action" report by the Panzer Lehr Division from Normandy suggested that "a successful break-in by the enemy was seldom exploited to pursuit. If our own troops were made ready near the front for a local counter-attack, the ground was immediately regained."¹⁰³ Thus, the pursuit of Rommel's battered Afrika Korps after El Alamein failed to the extent that virtually all the Germans got away. Similarly, Montgomery's mishandling of Twenty-First Army Group in early September 1944 allowed the German Fifteenth Army to escape and German defenses to reform. On September 4, Antwerp fell to British troops with its port facilities virtually

intact. At that point, Montgomery stopped his forces pleading fuel shortages and a need to reorganize. Yet, Lt. Gen. Brian Horrocks admitted after the war that his XXX Corps, stopped to the east of Antwerp, still possessed fuel for another 100 kilometers.¹⁰⁴ The resumption of the offensive two weeks later ("Operation Market-Garden") attempted to use the flexibility of Allied airborne forces to seize a Rhine crossing, but the battle had already been lost. By failing to pursue the beaten Germans, Montgomery had allowed the enemy to put back together the flotsam and jetsam of defeat into a recognizable military instrument.

The RAF generally displayed considerable mobility and flexibility in its operations. From the Battle of Britain to support for the Army in the desert, the RAF showed itself to be a flexible instrument of war. In North Africa, a combination of close air support with interdiction strikes against German supply lines prevented the early battles against Rommel from ending in the Army's absolute defeat. By El Alamein such support was a major factor in the success of British arms. Bomber Command showed flexibility with its awesome destructive power, when its commander so wished. Its mine laying operations in the Baltic and North Sea, the sinking of the Tirpitz, the 1943 raid on the Moehne and Eder dams, and its contribution to destroying the French rail network are cases in point. But when Harris did not wish to be flexible, he was not. His single minded pursuit of victory through air power alone in the Battle of Berlin came close to destroying the command.

Flexibility and mobility were the key words of Royal Navy operations. It trained long and hard in the interwar period to correct the inflexibilities that had typified Jutland. The Battle of the Atlantic tested its adaptability to the greatest extent. In the end its

conduct and direction of operations (aided by the Canadian and American navies) broke the back of the U-boats. Technology played a major role in that victory. Ironically, the Navy had relied too much on technology before the war, believing that Asdic (Sonar) had solved the submarine problem.¹⁰⁵ It had not, and the Navy faced a long struggle over the next six years. The introduction of technology from radar, to hedgehogs, to a skillful use of operations research was critical. Technology was also important for surface forces at Cape Matapan, the sinking of the Scharnhorst, and the use of aerial torpedos as Taranto underlined.

In the air, technology was of crucial importance. Its greatest service to the war effort came in the Battle of Britain. In summer 1940 high speed fighters (the Hurricane and Spitfire), radar, and the performance of an integrated command and control system all represented an intelligent adaptation of state of the art technology to defense needs. It is worth highlighting Air Marshal Sir Hugh Dowding's contribution: in the mid 1930s he had headed the RAF's research and development command, furthering early experiments in radar and establishing specifications for what would become the Hurricane and Spitfire fighters; in the late 1930s, he introduced that technology to Fighter Command, and at the same time designed an effective air defense system; and then in 1940 fought and won the Battle of Britain with the technology and system he had created -- surely an impressive accomplishment.¹⁰⁶ Bomber Command's performance was spotty at the beginning. It began the night bombing campaign with the comfortable assumption that finding targets in darkness represented no significant hurdle. In the late 1920s when asked how even trained aircrews could find their targets, Tedder had replied: "You tell me!"¹⁰⁷ His comment proved all too true through 1941, when the Command discovered that less

than one third of its crews were dropping their bombs within a target radius of five miles (approximately eighty square miles in area).¹⁰⁸

The Army's difficulties with technology do not entirely explain its deficiencies, but they clearly contributed to its problems. In some cases the problem was beyond its control: in summer 1940 the Army was scheduled to begin replacement of the inadequate 2 pounder anti-tank gun with a new hard hitting 6 pounder. The abandonment of the Army's equipment at Dunkirk faced the British with the unpalatable choice either of changing over production lines to the 6 pounder (slowing production down considerably) or of allowing maximum continued production of the 2 pounder. With the immediate threat of invasion the latter alternative was the only reasonable choice.¹⁰⁹

The story of British tank development, however, suggests serious difficulties in the Army's development and introduction of up-to-date weapons systems. Part of the problem lay in the distance between the Mediterranean battlefield and the R & D centers in Britain. There is another reason for the faulty tank designs of the early war: the scanty allocation of Army funding by pre-war governments. But the consistently weak tank design program that placed British tank crews at a severe disadvantage throughout the war was inexcusable. Part of the problem lay in a separation of tank gun development from vehicle design. As a result tank development ignored the basic question of what weight of German armor would British tank weapons have to penetrate on the battlefield.¹¹⁰ Equally detrimental to effective tank development was the attitude even as late as summer 1941 within the War Office that research was not basic to effective weapons design. "Q" Martel, inspector of armored troops in the War Office, told Hobart in June 1941 that he doubted that Britain had time for research in armored fighting

vehicles.¹¹¹ In 1942 sloppy thinking in the Middle East further exacerbated design problems: Montgomery apparently approved a report from his theater in November that asserted to the War Office that "the 75mm gun is all we require."¹¹²

The implications for tank crews who fought German tanks throughout the war were all too depressing. Robert Crisp in preparing for the "Crusader" battle of November 1941 recalled:

I had an idea which I wanted to try out. It was inspired by the fact that enemy anti-tank weapons, especially the newly introduced 88mm gun ... could knock us out at 3,000 yards, whereas the maximum effective range of our 37mm and 2 pound guns was reckoned to be about 1,200. (This turned out to be wildly optimistic.) The result in simple arithmetic, was that we would have to be within range of their tanks and guns for 1,800 yards before we could hope to get close enough to do any damage. Eighteen hundred yards, in those circumstances, is a long way. It's sixty-four thousand eight hundred inches.¹¹³

The following apocryphal conversation (reported to have taken place in Normandy) suggests the extent to which matters had improved by 1944:

"What do the Germans have most of?"

"Panthers. The Panther can slice through a Churchill like butter from a mile away.

"And how does a Churchill get a Panther?"

"It creeps up on it. When it reaches close quarters the gunner tries to bound a shot off the underside of a Panther's gun mantlet. If he's lucky, it goes through a piece of thin armor above the driver's head."

"Has anyone ever done it?"

"Yes. Davis in C squadron. He's back with headquarters now, trying to recover his nerve."

"How does a Churchill get a Tiger?"

"It's supposed to get within two hundred yards and put a shot through the periscope."

"Has anyone ever done it?"

"No." 114

Logistical support for military operations is obviously crucial to their effectiveness. The British had to address the problem of logistics from the moment that war began. After the French collapse, the only place to attack directly their Axis opponents lay in the Eastern Mediterranean -- an immense logistic undertaking, considering the distance around the Cape. That logistic support structure functioned for

the most part with great efficiency. Churchill did feel that the Army was a little too well supplied (although both the British and the Germans were appalled at the largess with which American armies were equipped). Slim also suggests in his memoirs that the Army had traditionally since the Crimea stressed "supply at the expense of mobility."¹¹⁵ Ironically his forces, far removed from British production and the least well provided, possessed excellent mobility and a willingness to exploit their tactical victories.

Military forces also depend on timely, skilled intelligence, and in this realm Britain's performance shone throughout World War II. A massive decyphering effort centered at Bletchly Park broke some of the most important German codes and provided the "Ultra" intelligence that was a major factor in the Allied war effort.¹¹⁶ "Ultra" made its greatest contribution in the winning of the Battle of the Atlantic and at least in 1941 played a decisive role by itself in protecting British convoys. Through capture of a German weather trawler and a U-boat in May 1941, each with Enigma settings, the British broke into the German message traffic between Dönitz and his submarines for the rest of the year. The results speak for themselves (see Table IV):¹¹⁷

Table IV
British Merchant Ship Losses
February 1941 - November 1941

	Number of Ships Sunk	Tonnage Sunk
February 1941	34	196,783
March 1941	41	243,020
April 1941	43	244,375
May 1941	58	325,492
June 1941	61	310,143
July 1941	22	94,209
August 1941	23	80,310
September 1941	53	202,820
October 1941	32	156,534
November 1941	13	62,196

While "Ultra" may have been less absolute in other areas, it was of considerable help to the Army and the RAF. Both services integrated it well into their operations and rarely was its import ignored.¹¹⁸

But "Ultra" represents only a portion of the extraordinary intelligence success of the British in World War II. One of the foremost British intelligence successes in World War II lay in the capabilities developed in the field of photo-reconnaissance.¹¹⁹ From the opening moments of the war the British developed an extraordinarily useful ability to spy out from the air what the Germans were doing on the ground. Not only was such information helpful to those on the ground, but it played a crucial role in combination with "Ultra" in spying out German technological developments, such as radar, the V-1 and V-2

programs, and, of course, the V-1 launch sites in France.¹²⁰

As in the case of "Ultra", the British smoothly incorporated intelligence into their strategic and operational plans. As the war proceeded, they became more and more skilled at apprehending what was happening in the German camp, while cloaking their own developments. This involved deception (from the "double cross" system to the technical moves that cloaked D-Day), as well as a general sense of the need to protect the British research and developments from the prying eyes of German intelligence. The greatest triumphs lay in scientific intelligence. From summer 1940, when British scientists unraveled the secrets of "Knickebein" (a blind bombing aid) to the effort against the V-1 and V-2, the British included scientists at the highest levels of strategic discussions and listened to what they had to say. Churchill's attitude undoubtedly encouraged such a state of mind throughout the government.¹²¹ But the successful integration of scientific intelligence into the war effort was due to more than just Churchill's influence as the relationship between such military figures as Dowding, Mountbatten, Tedder, and Hobart on one hand and the scientific and engineering community on the other suggests.

There was one area of acquiring intelligence where the British were less successful, although their difficulty was as much due to the nature of the problem as to institutional failures. Specifically the area was the problem of 1) figuring out what the Germans were doing on the field of battle in the desert and 2) then working out an effective response. It was not an easy task considering the chaos and confusion of battle. Moreover, the separation of the intelligence functions from operations did not allow British intelligence officers sufficient familiarity with the operational and tactical concepts of even their own forces.

Consequently, the British found it difficult to understand what their opponent was doing in the desert. There was generally too much satisfaction with the "Crusader" battle of late 1941. In fact, that battle represented more of a success for the toughness of British troops than for the Army's tactical and operational competence.¹²² But even when the British managed to unravel the German system in North Africa, it was another matter to devise effective counters or to train one's troops in the same form of mobile warfare. The situation was exacerbated by the fact that troops coming out from England were not prepared for the desert or the Germans. Such devices as "Jock" columns (the throwing together of units from different branches) did not make a German Army. The different branches still fought as different entities. And as suggested above the British found it almost impossible to alter doctrinal and training approaches to meet the Germans on a one-on-one basis.

One must also address how the British paired their operational concepts with the strategic objectives assigned to their military forces. At the start, there were considerable problems, because of the natural deficiencies that grow into operational concepts during peacetime. There was, for example, no possibility that the Royal Navy could test its Asdic technology under peacetime conditions. Nor could it evaluate fully the airpower threat until wartime conditions placed fleets, maneuvering at high speeds, within the range of enemy aircraft. The low level of pre-war funding added to the difficulties of developing workable operational concepts.

Once the British were well into the war, there was a mismatch between operational concepts and strategic objectives. Perhaps the only glaring failure in the later period of the war lay in Bomber Command's operations during the Battle of Berlin. There, the mismatch between

operational concepts and capabilities and strategic objectives led to a military disaster: the loss of no less than 1,128 bomber aircraft in a five month period without the achievement of a decisive strategic success.¹²³ In most cases, operational concepts came clearly into line with strategic objectives -- the most obvious example being combined operations. While the Army's tactical execution of the battle in Normandy had serious faults, the operational concepts that got the Army ashore, that closed off the beachhead in a massive air interdiction campaign, and that pushed Allied forces ashore with rapidity and dispatch, represented a considerable operational success. Such concepts achieved strategic objectives with the successful lodgement on the European continent from which the Allies could wage a great land campaign against the Third Reich.

Overall the British placed their operational strengths against German weaknesses with increasing success as the war unfolded. The Navy was the most successful of the services in this regard. In the early war, its conduct of surface operations within the range of German aircraft resulted in serious losses, but such operations as Crete were unavoidable because the Army had already been committed. The Battle of the Atlantic placed an increasingly large and well trained force with an outstanding support structure from logistics to intelligence against a U-boat force that had lost by May 1943 many of its operational and technological strengths. The earlier picture was, of course, darker.

The RAF's picture is less complimentary. Dowding's conduct of the Battle of Britain consistently placed the strengths of his Command against the considerable weaknesses of the Luftwaffe. Unfortunately, Fighter Command's operations over the following two years (the so-called "Circus" operations) played to German strengths in the same fashion as

the Luftwaffe had played to British strengths in summer 1940. At times Bomber Command was able in its operations to place its technical and combat strengths against German weaknesses, especially in the summer of 1943. Unfortunately, Harris' fanatical faith in area bombing raids prevented the Command, when it possessed the capability, from making significant contributions to the American precision bombing campaign.¹²⁴ And Harris' pursuit of victory through airpower in late 1943 placed Bomber Command against the strongly recovered German night air defense system with disastrous results.

The Army's inability to place its strengths against its opponent's weaknesses showed most clearly the inadequacies of pre-war developments and an unfortunate unwillingness to adapt to battlefield conditions. The catastrophe in France was, of course, beyond the control of the forces committed, and Gort's timely extraction of the BEF, if not qualifying him as a great general, certainly represented the right decision at the right time. Performance in North Africa, however, represents another story. From the beginning the British insisted in placing their inadequately trained and equipped formations against the Germans in a mobile environment. There was some excuse for placing troops new to the desert at El Agheila in the late winter 1941 with the intervention in Greece. However, to repeat the same mistake after "Crusader" by replacing battle acclimated troops with ill-prepared forces, new to the theater, represented genuine incompetence.

As suggested above the British found it difficult to unravel the reasons for Rommel's successes. Clearly, they confused symptoms for the cause, and attempts to increase mobility by decreasing the size of formation levels (the so-called "Jock" columns being the foremost example) placed British forces at greater disadvantage than their

weakness in training and equipment deserved. Montgomery's greatest contribution in the war lies in his refusal to play the game according to German rules. With his emphasis on fighting what the Germans called a battle of matériel (or what is called by some observers a set piece battle) he placed the strengths of the British Army against the considerable weaknesses of his opponent. Thus, in fighting the set piece battle with its emphasis on fire power and matériel (The Royal Artillery was clearly the best of the British combat arms, and close air support as developed by the RAF in North Africa was outstanding), he enabled 8th Army to wear down and break the Afrika Korps.¹²⁵ Admittedly, once the period of pursuit had begun, Montgomery and his forces proved incapable of exploiting their victory fully. But Montgomery never placed his troops in a position where their weaknesses in mobile warfare would be exposed to the stunning retorts that had characterized battles in the desert up to that point in the war.

For the remainder of the war the British and their American ally were able to create conditions necessary to fight the set piece battle. In retrospect, it is hard to see how there was much of a choice. And Montgomery greatly contributed to the success of both "Husky" and "Overlord" by ensuring that Allied forces would fight that set piece battle of matériel on conditions most favorable to themselves. Nevertheless, one does not see a significant improvement in the post-Alamein period in the Army's ability to exploit breaks in operations into successes that maximized the full potential of Allied mobility. Two questions in the official history of the Mediterranean theater remain unanswerable:

Did the system of command provide for the moment, which inevitably comes, when someone must push the battle or fight over the hump? Had tactical training yet really got to grips with the problem of dealing quickly with the anti-tank guns sited beyond an obstacle?¹²⁶

In other words, could the operational and tactical systems adapt? The next section on the British Army's tactical approach will suggest that they did not. But without a consistent doctrine that meshed the combat arms into an operational whole and without a hard, demanding training program based on that doctrine, the British could only fight a battle of matériel.

One final area should be addressed. Our analysis has concentrated on Europe. It is worth here discussing British efforts in South East Asia, for they serve to reemphasize several points made in the above essay.¹²⁷ The initial effort in Malaya and Burma was an unmitigated disaster.¹²⁸ From the Royal Navy's loss of the Repulse and the Prince of Wales to the conduct of ground operations against an inferior enemy, British efforts surpassed those of their American allies in the size and scope of the disaster.

Field Marshal Slim went out to Burma in spring 1942 to help pick up the pieces on the Indian-Burmese frontier. Unlike commanders in the Middle East, he was not under pressure to launch an immediate counter-attack to recover ground lost, for the Burmese theater remained very much a strategic backwater. As such, it failed to receive manpower and material support in significant quantities. Thus, Slim received the time required to think through the failures and to design a remedy. He also received the time from his own government, as well as the Japanese, to

put things right. And put them right he did, making British troops in Burma by 1945 among the most effective units deployed by Great Britain in World War II.

To begin with, he carefully analyzed the failures and weaknesses of British, Australian, and Indian troops who had fared badly thus far against the Japanese. Then, beginning at the small unit tactical level, he and his staff created a training program to rectify those areas of greatest weakness. They based their program on the following set of principles:

- 1) The individual soldier must learn, by living, moving, and exercising in it, that the jungle is neither impenetrable nor unfriendly.
- 2) Patrolling is the master key to jungle fighting. All units, not only infantry battalions, must learn to patrol in the jungle, boldly, widely, cunningly, and offensively.
- 3) All units must get used to having Japanese parties in their rear, and, when this happens, regard not themselves, but the Japanese, as 'surrounded'.
- 4) In defence, no attempt should be made to hold long continuous lines. Avenues of approach must be covered and enemy penetration between our posts dealt with at once by mobile local reserves who have completely reconnoitered the country.
- 5) There should rarely be frontal attacks and never frontal attacks on narrow fronts. Attacks should follow hooks and come in from flank or rear, while

pressure holds the enemy in front

- 6) If the Japanese are allowed to hold the initiative they are formidable. When we have it, they are confused and easy to kill. By mobility away from roads, surprise, and offensive action we must regain and keep the initiative.¹²⁹

The process of remaking old habits of mind was, it must be stressed, a most difficult one. Not until 1945 did Slim really manage to complete the job. Interestingly, his operational approach (again, one that took long to instill) was similar to that on which the German Army operated for much of both world wars.

My corps and divisions were called upon to act with at least as much freedom as armies and corps in other theaters. Commanders at all levels had to act more on their own; they were given greater latitude to work out their own plans to achieve what they knew was the Army Commander's intention. In time they developed to a marked degree a flexibility of mind and a firmness of decision that enabled them to act swiftly to take advantage of sudden information or changing circumstances without reference to their superiors.¹³⁰

The results that Slim achieved in terms of operational capabilities were indeed outstanding, and the performance of his units in the pursuit phases was wholly different from that of other British forces around the world. The 300 mile race from Meiktila to Rangoon, accomplished in a

little over a week, stands in stark contrast to the Guards Armored division brewing up tea on the road to Arnhem.

IV. Tactical Effectiveness

In this section it is perhaps more useful to examine separately the tactical effectiveness of the British military services. Not only is it more difficult to draw comparable lessons and examples in this area, but the environment and conditions under which the services fight is enormously different. Of the services, the Royal Navy was the best prepared for war. There were, of course, considerable weaknesses: most notably in terms of anti-submarine and naval-air tactics. The first weakness reflected the difficulties of assessing technology in peacetime (namely evaluating the impact of Asdic on the capability of anti-submarine forces). It also reflected the Navy's pre-war misreading of submarine tactics and its failure to foresee the implications of the night surface attacks that U-boats had made in the Mediterranean in 1918.¹³¹

Similarly, the Navy faced problems in developing tactical naval airpower and its employment from aircraft carriers. The RAF's creation in 1917 and the inter-service squabbles throughout the inter-war period placed constraints on research and development of suitable aircraft and on the experience level of senior officers. However, the Navy was generally too blasé about the threat posed by shore based aircraft on its operations, and too highly estimated the potential of the anti-aircraft guns and the maneuverability of ships under attack. While losses off Norway, Dunkirk, and Crete were perhaps unavoidable given land force commitment, the loss of the Repulse and Prince of Wales suggests a continuation of the pre-war mentality beyond reasonable expectation. On

the other hand, the British did use their naval airpower with flexibility and imagination. In the Mediterranean in 1940, despite minimum resources and primitive aircraft, Cunningham used his fleet air arm and their tactical expertise to eliminate half of the Italian battle-fleet in the night torpedo attack on Taranto in November.

In surface fleet operations against its opponents, the Royal Navy's tactical handling of ships against enemy surface units was outstanding throughout the war. In general, tactical expertise and capabilities originated with the hard, rigorous training of the pre-war Navy. In the inter-war period, the Royal Navy cleared out many of those areas of weakness that had appeared in its performance in World War I. Perhaps, there was too much emphasis on preventing the errors and lack of initiative that had appeared at Jutland; generally, there was an effort to ensure that next time British admirals and ship captains would seize the initiative.¹³² As a result, the pre-war efforts to inculcate tactical flexibility and initiative in the officer corps (largely through training) took hold and provided the Navy with ships' captains who adapted rapidly to the changing circumstances of war. From Captain Warburton-Lee's attack on German destroyers in Narvik,¹³³ to the Battle of Calabria in July 1940 against the Italians,¹³⁴ to the defense of convoy J.W.51B by British destroyers against the pocket battleship Lützow and the heavy cruiser Hipper,¹³⁵ the Royal Navy executed its tactics with initiative, flexibility, and élan.

The Royal Navy's tactical adaptation to the Battle of the Atlantic showed considerable improvement over World War I, when the very idea of convoying ships had proved anathema to the First Sea Lord. That tactical adaptation, nevertheless, came at great cost to the ships protecting and the ships protected despite the contributions of intelligence and

technology. The problems of anti-submarine warfare in countering the threat posed by German submarines proved intractable and illusive. In fact, the success of "Ultra" in the last half of 1941 may have misled the Admiralty as to the tactical complexities involved in mastering the U-boats. Admittedly, the RAF's unwillingness to commit itself to the Battle of the Atlantic did little to ease the Navy's burden. Only after 1942 was Coastal Command a full-fledged player in the war on submarines.¹³⁶ Nevertheless, when all is said and done, the British had to place their strengths in the tactical sphere (and those of the Canadian Navy) against the strengths of the German Navy: its U-boat force. There were few tactical short cuts and only when escort ships were available in sufficient quantity, when various gaps in air coverage had been covered, and when intelligence ("Ultra" and otherwise) was available in sufficient quantity, could the Royal Navy fully utilize its tactical expertise.

The RAF had more serious problems in adapting to the tactical problems that World War II raised. To begin with, the basic belief of most RAF pre-war commanders was that a future war in the air would not involve a direct air-to-air struggle. Therefore, insufficient attention was paid to the defense of bomber formations. Surprisingly, in view of the RAF's stress on strategic bombing as its raison d'être, it made no preparation to iron out tactical and technological problems involved in placing bombs accurately on targets.¹³⁷ Even Fighter Command had its problems. Despite reports from Spain (or Poland for that matter) that the day of the dog fight was not over, the Air Ministry with little opposition from Fighter Command's Staff imposed a set of close controls on the British fighters -- tactics that were wholly inappropriate to combat against the Luftwaffe. The realities of that air-to-air

environment made themselves quickly clear to RAF fighter pilots in the spring and summer of 1940. Under the pressure of combat they quickly adapted to the loose figure-four tactics of German fighters. But there were needless losses in early air encounters with the Germans.

The other tactical problems raised by the war proved more intractable to satisfactory solutions. The first had to do with placing bombs accurately on target. Early encounters with the Luftwaffe during raids on German naval bases in late 1939 resulted in a catastrophe for the "Wellingtons" that flew those missions.¹³⁸ That experience convinced the Air Staff that daylight bomber attacks were not feasible without prohibitive losses. Thus, the turn to night bombing was both sensible and explicable. What was inexcusable was the self-satisfied attitudes of Air Staff and Bomber Command over the next year and a half. Both believed that the bomber force possessed the technological and tactical expertise to hit targets in Germany with some degree of accuracy. The Butts report of late summer 1941 suggested, however, that Bomber Command had been spending a substantial portion of its effort in killing cows and damaging trees.¹³⁹

Harris' assumption of leadership in February 1942 led to an improvement in direction but even he had to be forced to create the pathfinder force that under Bennett's command contributed so much to the effectiveness of area bombing attacks. In 1943, the introduction of technological aids, such as "H2S," "Oboe," "Window," and marking devices used by the Pathfinders, noticeably improved the tactical capabilities of the bomber force. There is an interesting point here: these technological improvements by and large aimed at improving Bomber Command's accuracy; little was done to protect the bomber force from the threat posed by the Luftwaffe's night fighters. From 1942 through to the

disastrous raid on Nuremberg in March 1944, Harris' forces flirted on the knife's edge of defeat in terms of its loss rates. The introduction of "Window" in summer 1943 gave the command a brief respite, but the tactical recovery of the German night fighters and defense system was so quick that the Battle of Berlin was a foregone conclusion before it began. Exacerbating the command's difficulties was the fact that its intelligence officers and senior commanders found it difficult to discover the new, and highly effective tactics of the German night fighter force (particularly the "Schräge Musik," upward firing cannons that allowed the Germans to attack the bombers from their blind spot).¹⁴⁰ Only when Harris realized that his force could no longer continue the night bomber raids did he become interested in using British night fighters over the Reich. As for the bomber crews, his command never developed an effective technological or tactical response to fighter attacks.

Like the Royal Navy, the RAF was a volunteer force, at least as far as its flying personnel. As such, it possessed a self-selected elite of considerable cohesion, élan, and pride. Morale remained high for most of the war, but at least in the Battle of Berlin Harris pushed his crews too hard, so that there was a dangerous decline in morale. In that battle, Bennett's pathfinder force of elite air crews lost approximately 150 percent of crew strength; to him the battle "had been the worst thing that could have happened to the Command." The result was a spate of what he called "fringe merchants," air crews who dumped their bombs over the North Sea to climb above the bomber stream and away from German night fighters. But, Bennett also suggests that a portion of the problem lay in the distance between those commanding and those flying. As the only Group Commander to fly on active operations in Bomber Command during

World War II, he suggested in an interview that in future wars all senior RAF commanders fly on operations in wartime and that for every Air Vice Marshal lost on operations, the RAF would save the lives of 200 air crew.¹⁴¹

The tactical competence of the Army presents the most interesting and important issues to the military historian. It appears that the upper levels of the Army's high command did not generally concern themselves with battlefield tactical problems. There is, of course, an explanation for this factor: the CIGS and his staff in London faced enormously complex strategic and logistic problems in the conduct of the war. Brooke particularly seems to have left matters outside of the war's strategic and global conduct to his staff or disregarded them entirely.¹⁴² Montgomery made the necessary tactical improvements to 8th Army to enable it to fight his set piece battle at El Alamein, and when transferred to Europe he had little time, given his strategic and operational concerns, to work on the tactical problems of the home Army. But when all is said and done even Montgomery did not fully grasp the tactical weaknesses of his forces at the lower levels.

Only Slim, with his long tenure in the CBI (China-Burma-India) theater and with his knowledge of the shocking inadequacies that had appeared in the first six months of the war against the Japanese, managed to reform the structure of tactical and operational concepts from top to bottom. He then, as mentioned above, insured that thorough training corrected deficiencies. And that process took three full years. There were no shortcuts to the repair of tactical and operational deficiencies. In a general sense, the evidence suggests that a lack of pressure and concern from the Army's higher levels hindered creation of a consistent and effective tactical approach to combat (with the exception of the

Royal Artillery). Thus, the tactical competence of British units was often insufficient either to realize fully operational and strategic goals or to seize completely the fleeting operational and strategic opportunities that battlefield success offered.

Part of the problem that the British Army faced in the tactical sphere lay in the most basic arena of military competence: that of combat leadership. An anti-Nazi German serving with the British Home Army in 1942 commented to Liddell Hart about "the tremendous gulf between officers and men ... our C.O. -- and we have had quite a few already -- never says a personal word to us, nor does even a subaltern." The refugee underlined that his experience in the last war had suggested a very different relationship between front line officer and soldier existed in the German Army.¹⁴³

The leadership problem partially reflected the fact that the Army had not begun to rearm seriously until March of 1939. And yet, the general disinterest or lack of knowledge, or in some cases the unwillingness to grapple with the fundamental issues that consistently appeared explains the marginal (at best) improvements that took place in tactical performance and cooperation between arms. Montgomery and Slim were at least willing to grapple with the problems at the bottom level; most other senior commanders were not. A letter from Auchinleck to Churchill is most revealing in this regard. The commander of Britain's armies in the Middle East admitted that reverses in January 1942 had resulted from failures to coordinate units on the battlefield; Auchinleck then continued on to place all the blame for tactical reverses on the technical inadequacies of British armor design.¹⁴⁴ There were, of course, those who did see the weaknesses and made an attempt to rectify defensive or offensive sloppiness. One such commander was Lt. General

Sir C. Walter Alfrey, V Corps commander in North Africa, who obviously spent much of his time on the front lines. More often than not what he saw of his combat units did not please him. On January 22, 1943 he noted in his diary after a visit to the 6th Armored Division: "Impressions of the day: -- a) Irishmen still blatantly obvious, b) little use of reverse slope positions" Three weeks later after visiting two paratrooper battalions he gave their commanding officers rockets because "walking round two Para battalions in detail and found: a) slits dug to 3 feet instead of shoulder depth, b) no wire, c) undue dispersion within platoons, d) no one seemed to know where the men should be or how to alert them, e) officers more or less non-existent."¹⁴⁵ It speaks volumes for the state of the British Army that Corps commanders had to spend time in correcting such deficiencies.

The real cause of such a state of affairs lay in failure of the Army leadership to enunciate a clearly thought out doctrine and then to institute a thorough training program to insure its acceptance throughout the Army. In discussing the Afrika Korps, the British official historian clearly understands what made the Germans such formidable opponents throughout the war: "By insisting upon a clear and well-understood doctrine, thoroughly instilled by training on uniform lines, they made it possible for units and even sub-units to settle down quickly in new groupings and under new commanders with a minimum of confusion."¹⁴⁶

The British approach was quite dissimilar. There was no sense of doctrine to provide a framework of reference for tactical responses to combat.¹⁴⁷ Therefore, British Army training never obtained the same high level of consistency and effectiveness that the German system managed. The regimental system with its strongly decentralized approach to training was not responsible for this state of affairs: the German

training system was equally decentralized with each division responsible for its own training.

Admittedly, the root of the problem went back to the pre-war period. The Staff College at Camberly issued staff solutions to all exercises and as one attendee noted "discussion was very much frowned on after lectures."¹⁴⁸ There was ample information flowing back from the Middle East theater and certainly from within that theater itself, but one can doubt how much attention the Home Forces paid to after-action reports or tactical tips -- especially with the Army's high command proved so unwilling to set even a general doctrine. There was a disinclination to set even a general doctrinal approach. Alanbrooke found Auchinleck most reluctant in 1942 to appoint a Major General as general director and adviser on the employment and equipment of armored forces.¹⁴⁹ But Alanbrooke himself waged a major campaign to prevent those with experience in the Royal Tank Regiment from gaining any substantial influence on armored doctrine. Pile was shuffled off to the anti-aircraft command. Hobart, brought back to active duty after only the most vigorous arm twisting by Churchill, never received an active command. The general theory as presented by the CIGS was that all corps commanders should be capable of handling armored formations,¹⁵⁰ but in practice it seems to have meant that those with experience in armored warfare should be excluded from even divisional command. The most egregious example was that of Brigadier John Caunter. Trained by Hobart in the 7th Armored Division's start up days in 1939, Caunter as the division's senior Brigadier assumed command in December 1940 and then again in February 1941 when the division commander was not available. As such he played a crucial role in winning the great early victories over the Italians in the desert. In February 1941 the 2nd Armored Division

arrived new from England with no experience in the North Africa theater. Its division commander died immediately after its arrival. One would think that in the circumstances Caunter was the ideal candidate for the position. He was not selected but instead was shipped to India to become the adviser on armored fighting vehicles to the Indian Army.¹⁵¹ The general attitude of the Army was enunciated by General Paget, commander-in-chief Home Forces: "Anyone can handle armored forces. No special knowledge is needed."¹⁵²

Even given its doctrinal problem, the British Army seems not to have regarded tactical training with the same ruthless intensity as did the Germans. There were, of course, senior commanders whose interest was considerable. Both Montgomery and Slim were clearly first class trainers, but from late 1943 on Montgomery's position at the highest level gave him relatively little time to work on training. At lower levels, hard, tough, and realistic training was clearly a hit or miss affair. Hobart, as he had done in North Africa with the 7th Armored Division, did an outstanding job in training two armored divisions in the British Isles. It is clear that his rigorous, demanding, and ruthless training was regarded as somewhat bizarre by other Army leaders.¹⁵³ One division commander noted to Liddell Hart after the war:

Training: I have already told you how shocked I was at the meagre results of two years of training in the United Kingdom when I met 44 Div, 51 Div, 56 Div (not to speak of 50 DI which learnt nothing, ever, even after years in the desert If I told you what I had seen myself among those divisions, you'd not believe it.) It was nothing to leave the tanks to hold a position at

night and retire the infantry -- for a rest? too dangerous? -- and let the enemy infiltrate back and take the position.¹⁵⁴

From the German point of view British tactical failures were clear throughout the war. German after-action reports on the "Crusader" battle criticized the British inability to concentrate their strength at the decisive point -- in other words their tendency to disperse their effort. This the Germans emphasized was their "fundamental tactical mistake."¹⁵⁵ Tedder in his memoirs records a German after-action report on combat with the British Second Army in Normandy in July 1944:

British attacks took place on principle only after a barrage of anything up to three hours. 'A successful break-in by the enemy is almost never exploited to pursuit. If our own troops are ready near the front of a local counter-attack, the ground is immediately regained.' The enemy drew the conclusion that they should occupy the main line of resistance very thinly, holding behind every sector a local reserve supported by tanks, ready to advance as soon as the artillery fire lifted. 'It is best to attack the English, who are very sensitive to close combat and flank attack, at their weakest moment -- that is, when they have to fight without their artillery.'¹⁵⁶

In Italy at the same time a German evaluation commented:

The conduct of the battle by the Americans and English was, taken all round, once again very methodical. Local successes were seldom exploited

British attacking formations were split up into large numbers of assault squads commanded by officers. NCOs were rarely in the "big picture," so that if the officer became a casualty, they were unable to act in accordance with the main plan. The result was that in a quickly changing situation, the junior commanders showed insufficient flexibility. For instance, when an objective was reached, the enemy would neglect to exploit and dig in for defense. The conclusion is: as far as possible go for the enemy officers. Then seize the initiative yourself. [Emphases in original.]¹⁵⁷

These after-action reports by German military units engaged in fighting the British Army are not unusual and their geographic spread suggests genuine problems in the Army's tactical approach that reach beyond explanations such as pre-war funding problems or the Army's social position in British society. Even the basic building block of infantry tactics showed weaknesses. The British approach seems to have been to move forward with a straight forward rush and the obvious prayer that the Royal Artillery had bashed the Germans to pieces. One future British Army commander noted on his training preparations that "It was pretty unimaginative, all the things that we had learned to do at battle school. A straight forward infantry bash."¹⁵⁸ And preparations as far as teaching individuals what to expect from enemy defenses seems also to have been lacking: The Royal Scots Fusiliers found it most disconcerting

to come over the top of hills to discover 'the Germans dug in on the reverse slope, 'something we had never envisaged...'¹⁵⁹ This is an extraordinary admission, because the siting of reverse slope positions had been a basic principle of German defensive tactics since 1917. At the heart of these weaknesses lay a lack of realistic doctrine to support a consistent training program. On the whole, the system left training in the hands of regiments and operational units. Some evolved excellent programs; others completely unrealistic approaches. The result was not consistency.

Such decentralized training did for the most part build esprit de corps and unit cohesion to a greater extent than in the American Army. Unfortunately, unlike the German and American systems the regimental system, while it did promote unit cohesion, also perpetuated the class stratification of British society and retarded promotion of battle tested, competent NCOs into the officer corps. Thus, while the British Army possessed an excellent cadre of NCOs throughout the war, valuable experience that could have leavened junior officer ranks remained in the enlisted ranks. As the Afrika Korps noted in early 1942 on the course of the Crusader battles and Rommel's counterattack:

British troops fought well on the whole, though they never attained the same impetus as the Germans when attacking. Officers were courageous and self-sacrificing but rather timid if they had to act on their own initiative. NCOs were good throughout.¹⁶⁰

Exacerbating the difficulties of cooperation between the combat arms on the tactical plane was the overly structured nature of the

training systems. As discussed above in the operational section, it tended to create a "we-they" syndrome in which infantry units viewed armored and artillery in almost an adversarial relationship and without clear understanding of the problems facing the other branches. Without that understanding it was difficult to establish the level of trust necessary for tactical cooperation on the battlefield. Thus, cooperation tended even in Normandy to involve the artillery (or RAF) pasting contested areas with the tanks and infantry then attempting to occupy the wreckage without paying much heed to each other.

In general the Army proved unable to give its units in the British Isles the full benefit of the lessons of battlefield tactics learned in the hard school of desert fighting. While analysis of the North African battles were regularly provided to the commanders back home, one can doubt how many used the lessons fully in their training. The perceptive journalist and future historian of the battle of Gallipoli, Alan Moorehead wrote in the Daily Express in June 1942 that "we would have more experienced men if we had a better system of continually sending large numbers of desert fighters and staffers back to England and replacing them here with men from England."¹⁶¹ Unfortunately, most British units had to learn many of their basic tactical skills on the battlefield -- an expensive school.

Also contributing to tactical problems were undoubtedly the manpower problems in terms of the quality of soldier provided as replacement to front line divisions. Moreover, like the Americans, British units (especially after the landings in Normandy) remained committed for interminable periods of time to front line combat. Not only was this a wearing and psychologically debilitating experience but it provided little time for tactical adaptation except of the crudest

kind. It also was a method guaranteed to winnow out the best combat leaders and leave their bodies behind. As Michael Carver wrote to Liddell Hart about the failure of his troops to gain the full fruits of the Falaise opportunity:

Two days later, when they [his men] knew for certain that the break had come at last, they were ready to dare all: then it was too late. It was a hell of a long time since they had had a real break, not since Tripoli. Since then Sicily and Italy and the beachhead battles had disillusioned them. Tank casualties may not have been high, but a lot of the best and the boldest had been killed or wounded ... the fighting element of an armored regiment is small and it is the tank commanders who determine all -- a maximum of 60 out of 700 men. Out of that 60, a maximum of 48 led the way in the troops day in and day out. There were few days when we were out of action.¹⁶²

The response to tactical weaknesses (and perhaps partially their cause) was to use matériel to correct those deficiencies. In the long run it represented a battle the Germans could not possibly win. Nevertheless, while in the short run the cautious use of massive fire-power and the expenditure of tanks instead of infantrymen, saved lives, it may also have prolonged the war. Certainly, the system did not encourage the flexibility of mind and the willingness to take initiative that are essential, if one hopes to do more than break into enemy positions. For exploitation of fleeting battlefield advantages, one

needs NCOs and junior officers who possess initiative and drive. Those qualities were not often enough in evidence in World War II.

Conclusion

The military performance of Britain in World War II provides any number of important points. In many respects it was truly outstanding. Its mobilization and resource allocation was the best of any combatant in the war; its conduct of strategy and its ability to cooperate with its allies in an effective fashion were also excellent. Inter-service cooperation, particularly in combined operations, made major contributions to the winning of the war and the conduct of intelligence and incorporation of both technical and "Ultra" information into the war effort was outstanding.

But if there is much to praise in the British effort, disturbing questions remain. Why in particular did it prove so difficult to merge the tactical and operational capabilities of the British Army's combat arms on the battlefield? How to explain the wide disparity in combat effectiveness between units in the same Army? Did a possibility exist to create a coherent doctrine and an effective training program that would improve battlefield performance? Why did the development of effective weaponry vary so widely in terms of battlefield effectiveness from service to service?

As this author has attempted to suggest there were possibilities of improving the operational and tactical weaknesses of British military forces. But it must be stressed that those improvements in effectiveness at best could only have been incremental in nature and required a substantial rethinking of tactical and operational approaches, a

continuity of leadership that was not often present, and a willingness to train long and hard at making small improvements. It also would have involved a willingness to recognize that the payback for such reforms was going to come far down the road. Most military organizations and certainly most political leaderships rarely possess such patience. Finally, it would have also required a ruthlessness with incompetence at the higher levels which was not present in the British Army. The reappearance of Ritchie as a corps commander in Dempsey's Second Army after his wretched performance in the desert in spring 1942 speaks volumes on this point. The cost of ineptitude of junior officers is often their own lives as well as those of their men; the cost of ineptitude at the higher ranks is rarely death for the individual concerned; the impact on the troops needs little underlining.

Notes

1. The comments sprinkling the public as well as private pronouncements of British statesmen are almost too numerous to mention. Among the more useful works on this phenomena are Correlli Barnett, The Collapse of British Power (London, 1972); Martin Gilbert and Richard Gott, The Appeasers (New York, 1967); and Williamson Murray, The Change in the European Balance of Power, 1938-1939 (Princeton, 1984).
2. For the impact of underfunding on the services see particularly Brian Bond, British Military Policy Between Two World Wars (Oxford, 1980) and Murray, The Change in the European Balance of Power, Chapter II.
3. Michael Howard, "The Liddell Hart Memoirs," Journal of the Royal United Services Institute (February, 1966), p. 61.
4. David Fraser, Alanbrooke (New York, 1980), p. 297.
5. Public Record Office (PRO), CAB 16/209, SAC/4th Meeting, CID, Strategic Appreciations Sub-Committee, p. 75.
6. For the decline of the ship building industry which had a direct impact on the buildup of the Royal Navy and on the logistic infrastructure supporting Britain and her far flung strategic interests see: Leslie Jones, Shipbuilding in Britain (Cardiff, 1957), p. 125; and C. B. A. Behrens, Merchant Shipping and the Demands of War (London, 1955).

7. For a brilliant look at the larger issues involved in Britain's rise as well as her decline see: Paul Kennedy, The Rise and Fall of British Naval Mastery (London, 1976).
8. PRO CAB 53/37, COS 698 (Revise), "Military Implications of German Aggression against Czechoslovakia," 28.3.38, pp. 145-146.
9. Stephen Roskill, Hankey, Vol. III (London, 1974), p. 419.
10. For an outstanding discussion of the qualities that made Winston Churchill such an outstanding war leader and manager of the British nation in war see: Martin Gilbert, Winston S. Churchill, Vol. VI, Their Finest Hour, 1939-1941 (Boston, 1983), pp. 891-898.
11. For a discussion of the failures in British strategic decision making see: Murray, The Change in the European Balance of Power, 1938-1939, Chapters IX and X.
12. PRO FO (Foreign Office) 371/22922, C 1545/281/17, Minute by Sir Robert Vansittart, 10.2.38 on CP (Cabinet Paper) 40 (38), "Staff Conversations with France and Belgium."
13. For a discussion of the rather unwilling and belated response of the Chamberlain government to the seizure of Prague see: Murray, The Change in the European Balance of Power, 1938-1939, pp. 284-290.
14. PRO CAB 23/100, Cab 36(39), Meeting of the Cabinet, 5.7.39., pp. 108-128.
15. PRO PREM 1/296, Letter from Simon to Chatfield, 17.4.39.
16. For the production figures for fighters by the British and German aircraft industry see: Sir Charles Webster and Noble Frankland, The Strategic Air Offensive Against Germany, Vol. IV., Appendices, p. 497.
17. Burton Klein, Germany's Economic Preparations for War (Cambridge, Ma.: 1959), p. 99.

18. Gilbert, Winston S. Churchill, Vol. VI, p. 1032.
19. W. K. Hancock and M. M. Gowing, British War Economy (London, 1949), p. 519.
20. Ibid., p. 199.
21. Ibid., p. 352.
22. Quoted in Gilbert, Winston S. Churchill, Vol. VI, p. 1205. The original reference is: 'Most Secret and Personal,' Prime Minister's Personal Telegram, T.611, 29 September 1941: Churchill Papers, 20/43.
23. See Williamson Murray, Luftwaffe (Baltimore, 1985), pp. 282-284 for an evaluation of the role of strategic bombing in Germany's eventual defeat.
24. Among a whole host of books on "Ultra" two of the most important works on its impact on the war at sea are: Patrick Beasley, Very Special Intelligence (London, 1978) and P. H. Hinsley, E. B. Thomas, C. F. G. Ransom, R. C. Knight, British Intelligence in the Second World War, Vol. I (London, 1979), Vol. II (London, 1982), and Vol. III, (Part I) (London, 1984).
25. Winston S. Churchill, The Second World War, Vol. III, (London, 1950), pp. 100-101.
26. For an excellent discussion of Britain's utilization of her scientific and technological resources see: M. M. Poston, D. Hay, and J. D. Scott, Design and Development of Weapons (London, 1964).
27. Bernard Fergusson, The Watery Maze, The Story of Combined Operations (New York, 1961), pp. 110-118, 408.
28. M. M. Poston, British War Production (London, 1952), pp. 19, 40.

29. One can argue that the style of civilian life in terms of living conditions depicted by George Orwell in his novel 1984 represents rather closely the conditions under which Britain's urban population was living by later 1943 and early 1944.
30. Michael Howard, Grand Strategy, Vol. IV, August 1942 - September 1943 (London, 1972), p. 3.
31. Ibid., pp. 6-7.
32. Postan, British War Production, p. 225.
33. For two important accounts by British scientists of their war contributions see: R. V. Jones, The Wizard War (New York, 1978) and Solly Zuckerman, From Apes to Warlords (London, 1978). See also Brian Johnson, The Secret War (London, 1978) and Sir Arthur Hazlett, Electronics and Seapower (London, 1975).
34. See particularly Hinsley, British Intelligence in the Second World War, Vols. I, II, and III (Part I).
35. For the general unwillingness of the Chamberlain government to address the problems raised by Hitler in the war's early months see: Peter Ludlow, "The Unwinding of Appeasement" in Das 'Andere' Deutschland im Zweiten Weltkrieg, edited by L. Kettenacker (Stuttgart, 1977).
36. Hansard, 13 May 1940, columns 1501-02.
37. "Disastrously incompetent" may be too kind a description for the ineptitude that characterized the Italian military effort. See MacGregor Knox, Mussolini Unleashed (Cambridge, 1982) for a full examination of the Italian disasters that marked their debut in the war.
38. Major General I. S. O. Playfair, The Mediterranean and Middle East, Vol. I., The Early Successes against Italy (London, 1954), p. 377.

39. Ibid., pp. 377-89.
40. Hinsley, British Intelligence in the Second World War, Vol. II, pp. 70-73.
41. Gilbert, Winston S. Churchill, Vol. VI, pp. 755-556 and Playfair, The Mediterranean and Middle East, Vol. I, pp. 190-92.
42. Major L. F. Ellis, Victory in the West, Vol. I, The Battle of Normandy (London, 1962), p. 453; Vol. II, pp. 158-59.
43. John Terraine, The Right of the Line (London, 1985), p. 605.
44. "The 5th Casualty; Battle Absentees," 1943 Private Papers of Major General James Scott Elliot, King's College, University of London, Centre for Military Archives.
45. Ibid.
46. Paper written as Commander 56th (London) Division, 10 Apr 1944, Private Papers of Major General James Scott Elliot, King's College, University of London, Centre of Military Archives.
47. Lord Hastings, The Memoirs of General the Lord Ismay (London, 1960), pp. 269-70.
48. Gilbert, Winston S. Churchill, Vol. VI, p. 592.
49. General Sir Leslie Hollis, One Marine's Tale (London, 1956), pp. 66-71.
50. Lt. General Sir Ian Jacobs quoted in Gilbert, Winston S. Churchill, Vol. VI, p. 326.
51. Churchill never forgave Alanbrooke for the spite revealed in his diaries which were published with editing and commentary by the historian Sir Arthur Bryant. For Churchill's response see: John Colville, Winston Churchill and His Inner Circles (New York, 1981), p. 184.

52. See Fraser, Alanbrooke, pp. 413-420 for Churchill's insistence that British forces must participate in the reconquest of the Pacific.
53. See Murray, The Change in the European Balance of Power, Chapter II.
54. I. S. O. Playfair, The Mediterranean and Middle East, Vol. II, The Germans Come to the Help of their Ally (1941) (London, 1956), pp. 221-43.
55. Gilbert, Winston S. Churchill, Vol. VI, p. 862.
56. Kenneth Mackesy, Armored Crusader (London, 1967), p. 159.
57. Gilbert, Winston S. Churchill, Vol. VI, pp. 657-58, 908-09, 1040 n.3, 1101 n.2.
58. *Ibid.*, p. 658.
59. Playfair, The Mediterranean and Middle East, Vol. I, pp. 245-46.
60. *Ibid.*, Vol. II, p. 223.
61. See Murray, The Change in the European Balance of Power, pp. 64-71.
62. J. R. M. Butler, Grand Strategy, Vol. III, Part II, June 1941-August 1942 (London, 1964), p. 638.
63. Hinsley, British Intelligence in the Second World War, Vol. II, p. 73.
64. Lt. Gen K. F. Telegin, "German Breakthrough," quoted in Stalin and his Generals, ed. by Seweryn Bialer (New York, 1969), p. 273.
65. See D. C. Watt, Personalities and Politics (London, 1965). For the difficulties involved in handling the Australians in the desert see Playfair, The Mediterranean and Middle East, Vol. I, p. 227.
66. For a full exposition of these issues see Murray, The Change in the European Balance of Power, Chapters IX and X.
67. Playfair, The Mediterranean and the Middle East, Vol. I, p. 227.
68. *Ibid.*, p. 265.
69. See Murray, Luftwaffe, Chapter VIII.

70. For an examination of these issues see Christopher Thorne, Allies of a Kind, The United States, Britain and the War Against Japan, 1941-1945 (London, 1978).
71. John Connell, Wavell, Scholar and Soldier (New York, 1964), p. 204.
72. PRO CAB 21/903, 18.11.39. "Bomber Support for the Army," memorandum by the Air Staff.
73. For a description of the British system see: Playfair, The Mediterranean and Middle East, Vol. III, p. 208.
74. Ibid., Vol. IV, p. 88.
75. PRO CAB 54/4, DCOS 64, 8.2.38., DCOS Sub-Committee, "The Establishment of a Special Striking Force for Amphibious Operations," Letter from the DCAS to the Dep. Sec. CID.
76. PRO CAB 54/2, DCOS/30th Meeting, 15.11.38, DCOS Sub-Committee, p. 4.
77. Fergusson, The Watery Maze, p. 57.
78. Ibid., p. 50.
79. Ibid., p. 110.
80. For one scientist's impression of Mountbatten's combined operations organization see: Zuckerman, From Apes to Warlords, pp. 150-53.
81. Fergusson, The Watery Maze, Vol. I, p. 1.
82. Ellis, Victory in the West, Vol. I, p. 223.
83. Ibid., p. 294.
84. PRO PREM 3/14/1, Arthur Harris to Winston Churchill, 3.11.43.
85. Hinsley, British Intelligence in the Second World War, Vol III (Part I), pp. 291-307.
86. Webster and Frankland, The Strategic Air Offensive Against Germany, Vol. II, p. 193.
87. Quoted in Shelford Bidwell and Dominick Graham, Fire-Power, British Army Weapons and Theories of War, 1904-1945 (London, 1982), p. 228.

88. For a more detailed examination of this issue see Murray, The Change in the European Balance of Power, pp. 36, 91.
89. Mackesy, Armored Crusader, p. 159.
90. Lord Tedder, With Prejudice, p. 217.
91. Robert Crisp, Brazen Chariots (New York, 1960), p. 32.
92. Ibid., pp. 180, 193 among others.
93. Bidwell and Graham, Firepower, pp. 233-35.
94. Crisp, Brazen Chariots, p. 215.
95. Quoted in Bidwell and Graham, Firepower, p. 225.
96. For the stunningly bad show put on by the British at Villers-Bocage see the restrained commentary by the official historian, Ellis, The War in the West, Vol. I, pp. 251-54 and the telling examination in Max Hastings, Overlord, D-Day and the Battle for Normandy (New York, 1984), pp. 129-37.
97. See particularly: Sir Henry Pownall, Chief of Staff, The Diaries of Lieutenant General Sir Henry Pownall, Vol. II, 1940-1944 (London, 1974), pp. 18, 55-56, 63, 64; Playfair, The Mediterranean and Middle East, Vol. II, p. 27, and Vol. III, pp. 153-54; and C. P. Stacey The Canadian Army in the Second World War, Vol. III (Ottawa, 1960), p. 275.
98. Pownall, Chief of Staff, p. 99; for the bloody-minded German approach to training the reader is urged to read applicable sections in Guy Sajer, The Forgotten Soldier (New York, 1971), pp. 158-68.
99. Playfair, The Mediterranean and Middle East, Vol. III, p. 345.
100. Ibid., p. 352.
101. Fraser, Alanbrooke, p. 289.
102. Bidwell and Graham, Firepower, pp. 248-59.
103. Quoted in Hastings, Overlord, p. 147.

104. J. L. Moulton, Battle for Antwerp, The Liberation of the City and the Opening of the Scheldt, 1944 (London, 1978), pp. 52-53.
105. Murray, The Change in the European Balance of Power, p. 75-76.
106. An impressive accomplishment which makes his shabby treatment at the hands of the Air Ministry all the more astonishing. See Gilbert, Winston S. Churchill, Vol. VI, p. 1060.
107. Guy Hartcup, The Challenge of War (London, 1967), p. 126.
108. See the report of Mr. Butts to RAF Bomber Command, "Examination of Night Photographs, 15 August 1941," Webster and Frankland, The Strategic Air Offensive Against Germany, Vol. IV, p. 205.
109. Playfair, The Mediterranean and Middle East, Vol. II, p. 175.
110. Hastings, Overlord, p. 190.
111. Letter from Percy Hobart to B. H. Liddell Hart, 8/6/1941, B. H. Liddell Hart Papers 1/376/135, King's College, University of London, Centre of Military Archives.
112. Hastings, Overlord, p. 101.
113. Crisp, Brazen Chariots, p. 11.
114. " s, Overlord, p. 190.
115. shal Sir William Slim, Defeat into Victory (London, 1956),
116. For this author's thoughts on the subject see: Williamson Murray, "Ultra: Some Thoughts on its Impact on the Second World War," Air University Review (July-August, 1984).
117. Captain Steven Roskill, The War at Sea, Vol. I (London, 1954), p. 616.
118. The clearest case of ignoring "Ultra" came on the 5th and 6th of September when "Ultra" information clearly warned that the 9th and 10th SS Panzer Divisions were being sent to the area of Arnhem for

rest and refit. It is one more item in the sorry story of "Marketgarden." For the messages see: PRO DEFE 3/127, XL 9188, 5.9.44, 11522, DEFE 3/128, XL9245, 6.9.44., 01032. See also Williamson Murray, "Ultra: Some Thoughts on Its Impact on the War," Air University Review (August-September, 1984). The unwillingness of Harris to recognize "Ultra" and other intelligence information on the recovery of German night defenses has already been mentioned in the body of this paper.

119. See U. Powys-Lybbe, The Eye of Intelligence (London, 1983).
120. See particularly Jones, The Wizard War, pp. 133-34, 189-92, 226, 231, 236, 360-61, 431-35.
121. See the discussion in Jones, The Wizard War, pp. 100-102 for the account of his first meeting with Churchill and the tough-minded but fair hearing that he received over the "Knickerbocker" problem.
122. Pownall, Chief of Staff, pp. 63-64.
123. Webster and Frankland,, The Strategic Air Offensive Against Germany, Vol. IV, pp. 431-432.
124. The foremost example being Harris' obdurate refusal to support the American attacks on the Schweinfurt ball bearing industry. See Murray, Luftwaffe, p. 168.
125. For a full discussion of the role of firepower in the successes of British armies in the last half of the war see Bidwell and Graham, Firepower, Chapters 14 and 15.
126. Playfair, The Mediterranean and the Middle East, Vol. IV, p. 375.
127. For the British effort against the Japanese see: Major General S. Woodburn Kirby, The War Against Japan, Vols. I-V (London, 1957-1969); and Slim, Defeat into Victory.

128. For a recent historical examination of the problem see: H. P. Willmont, Empires in Balance, Japanese and Allied Pacific Strategies to April 1942 (Annapolis, 1982).
129. Slim, Defeat into Victory, pp. 142-43.
130. Ibid., pp. 541-42.
131. See Murray, The Change in the European Balance of Power, pp. 45-47, 73-78.
132. For the best discussion of the Royal Navy during the inter-war period see Steven Roskill, The Royal Navy Between the Wars, Vol. I and Vol. II, (London, 1976).
133. S. W. Roskill, The War at Sea, Vol. I (London, 1976), pp. 174-175.
134. Ibid., pp. 298-99.
135. Ibid., Vol. II, pp. 292-98.
136. For a full account of the RAF's contribution see Sir John Slessor, The Central Blue (London, 1956), pp. 464-538.
137. See Murray, Strategy for Defeat, p. 326.
138. PRO, CAB 66/4, WP (YO)1, 1.1.40, "Air Operations and Intelligence."
139. Webster and Frankland, The Strategic Air Offensive Against Germany, Vol. IV, Appendix 13.
140. For a description of "Schräge Musik" and its impact on the British bomber force see: Martin Middlebrook, The Nuremberg Raid (New York, 1974), pp. 70-74, 142-45.
141. Oral interview with D. C. T. Bennett, RAF Staff College Library, Bracknell.
142. Fraser, Alanbrooke, p. 216.
143. "Note on relations between officers and men in the British Army," 1942, 11/1942/113, Liddell Hart Papers, King's College, University of London, Centre for Military Archives.

144. Letter from Auchinleck to the Prime Minister, 16 Jan 1942, Alanbrooke Papers, 16/D/4d/H, King's College, University of London, Centre for Military Archives.
145. Diary of Lt. General Sir C. Walter Alfrey, Commander Corps, North Africa, entries for 22 Jan 1943 and 13 Feb 1943, King's College, University of London, Centre for Military Archives. Alfrey was a most unusual corps commander. It is clear that at least within his own corps he was willing to establish a general doctrine on tank infantry cooperation and other matters. See XIII Summary of Corps Commanders address to senior officers at Venafro, 9.4.44, Papers of Lt. Gen. Sir C. Walter Alfrey.
146. Playfair, The Mediterranean and Middle East, Vol. II, p. 27.
147. The author is using the word doctrine in the German sense rather than the American sense.
148. Letter from Air Chief Marshal Sir Ralph Cochrane to Liddell Hart, 6 Sep 1967, Liddell Hart Papers 1/679, King's College, University of London, Centre for Military Archives.
149. Letter from Alanbrooke to Auchinleck, 6/02/42, Alanbrooke Papers 6/D/4d/S, King's College, University of London, Centre for Military Archives.
150. Letter from Alanbrooke to Auchinleck, 21/01/42, Alanbrooke Papers, 6/D/4d/P, King's College, University of London, Centre for Military Archives.
151. Letter from Brigadier J. A. L. Caunter to Liddell Hart, 27 February 1969, B. H. Liddell Hart Papers 1/154/161; and letter from Brigadier J. A. L. Caunter to Liddell Hart, 9.4.42 (written) but not delivered until May 1948, B. H. Liddell Hart Papers, 1/154/146, King's College, University of London, Center for Military Archives.

152. Liddell Hart, "The 'New' Doctrine," June 1942, Liddell Hart Papers, 11/1942/55, King's College, University of London, Centre for Military Archives. Alanbrooke admitted to Auchinleck in Jan. 1942: "What is lamentable and must be remedied, is the lack of knowledge in most senior officers of the handling of armored forces." Alanbrooke to Auchinleck, 22/01/42, Alanbrooke Papers 6/D/4d/P, King's College, University of London, Centre for Military Archives.
153. See particularly the paper done by Major General Percy Hobart (undated) but while he was commander of the 11th Armored Division, Percy Hobart Papers, 15/11/9, King's College, University of London, Centre for Military Archives. For Hobart's "overdriving of [his] division" see: B. H. Liddell Hart, notes on a talk with Hobart 23/12/41, B. H. Liddell Hart Papers 11/1941/80, King's College, University of London, Centre for Military Archives.
154. "Questions about Montgomery's operations in North Africa by divisional commander [not named] in campaign," B. H. Liddell Hart Papers, 11/1940/133, October, 1958, King's College, University of London, Centre for Military Archives.
155. Playfair, The Mediterranean and Middle East, p. 100.
156. Tedder, With Prejudice, pp. 570-71.
157. Quoted in Hastings, Overlord, p. 147.
158. *Ibid.*, p. 139.
159. *Ibid.*, p. 141.
160. Playfair, The Mediterranean and Middle East, Vol. III, p. 154.
161. Daily Express, 23 June 1942, Alan Moorehead from the Desert.
162. Letter from Lord Carver to B. H. Liddell Hart, 8 May 1952, Liddell Hart Papers, 1/153/20, King's College, University of London, Centre for Military Archives.

THE ITALIAN ARMED FORCES

1940-1943

MacGregor Knox
The University of Rochester

Introduction

Italy's armed forces entered World War II with trepidation and left it in humiliation. In between, Italy fought at least three wars. The first was Mussolini's attempt to conquer the Mediterranean basin by Italian arms alone. That enterprise, which the armed forces had initially resisted and in which they only half believed, collapsed in the fall and winter of 1940 with the failed attack on Greece, the naval disaster at Taranto, and the British destruction of Italian Tenth Army in the Western Desert. The war "parallel to that of Germany to reach our [own] objectives" that Mussolini had proclaimed in the spring of 1940 was over. Only German help could end Italy's Balkan campaign and save Italian dominion in North Africa, and nothing could save the isolated Italian forces that held Mussolini's East African empire. German help for Italy's Mediterranean war -- the Luftwaffe, Rommel, and the Wehrmacht's thrust through Greece and Yugoslavia -- brought German strategic direction in its train.¹

This new war was a "guerra subalterna" in which Mussolini followed in the wake not merely of Hitler, but of lesser Germans delegated to guard Germany's soft southern flank.² Italian forces, at Mussolini's insistence, also operated in the Ukraine until their destruction in the winter 1942-1943 Soviet counteroffensives west of Stalingrad. By spring 1943, even German help in the Mediterranean was no longer enough to stave off defeat. The Western Allies crushed Axis resistance in Tunisia under an overwhelming weight of fire and steel. Then they leaped to Sicily and to the peninsula itself, precipitating first the fall of the Fascist regime, then the bungled attempt to change sides of the royal-military government of Marshal Pietro Badoglio.

That final fiasco included the total collapse of Italy's senior and most influential service, the Army, and ended Italy's second war. For all practical purposes it also ended the Italian state's participation in the war. In Italy's third and last war, satellite forces in South and North fought as auxiliaries to Allies and Germans, while partisans whose leaders were in general anything but products of the staff college took on Germans and Fascists in bitter guerrilla actions across North Italy.

For the purpose of assessing the armed forces' military effectiveness, or lack of it, the first war is the most important. Although German successes in France and Flanders "unleashed" it, the war of 1940 was a purely Italian effort. It therefore provides the best evidence of the armed forces' capabilities at all levels: political, strategic, operational, and tactical. The second war, fought under German tutelage, throws some light on the armed forces' ability -- or inability -- to learn from the German and British example. In the third war, Italian forces fought only division-sized or smaller actions of limited interest, while two navies and air forces, North and South, conducted minor skirmishes under the overall command of their respective allies.

I. Political Effectiveness

Italian armed forces' political effectiveness inevitably reflected their position in and relationship to Mussolini's regime. Fascist Italy was a "diarchy," a peculiar condominium that derived from Mussolini's October 1922 deal with the monarchy and with the royal military behind it. In the ensuing years, Mussolini and his associates attempted with considerable success to shift the balance in their favor. The levers of ultimate power nevertheless remained in the hands of the king and of the senior generals of the Regio Esercito, the only force in Italy powerful enough to throw the Duce out. The Army, hole card of the Italian establishment, was and remained the dominant service -- regardless of the naval and air requirements of Italy's Mediterranean war.

Despite Mussolini's partisanship of the Air Force and recognition of the decisive importance of the Navy, he was unable to shift the balance of funding in favor of the two junior services. But he did provide the services as a whole, his instrument for accomplishing his imperial goals, with an aggregate share of the national income in the interwar period greater than that of the armed forces of any other power except Nazi Germany, Imperial Japan, and -- in all probability -- the Soviet Union. In wartime, however, the armed forces' share of state expenditure and national income lagged behind that of some of its enemies, as did Nazi Germany's. The reasons were apparently similar; raw material shortages, "labyrinths" of industrial and bureaucratic inefficiency that held production below capacity in many areas, and

dictatorial reluctance to risk popularity through the draconian measures that Britain and Stalinist Russia, for opposite reasons, confidently demanded of their citizens. Fascist Italy fell short in this respect even of Germany; observers such as Field Marshal Kesselring complained of the "peacetime working methods" of Italian civilian dockyards, a complaint echoed in Italian sources. As late as 1942, civil ministries still held partial jurisdiction over matters as decisive as the supply of longshoremen for service in the North African ports.³

Shortages and inefficiencies did not however prevent the Army from securing a level of expenditure that if well employed would have produced a serviceable instrument:⁴

Percentage of Military Expenditure, by Service

FISCAL YEAR	ARMY	NAVY	AIR FORCE	MILITARY AS % OF STATE EXPENDITURE	STATE EXP. AS % OF NATIONAL INCOME	MILITARY AS % OF NATIONAL INCOME (Italy) (Germany)	
1938/39	44.2	22.7	28.4	35.8	29.1	10.4	20
1939/40	53.5	18.7	25.1	44.5	38.0	16.9	30.5
1940/41	72.6	11.9	14.0	59.2	52.1	30.8	42.5
1941/42	68.7	17.1	12.6	51.3	54.2	27.8	51
1942/43	na	na	na	na	52.2	na	58

But the Army's extremely high level of support indicated other things in addition to political effectiveness. It derived from the Army's size of 73 divisions in 1940 and 91 in mid-1943, and from its catastrophic defeats. The peaking of its proportion of military expenditure at the startling figure of 72.6 percent in 1940-1941 was a direct consequence of the emergencies of that winter. The ten divisions Marshal Rodolfo

Graziani lost in the desert needed replacement, or so the Army Staff thought. In addition, the Army ended up employing twenty-nine divisions, over a third of its strength, to stop the Greeks from driving the Italian attackers into the Adriatic.

The Navy's political effectiveness, defined in terms of financial clout, was correspondingly limited. Up to the Ethiopian conflict it had managed to hold onto slightly more than a quarter of the military budget, but thereafter its share sank to the relatively low levels of World War II. In part, this failure sprung from Mussolini's frequent commitment of the Army to combat. The Navy was not directly engaged in Ethiopia, and its actions in the Spanish Civil War did not involve ship losses or dramatic increases in expenditure. Once it did begin to suffer heavily in World War II, an unenviable raw materials position, industrial constraints, and long lead times prevented substantial investment. With the exception of the conversion of two liners to aircraft carriers, the only new ships the Navy embarked on during the war years were light units, submarines, and a class of light cruisers. The drastic shortage of fuel oil from early 1941 limited expenditures for fuel, and for munitions, which the Navy could not fire profitably without fuel. Finally, the Navy was a small service (168,614 officers and men on 30 June 1940; 259,082 on 1 August 1943).⁵

A second reason for the Navy's budgetary decline in the late 1930s was the success of the Air Force, which was able to claim almost 30 percent of military expenditure in 1937-1938 and 1938-1939 for Spain and for its expansion program. Thereafter the Air Force's share dropped markedly, to fourteen percent in 1940-1941 and 12.6 percent in 1941-1942 -- a measure not so much of political ineffectiveness as of raw material shortages and chaos in the aircraft industry.

The armed forces' record in converting budgets into appropriate technology is markedly less impressive than their ability to secure money. No central authority other than the Duce's often indefinable will planned or coordinated military research, specification, or production. In research, a National Research Council under the nominal direction of the Chief of General Staff, Marshal Pietro Badoglio, was supposed to provide direction. But it seems to have concentrated on pattering about with "autarkic" nostrums such as the cultivation of guayule bushes, imported from the southwestern United States, as a rubber substitute. Matters such as radar were not prominent on its agenda.

The Navy independently tackled that problem, but in the late 1930s its program fell behind developments abroad: "it was thought that [the Anglo-Saxon powers] could not be significantly further along than we were."⁶ The Navy's research institute doubled as an electronics and communications school, and was starved for research funds; nevertheless, working prototypes were ready by 1939-1940. But the Navy Staff took little interest, perhaps because of its aversion to night actions. Matapan, in March 1941, proved a rude awakening; the first ship-mounted radars appeared -- from German sources -- in early 1942. The Air Force, by contrast, apparently had no inkling of the Navy's program, but began its own in mid-1941 after pilots began to note the precision with which British fighters from Malta and Alexandria intercepted inbound Italian bombers.⁷ Research in other areas, such as metallurgy and aerodynamics, was similarly primitive. Italian tank armor sometimes shattered like glass.⁸ Aircraft design largely remained a virtuoso trial-and-error performance by individual progettisti, not a team effort.⁹

In issuing specifications for new equipment, the performance of the Navy, which designed its own ships, was in general adequate (although

submarines, destroyers, and light cruisers had serious deficiencies). The Army and Air Force, however, showed a remarkable inability to decide what they wanted, and to get industry to deliver it. At the War Ministry, each new item or weapon required approval of the artillery (or engineer, or motorization) technical office, the appropriate department of the ministry itself, the inspectorate of the branch concerned, the training section of the Army Staff, and finally the ministry secretariat. If even one of these organizations proposed a minor modification, the entire process had to begin over again. It required six months to approve a Molotov cocktail anti-tank weapon that the technical staff had put together and successfully tested in under a week in July 1940. Given this system, and the ministry's return in July 1940 to its leisurely peacetime closing hour of 2 p.m., it is remarkable that the Army received any new equipment at all.¹⁰

The Air Force proved consistently unable to stick to a specification once arrived at. The continual requests for design changes and variants that bedeviled the development of aircraft such as the Cant. 2 1018 medium bomber were only the most conspicuous examples of mismanagement. As Mussolini -- hardly the last political leader to utter such complaints -- put it in January 1943, "we arrive at perfection [only] when it is useless."¹¹ Nor were the Air Ministry departments and the Air Staff themselves able to agree on which aircraft to produce, while air industry designers spawned a proliferation of barely flyable prototypes. Industry managers secured continuing production of obsolete aircraft by threatening to shut down plants and fire laboriously assembled skilled labor. Some accounts suggest that industry lobbying was at least partly responsible for the ministry's failure to concentrate wartime production on a few types of aircraft -- although ministry success in containing prices

suggests that the problem lay less in the power of the industrialists than in Air Force indecision.¹²

Production was no less a disaster than research or specification. The Navy as usual managed well given the drastic limits of Italy's raw materials situation. Between June 1940 and September 1943, it took delivery of roughly 240,000 tons of warships, about a third of Italy's tonnage at the outset. The Army and Air Force once again did far worse. Except for small arms, they failed to provide the unification of types and long production runs that would have allowed mass production by semi-skilled labor, as in the Soviet Union, Germany after 1943, or the United States. Italian war industry remained essentially artisanal: too few highly skilled workers slowly and lovingly hand-crafting obsolete weapons. In addition, raw material bottlenecks multiplied bureaucratic and technological difficulties, and dictated that some capacity went unused. The result was that Italian aircraft production, for instance, peaked in 1941 and fell thereafter. When the plants the Army had belatedly commissioned to produce its new generation of artillery were ready in 1941-1942, shortages kept production well below capacity. Capacity for one key item, the 47mm anti-tank gun, was 290 units per month in February 1942, but raw material shortages kept production at 170, barely enough to replace losses. Overall production of equipment and munitions was enough to supply meagerly only twenty divisions actually in contact with the enemy.¹³ Total 1939-1943 production was small by international standards: roughly 83,000 transport vehicles, 4,111 armored vehicles of which only 536 had guns of 75mm or larger, and somewhere in the neighborhood of 10,000 artillery pieces. The Air Force took delivery of 10,389 aircraft of which three quarters were bombers, fighters, reconnaissance, or transport.¹⁴ This was not enough.

The armed forces in general secured access to manpower in the desired quantity, but quality was another question. Half of Italy's population were peasants, and the small educated elite gravitated to the law and the state bureaucracy rather than to industry, the sciences, mechanical and electrical engineering -- or the officer corps. Industry itself suffered from shortages of skilled labor and technical cadres that persisted throughout the war. Experience in World War I had suggested that conscripting too many workers lowered the production on which the armed forces depended. In World War II the Italian military therefore granted over 900,000 exemptions. But bureaucratic inefficiency, political favoritism, and perhaps also a degree of corruption ensured that many beneficiaries of those exemptions had little to do with war production.¹⁵ The military also failed to demand the suppression of the iniquitous peacetime deferment to age 26 for university youth. Well-placed cynicism about Italy's prospects in the war -- especially after the defeats of 1940-1941, increased the temptations of antel evasion. However, Fascist Italy did not tolerate outright resistance to conscription, and until the breakdown of the state in 1943 police measures ensured that the services received virtually all those eligible who lacked the raccomandazioni or money needed to escape.

Those who did serve in some cases lacked the attitudes needed for effective military performance. Both culture and regime encouraged conformism, while paradoxically but not unexpectedly generating extremes of anarchic individualism. Both also exalted the individual heroic gesture; German military methods struck Italian officers as "the cult of organization pressed to an extreme that impedes or distorts the vision of reality."¹⁶ Lack of interest in military affairs had always been a national tradition, "encouraged equally by left and right, anti-militar-

rist circles and generals."¹⁷ When this mixture met the Italian armed forces' material penury and bureaucratic dysfunction, the result, as one participant put it, was that "Italian military heroism [was] often an individual gesture of a man, who thereby escaped a small world of compromises and afflictions."¹⁸ The valor of despair was no substitute for teamwork and precision.

Finally, the manpower available had two excellent qualities: the willingness to suffer and the willingness, if led with anything approaching competence, to fight and die. Italian units in North Africa, Albania, and Russia generally held together despite totally inadequate clothing, food, and supplies in conditions that would have caused the armies of the industrial democracies to quail. Nor does much evidence support the most popular explanation, both in Italy and elsewhere, of poor military performance: that World War II was for Italians a "war not felt." With the exception of the Albanian retreat, where the internal disorganization of the units themselves was decisive, Italian collapse tended to stem from envelopment by enemy mobile forces. Soon after the British herded 133,000 prisoners into POW cages by February 1941, other Italian units, using the same antiquated equipment but new anti-tank tactics, were able with German help to hand the British a number of significant local defeats.¹⁹ In Albania, the casualty figures from Mussolini's March 1941 offensive suggest that Italian troops were at least as willing to die in futile frontal assaults as they had been in 1915-1918: almost 25,000 casualties from the two corps in six days, and twenty-nine percent of the infantry and artillery strength of one of the corps.²⁰

The Army was effective in securing quantity; the figure of 3,050,000 men in January 1943 compares favorably with the U.S. Army

ground forces figure of 3.7 million at the end of 1942.²¹ But quantity was not uniformly available throughout the conflict. At the beginning of October 1940, after curbing his enthusiasm for an attack on Yugoslavia, Mussolini ordered the demobilization of 600,000 of the 1,100,000 men of the home Army. The demands of agriculture made this drastic arrangement seem necessary; the Army would remobilize with new recruits in the spring. Badoglio of the Comando Supremo acquiesced with relief, since the measure would presumably rule out Mussolini forays in the Balkans for some time to come. General Mario Roatta, deputy chief (and de facto head) of the Army Staff, regretted the demise of the Yugoslav operation, and pointed out that demobilization would destroy at a stroke all training done, and make the home Army unusable until late the following spring: "no misunderstandings of any sort whatsoever should exist over the unavoidable consequences of this state of affairs."²² Squeezed between Mussolini and a Comando Supremo intent on limiting the scope of the dictator's omnidirectional bellicosity, the Army acquiesced. Then came the Greek affair, which required a crash remobilization that produced units so ill-organized that they were barely able to function. There were no more demobilizations until the spontaneous one of September 1943.

The Navy also suffered from shortages of quality personnel, due particularly to the strain of manning the four new and reconditioned battleships that came into line in the summer and fall of 1940. But unlike the Army it had also suffered from a serious shortage of officers during peacetime, and still more during its undeclared wars after 1935. Buying ships first and funding manpower later had led to overwork and personnel turbulence in the officer corps. Naval officers in 1940 amounted to 5.4 percent of enlisted manpower; in France and Britain the

proportions were 7.5 and 9.2 percent.²³ In recruiting NCOs and men the Navy had relatively less difficulty than the other services in securing quality. It could selectively conscript inhabitants of the coastal districts, many of them with sea experience; in addition, the Navy's prestige attracted a high proportion of volunteers. Similarly, the Air Force benefitted from prestige that the Army could not match, and attracted relatively high quality recruits, particularly for the officer corps. Nevertheless, as the Air Force Chief of Staff, Francesco Pricolo, put it in August 1940, it was "far from easy to ensure that only officers fully up to their tasks receive[d] unit commands."²⁴ For the enlisted ranks, conscription provided the necessary quantity, but at least some of the Air Force's logistical and maintenance difficulties appear to have resulted from shortages of technical personnel due to the small size of the national pool of skilled manpower.

A final measure of political effectiveness is the extent to which a service can convince the political leadership to allow it to procure weapons systems it thinks it needs. Italy provides two major negative examples, both a consequence of Mussolini's partisanship of the Air Force, the Fascist service the regime had founded in 1923. The Navy attempted irresolutely on various occasions in the interwar period to acquire at least one aircraft carrier; the Air Force always succeeded in blocking this invasion of its air space. Ultimately, in March 1941, Mussolini came to the conclusion that an aircraft carrier was necessary, and gave permission to the Navy to convert the liner Roma, followed in 1942 by a second liner.²⁵ Neither was ready by September 1943. Similarly, from the mid-1930s on the Air Force resisted Navy urging of the creation of torpedo-bomber squadrons to support the fleet. The Navy had developed an excellent aerial torpedo, but only in late 1939 did the

Air Force, under new leadership, agree to form the necessary units. Procurement, training, and tactical experimentation delayed the weapon's full effects until 1941.

II. Strategic Effectiveness

In the realm of strategy, the foremost characteristic of Fascist Italy's last war was a notable, if fluctuating, gap between political goals and strategic objectives. The gap was no accident, but rather the most obvious consequence of Mussolini's drive to make Italy truly independent by ejecting the British and French from the Mediterranean. The magnitude of that aspiration was so out of proportion to Italy's capabilities in early 1940 that Mussolini feared to reveal it fully to his high command, lest it arouse military and royal resistance. Only Germany's victories against the French and British in Scandinavia and the West allowed Mussolini to move generals, admirals, and monarch into war by promising that they need not fight. Badoglio and the service chiefs acquiesced in Mussolini's decision for war, in return for his temporary toleration of their almost total inaction.²⁶

Perhaps understandably, the high command and the services subsequently failed to produce a coherent strategic concept -- even though French collapse within a week of Italy's entry into the war on 10 June 1940 for the first time gave Italian forces temporary preponderance in the central Mediterranean, and a chance to attack Britain's vital position in Egypt. But the new situation did not belatedly induce Badoglio or the service chiefs to draft a comprehensive war plan. German victory in the north, all except Mussolini tacitly hoped, would make any such effort superfluous.

Badoglio and the Army Staff did press ahead with preparation for the desert offensive, possibly in conjunction with a thrust northwards through the Sudan from East Africa. But they were unable to overcome the reluctance of the Navy Staff to assist by clearing the seaward approaches to Suez. The Navy's foremost strategic goal, enunciated as early as April 1940, was to keep the fleet in being. Its second, which became practical once the French had left the scene, was to maintain sea communications with Libya. A long way, third came the goal of closing with and destroying the isolated British before the unique opportunity of summer 1940 passed. As Badoglio, converted to the Navy view by mid-September, put it: "to conceive of a naval battle as an end in itself is absurd."²⁷ Then the Taranto disaster of November 1940 lost the Navy three of its six battleships, at least temporarily. A new naval leadership, embarrassed by its own inaction and German prodding, attempted to support the Army in Albania by attacking British convoys to Greece. The result was the Matapan action of March 1941, in which Italy lost three heavy cruisers. Thenceforth the Navy abandoned offensive action, except with submarines and infernal machines, and husbanded its resources for the North African supply mission, the one strategic task at which it was modestly successful. As for the Air Force, it failed to enunciate a strategic concept of any kind, and its principal mission, by default, became that of supporting Army and Navy.

Italy's improvised main effort culminated in September 1940 with Graziani's reluctant advance to Sidi el Barrani, a quarter of the way to Alexandria. Thenceforth, Italy's defeats completely destroyed what little relationship existed between Mussolini's goals and the services' strategic objectives. The Greek campaign, which Mussolini wished on the insufficiently reluctant Badoglio and Army Staff, who feared inconvenience

rather than disaster, devoured weapons and vehicles needed desperately in North Africa. Six weeks after the attack on Greece, the British counter-offensive caught and destroyed Graziani's ill-deployed forces. For the next six months Italy's strategic objective was mere survival -- and only German help enabled it to achieve that. Subsequently, the Army and reorganized Comando Supremo under General Ugo Cavallero saw their principal objective as arriving at Suez with the Germans, but in greater numbers than the Germans. The alternative, they felt, was watching Italy's over-mighty ally seize Italy's booty for itself.

But the Germans failed. As the war moved closer to Italy, even Mussolini's professional optimism began to crack. He contemplated the delicate problem of how to extricate the Axis from an increasingly desperate situation; given Hitler's refusal to negotiate with Stalin, the Duce soon fell to pondering how to extricate Italy alone. The Comando Supremo under Cavallero's successor Vittorio Ambrosio took the lead in a confused attempt at redefining objectives: Italy must hold out until it was safe to change sides. Ambrosio does not seem to have consulted the Navy or Air Force in these efforts, which led to the royal military coup of 25 July 1943. But Ambrosio failed to address coherently his major strategic dilemma. Holding out against the Allies until Italy could secure an advantageous armistice, and protection from the Germans, required increased German reinforcements. These in turn could and did cripple Italy's attempt to change sides. In the end, Ambrosio and the King sought to stall until an imagined Allied landing could save them and Rome, and avoid a head-on clash between the Italian Army and the Germans. As a bare minimum they sought to ensure the "continuity of the state": monarchy and government must reach the Allied camp. This last objective they accomplished, but at the price of leaving the armed forces leader-

less and without clear orders to resist the Wehrmacht.²⁸

The armed forces were not entirely incapable of calculating the risks involved in securing Italy's strategic objectives, or of assessing the consequences of failure. Badoglio sought to eliminate risk entirely from Italy's entry into the war: the result was his refusal to pursue any strategic objective whatsoever until after French collapse. Thereafter, the risks of Italy's land drive on Suez, a strategic objective the Army Staff also supported, were not disproportionate to the stake -- domination of the Middle East -- or to the consequences of failure. Italy's African forces risked disaster in any case, whether they advanced on Sidi el Barrani or stayed put until the British reinforced Egypt and seized the initiative.

Badoglio and the Army Staff were less prescient in assessing the strategic implications of Mussolini's Greek operation, which they viewed as a minor distraction from the main effort in North Africa. The doggedness of the Greeks, whom Italian military intelligence had judged possessed "characteristics that are for the most part negative from the military point of view," was a considerable surprise.²⁹ Italian failure to break through at the outset produced a World War I style mountain conflict into which, as if into a bottomless pit, the Comando Supremo found itself compelled to pour all available warm bodies, weapons, vehicles, and air power -- just as the British took the offensive in Africa.

On the naval front, Admiral Domenico Cavagnari, the Navy Chief of Staff, gave an excellent if self-fulfilling prophecy when he informed Mussolini in April 1940 that Italy risked arriving at the peace table "not only without territorial bargaining counters, but also without a fleet and possibly without an Air Force." The Navy's subsequent record,

with the exception of the battle off Matapan, shows a single-minded determination to "strive for the greatest possible security," as the German naval liaison chief put it in September 1940.³⁰ Cavagnari, his successors, and the post-war official historians all emphasized that failure would involve the loss of ships that Italy could not replace. What the naval leadership failed to perceive was that if Italy lost the war, its ships would in any event be forfeit. It therefore made more sense to commit them fully at the outset, especially since the Navy had fuel oil for less than a year. Caution fit neither Mussolini's immense objectives, nor the temporary embarrassment of Italy's enemies. In other respects, the Navy was more effective. Its fallback objective, the supplying of Italian and later German ground forces in Africa, involved little risk of total defeat until late 1942, when the TORCH landings in Northwest Africa brought overwhelming Allied air and sea forces to bear.

Those landings posed a strategic dilemma not merely for the Navy but also for the Axis as a whole: whether to defend Tunisia to the end. Premature withdrawal risked speeding Allied invasion of Italy or the Balkans; holding out too long risked losing the experienced units needed to repel that same invasion. The Comando Supremo and Navy accepted the claim of Hitler (and Mussolini) that willpower would prevail over the Allies' inexorable pressure on the Sicily-Tunis supply line; Rommel, who urged early evacuation on Hitler in person, received a sharp rebuff.³¹ The result was the loss of over a quarter of a million irreplaceable veterans: the Afrika Korps, General Giovanni Messe's First Italian Army, and large air and naval forces detailed to support them. Timely withdrawal and the staking of everything on pushing the Allies off the Sicilian beaches would have improved Axis chances of disrupting Allied strategy and of delaying the invasion of France. The Italian armed

forces paid for the decision to hold Tunis by premature collapse.

Even had the Comando Supremo concluded that the risks of holding Tunis were disproportionate to possible rewards, it would have been difficult to move Mussolini from heartfelt support of Hitler's principle of fixed rather than elastic defense, and impossible to shake Hitler's conviction that loss of Africa meant the collapse of his Fascist ally -- and a consequent threat to his power within Germany. Dictatorships that rest at least in part on the leader's charismatic vision scarcely encourage military leaders to "communicate with and influence the political leaders to seek militarily logical national goals." Mussolini had attempted for eighteen years to reduce the military to a subservience that would free him to pursue national goals that in the long run were beyond Italy's strength. In 1940 the military, particularly Badoglio and Cavagnari, did slow Mussolini's thrust toward war by pointing out that Italy could not take on both Britain and France, unless -- as Badoglio delicately put it -- "the state of prostration of our adversaries gives us a chance of success."³² German breakthrough in France enabled Mussolini to appear to meet Badoglio's conditions, while nourishing designs, soon put into effect, for fighting a short victorious war.

The Navy Staff's largely successful refusal to commit its forces to battle showed strategic effectiveness, at least in dealing with Mussolini. Air Force and Army were less successful in bending the dictator's will. The Air Force failed to deflect Mussolini demands that it send an air corps in September 1940 to assist the Germans against England. The Air Force Chief of Staff, Pricolo, pointed out that this diversion of effort from the Mediterranean would make it difficult to support Balkan operations, and protested to the Comando Supremo, but to no avail.³³ Mussolini's nightmare that Germans and British would arrive at a

compromise peace behind Italy's back, and at the expense of Italian aspirations, appeared to demand Italian commitment in the north.

Badoglio and the Army similarly failed to press their feeble misgivings about Mussolini's Greek foray, which proved far more than a minor distraction from the thrust toward Suez. The Army Staff's position was particularly flaccid, perhaps reflecting the enthusiastic support of its de facto chief, Roatta, for that other Balkan inspiration of Mussolini, the long-foreseen attack on Yugoslavia for which the Army had prepared throughout the summer of 1940.³⁴ Strategic megalomania did not stop with Mussolini.

After the Germans saved Italy in early 1941, the military had less need than before to influence Mussolini to seek goals proportionate to Italy's strength. Defeat had done the job. But defeat and German rescue had also, from Mussolini's point of view, made an Italian contribution to Germany's war more imperative than in 1940. The result was his decision, initially unwelcome even to the Germans, to send ground and Air Forces to Russia: "We cannot be less present [than] Slovakia, and we must pay off our debt to our ally."³⁵ Cavallero, Badoglio's successor at the Comando Supremo, made no protest. Consequently much of the artillery and vehicles fitfully rolling off the assembly lines disappeared into the East, instead of appearing in North Africa, where they might have enabled Italian mobile units to face the British on more even terms.³⁶

As final defeat approached in the spring of 1943, Cavallero's successor at the Comando Supremo, Ambrosio, made a series of attempts to move Mussolini toward the political goal the strategic situation increasingly demanded: exit from the conflict. But the dictator, although recognizing the justice of Ambrosio's suggestions, proved unwilling to cross Hitler. The Comando Supremo was strategically

ineffective on this front until it ceased attempting to influence Mussolini through persuasion, and turned instead to a coup d'état. The Duce's bloodless removal marked the Italian military's peak of strategic effectiveness, as well as its most brilliant tactical success of the war.

The armed forces' record in bringing strategic objectives and courses of action into harmony with force size and structure was less brilliant. The Army, with its emphasis on numbers rather than machines, was almost totally unprepared for the drive on Suez, although at the time its leaders failed to appreciate the full extent of that unpreparedness.³⁷ Their later attempts to bring force structure into line with strategic objectives continued to emphasize numbers, and thus frittered away the effectiveness of the few machines Italy could produce.

The Navy's lack of enthusiasm for closing with the British Mediterranean fleet was at least partly based on its recognition that it lacked adequate air cover. Passive resistance, until Taranto, was thus the Navy's relatively successful way of harmonizing strategic objectives with force size and structure. For its other, more congenial mission, supply of North Africa, its force structure was battleship-heavy and short of escort craft. This deficiency it attempted to remedy with what little wartime construction raw materials shortages permitted.

The Air Force began the war without a strategic concept other than a lingering faith in Douhet, although Pricolo, who had taken over in November 1939, did attempt to bend his service toward interservice cooperation. After early attempts to secure air superiority over Malta and North Africa miscarried, the Air Force settled back into the modest role of supporting its rivals. Even for this task its equipment and force structure remained faulty. The SM 79 tri-motor proved reasonably successful as an improvised torpedo bomber, but the Air Force failed to

provide the Army with more than sporadic close support. It also failed to organize a consistent and dependable mechanism for forward control of aircraft cooperating with ground and naval units. Air-ground and air-sea cooperation did improve in the course of the war, but remained weak by comparison with that of Italy's ally, and weaker still by the standards of Italy's enemies.

If force structures were ill-suited to achieving strategic objectives, those strategic objectives were themselves totally inconsistent with the services' logistical infrastructure and industrial base. That base was adequate for a short war of six to twelve months that involved a relatively small proportion of Italy's ground forces. The main energy sources of Italy's industries, German coal and Alpine hydropower, failed to keep pace with requirements, particularly after 1941. Other necessities, drawn in peacetime from beyond Gibraltar and Suez, simply stopped arriving. After six months, shortages of most major strategic raw materials -- oil, nickel, molybdenum, copper, rubber -- began to bite, and in effect prevented expansion of Italian armaments production to levels much greater than those of the pre-war period. In Germany, technological sophistication and the loot of half a continent kept production rising until late 1944, but Italian technology was less advanced, and Italy acquired no loot to speak of at Sidi el Barrani and in British Somaliland. The consequence, particularly after the Comando Supremo acquiesced in Mussolini's forays in Greece and Russia, and accepted the necessity of a large Balkan occupation force, was that production never even distantly approached the requirements of the armed forces.

Another area of almost complete strategic ineffectiveness was Italy's cooperation with its ally.³⁸ This was in part inevitable.

Hitler's Germany was not the easiest alliance partner, and Hitler was throughout the war determined to keep Rome in the dark about his intentions: "... every second Italian was either a traitor or a spy."³⁹ In addition, the alliance was even more implicitly competitive than most such arrangements. Hitler himself was willing at least provisionally to concede the Italians their sphere in the Mediterranean, if they could conquer it. His subordinates in the military and industry were rather less Axis-minded, and tended to regard Italy as a mere vassal. On the Italian side, leaders from Mussolini downward were as intent on fighting a purely Italian war as they had been determined in pre-war years to block German southward penetration. Only an Italian war would firmly establish Italy's claim to the vast territorial booty Mussolini sought, and reinforce Italy against the threat of post-war vassalage.

German suggestions in March 1940 for deployment of an Italian Army on the western front opposite Belfort aroused the scorn of Badoglio: this "role as second echelon troops" would be supremely undignified.⁴⁰ Mussolini permitted no military talks with the Germans before Italy intervened, perhaps out of fear that Berlin would press the Belfort project. The consequence was that Italy entered the war with no agreement coordinating Italian and German strategic objectives. Those objectives diverged markedly from the start, as Germany sought a temporary compromise with Britain "on the basis of the division of the world"⁴¹ while Mussolini sought desperately to move on Suez before an Anglo-German deal could sacrifice Italy's aspirations.

The Italian military made no attempt to coordinate activities with the Germans in the summer of 1940, except for an abortive Army Staff feeler about German assistance for the planned attack on Yugoslavia.

That feeler provoked a rebuff from Hitler in person. By September the Germans sensed that the drive on Suez was flagging, and offered German armor and air units for Africa. Mussolini and Badoglio politely refused and instead urged the Germans to give Italy the necessary equipment rather than troops. Roatta of the Army Staff and even Graziani in North Africa were more willing to accept help, but did not press their case. After the disaster of December 1940, Roatta confided to the Germans that refusal had been "very foolish." Had the Italian high command accepted German help before defeat, it would have damaged Italy's prestige and prospects in North Africa far less than did German rescue in February-April 1941.

In the new phase that followed German rescue, the "guerra subalterna," the Italian high command showed only limited ability to influence German plans. In private, Italian strategists might hope to temper "the well-known excessive intellectual rigidity of the Germans ... with greater contact with the mentality and intelligence of our race."⁴² But in practice the Italians remained largely in the dark about over-all German strategy, and Italy's demonstrated weakness made both Mussolini and his high command sheepish. Cavallero sought a conference with Keitel, his opposite number, in May-June 1941, but failed to request increased German aid or a genuine coordinated effort.⁴³ Cavallero probably feared that more Germans in the Mediterranean would further weaken Italy's claim to pre-eminence there; he was apparently willing to put up with delays or perhaps even failure in the drive on Suez rather than risk losing Egypt to Italy's over-mighty ally. The Germans for their part were careful to avoid giving much advance notice of the attack on the Soviet Union. What warning Mussolini did have he used to prepare an Italian expeditionary force for that theater rather

than seek to turn Hitler back toward the war against the West.

Later Comando Supremo attempts to influence German strategy in the Mediterranean met with little success. From mid-1941 on the Navy, in particular, pressed for a Malta landing to clear the supply lanes to Tripoli, but Cavallero was unable to secure Mussolini's whole-hearted commitment to the operation. Rommel's May 1942 drive on Alexandria decided the issue by default. At the theater level, Rommel and the Fliegerführer Afrika clashed repeatedly with their Italian counterparts, who were determined, on orders from the Comando Supremo, to preserve Italian prerogatives. Rommel, with Hitler's ear and some influence over Mussolini, usually went his own way. After Axis collapse in Africa, Mussolini and Cavallero's successor Ambrosio were able to secure German troops to help defend Italy and the islands, but the Germans needed little prodding; they were fully aware that without German stiffening Italy would collapse immediately. Attempts by Ambrosio and Roatta to influence the Germans after Mussolini's removal were feeble and indecisive. High Command and Army vacillated between seeking German troops to save the south, and fearing the vengeance those same troops might exact if Italy changed sides. Ambrosio and Roatta asked for another two divisions three days before generals and King overthrew Mussolini, and thereafter made no effective effort to slow the accelerating influx of picked German units.⁴⁴

The Italian record on choosing plans and objectives that pitted friendly strengths against enemy weaknesses was equally poor. One reason for this was that Italy's forces had few strengths. The second was that the Army, in particular, showed a complete inability to subordinate secondary objectives to the main one. An obsession with being strong everywhere inevitably meant an even distribution of Italian weakness.

The result was that high command and services failed to seize what opportunities existed and frittered away their resources without concentrating against the adversary's vulnerable points.

Nineteen forty offered the best opportunities. First, of course, came Malta, whose garrison in June consisted of five understrength British battalions, the local regiment, and three biplane fighters. However, the Navy rejected a landing operation at that point -- a decision it later regretted. Badoglio and the Air Force deluded themselves that high altitude air bombardment with the Regia Aeronautica's 50 and 100 kilogram bombs would "sterilize" the island and make a landing unnecessary.⁴⁵ Even the Luftwaffe, using rather more effective tools, ultimately proved unequal to that task. The second lost opportunity was the drive on Suez, perhaps with German armor and air assistance, while the cross-channel threat in the North prevented British reinforcement. The accidental death in late June 1940 of the theater commander, Italo Balbo, deprived Italy of a man of imagination, drive, and offensive spirit. His successor, Graziani, soon outlived the military reputation he had acquired while massacring Libyans and Ethiopians. Graziani's attempt to overwhelm the mobile but extremely weak British forces by sheer weight of Italian numbers, rather than by motorizing a couple of divisions and flinging them at the still unprepared British, lost Italy whatever slim chance it had possessed of an independent war in Africa. By fall 1940, British weakness had begun to give way to strength, and Graziani's forces were in increasing jeopardy.

Subsequently, Badoglio and Cavallero failed to prevent Mussolini's Greek and Russian diversions, which cut drastically into the equipment available for Africa. Mussolini's decision to double Italian forces in

Russia in response to German requests in 1942 deprived the Italian units that accompanied Rommel to El Alamein of the modern artillery and trucks they desperately needed. The commitment after spring 1941 of over thirty divisions to occupation tasks in the Balkans, and of another seven for the occupation of France in November 1942, spread Italy's experienced personnel and modern weapons ever more thinly. By 1943, Italian weakness everywhere faced Allied strength. The Comando Supremo -- admittedly with help from Hitler, Mussolini, and the ever-optimistic Kesselring -- gambled away Italy's last efficient forces in Tunisia, instead of concentrating Axis strength on the defense of Sicily.

III. Operational Effectiveness

The operational methods and concepts with which the armed forces began the war were recipes for defeat. The Army placed its trust in numbers, the Navy prepared for a Mediterranean Jutland but declined to fight one, and the Air Force still labored under the effects of Douhet's independent air warfare fantasy. Integration of methods between services was almost totally lacking. Army, Navy, and Air Force planned and largely fought separate wars.⁴⁶ This jealous exclusiveness has parallels only in Japan and the United States (where academy football deforms for life the officer corps' attitude toward interservice cooperation). But in World War II, unlike their Japanese and American counterparts, the Italian Army and Navy lacked their own Air Forces.

At the operational level, only the overseas theater commands in North Africa, the Dodecanese, and East Africa had authority over more than one service, but even there the Army dominated planning. At the center, the Comando Supremo in theory delegated the conduct of operations to the service staffs. In practice, even after Cavallero's strengthening of Comando Supremo prerogatives in 1941, Army and Navy planned and conducted their own operations, merely calling upon the Air Force for support without involving it in planning. One result was the remarkable confusion, during both naval bombardments of Genoa in June 1940 and February 1941, about who was in charge of defense and counteraction. In the latter case, no headquarters bothered to inform the fleet commander at sea that the British were shelling the city; he continued to look for

the enemy west of Sardinia.⁴⁷ On both occasions the attackers got away virtually untouched, and neither fiasco taught the Comando Supremo the need for some sort of joint air-naval operations center and staff.

After Matapan, which pointed out even more forcibly than Genoa the need for Air Force-Navy cooperation, Cavallero belatedly imposed new procedures on the Air Force. Air support requests could now go directly to the airfields in south Italy and the islands, instead of travelling up the Navy chain of command to Rome, across Rome to the Air Ministry, and down the Air Force chain of command to the airfields. Cooperation thereupon improved, although the absence of a joint operations center and planning staff still led to confusion, duplication of effort, and Navy complaints of insufficient air cover.⁴⁸ After 1941, the Air Force's shortage of long-range fighters and other aircraft, not lack of coordination, was probably the chief impediment to effective Navy and Air Force joint action.

Army and Navy cooperation was scarcely better, although it did improve slightly in the course of the conflict. An unspoken Navy reason for rejecting a Malta operation in 1942 was probably unwillingness to engage in joint planning with the Army. The landing might also make a fleet action unavoidable should the British Alexandria and Gibraltar squadrons attempt to save Malta. Subsequently, the Navy's losses on the Tunis and Benghazi runs convinced it that interservice cooperation was the lesser of two evils. It therefore participated wholeheartedly in the joint planning of the 1941-1942 Malta project, which even included direct cooperation with the Germans.

All arms integration within each service was more prevalent than interservice cooperation. The Army began the war with a doctrine that proclaimed the absolute primacy of the infantry: "the decisive element of

combat; if it advances, all advance, if it gives way, all give way." The doctrine, however, also stressed the obvious necessity of infantry-artillery integration. Armor, which Italian doctrine tended to see as an infantry support weapon, was similarly tied to the infantry, except for light tanks, which were "to know how to operate with the other [sic] horse-borne squadrons."⁴⁹

The Army, for all its faults, never permitted regimental exclusiveness to get in the way of all-arms cooperation. The few Italian mobile units that accompanied the Afrika Korps in its desert peregrinations apparently learned far more quickly than the British the lesson that armor, artillery, and infantry must function as a team. The German example may have helped, but Italian doctrine, precisely because it was oblivious to the work of the British all-tank theorists, was already predisposed toward integration. The utter inadequacy of Italian equipment, from the M13 and M14 tanks to the World War I artillery to the rudimentary communications gear, made practice more difficult and dangerous than theory. But the Army's record of all-arms integration is a relatively good one.

The Navy was rather less successful. It failed throughout the war to use submarines successfully in cooperation with surface forces, either as pickets or in ambush. This failure was primarily due to the submarine's slow speeds and inadequate communications, partly to the great and ever-increasing danger of British submarine-hunting aircraft. In the first major naval clash, off Calabria on 9 July 1940, the Navy Staff also failed to commit its light craft against the British on the nights preceding and following the main battle. That omission, the German naval liaison chief judged, helped rob the Navy of a decisive success.⁵⁰

The Air Force record on all-arms cooperation was rather better than the Navy's. Despite Douhet, the Regia Aeronautica proved not entirely blind to one of the lessons of Spain, the need for fighter escort for bomber formations.⁵¹ From the first operations against France in 1940, Air Force commanders attempted wherever possible to provide escorts, although Italian fighters throughout the war lacked adequate range for this purpose. By late 1941 the Air Force had also discovered the synchronization of level bombers, dive bombers, and torpedo aircraft.⁵²

Operational mobility and flexibility was not a notable characteristic of Italian forces, and in this respect the Army was once again the least effective of the services. Given its limited motorization and almost complete lack of armor, its physical mobility depended on the march performance of the infantry which although excellent was no substitute for vehicles. The horse cavalry of the celere divisions proved of some use in Russia, in the fluid conditions of the summers of 1941 and 1942, but fast tracked or half-track vehicles would have been more effective. The standard FIAT and Lancia trucks were excellent, but had limited off-road mobility.⁵³

In the intellectual sense, the Army combined a doctrine that preached a "war of rapid decision" with a command and staff organization suited only for static warfare. Corps Staffs such as that of the Italian expeditionary force in the Ukraine were immobile, weighted down with as many as 150 officers, compared to 66 in a German corps staff.⁵⁴ In the judgement of a German general staff officer with long experience with the Italian Army,

The command apparatus is ... pedantic and slow. The absence of sufficient communications equipment renders

the links to the subordinate units precarious. The consequence is that the leadership is poorly informed about the friendly situation and has no capacity to redeploy swiftly. The working style of the staff is schematic, static [unbeweglich], and in some cases lacking in precision.⁵⁵

The Army's performance on all fronts confirms this picture. The only exceptions were the few Italian mobile units, such as the Ariete and Trieste, that operated with the Afrika Korps. These units also suffered from inadequate communications and vehicles. But by dint of practice alongside the Germans, their staffs did acquire the experience and some of the habits of mind needed to cope with rapidly changing situations in a war without fixed fronts, under the leadership of the most volcanically unpredictable of Germany's generals. The commander of the Ariete at El Alamein, General Francesco Arena, still found Rommel's habit of giving operation orders over the radio rather than in writing a shade odd, but he did attempt to educate the Comando Supremo about "the advantages of a morale and operational nature" of the German practice of commanding from well forward.⁵⁶ Not everyone learned. Rommel's titular superior throughout most of the campaign, Bastico, continued to regard German scurrying about the battlefield as undignified and eccentric.

The Army's weaknesses in operational mobility, both physical and intellectual, helped produce its ignominious collapse in September 1943. What orders to resist the Germans that did emerge, reached the units belatedly and met, in some cases, with disbelief. Swift German action in most cases forestalled organized resistance, and the lack of precision of Army Staff work was much in evidence. Roatta, as chief of staff, at one

point ordered the principal mobile force defending Rome to fall back on Tivoli, east of the capital, with a front facing east -- away from the Germans. He was evidently confused.⁵⁷

If self-inflicted material penury and intellectual torpor overdetermined the Army's lack of operational mobility, the Navy's problem was not physical mobility, although the oil shortage of 1941 and later did paralyze the heavy units. Paradoxically, the Navy's too efficient solution to the same problems of communications that baffled the Army in turn created a new kind of paralysis. The Navy Staff war room in Rome had sole control of the nature and timing of operations, the routes the fleet was to follow, and the assignment of aircraft, surface forces, and submarines to the fleet commander. During operations, Supermarina frequently invaded the prerogatives of the fleet commander by countermanding dispositions or ordering changes of course.⁵⁸ This baneful influence abated only slightly after the dismissal of Cavagnari following Taranto. At the end, in September 1943, the Navy gave marked proof of operational mobility -- it succeeded in moving almost intact to Malta and other Allied ports. Of the major units, only the battleship Roma, lost to a Luftwaffe glider-bomb, failed to arrive safely.

The Air Force, in theory, was the service most capable of mobility, both physical and intellectual. But the reality, as with all Air Forces, was rather different. Mobility depended on the mobility of the ground organization, which entered the conflict with serious deficiencies. The North African, Dodecanese, and southern Italian airfields in many cases lacked the hard runways, protected dispersal sites, and support equipment to handle the numbers of aircraft needed to maintain air superiority and strike offensively at enemy ground forces, naval targets, or the British fleet base at Alexandria. The British desert counteroffensive of

December 1940 soon deprived the Regia Aeronautica of its African forward bases. Air Force communications also impeded operational mobility. Air units in Libya had to borrow much of their land-line net from the Army, and land-lines in Cyrenaica tended to suffer from the attentions of the Arab inhabitants. Voice radio for fighters was not widely available until 1942. In the end, however, most of the Air Force's remaining serviceable combat aircraft managed to transfer to the Allies in September 1943, although with the inevitable loss of the ground organization and of mountains of equipment.⁵⁹

The services' record in adapting their operational concepts to available technology was, with a few exceptions, disastrous. In the Army and Navy, doctrine inhibited the adoption of new technology; in the Air Force, absence of doctrine had the same effect. In all services, intellectual rigidity and a self-satisfied lack of curiosity about developments elsewhere meant that combat, when it came, was a shocking chastisement of intellectual backwardness.

The Army was the worst offender. It began with the two mistaken assumptions it had held fiercely through the interwar period: that the Alps were the most likely theater of war and that numbers were decisive. The first assumption fell away in 1940. The second, despite repeated demonstrations of its fallaciousness, determined Italian doctrine, and force structure -- and hence use of technology -- until 1943. The Army, in the interwar period and in World War II, faced uncomprehendingly a simple choice. It could either devote its available funds, raw materials, and industrial capacity to creating a small, well-led, mobile, and at least partly armored force, or it could spread those same resources thinly through a large, disorganized, and pathetically equipped mob of infantry -- a World War I Army for a war of machines.

Its leaders, with encouragement from Mussolini, but on their own responsibility, chose numbers. After the outbreak of European war in 1939, the Army Staff began to have second thoughts about the 120 division target figure it and Mussolini had arrived at. Despite Graziani's attempt to hold the line at one hundred divisions, the final figure selected for the spring 1940 mobilization was seventy-three. But once at war, the Army began to grow. By 1941, Cavallero claimed to perceive that "the general experience of the war to date has emphasized the importance of quality rather than numbers." Nevertheless, he also prepared and implemented with enthusiasm a Mussolini plan to expand the Army to eighty divisions.⁶⁰ The German example of maintaining enough divisions to rotate sorely tried ones out of the line, rather than destroying cohesion by constantly adding untried replacements, may also have contributed to this megalomania.⁶¹ Whatever the cause, the Army swelled to ninety-one divisions by mid-1943.

This mass of manpower obscured the importance of machines, and diluted the impact of what equipment industry did manage to produce. Badoglio was so uninterested in mechanized warfare that his only recorded comment on a perceptive Army intelligence analysis of German methods in July 1940 was "we'll study it when the war is over." It required a direct order from Mussolini that same month to compel the War Ministry bureaucracy to begin work on a 75mm gun tank, which in the event was not ready until collapse in 1943 rendered it superfluous. The Army placed a slightly higher priority on artillery. But even this need, which the most hidebound of the Badoglio traditionalists recognized, took second place to manpower. Of the 7,970 cannon with which the Army entered World War II, only 246 had been produced after 1930.⁶² Modern artillery, some of it excellent, only became available in moderate quantities in

1941 and after, and those quantities barely kept pace with losses. The Army's record on motor transport was only slightly less disastrous. The Ministry of War had failed to anticipate before June 1940, and to recognize thereafter, the extent of motorization that mobile warfare demanded.

It was in areas such as communications, where relatively small investment could have produced dramatic results, that the Army failed most dismally. Italian tank crews suffered without voice radios until 1941. Even after that, no long distance radio that could operate on the move existed.⁶³ Nor did anyone think to provide inexpensive items such as the compensated vehicle compasses essential in the desert -- this despite thirty years of Italian military experience in Libya. When the reconnaissance units of the Italian mobile divisions fighting alongside the Afrika Korps belatedly received their first armored cars in 1941-1942, the commanders had to stop and walk some distance from their vehicles before taking bearings with a hand compass. Even that excellent and inexpensive infantry weapon, the 81mm mortar, was in short supply and ill-provided with ammunition until 1941.

The Navy has enjoyed the best reputation of the services in harmonizing doctrine and technology, but on close examination its record is hardly a triumphant one. The chief areas of naval innovation before and during World War II were aircraft carriers, submarines, and anti-submarine equipment, and the weapons of coastal warfare: mines, land-based torpedo aircraft, and light surface forces. Navy difficulties with aircraft carriers and torpedo-bombers, already mentioned, were largely political; the other problems were entirely the Navy's own.

In June 1940 Italy had one of the largest submarine forces in the world. But technical difficulties, from a submersion time three times

that of German boats, to a surface speed of only 11-12 knots, to an inadequate torpedo capacity and too-short periscopes, rendered them relatively ineffectual.⁶⁴ Many of these defects were the consequence not of technological lag, but of the Navy's interwar submarine doctrine, which stressed the daytime submerged ambush to the detriment of all else. The Navy failed equally in anti-submarine warfare; sonar did not appear on Italian escort vessels until early 1942. Depth charge technology, use of aircraft against submarines, and anti-submarine tactical theory remained rudimentary.⁶⁵ The Navy Staff did recognize the usefulness of mines, to which it assigned the task of blocking the Sicily channel to east-west British traffic. Cavagnari, however, refused to adjust spending priorities to reflect the importance of this mission. Battleships came first, and in 1940 the Navy entered the war with mines that were almost all World War I surplus. Subsequently, increased research and development efforts, and above all, German willingness to make available modern mines, made possible such successes as the virtual destruction in December 1941 of "Force K," the British Malta surface squadron.⁶⁶ But on the whole, the Italian mine effort was a major missed opportunity.

One technologically sophisticated weapon that belatedly prospered despite Navy Staff neglect was the "maiale" ["hog"], the frogman-guided torpedo that sank the battleships Valiant and Queen Elizabeth at Alexandria. This was the one major weapon of the Second World War that Italy developed first, building on a tradition inaugurated in World War I, when Italian swimmers and torpedo boats had accounted for two Austro-Hungarian battleships. However, the maiali were anything but a Navy Staff product: they did not fit into Supermarina's Jutland-style operational concept. Only the emergencies of 1935-1936 and 1940 gave the

devoted band of diving enthusiasts at the La Spezia submarine flotilla a chance to develop their weapons: the torpedoes, the explosive motorboats that accounted for the cruiser York in March 1941, and the frogman-borne limpet mines that destroyed shipping at Gibraltar, Algiers, and elsewhere. Navy Staff indifference starved the program between 1936 and the Munich crisis of 1938,⁶⁷ and only after the battle off Calabria did Cavagnari suddenly discover that he had a weapon that cost little, risked little except the lives of those skilled and brave enough to employ it, and offered much. Had the "maiali" been operationally ready in June 1940, Italy would have had the weapon it needed for the devastating initial blow that the Germans and British expected, but which never came.

Even the Navy's conventional surface forces had avoidable defects. Some units, particularly the Littorio-class battleships and Zara and Bolzano-class heavy cruisers, were fully up to world standards except for two vital details, their rangefinders and main guns. The Navy had inexplicably preferred the highest possible muzzle velocity to accuracy.⁶⁸ Most of the light cruisers were a foreseeable disaster; built for speeds approaching 40 knots, they tended to disintegrate when hit, and had inadequate protection against heavy seas. Destroyers tended to swamp; the fleet lost two escorts in this manner while returning from the second battle of the Sirte in March 1942.

If the Navy's technological effectiveness was mixed, the Air Force picture was one of almost unrelieved disaster. This was not primarily the result of operational doctrine, although the Air Force did make obeisance to Douhet by attempting to develop a heavily-armed four engine bomber. The Piaggio P 108 or "flying weakness"⁶⁹ entered service only in late 1942, and was so unreliable mechanically that it tended to disappear without trace over the Mediterranean. Air Force technological

failure, however, was first of all the result of its tactical conceptions, not of its largely non-existent operational ones. The Air Force's pilots "rejected" the monoplane fighter. Low wing loading made the twin machine gun, wood and fabric biplane more maneuverable, more suitable for aerobatic display and individual virtuosity. The biplane had also served well in Spain. Consequently the Air Force ignored until 1939 developments such as the Messerschmitt Bf 109, Hurricane, and Spitfire, and failed to press development of the 1,200-1,500 horsepower engines required to propel heavily armed fighters.⁷⁰ Only the importing and licensed production of Daimler Benz motors in 1940-1941 solved this problem, at least in part, and allowed the air industry to begin designing marginally adequate fighters such as the Macchi MC 202, which entered service in late 1941. Its successor, the MC 205, was the equal of the P 51D Mustang at low altitudes. Few saw combat.

The relative ineffectiveness of the Air Force's ground attack aircraft and bombers stemmed in part from the same engine difficulties that plagued the fighters, and in part, from doctrinal rigidity. The pre-war Air Force Staff neglected ground attack for the same reason it had fought the Navy over torpedo-bombers: the mission implied subordination to another service. Pricolo's late 1939 "new look" came too late to give Italy an adequate ground attack aircraft; the fall-back solution was to buy Ju 87 Stukas from the Germans after Italian dive-bomber designs proved more dangerous to their crews than to the enemy. The Air Force's mainstay was high-altitude level bombing with the FIAT BR 20, the Savoia-Marchetti SM 79, and the Cant. Z 1007, the Air Force's principal bombers through the conflict.

Italian bombing, however, was remarkably ineffectual. Misinterpreted experiments in the 1930s had persuaded the Air Ministry

that large numbers of 30 to 100 kg. bombs were the most effective way to attack even small armored moving targets such as ships. Italy therefore entered World War II with a shortage, not remedied until 1941, of the heavy ordnance needed to make an impression on the British Mediterranean fleet. Italian fuses proved unreliable, and bomb casings often split open on impact. Incendiaries used briefly over Malta had the disconcerting habit of bursting immediately upon release, destroying the aircraft. Despite research throughout the conflict, the Air Force even failed to procure an illumination rocket that worked.⁷¹ Bombsights and bombing procedure remained rudimentary: no stabilizing gyroscopes, and no intercom between pilot and bombardier, at least on the SM 79. To confer with the pilot or request a second pass, the bombardier had to crawl up to the cockpit. The consequent lack of communication led an entire formation to drop its bombs on the Italian fleet rather than on the British during the battle off Calabria.⁷²

Finally, despite the existence of a much-publicized school for instrument flying, Italian line aircraft lacked most common blind-flying instruments and electronic navigational aids. The Air Staff does not seem to have been aware of the extent of the problem until the fiasco of the dispatch of the air corps to the Channel in September 1940. Five of seventy-seven aircraft crashed during the initial flight to Belgium, and the corps lost a further fourteen from fog, rain, and icing, compared to eight from enemy action.⁷³

The integration of the armed forces' supporting activities into their operational practices presents a mixed picture. Army intelligence, communications, supply, and transportation suffered from the same self-induced penury that crippled the Army at all levels. But the Army also showed little aptitude at integrating these activities into the "war

of rapid decision." Intelligence was a relatively neglected aspect of operational planning, and commanders in the field tended to make insufficient use of intelligence resources. Neglect did not prevent the Army's central intelligence organization, the Servizio Informazioni Militari (SIM), from managing occasional successes. One was of decisive operational importance: in April 1941 SIM used its command of Yugoslav cyphers to disorganize with bogus orders a dangerous Yugoslav advance against the poorly defended rear of the Italian force in Albania. In the desert, command of the U.S. Army BLACK cypher, which SIM had secured through a brilliant embassy bag job, gave Rommel almost six months of invaluable information about British forces and intentions through the radiograms of the U.S. military attaché in Cairo -- even if Cavallero did not bother to read the resulting summaries.⁷⁴ SIM radio intercept units working on British cyphers also provided valuable tactical and operational intelligence. But SIM also displayed a conspicuous tendency throughout the war to overestimate enemy strength; in May-June 1940 it doubled French ground strength in Tunisia, striking terror into the hearts of Graziani and Badoglio. In September 1943, it apparently multiplied German strength around Rome.⁷⁵

In the areas of supply and transportation, the Army's operational concept, the "war of rapid decision," was totally divorced from existing Italian capabilities. The Army's supply organization functioned adequately in slow-moving or static actions, but failed to support swift movement in North Africa, Greece, and Russia. Supply was overcentralized at Army level, leaving forward units at the mercy of the vagaries of the Intendenza.⁷⁶ In North Africa the bottleneck was the sea link, along with the vast distances between ports and front. The Army Staff and Comando Supremo's refusal to reduce the number of non-motorized mouths

and curb the size of bureaucracies and rear-area units meant that Italian divisions in combat suffered regular shortages. In the Greco-Albanian campaign, a port bottleneck also produced shortages at the front, although Italian retreat subsequently shortened overtaxed supply lines, and Cavallero ultimately overcame the crisis. In Russia the Army initially provided a supply organization only suitable for static warfare, which led to serious difficulties during the headlong German advance of summer-fall 1941. Reinforcement with trucks desperately needed in North Africa ultimately assured Italian forces adequate support except during rapid movement. The transportation services appear to have functioned reasonably well where rail networks were available, and as well as could be expected in North Africa, where the long road from Tripoli eastward ate up much of the fuel intended for the front.⁷⁷

The supporting activities of the Navy were relatively well integrated. Naval intelligence focused narrowly on enemy order of battle, movements, and communications. Within these limits, and despite its absence of decryption machines or sophisticated air reconnaissance techniques, it was reasonably effective. It apparently deciphered major portions of the British operation order five days before the battle off Calabria,⁷⁸ and its decryption teams on board the fleet flagship provided timely tactical intelligence. It failed, however, to maintain an effective agent network at Alexandria, and the British were able to conceal temporarily disasters such as the sinking of the Queen Elizabeth and Valiant in December 1941.

In the decisive area of communications security, naval intelligence failed completely, although in the company of the Germans, at whose insistence the Navy adopted Hagelin cypher machines in 1940. The British cracked this source of ULTRA intelligence by early 1941, in time for

Matapan, but did not read it continuously and currently until summer-fall 1941. From that point, losses on the Libyan run rose dramatically whenever Malta was capable of using the intelligence gained. In November 1941, losses were over sixty percent of tonnage shipped. Italian submarines also suffered as a result of this and other breaches of security.⁷⁹

Naval supply and transport arrangements were on the whole excellent. Fleet units managed a relatively high state of readiness throughout the war, and the Navy and the naval shipyards were able to repair two of the three battleships sunk at Taranto. Port and sea transport arrangements also generally functioned well, despite the Army's insistence on operating in areas, such as Albania and North Africa, where unloading facilities were totally inadequate. Between 28 October 1940 and 30 April 1941 the Navy moved to Albania almost half a million troops and over half a million tons of equipment and supplies. On the North African run the Navy had more difficulty, given British decryption of Italian convoy orders and the swiftness with which Malta forces could exploit that intelligence. The sharp rise in ship losses in October-November 1941 led the Navy to escort convoys with battleships, and the Luftwaffe soon returned in force to restore order. But after August 1942 the revival of Malta and the TORCH landings ultimately throttled the supply line to Africa, despite the Navy's sacrifice of increasing numbers of escorts and merchant ships. In aggregate terms, nevertheless, eighty-three percent of the 2.68 million tons of cargo shipped to Africa arrived safely, despite Malta and ULTRA.⁸⁰

The Air Force's support services were relatively less efficient and well-integrated than those of the Navy. Air intelligence does not appear to have distinguished itself especially in the course of the conflict,

except for gross overestimates of French air strength in June 1940. Strategic reconnaissance was almost non-existent at the outset,⁸¹ but improved once camera-equipped MC 202s became available in 1942. Maintenance and supply tended to be inadequate. Air Force ground transport, as mentioned in discussing operational mobility, was initially unable to meet demands placed upon it, particularly in the North African wastes. The Air Force did develop a modest airlift capability, which it used at Army request to ship troops to Albania, and all the necessities of war, "from torpedoes to women, from artillery ammunition to mail, from cannon to bocce games" to North Africa.⁸² Resources were always unequal to demand, which by early 1942 also included the Malta landing; Luftwaffe help was increasingly necessary. Finally, the Air Force and Army did not foresee the vital importance of supply drops, particularly in mountains -- a remarkable omission, given the Army's Alpine fixation. The two services had to improvise dropping containers and procedures in the midst of the winter campaign in Albania.⁸³

The armed forces' operational concepts were largely inadequate to the strategic objectives assigned, just as those strategic objectives were inadequate to the political goals of the Fascist leadership. The Army's operational doctrine, proved in Ethiopia and not sufficiently disproved in Spain, was one of the rapid advance by truck or bicycle-borne infantry hordes, backed by road-bound artillery and three and half ton tanks.⁸⁴ Baistrocchi and Pariani, the chiefs of staff responsible, had forgotten during the "easy wars" of the 1930s that the elan of the Bersaglieri was no answer to artillery and automatic weapons in the hands of determined and reasonably competent troops.

To compound the confusion, Pariani added his own organizational revolution, conversion of the Army's three-regiment divisions into

two-regiment "binary" divisions, which by doctrine were supposed to be capable only of frontal attack. "La manovra," in Pariani's lexicon, was the sole prerogative of the Army corps. Italy's improvised offensive in the Western Alps, willed by Mussolini in mid-June 1940, should have suggested that something was badly wrong. All along the front Alpini and motorized units dashed forward into the French artillery killing zones and stopped. The Army Staff apparently blamed failure on inadequate artillery support, due to the improvised nature of the operation -- rather than on an operational concept that assigned to poorly trained infantry tasks of offensive deep penetration that no infantry in the world could accomplish against an unshaken defense. The Army's second experiment along these lines, the October 1940 attack on Greece, had results that were truly catastrophic. The Greeks had numerical superiority after full mobilization, and the Germans were initially neither willing nor able to rescue the Army from the consequences of its operational concept.

Finally, the Army might have learned the lesson in North Africa between December 1940 and February 1941, where it lost perhaps 10,000 dead and 133,000 prisoners. Infantry hordes in the desert inflated supply requirements without a corresponding increase in either offensive or defensive power. Some officers at the Comando Supremo did recognize by July 1941 that "a single motorized division, EVEN FOR DEFENSE AND OCCUPATION MISSIONS, has the capability of four infantry divisions, while it eats only a fourth as much and require. ly a fourth as much transport from Italy."⁸⁵ Cavallero nevertheless failed to reduce the number of useless mouths while fully motorizing the rest. Mussolini's own rage for numbers and the prestige importance of outnumbering the Germans in Africa were doubtless partly responsible.⁸⁶ But the

ultimate source of the problem was that Cavallero himself continued to trust in numbers. He wanted to bring the forces in North Africa up to sixteen divisions, of which all except two or three would of necessity be foot infantry.⁸⁷ In the event, the Army managed to maintain the equivalent of at least eight foot infantry divisions in North Africa until El Alamein. As late as July 1942 the Comando Supremo proposed to reinforce Libya by adding a further 67,000 troops to the mostly immobile 150,000 already there.⁸⁸

The Navy's operational concept of only fighting fleet actions close to Italy and at a decisive superiority of force was ill-suited to securing the strategic objective Mussolini and Badoglio had initially set, control of the Mediterranean. In the battle off Calabria and later, the Navy failed even to adhere to its own operational concept, and retreated in confusion from a slower opponent that was outnumbered in most respects, but markedly more aggressive.⁸⁹ Subsequent Regia Marina operations, however, were entirely in accordance with the service's preferred mission, the protection of supply to North Africa. In this the Navy was at a partial disadvantage, given its overemphasis on the battle fleet to the detriment of escorts and coastal warfare. But within the limitations the escort shortage and the successes of ULTRA imposed, it succeeded in achieving a reasonably close match between operational concept and strategic objective.

In its operational concepts, insofar as it had any, the Air Force abandoned Douhet except for his insistence on securing air superiority. It instead attempted to contribute to the general strategic objective of Mediterranean primacy, but without having thought through precisely how to contribute. In the end, the Air Force sought to concentrate its centralized firepower ("azione di massa") on strategically decisive

targets. But what were those targets?

In the air operation order for attack on Greece, Pricolo set the following priorities: "defeat the enemy Air Forces," "counter enemy naval action," and "assist ground operations on Greek territory and the occupation of Corfu."⁹⁰ Thanks apparently to inadequate discussion of the air plan with Badoglio, Pricolo had given support of ground forces far too low a priority. Neither Greek Air Force nor Navy were a threat worthy of the attention assigned them, but it soon emerged that Italian ground forces needed rescue from the Greek Army. Pricolo had to improvise ground-air cooperation arrangements, while covertly ignoring Mussolini's wrathful and impractical demands that the Air Force concentrate on enemy morale by "sowing panic everywhere" and razing to the ground "all urban centers of over 10,000 population."⁹¹

In North Africa, the RAF's system of forward staging fields, fed from bases in the Nile delta outside Italian range, made it relatively difficult for the Regia Aeronautica to convert numerical superiority into air superiority. Nor was the RAF cooperative: badly outnumbered but determined to seize the initiative, it struck immediately at Italian airfields and forward ground units. The Regio Esercito, unused to air bombardment, thereupon clamored for standing air patrols and received them; theater command, once Graziani took over after Balbo's death at the end of June 1940, belonged to the Army. Even under Balbo the Air Force flew SM 79 sorties to hunt individual British armored cars. The resulting logistical drain, dispersal of effort, and absence of a clear operational concept frittered away the initial Italian advantage.⁹²

In the Mediterranean, the Air Force's inexperience at supporting the Navy meant that "mass action" against naval targets proved initially elusive. Bomber pilots could neither find nor identify nor hit the

British fleet. And the Air Staff's failure to recognize early the need for fighter cover for the fleet, along with the air industry's inability to produce long-range fighters, ultimately crippled the Air Force in its fall-back objective of supporting the Navy in keeping the North African sea lanes open. That objective required beating Malta down -- a task the Regia Aeronautica proved consistently unequal to. Only the repeated commitment of large Luftwaffe forces kept Malta-based British surface, submarine, and air units from blocking the Navy's route to Tripoli.

On the operational as on the strategic level, the armed forces were generally poor at placing friendly strength against enemy weakness. Italian strength was generally lacking, but the armed forces also failed to seek out what enemy weak points did exist. The concept of a Schwerpunkt, whether in attack or defense, was conspicuous by its absence; the even distribution of weakness and failure was the result. In the Alps and Greece, Italian forces advanced on broad fronts and suffered defeat in detail. In the defense, the desire to be strong everywhere precluded the accumulation of mobile reserves; Graziani's December 1940 débâcle and the rapid collapse in East Africa bore witness to this vice. Later, at least in Africa, the Germans selected the Schwerpunkt, but only Italian mobile units such as the Ariete seem to have learned to concentrate force against enemy weakness. In Russia the absence of concentration was not entirely the Army's fault. The Germans assigned the Italian 8th Army an overwhelmingly broad front, and on the basis of the supposed lessons of the winter battles of 1941 Hitler insisted that the Italian deploy all assets forward; the mobile reserves would be German. In the event, those reserves failed to arrive in sufficient force.

Navy operational doctrine overemphasized the clash of battle fleets

and thus placed Italian strength directly against that of the enemy. In practice, despite the collapse of the French, caution dictated not even challenging enemy weakness, as off Calabria, although the Navy's own directives stoutly suggested that "the danger of losses is no adequate reason for not undertaking an action, or breaking one off once begun."⁹³ The Navy Staff also rejected the idea of night actions by heavy units, despite the advantages the night offered for surprise concentration of forces, at least until most British ships acquired dependable radar in 1941. Italian submarines did attempt to strike from the outset at what the Navy Staff took to be enemy weakness, but British anti-submarine screens held them off. As the conflict went on, shortage of fuel for the battleships dictated a shift in emphasis to coastal warfare, but the Navy Staff failed to develop a doctrine adequate to the new situation. The one area in which the Navy succeeded in discovering and exploiting enemy weakness was at Alexandria and Gibraltar. The eccentric heroes with their "maiali" were a classic demonstration of economy of force, imagination, and surprise. But they were hardly a Navy Staff product, and they left little mark on Navy doctrine.

Finally, the Air Force record in seeking enemy weakness resembled that of the Army. The Air Staff proved unable to discern and concentrate on a Schwerpunkt. Pricolo and his successor Pougier insisted that avoiding dispersal of effort demanded that they control everything that flew, then surrendered piecemeal to the incessant demands of the other services. The Air Force's inability to set priorities and feasible operational objectives, and stick to them, was the decisive ingredient of its ineffectiveness.

IV. Tactical Effectiveness

The three services displayed varying degrees of tactical ineffectiveness. The Army's system was wildly inconsistent with both strategic objectives and operational concepts. The "war of rapid decision" required deep penetration into the enemy rear. But Italian tactics were unsuited to producing that penetration, as a British analyst writing in late 1940 or early 1941 noted:⁹⁴

The principal characteristic of Italian tactics in both theaters, Libya and East Africa, has been rigidity. They have remained attached to one principle, the concentration of the greatest possible mass for every task that faces them. In the attack they deploy this mass in line and rely solely on weight of numbers to clear the way.

If stalled, Italian units attempted to regain impetus by committing reserves frontally to reinforce failure.

This tactical rigidity was partly due to deficiencies in leadership and training that rendered Italian units incapable of infiltration and exceedingly vulnerable to the infiltrations of others.⁹⁵ But rigidity was also doctrinal: the Army's conception of how to pit Italian strength against enemy weakness assumed that Italy's "eight million bayonets" were Italy's strength. Italy's antagonists, the supposedly decadent British

and French, practiced birth control and were thus doomed to submersion under wave after wave of Italian assault troops. The generals initially assumed that infantry and artillery alone could do jobs that also required tanks. But in practice, superiority in numbers only produced superior numbers of dead, missing, maimed, and captured.

Pre-war doctrine also apparently had nothing to say on the subject of surprise, and assigned rapid exploitation of opportunities to soft-skinned motorized forces and to armored divisions equipped with the three and a half ton L.3 tank. Neither type of unit had the necessary striking power or cross-country speed. Until 1941 the Army also failed to recognize the need for specialized reconnaissance units to ensure surprise, to avoid it from the enemy, and to find opportunities to exploit.⁹⁶

The Army tactical system thus proved unable to dent the Alpine fortifications of the French, disperse the numerically superior Greeks, or cope with the mobile counterblows of the British in the manner the improvised strategic concept of summer 1940 required. Subsequently, at least in North Africa, the Army system underwent modification as Italian units learned mobile warfare and effective anti-tank tactics. Despite the inadequacies of its equipment, the Ariete division soon proved itself able to find and attack the enemy's flanks and rear, to use deception by feinting withdrawal or creating immense clouds of dust to bluff the superior British into pulling back.⁹⁷ But Ariete's relative success did not have the Army-wide influence it should have had. In their limited re-thinking in 1941 and 1942, Comando Supremo and Army Staff failed to devise a new tactical system and force structure -- based on small numbers of highly trained, well-equipped troops -- that might have enabled Italy to suffer impending defeat without humiliation.

The Army did at least emphasize the integration of all arms: tactics rested on infantry-artillery cooperation, later extended to armor. But inadequate technology and training limited the effectiveness of cooperation. In the offense, Italian artillery was frequently unable to cover or communicate with the infantry. In the defense, support was generally more effective. The commander of the Ariete in its final battle at El Alamein could claim with some plausibility that Italian artillery, with its emphasis on centralized direction, had in that set-piece battle cooperated with the other arms more effectively than had German artillery.⁹⁸ Integration of other factors, such as terrain, weather, training, qualities of the troops, and morale was less successful. The Army's infantry-based tactics inevitably worked best with a defensive mission and in hilly or mountainous country, as the dogged stand at Keren in East Africa, Cavallero's laboriously constructed "wall" against the Greek counteroffensive, and the often excellent Italian performance in Tunisia all demonstrate. But the Army failed to realize the full extent to which foot infantry were handicapped in the desert. Even as late as El Alamein, the Comando Supremo was intent on sending foot-borne reinforcements, including the paratroops of the Folgore, rather than artillery, armor, and above all trucks.⁹⁹

While doctrine was responsible for much of Italian rigidity, the Army's leadership style and training methods were equally at fault. Its approach to morale, unit cohesion, and relations between officers, NCOs, and enlisted men was inconsistent with any tactical system aimed at defeating the enemy. The nationwide recruitment system, in a nation as divided by dialects and particularisms as Italy, made unit cohesion difficult to achieve at the best of times. Only the Alpini were exempt. Then came the mobilization-demobilization comedy of 1940, which impelled

the Army Staff to ship to Albania units hastily filled with partially trained reservists or untrained recruits. The Albanian command threw the new units into the line a battalion at a time, as they disembarked, often without their supporting weapons, communications, or supply echelons. As Cavallero, himself a major offender, put it unhappily as late as March 1941, "we are making a tossed salad!"¹⁰⁰ Under these conditions, units blessed with particularly inept commanders simply collapsed; the cases of the "Wolves of Tuscany" and Bari divisions were especially conspicuous.¹⁰¹

The caste mentality of the officer corps precluded, and was designed to preclude, a relationship of trust with the lower orders. In the German or even the U.S. Army, which was in practice less egalitarian than the German, NCOs could become officers. In Italy, the battlefield commission was apparently unknown. The NCO corps was deliberately small (only 41,200 NCOs and technical specialists to 56,500 officers in June 1940) and NCOs served primarily in administration.¹⁰² Officers had personal servants, better uniforms and equipment, more leave, and above all, more and better food and drink than their enlisted men -- an issue that Kesselring raised several times with Cavallero, but without result.¹⁰³ General officers tended to view the troops with a patronizing self-sufficiency that sometimes cost lives.¹⁰⁴ The exceptions were the officers of the Alpini and elite units such as the Folgore, where common danger, specialization, and esprit de corps created a bond between ranks that overcame the Army's hierarchical mentality. As one Folgore recruit noted almost with wonder, "if we have to jump off a four meter wall, the senior ranks jump first, and then we jump." The usual sort of junior officers, "full of exaggerated dignity and bluster," did not survive in such an atmosphere.¹⁰⁵

After the initial defeats, and at the urging of Mussolini himself, the Army Staff polled subordinate units on their views on adopting a common ration and distribution system for officers and men, at least in the field.¹⁰⁶ The replies received at 2nd Army, at that point occupying Yugoslavia, have survived. Most corps commanders were favorable for logistical rather than leadership reasons, but "the mass of the officers" was apparently far from delighted.¹⁰⁷ One commander insisted that officers were simply not capable of functioning on the normal enlisted ration of a mess tin slopped full of pasta or crude minestrone: "the officers' mess relaxes [ristora] and puts the officer in the physical and psychological conditions necessary for the accomplishment of his far from easy task ... there must be some differentiation -- for the purposes of the officers' morale."¹⁰⁸ The suppression of officers' field messes might also produce "excessive familiarity [domestichezza] and consequent loss of prestige," as well as a loss of "collaboration and comradeship" among unit officers.¹⁰⁹ Finally, the new system, if extended to garrison, might lead to "diminution of the already tenuous authority of the young subalterns, as a consequence of the suppression of formal distinctions."¹¹⁰ The fierceness of the officer corps' defense of "formal distinctions" reflected an inner lack of confidence in its ability to lead.

Correspondingly, training tended to be inconsistent with any effective tactical system. Commentators on the pre-war period are practically unanimous in suggesting that the Army's leaders were oblivious of the importance of training. In a book otherwise devoted to defending the record of the armed forces in World War II, one eminent staff officer has written of "the widespread assumption that in battle, intuition and individual valor counted for more than training."¹¹¹ The

Army sacrificed unit training to force structure megalomania, which produced skeletal units incapable of mounting field exercises, and so diluted the officer corps' store of experience and talent that much of the training actually done was of little use.

This same combination of megalomania and neglect presided over the Army's training of its junior leaders. Junior regular officers were in extremely short supply, due to the pre-war practice of restricting their numbers to guarantee all regulars a career.¹¹² Worse, according to one retired general whose opinion the Comando Supremo found worthy of respect, junior regular officers in too many cases "allowed themselves to be attracted by choice to the quietism of sedentary functions" in the Army's immense bureaucracy.¹¹³ If regulars were in short supply in line units, the new reserve lieutenants from the university training courses suffered at the hands of instructors whom one senior commander described as "so incompetent as to give rise to criticism and comments among the officer candidates."¹¹⁴ Retreads from other wars, the Army's other principal source of junior officers, had even less training in modern warfare than the green lieutenants, and were in many cases unsuited to the physical and psychological rigors of combat. The deliberate stunting of the NCO corps did the rest: this was an Army in which competent junior leaders were the exception.

After the disasters of the winter of 1940-1941, the Army Staff under Roatta succeeded at least in part in diagnosing the problem. Roatta found it necessary to point out in a circular that "instructors are to keep in mind that battles are not only won on the battlefield, in front of the enemy, but also in the barracks, on the ranges, and in field exercises." His list of gaps in the training of the Army's junior leaders suggested how necessary the reminder was. Officers had:

- 1) insufficient capacity for command (lack of authority, timidity in ordering and demanding, uncertainty in addressing the troops).
- 2) inadequate knowledge of the mechanical side of weapons.
- 3) limited knowledge of small unit tactics.
- 4) rudimentary knowledge of communications equipment and organization.
- 5) insufficient knowledge of how to read topographic maps, and little understanding of the compass.
- 6) insufficient knowledge of field fortification.
- 7) inadequate conditioning for long marches.
- 8) total administrative ignorance.

NCOs suffered from even worse deficiencies, including an "almost total absence of initiative".¹¹⁵ This was a damning indictment of the Army's methods to date.

Roatta's remedy was a reasonable one: much practice in platoon and company tactics "using a variety of simple tactical situations, close to the real thing." Cavallero also took a hand in June 1941, ordering the creation of training battalions to give courses to the junior leaders of units likely to be committed to combat soon. Roatta's implementing order was a compound of common sense (as much live-fire and anti-tank training as possible) and bluster: "education [la cultura] counts for nothing". La cultura might indeed count for nothing until it came time to navigate in the desert or adjust mortar fire.

The effect of the Army leadership's new-found interest in training is hard to establish with precision. However, with the conspicuous exception of the mobile units and the Folgore (which appears to have attracted large numbers of career officers, especially nobles) the divisions in North Africa tended to have one or two regular officers per battalion, or less, and were correspondingly short of experienced NCOs. The reserve officers, in the words of a division commander at El Alamein, were willing to learn, but still suffered from "notable deficiencies in professional preparation." The result was inevitably to overtax the few regulars.¹¹⁶

One further built-in deficiency in training which the Army never even attempted to remedy was what the military attaché in Berlin, commenting on the disarray of 8th Army in Russia, described as "the principle that service support personnel do not fight."¹¹⁷ Italian support and headquarters units, unlike German ones, did not train as infantry and normally made no attempt to establish all-round defensive perimeters to ward off enemy raids.¹¹⁸ In North Africa this principle proved dangerous. In Russia it proved fatal: during the retreat from the Don, Soviet armor patrols attacked the main Italian logistical base at Kantemirovka and routed both service troops and thousands of infantry undergoing reorganization.

Finally, Army support capabilities were as inconsistent with any effective tactical system as was Army training. Food, except for officers' rations, was by universal testimony execrable in quality and inadequate in quantity. The already mentioned overcentralization of the Intendenza, along with the sea-link bottleneck and the vast distances from port to front, meant that Italian combat units in North Africa suffered regular shortages of fuel, food, water, ammunition, vehicles,

weapons, and even manpower. But neither penury nor technological backwardness dictated uniforms that came unsewed, the famous "cardboard" boots that disintegrated in the snow and mud of Albania, or the War Ministry's rejection of requests from the units in Russia for felt valenki instead of the hobnailed alpine boots that infallibly caused frostbite. Medical services and field sanitation were often inadequate. The Army began the Greek campaign with two ambulance platoons in all of Albania. Italian units in North Africa were perhaps better at sanitation than their German allies, but both lived amid clouds of flies and suffered inordinately from dysentery and hepatitis.¹¹⁹

Army supply also proved poor at maintaining the vehicles essential to movement and support; in November 1940 almost 2,000 of Italy's 5,140 vehicles in North Africa were out of service. This record was in part a consequence of Army attempts to make up its shortage of military vehicles by requisitioning civilian trucks, which inevitably had non-standard spare parts. Partly, it was the consequence of a shortage of mechanics and drivers. The Army did improve, at least in North Africa; by August 1941, only 1,500 of 8,500 trucks were out of service.¹²⁰ In Russia, however, the War Ministry inexplicably failed to provide low-temperature lubricants, necessary even in North Italian winters, for vehicles and weapons. This improvidence was of a piece with the rest of the Army's dismal tactical record.

Navy tactics are far less easy to analyze than those of the Army. The available sources usually fail to describe tactical concepts or training; this lack of emphasis is perhaps itself a reflection of tactical weaknesses. The chief characteristics of Navy tactics were rigidity -- well attested to by pre-war German observers¹²¹ -- and consequent reluctance to exploit opportunities. Supermarina's dogma that

Italy must not lose ships paralyzed tactical as well as operational initiative, and was out of step with the wider strategic objective of defeating the British fleet, or even with the Navy's preferred goal of guaranteeing supplies for North Africa. In addition, the naval high command's initial vision of war as a Mediterranean Jutland almost precluded the placing of Italian strength against enemy weakness.

Caution in the battle off Calabria lost Italy's best opportunity to achieve its primary strategic objective. After that the fleet generally sought to avoid British heavy units, but failed to develop new tactical concepts to replace the Navy Staff vision of a clash of battle fleets. After Matapan, even the desperate British evacuation of Crete under Luftwaffe pounding failed to lure the Navy out. When the British Gibraltar force sortied in September 1941, the Italian battleship squadron wandered about indecisively, then at Supermarina's orders swiftly withdrew even after the Air Force correctly reported that an Italian aircraft had torpedoed the battleship Nelson.¹²² The Navy's refusal to contemplate offensive night actions or risk defensive ones introduced a further rigidity: throughout the conflict, even when in contact, Italian heavy units felt compelled to turn for home as the sun set.

The Navy was more aware than the Army of the importance of surprise and rapid exploitation, but was disinclined to seek them. In April 1940 Cavagnari claimed that surprise against enemy bases was impossible to achieve, since the British and French navies were already mobilized. As the British demonstrated at Taranto, the matani at Alexandria, and the Japanese at Pearl Harbor, this was nonsense. But it was nonsense that Cavagnari's opposition to going to war at all may have dictated.¹²³ Whether excuse or not, the Navy was not entirely oblivious of the need

for security and surprise, as its elaborate though ultimately vain preparations to safeguard the North African convoys attest. The Naval Staff intended the Matapan operation as a surprise raid against British convoys, even if ULTRA betrayed the secret and the Italian heavy cruiser squadron in turn fell victim to surprise. The Navy's only dramatic success in the use of surprise was technological: the long-neglected maiali, once they achieved full operational readiness in 1941.

As for rapid exploitation of opportunities, the Navy's overcentralized command system and the lack of aggressiveness of the higher commanders largely prevented it. Italian cruisers or battleships in contact with inferior British forces repeatedly held back or withdrew rather than exploit. In March 1942 Admiral Vian, with one cruiser and six destroyers escorting a convoy, held off Admiral Iachino with the Littorio, three cruisers, and ten destroyers. The British did not lose a single ship to Iachino's overwhelming preponderance of force.

The submarines, from which both Mussolini and the admirals had expected major successes, also proved largely ineffectual. British merchant shipping in the Mediterranean was scarce and usually convoyed. The initial Italian tactical system of isolated submerged ambush around enemy ports proved suicidal, given the clarity of Mediterranean waters and the effectiveness of British anti-submarine aircraft and destroyers. The Navy response was twofold: to keep many of its submarines as well as its battleships in port, and to follow belatedly the German example by using submarines at night, on the surface, and in groups. Results improved by 1942, but by then it was too late to accomplish any useful strategic objective. Only the maiali, which harnessed the national individualism, embodied a tactical system capable of achieving strategic results.

Navy tactical systems also appear to have lacked integration in some respects. Use of torpedo craft, destroyers, and even cruisers for anti-aircraft and anti-submarine screening was standard procedure. In the battle off Calabria the destroyers moved swiftly to cover withdrawal with smoke. But combining the fleet's action with that of submarines and aircraft proved more difficult due to the insufficient speed and daylight vulnerability of Italian submarines. Supermarina's insistence on keeping the submarines under separate command further impeded fleet cooperation. Air support, even after the Air Force agreed to the arrangements needed to provide it on a reasonably timely basis, tended to be late in arriving; the limited range of Italian fighters also thinned out coverage of fleet and convoys. Air reconnaissance throughout the conflict tended to be sketchy, due to poor ship recognition, slipshod reporting procedures, and the Air Force's initial insistence on assigning only superannuated aircraft to the task.

The sources rarely address the Navy's approach to unit cohesion and training. Presumably, the shared danger and hardship of naval (and air) crews, and the precise and technical nature of combat tasks, meant that cohesion of the kind the Army had difficulty generating was both easier to achieve, and less vital to accomplishing the mission. At sea or in the air, surrender or flight is in general a choice only the commander can make. Little information is available about the Navy's training procedures during the war, but it clearly failed to develop the instinctive though rationally controlled aggressiveness that repeatedly enabled the British Royal Navy to defeat or thwart superior Italian and German forces. Regia Marina tactical performance, with the exception of the maiali and some light units, gives little reason to revise the German naval attaché's mid-1939 judgement that Navy training was "not at the

same level as ours; difficult conditions of the kind we deliberately create in combat-type exercises are not sought."¹²⁴ These weaknesses might seem to justify retrospectively the Navy Staff's strategic and operational caution. But any such judgment would ignore the extent to which aggressiveness is itself a decisive tactical asset: "... no captain can do very wrong if he places his ship alongside that of an enemy."

Air Force tactics are if anything even less well documented than those of the Navy. Tactics had strategic implications principally in the case of the bombers, which like those of the USAAP trusted in close defensive formations and simultaneous release on the objective. In combat, these tactics apparently served well -- when fighter escort was available -- in maximizing what little accuracy primitive Italian bombsights and navigation aids provided.¹²⁵ Operationally, the air force's tactical system clashed with its concept of azione di massa. Fighter tactics rested on the individual prowess of the pilot as aerial matador.¹²⁶ Simultaneously and paradoxically, fighter training emphasized formation aerobatics; and combat formations were sometimes so tight that avoiding collision distracted pilots from scanning the sky for enemy aircraft. Once aircraft such as the MC 202 appeared, however, Italian fighters, although outnumbered, appear to have given a good account of themselves at the tactical level.

The Air Force tactical system was also integrated, in the sense that fighters and bombers cooperated from the outset; tactically the Regia Aeronautica proved less Douhetian than the USAAP. The Air Force also recognized by late 1941 the importance of synchronizing bomber and torpedo aircraft attacks. Air Force ability to cope with adverse weather, however, remained extremely limited.

Surprise and rapid exploitation of opportunities was at least in theory an inherent Air Force characteristic. But that service's relatively immobile ground organization made exploitation difficult. Worse, insufficient emphasis on reconnaissance and communications often threw away even tactical surprise, while making it relatively easy for the British to catch Italian aircraft on the ground. Bomber units attacking well-defended targets such as Alexandria or Malta seem to have made little special effort to achieve surprise, even after the Air Force belatedly perceived in mid-1941 that the British had air defense radar. Fighter-bombers seem to have been more imaginative; in 1942 two Reggiane 200ls, camouflaged to resemble Hurricanes, joined the landing circuit of the British carrier Victorious to deliver a "brilliantly conceived and executed attack." Unfortunately, the bomb that landed on the carrier's flight deck shattered without exploding.¹²⁷

Air Force training suffered, more even than that of the other services, from the throttling of Italy's fuel supplies. Between June 1940 and June 1942 the Air Force trained 1920 pilots and lost perhaps a thousand,¹²⁸ and as 1942 wore on the new pilots were increasingly short on flying time. But aircraft shortage was much more crippling; the lesser skill of the new arrivals was probably not a major factor in Air Force ineffectiveness.

The Air Force's support system shared some of the Army's problems in sustaining combat units. Shortage of vehicles for transport of crew, water, fuel and ordnance had a serious tactical consequence: it limited dispersion of aircraft on the fields, and of units to satellite fields.¹²⁹ Maintenance and supply tended to be slipshod. In the words of one pilot who deployed to Libya in 1940,¹³⁰

The aircraft flew primarily because they were brand new, and also because our ground crews made the most unheard-of deals with other units, with mysterious Arab traders, and with the scavengers preying on wrecked Italian and British aircraft The same thing, the same system of improvisation, was followed for the mess, the aid station, and the other vital necessities of men in the desert. We had high losses; not from the enemy, but from equipment difficulties.

Despite almost thirty years flying experience in Libya, Italian aircraft stationed there in June 1940 lacked sand filters; the result was an epidemic of engine failure.¹³¹ Experience did teach something: Pricolo insisted on holding back the first precious squadrons of MC 202s until they could be fitted with sand filters, despite the wrath of Cavallero of the Comando Supremo, who demanded immediate deployment regardless of consequences.

Even in Italy, Sicily, and Sardinia, the Air Force's ground organization and industrial backing proved unequal to the task of maintaining the high sortie rates both tactical system and situation demanded. In the August 1942 Malta convoy battle, the Regia Aeronautica's swan song, it was able only with extraordinary difficulty to commit 500 torpedo bombers, bombers, fighters, and reconnaissance aircraft. The problem was not exclusively Italian; Luftwaffe serviceability in the Mediterranean theater in 1942 and 1943 tended to run at fifty percent or less of establishment strength.

Conclusion

The organizational effectiveness of the Italian armed forces in World War II was clearly low. They entered the war with largely unsuitable doctrine, training, and equipment, and learned from their defeats less than the Germans learned from their victories.¹³² Particularly in the operational and tactical realms, the services remained rigid and unimaginative. Army failures were especially conspicuous, thanks to a World War I force structure and systematic neglect of unit training and junior leaders. A few perceptive officers -- subordinates of Cavallero at the Comando Supremo and the much-maligned Roatta at the Army Staff -- diagnosed at least some of the Army's problems. But the insistence of Mussolini, Cavallero, and Army traditionalists on numbers, as well as the incessant demands of peripheral theaters in Russia and the Balkans, blocked the organizational revolution the Army required.

As Lucio Ceva has suggested, war also failed to produce change because inhibitions against washing dirty linen in front of the Germans and the Italian public, as well as the absence of long-lasting ground combat involving most of the Army, combined to impede the renewal of the higher officer corps. During the first eleven battles of the Isonzo, Cadorna had "torpedoed" unsuccessful or suspect subordinates with wild abandon. The ductile Cavallero, who survived that experience, was unwilling to retire even obvious incompetents.¹³³ Other than Badoglio, whom the regime made scapegoat for Greece, the only prominent victims of

Italian defeats were Graziani, who went to pieces and pleaded for his own relief, and Ubaldo Soddu, who failed to halt the November 1940 Greek counteroffensive in Albania. Graziani's successor Italo Gariboldi showed little energy or aptitude, but nevertheless went on to preside inertly over the destruction of 8th Army in Russia.¹³⁴ Roatta and Ambrosio traded positions as Army chief of staff and commander of 2nd Army. Division and corps commanders showed similar stability, except for Sebastiano Visconti Prasca, who commanded the Greek affair at the outset, and those killed or captured in Africa and Russia.¹³⁵

A further major source of failure to learn was the traditions and nature of the officer corps itself. The higher officer corps, in particular, lacked a leadership tradition; lack of energy and self-confidence was epidemic. The commander of one of the two armies in Albania described without mincing words the general level of his division and corps commanders:

Some did not show sufficient strength of character, physical robustness, professional competence and initiative together with love of responsibility. Too many have presumably arrived at high rank by virtue of administrative drudgery, and without having well understood the meaning of the leadership of men and the active employment of units on the battlefield.

Corporate self-defense and barracks Army routine had also produced an over-age officer corps: colonels in fifties, divisional commanders in their late fifties, and higher commanders of sixty or more.¹³⁶ Age and infirmity on high paralleled the youth and inadequate training of the

reserve officers below.

Some generals tended to manic bravado, in the manner of Graziani ("when the cannon sounds, everything will fall into place automatically") and Visconti Prasca ("this operation...has been prepared down to the smallest details, and is as perfect as is humanly possible.") Others fell into exaggerated despair, as when Soddu panicked at a Greek breakthrough, or when Emilio Battisti, commander of the Cuneense alpine division, gave up any semblance of command during the retreat from the Don.¹³⁷ The naval high command's inferiority complex vis-à-vis the British was similarly debilitating, and prevented the only possible remedy, a successful fleet action.

The Army's counterpart to the readiness to assume responsibility ["Verantwortungsfreudigkeit"]¹³⁸ demanded of German commanders at all levels was the sport of "palleggiamento delle responsabilità," or the unloading of hot potatoes on subordinates or superiors, while storing up evidence with which to damn others in case of disaster.¹³⁹ Graziani bitterly resented his transfer to North Africa in June 1940, and sought to minimize his own responsibility for immobility by sending Rome the minutes of his councils of war with his subordinates. After the war Badoglio, Graziani, Visconti-Prasca, and lesser lights followed up by abusing one another in their memoirs.

The total abdication of the high command in September 1943 was the culmination of this flight from responsibility. Ambrosio, chief of general staff, avoided any part in planning action against the Germans. That task he thoughtfully left to the initiative of Roatta, while Giacomo Carboni, in charge both of SIM and of the mobile corps defending Rome, adopted a position of ambiguity so extreme that historians have had difficulty decyphering his motivations. Ambrosio himself, following king

and government and followed by Roatta, exchanged flight from responsibility for flight pure and simple.

Even in better times, this was an officer corps short on mutual trust, a condition Fascist rhetoric worsened, but did not cause. Intrigues and rivalries were a principal preoccupation of the staffs in Rome. Soddu feuded with the equally unprincipled and inept Carboni at SIM, while plotting first to supplant Badoglio, then Visconti Prasca. Graziani sought to undermine Badoglio. Cavallero torpedoed Alfredo Guzzoni (who had minded the Comando Supremo in Rome during Cavallero's absence in Albania), Gastone Gamba of the mobile corps in North Africa (for getting along too well with Rommel), and Pricolo of the Air Force, whose own service was at least as intrigue-filled as the Army.¹⁴⁰

In the field, Graziani found it necessary to emphasize to his chief subordinate, Mario Berti, the need for "absolute precision" and "a complete and absolutely true outline" of the motor transport requirements of one of Berti's divisions.¹⁴¹ In 1942 one general petulantly refused service in North Africa on the grounds that his assignment would subordinate him to a rival with less seniority.¹⁴² The staff in East Africa actually attempted to turn rivalries to tactical advantage in the attack on British Somaliland: "We had placed at the head of the [attacking] echelons officers whom we knew to be hostile to one another, hoping that this would put wings on their feet." The unexpected result was that "both of them concentrated essentially on preventing the other from getting there."¹⁴³ At company level, lack of mutual trust between officers and enlisted men mirrored the lack of trust within the officer corps, and the Army's cavalier attitude toward training multiplied the resulting damage.

The final and most devastating source of Italian ineffectiveness at all levels was what one recent official history, with praiseworthy candor, has described as "atavistic intellectual narrowness."¹⁴⁴ At the strategic level, the best that one can say for Badoglio, Cavagnari, and associates was that left to themselves, they would not have fought at all. But once at war, their vision did not extend beyond the Mediterranean. As Badoglio put it in September 1940, successful action at Gibraltar and Suez would give Italy domination of that sea, "and nothing...could stop us." Cavallero, even after Pearl Harbor, was equally obtuse. Only after United States tanks and aircraft began reaching the British 8th Army in quantity in the summer and fall of 1942 did the Italian leadership begin to recognize that this was now a world war. As late as the November 1942 TORCH landings, Cavallero inexplicably harbored illusions of victory -- through alliance with the already defeated French.¹⁴⁵ On the operational and tactical levels, the services were largely impervious to outside example, whether doctrinal or technological. A combination of intellectual parochialism with a nationalist arrogance encouraged but not engendered by Fascism produced an Army leadership that rejected armor, a Navy Staff that neglected radar and coastal warfare, and an Air Force that preferred biplane fighters.

However devastating the effects of these conditions for Italy, they were hardly an Italian monopoly. British and United States Army leadership traditions fostered the illusions that war was -- respectively -- akin to regimental soldiering or industrial management. Traditions are by their nature resistant to change. But to achieve and maintain effectiveness military institutions must acquire the habit of introspection, of learning willingly from both enemies and allies, of remodelling leadership style. The Italian case makes clear the price of failure.

Notes

1. On all this, see MacGregor Knox, Mussolini Unleashed, 1939-1941 (Cambridge, 1982); for some of its wider implications, Knox, "Conquest, Foreign and Domestic, in Fascist Italy and Nazi Germany," Journal of Modern History, 56/1 1984, pp. 1-57.
2. For the phrase, and for masterful analysis of this second period, see Lucio Ceva, La condotta italiana della guerra: Cavallero e il Comando Supremo 1941-1941 (Milan, 1975); also the relevant chapters of his Le forze armate (Turin, 1981), and his Africa settentrionale 1940-1943 (Rome, 1982). I am extremely grateful to Ceva, to Professor Andrea Curami of the Milan Politecnico, and to Dr. Jürgen Förster for their friendly comments on and valuable corrections to this essay.
3. Ugo Cavallero, Comando Supremo (Bologna, 1948), pp. 318-19, 392 ("labyrinths"), 303 (dockyards); Albert Kesselring, The Memoirs of Field Marshal Kesselring (London, 1953), p. 110. No adequate secondary work on the Italian war economy yet exists.
4. The percentages derive from the service expenditure figures in Ragioneria Generale dello Stato, Il Bilancio dello Stato negli esercizi finanziari dal 1930-1931 al 1941-1942 (Rome, 1951), pp. 257, 403, 407; the state expenditure figures in Francesco A. Répaci, La finanza pubblica italiana nel secolo 1861-1960 (Bologna, 1962), p. 331; and the national income figures (averaged to conform with fiscal years) in Rosario Romeo, Breve storia della

grande industria in Italia (Milan, 1972), p. 412. German figures (averaged to conform with Italian fiscal years) are from Berenice Carroll, Design for Total War (The Hague, 1968), p. 184. Service figures for 1942-1943 and later are unavailable. Army figures include Carabinieri and Fascist Militia (MVSN).

5. Ufficio Storico della Marina Militare (henceforth USMM), Dati statistici (Rome, 1972), pp. 53, 263-71.
6. USMM, L'organizzazione della marina durante il conflitto (Rome, 1972-1975), 1:169.
7. Giuseppe D'Avanzo, Ali e poltrone (Rome, 1981), pp. 310-11, note 3; pp. 355-57; USMM, L'organizzazione, 1:151-52, 2:325.
8. See the photographs of knocked out M13 tanks in the March 1942 report on vehicles and tactics in North Africa for the Comando Supremo by col. M. Bizzi, National Archives and Records Service, Microcopy T-821, roll 250, frames 000100ff. (henceforth NARS/microcopy/roll/frame).
9. Only six individuals (Marchetti, Rosatelli, Gabrielli, Zappata, Castoldi, and Longhi) were responsible for the ten aircraft that gave an effective contribution to Italy's World War II air effort (CR 42, G 50, MC 200, MC 202, RE 2001, SM 79, SM 84, BR 20, Cant. Z 1007, Cant. Z 506) (Fortunato Minniti, "La politica industriale del Ministero dell'Aeronautica. Mercato, Pianificazione, Sviluppo (1935-1943)," Storia Contemporanea, 12/1, 12/2, 1981, pp. 25; also comments of Andrea Curami).
10. Mario Caracciolo, E poi? La tragedia dell'esercito italiano (Rome, 1946), pp. 58-60; closing time: Soddu to subordinates, 61920, 27.8.1940, Archivio Centrale dello Stato (henceforth ACS), Rome, Primo Aiutante di Campo, Sezione Speciale, folder "Circolari Varie

1940."

11. For the Cant. Z 1018, NARS T-821/479/001049ff. and 480/000127ff.; Mussolini remark: Minniti, "La politica industriale," p. 274.
12. See D'Avanzo, Ali e poltrone, pp. 334-35, for an energetic but undocumented statement of the 'malefactors of great wealth' thesis; Minniti, "La politica industriale," pp. 51-55 and 281-82, implies the problems lay elsewhere.
13. 47mm gun: Comando Supremo memorandum, 6.2.1942; 20 divisions: Cavallero, in minutes of meeting, 6.3.1942 (Ceva, La condotta italiana, pp. 201-02, 208).
14. The figure for armored vehicles is based on Professor Andrea Curami's research in the Agostino Rocca archive at the Einaudi Foundation, Turin (Rocca was chief of Ansaldo, the principal producer of armor). The artillery figure is an estimate based on Curami's research; remaining figures from Minniti, "Il problema degli armamenti nella preparazione militare italiana dal 1935 al 1943," Storia Contemporanea, 9/1, 1978, pp. 27-28, 39-40.
15. See the acid comment of Ufficio Storico dell'Esercito (henceforth USE), L'esercito italiano alla vigilia della seconda guerra mondiale (Rome, 1982), p. 227 and note 19.
16. Unsigned Comando Supremo memorandum, 24.2.1941, in Ceva, Le forze armate, pp. 572-73; the comment is representative of Italian remarks about the Germans found in the documents.
17. Giorgio Rochat, L'esercito italiano da Vittorio Veneto a Mussolini (1919-1925) (Bari, 1967), p. 3.
18. Giuseppe Bottai, Diario 1935-1944 (Milan, 1982), p. 196. Bottai (Minister of National Education, 1936-1943) was the only high regime personality other than Balbo to show much military

aptitude: he led with credit a battalion of Alpini in Albania, and survived a post-war Foreign Legion stint.

19. Ceva, Le forze armate, p. 296.
20. Figures: USB, La campagna di Grecia (Rome, 1980), 1:667, 669-70.
21. Italian Army: Sciuero, in Palazzo Venezia conference minutes, 29.1.1943, in Carlo Favagrossa, Perché perdemmo la guerra (Milan, 1946), p. 295; U.S. Army: K.R. Greenfield, R.R. Palmer, B.I. Wiley, The Organization of Ground Combat Troops (Washington, D.C., 1947), p. 161; for larger figures, (3.7 million in April 1943) including officers and probably prisoners, Ceva, Le forze armate, p. 353.
22. Knox, Mussolini Unleashed, pp. 193-94; see also USB, Grecia, 1:63-70.
23. USMM, L'organizzazione, 1:261, 272-73 graph 14.
24. Pricolo to Porro (air commander, North Africa), quoted in Knox, Mussolini Unleashed, p. 24; also Felice Porro, "La Quinta Squadra Aerea in Libia (10 giugno 1940 -- 5 febbraio 1941)," Rivista Aeronautica, 1948/6, 7, 8, 9 (9:533).
25. USMM, Le navi di linea italiane (Rome, 1973), pp. 339-54.
26. Knox, Mussolini Unleashed, pp. 39-40 and Chap. 3.2.
27. *Ibid.*, p. 150.
28. An immense polemical literature on the subject exists; the best summary is still Carlo Pinzani, "L'8 settembre 1943: elementi ed ipotesi per un giudizio storico," Studi Storici, 13/2, 1972.
29. Knox, Mussolini Unleashed, p. 220.
30. Cavagnari to Mussolini, 14.4.1940, printed in USMM, L'organizzazione, 1:351-52; Weichold to OKM, 1.9.1940, German Naval Records (henceforth GNR), PG 45951.

31. See particularly Walter Warlimont, Inside Hitler's Headquarters (New York, 1964), pp. 307-12, Basil H. Liddell Hart, ed., The Rommel Papers (New York, 1953), pp. 365-66; also Kriegstagebuch des Oberkommandos der Wehrmacht (Wehrmachtsführungsstab) (Munich, 2nd. ed., 1982), 1942/2:1040-41, 1943/1:130-31, 1943/2:1603.
32. Badoglio to Mussolini, 13.4.1940, in Knox, Mussolini Unleashed, p. 93.
33. "Appunto per il Duce," 10.8.1940, Ministero dell'Aeronautica, Gabinetto, 1940 bundle 63, ACS; Quirino Armellini, Diario di guerra (Milan 1946), p. 88.
34. For Roatta's views, and the whole question of military opposition to the Greek operation, see Knox, Mussolini Unleashed, pp. 193, 209-221.
35. Mussolini to Cavallero, 24.7.1941, in Ceva, La condotta italiana, pp. 169-70.
36. On the extent of the drain, and its effects on the North African campaign, see the excellent analysis in Ceva, La condotta italiana, pp. 99-118, and his "La campagna di Russia nel quadro strategico della guerra fascista," Il Politico, 1979/3.
37. See the Army Staff memorandum, 30.6.1940, quoted in Knox, Mussolini Unleashed, pp. 136-37.
38. For full discussion of the Italo-German alliance, see the excellent volume by Gerhard Schreiber et al, Das Deutsche Reich und der Zweite Weltkrieg, 3, Der Mittelmeerraum und Südosteuropa (Stuttgart, 1984).
39. Hitler, in Gerhard Engel, Heeresadjutant bei Hitler 1938-1943 (Stuttgart, 1974), p. 88.

40. Badoglio to Mussolini, 15.4.1940, in USE, In Africa settentrionale. La preparazione al conflitto. L'avanzata su Sidi el Barrani (Rome, 1955), pp. 170-72.
41. Franz Halder, Kriegstagebuch, (Stuttgart, 1962), 1:308.
42. Unsigned Comando Supremo memorandum, 24.2.1941, in Ceva, Le forze armate, pp. 572-73.
43. Ceva, La condotta italiana, pp. 53-54, 144-51.
44. Ambrosio remarks to chiefs of staff, 22.7.1943 and 26.7.1943, NARS T-821/125/000369-70, 000364, 000357, 000353-54; for the view from the German side, Kriegstagebuch des Oberkommandos der Wehrmacht, 1943/2:814-15, 820, 825, 847, 850, 855, 865, 868, 871, 881-82, 1447-48.
45. Badoglio, in minutes of chiefs of staff meeting, 25.5.1940, USE, Verbalì delle riunioni tenute dal Capo di SM generale, (Rome, 1982), 1:63.
46. This latter tendency is almost universal; for a rare counterexample, I.S.O. Playfair et al, The Mediterranean and Middle East, (London, 1954-1966).
47. Knox, Mussolini Unleashed, pp. 125-6; USMM, Le azioni navali in Mediterraneo dal 10 giugno 1940 al 31 marzo 1941 (Rome, 1970), Chap. 12; Giuseppe Santoro, L'aeronautica italiana nella seconda guerra mondiale (Rome, 1957), 1:274-83.
48. See especially Santoro, L'aeronautica, 2, Chap. 21 (Malta convoy battles, 1942).
49. Addestramento e impiego dei carri veloci, quoted in USE, L'esercito italiano alla vigilia, p. 268.
50. Weichold to OKM, B. Nr. Gkos 55/40, 10.7.1940, GNR PG 32211; Knox, Mussolini Unleashed, p. 147.

51. LTC Bruno Montanari, Appunti sull'impiego dei mezzi aerei (Caserta, 1941-1942), NARS T-821/461/000188, 000206.
52. Peter C. Smith, Edwin Walker, The Battles of the Malta Striking Forces (Annapolis, Md., 1974), p. 91; see also Santoro, L'aeronautica, 2:300, 382, 391, 403-04.
53. Ceva, Le forze armate, p. 349.
54. Italian corps: Deutsches Verbindungskommando b. ital. Expeditionskorps in Russland to DVst.b.it.AOK 8., 7.8.1942, NARS T-501/326/000149-50; German corps: Martin van Creveld, Fighting Power (Westport, CT, 1982), p. 50.
55. Gyldenfeldt report, 8.8.1942, NARS T-501/320/000289-95; for corroboration see Becker, "Erfahrungsbericht als Verb. Offz. bei der Ital. mot. Div. 'Pasubio,'" 15.8.1941, NARS T-312/360/7934956-57, and Giuseppe Mancinelli, Dal fronte dell'Africa settentrionale (1942-1943) (Milan, 1970), pp. 15, 175, who points out that poor communications helped engender the schematism the Germans lamented. For more on the German view of the Italians in Russia, see Jürgen Förster, "Il ruolo della 8a armata italiana dal punto di vista tedesco," in Gli italiani sul fronte russo (Bari, 1982).
56. Arena after action report, 13.12.1942, NARS T-821/31/000018-20.
57. Roatta to Comando del Corpo d'Armata Motocorazzato, 9.9.1943, printed in USB, Le operazioni delle unità italiane nel settembre-ottobre 1943 (Rome, 1975), p. 139; the text of the official history passes over this detail in silence.
58. For a particularly noteworthy case (31.8.1940), see Knox, Mussolini Unleashed, p. 149.
59. D'Avanzo, Ali e poltrone, p. 388 note.

60. Cavallero to Roatta, 8.6.1941, in Ceva, La condotta italiana, pp.151-52; the subject was the setting up of training battalions for junior leaders; on Army expansion, see in general Ceva, Chap. 4 ("The Mirage of the Grande Armée").
61. A retired general, Luigi Bongiovanni, urged this on Mussolini in March 1941: the Comando Supremo considered Bongiovanni's recommendations worthy of interest (Bongiovanni to Mussolini, "Vincere la guerra," 15.3.1941, p. 27, NARS T-821/249/000409); Comando Supremo comments, 000378-82.
62. USB, L'esercito italiano alla vigilia, p. 243. (Figures exclude anti-tank and anti-aircraft guns.)
63. Bastico, Rommel's Italian superior and antagonist in North Africa, was particularly bitter about this inadequacy in his after-action report on the last phase of the retreat from El Alamein to Tunisia: NARS T-821/9/000152.
64. See Mussolini, in Palazzo Venezia conference minutes, 29.1.1943, in Pavagrossa, Perché perdemmo la guerra, p. 284.
65. Cavallero, Comando Supremo, pp. 189-90, 195; USMM, L'organizzazione, 1:135-49.
66. Romeo Bernotti, Cinquant'anni nella Marina militare (Milan, 1971), p. 244; USMM, La guerra di mine (Rome, 1966), pp. 14-15, 203-22.
67. For the development history of the "maiali," see Archivio dell'Ufficio Storico della Marina Militare, Rome, "Mezzi d'assalto," bundle 1, and USMM, I mezzi d'assalto (Rome, 1972), Chap. 1.
68. USMM, L'organizzazione, 1:97.
69. "vere debolezze volanti": Santoro, L'aeronautica, 2:473.

70. See particularly Ceva, "Lo sviluppo degli aerei militari in Italia (1938-1940)," Il Risorgimento, 35/1 (1983); for the (belated) issuing of specifications for 1500 and 1100 horsepower in 1939, Valle to Badoglio, 63860, 25.8.1939, NARS T-821/144/000560-62 (my thanks to Professor Curami for drawing my attention to this document).
71. Francesco Pricolo, La Regia Aeronautica nella seconda guerra mondiale (Milan, 1971), pp. 140-42; Bernotti, Cinquant'anni nella Marina militare, p. 230; Donald G. Payne (pseud. Ian Cameron), Red Duster, White Ensign (New York, 1960), pp. 78, 229; Hugh Lloyd, Briefed to Attack (London, 1949), p. 45.
72. Pricolo, La Regia Aeronautica, p. 261.
73. Unsigned memorandum for Mussolini, 29.9.1940, ACS, Ministero dell'Aeronautica, Gabinetto, 1940 bundle 63; D'Avanzo, Ali e poltrone, p. 314 note 9.
74. Carlo De Risio, Generali, servizi segreti, e fascismo (Milan, 1978), p. 113, and Ceva, "L'intelligence britannico nella seconda guerra mondiale e la sua influenza sulla strategia e sulle operazioni," Storia Contemporanea, 13/1, 1982.
75. De Risio, Servizi segreti, pp. 28-34, 227 note; USB, Le operazioni delle unità italiane nel settembre-ottobre 1943, pp. 99-104, defends Army intelligence, but mistakes TOE strength ["Soll"] for actual strength in the 3rd Panzergrenadier division status report of 1.9.143 [facsimile in Giuseppe Castellano, Roma Kaputt (Rome, 1967), pp. 225-27; original in Bundesarchiv-Militärarchiv, Freiburg, RH 26-3/12, Teil 2, and endorses the Army Staff's implausible total of 150 tanks assigned or attached to the division by 9 September. The 1 September status report shows only

three Mk. III tanks, used as command vehicles.

76. For the contrast in organization and in effectiveness between the centralized Italian system and the decentralized German one, Mancinelli, Dal fronte dell'Africa settentrionale, pp. 46-47.
77. On this, see particularly Martin van Creveld, Supplying War (Cambridge, 1977), Chap. 6.
78. Roatta to Graziani, 9.7.1940, ACS, Carte Graziani, bundle 42; see also Mario De Monte, Uomini ombra (Rome, 1955), pp.30-34.
79. See Alberto Santoni, Il vero traditore (Milan, 1981), and P.H. Hinsley et al, British Intelligence in the Second World War, 2, (London, 1981).
80. On ULTRA, see especially Santoni, Il vero traditore; shipping statistics: USMM, La difesa del traffico con l'Albania, La Grecia e l'Egeo (Rome, 1965), p. 47; USMM, Dati statistici, pp. 127, 129, 144. British concentration on vital cargoes (fuel, ammunition, vehicles) ensured that considerably less than 83 percent of those categories actually arrived.
81. "An unpardonable error": Porro, "La Quinta Squadra Aerea in Libia," 8:487.
82. Memorandum by the Comando Supremo air representative, 27.8.1941, in Santoro, L'aeronautica, 2:225.
83. USB, Grecia, 1:287.
84. See particularly USB, L'esercito italiano alla vigilia, pp. 252-77.
85. Comando Supremo office note, July 1941, quoted in Ceva, La condotta italiana, p. 110 (emphasis in original). The author was probably Montezemolo, chief of the operations section for Africa, and the Comando Supremo's best brain.

86. The latter is the thesis of Ceva, La condotta italiana, pp. 76, 109-110.
87. Cavallero diary, 20.7.1941, quoted in Ceva, La condotta italiana, p. 77; see also Army Staff memorandum on reinforcement of North Africa, 23.5.1941 (110,000 additional men, but only 14,000 vehicles and tanks), in Ceva, Le forze armate, pp. 582-87.
88. Comando Supremo memorandum, "Ripartizione tonnellaggio negli avviamenti in A.S.," 22.7.1942, NARS T-821/144/000486-91.
89. See Weichold to OKM, 10.7.1940, GNR PG 32211, and Knox, Mussolini Unleashed, pp. 146-47.
90. Pricolo to subordinate commands, B-02038, 25.10.1940, NARS T-821/127/000250-54.
91. Mussolini, in chiefs of staff conference, 10.11.1940, NARS T-586/000871-90.
92. Roderic Owen, Desert Air Force (London, 1948), pp. 30-35; Raymond Collishaw, Air Command (London, 1973), pp. 238-44; Porro, "La Quinta Squadra Aerea in Libia," particularly 6:351-55 and 9:536-37.
93. Navy directive, quoted in USMM, L'organizzazione, 1:326.
94. Ceva, La condotta italiana, pp. 190-92 (my retranslation).
95. See the lament of Cavallero, Knox, Mussolini Unleashed, p. 260.
96. See the 1940 tables of organization of Italian divisions and corps, which despite the German example contained no reconnaissance units: USB, L'esercito italiano, pp. 309-24.
97. See particularly Oderisio Piscicelli-Taeggi, Diario di un combattente in Africa settentrionale (Bari, 1946), pp. 34-42, and the excellent March 1942 report on vehicles and tactics in North Africa for the Comando Supremo by Col. M. Bizzi, NARS T-821/250/000100ff.

98. Arena after action report, 13.12.1942, NARS T-821/31/000011-12; also Messe after action report on Enfidaville, 30.4.1943, 31/000048.
99. See especially Mancinelli, Dal fronte dell'Africa settentrionale, p. 208.
100. "Stiamo facendo un'insalata!": USE, Grecia, 1:724.
101. For the "Wolves of Tuscany," Knox, Mussolini Unleashed, pp. 258-59, and the Albanian Command file, NARS T-821/210/000080ff.; for the Bari, USE, Grecia, 1:282, 293-94, 308.
102. USE, L'esercito italiano alla vigilia, p. 220.
103. Kesselring, Memoirs, pp. 107-08.
104. See the account of Raffaele Doronzo, Folgore!...e si moriva. Diario di un paracadutista (Milan, 1978), pp. 93-94, of the death at El Alamein of Gen. Ferrari Orsi, who apparently ignored an enlisted man's warning that he was walking into a minefield.
105. Doronzo, Folgore!, pp. 12, 33.
106. Cavallero, Comando Supremo, p. 117; Scuero (War Ministry) to major commands; Scuero to Ambrosio (2nd Army), 26.7.1941, NARS T-821/395/000034-36, 000041.
107. Corpo d'Armata Celere (Ferrari Orsi) to 2nd Army, 28.8.1941, *ibid.*, 000014-17.
108. XI Corps (Robotti) to 2nd Army, 26.8.1941, *ibid.*, 000018-20.
109. VI Corps (Dalmazzo) to 2nd Army, 24.8.1941, *ibid.*, 000023-25.
110. V Corps (Balocco) to 2nd Army, 24.8.1941, *ibid.*, 000026-27.
111. Emilio Faldella, L'Italia e la seconda guerra mondiale. Revisione di giudizi (Bologna, 2nd rev. ed., 1960), p. 114; on pre-war training see also Mario Roatta, Otto milioni di baionette (Verona, 1946), pp. 37-41.

112. Numbers (5204 new lieutenants for the years 1935-40 inclusive):
USE, L'esercito italiano alla vigilia, pp. 214-15.
113. Bongiovanni to Mussolini, "Vincere la guerra," 15.3.1941, p. 28,
(NARS T-821/249/000409).
114. Caracciolo (5th Army) to subordinate units, 19.1.1942, NARS
T-821/86/001029.
115. All from annex 2 to Roatta circular, 4100, 15.3.1941, NARS
T-821/130/000870-72.
116. Fabris after action report, April 1943, NARS T-821/355/000644-55;
Bastico after action report, T-821/9/000145-46.
117. Marras, 14.1.1943, in Ceva, Le forze armate, p. 564 note.
118. Mancinelli, Dal fronte dell'Africa settentrionale, p. 65.
119. Ambulances: De Risio, Generali, servizi segreti e fascismo, p.
84; flies and dysentery: David Hunt, A Don at War (London, 1966),
p. 135, and, for graphic description, Doronzo, Folgore!, passim.
120. Comando Supremo memorandum, 2.8.1941, in Ceva, La condotta
italiana, pp. 174-75.
121. For instance Löwisch to OKM, Nr.G.1564, 16.8.1939, GNR PG 33745.
122. USMM, Le azioni navali in Mediterraneo dal 1 aprile 1941 al 8
settembre 1943 (Rome, 1970) reports these events but avoids
critical analysis.
123. Cavagnari later claimed he attempted to "brake our sliding into
war": "La Marina nella vigilia e nel primo periodo del
conflitto," Nuova Antologia, 357, August 1947, p. 379.
124. Löwisch to OKM, Nr.G.1564, 16.8.1939, GNR PG 33745. The
ineptitude of German surface forces, most notably in the
Hipper-Lützow and Scharnhorst fiascos of 1942-1943, suggest that
even German training failed to create conditions that were

difficult enough.

125. Santoro, L'aeronautica, 2:265, in part quoting British accounts.
126. "Vista, suerte...y al toro," acquired in Spain, was the Italian equivalent of "talley-ho!" (Ceva, "Lo sviluppo degli aerei militari," p. 32); on the cult of the "pilot-hero," see also Alberto Rea, L'Accademia Aeronautica (Rome, 1977), pp. 134, 146.
127. Payne, Red Duster, White Ensign, p. 229.
128. Santoro, L'aeronautica, 2:470, 473; for the fuel situation, 474-76.
129. Porro, "La Quinta Squadra Aerea in Libia," 6:356-57, 8:534.
130. D'Avanzo, Ali e poltrone, p. 348.
131. See Knox, Mussolini Unleashed, p. 23, and the Pricolo-Porro correspondence cited there.
132. See Williamson Murray, "German Response to Victory in Poland: A Case Study in Professionalism," Armed Forces and Society, Winter, 1981.
133. Ceva, Le forze armate, pp. 357-58; on this issue, see also Giorgio Rochat and Giulio Massobrio, Breve storia dell'esercito italiano dal 1861 al 1943 (Turin, 1978). For Cavallero's indulgence toward Ottavio Bollea, who commanded the "Wolves of Tuscany" when they collapsed in January 1941, see Knox, Mussolini Unleashed, pp. 258-59.
134. The official historians, after heaping largely deserved praise on his predecessor in Russia, Giovanni Messe, say of Gariboldi only that his command activity "had without doubt very narrow limits" due to German interference (USB, Le operazioni delle unità italiane al fronte russo [Rome, 1977], pp. 507-08, 510).
135. The division, corps, and Army commanders of June 1941 show remarkable continuity with those of June 1940 (OB lists, Ceva, Le

forze armate, pp. 492-95, 501-05).

136. Geloso after action report, quoted in USB, Grecia, 1:907; age: ibid., p. 905.
137. For Graziani, Visconti Prasca, and Soddu, Knox, Mussolini Unleashed, pp. 121, 212, 250; for Battisti, Nuto Revelli, La strada del daval (Turin, 1966), pp. 266-67 (eyewitness account).
138. Truppenführung (Berlin, 1936), quoted in Crevelde, Fighting Power, p. 128.
139. This is the origin of Graziani's marvellous collection of papers, now at the ACS.
140. D'Avanzo, Ali e poltrone, mines a rich vein of gossip about Air Force rivalries.
141. Graziani to Berti, 26.8.1940, ACS, Carte Graziani, bundle 42 (emphasis in original).
142. General Pafundi, in Cavallero, Comando Supremo, pp. 349, 351.
143. Trezzani to Badoglio, 25.8.1940, quoted in Knox, Mussolini Unleashed, p. 154.
144. USB, L'esercito italiano alla vigilia, p. 251.
145. Minutes of chiefs of staff meeting, 25.9.1940, USB, Verballi delle riunioni tenute dal Capo si SM generale, 1:84; Cavallero, Comando Supremo, pp. 175, 377.

THE DYNAMICS OF VOLKSGEMEINSCHAFT:
THE EFFECTIVENESS OF THE GERMAN MILITARY
ESTABLISHMENT IN THE SECOND WORLD WAR

Jürgen E. Förster
Militär-geschichtliches Forschungsamt
Freiburg, Federal Republic of Germany

Introduction

The assumptions and conditions under which the Wehrmacht functioned after 1939 were heavily shaped by a cultural tradition that dates back to Imperial Germany. Since the German state had been founded by the army, the army was a major national institution, and military service an almost universal obligation. Not only did soldiers dedicate themselves to an exultation of military values, but the system of subordination and autocracy was widely accepted, and an authoritarian attitude predominated. The National Socialist regime did not have to invent the glorification of war as a corporate experience, dismantling social and educational barriers and uniting the whole nation except for those who, with the help of Bolshevism, had stabbed the victorious army in the back. The "battle as an inner experience" (Frontenerlebnis) was not a mere literary convention in Germany. It became the pivot for the amalgamation of National Socialism and the German soldierly tradition.

It was General Werner von Blomberg, Hitler's Minister of War, who stated in an educational directive on May 24, 1934 that the "ideas of both our soldiery and National Socialism spring from the common experience of the Great War."¹ The bond between the military and the movement was the "idea of a community of blood and destiny of all German people." The political goal of a militarized Volksgemeinschaft incorporated the ideas of self-sacrifice and the elimination of foreigners. In 1935 universal conscription for Aryans was decreed as a duty for the German people. In 1938 the German's honor was defined as allegiance to the Führer and the people. "This is part of the story of how war, regardless of victory or defeat but especially in defeat, came to be seen as bestowing on Germans a seriousness and weightiness of experience others did not possess."²

The Wehrmacht was certainly one of the most formidable military machines in history, and certain lessons for future European battles might be drawn from a close examination. The German Bundeswehr has also seen the need to look upon the Wehrmacht's tactical performance for the instruction of its young officers.³ Can the knotty problem of learning from the past be solved by selective exploitation of the operations of the "finest fighting army of the war?"⁴ The linkage between strategy and mass murder in the war policy of the Third Reich "makes it impossible to posit a clean war, planned and fought by German soldiers who somehow remained insulated from their political leadership."⁵ To say that the Wehrmacht is responsible for many crimes in Russia and Yugoslavia is not to say that every German soldier was a criminal or was equally guilty of the crimes perpetrated in the name of the regime. Yet Auschwitz was defended at Stalingrad too. On the other hand, the fact that the political and military elite of Nazi Germany had drawn so many lessons

from World War I and nevertheless replayed the past, raises some questions as to the validity of historical examples.

I. Political Effectiveness

Since the days of Clausewitz, much has been written about the relationship of politics and strategy, scepter and sword, Staatsmann and Feldherr. Hitler had defined politics as playing a leading role in Germany's struggle for survival. This struggle was to be a permanent one until the "racially more worthy" German people had proved its claim to world mastery ("Pax Germanica"). "Until that day there could be no appreciable difference between war and peace."⁶ War was not only the "highest expression of the life force" of a people, but also a legitimate, inevitable tool in the hands of the responsible German statesman to acquire the sufficient living space by which the nation's future would be secured: racially, economically, and militarily. In the light of Hitler's grand political alternatives, clear victory or total destruction, with survival being contingent on military victory, politics and strategy became indistinguishable.

Hitler had studied military history as well and drew his own lessons from it. As a good disciple of Ludendorff, he did not intend to be reduced to the position to which Emperor Wilhelm II had been in the Great War. Hitler saw himself as the executor of a historical mission and was not willing to allow generals and admirals to exert influence on policy-making. By 1938, at the latest, Hitler was "master in the Third Reich." The political and military power combined in his hands was unthinkable in democratic countries. Hitler was not only Head of State, Chancellor, Party Leader, and supreme judge, but also Supreme Commander

of the Wehrmacht and self-proclaimed supreme ideological leader of the military. Since there were no such bodies as a war cabinet or joint chiefs of staff, it was in his hands only that the threads came together. Despite the Wehrmacht's numerical strength, its political effectiveness was smaller than that of the Reichswehr during the Weimar period. The Wehrmacht was politically emasculated, and the military establishment reduced to a functional elite. Hitler had achieved the traditional concept of sword and sceptre in a single hand in a fashion unseen in Germany since the days of Frederick the Great.

As Führer und Oberster Befehlshaber der Wehrmacht (Leader and Supreme Commander of the Armed Forces) Hitler commanded via the High Command of the Wehrmacht, the Oberkommando der Wehrmacht (OKW). Its chief, General, later Field Marshal, Wilhelm Keitel can rightly be defined as head of Hitler's fifth chancellery, that for military affairs.⁷ The OKW, especially its Operations Branch (Wehrmachtführungsstab) under General Alfred Jodl was Hitler's central military staff to formulate his strategic goals. In December 1941, when Hitler also assumed the immediate command over the Army, Keitel took over the administrative powers of the Army High Command and the authority of the OKW's Operations Branch was enlarged. The calamitous division in strategic command between the Army General Staff (for the eastern front) and Jodl's working staff (for the other theatres of war from the North Cape to the Mediterranean) remained. It was even widened in 1942, when after the Allied landing in North Africa and General Franz Halder's dismissal, Jodl and General Kurt Zeitzler (after July 1944 General Heinz Guderian) were rival Army chiefs of staff to Hitler. Only in the last phase of the Wehrmacht's existence, when in 1945 the entire Army General Staff was incorporated into the OKW, "did an organizational form of the

highest command authorities come into being which put an end to the old rivalries."⁸

In 1939 Hitler had willingly run the risk of being trapped in a military conflict with Britain and France, although Germany was not ready for a general war with the western powers, militarily or economically. As far as armaments were concerned, the war in Europe began three to four years prematurely. This unexpectedly imposed a "total war of improvisations" on the Third Reich, a situation which only developed into a real total war after the failure against the Soviet Union. The Council of Ministers for Reich Defense (Ministerrat für die Reichsverteidigung) was formed on the eve of war, on 30 August 1939, with Field Marshal Hermann Göring as chairman and Keitel the military member, together with the heads of two other chancelleries, Hans Lammers and Martin Bormann, and the Plenipotentiaries for the Economy (Generalbevollmächtigter für die Wirtschaft) (GBW), Walter Funk, and for Administration (für die Verwaltung) (GBV), Wilhelm Frick. This body could have played a useful role in coordinating civilian, industrial, and military requirements. Three months later it had passed out of existence, because Göring did not want to come into conflict with the Führer's political prerogatives to direct the German war effort. In any case, it could not have made strategic decisions, because Keitel, its military member, did not have the responsibility for representing and coordinating the three services. Göring only took care to insure his grip on economic matters via the General Council for the Four Year Plan (Generalrat für den Vierjahresplan), and on 7 December 1939 made General Georg Thomas a member of this body. Thomas was head of the War Economy and Armament Branch (Wehrwirtschafts - und Rüstungsamt) within the OKW.¹⁰ Since there was no systematic machinery for coordinating the whole war effort,

the peculiar characteristics of the Führer state prevailed. Hitler understood life as a lethal struggle for survival between races, nations and individuals, so it was not surprising that behind the monolithic façade the relations between party and state, party and armed forces (not to mention within each body), were governed by mutual suspicion, wrangles over competence, and duplication of functions. The resulting power struggles gave Hitler the role of the final arbiter, which is a fundamental element of charismatic leadership.

Yet the Council of Ministers for Reich Defense was responsible for one decision that had formidable consequences for civil-military relations within the Third Reich. On 1 September 1939 it appointed 14 of the party regional leaders (Gauleiter) as Reich Defense Commissioners (Reichsverteidigungskommissar). They were thus made responsible for a uniform handling of all defense matters within their region. Thereby the fifteen commanders of the Army Districts (Wehrkreis) were stripped of the powers the Deputy Army Corps Commanders had possessed during World War I. In matters of dispute it was the party that finally decided what belonged to "Reich Defense" and what did not. On 22 September 1939 these Commissioners established "Defense Committees" to advise them on defense issues. General Thomas even failed to get his delegates in the Army Districts, the Armament Inspectors (Rüstungsinspekteur), on this body. On 16 November 1942 all forty-two Gauleiter were promoted to Reich Defense Commissioners.

While Josef Goebbels and Albert Speer tried in vain to reactivate the Council of Ministers in 1942-1943, a step in a more sensible direction was the establishment of the so-called "Committee of Three" in January 1943. Its members were the heads of the three powerful chancelleries: Bormann (party), Lammers (administration), and Keitel

(military). This board was to direct the total mobilization of the Third Reich.

As there was no such thing as a strict separation of expenditures for civilian and military needs during the war, it is hardly possible to determine accurately the share of the national budget which the armed forces could assure for themselves. For Hitler and his Nazi elite there were social limits which inhibited them from simply laying the burden of war on the shoulders of the German people. This was one of the many lessons they had drawn from the Great War. The stability of the regime, they felt, depended as much on public morale as on coercion. Due to the party's emphasis on the maintenance of a relatively high standard of living, the imposition of higher taxes was also out of question. The solution to this financial dilemma was simple: the Wehrmacht was expected to force the occupied countries to pay the war bill. On 13 July 1944 Walter Funk, Reich Minister of the Economy, stated that the contributions of the occupied countries to the German war economy and the armed forces had amounted to about 66 billion marks up to the end of 1943, while those of the allied countries amounted to only about 6 million. The latter figure is hardly believable. With the German-arms pact of 21 May 1940 Germany alone had made a profit of 10 billion marks through Bucharest's acceptance of a devaluation of the Rumanian currency and paying pre-war prices for its crude oil, not to speak of the fact that Berlin exchanged parts of Polish and Czech booty for Rumanian oil.¹²

Expenditures for the armed forces between September 1939 and February 1945 amounted to 394 billion marks, while the total expenditures of the Reich were 630 billion marks. According to the former Reich Minister of Finance, this was covered by foreign contributions (12%),

national revenues (33%) and by debts (55%).¹³ If one compares military to civilian expenditure, as a percentage of the entire budget, it becomes clear that the former was nearly always twice as high as the latter.¹⁴

Although nominal military expenditures increased greatly in the years 1939 to 1941, the pattern of state expenditure confirms the fact that civilian spending also rose between 1939-1940 and 1943-1944 in virtually a straight line. Civilian output was maintained despite the demands of war. The huge debts which the Nazi regime had incurred in fighting this war had to be paid by the German people after 1945.

The question as to what extent the Wehrmacht had access to industrial and technological resources may best be examined in the context of its need to provide the required manpower both for the armament industry and the armed forces. Since Germany did not have a defined overall Blitzkrieg strategy in 1939, there did not exist such a thing as a Blitzkrieg economy. Germany "was caught half-way through preparations for a longer war."¹⁵ If there was any link between the operational concept of short campaigns and economic implementation, "its conscious expression was confined to the mind of the Führer."¹⁶ The German economy was still divided into two main sectors: the armament factories, which were controlled by the OKW's War Economy Branch, and the civilian industries, which were monitored by the Plenipotentiary for the Economy. The civilian industries were classified either as "essential to the war effort" or "vital." Although both sectors of the German economy were mobilized after 3 September 1939, a total mobilization to counter the probable war of attrition did not take place, at least not in the view of General Thomas.¹⁷ At the beginning of October 1939 Hitler amended the still valid peace-time armament programs of the individual services slightly. The victorious Polish campaign required the

production of additional equipment to reconstitute the armed forces, but Hitler still saw no need for a transition of the German economy to the necessities of total war. By and large, business as usual prevailed. Decentralization of the economy and small-scale manufacture on a single-shift basis were kept, although they resulted in less output per unit of input.

Skilled labor was preferred to automated processes. Apart from other consequences, decentralization meant a strain on transport. The main problem was one of coordination, as the running of the war economy was hampered by the complexity of its organization. Jurisdictional authority often overlapped or was not even available. It was the intention of the OKW's War Economy Branch to obtain overall planning authority and to increase the production of armament. Yet Thomas had to compete with the interests of Göring and Funk on the one hand and those of the services on the other. Under the impact of various inherent bottlenecks in armament production and the cry of big business "for a man who dictatorially controls things with competence,"¹⁸ the main responsibilities of Funk were taken over by the Four Year Plan and Thomas was made a member of its General Council. But this was only one step in the right direction. Göring was not able to fulfill the functions of a "Chief of Staff of War Economy" which he had assumed in December 1939. Under the impact of a crisis in shell production and a striking comparison between figures for the Great War with current levels, Hitler decided this power struggle over control of armaments among Göring, Keitel, and the military in favor of Dr. Fritz Todt and the civilian experts. Hitler was convinced that the economy needed a "slave driver. A businessman and party member would have other possibilities than an officer of whom he could not expect such shifty tricks as the other would

use."¹⁹ Moreover, Hitler showed an understanding that rivalries, which were essential to maintain himself as arbiter, were only helpful in a time of plentiful raw materials, machines, and laborers. This decision in favor of competent professionalism was taken after consultations with both big business and Todt. He was appointed "Inspector-General for special issues of the Four Year Plan" (Generalinspekteur für Sonderfragen des Vierjahresplanes) on 23 February 1940 and "Minister of Armaments and Munitions" with formidable powers on 17 March 1940.

The political and technical elite regarded the officer corps as unqualified to organize the German war effort. The coordination of a high production output of armaments and munitions with a low investment input called for technologists and managers with special training, capable of dealing with such concerns in the language of business and science. The alleged inherent leadership qualities of officers, because of their specific education, was successfully challenged by the technical and economic experts. In the eyes of Todt and his collaborators the military lacked the proficiency to exploit the economy effectively. A striking example of military incompetence and mismanagement is the fact that at the beginning of 1940 one armaments factory received contracts from all three services which exceeded its production capacity by a factor of 14 : 1.²⁰

With the appointment of Todt the path was opened to the concept of "industrial self-responsibility,"²¹ which Walter Rathenau, the great organizer of the German war economy during World War I, had meant to govern the German peace-time economy. The intentions of Todt to create a sense of solidarity among the engineers and managers coincided with their wish for "unbureaucratic control" and their hostility to too high a level of military interference.

Todt tried hard to explain the necessity of his administrative reforms to the military, especially Thomas and the Army's ordnance office, but they did not want to accept that the control of planning and production of munitions, and soon of tanks and other items, was to be taken out of their hands and given to industrialists. Although Todt had been a reserve officer in the Great War and was appointed an honorary Brigadier-General in the Air Force on 19 October 1939, he was regarded as a mere civilian by the military. His relations with Göring, the natural rival for overall control of the war economy, were influenced by the fact that, as commander-in-chief of the Air Force, Göring was his superior.²²

In order to pool and allocate resources, working groups and committees were established in the key sectors of the economy. The openings which Todt had made with Hitler's backing into the provinces of the OKW and the Army were successfully widened by Albert Speer after Todt's sudden death in 1942. Speer's system of "organized improvisation"²³ refined Todt's concept of "industrial self-responsibility." Better management together with the massive closing down of small firms and the redistribution of skilled labor resulted in a better use of resources and a higher output of armaments. The energetic and independent Speer used his position, with Hitler's consideration, to incorporate the OKW's Armament and War Economy Branch into his organization. The Navy and Air Force were reluctant to give up their still relatively strong independence in armament matters. While Speer got control of the Navy's fleet program after Admiral Raeder's dismissal at the beginning of 1943, it took him a further year to take over Air Force armaments (August 1944). A single executive body to concentrate on fighter production (the so-called "Fighter Staff") had already been formed in March 1944. Speer, who had continued and developed Todt's policy, can rightly be called the Rathenau

of World War II. Yet the so-called "Speer miracle" is not understandable without the ruthless exploitation of human and material resources in the occupied countries.

Enormously effective though civilian performance was, can the military's performance rightly be called ineffective? It is true that the armed forces had often spoken with conflicting voices and had spent too much energy in competing with each other rather than joining together. It is also true that the individual services lacked a coherent armament policy. The Navy, for example, vacillated far too long between big ships and submarines. The Air Force overstressed the necessity for anti-aircraft guns for air defense, while minimizing the importance of air-superiority fighters. The Army lacked standardization and its weapons were overly sophisticated. New technological weapons such as jet aircraft or rockets were neglected far too long to be produced en masse.

It is true that, by and large, the German military was not fit to fight an industrial war. On the other hand, within the peculiar power structure of the Third Reich, everything revolved around Hitler. His commands, the so-called Führerbefehle, were issued in response to changing strategic judgements and governed the switches in war production between 1939-1942, which in turn had consequences on manpower policy. After the fall of France priority was given to Navy and Air Force armament because of Britain's resistance. When Hitler had decided on the war against Russia, the first task of the war economy was to equip the 180 field divisions required. In mid-July 1941, with Russia seemingly crushed, priority was again given to Air Force and Navy armament, a decision which had already been anticipated in the manpower sector on 20 December 1940. The basic transformation of the German economy to the demands of a total war was not accomplished before 1941-1942.

Consequently, Germany's inherent capability to sustain only short campaigns became a liability in the long war of attrition. Both Hitler and the military realized that the German power base was too small for a new world war, yet the unexpectedly easy victory over France, the immense booty, and the access to foreign armament factories had masked the deep weaknesses of Germany's war economy and its organizational deficiencies. The Blitzkrieg in the East was meant to make her self-sufficient and to gain the necessary power base to fight the expected war against America. The failure of Barbarossa forced Hitler and the military to fight an industrial, total war which they had far too long sought to avoid. Yet this new character of the war was not reflected in a fundamental revision of German strategy.

The competition between the armed forces, war economy and political agencies for manpower after 1939 reflects the state of Germany's unpreparedness for a long European war. Especially the armament industry and the Wehrmacht made demands on the same men: the young, physically fit and technically trained. To balance these manpower requirements, extensive planning was needed. Legally the armed forces possessed adequate access to the required quantities of military manpower. The Defense Act of 1935 had given them priority. Since then the Wehrmacht had not only demanded definite regulations for the distribution of manpower in case of war, but had to fight against the far-reaching military ambitions of the SS. Although the SS relied on the volunteer principle, its strength had increased almost three-fold to 23,000 between 1935 and 1938.²⁴

The so-called totalitarian state was not able to establish a "people's roster" up to 1939, the necessity of which Göring had stressed in November 1938. Only 58% of the German labor force was listed.²⁵

Moreover, there were no defined regulations for the exemption of personnel to be placed at the disposal of the armament industry. Many uncoordinated individual rules were the consequences, additional evidence that Germany was not prepared for a long war. The distribution of draftees for the three services at the beginning of the war was as follows: Army 66%, Air Force 25%, and Navy 9%. The quota of the armed forces of the SS, the Waffen-SS, was still so small that it is not included in the calculations.²⁶

The mobilization of August 1939 showed considerable deficiencies. Although the armed forces had wanted to avoid the "mistake of 1914," parts of the exempted personnel in the armament industry (about 114,000 men of the younger age groups had been declared essential to the war economy) were called up nevertheless. The total exemption amounted to 1.8 million in December 1939.²⁷ By September 1, 1939, the Wehrmacht had mobilized about 4,559,000 men, almost three quarters of a million more than in 1914. The Field Army stood at 3,279,000 men, the Air Force at 677,000, and the Navy at 150,000. While the Imperial Army could rely on a potential of 3 million trained reservists, the Wehrmacht with its higher actual strength had 3.8 million men at its disposal. As impressive as this numerical comparison might be, it conceals the structural deficiencies of the Wehrmacht's trained pool of reservists. In contrast to the forty trained age groups of the Imperial Army, the Wehrmacht had only four, those born between 1914 and 1917. They, however, belonged to the especially small age groups of World War I which contained up to 50% fewer recruitable men than the older age groups (1901-1913), the "white years," of whom only a few had received short term training. Thus, the Wehrmacht had a sufficient, yet mainly untrained potential of men between 35 and 45 years of age, but no

considerable reserve of young men. This personnel situation was militarily unsound. Although it was understood by Hitler and the military establishment, they both accepted these weaknesses, hoping for a short campaign against Poland alone.

After mobilization, the Field Army order of battle stood at a total of 103 formations: 102 divisions and one cavalry brigade. Regular personnel formed seventy-eight percent of the 52 category 1 divisions, but only six percent of the 16 category 2 and nine percent of the 14 category 4 divisions. There were no regular personnel in the 21 category 3 divisions. Class I reservists (below 35 years of age) formed eighty-three percent of the category 2 divisions, while class II reservists (same age but quickly trained) filled forty-six percent of the ranks in the category 3 and 4 divisions. The gaps in the rear area services of the category 1 and 2 divisions (four and three percent respectively) had to be filled by those age groups which had already fought in the Great War (1894-1900). Their age and state of training were, of course, a liability. These older men of the Landwehr I reserve (up to 45 years of age) provided forty-two and twenty-five percent respectively of the category 3 and 4 divisions. The quota of these men (most of whom had not shouldered a rifle since 1918) of the total of 103 formations stood at twenty-five percent, about 1.2 million.²⁸

The Army High Command and the field commanders were effective in largely obstructing Hitler's order of September 19, 1939 to dismiss the World War I participants. Hitler and the party leaders did not wish the old combatants to carry the burden again, while a younger generation remained at home; the military establishment was interested in keeping the veterans because they formed the mass of the non-commissioned officers. On the other hand, the Air Force was unable to fill its

personnel gaps, because the Minister of Science and Education vetoed the Luftwaffe's demand to draft senior high school boys (between 16 and 18 years of age) to man the anti-aircraft guns. Yet as the need for soldiers fit for front line duty increased, civilian auxiliaries began to substitute for them. "From 24,000 boys employed in anti-aircraft units in 1940 the figure rose to 92,500 boys in 1945."²⁹

The unsatisfactory personnel situation was one of the factors that contributed to professional opposition in the Army High Command and among the field commanders to Hitler's intention to attack in the west in fall 1939. They were convinced that the Wehrmacht could not be compared to the Imperial Army of 1914.³⁰ The Commander of Army Group C (in the west) told Halder on October 3 that the category 3 divisions were fit for static war (Stellungskrieg) only under quiet conditions, while the category 4 divisions would require further training to be fit for any form of defense.³¹ "A war that involved immediate and heavy sustained fighting might have led to grave difficulties in the training and reinforcement system."³² The seven months of the Phony War helped to reorganize and retrain the Field Army.

While the Wehrmacht could increase its actual strength to 5,651,000 men by mid-June 1940, exemptions had risen to 3.1 million men. Although the Wehrmacht had increased its actual strength to 6,387,000 men by mid-December 1940 (Waffen-SS excluded), at the same time exemptions were 4.8 million, of whom only 1.5 million were actually employed in the strained armament industry. The fight between the Army and the war economy for personnel was decided by Hitler in favor of the production of materiel and against the tactical needs of the Army. Nevertheless, the military establishment successfully obstructed the release of 300,000 skilled laborers, the so-called "Rü 40 Urlauber," to go on temporary

leave for work in the armament industry. By November 1940 only 89,000 men whose release had been ordered by Hitler on September 28, 1940 had left the Replacement Army. In this situation the OKW's War Economy Branch had drafted a new Führer order and, with the backing of his military advisers Keitel and Jodl, had gotten Hitler's consent. From the standpoint of personnel the order of December 20, 1940 foreshadows that of July 14, 1941, because it stressed the priority of armaments production for the Air Force and Navy "for the continuation of war against Britain."³³ No laborer working for these programs was to be called up until June 30, 1941. This decision was taken two days after the directive for Barbarossa! The Third Reich gambled on an easy and short war in the East.

The distribution of replacements for the three services on May 1, 1941 stood at: Army 72.3 percent, Air Force 22 percent and Navy 4.4 percent. The quota of the Waffen-SS had risen to 1.1 percent. Nevertheless the Wehrmacht had been quite effective in resisting Himmler's far-reaching demands on manpower. The SS was by no means satisfied by having increased its armed forces almost four-fold to 93,000 in the seventeen months between December 1938 and May 1940. The expansion of Nazi Germany to the east, north and west, as well as the shaping of the "Great Germanic Empire" which the SS dreamt of, helped to meet its ever growing requirements. By incorporating "Germanic" and "Ethnic German" volunteers, the Waffen-SS slowly transformed itself into a multinational army.³⁴ The so-called "crusade against Bolshevism" gave a further substantial impetus to these tendencies. The intake of foreigners into the Waffen-SS did not reduce its pressure for a higher quota of German manpower, which rose to 2.8 percent in August 1941. The Wehrmacht lost control completely, of course, after July 20, 1944, when

Himmler was appointed commander of the Replacement Army. By 1945 the Waffen-SS was to receive 17.3 percent of the 550,000 recruits of age group 1928.³⁵ On the other hand, it is worth noting that the volunteer applications of age groups 1925 and 1926 for the Waffen-SS in September 1944 outnumbered those of each of the three services. The total strength of the armed forces of the SS, Germans and foreigners, amounted to almost 830,000 men in March 1945. Only forty percent of them were German nationals.

The summer of 1941 (September 4) saw the peak of exemptions: 5,574,000 men were declared essential to the war economy, while 7,191,000 men served in the Wehrmacht (Waffen-SS excluded). This is only correct in relative figures. The absolute peak of exemptions was reached at the end of May 1944: 6,198,550. This was made possible by a larger intake of older age groups due to an amendment of the conscription laws in 1943. In 1941 exemptions outnumbered the Field Army (5,200,000). In March 1942, before the summer offensive on the eastern front, the Field Army had risen to 6,056,000 men, while the exemptions still stood well over five million. It was not until summer 1943 that the armed forces (Waffen-SS excluded) reached their peak: 9,730,000. This does make a case for the Wehrmacht's strategic effectiveness in its fight for manpower during the months of the Third Reich's painful transition to total war. In August 1943 the armed forces had received only 654,000 men of the agreed upon 800,000, a mobilization program the "Committee of Three" had decided upon in January 1943 to meet the immediate replacement demands of the Wehrmacht.³⁶ Since Hitler had ruled out capitulation, the Third Reich responded to attrition with drastic measures. The problem was to get the necessary personnel to handle the equipment that was available and to produce the equipment that was necessary for the

soldier to sustain the fight. The solutions for the armed forces were: reduction in exemptions; recruitment of formerly unworthy Germans; forced recruitment of "ethnic Germans;" transfer between the services; reshaping of services to thin out men for combat duty; reorganization of formations; recruitment of women auxiliaries; increase in allied troops; recruitment of Soviet prisoners of war and of Soviet civilians as Hilfswillige,³⁷ and raising of units and formations made up of Russians, Ukrainians and other Soviet nationalities.³⁸

Despite efforts to reduce the size of the armed forces administration by combing-out operations, in fall 1943 Hitler was appalled by the disproportion of troops both behind the lines and at home to that at the front. He ordered the thinning-out of at least one million men for combat duty.³⁹ At the end of 1943 the Field Army stood at 4,482,396 men, only 2,887,456 of them were actually involved in the fighting (combat and supply troops at divisional level and fighting GHQ troops). In 1944, the Army compared its fighting power, the length of the fronts, and the age of the soldiers at that time to that in 1917.⁴⁰ In 1917, 334 German and allied divisions had held 2,800 km of front, in July 1944 247 divisions were defending 3,152 km. The soldier of 1944 was on average 31 and a half years old, in 1917 there had been a difference in age between the theaters of war: (east) 33 years and (west) 28 years. Yet it was too late to draw immediate lessons from history. The armed forces' "campaign for fighters to the front" was only a partial success. Instead of the ordered million replacements, it achieved an increase of only 400,000 combatants.⁴¹ Needless to say, the incorporation of foreign "volunteers" into the Waffen-SS helped to overcome some of the manpower problems. One of the least effective and most costly solutions was the Luftwaffe's establishment of its own field divisions in September

1942 instead of transferring its young and combat-ready personnel to the Army.⁴² Not only Army officers were enraged, but even General von Richthofen, Commander of Fliegerkorps VIII, was highly skeptical: "These men belong to the weak Army divisions. I can only hope that the whole thing will not be a dreadful blunder."⁴³ It was. The Air Force field divisions were incorporated into the Army in November 1943, but kept their name. By March 1945 four remained.

II. Strategic Effectiveness

As Germany's political and military leader Hitler saw himself as the ideal fusion of statesman and Feldherr. The explanation for this unique combination in Hitler's hands lies in part in the peculiarities of the Führer state and its impact on the military command system. Not just Keitel and Jodl believed in the Führer principle. Likewise, one should not overlook German military tradition as a factor in this development. Along the lines General Ludendorff had propagated in his writings after the Great War, the Army's senior leadership believed in the concept of Feldherr. Yet Hitler had realized this concept in such a fashion that the traditional directors of German strategy, the Chiefs of the Army General Staff, did not remain as his principal advisers on war policy. In their desire to preserve a decisive influence on matters of war and peace for the Army, Generals Ludwig Beck and Franz Halder had opposed the creation of an overall Wehrmacht leadership.

Another factor also worked in Hitler's favor: the German military was unaccustomed to thinking in terms of grand strategy. They tended to equate strategy with operational concerns and considered the conduct of Army operations as an art. They argued that the necessary "creative ability" for commanding an Army could only be acquired through personal experience and the study of military history, because no fixed rules existed for the art of war. "Military planners were trained to conceptualize in terms of particular operations within their own branch of the service."⁴⁴ In November 1938 the former Army Chief of Staff,

Ludwig Beck, warned his colleagues of the fallacy in believing that quick offensive mobile operations could insure a short war. In an assessment of Germany's position in a future war Beck stressed that Germany's attempt to overrun one enemy would trigger war against a "world coalition" which she would lose. "The Wehrmacht is comparable to a colossus on earthen feet, if it is not supported by the other factors necessary for total warfare. The architecture of only the armed forces is not by itself sufficient basis on which to run a war."⁴⁵ Yet his successor and the chiefs of the other services accepted the near certainty that an attack on Poland meant war with Britain and France as well as Poland.

Although secret preparations for an invasion of Poland had begun in April 1939, no general strategic plan for dealing with a coalition of Poland and the western Powers existed. Some historians, mostly Anglo-American, have argued that Hitler and the German High Command deliberately developed a Blitzkrieg strategy. However, in German terms, Blitzkrieg, (defined as a short decisive campaign against an isolated enemy), had meaning at only a purely operational level. "It was victory that gave Blitzkrieg the status of doctrine"⁴⁶ and helped to gloss over Germany's lack of preparation for the larger war into which Hitler's decision had plunged her. In contrast to the situation in 1914 the outbreak of war did not evoke enthusiasm but rather skepticism among the German people. Yet this unpopular war which Germany's leader had unleashed developed into a patriotic affair -- patriotic, at all events, as long as the Wehrmacht was victorious, especially over France.

If a test of the relationship between strategic means and political ends is a fundamental measure of strategic effectiveness, then the German attack in September 1939 suggests ineffectiveness at the strategic

level. Although the military objective of crushing Poland was reached and the operational skill of military forces successfully proved, the war was not won: France and Britain did not ask for peace. Moreover, the stratagem of deterring the western powers by the Russo-German Pact had not worked. Instead Germany depended on Stalin's benevolent neutrality to resist the British blockade.

Emboldened by the Munich Conference in 1938 and the Western "umbrella politicians," Hitler had deliberately taken the risk of expanding Germany's Lebensraum. This decision was taken as a matter of "cool calculation, however wrong-headed the conclusions"⁴⁷ that Germany had only a temporary advantage in military preparedness with respect to equipment, organization, tactics, and leadership, and that time appeared to be working against her, militarily and economically. Already in his "Second Book" Hitler had advocated a risky foreign policy to break the bonds shackling Germany. In the case of politics, he had argued, the chances of winning are never subject to fate or chance, but success or failure in a political action is erected on humanly perceptible factors. "The task of a nation's political leadership is to weigh these factors."⁴⁸ On January 18, 1939, while addressing young officers, Hitler stated that history suggested that one could never calculate beforehand even a 51 percent surety in war.⁴⁹ Hitler's folly was that he assessed the situation of 1939 in terms of preconceived fixed notions while ignoring any contrary signs. His aggressive political will ruled out status quo or compromise and he gave pride of place to his own historical uniqueness.

The military leaders seem to have completely misunderstood the relationship between means and ends. They let themselves be persuaded by their supreme commander that Britain and France would be deterred by

Germany's might and Russia's backing. On the other hand, the turn against Poland in concert with Russia was not unpopular within the military establishment and followed the line General Hans von Seeckt had drawn. "Their original sin was an arrogant Fachidiotie, the blinkered professionalism of specialists indifferent to the context and consequence of their profession."⁵⁰ The naval command had known since May 1938 that Hitler was thinking of war with Britain and France. It thus planned a special fleet for cruiser warfare against Britain. On January 27, 1939 Hitler gave the highest priority to naval armament and approved the so-called Z-Plan for the creation of a large fleet by 1948. Germany's second attempt at becoming a naval power is clearly demonstrated by this program. Only two battleships, three pocket battleships, one heavy and six light cruisers, twenty-one destroyers, twelve torpedo boats and fifty-seven U-boats were in service at the outbreak of war.⁵¹

The Navy was certainly unprepared for the great conflict with Britain. In September 1939 its commander-in-chief conceded with a tone of resignation that surface forces "could only demonstrate their readiness to die honorably and thus pave the way for a new fleet."⁵² The Luftwaffe, too, had only begun to think of aerial warfare against Britain and France in August 1938. Then, it had planned for a fivefold enlargement of its forces. Strong voices in the Luftwaffe general staff advocated that Germany was the only state which had advanced to a total concept of an offensive as well as defensive air war in respect to equipment, organization, tactics, and leadership.⁵³ Yet in respect to the strategic air offensive, necessary for the fight against Britain, the Luftwaffe was less optimistic. Although in August 1939 Göring warned Hitler against playing va banque, his boasts about his mighty Air Force only egged on the Führer.

It needed the vision of the bloody stalemate on the Western Front in the Great War to make the Army generals revive their opposition to Hitler. The Führer had announced his intention to extend the war in the West even before Chamberlain rejected the vague German peace offer of October 6, 1939. "Hitler's speech in the Reichstag was then a mere lie to the German people," noted one of the Army group commanders.⁵⁴ On October 10, 1939 Hitler ordered the Army High Command to draw up a plan of campaign. Despite much criticism from below, the Army's top echelon obeyed, although they feared that the offensive in the west would lead to the same static war as in 1914. Hitler's bitterness "because the soldiers do not follow him"⁵⁵ proved premature. "Passive resistance was their only means of applying the brake, now that the Reich was at war, without breaching the code of conduct of a lifetime and abandoning their allegiance to the state."⁵⁶ Was passive resistance really their only means? Certainly not, if one remembers what General Beck had written on July 16, 1938: "Military obedience has a limit where knowledge, conscience, and a sense of responsibility forbid the execution of a command. If their warnings receive no hearing then soldiers have the right and duty to resign If they all act with resolution a policy of war is impossible."⁵⁷

In this light the opposition of the generals cannot be dismissed as mere "military impotence."⁵⁸ Generals Walter von Brauchitsch and Franz Halder clearly saw the alternative between resignation and coup d'état. On the other hand, their relationship with Hitler was strongly influenced by a similar political end, namely the goal of making Germany the dominant power in Europe, and on the other hand by their military values of loyalty and obedience. Their individual moral dilemma was enlarged by the uncertainty of who would follow their decision. Hitler was not only

prepared to destroy ruthlessly "any defeatist (Miesmacher) and anyone who opposed him and his plans for the offensive,"⁵⁹ but he was also willing "to stake everything on one card,"⁶⁰ because Germany could not sustain a war of attrition. Therefore he wanted to smash France without delay and force Britain to make peace before the military balance shifted inexorably against Germany. Because of the pact with Stalin, Hitler could instruct the military to begin work on operational planning for an offensive in the west. There was no reason to fear a two-front war.

Just as it is impossible to say whether Germany could have defeated the Western allies in late 1939, the professional objections of the generals about the preparedness of the Army may also have been justified. The passing of time worked in Germany's favor, but only in the short run and on the operational and tactical level. It is interesting to note that the military opposition faded away as soon as a more promising offensive plan emerged in 1940 which avoided the frontal onslaught. "By a fortunate convergence of a number of historical accidents: autumnal weather, Hitler's penchant for amateur strategy, Manstein's persistence, Schmundt's intervention and the failure of the western powers to attack, a strategic plan was evolved which four months later led Germany to a victory over France more complete than that of 1870-1871."⁶¹

This dazzling victory over her old enemy had profound effects on Germany. The bond between Hitler and the military was stronger than ever. While Keitel dubbed him the "greatest Feldherr of all times," the C-in-C of the Army, General von Brauchitsch, praised Hitler as the "top soldier of the German Reich" who would definitely secure its future. Nothing seemed impossible for the German soldier. The Army General Staff had gained a new confidence in itself. Its chief Halder even thought of

winning back its authority as the arbiter of strategic matters. In mid-June 1940, quite independently of Hitler, Halder began to plan first for an offensive-defensive, and then for a preventive "military blow at Russia to force her to recognize the dominant role of Germany in Europe."⁶² This strategic objective suggests that it was not pure concern about the build-up of Soviet forces in the newly-seized territories that caused Halder's instruction to the operational planners. Halder himself said after the war that the Feldherr should not be denied the right to launch a preventive war in order to secure the nation's welfare.⁶³

So when Hitler asked the Army command to find a military solution for the "Russian problem," it was already well on its way in its preparations for the next campaign. On July 21, 1940 Brauchitsch was able to submit to the Führer an outline plan which contained aims, concentration, and comparative strengths for a military blow at Russia in the fall of 1940. The campaign was to be carried out with only eighty to a hundred divisions against the fifty to seventy-five good divisions the Soviets presumably possessed. New German historical research has shown that this "proposal of extraordinary optimism" was based upon a contingency plan for the 18th Army which had already been issued.⁶⁴ Therefore it is not surprising that the Army High Command offered no objections whatsoever to Hitler's intention to attack Russia in spring 1941, although his war aims exceeded theirs.

Hitler and the Army High Command had turned to Russia in the summer of 1940 as a possible solution to Germany's strategic dilemma. They had become increasingly concerned that Britain had placed her hopes on Russia and the United States. When German efforts failed to coerce London to sue for peace, the key to the strategic problem appeared to be the

destruction of the USSR. "If Russia were to be destroyed, then Britain's last hope will be wiped out. Germany will then be master of Europe and the Balkans."⁶⁵ The defeat of Russia would make America a quantité négligeable. This evaluation remained the strategic basis for Hitler's decision to crush Russia in a rapid campaign before the war against Britain had been concluded. Just one day before issuing Directive No. 21, "Case Barbarossa" on December 18, 1940, he reiterated his grand strategy. All continental European problems were to be solved in 1941 as the United States would be prepared to interfere from 1942 onwards.⁶⁶ But Hitler was convinced that after the destruction of Russia Germany would be unassailable and Britain would be forced to sue for peace. He also knew that everything would be lost if Barbarossa failed.

The military not only failed to communicate to Hitler what was militarily possible, something one might have expected from generals who prided themselves on their analytical brilliance and objective professionalism, but also showed no practical ability in coalition building. Although the OKW's operations branch and the Naval High Command favored a peripheral strategy, aimed at the British empire, as an alternative to war on the Soviet Union, they did not unite their individual efforts with those of Foreign Minister Joachim von Ribbentrop in urging Hitler to form a continental bloc to isolate Britain and deter the United States. As long as these separate strategic plans served Hitler's intentions to obtain a stable western and southern flank, he signalled agreement. In December 1940 Hitler again defended Barbarossa in terms of global strategy as a strategic means to dash Britain's hopes. Thus, the Navy's attempt to secure for itself a decisive role in order to win victory over Britain failed. Hitler's central objective -- to take the continental empire route to world power via smashing the

Soviet Union -- remained unchanged⁶⁷ and shaped German strategy almost up to the end of the Third Reich. The Luftwaffe, too, had its doubts about fighting a two-front war against Britain and the Soviet Union. Yet after the disappointing "Battle of Britain" the chief of staff viewed Barbarossa as another chance to fight that type of air war for which the Luftwaffe seemed best suited. Convinced that Bolshevik Russia was a long-term threat to German ambitions, Air Force generals set to work with optimism on the details of the operational plan to support the Army.⁶⁸

The Russo-German war provides a significant example of strategic ineffectiveness, arising from failure to balance the relationship between available forces and strategic objectives. From a rational point of view the German forces were too small, too ill-equipped, and too badly supported for the strategic task of defeating the Red Army before the onset of winter. Moreover, the widely-held assumption that the Soviet system would collapse after the loss of vital parts of its industrial potential, led the Germans down a dangerous strategic path. While the German military in 1914 had underestimated France and overestimated Russia, in 1940-1941 it was the other way around. Drunk with victory over France, the senior Army leadership planned the invasion of Russia as a Blitzkrieg in every respect. "If France, the principal foe in German interwar planning, had been so quickly destroyed; the Soviet empire, with its primitive economy and clumsy, purge-weakened Army, could hardly expect to survive."⁶⁹ General Jodl, Hitler's foremost strategic adviser, unequivocally stated on December 3, 1940 that it was correct to reduce armaments production for the Army in favor of that for Navy and Air Forces, since Barbarossa could "by all means" be fought with existing equipment.⁷⁰ Likewise Hitler on January 14, 1941 took full responsibility for this measure "in consideration of all operational aims

and in appreciation of all military objections.⁷¹ The Chief of Army Equipment and Commander of the Replacement Army, General Fromm, saw no reason to press for a higher priority for the Army in armaments production. Thus, the coming Blitzkrieg rested on a panzer force equipped with existing materiel and booty and only peripherally on new production. Hitler after consultations with Todt ordered on June 20, 1941 that Army armament production should be drastically reduced in favor of the enlarged Luftwaffe program. Thus, there was an immediate shift in emphasis in armament production on July 14, 1941 to the Air Force and Navy. The underestimation of Russian capabilities lay not only in a false analytical assessment, but also in the fact that Nazi ideology was inherent in the military's perception of Russia's strength.

While there can be little doubt that both ideological and strategic factors governed Hitler's decision to attack Russia, the ready acceptance of his racial goals by the military establishment and most of the officer corps should not be overlooked. Difficult though it is to discuss the ideological bond between Hitler and the military within the framework of effectiveness, one must understand the deep involvement of the Army in the war of annihilation in the east.⁷²

This was not done out of cowardice or because Hitler's advisers had drifted away from the high standards of the old Prussian officer corps and degenerated into unthinking military automats indifferent to moral issues. On the contrary, it was a measure of the deep-seated hostility to 'Russian bolshevism' which permeated the officer corps throughout the Weimar period. That is why the military were prepared to

translate Hitler's bloodthirsty instructions into precise military orders.⁷³

On the other hand, strategic necessities provided the officer corps with something like a "clear conscience" in their effort to destroy the fabric of Soviet society.

In March 1941 Hitler made it abundantly clear to the military that the campaign against Russia was to be more than just a battle between two armies, it would also lead to a struggle between two Weltanschauungen (philosophies of life) and to the liquidation of the "Jewish-Bolshevik intelligentsia." He was determined to convert the Wehrmacht into an instrument of extermination alongside the SS. Thus, he wanted to erase the line between military and political-ideological warfare in the east. It was the Wehrmacht's senior officers and their legal advisers who cast Hitler's ideological intentions into legal form: the "Decree concerning the Exercise of Military Jurisdiction and Procedure in the Barbarossa area and Special Measures of the Troops in Russia" of May 13, 1941, and the "Guidelines for the Treatment of Political Commissars" of June 6, 1941, and the details for deployment of four SS Einsatzgruppen (murder squads) within the Army Zone of Operations, were all the result of Army administrative actions.

In the center of the Army's preparations for the struggle against the "deadly enemy of National Socialist Germany" stood Halder, not Brauchitsch or the latter's often mentioned "General Officer for Special Duties attached to C.-in-C.," General Eugen Müller. Halder was willing to let the troops participate in the forthcoming ideological war. Partisans were not to be court-martialled but summarily shot. Commissars captured in battle were to be shot forthwith. With the approval of the

Army High Command the OKW drew up guidelines for the common soldier to take up "ruthless and energetic" measures against Bolshevik agitators, partisans, saboteurs, and Jews and to crush absolutely any active and passive resistance. Concern for the security and the discipline of the troops, and the speedy pacification of the country were obviously more important than flagrant breaches of international law. The whole concept of ius in bello was viewed as an irksome impediment to the extermination campaigns in the east. Professionalism and ideology went together well. As long as the mass shootings of Jews and communists were "perceived and construed as military measures against Germany's enemies, it did not require nazified zealots (though surely these were not lacking), merely conscientious and politically obtuse professional soldiers to carry them out."⁷⁴ By shooting the commissars, who were identified with criminals, the German military hoped to eliminate the hardliners and to drive a wedge between the political leadership and the presumably decent Russian soldier. Thereby, they hoped for a speedier and less costly advance into the depths of Russia. When the treatment of political commissars proved counterproductive, i.e., the resistance of the Red Army stiffened, opposition to the standing orders spread. The problem which had arisen out of "partial identity" with Hitler's racial concept was eventually solved within the context of professional military thinking.

Long before the German offensive had come to a halt at the gates of Moscow, Leningrad, and Rostov, it dawned on Hitler and his generals that the Blitzkrieg against Russia had failed. While Halder still believed he could achieve final victory through a broad encircling movement against Moscow, Hitler had already realized by the end of August that it was too late for that in 1941. Hitler wanted to seize both the economic resources in the Baltic and the Ukraine and to lay sound strategic

foundations for victory in 1942.

At the height of the first great military crisis in November 1941, when the commander of Army Group Center only feared another "Verdun," it was the civilian minister Dr. Todt who called for a negotiated peace settlement.⁷⁵ Yet Hitler was not a man to cave in. The consequences of the erroneous strategy for Germany "were grave in the extreme: Russia would still be fighting in 1942, Britain remained undefeated and in December the United States entered the war bringing into being a formidable coalition dooming Germany inevitably to defeat."⁷⁶

The "ruthless, incontrovertible laws of attrition" did not lead to a fundamental revision of Germany's strategy. The defeat of the Soviet foe kept top priority until the threat of an Allied landing in France became imminent in fall 1943.⁷⁷ Because of the great personnel casualties and material losses in 1941 the Third Reich had the strength for an offensive against Russia on only one sector in summer 1942. The strategic objective of seizing the Soviet oil area was, however, linked to a grander strategy of German armies descending from the Caucasus and, together with Rommel's desert offensive crushing the whole British position in the Middle East.⁷⁸ Yet this plan could not materialize. Even before both offensives commenced, the balance of probability, given available resources, was against success. In 1939 the Army was not the same as that of 1914, in June 1941 it was relatively weaker than in May 1940, given its tasks. After the failure in front of Moscow, the General Staff knew that there would be never again be an Army like that of June 1941.⁷⁹

After the heavy setbacks in North Africa and Stalingrad the OKW's operations branch, for the last time, undertook to assess Germany's situation in terms of a world-wide strategy.⁸⁰ Since the higher

conduct of war was solely Hitler's business and since there was still no combined services planning and advisory staff, General Jodl could only inform the other agencies about his strategic analysis. Under the realistic impression that the war could not be won by a mere holding of the front lines, Jodl and his lieutenant, General Walter Warlimont, defiantly demanded a resumption of the offensive against Russia in the southern sector. The seizure of the Middle East was still viewed, together with the continuing impact of the U-boat warfare, as the key to final victory.

By the spring of 1943 it was crystal clear that Germany had lost the strategic initiative. Yet the military establishment did not argue with Hitler over a recasting of German strategy but about applying the best possible offensive operational techniques against superior allied land, sea, and air power. The Army command hoped to regain freedom of maneuver on at least one sector of the eastern front to forestall a decisive Soviet offensive (Operation "Citadel").⁸¹ Although submarine warfare in the North Atlantic had collapsed in May 1943, the naval command embarked on a "new fleet program" to build 40 U-boats monthly and 8 destroyers and 12 torpedo boats yearly. The new Chief of Naval Operations, Grand Admiral Karl Dönitz, ruled out victory at sea but hoped to hinder the Allied sea powers from utilizing their superiority at sea.⁸² The battles of attrition in the east and in the Mediterranean were bleeding the Luftwaffe white. The threat posed by the American bombers, aimed at Germany's industrial heart, left the German Air Force "with no choice but to come up and to fight" for the Third Reich's defense. Thus, the other two fronts became subsidiary theaters for the Luftwaffe.⁸³

Despite the heavy blows both by the western allies and the Soviets in summer 1944, Hitler resolved to carry on this desperate struggle in the hope that the enemy alliance would break up. Once again he played va banque. The Ardennes offensive in December 1944 was a desperate attempt to drive a wedge between the Americans and the British. When this gamble failed Hitler flew from reality into history and hoped for the same miracle that had saved his idol Frederick the Great.

The so-called "Axis" possessed virtually none of the characteristics of a serious alliance. Hitler's self-confidence and secretiveness contributed to the fundamental lack of a combined grand strategy. "The lack of any central body for coordinating the efforts of all the members made the Axis somewhat less than the sum of its parts."⁸⁴ His arrogant disregard of the possibility of involving Japan in Barbarossa led to his substitution of Finland and Rumania in her place. Although Hitler still thought highly of Mussolini, Italy was not considered as a major power after her setbacks in Africa and in the Balkans in fall 1940. The switch to Helsinki and Bucharest is clearly visible after Hitler's decision to go to war with Russia in summer 1940. At first his strategy was primarily defensive: to safeguard Germany's vital supplies of oil from Rumania and nickel from Finland.

In the case of Rumania, Hitler's attitude changed after German Luftwaffe and Army missions were stationed there. Their tasks were not only to defend the oilfields against occupation and destruction and to train the Rumanian armed forces, but to prepare for a commitment of German and Rumanian troops in a campaign against the Soviet Union. Although Hitler and his generals took it for granted that Rumania would participate in Barbarossa because of her territorial aspirations for Bessarabia, Northern Bukovina, and Transylvania, they did not hammer out

strategic objectives in a series of conferences at which top political and military leaders and staffs communicated freely. The Rumanians remained in the dark, although the head of the German Army Mission in Bucharest had pressed for the establishing of "a sound basis for this difficult coalition warfare" at the beginning of March 1941.⁸⁵ Marshal Ion Antonescu, dictator of Rumania, was not fully informed about the imminent attack before June 11-12, 1941. Up to this date the German military establishment in Rumania had only worked for an allied effort to beat off a Soviet attack. Indicative of Hitler's attitude to his allies in general is his remark to Antonescu on June 12, 1941:

An operation stretching from the Arctic Ocean to the Black Sea demands a central unified command. This naturally rests with us. The mistakes of former coalition wars have to be avoided. Each ally participates in the total glory.⁸⁶

So it happened that Mannerheim, Antonescu, and Horthy, but not Mussolini, were awarded the Knight's Cross in summer 1941. The non-agreement on common political and strategic objectives was not a major factor during the period of success. However, it became a quickly growing element in the relationship between Germany and her allies as the war began to go badly. In the case of Finland, it began after the failure to seize Leningrad in September 1941; in the case of Rumania, Hungary, and Italy in the fall of 1942. After Stalingrad, Antonescu and Horthy wanted peace with the west but a continuation of war against the Soviet Union, while Mussolini wanted to conclude a separate peace with Stalin and a continuation of war against the Anglo-American powers.⁸⁷ The tactical

success over the Red Army in March 1943⁸⁸ proved strong enough to keep Hungary and Rumania in line. It could not, however, offset the impact of the Allied advance in the Mediterranean which, in the process, caused Mussolini's deposal and Italy's surrender.

III. Operational Effectiveness

The greatest single campaign of the war, planned and prepared to achieve by combat a strategic objective within a single theatre of war, was operation Barbarossa against the Soviet Union. The lightning victory in the west marked the turning-point in the development of a Blitzkrieg conception of operations. Nevertheless, the German forces on the eastern front in June 1941 were only slightly stronger than those deployed in the west in May 1940:

	<u>1940</u>	<u>1941</u>
divisions (armored)	141 (10)	152 (17)
tanks	2445	3350
aircraft	4020	3032 ⁸⁹

Despite the enormous research on Barbarossa there are several elements in the planning process that require amplification.⁹⁰ The first was the persistent tendency of most German generals to underestimate the size and quality of the opposing force, the Soviet industrial resources and manpower potential, and the Soviet command and control system, a disastrous omission once the Blitzkrieg failed. This tendency matched the belief in a decisive German qualitative superiority in leadership. The conviction of the Russian soldier's inferiority was enhanced by the unexpectedly rapid victory over France. The German military leaders became victims of their previous overestimation of an

old foe. An additional factor lay in the underestimation of Russia's size and her geographical conditions which vastly differed from those in the west. The essence of the Barbarossa plan was to destroy Soviet forces by swift pincer movements west of the rivers Dnepr and Dvina. The Germans assumed that this plan would succeed. They believed that they could break the back of Soviet resistance under the initial impact of Blitzkrieg. They gave little thought to the fact that only 20 percent of the available forces were really capable of the mobile warfare necessary to reach the strategic objectives.

Since the war much of the blame for the failure of the Blitzkrieg has been placed on the shoulders of Adolf Hitler, whose strategic and operational insight is characterized as a "strange mixture of intuition and ignorance."⁹¹ "The truth is that the generals were every bit as culpable as their Führer. Filled with a boundless optimism in the efficacy of the Blitzkrieg they had fashioned,"⁹² they could not imagine that the Red Army could resist their mighty Wehrmacht. They unequivocally ruled out the Soviet armed forces as a real danger. General Erich Marcks, who drew up the first plan for Barbarossa in summer 1940, even went so far as to blame the Russians for not doing the Wehrmacht the favor of attacking, because he viewed the destruction of the bulk of the Red Army forward of the great forest zone and the rivers Dnepr and Dvina as an essential condition for the outcome of the campaign.⁹³

A few weeks later Colonel Kinzel, head of the Army's intelligence staff, agreed with this evaluation of Russia's intentions. Germany would have the "prävenire," because the Russians would not even be so bold as to launch a limited operation to seize the vital Rumanian oil fields.⁹⁴

On the other hand, the German military leaders were concerned about some

of the information as to the Red Army's future capabilities. If in the ongoing process of its modernization, quality were to be added to quantity, then the Red Army might emerge as a competitive Army in leadership and combat strength capable of sustained offensive operations. This long-range, latent threat had to be eliminated by an immediate German attack with the might of a superior Wehrmacht. On the eve of the German invasion Halder admitted that the Russian deployments did not suggest offensive intentions. The "border battles could last days, perhaps even a number of days" which would however create an opening (Vakuum) which the panzer groups could exploit.⁹⁵

Except for outlining (on July 31, 1940) a campaign with two thrusts, one toward Kiev and the other through the Baltic States in the direction of Moscow, which were finally to be linked up, Hitler left the military planning for the Blitzkrieg to the generals. It was not until December 5, 1940 that he was informed about their proposals. At first, he expressed agreement with the Army's plan. Subsequently, however, he developed his own, substantially different approach. For Halder, Moscow was to be the main objective. Therein he followed Marcks. Hitler's gaze was fixed elsewhere. After the first phase of operations, the destruction of Russian manpower before the Dnepr-Dvina-line and the prevention of a Soviet retreat into Russia's interior, Hitler wanted to seize important industrial areas in the Baltic and in the Ukraine. Moscow was of little importance, he argued.

It was characteristic of the relationship between Hitler and Halder that they did not argue about this obvious dichotomy.⁹⁶ While Hitler had no doubt that the General Staff would ultimately accept his views, Halder continued to regard the capture of Moscow as the principal objective. He felt sure that the operational developments would prove

him right. The fact that the Chief of the General Staff did not attempt to argue his case for a direct advance on Moscow, and that he regarded the second phase of the campaign as less important than the opening border battles, is a sure indication of operational ineffectiveness. "The subsequent attempts of the Army leaders to develop the operations in accordance with their original plan led to a dispersal of effort and serious delays while the arguments which should have been raised before the campaign were finally settled."⁹⁷ One only needs to compare Hitler's directive of December 18, 1940 with the original version of the Army's December Directive of January 31, 1941 to see what Halder had in mind. This attitude is a clear example of Führen unter Hand (leadership behind the superior's back) which became a common feature of operations from 1943 onwards.⁹⁸ Moreover, Halder tried to secure his influence on guiding the campaign in the right direction by appointing his chief of operations, Major-General von Greiffenberg, to Chief of Staff of Army Group Center. It was not an effective counter to the feared Querschüsse aus der Stratosphäre⁹⁹ (monkey wrenches thrown into the works from on high).

Did the German military establishment have the capacity for supporting the invading force with the required supply? The expansion of the armored force between the battle of France and Barbarossa is an interesting case in point. "The ten panzer divisions were to be doubled in number but each was to be halved in its tank strength -- from its earlier divisional organization of two panzer regiments with a total establishment of about 280 tanks, to a single tank regiment of about 140 tanks."¹⁰⁰ Each tank regiment consisted of two Abteilungen (battalions), although three out of 20 panzer divisions did in fact keep three battalions. At the same time an increase in motorized divisions

also took place. Except for the three motorized divisions of the Waffen-SS that retained three regiments, the Army's motorized divisions were now reduced to two regiments in order to convert eight further infantry divisions into motorized infantry. It is doubtful whether the 17 panzer divisions deployed in the east in 1941, (five of which were still equipped with Czech tanks), could be compared to those deployed in the west in 1940. General Halder fully recognized this. The logical consequence of fighting a Blitzkrieg with inadequate equipment was a system of improvisations. On June 4, 1941 Halder told the Chiefs of Staff of the higher echelons that "organizational adjustments and utilization of all possible makeshifts" would be required.¹⁰¹ The failure of panzer production is suggested by the fact that the German panzer force in the east still contained 281 obsolete MK I and 743 outmoded MK II tanks respectively, and only 444 of the modern MK IV.¹⁰² The total tanks in the east amounted to only 3350. "These figures were, of course, entirely inadequate, and the war in Russia was to bring out the tank deficiencies, not only in numbers but also in performance, armor, armament and tactical mobility."¹⁰³ The German materiel was only suited for fair weather and good roads.

Even more harmful was the fact that 84 infantry divisions and even three motorized divisions were equipped with vehicles drawn from foreign countries. Despite the great number of looted vehicles, 77 infantry divisions had only horsedrawn supply troops.¹⁰⁴ About 15,000 Polish peasant Panjewagen had to be acquired for this purpose. Therefore it is not suprising that the German Blitzkrieg Army had more horses than vehicles. The very multiplicity of vehicles (2000 different types), guns (170 types), tanks (with the allies', 73 different types) and of anti-aircraft guns (52 models) created a logistical nightmare in terms of

parts and maintenance. The military establishment had accepted in November 1940 that the commitments were far outstripping resources, its striking solution was to define supply problems as inferior to command tasks and to demand a flexible supply organization.¹⁰⁵ The problems associated with "great space -- great aims -- no railroads" had certainly not been given full attention.¹⁰⁶ To achieve some extra mobility the motorized troops were given an additional, so called "handbag" (Handkoffer) of supply. According to his command task (Führungsaufgabe) the Quartermaster-General, General Eduard Wagner, introduced his own field supply organization at Army group level which had a capacity of 60,000 tons of Großtransportraum (Army motor transport lift) on heavy trucks at its disposal. As the vehicles were generally unsuited for their logistical tasks on the primitive roads of the Soviet Union, supply could not keep pace with operational advances. A pause for replenishment of the motorized formations was planned for after 300-400 kilometers. Yet the Soviet resistance did not allow the necessary time. By the end of October, the 18th Panzer Division, for example, had lost 59 tanks due to enemy action and accidents, but 103 tanks due to the lack of spare parts.¹⁰⁷ Already in September the four panzer divisions of Guderian's 2nd Panzer Army only had between 20 and 30 percent of their combat strength. In its after-action report of March 12, 1942, the 4th Panzer Division complained that "leadership had been reduced to a large extent to a problem of supply."¹⁰⁸ Thus, contrary to doctrine, operational successes could not be fully exploited. The great crisis of supply which arose behind the "magic" Dnepr-Dvina line was not so much caused by the unfavorable weather and terrain conditions of fall 1941 as by an earlier collapse of the supply system. One result was the abolition of Wagner's field supply organization and the establishment of quartermasters at Army

group level.

In June 1941, 3,050,000 men stood ready for Barbarossa in the east, leaving 385,000 men of the Replacement Army for future Army needs. Ninety thousand men in the field replacement battalions were intended to cover immediate replacement requirements. The Army estimated that the two months of "border battles" would cost 275,000 casualties with a further 200,000 in September. Thus, by the beginning of October 1941 there would be no trained reserves left. The Army leaders were willing to accept the risk. Such personnel policies reveal once again the military's optimistic assumption that they would win a decisive victory over Russia within three months. They were undoubtedly blinded by the suprisingly small losses in the first two years of the war-losses which had totalled less than 100,000 dead and missing. Yet the real casualties in the Russo-German were to reach more than 830,000 by the end of December 1941.¹⁰⁹ The significance of this theatre of war in comparison to the others is revealed by the fact that 33,463 officers had fallen in Russia through March 1944 out of the total of 38,000 officers killed from the beginning of the war.¹¹⁰

The Barbarossa plan with its fixation on a short campaign provides numerous examples of operational ineffectiveness. German operations in Pussia in 1941 were not masterpieces of the military art.¹¹¹ Proud of their victories and contemptuous of the Russians, Hitler and his generals miscalculated the Wehrmacht's strengths with respect to personnel, materiel and logistics. Viewed against this background the Army High Command's optimism reveals itself more as a compulsion. The result was that "whether behind the lines or on the battlefield, Operation Barbarossa stands as grisly testimony to the necessity of harmonizing reach and grasp, will and means in national policy."¹¹²

Historians have too long believed the alibis of German generals who blamed Hitler after the war for demanding a new offensive in 1942. The truth is quite different. There was in fact no serious opposition when Hitler said that the war would be won against Russia, although the Wehrmacht's reduced fighting strength allowed for only one thrust. It was to be delivered in the south while the two other Army groups stood on the defensive. The essence of Operation "Blue" was to destroy Soviet forces west of the Don, this time executed by smaller enveloping movements than in 1941, and to occupy Soviet oil producing areas in the Caucasus. The latter goal was considered to be "a must. This territory," Halder told the Navy liaison officer in April 1942, "has the same importance for the German Reich as the province of Silesia had for Prussia."¹¹³

Several weeks after the beginning of the summer offensive Hitler seemed confident that he could achieve victory by capturing the city of Stalingrad and the Caucasus at the same time. He made this decision against the combined advice of his generals. Nevertheless, when the 6th Army was surrounded by the swiftly executed Soviet counter-offensive in November, General Friedrich Paulus's chief of staff did not think it worth looking for anyone in particular to blame. "We all have not recognized the dimensions of the danger, we all have over-estimated ourselves and once again underrated the Russians."¹¹⁴ Yet General Arthur Schmidt still believed in Hitler's "lucky star." When Paulus asked Hitler for permission to break out, the High Command turned him down. Looking to Field Marshal von Manstein for understanding and support, he received the striking answer:

After the Führer's order to hold the fortress Stalingrad, the commander is responsible only for executing this order to the utmost with all means. The responsibility for the fate of the Army has been taken over by the Führer. The commander has to carry the fate but not to answer for it.¹¹⁵

Is this an example of operational effectiveness or the degeneration of leadership?

The German generals in the east were to learn the bitter lesson that Russians were fully capable of executing an armored operation with strategic objectives. In 1942-1943 it needed all the tactical skill and experience of the German field commanders to prevent their armies from being thrown back beyond the starting point of their great summer 1942 offensive. The second attempt at knocking the Soviet Union out of the war had failed. What remained was the strategic defensive, the best tactical means of which -- the limited offensive -- was unsuccessfully tried three times: at Kursk (July 1943), at Avranches (August 1944) and in the Ardennes (December 1944).

IV. Tactical Effectiveness.

The German campaign against the Low Countries, Belgium and France has become stereotyped as the classic example of Blitzkrieg. In this view, the tactical approach of the German Army was consistent with its strategic objectives and operational capabilities. It had effectively pitted its strengths against its adversaries' weaknesses. In reality, the German military establishment had not thought of a Blitzkrieg in the strategic respect. It had assumed a much longer period of fighting, for which it had prepared a "second wave" in personnel and materiel. The surprisingly quick victory over the old foe left Hitler and his generals so enthusiastic about German tactics "that thereafter air bombing, the panzer breakthrough and the deep motorized envelopment became ... all there was to be learned about waging a war."¹¹⁶

The German tactical system before Barbarossa was, by and large, consistent with its strategic objectives, its operational concept, and its evaluation of morale and unit cohesion. The Army High Command, analyzing the combat experiences, pointed out that the Polish and French campaign had confirmed German tactical principles.¹¹⁷ Overlooked was the earlier critical comment of a panzer commander that the panzer arm had only succeeded in fulfilling its main tasks, crushing the enemy's positions in ruthless pursuit, because the Polish forces had been so inferior. General Wilhelm Ritter von Thoma warned that it remained to be seen whether panzer divisions lacking absolute air superiority could master their tasks against a modern well-equipped and well-led enemy with

a modern system of positions.¹¹⁸

With the pattern of the successful Panzer Groups of von Kleist and Guderian in mind,¹¹⁹ the OKH established four panzer groups in the fall of 1940. All motorized formations were concentrated in them. Each panzer group was to command two to four panzer and motorized corps. "The panzer groups, like armies, would be capable of independent long-range tasks, driving wedgelike blows that would tear open the enemy's front and help the infantry armies forward to their operational objectives."¹²⁰ Yet the time between the campaign in the west and that in the east was too short to upgrade tactical training to meet the operational demands. The manpower exchange between the Army and the war economy, the shortage of fully trained reservists, the creation of new panzer divisions through a cadre system, the extensive special training of officers at the service schools which hindered divisional training; all contributed to the fact that the Blitzkrieg tactics of the forces invading Russia were far from perfect.

Although the Luftwaffe had proved helpful to ground forces in the Polish campaign, especially in achieving air superiority and striking Polish defensive lines, "it took the more complex military operations against Allied forces in the west in spring 1940 to refine close air support doctrine for armored formations" in fluid battle situations.¹²¹

Like the Army, the Luftwaffe was more interested in confirming earlier combat lessons than about the apparent continuation of difficulties in gaining a clear picture of rapidly changing events on the ground. The Luftwaffe detailed close air reconnaissance squadrons to each panzer division, established air liaison officers down to that level, and assigned signal detachments to front areas where important mobile operations were taking place. In addition the Luftwaffe established a

close air support leader within the Fliegerkorps which was to cooperate 'especially closely' with the panzer groups.¹²²

The panzer groups were subject to the command of particular armies, a circumstance which led to friction immediately after the Russian campaign had begun. While the panzer groups wanted to retain full advantage of their mobility, they were needed by the infantry armies to crush the encircled Russian forces, even though the best equipped infantry divisions had been deployed behind the advancing panzer groups.¹²³ Contrary to expectations the encircled enemy forces did not fall to pieces but doggedly fought on, thus tying down German mobile formations needed for further advances. Army Group Center felt the need to subordinate two panzer groups to one Army while transferring their infantry formations to another Army. On the other hand, tactical difficulties arose through the fact that these two panzer groups were differently equipped. The motorized divisions of Panzer Group 3 had only French vehicles, and could not keep pace with the other panzer divisions.¹²⁴

In mid-July 1941 Hitler became concerned that in the second phase of operations against the "strong Russian colossus" (an assessment contrary to earlier hopes), the panzer arm would have to "suffer those losses which only the infantry could fill up," because there would be no supply of panzers and vehicles.¹²⁵ The growing friction between field commanders, for example Field Marshal Günther von Kluge and General Heinz Guderian, and between Hitler and the Army High Command reflected more than different tactical concepts; they reflected a growing recognition that the Blitzkrieg had failed by late summer 1941. Hitler wanted to seize Leningrad to secure the iron ore supply through the Baltic and the Ukraine, because of Germany's need for grain, and accordingly tailored

German tactics to the aim of destroying the Red Army via smaller, but more effective encirclements. Halder, however, kept on thinking about a grandiose victory around Moscow.

Like the great Michael offensives in France in the spring of 1918, the Ardennes offensive in December 1944 ought to be considered under the rubric of "tactics." Like Ludendorff in 1917-1918, Hitler was guided in his decision in August-September 1944 more by political goals than by military, i.e. strategic or operational, considerations. By punching a deep hole into the enemy line, Hitler intended to shock the allies in such a way that they would be ready for a peace settlement. Like Ludendorff, Hitler defended his decision to gamble on an armored offensive to take Antwerp. Even the style of Hitler's leadership is comparable to Ludendorff's dictatorship in military matters in 1917-1918.¹²⁶ In 1944 Field Marshals Gerd von Rundstedt and Walter Model were virtually reduced to the status of highly paid non-commissioned officers, an approach to command that General Wolfram von Richthofen had already criticized in November 1942. "All planning, preparation and orders [for the Ardennes offensive] remained, as the OKW diarist noted, closely under the hand of the Führer, for he was even making the daily decisions as to the supply of vehicles and horses to the individual divisions making up the attack force."¹²⁷ After some initial gains -- due to complete surprise and poor visibility for the superior Allied Air Forces -- the assault ground to a halt after a week of heavy fighting. The German losses totalled over 76,000 men. Although the Ardennes offensive shocked the allies and for the last time demonstrated German tactical effectiveness, the strategic result was that the backbone of the German defense on the Rhine soon collapsed.

As the Army considered itself first and foremost an offensive force, its doctrine and training were geared accordingly. After the victories of 1939 and 1940 the Army's C-in-C underlined the value of the educating of officers and men "to the ruthless offensive spirit, to boldness and a determined way of acting supported by confidence in the superiority of the German soldier over every enemy and by a staunch belief in the final victory."¹²⁸ Field Marshal von Brauchitsch also pointed out that "there could be not the slightest doubt about the fact that the training of the soldier to be a determined and aggressive fighter could not be separated from a lively education in the National Socialist sense."¹²⁹ The company and battery commander was considered to be "the central personality still retaining a direct influence upon the education, instruction and leading of the individual man," he alone could "forge the company as a compact unit and both lead the individual man into and keep him within the battle-community (Kampfgemeinschaft)."¹³⁰ Since the troop commander was responsible for the spirit and attitude of his soldiers, the ideological education of the troops was his task. Neither Hitler nor the generals were interested in a sophisticated educational program. Neither understanding or an profound ideological conviction was desired, but rather an emotional instinct of the Volksgemeinschaft's needs and a staunch belief in the Führer.¹³¹

After the failure of the summer offensive in 1942 the "ruthless offensive spirit" was substituted by Hitler's slogan for the defensive front: "Dig and go on digging."¹³² A month later the Führer demanded that the troops and their leaders fight the coming winter battles with the "proud knowledge of the achieved victories, strong confidence in their own ability and with the uncompromising will to crush the enemy again."¹³³ It was left to the commanders of all ranks to strengthen

the defensive preparedness of their men for the coming defensive battles. The new demands on the powers of resistance, even in the face of crises and setbacks, were met with a mixture of strengthening the traditional military values and an increasing ideological orientation. Since the commanders still carried the responsibility for this work of instruction and education, in 1943 "educational officers" (Offizier für Wehrgeistige Führung) were nominated to support their commanders. It was the Army's personnel office, not the party, that in summer 1943 saw the need for a uniform orientation of the officer corps in regard to the "fight for Germany's destiny."¹³⁴ The result of this professional initiative was a highly ideological book with the title What Do We Fight For? Hitler's well-known order of January 8, 1944 emphasized the officer's role in leading by personal example not only in battle, but also in questions of ideology. "He who fights with the purest will, the bravest belief and the most fanatical determination will be victorious in the end."¹³⁵ There was no room left for non-political officers.

The question of the efficacy of ideological instruction is difficult to answer. Yet it was one important factor -- together with traditional "soldierly qualities," the social and educational background of the officers, and the conditions at the front which contributed to the tactical effectiveness of the individual soldier. It was attractive for him to be praised as the "first socialist of the Reich," "real socialism" being defined as the doctrine of "performance of the hardest duty."¹³⁶ Since the soldierly and patriotic rhetoric persisted side by side with ideological orientation and since the relationship between Wehrmacht and Nazi Weltanschauung was a dynamic one, it is difficult to agree with the judgement of one historian that the average soldier "did not as a rule fight out of a belief in Nazi ideology -- indeed, the opposite may have

been nearer the truth in many cases.¹³⁷ The contemporary "sociological findings" about the officer candidates between 1939 and 1942 reveal that almost 45 percent of them had been members of the Nazi party.¹³⁸ "The language used by commanders [of three first line divisions] became more and more National Socialist in terms and content, [as the war proceeded] probably with the hope of providing their troops with that very belief in victory which the realities of the battlefield seemed to contradict."¹³⁹

The German tactical approach that stressed decisive action as "the first prerequisite for success in war," and war as "an art, a free creative activity" which "makes the highest demands on a man's entire personality,"¹⁴⁰ depended on front line leadership and a high level of unit cohesion. An officer corps constituted from men with outstanding martial and intellectual qualities, particularly moral and physical courage, "requires long tradition and broad experience in order to function effectively."¹⁴¹ Martin van Creveld makes the point that the American officer corps which expanded forty-fold during the war should not be compared to the German officer corps. I should like to ask the provocative question: why not? Does German ideological instruction indeed play an important part?

The German Army officer corps expanded sixty-four fold during the ten years 1933-1943. By October 1, 1943 the Army possessed 246,453 officers, yet more than 80,000 of them were medical and veterinary doctors or arms officers.¹⁴² The German naval officer corps expanded from 4,500 to 11,200 officers between August 1939 and March 1941.¹⁴³

During its sixty-four fold expansion the German Army officer corps had developed from a small professional one to a large Volksoffizierkorps (people's officer corps).¹⁴⁴ It had lost its social homogeneity, was

over-aged, and was characterized by qualitative differences. Hitler's initiative of summer 1942, which General Rudolf Schmundt was eager to implement, aimed at preferring the combat officer over the military systematist and only partly represented a "manipulation of a traditional elite"¹⁴⁵ via Social Darwinist beliefs. As early as August 1808 Frederick Wilhelm III had ordered that in times of war only those who were "outstandingly brave and had things under control" would be entitled to a commission.¹⁴⁶ The initiative of 1942, to stress combat experience over education and seniority, was also partly the result of the officer corps' structural deficiencies and the enormous casualties in Russia. Schmundt's efforts were successful. While in 1942 7,800 officers were commissioned into the Army, one year later the total was 45,870. Yet the daily losses of officers outnumbered the input. September 1944 was the worst month with 317.5 officer casualties per day.¹⁴⁷ The total shortage of officers in the Field Army amounted to 13,000 on September 5, 1944.

When the campaign against Russia began there had been no numerical shortage of officers, even a reserve of 300 for each Army group. Yet the divisional distribution is interesting. While the ratio between active and reserve officers was 50:50 in the panzer, motorized, and mountain divisions, it was 35:65 in the category 1, 4, 11 and 12 divisions, and 10:90 in all the others. Moreover, the head of the Army Personnel Department pointed out on June 4, 1941 that 6,000 - 7,000 former World War I officers held on a separate supplementary list (Ergänzungsoffiziere) would be accepted on the active officer list. This applied only to those with an outstanding personality, and not to those with merely administrative qualifications (Büro-Offiziere mit Beamteneigenschaften).¹⁴⁸ In the Luftwaffe the ratio between active

and reserve officers was the same as in the panzer divisions (50:50) at the beginning of Barbarossa. In the fall of 1942 the total ratio between active and reserve officers in the Army was 1:6 out of a total of 180,765 on October 1, 1942.

Schmundt tried hard to do justice to officers at the front and tried to promote them according to their involvement at the front line.¹⁴⁹ The ideal divisional commander was to be a young, battle-experienced, vigorous officer of character and with heart. Intellectual ability ranked second. In those new infantry divisions, known as Volksgrenadierdivisionen, raised in 1944 under the administration of the SS, there should be no regimental commander over 40 years of age without the Iron Cross, First Class. Colonels could only be promoted to major-general after one year of front line service. The Volksgrenadier divisions were to symbolize the German Volksgemeinschaft at arms in its fight for "liberty and honor." Unsurprisingly, these divisions were considered elite formations and got preferential treatment in regard to personnel and equipment after Himmler had assumed command of the Replacement Army in July 1944.

Williamson Murray has persuasively argued that the German Army's response to its victory over the Poles in 1939 represents a high level of effectiveness in uniting training and doctrine. He suggests that its "willingness to be self-critical was one of the major factors that enabled the German Army to perform at such a high level throughout World War II."¹⁵⁰ This may have been true after the Polish campaign when the German Army faced the highly respected French Army. Having crushed that adversary the notion prevailed that the German soldier could do anything. The Army High Command felt that doctrine and training had stood the test well. The 6th Panzer Division, for example, stressed in

its after-action report that German air superiority had played a decisive role in the west. Its own success was ascribed to the "closest cooperation between armor, infantry, artillery, engineer, and anti-tank forces."¹⁵¹ While the motorized and panzer formations went through the ordered "cell division" program, an intensive training program went on from the fall of 1940. In general the troops were to be trained to fight against an "equal adversary."¹⁵² Priority was placed on attack and exploitation of success. The training program for battalion and company commanders, for example, went so far that field commanders complained about its serious repercussions on the divisions' daily duties because too many officers were attending courses at training schools or camps.¹⁵³

It is true that the German military establishment in the Second World War was willing to learn from experience in order to save blood. It closely tied its training to its "lessons learned" analysis of events in Poland, France, and in Russia. From November 1939 divisional commanders were asked to indicate the level of combat effectiveness (Kampfkraft) of their formation in a monthly evaluation report, so as to avoid the mistake of the High Command in World War I in wrongly assessing German fighting power.¹⁵⁴ What was the use of such reports, however, when there were no supplies or replacements to cover the losses? In November 1941, for instance, in order to seize Moscow with a last effort, Halder and the command of Army Group Center gave precedence to superior leadership, stronger will power, and unit cohesion over the other important components of success such as personnel and materiel, the enemy, terrain, and climate.¹⁵⁵ They thereby overruled the unanimous opinion of the other chiefs of staff to go on the defensive.

Responsible for the evaluation of war experiences for "conduct of operations, training, organization, weapons, and equipment" in the Army High Command since 1939-1940 were "arms" generals for infantry, tanks, artillery, and engineers. In September 1944 the Army saw the need for a general for anti-tank warfare. Within the Replacement Army there were equivalent inspectorates. The Luftwaffe upgraded its inspectors for fighters, bombers, and anti-aircraft to arms generals in September 1941. Only the Navy kept its "lessons learned" analysis procedures via war diaries. In order to save blood from experience, tactical directives were regularly issued by the relevant staffs. In 1944 the Luftwaffe began distributing the "C-in-C's tactical remarks."¹⁵⁶

Since the setting up of the new arm of mobile troops in the fall of 1938, the panzer troops had been in a special category that distinguished them from the other main arms. This became significant in the spring of 1943 when Guderian was nominated "Inspector-General of Panzer Troops." If Schmundt is to be believed, it was he who drew Hitler's attention to Guderian again because "he was one of the most loyal followers" of the Führer among the generals.¹⁵⁷ The infantry failed to be elevated to a similar position. There was to be only one more "Inspector-General," that for leader talents (Führernachwuchs). The term was coined in the fall of 1943. It has to be seen in connection with Schmundt's initiatives to amalgamate different officer careers and to establish one "corps of leaders" (Führerkorps) consisting of officers and NCOs.¹⁵⁸ This egalitarian drive did not spare the former elite corps of general staff officers. After Himmler had assumed command of the Replacement Army, the Army was on the way to becoming a "party Army".

During the last year of the war the German Army's tactical system was not consistent with its strategy of "evasion". Since Hitler's strict

order to hold the positions had effectively helped to stop the Soviet counter-offensive over the winter of 1941-1942 there was hardly any room left for the field commander's "free creative activity" to conduct their operations. The mission-oriented command system was supplanted by an order-oriented one.¹⁵⁹ The independent responsibility of field commanders was further reduced in the fall of 1942 when Hitler ordered that "no Army group commander let alone Army commander is entitled to order a so-called tactical withdrawal without my explicit approval."¹⁶⁰ After the failed Ardennes offensive Hitler further narrowed the room for independent tactical initiatives when he bound even commanding generals and divisional commanders to report in good time so that he could intervene in their decisions as he thought fit. The reports were to contain "nothing but the unvarnished truth. In the future, I shall impose draconian punishment on any attempt at concealment, whether deliberate or arising from carelessness or oversight."¹⁶¹ The essence of defense was defined in September 1942 as holding the main line of resistance by all means. With this view Hitler consciously repeated the style of defense executed by the Imperial Army up to the end of 1916. It was not until the "great Allied superiority in materiel began to have its impact that a deliberate defense-in-depth had been created."¹⁶² Thus until 1944 Hitler stuck to the tactics of holding a more rigid line of resistance, because Soviet superiority was, in his opinion, not comparable to that of the Western allies in 1916. In the case of trench warfare Hitler correctly attributed the advantage in war to the defender. Another new element in German tactics was the designation of certain areas or cities as "fortified places." These fortresses were to "allow themselves to be surrounded, thereby holding down the largest number of enemy forces, and establishing conditions

favorable for successful counter-attacks.¹⁶³ Except for very few cases, for example at Kovel, such extravagant ambitions could no longer be fulfilled both due to the lack of fire and shock power on the German side and to different Soviet tactics.

Owing to lack of mobility in 1944-1945 the once mighty Blitzkrieg Army came back to the defensive tactics of 1917. The draft manual of "Command of a Grenadierregiment" detailed for position warfare a sparsely manned trench behind which (300-600 m) there was to be a second one in order to give the infantry the necessary depth for the defensive battle. Both trenches constituted the main line of resistance which was to be held even under the heaviest enemy fire.¹⁶⁴ At the end of the Great War, the greatest tool of the infantry had been the machine gun; in the later stages of the Second World War it was to be the assault gun (Sturmgeschütz), despite its misleading name, and the Panzerfaust. Yet the infantry were helpless against the threat from the air, "the pestilence of fighter-bombers."¹⁶⁵

Analogous to the development of infantry tactics the "Directives for Command and Fighting of Panzer Brigades" of August 29, 1944 can be viewed as a regression. Their task was to support the infantry in their defensive battle and to destroy the enemy by counterattack when he had pierced or broken through the main line of resistance. Heavy emphasis was laid on the leader's "bravery, robustness, resoluteness and ability." It was the task of the brigade commander to bring about and maintain through education and training not just normal unit cohesion, but an "absolute sworn-in community."¹⁶⁶ Cavalry brigades were to become another tool in the hands of Army group commanders to deploy against Russian breakthroughs in 1944-1945.¹⁶⁷ In 1939 there had been only one brigade, which later became the First Cavalry Division. It was

reorganized into the Twenty-Fourth Panzer Division in 1941-1942. Two years later there existed three cavalry regiments on the eastern front. The total strength of the cavalry arm in the Field Army amounted to 95,000 by the summer of 1944 and far outnumbered that of 1939. The two cavalry brigades in the East were upgraded to divisions in 1945, a cavalry inspectorate under the infantry arms general was established, and a manual for personnel training in the Replacement Army drafted. Can this re-evaluation of the cavalry and its binding together with the infantry really be interpreted as an adjustment to the "doctrines of modern warfare?" Cavalry was never viewed as a mere arm; it incorporated a philosophy of life as well.¹⁶⁸

The Wehrmacht's "campaign for fighters to the front" may have been only partially successful. The Army was, however, highly effective in maintaining combat efficiency despite the ever increasing problems of replacing the casualties. One tool was the reshaping of divisions through a redistribution of officers, NCOs and men between combat and service units. Within half a year nearly 700,000 positions could be spared and 190,000 men were freed for combat duty. Twenty-four Army, three Luftwaffe and thirteen Waffen-SS divisions were raised before the Allied landing in France.¹⁶⁹ In 1944 a new effort was undertaken to get even leaner fighting organizations by reducing the supply troops up to 60%. The standard infantry division in the East, "type 44," was to have a strength of 12,770 men including over 1,400 Russian Hilfswillige. The supply troops only amounted to 1,455 men. A further reorganization of divisions (panzer, panzer grenadier, and infantry) was planned for 1945, including panzer combat groups with a strength of 8,602 men and 54 tanks.¹⁷⁰ Already in 1941 General von Seydlitz, commander of the Twelfth Infantry Division, had seen the need to build combat groups made

up of infantry and artillery components. Because of a lack of mobility and terrain he could not deploy the whole division when being attacked on the advance. Similar tactical units below the divisional level -- regimental combat teams, brigades or groups -- were to appear again in the military debate about the size of the German contribution to the European Defense Force in 1950-1951.¹⁷¹

Conclusions

It was argued after the war that the root of catastrophe and had been "the manner of German leadership." Thus the war was already lost before it started.¹⁷² This interpretation, which was phrased by Field Marshal Erich von Manstein as Germany's "Lost Victories," has recently been reiterated by Matthew Cooper. The greatest folly of the German Army supposedly was that the generals, "men of great professional experience and, on the whole, of high standards of personal morality ... prostituted their talent to Hitler's megalomaniac will, and allowed the militarily unskilled dictator to disregard their ethics and to neglect their well-founded strategic principles."¹⁷³ Is it really true that Germany lost the Second World War because the military establishment's sound expertise was supplanted by Hitler's dangerous amateurism? I hope that it has become clear from this essay that the linkage between Hitler and his generals, the Führer and his followers, was more complex and dependent on the course of war than such general statements suggest. On the other hand, this essay was not meant to answer the popular question: why did the German fight so well "in spite of their own demented Führer,"¹⁷⁴ because military effectiveness cannot be reduced to "fighting power."

One hesitates to credit Hitler with much of anything. Yet the dynamics of the militarized Volksgemeinschaft, symbolized by the unshakeable belief in the Führer, did contribute to the Wehrmacht's morale, élan, unit cohesion, and resilience to a much larger extent than

former generals were willing to acknowledge after the war.¹⁷⁵ Some recent historians have placed too much emphasis on the Army's internal organization "which succeeded in creating and maintaining fighting power."¹⁷⁶ Fighting organizations need professionalism and motivation. Given the same professional skill, the organization with the higher motivation will be victorious. The notion of separating the Wehrmacht from Hitler's influence and his idea of Volksgemeinschaft will not help to provide a satisfactory answer to the question why the German Army performed so well in combat against Allied troops.

The different levels of warfare -- political, strategic, operational, and tactical -- are interdependent. Those who have an interest in the art of war and the factors that govern modern war should not study campaigns as an abstract military exercise. It is necessary to put the entire problem of the Wehrmacht's fighting qualities into a much wider perspective.

Given its single-minded concentration on tactics and operations, the German military establishment did not master the issues involved in grand strategy and in industrial war. The worry about another revolution like November 1918 explains why the German High Command deliberately avoided total war far too long. A lesson learned from World War One contributed to losing the Second and, thus, to repeating history. The Western democracies were far ahead of the Germans in establishing central planning agencies, coalition building, and the details of inter-service staff planning. The joint operations of Army, Air Force, and Navy against Denmark and Norway in spring 1940, planned and commanded by the OKW under Hitler's immediate influence, remained only an episode. The services "reverted to operating in separate compartments. Easy victories seldom inspire comprehensive self-analysis".¹⁷⁷ The military command

structure was indeed a peculiar and cumbersome one. The system of overlapping and contradictory organizational responsibilities "led to numerous internecine clashes, and, in the competition over decision-making power, inevitably caused a certain amount of ineffectiveness."¹⁷⁸

Both the nation and the military establishment had given Hitler their confidence to restore Germany's world power position. The Führer's "unshakeable will that the German armed forces become the mightiest force in the whole world"¹⁷⁹ had strengthened the bond between Hitler and the military. Moreover, the linkage between Führer and the military in questions of German rearmament proved an important stabilizing element in the Third Reich. If few officers recognized the "ideological rather than the politically realistic core of Hitler's policies and strategy,"¹⁸⁰ the goals they shared with their Führer were sufficient to provide a basis for cooperation between the Army and National Socialism in the ideological war against the Soviet Union. Thus, the policy carried out by the Army in Russia and Serbia cannot be interpreted as "a product of general sickness" but rather as the result of an "identity of aims."¹⁸¹

After 1938 the German military establishment was reduced politically to a functional elite. It functioned well when the supreme commander took the risk of triggering war against the Anglo-French coalition. In contrast to Hitler's and the military's assessment, the old foes from the Great War stood ready to check and defeat Germany's second attempt at dominating Europe. Neither he nor his generals understood the limits of a continental power. They refused to recognize the lesson of 1914-1918 that a continental war could not remain limited to Europe. In the summer of 1940 it was Hitler who recognized the basic facts of Germany's position more fully than his strategic advisers. He understood that Germany was still incapable of winning a worldwide war

and Barbarossa represented a panacea for both the strategic dilemma facing Germany and the Reich's inferior capabilities for sustaining a global war of attrition. The war for Lebensraum in the East is a significant example of identity of political ends and strategic means. The strategic, operational, tactical and production decisions, taken before June 22, 1941, rested on a common assessment that the Wehrmacht could win a decisive Blitzkrieg victory over the Soviet Union. Hitler's and his general's gaze was already fixed upon the time after Barbarossa even before they had accomplished the destruction of Russia.

Although Hitler and the top Army leaders did acknowledge in the fall of 1941 that they had not reached their strategic objectives, they shrank from a fundamental reordering of German strategy as Fritz Todt had urged upon Hitler in November 1941. The Führer had staked everything on a single card and lost. He blamed the German people for being weak. They deserved extinction. Yet before "Jewry" and the "stronger people of the East" would destroy the Aryan race, Hitler and the SS enlarged the mass shootings of the Einsatzgruppen in Russia to the systematic extermination of European Jewry. These acts resulted less from the wartime situation but rather represented the final step of a "historic mission" to destroy Jewry, bureaucratically prepared and technocratically executed by the German civil service and the SS.

When courageous and insightful members of the military establishment attempted to act politically, their attempt to avert the catastrophe failed on July 20, 1944. "The extraordinary factor distinguishing the German opposition from resistance movements in the countries occupied by Germany was that any action in Germany would run counter to the feelings of the majority of the population."¹⁸² When the attempted assassination of Hitler by Colonel Claus Count Schenck von

Stauffenberg misfired, it caused a wave of sympathy for the Führer. This fact leads us back to the dynamics of Volksgemeinschaft. Hitler's egalitarian drive both to dismantle social barriers inside the armed forces and promote new talents under the leadership principle was popular throughout the population. The heavy emphasis on the human factor, that often substituted will power for manpower, counted heavily in maintaining fighting power. The high level of endurance and sacrifice displayed by the German armed forces also has a reverse side. It increased the attrition rate and insured that the final defeat of National Socialist Germany would be all the more terrible. Although the overall picture of the Wehrmacht is one of a superb instrument on the tactical and operational levels right to the end, the strategic results for the German nation were catastrophic.

Notes

1. Cited in Manfred Messerschmidt, Die Wehrmacht im NS-Staat. Zeit der Indoktrination (Hamburg, 1969), p. 24.
2. So J.P. Stern in his article about German literature and war in TLS, May 17, 1985, p. 547.
3. See Unterrichtsmappe Kriegsgeschichtliche Beispiele, Teil 1: Verteidigung (Freiburg, 1985).
4. Max Hastings, Overlord. D-Day and the Battle for Normandy (London, 1984), p. 315.
5. See Peter Paret in his review of Das Deutsche Reich und der Zweite Weltkrieg, in German Studies Review, VIII (1985), p. 314.
6. Hans-Adolf Jacobsen, "The Third Reich", in Charles Burdick, Hans-Adolf Jacobsen, Winfried Kudszus, eds., Contemporary Germany. Politics and Culture (Boulder, 1984), p. 30.
7. See Ernst Klink, "The German Military High Command in World War II", Revue Internationale d'Histoire Militaire, XLVII (1980), pp. 135, 144, 150; Reinhard Stumpf, Die Wehrmacht-Elite. Rang- und Herkunftsstruktur der deutschen Generale und Admirale 1933-1945 (Boppard, 1982), pp. 312-13 claims that Keitel became Hitler's military secretary in December 1941.
8. Klink, "German Military High Command," p. 129.
9. See Georg Thomas, Geschichte der deutschen Wehr- und Rüstungswirtschaft (1918-1943-45), Wolfgang Birkenfeld, ed., (Boppard, 1966), p. 175.

10. See R.J. Overy, Goering. The 'Iron Man' (London, 1984), p. 101.
11. See Willi A. Boelcke, "Kriegsfinanzierung im internationalen Vergleich", in Friedrich Forstmeier and Hans-Erich Volkmann, eds., Kriegswirtschaft und Rüstung 1939-1945 (Düsseldorf, 1977), p. 58.
12. See Jürgen Förster, "Rumäniens Weg in die deutsche Abhängigkeit. Zur Rolle der deutschen Militärmission 1940-41," Militär-geschichtliche Mitteilungen, 1/1979, pp. 50-54.
13. Lutz Graf Schwerin von Krosigk, "Wie wurde der Zweite Weltkrieg finanziert?" in Bilanz des Zweiten Weltkrieges (Oldenburg, 1953), p. 322.
14. Boelcke, "Kriegsfinanzierung," p. 57.
15. Overy, Goering, p. 98.
16. Hew Strachan, European Armies and the Conduct of War (London, 1983), p. 166.
17. See Thomas, Geschichte der Wehr- und Rüstungswirtschaft, pp. 145-56.
18. Cited in Karl-Heinz Ludwig, Technik und Ingenieure im Dritten Reich (Düsseldorf, 1974), p. 349. Cf. Hans-Erich Volkmann "Zum Verhältnis von Großwirtschaft und NS-Regime im Zweiten Weltkrieg," in Waclaw Dlugoborski, ed., Zweiter Weltkrieg und sozialer Wandel. Achsenmächte und besetzte Länder (Göttingen, 1981), pp. 87-95.
19. Handwritten notes by Colonel Jansen of 29 March 1940, printed in Thomas, Geschichte der Wehr- und Rüstungswirtschaft, pp. 509-11.
20. See Ludwig, Technik, p. 353.
21. Albert Speer, Inside the Third Reich (New York, 1970), p. 208.
22. Ibid., p. 196.

23. See the title of a chapter in his memoirs. See Willi A. Boelcke, ed., Deutschlands Rüstung im Zweiten Weltkrieg. Hitlers Konferenzen mit Albert Speer 1942-1945. (Frankfurt, 1969), pp. 5-21.
24. See Bernd Wegner, "'My Honour is Loyalty'. The SS as a Military Factor in Hitler's Germany," in Wilhelm Deist, ed., The German Military in the Age of Total War (Leamington Spa, 1985), p. 225.
25. See Bernhard R. Kroener, "Squaring the Circle. Blitzkrieg Strategy and Manpower Shortage 1939-1942," Ibid. p. 286.
26. See Bernd Wegner, Hitlers politische Soldaten: Die Waffen-SS 1933-1945 (Paderborn, 1982) p. 273n.
27. I am indebted to Bernhard R. Kroener for letting me use his draft manuscript and statistical data for the forthcoming Volume 5 of Das Deutsche Reich und der Zweite Weltkrieg.
28. Ibid. Until its publication see Albert Seaton, The German Army 1933-1945 (London, 1982), p. 93-97.
29. Cited in A Study of the Employment of German Manpower from 1933 to 1945. Text and appendices compiled at GMDS by a combined British, Canadian, and US staff between 1945 and 1947, chapter six, 4.
30. Cited in Generaloberst Halder, Kriegstagebuch, Hans-Adolf Jacobsen, ed., Volume 1 (Stuttgart, 1962), p. 84, entry dated September 24, 1939.
31. Ibid., p. 96.
32. Seaton, German Army, p. 95.
33. Bernhard R. Kroener, "Squaring the Circle," p. 296.
34. See Bernd Wegner, "'My Honour is Loyalty'," p. 235.
35. See Kriegstagebuch des Oberkommandos der Wehrmacht, Percy E. Schramm, ed., Volume 4 (Frankfurt, 1961), p. 1303.

36. See Deutschland im zweiten Weltkrieg, Volume 3 (East Berlin, 1979), p. 213.
37. Symptomatic for the military establishment's view to incorporating Russians into the German Army is Reinhard Gehlen's judgement of November 25, 1942: "It does not matter at all whether we shall have difficulties by one action in 1955 as long as it helps to win in 1943."
38. See Joachim Hoffmann, Die Ostlegionen 1941-1943 (Freiburg, 1976) and Die Geschichte der Wlassow-Armee (Freiburg, 1984).
39. See Kriegstagebuch des Oberkommandos der Wehrmacht, III, 1314-1315.
40. Notes of the Army General Staff, Organizational Branch, of July 20, 1944, in Bundesarchiv-Militärarchiv, Freiburg [cited BA-MA] RH 2/v. 847a and RH 2/v. 1341.
41. Tätigkeitsbericht des Chefs des Heerespersonalamtes General der Infanterie Rudolf Schmudt, Dermot Bradley and Richard Schulze-Kossens, eds., (Osnabrück, 1984), p. 115.
42. See Reinhard Stumpf, "Die Luftwaffe als drittes Heer. Die Luftwaffen-Erdkampfverbände und das Problem der Sonderheere 1933 bis 1945", in Soziale Bewegung und politische Verfassung, Ulrich Engelhardt, Volker Selin, Horst Stuke, eds. (Stuttgart, 1976), pp. 857-94.
43. von Richthofen diary, entry dated October 15, 1942.
44. William Carr, Hitler. A Study in Personality and Politics (London, 1978), p. 85.
45. Memorandum of November 1938. Cited in Handbuch zur deutschen Militärgeschichte, Volume 5 (München, 1979), p. 566.
46. Strachan, European Armies, p. 163.
47. Carr, Hitler, p. 60.

48. Cited in Ibid.
49. Address to the youngest officer class in the Reich Chancellery, in Bundesarchiv Koblenz [cited BA] NS 11/26. See Nicolaus von Below, Als Hitlers Adjutant 1937-1945 (Mainz, 1980), pp. 144-45.
50. David Schoenbaum, "The Art of the Impossible. German Military Policy between the Wars," in Ideas into Politics. Aspects of European History 1880-1950, R.J. Bullen and H. Pogge v. Strandmann, eds. (London, 1984), p. 103.
51. See Das Deutsche Reich und der Zweite Weltkrieg, Volume 2 (Stuttgart, 1979), p. 71.
52. Cited in Wilhelm Deist, The Wehrmacht and German Rearmament (London, 1980), p. 84.
53. See Williamson Murray, Luftwaffe (Baltimore, 1985), p. 29; Klaus A. Maier, "Total War and German Air Doctrine before the Second World War," in The German Military in the Age of Total War, p. 216.
54. Generalfeldmarschall Wilhelm Ritter von Leeb, Tagebuchaufzeichnungen und Lagebeurteilungen aus zwei Weltkriegen, Georg Meyer, ed. (Stuttgart, 1976), p. 188, entry dated October 9, 1939.
55. Halder, Kriegstagebuch, p. 98, entry dated October 4, 1939.
56. Robert Cecil, Hitler's Decision to Invade Russia 1941 (London, 1975), p. 63.
57. Cited in Seaton, German Army, p. 107.
58. So the title of a chapter in Matthew Cooper, The German Army. Its Political and Military Failure (London, 1978), p. 177-194.
59. Address of November 23, 1939, Cited in Seaton, German Army, 124.
60. So Hitler on December 6, 1939. Cited in Das Deutsche Reich und der Zweite Weltkrieg, Volume 2, p. 238.

61. William Carr, Poland to Pearl Harbor. The Making of the Second World War (London, 1985), p. 88.
62. Halder, Kriegstagebuch, Volume 2 (Stuttgart, 1962), p. 6, entry dated July 3, 1940.
63. See Das Deutsche Reich und der Zweite Weltkrieg, Volume 4 (Stuttgart, 1983), p. 206.
64. Ibid., pp. 207-14.
65. Halder, Kriegstagebuch, II, p. 49.
66. Kriegstagebuch des Oberkommandos der Wehrmacht, I, p. 996.
67. See Gerhard Schreiber, "The Mediterranean in Hitler's Strategy in 1940. 'Programme' and Military Planning", in The German Military in the Age of Total War, p. 269; Das Deutsche Reich und der Zweite Weltkrieg, IV, pp. 25-28, Carr, Poland, pp. 116-17.
68. Das Deutsche Reich und der Zweite Weltkrieg, Volume 4, pp. 285-86. For a more detailed investigation see Williamson Murray, "The Luftwaffe and Close Air Support 1939-41".
69. So Dennis E. Showalter in his review of Volume 4 of Das Deutsche Reich und der Zweite Weltkrieg in American Historical Review, 89 (1984), p. 1353.
70. Printed in Thomas, Geschichte der Wehr- und Rüstungswirtschaft, pp. 436-37.
71. Cited in Das Deutsche Reich und der Zweite Weltkrieg, Volume 4, p. 178.
72. See Jürgen Förster, "New Wine in Old Skins? The Wehrmacht and the War of 'Weltanschauungen', 1941," in The German Military in the Age of Total War, pp. 304-22.
73. Carr, Poland, p. 126.

74. Christopher Browning, "Wehrmacht Reprisal Policy and the Mass Murder of Jews in Serbia," Militär-geschichtliche Mitteilungen 1/1983, p. 38.
75. See Das Deutsche Reich und der Zweite Weltkrieg, Volume 4, p. 601.
76. Carr, Poland, p. 133-134.
77. Directive No. 51 of November 3, 1943, in Hitlers Weisungen für die Kriegführung 1939-45, Walther Hubatsch, ed., 2nd edition (Koblenz, 1983), pp. 233-37.
78. See Andreas Hillgruber and Jürgen Förster, "Zwei neue Aufzeichnungen über 'Führer'-Besprechungen aus dem Jahre 1942", Militär-geschichtliche Mitteilungen, 1/1972, pp. 109-21.
79. Halder, Kriegstagebuch, III, p. 306, entry dated November 3, 1941.
80. See Jürgen Förster, "Strategische Überlegungen des Wehrmachtsführungsstabes für das Jahr 1943," Militär-geschichtliche Mitteilungen, 1/1973, pp. 95-107.
81. See Ernst Klink, Das Gesetz des Handelns. Die Operation "Zitadelle" 1943 (Stuttgart, 1966).
82. See Michael Salewski, Die deutsche Seekriegsleitung 1935-1945, Volume 2 (München, 1975), pp. 309-12.
83. See Murray, Luftwaffe, pp. 176-84.
84. Barry A. Leach, German Strategy against Russia 1939-41 (London, 1973), p. 191.
85. General Hansen's memorandum of March 4, 1941. Cited in Das Deutsche Reich und der Zweite Weltkrieg, Volume 4, p. 341.
86. *Ibid.*, p. 345.
87. See Jürgen Förster, Stalingrad. Risse im Bündnis 1942-43 (Freiburg 1975), pp. 66-86.

88. See Eberhard Schwarz, Die Stabilisierung im Süden der Ostfront nach der Katastrophe von Stalingrad und dem Rückzug aus dem Kaukasus, Ph.D. Dissertation (Cologne, 1981).
89. Das Deutsche Reich und der Zweite Weltkrieg, Vol. 2, pp. 254, 282, 339-40, and Vol. 4, pp. 270, 312-13. For Air Force figures see Murray, Luftwaffe, p. 83.
90. Leach, German Strategy and Bryan I. Fugate, Operation Barbarossa. Strategy and Tactics on the Eastern Front, 1941 (Novato, 1984).
91. Murray, Luftwaffe, p. 73.
92. Carr, Poland, p. 131.
93. Ingo Lachnit and Friedhelm Klein, eds., "Der 'Operationsentwurf Ost' des Generalmajors Marcks vom 5. August 1940," Wehrforschung, 4 (1972), p. 117; Das Deutsche Reich und der Zweite Weltkrieg, Vol. 4, p. 227.
94. Statement of September 27, 1940. Cited in Das Deutsche Reich und der Zweite Weltkrieg, Vol. 4, p. 336.
95. Notes of the Chief of Staff of the 17th Army of June 4, 1941, in BA-MA, 16. Armee, 14499/5.
96. See Das Deutsche Reich und der Zweite Weltkrieg, Vol. 4, p. 237.
97. Leach, German Strategy, pp. 234-35.
98. See Klink, Gesetz des Handelns, p. 270; Manfred Kehrigh, Stalingrad. Analyse und Dokumentation einer Schlacht (Stuttgart, 1974), p. 360, and Introduction to Kriegsgeschichtliche Beispiele, part. 1, pp. 27-30.
99. Halder, Kriegstagebuch, III, 111, entry dated July 25, 1941.
100. Seaton, German Army, p. 158.
101. Notes of the Chief of Staff of Army Group North, in BA-MA RH 20-18/71.

102. Das Deutsche Reich und der Zweite Weltkrieg, Vol. 4, 185. A total of 964 MK IV tanks were produced in 1941.
103. Seaton, German Army, p. 173.
104. See Das Deutsche Reich und der Zweite Weltkrieg, Vol. 4, p. 185, 961 and Martin van Creveld, Supplying War: Logistics from Wallenstein to Patton (Cambridge, 1977), pp. 143-54.
105. Halder, Kriegstagebuch, II, 181, entry dated November 15, 1940.
106. Ibid., II, 269, entry dated February 2, 1941.
107. See Rudolf Steiger, Panzertaktik im Spiegel deutscher Kriegstagebücher 1939-1941 (Freiburg, 1973), p. 160. For German tactics in Russia in general see Eike Middeldorf, Taktik im Rußlandfeldzug. Erfahrungen und Folgerungen (Darmstadt, 1956).
108. Cited in Steiger, Panzertaktik, p. 171.
109. Halder, Kriegstagebuch, III, p. 374, entry date January 5, 1942.
110. Tätigkeitsbericht Schmudt, p. 131, entry dated March, 3, 1944.
111. For an opposing view, see Martin van Creveld, Fighting Power. German and U.S. Army Performance 1939-1945 (Westport, 1982), p. 4.
112. So Dennis B. Showalter in his review of Vol. 4, in American Historical Review, 89 (1984), p. 1354.
113. Marine-Verbindungs-Offizier zum Oberkommando des Heeres, April 4, 1942, in BA-MA case 279.
114. Letter of December 1, 1942. Cited partly in Deutschland im zweiten Weltkrieg, Vol. 3 (East Berlin), pp. 30-31. The remainder of this significant letter can be found in Kehrigh, Stalingrad, p. 205, note 39.
115. Printed in Kehrigh, Stalingrad, p. 571.
116. Seaton, German Army, p. 118.

117. Oberkommando des Heeres, GenStdH/Ausb.Abt. (Ia) Nr. 2400/40 g, 20.11.1940, Taktische Erfahrungen im Westfeldzug, in BA-MA RH 19 II/152.
118. Panzer-Regiment 3, 20.1.1940, Erfahrungen aus dem polnischen Feldzug, in BA-MA H 35/88.
119. See Armeeoberkommando 7, 10.8.1940, after-action report claiming that the compact deployment of great panzer formations had met the test and had simply been decisive, in BA-MA RH 12-5/v. 246.
120. Seaton, German Army, p. 167.
121. See Murray, "The Luftwaffe and Close Air Support."
122. See Das Deutsche Reich und der Zweite Weltkrieg, Vol. 4, p. 318 (chart).
123. See Das Deutsche Reich und der Zweite Weltkrieg, Vol. 4, p. 188.
124. Ibid., pp. 453-57.
125. Minutes of a discussion at headquarters Panzer Group 3 with Hitler's Wehrmacht aide, Colonel Schmudt, on July 13, 1941, in BA-MA RH 21-3/v. 46.
126. See Ekkehart P. Guth, "Ardennen 1944-45," Truppenpraxis 2/1985, pp. 190-97.
127. Seaton, German Army, p. 243.
128. Der Oberbefehlshaber des Heeres, 21.2.1941, Ausbildung im Frühjahr 1941, in BA-MA RH 19 III/152.
129. Der Oberbefehlshaber des Heeres, 7.10.1940, Richtlinien für den Dienst der Truppen im Winter 1940-41, annex 4, in Ibid. Two years earlier Brauchitsch had demanded in a directive on education: "The officer corps must not allow itself to be surpassed by any one in the purity and genuineness of its National Socialist Weltanschauung." Cited in Förster, "New Wine in Old Skins," 305.

130. Order of the commander of the Twelfth Infantry Division of July 8, 1940. Cited in Omer Bartov, The Barbarisation of Warfare. German Officers and Soldiers in Combat on the Eastern front, 1941-1945. Ph.D. Thesis, St. Antony's College (Oxford, 1983), p. 151.
131. See Messerschmidt, Wehrmacht im NS-Staat, pp. 253-54.
132. Führer order of September 8, 1942 on the "fundamental tasks of defense". Printed in Kriegstagebuch des Oberkommandos der Wehrmacht, II, p. 1297.
133. Hitler's "operational order no. 1" of October 14, 1942, in *Ibid.*, p. 1301.
134. Tätigkeitsbericht Schmundt, p. 85, entry dated August 2, 1943.
135. Personal-Amt des Heeres, ed., Wofür kämpfen wir?, January 1944.
136. *Ibid.*, pp. 80-81.
137. Van Creveld, Fighting Power, p. 163.
138. See Bernhard R. Kroener, "Auf dem Weg in eine 'nationalsozialistische Volksarmee'. Modernisierungstendenzen im deutschen Heeresoffizierkorps der zweiten Kriegshälfte (1942-1945)," in Klaus-Dietmar Henke and Hans Woller, eds., Von Stalingrad zur Währungsreform. Sozialgeschichte des Umbruchs in Deutschland (Munich 1987).
Währungsreform (Munich, 1986).
139. Bartov, Barbarisation of Warfare, p. 171.
140. German official manual Truppenführung of 1936, Cited in van Creveld, Fighting Power, pp. 28-29.
141. *Ibid.*, p. 127.
142. Tätigkeitsbericht Schmundt, pp. 83, 98. There had only been 180,765 officers in the fall of 1942, in BA-MA H6/259.1, entry dated November 27.

143. Marinekommandoamt, April 4, 1941, in BA-MA RH 7/1206.
144. See Rudolf Absolon, "Das Offizierkorps des deutschen Heeres 1935-1945" in Hans Hubert Hofmann, ed., Das Deutsche Offizierkorps 1860-1960 (Boppard, 1980), pp. 247-68. For the Luftwaffe and the naval officer corps see the relevant essays of Horst Boog and Michael Salewski in *ibid.*
145. See Stumpf, Wehrmacht-Elite, p. 341.
146. Printed in Militärgeschichtliches Forschungsamt, ed., Offiziere im Bild von Dokumenten aus drei Jahrhunderten, (Stuttgart 1964), p. 171.
147. Tätigkeitsbericht Schmudt, p. 280, entry dated October 9, 1944. Officer losses totalled 94,343 at the end of August 1944.
148. Notes of the Chiefs of Staff of Army Group North and of 18th Army of June 4, 1941, in BA-MA RH 20-18/71.
149. Tätigkeitsbericht Schmudt, p. 23, entry dated November 21, 1942.
150. Williamson Murray, "The German Response to Victory in Poland. A Case Study in Professionalism," Armed Forces and Society, 7 (1981), p. 287.
151. 6. Panzer-Division, 18.7.1940, in BA-MA RH 19 III/157.
152. Der Oberbefehlshaber des Heeres, 7.10.1940, annex 2, in BA-MA RH 19 II/152.
153. See the reports of Army Group C and Panzer Group 1 of November 28, 1940 and December 7, 1940 respectively, in BA-MA RH 19 III/157.
154. Murray, "German Response", p. 289.
155. See Das Deutsche Reich und der Zweite Weltkrieg, Vol. 4, pp. 589-92.
156. Taktische Bemerkungen Nr. 2/44 - Nr. 6/44, in BA-MA RH 11 III/76. Also interesting are the instructional notes for Schlachtflieger

to support army formations on the battlefield at night, Ibid. (May 5, 1944).

157. Tätigkeitsbericht Schmudt, 47, entry dated February 28, 1943. Seaton, German Army, pp. 201-03.
158. Tätigkeitsbericht Schmudt, p. 40, (25.1.1943) and p. 298 (20.10.1944).
159. See Halder's directive of January 6, 1942. Cited in Das Deutsche Reich und der Zweite Weltkrieg, Vol. 4, pp. 618-19.
160. Führer order of September 8, 1942, Printed in Kriegstagebuch des Oberkommandos der Wehrmacht, II, p. 1297.
161. Directive of January 21, 1945. Printed in H.R. Trevor-Roper, ed., Blitzkrieg to Defeat. Hitler's War Directives 1939-1945 (New York, 1965), p. 203.
162. Führer order printed in Kriegstagebuch des Oberkommandos der Wehrmacht, II, p. 1293.
163. Führer order of March 8, 1944. Printed in Blitzkrieg to Defeat, p. 160.
164. Entwurf zur HDv 130/20 (Führung des Grenadierregiments) March 1945. Cited in Kriegsgeschichtliche Beispiele, part 1, introduction, p. 30.
165. Lecture prepared in the Army High Command, General of Army Anti-Aircraft troops with the telling title: "Wie können wir mit der feindlichen Tieffliegerpest fertig werden?," in BA-MA RH 11 III/50.
166. Der Generalinspekteur der Panzertruppen, 29.8.1944, Richtlinien für die Führung und Kampf der Panzer-Brigade, in BA-MA RH 11 III/76.

167. See the whole file RH 11 I/63 in BA-MA. The draft manual, signed by SS-General Jüttner, in *ibid.*, RH 11 I/69.
168. Remarks to a paper on the "Development of German Cavalry Before and During World War II," February-March 1945, in BA-MA RH 11 I/62.
169. See Burkhardt Müller-Hillebrand, Das Heer 1933-1945, Volume 3 (Frankfurt 1969) pp. 136, 138.
170. See the various divisional strength charts in RH 11 III/33.
171. See Edward Fursdon, The European Defence Community, A History (London 1980), pp. 111, 123-24; Wilhelm Meier-Dörnberg, "Politische und militärische Faktoren bei der Planung des deutschen Verteidigungsbeitrages im Rahmen der EVG", Hans Erich Volkmann and Walter Schwengler, eds., Die Europäische Verteidigungsgemeinschaft (Boppard 1985), pp. 271-90.
172. See Kurt Assmann, Deutsche Schicksalsjahre. Historische Bilder aus dem zweiten Weltkrieg und seiner Vorgeschichte (Wiesbaden, 1950), pp. 534-35.
173. Cooper, German Army, p. 558.
174. Hastings, Overlord, p. 319.
175. See Günther Blumentritt, Warum hat der deutsche Soldat in aussichtsloser Lage bis zum Schluß des Krieges 1939-45 gekämpft? (Allendorf, 1947), Historical Study B-338.
176. Van Creveld, Fighting Power, p. 163.
177. Dennis Showalter in his review of Das Deutsche Reich und der Zweite Weltkrieg, Volume II, in Air University Review, XXXIV (1982/83), No. 3, p. 103.
178. Klink, "German Military High Command" p. 129.
179. So Hitler in his address of January 18, 1939, in BA NS 12/28.

180. See Peter Paret in his review of Das Deutsche Reich und der Zweite Weltkrieg, Volumes 1-4, in German Studies Review, VIII (1985), p. 314.
181. For a supporting view on this issue see Michael Geyer, "German Strategy, 1914-1945," in Peter Paret, ed., (Makers of Modern Strategy from Machiavelli to the Nuclear Age (Princeton, 1986) pp. 573-74.
182. Jacobsen, "The Third Reich," p. 55.

BITTER VICTORY

FRENCH MILITARY EFFECTIVENESS DURING THE SECOND WORLD WAR

Ronald Chalmers Hood III

Introduction

The French military experience in World War II was unique even in an era of exceptional events. A defeated France, divided in half, was further overrun by two opposing armies and eventually returned to battle alongside her original allies. France's ignominious defeat in June, 1940 was totally unexpected by her allies and was enormously difficult for the French people to accept. Even today, political and private behavior are strongly influenced by the events of 1940-1945, which Frenchmen have never accepted the way other European peoples have. Divided into two hostile camps, Gaullist and Vichyite, they have found it easier to avoid discussion of the Second World War than it was for others who have spoken openly to their children about the dark side of their Nazi heritage. In the American experience, only the Civil War caused equivalent physical damage and left behind a trail of emotional wounds which took generations to heal.

It was only in 1969 with the premiere of a documentary film about the German occupation, Le Chagrin et la Pitié, that the French public began to discuss the war more openly. At the same time, a number of books on this period appeared, many written by non-French historians, which helped pave the way to a more open discussion of this difficult period. Today, there are many gaps in the study about the French participation in this war and much of the best already on the shelf is still published by scholars from other lands.¹

Le Chagrin

At dawn on May 10, 1940, the German Army of over 100 divisions launched an attack along a front extending from the Netherlands to the Swiss border. Following extensive pre-assault bombardments, the Wehrmacht poured across the frontier, bringing the Dutch to their knees in only four days. Simultaneously, the main body of troops crossed the frontier into Belgium, led by a thin spearhead of seven panzer divisions. The plan, devised by General Erich von Manstein, was to overcome Franco-British resistance by breaking the front in half on a narrow front. The tanks deployed through the thick Ardennes forest, emerging two days later to the surprise of the light French cavalry forces screening this "impenetrable" sector of the front. Within one week, the German Army had surrounded the remainder of the Belgian Army, nine divisions of the British Expeditionary Force and the First French Army, containing nearly half the Allies' armored forces. The three

French armored divisions held in reserve were never deployed or were deployed in piecemeal fashion against the panzers. Only desperate last minute efforts saved the 300,000 men of the Anglo-French force stranded on the beaches of Dunkirk.

The disaster in Belgium gave the French command time to redeploy the remaining forces in a final stand along the Somme near the border. On June 5, the combined German armies renewed their assault along the entire line which they broke with ease near the Channel coast. Four days later, the advance had crossed the Seine and was pressing against the rear of the Maginot Line. On June 17, the government of Paul Reynaud resigned. The first official act of his successor, Marshal Henri-Philippe Pétain was to seek an Armistice which was negotiated and signed on June 25 at Compiègne, site of the negotiations which ended hostilities in 1918.

For at least three generations, German officers had studied the techniques of overpowering their great western rival. General von Schlieffen gave his name to a well publicized plan which had failed on the Marne in 1914. The latest approach, combining audacity with a full integration of air, artillery, and mechanized power, caught the French entirely by surprise. They had spent the inter-war years anticipating a replay of 1914. What Germans had dreamed about since 1870 was accomplished in six weeks. Down the Champs Elysée from the Arc de Triomphe to the Place de la Concorde, the Wehrmacht paraded in June, 1940 before German generals on horseback and weeping Frenchmen in the streets. This ceremony would be repeated every morning for the next 1,200 days.²

La Pitie

Though the world stood in shock at the demise of one of the greatest armies in the West, careful observers might have seen the seeds of defeat as early as the mid-1930s. Already, political and military concerns about the poor birthrate had led to the construction of a great cement trench, extending from the Swiss border to an undesignated final point somewhere along the Belgian frontier. Across this finest of defense works, thought Frenchmen of all persuasions, the Germans would never pass. But this Maginot Line was never finished, leaving an exposed border from Luxembourg to the Channel. To overcome this, motorized or mechanized forces could have been formed to cover large areas of the front more efficiently than the foot soldier. But when asked to double the small number of armored units in the French Army, General Maxime Weygand told his staff, "two armies, no, not at any price." For him and many of his generation there was no real place for this new kind of highly mobile warfare. He and many like him who had served with distinction as battalion commanders in the First World War, had risen to the top with the lessons of that great conflict still in mind. France stopped the boche with the rifleman and gunner and she would do so again. Old men with ideas that worked once before had comparatively little faith in a regime of revolving-door cabinets and unstable political majorities.

As late as the winter of 1939, during the so-called phony war, the French Chief of Staff was painting a dismal portrait for the public to see and hear. In response to an American journalist, General Maurice Gamelin explained that France's strategy for victory could not include

major loss of life. In his opinion, 100,000 French dead would mean a pyrrhic victory for his country. For Gamelin, there had to be another way.³ Ironically, the actual losses in 1940 came close to that figure. But across the border, there was the clear understanding that von Schlieffen's plan was inadequate. The small German Army experimented with new tactics and equipment, producing by 1939 the offensive doctrine which terrified most of Europe for six years. Marc Bloch, a French reserve officer who fought in both world wars, summed up the difference between the two armies just after the Armistice:

Our leaders, or those who acted for them, were incapable of thinking in terms of a new war. In other words, the German triumph was, essentially, a triumph of intellect -- and it is that which makes it so particularly serious.⁴

In the summer of 1940, an acceptable armistice to the French military leaders would have to preserve a semblance of armed might. It appears that Admiral Darlan insisted that his fleet and the colonies remain in French hands. As for the great French Army of over 80 divisions in 1940, it fell to a skeleton organization of 8 foot infantry divisions of 90,000 men. This Armistice Army had no artillery piece over 75mm, no infantry vehicle other than five staff cars per regiment. The cavalry gave up all its tanks for horses and the artillery returned to mules. In addition, there was a second force of 100,000 men known as the Armée d'Afrique, equipped somewhat better and stationed in Morocco, Algeria and Tunisia. The Air Force was also reduced to about 200 outmoded aircraft and 10,000 men while the Navy, fourth largest in the

world, remained untouched and virtually in mothballs, a pre-condition set by France for the Armistice.⁵

As for the Gaullist forces, they were nonexistent on June 18, 1940 when De Gaulle gave his famous speech over BBC radio, calling on all Frenchmen to continue the fight. In the early days, he was able to rally one demi-brigade of the Foreign Legion, a smattering of colonial troops, a few thousand sailors with four destroyers and eight submarines and a few dozen aircraft and their pilots scattered around the world. It was not a force to carry on a global campaign. Over the next two years, the Gaullists managed to enlarge their numbers to some 70,000 including military and civilian followers worldwide. By the summer of 1942, they were able to sustain two small mechanized divisions in the field, each the size of an independent American brigade. Until they rallied the bulk of the French armed forces in November, 1942, the Gaullists had no hope of mounting a serious military campaign. One important part of the Gaullist story is how difficult it was to attract officers from the mainstream of command. Without them, there would be no large Free French units. Early on, De Gaulle attracted men on the fringe, attachés, those close to retirement, and those who had clashed with one or more of the leaders at Vichy. In one case, he turned a Navy chaplain into a line admiral. Another officer literally jumped ship, swimming to safety in Alexandria harbor. Though they came from all social backgrounds, the early military supporters of De Gaulle were often independent-minded men who had less interest in hierarchy and conventional obedience to authority than the average French officer.⁶

From the Armistice in 1940 until V-J Day, the French war effort relied on Britain and the United States for financial and logistical support to remain in the fight. This placed French operating forces in a

peculiar position of being in the war but always under the operational control of another nation. Therefore, in measuring political, strategic, operational and even tactical effectiveness, we must recall that Frenchmen did not always have the final say. At the political level, De Gaulle retained final authority on whether to commit French forces but had only advisory authority on their employment. Beneath him, the major strategic decisions on the employment of his forces were largely in the hands of Eisenhower and other theatre commanders. At the operational level, the French Army, first under Marshal Alphonse Juin and later under Marshal Jean de Lattre de Tassigny, stood on its own, but the Navy and Air Force had even less autonomy, working as integral parts of some other operational command. As for the French naval and air forces, they exercised only tactical authority while serving as elements of larger Allied formations. As for the Armistice armed forces, they were bound by straightjacket controls imposed by the German authorities, permitting no tactical movement and only self-defense.

The political and strategic objectives of the Gaullists and the Vichy government were substantially different. In their own very different ways, each side hoped for the eventual restoration of French sovereignty and power through military or diplomatic means.

Gaullist Political Objectives

- * Liberation of France and the French Empire as quickly as possible
- * Restoration of France to the status of a major power

- * Allied recognition of the Comité Française de la Libération Nationale as the provisional government of France
- * Absolute rejection of Allied military government in post-liberation France
- * Reunification of the French nation behind new government
- * Restructuring of the French government to provide greater civilian control over the military

Gaullist Strategic Objectives

- * Restoration of French military power as quickly as possible
- * Unification of all fighting elements under the French armed forces
- * French military effort directed toward liberation of the patrie with participation elsewhere on major fronts
- * Restoration of French authority through arms if necessary in the French Empire following victory in Europe

Vichy Political Objectives

- * Hold on to as much residual power as possible
- * Attempt to expand political leverage through diplomatic bargaining with Germany

- * Anticipating a German victory, seek as large a role as possible in the new order which will dominate Europe
- * Form a non-parliamentary, corporate government based on Patrie, Family and Work in lieu of a republican system founded on Liberty, Equality and Fraternity

Vichy Strategic Objectives

- * Hold on to as much territory as possible in Europe and overseas with static defenses as dictated by the Compiègne Armistice
- * Consider assistance by German forces in defending territory on a case by case basis

To better understand the ebb and flow of French fortunes during the war, the chronology provided below gives the highlights from the Armistice of June 1940 through V-J Day:

1940

- | | |
|---------|---|
| 18 June | De Gaulle's radio speech from London asking all Frenchmen to continue the war |
| 22 June | Armistice signed with Germany at Compiègne |

- 3 July British fleet under Admiral Cunningham attacks French squadron in Mers-el-Kébir, Algeria after French commander refused terms of an ultimatum to take his ships to the UK, the US or the Caribbean
- 7 August Churchill and De Gaulle sign an accord establishing basis for Free French movement
- 23 September Anglo-Free French raid on Dakar fails to rally French West Africa to the Gaullist cause
- August - November French Equatorial Africa becomes Free French

1941

- 8 June Anglo-Free French attack on Syria following arrival of German Luftwaffe units in Damascus. Vichy considers but finally decides against request for German air support. Syria becomes Free French but most of the defending troops return to France rather than join the Gaullist forces

1942

10 June Successful week-long defense of Bir-Hacheim against Afrika Korps by French force under General Koenig, granting British 8th Army a chance to build up defensive line further East

8 November Operation TORCH, Anglo-American landings in North Africa

11 November France completely occupied by German Army

27 November French Fleet scuttled in Toulon harbor as Germans try to seize it

1943

26-27 January Casablanca Conference. Agreement reached with De Gaulle and Giraud to rearm French armed forces

13 May Tunis captured. End of North African campaign

30 May De Gaulle moves from London to Algiers

31 July De Gaulle and Giraud reach a tentative accord between their two movements

October Gaullist and Giraudist forces unified into a single fighting force

4 October French capture of Corsica

9 November Gaullist-Giraudist cause renamed Comité Française de la Libération Nationale and declared a provisional government. Not recognized as such either by Britain or the United States

December French Expeditionary Corps under Juin arrives in Italy. Strength eventually reaches five division equivalents

1944

April Giraud voluntarily retires after loosing political battle with De Gaulle

11-15 May French Expeditionary Corps in Italy breaks through the Gustav Line west of Cassino. Link-up with Anzio beachhead follows

4 June Rome falls to the Allies

6 June Normandy landings, D-Day. Only small French military participation

16-19 June French take Elba in amphibious assault

June - July French Expeditionary Corps advances north in Italy to outskirts of Florence then withdraws to prepare for campaign in France

16 August Operation ANVIL, Franco-American landings near Saint-Tropez

26 August Paris liberated by French Second Armored Division

August - September Liberation of Provence and Rhone Valley by French First Army and American Seventh Army

12 September Link-up between Overlord and Anvil Forces. Sixth Army Group, including First French Army, under operational control of SHARP.

19 September De Gaulle declares underground, or French Forces of the Interior (FFI) an integral part of the Army. Month of October spent integrating FFI units into First French Army

23 October The United States recognizes De Gaulle's Comité Française de la Libération Nationale as the provisional government of France

13 November France invited to participate as one of the big four on the European Advisory Commission. Symbolic return to status as a full allied power

28 November Belfort and Mulhouse recaptured

1945

3 January Franco-American crisis over the defense of the city of Strasbourg. With Churchill's help, De Gaulle prevails and city is not evacuated during the Battle of the Bulge

2 February Colmar pocket eliminated, ending German presence on French territory

3-11 February Yalta Conference. France receives an Occupation Zone in Germany and Austria, joins the Allied Control Commission and requested to serve as one the convening powers at the conference on the United Nations Organization

March First French Army's campaign in the Palatinate

31 March First French Army crosses the Rhine

20 April Franco-American crisis concerning the presence of French units in Stuttgart. United States threatens to end Lend-Lease

4 May General Leclerc's Second Armored Division captures Berchtesgaden

8 May In Berlin General de Lattre de Tassigny signs the German surrender document

9 June End of French Lend Lease following impasse over French occupation of three Italian border communes against US and British wishes

September 2 General Leclerc represents France in Tokyo Bay. France prepares to send troops to Indo-China to reclaim these colonies. French government struggles with a plan for maintaining imperial defense in spite of ruined economy

I. Political Effectiveness

The French military's greatest worry, that of adequate funding by the Parliament, ended with the Armistice at Compiègne. From that date until the end of the Second World War, the armed forces in both camps had comparatively few financial worries. Without a normal political regime either in London or at Vichy, the defense establishments did not have to defend a budget before their own people. In London, it was not even clear if there would be a serious French resistance in the early weeks following the Armistice. Toward the end of the summer of 1940, Winston Churchill conducted a number of meetings with De Gaulle's followers and reached an agreement on August 7th outlining the support Britain would provide. Clearly, the Free French cause had no chance of survival without some form of outside financial support even though Paul Reynaud saw to it that De Gaulle took a large sum of money with him on his last flight from Bordeaux. The British decision was in keeping with the tradition of recruiting allies to share the military burden in her European wars.

Financially, Churchill treated the Gaullist cause as though it were another government in exile. The personnel were paid on a par with their British counterparts and each department had its own budget. The machinery took a few months to smooth out but in the end, requests went from the French to the British treasury, which in turn provided an account upon which they could draw for their entire operation. Had it not been for this financial accord, the chances of an organized French

resistance would not have existed. Britain also provided war equipment including ships and aircraft for the small Gaullist forces.⁷

For Churchill, this was a bold leap into the dark. He had no way of knowing how much the Gaullist cause would grow, if at all. Strapped for money as she was, Britain alone could not have afforded to sustain the 300,000 men the French defense establishment had on hand in 1945. Churchill appears to have been emotionally moved by the French collapse in 1940 and went out of his way to keep some symbolic French element in the fight. Churchill and De Gaulle clashed frequently but somehow managed to keep their egos under control. The bond was enough so that later in the war, De Gaulle turned to Churchill to back him up in confrontations with the United States. If De Gaulle found Churchill occasionally too sensitive in difficult negotiations, he saw in Anthony Eden the close and enduring friend of the French cause who somehow managed to conduct difficult negotiations without rancor or malice.⁸

American entry into the war and the extension of Lend-Lease to the Gaullists removed an enormous financial burden from the United Kingdom. Except for a few aviation squadrons and naval units which remained under British supervision, Churchill ended his economic support of the Gaullists during the summer of 1943. The agreement signed at the Casablanca Conference between the United States, De Gaulle and Giraud paved the way for eleven refurbished Army divisions, major repairs to the fleet, and over 500 aircraft during the war.⁹

Vichy also had a foreign power dictate the size and shape of the French armed forces. The reduction from wartime strength meant a vast financial saving; only 200,000 in the two Armies, another 10,000 in the Air Force and a Navy reduced well below its wartime strength of 70,000. Moreover, the stripping of all mechanized weapons from the Army with no

immediate hope of replacement and an end of all shipbuilding ended outlays for new equipment. The costs now included little more than the military salaries, which were among the lowest in Europe, and the maintenance of the fleet. The Vichy government could plead its case for an expanded arms program through the standing Armistice commission headed on the French side by General Charles Huntzinger. He used the forum to push for expanded arms production in exchange for German access to the French defense industries. Other Vichy officials tried the same tactic, offering access to French industries or raw materials in exchange for a larger defense force at home. Hard cash came from the Germans in the sale of some 13,000 trucks at very high prices though it is unclear if this money was credited in any way to the armed forces. In the end, the Germans played a very tough game, permitting very slow growth only of the Armée d'Afrique when it became clear the Allies were interested in North Africa.¹⁰

In the end, this lack of fiscal responsibility during the war created a problem of unreasonable expectations in 1945 when Lend-Lease came to an end. It took the French Ministry of Defense more than twelve months after V-E Day to come to grips with the fiscal realities of an exhausted and economically ruined nation which could not afford traditionally large defense forces. From eleven divisions and 770,000 men on V-E Day, the French Army dropped to half that size in 1946. It was only through American financial support that France sustained her eight year campaign in Indochina. With hindsight, we can see the financial drain from two colonial wars delayed the return of French prosperity for two decades.¹¹

At the mercy of foreign powers, neither the Gaullists nor the followers of Marshal Petain had access to the means of production of war

material. Eight divisions of the French Army received the latest equipment from the United States as did twenty-four squadrons of the French Air Force. What was left of the French Navy after the Toulon scuttling received the special equipment needed to bring the ships to par with Anglo-American fleets, notably sonar and radar. Some French munitions, notably torpedoes and some naval projectiles, were unique and required new sources of supply. A more serious problem arose in the disagreement over the future composition of the French Army. The French wished to concentrate only on combat units, leaving logistical duties to the United States while the Americans insisted on a balance of combat and support units, matching their own structure. Wartime destruction was so complete that French defense industries were not truly productive until the mid-1950s.¹²

At Vichy, the problem was not too different. Those industries which had not been destroyed were utilized by Germany to sustain her own war production. Even the shipyards were turned over to German use. In one rare case, a French aircraft company had permission to build fighter aircraft for use in North Africa, a project which never reached fruition. Instead of building new arms, French officers spent their time trying to hide war stocks authorized by the Germans. This effort had limited success in infantry weapons and munitions but was deficient in most other areas. The war reserves in North Africa were sufficient for ninety days and were used in the Tunisian campaign. Those in France were estimated at twice that size and went unused except by some of the resistance groups.¹³

For the Gaullists, manpower was a chronic problem with a single solution -- the liberation of France. The efforts of De Gaulle and his early followers in 1940 produced disappointing results in Britain and the

empire. They managed to rally most of French Equatorial Africa and a few islands in the Indian Ocean and the Pacific. None of these had the manpower resources which existed in French North and West Africa. Consequently, until the reunification of the Armée d'Afrique with the Gaullists after Operation TORCH, Free French military operations were more symbolic than decisive. Even with the African troops, there were serious shortages of trained technicians and no way to provide for combat losses until the liberation of Europe.

The Vichy government faced exactly the opposite problem. Politics, not resources, limited the size and composition of the armed forces. Of the 11,000 military officers serving Vichy France, 1,500 escaped to North Africa to continue the war, 1,000 retired, 4,000 went underground into the many resistance organizations, and 4,500 so-called napthalinards packed their uniforms in moth balls to await the war's outcome.¹⁴

II. Strategic Effectiveness

Gaullist strategic objectives were clearly spelled out from the start: continuation in the war and liberation of the patrie and empire with reunified and reequipped French armed forces. Though De Gaulle's political goals were closely tied to these objectives, military victory could not guarantee them all. Certainly, the goal of a France free of occupying armies came with the end of the war. As for the Empire, Gaullists failed to gain needed American support for the reconquest of lost colonial possessions. Though American policy had been announced before, French officials were surprised in 1945 when the United States refused to rearm additional troops for duty in Indo-China. The urgency of the European campaign and the assistance which the United States provided in North Africa permitted the French leadership to forget Roosevelt's strong anti-colonial bias.

The Empire aside, national unity received a boost from the reunification of the armed forces and maquis during the war. De Gaulle's Comité Française de la Libération Nationale knew it was a minority of a minority and could only hope to win if it gained the allegiance of other groups and causes. The armed forces returned to the fight after Operation TORCH while the various resistance groups became available after the landings in Normandy and Southern France in 1944. Political differences between De Gaulle and Giraud delayed the integration of the Free French and Regular Army units until late 1943. De Gaulle's hope that this spirit of unity would carry over into the post-war years,

however, was simply unrealistic. A virtual civil war raged in France for many months after the liberation.

Three very important political goals were all achieved by V-E Day: recognition of Gaullists as the provisional French government, keeping allied military government out of liberated France, and restoration to big power status. Though only indirectly tied to battlefield success, they would have remained mere dreams had France declined to reenter the war in 1942. The most far reaching political goal of restructuring the French government after the war had a very tenuous link with strategic success. Like many others in the cabinet of Paul Reynaud during June, 1940, De Gaulle was sickened by the absence of civilian authority over the military, especially in the moments of great national danger. Even the President of France, Albert Lebrun, found he had no ability to sway the military leadership once it was determined to sue for peace. What was needed was a system which assured civilian control at the highest levels of government. To achieve this, his ultimate goal, he used whatever clout he had as head of the provisional government in late 1945 but was unable to lead the country to a national referendum on its political structure. For this, he was to wait twelve years until another military victory brought him back to power.¹⁵

Vichy thinking was flawed from the start, based on a false assumption that Germany would treat France better after the war than other occupied countries if she collaborated with the Third Reich. Obviously, Marshal Pétain and his followers could not know Germany's plans for the post-war Europe but documentary evidence indicates restoration of France to its pre-war status was very unlikely. The Vichy government also justified itself on the grounds that it alone guaranteed a better life for Frenchmen during the war than was the case in the other

occupied countries. Again, this simply was not true. Trying to maintain French sovereignty over its remaining territory through a policy of a static defense also proved a failure. Opposing armies on both sides moved into French territory as they pleased.¹⁶

When a country is overrun and its remaining forces left to survive with no hope for reinforcements, then desperate measures become a necessity. The Gaullists shared this plight with a number of exile governments in London. For many of them, no risk was too great for they had nothing to lose. De Gaulle needed to gain the ear of his chief Allies as the spokesman of the French people. America refused and Churchill wavered. This left De Gaulle with comparatively little leverage. He controlled the French armed forces but had no say on their use in combat for they always served under a British or American theatre commander. This meant that foreign powers controlled the attainment of French strategic goals, pressing his cause to the limit while offering to compromise. He gambled that the need to preserve Allied unity and the tactical impact of pulling his eight divisions out of the line would be too costly for them to say no to French demands.¹⁷ In the end, he generally got his way on the employment of French forces and the securing of his strategic objectives. On the ground, in the air and at sea, his troops were used well. Much credit for this is due to the good relations which French field commanders maintained with their Allied superiors. Marshal Juin's recommendations on the use of his forces were not appreciated by Marshal Alexander but were quickly understood by General Mark Clark. He credits Juin with the plan which broke the Gustav Line in May 1944. Marshal de Lattre de Tassigny had a lesser rapport with his superiors, Generals Alexander Patch and Jacob Devers, but managed to achieve the strategic objectives assigned by the French government.

Fighting on native soil, De Lattre de Tassigny was under greater political pressure than Juin had been in Italy. Three times his strategic objectives clashed with those of the United States and three times De Lattre de Tassigny got the matter out of his hands and up to the political level while continuing to operate his army in the field.¹⁸

Marshal Pétain's two Prime Ministers, Pierre Laval and Admiral Darlan, tried to enhance Vichy's political position by accommodating German demands. They drew the line whenever the Reich attempted to drag the French back into the war against their former allies or to use French overseas territory to stage German operations. Darlan knew that he had two strategic cards to play, the fleet and the Armée d'Afrique. He prepared inadequately to prevent the destruction of the first and the loss of the second for which he shares the blame with Marshal Pétain and a number of French naval officers.

Headed by military men with a significant number of their inner circles also in uniform, neither the Gaullists or the Pétainists had any trouble obtaining military advice or in communicating with the armed forces. While the line between civil and military authority was blurred at Vichy, De Gaulle made it very clear from the start that his field commanders had no business meddling in politics. He separated himself from them by creating the new position of Chief of Staff of National Defense, comparable to the American Chairman of the Joint Chiefs of Staff, who assured a proper link between military and political problems. This was a tough job but it appears that Marshal Juin who held it from mid-1944 had the sort of intelligence and steadiness required for it. His time was absorbed assuring smooth working relationships among French civil and military authorities and in managing crises with the Allies when they arose. In the three politico-military conflicts

involving the pull-back from Strasbourg, from Stuttgart, and later from some Italian villages, Juin had to negotiate with Generals Eisenhower and Devers, Field Marshal Alexander, and indirectly with Churchill.¹⁹ Existing somewhere between sovereign nation and mercenary army, the Gaullist leadership could not hope to achieve its strategic goals without support of foreign political and military leaders. It would appear that they always preferred to deal with Britain on the political level but with the Americans on the military level. While Churchill and Eden understood France's plight, De Gaulle believed the Americans either could not or were too busy to find out. Conversely, French admirals and generals always seemed to work much better with American than British military officers.

Vichy leaders found it very difficult to disagree with Marshal Pétain or to present ideas which ran counter to his. The result was a government exercising little imagination or flexibility. The pressures on the old man simply made him withdraw from the daily political battle, leaving a power vacuum which no one could fill. He heard only what he wanted to hear.²⁰

The Gaullists and the Armée d'Afrique in late 1942 overestimated the size of the armed force they could place in the field. Looking at a potential of 300,000 men in North and West Africa, they misjudged what that meant in terms of deliverable manpower. American officers assigned to reequip the French armed forces slowly brought General Giraud around to understand the realities of industrial warfare. French officials took a long time to absorb what the Americans told them but most were converted by the end of 1944 when Allied armies stood poised to cross the Rhine. Juin had an extremely fine grasp of his situation in Italy and made realistic estimates of what his forces could achieve from the start. De

Lattre de Tassigny recognized his overall weakness during the campaign in Alsace and did not hesitate to ask for additional American forces in the battles for Belfort and Colmar. With the only two armored divisions in the entire Seventh Army, he knew this gave him leverage with General Patch in the Rhone Valley campaign.²¹ The greatest failure of French strategic planning was in making the transition from war to peace in 1945-1946, greatly overestimating what the country could afford on national defense.

The Vichy regime could have done far more with its unused Navy and three armies. Many believe those seeking an armistice in 1940 did not consider the enormous potential of a modern fleet, of over 100,000 troops in the colonies and of the chance to transport at least part of the Armée Metropolitaine from Europe to North Africa. Arguments favoring the armistice are terribly emotional but all focus on the inseparability of the Army from the patrie and of the lack of enough shipping to perform the withdrawal across the Mediterranean. Collectively, Marshal Pétain, Admiral Darlan and General Weygand could not foresee a continuation of the war from the empire. Their influence prevailed over the cabinet which voted for an armistice in June, 1940.²²

Even after the collapse, Vichy retained the fleet and the Armée d'Afrique, which Germany coveted but could not reach. The naval disaster at Mers-el-Kébir on July 3, 1940 could have been avoided if the commander, Admiral Gensoul, had taken his squadron to Martinique as the British commander requested rather than fight a one-sided battle, which produced lasting bitterness in both countries.²³ Finally, a realistic contingency plan for the dispersal of the warships at Toulon would have precluded the German attempt to seize them and the French response to scuttle the finest half of their fleet.

Neither group of Frenchmen retained a military-industrial base during the Second World War. Britain controlled the Free French efforts from 1940 through 1942. After that, Gaullist forces received most of their logistical support from the United States which sometimes subtly, other times bluntly told the French how far they could go. Throughout the war, French commanders were acutely conscious of their manpower limitations but generally less sensitive to their other support requirements. It took France most of the war to develop a true appreciation for a balance of logistical and operational concerns within their forces. An American general compared the way United States and French army units looked at service support. "Americans howl for what they want. The French anticipate that Higher Command will send what they should have," reflecting the differences in behavior between a decentralized and a highly centralized system of command.²⁴ French officers serving in that war look back on the experience and still don't understand how the United States turned farmers into naval officers, businessmen into logisticians and lawyers into fighter pilots. Fortunately, the general good will exhibited between French and American officers at the operational level gave the system time to work and produce results. Captain (later General) André Beaufre, aide to General Giraud, provides an insight into French awakening to the new techniques on a whirlwind tour of the United States in 1943. A quick visit to the Pentagon proved to him that the American method was neither madness nor fantasy.

The Pentagon suprised us by its size; 40,000 people, parking for 30,000 cars, access roads with overpasses, little boutiques and restaurants inside. One saw there a characteristic application of modern civilization. I

was struck by the serious method of work and of the competence of the ones we spoke to and with their narrow fields of specialization, even at the highest levels. Officers like the European "generalist" were very rare there but the collective power of the machinery was impressive.²⁵

At Vichy, the leaders had very few choices available to them. What they retained in the way of industry supported the German war effort. The merchant marine had a very difficult time importing the minimum food needs for a population which suffered generally from malnutrition during the war. Raw materials, when available, were used as ploys in the mistaken belief that Germany would relax the Armistice restrictions and eventually readmit her to the post-war circle of great European powers.

De Gaulle mastered the technique of getting the allies to meet his strategic goals. From his perspective of great weakness, he felt that he had to redirect the American war machine or shame the British out of their ivory tower when French interests were at stake. He appreciated the Anglo-American penchant for elaborate planning but watched their work to make sure it produced no nasty surprises at the eleventh hour. He knew he had to place his foot down and simply refuse to budge when his interests were ignored. He had great difficulty showing the psychological problems which the evacuation of Strasbourg would create for the French people, and of the reprisals which the Germans might take against the city.²⁶ On June 10, 1944, the 2nd S.S. Panzer Division burned the village of Oradour-sur-Glane to the ground and executed 600 inhabitants. But even with this in mind, the Anglo-American leaders failed to understand the interests which France perceived in holding Stuttgart and

in occupying a few Italian villages after the surrender. De Gaulle did not handle these two politico-military crises as well as the Strasbourg emergency, leaving his field commanders to bear much of the political heat. In the Italian situation it appears he was backing up a French general on a fait accompli. In short, when nothing else worked, De Gaulle learned "that in a situation of acute weakness, intransigence is inescapable."²⁷ The French Army's leading official historian concluded that, "the Americans seemed to consider equipment and the balance of opposing forces as the only elements determining their policy and their strategy ...," neglecting the human and psychological factors.²⁸

The Vichy government was successful in persuading the Germans to keep out of the unoccupied zone until the Allies landed in North Africa. They were relatively helpless in protecting French citizens against reprisals by the German police. They were also unable to control the flow of French labor and Jews to Germany. Against the Allies, they were unable to stop the occupation of French territory. Finally, they were unable to preserve the fleet which had been the centerpiece of their armistice with Germany. The Third Reich did what it wanted to do in France and with Frenchmen. It tolerated the Vichy regime for two years because it freed up German troops for duty elsewhere. When it had served its purpose, it was cast aside, its leaders imprisoned in a castle in the Black Forest like the characters in the 1938 film, La Grande Illusion. In spite of these weaknesses, Vichy still claimed that Frenchmen were better off with a rump government than under complete occupation.

De Gaulle understood the military limitations of his reequipped armed forces in 1942. His plans for their use were reasonable; a limited campaign in Italy followed by an all-out effort in France with a special unit set aside for the liberation of Paris. The Navy and Air Force were

also prepared with OVERLORD and ANVIL in mind. These forces were introduced into battle slowly and they generally fought in sectors where they could do their best. With the exception of two light mechanized brigades organized around forty-eight model D-1 tanks, French units in Tunisia fought with World War I equipment, some dating back to the 1890's.²⁹ That campaign used up all the war reserve stocks in North Africa. Fortunately American Lend-Lease followed with the fall of Tunis. Later in Italy, Juin felt his progress hampered by the slow introduction of his units from North Africa. Once he had his entire corps of five division equivalents in place, he made the penetration of the Gustav line as planned. In France, De Lattre did overstretch his lines of supply in the 700 kilometer move up the Rhone River valley, causing critical shortages in fuel for his mechanized units. Speed was vital to keep German units from regrouping and interfering with the Allied link up of OVERLORD and ANVIL. He overcame the problem by restructuring his logistic support unit based in Marseille. De Lattre de Tassigny also made reasonable use of limited French strength in the mop-up operations in the West and along the Atlantic coast. There, the Germans held on to several cities, home ports to the U-boat packs. French units played a major role in these operations, placing a great strain on the First French Army. Unable to divert precious resources from the main campaign for any length of time, de Lattre de Tassigny put together several task organized mechanized brigades. These served as the nuclei around which FFI units rallied, bringing the assault forces up to reasonable size. The Americans also added a heavy artillery brigade which proved invaluable in this roving siege campaign.³⁰

Without adequate forces available, De Gaulle could do very little for his Middle Eastern and Asian colonies. In Indo-China he could do

nothing to thwart the Japanese. As for the Levant, De Gaulle believed that the United Kingdom intended to expand her sphere of influence throughout the French mandated territories of Syria and Lebanon. A serious confrontation between British and Free French troops in Damascus was avoided only through intense negotiations in London.³¹

As discussed earlier, the French Navy and Air Force performed up to Allied standards. Their most senior officers were only squadron and task group commanders, integrated into larger Anglo-American organizations. The amphibious invasion of Southern France relied heavily on French naval bombardment and air cover as did the elimination of German pockets of resistance along the Atlantic coast.

In the end, Vichy was a strategic failure, unable to protect its territory from either the Allies or from the Germans. Though they had relatively large assets, these were precluded under the Armistice from operating at large without German consent. Though this was inadequate for Vichy's needs, it benefited the Allies substantially.

III. Operational Effectiveness

From Louis XIV to President De Gaulle, French political and military leaders tried to integrate defense planning and create combined operational staffs. Most of these efforts were in vain. Traditional attitudes proved insurmountable and the Ministries of War and Marine continued to work in isolation as they had for centuries. The introduction of the new Ministry of Air met resistance first from the Ministry of War and then, when naval aviation was threatened, from the Ministry of Marine. Most intractable to operational or bureaucratic integration was the Navy which saw its power threatened in any collaboration with the larger and more powerful French Army. De Gaulle blamed much of the problem on Admiral Darlan whom he called a "feudal lord" with the fleet his "fief." Certainly Darlan's power over the naval officer corps from 1936 was enormous.³² A brief attempt to create an American-style Minister of Defense in 1932 failed after only four months, never to be tried again until De Gaulle imposed an integrated effort upon his little force in Britain. He maintained this argument throughout the war and made this a centerpiece of political reform under the Fourth and Fifth Republics.

The problems encountered at the political and strategic levels were matched by similar difficulties among the operational forces. The defeat in 1940 did get some senior field commanders to see that a much closer integration of their forces was essential in modern maneuver warfare. The French forces had some limited success in Tunisia with their two

small mechanized brigades, experimenting with penetration and exploitation maneuvers.³³ Some infantry units were badly mauled there when their commanders fought in tight formations, something which Beaufre called "Verdun, revisited."³⁴ He found that junior officers had a better feel for mechanized and maneuver warfare than did older men whose outmoded training and ingrained habits were hard to overcome.

In training his Expeditionary Corps for Italy, Juin pushed hard on the concepts of maneuver warfare which he felt were entirely forgotten in the French campaign of 1940.³⁵ After a few small battles in early 1944, Juin realized that conventional doctrine would not suffice, given the terrain and troops available to him for breaking fixed defenses. He integrated the employment of his troops, specially trained and equipped for mountain warfare with Clark's regular infantry divisions in the May campaign which finally broke the line and advanced the Italian front to Rome after months of stalemate.³⁶ Juin, who had no armored divisions in his Expeditionary Corps, created two provisional brigades out of his corps reserve, each including one tank destroyer regiment, one tank battalion, two motorized infantry battalions, and mechanized engineer and reconnaissance units.³⁷

De Lattre de Tassigny had more time to prepare and was able to observe the French experience in Italy during several visits there. When fully established in Provence with two armored, one mechanized, and four infantry divisions, he handled his combined arms much like an American commander. Ordered by General Patch to advance along two non-contiguous corridors, one mountainous and one in a valley, separated by an American corps and a major river, De Lattre assigned his forces according to their capabilities and placed each half under a separate corps commander. His chief weakness was in understrength armored divisions which he corrected

by recruit in liberated territory. De Lattre had the only armored divisions. Patch's Army and consequently provided the only capability for rapid exploitation. The advance through Provence and up the Rhone valley was perfectly suited for just such operations.³⁸ With the creation of the Sixth Army Group under Jacob Devers in September, 1944, the First French Army operated with units cross-assigned between his army and Patch's. This also worked fairly smoothly because both generals had developed joint operational procedures and relied on a common supply system. This was one very beneficial result of having the French Army designed and equipped by the United States.

Use of air and naval power were again established along Anglo-American lines. Traditionally, the French Air Force had always sought to attach an air corps to an army corps, placing the air component directly under the ground commander. In short, the philosophy was one of centralized air training but decentralized operations and maintenance. This is how they had fought in World War I and 1940 and intended to fight after 1942. It took the heavy hand of British and American air staffs to redirect French thinking to centralized training, operations and maintenance.³⁹ In the field, French aviation units were generally used in support of French ground forces which obviated the problems of language and operating style. Nevertheless, the French flying squadrons operated as integral parts of the Allied air effort in the Mediterranean and Europe. Two units warrant special mention; the Normandie-Niemen Regiment and two squadrons under Britain's Bomber Command. The first was a pair of fighter squadrons assigned to the Eastern Front as an integral part of the Russian Air Force until war's end. The latter flew four-engine Halifax bombers under Britain's Bomber Command. The remaining twenty squadrons were tactical fighters, medium bombers, or transports generally

used in support for the French Expeditionary Corps in Italy and the First French Army following Operation ANVIL.⁴⁰

Operationally, the Vichy armed forces continued with traditional French doctrine, uninfluenced by the experiences of 1940. The services remained autonomous except for a short period when Darlan assumed command of all three. His position, however, was more symbolic than practical. Army divisions had separate commanders for each separate arm -- infantry, artillery and cavalry -- working between the general staffs and the regiments. This clearly impeded the development of combined arms task organization, a technique used heavily by the United States and which French commanders picked up on quickly.

Once exposed to American techniques in combat even the most skeptical French officers saw the merits of the new doctrine. Certainly, the adaptation of the American style of maneuver and mechanized warfare provided for great flexibility in combat. Some commanders shared the concept but picked up quickly on it after the Tunisian campaign. Beaufre realized this when observing Anglo-American artillery fire support in action while de Lattre showed his abilities in task organization during his move up the Rhone. Juin faced an unusual situation because of his mix of forces and difficult terrain. He had to adapt maneuver concepts to mountain warfare which he practiced in the early French engagements north of Cassino. He admitted these techniques would have been severely criticized at the French Ecole Supérieure de Guerre before the war, one more indictment of French military thought between the world wars.⁴¹

Officers serving the Vichy regime had a very different experience indeed. The armistice permitted them no operational flexibility which permitted the armed forces to fall back on what it already knew. The Army suffered terribly from a garrison mentality while the Navy conducted

no major training and could not develop any new doctrine even if the admirals had wanted to. Ceremonial duties took up a great amount of time while sports and discipline received the greatest emphasis in unit training. In short, it was an army with nothing practical to do. Senior officers did not wish to study the campaign of 1940 to learn from their mistakes. The General Staff banned any updating of doctrinal manuals, fearing the German reaction to any aggressive spirit coming out of the French officer corps. One scholar examining this question found no trace of new tactical or strategic thought coming out of the Armistice Army.⁴² As for the Navy, Darlan had always focused too narrowly on conventional surface fleet battles and submarine warfare to the exclusion of naval aviation and anti-air and anti-submarine warfare. With the fleet in port under the armistice, Darlan devoted all his time to politics and took the cream of his officer corps with him into non-military jobs. He even converted his planning staff, the famous Section d'Etudes, into a political staff, relying on individual energy to make up for a lack of experience. In brief, Marshal Pétain's armed forces were not the place where aggressive, forward looking officers got ahead.

French armed forces were not on the front edge of military technology in 1940. The gap remained until the Americans reequipped their Army and Air Force and modernized their Navy. The Americans had to infuse in the ground forces a concept of maneuver warfare and an integrated approach to air and ground warfare in a very short period of time. The Navy's gaps in anti-submarine and anti-air warfare were overcome by ship modernization programs. Fortunately, the various forces caught up quickly once the proper equipment arrived on the scene and some limited training took place.

Equipment, however, was not an overriding concern of French officers. Over the centuries, the armed forces had developed a highly refined ability to exist by foraging and this remained a key element to their survival during the Second World War. Having loaned all his fording equipment to Montgomery, de Lattre de Tassigny got across the Rhine only because of the extraordinary ability of his chief engineer, General Dromard. Anticipating the problem, Dromard had gathered bits and pieces of bridging equipment along the way from Marseille to Strasbourg. When the Army was short of troops, it incorporated resistance units into slots opened by battle casualties or into units which had never risen to their full combat strength. The technique of incorporating the local population into the ranks was similar to the British method of recruiting local militia units to assist the suppression of rebellion in Ireland. The militia could not be trusted to operate on its own but worked well in conjunction with regular battalions and regiments which were always in short supply.⁴³

It seems fair to say of the Vichy military that they had more equipment than they used. A few young officers understood its potential and, against the express orders of senior commanders, spent a great deal of time trying to hide whatever they could for a day when it could be used in liberating the country. It was this equipment which outfitted the French Army throughout the difficult Tunisian campaign in 1943.

Modernization of the French Army was delayed as French and American officials haggled over the proper mix of combat and support units. Fortunately, American perseverance and French ability to grasp the industrial demands of mechanized warfare produced a compromise solution. The problem stemmed from a very traditional approach to combat support functions in the French armed forces. These remained far from the battle-

field under autonomous directorates which in several cases were practically civilian bureaucracies. This was how all European armies and navies handled their logistic support in the eighteenth century. Unfortunately, the French continued to handle them the same way in the twentieth. It is a quantum leap from this approach to one with supply, maintenance, and other service units organic to each combat organization.

French military intelligence had always been narrowly defined as gathering information on enemy units in the field and providing commanders with recommendations on how opposing forces would be used. During the Second World War, the requirements went far beyond that and the French military had great difficulty adapting to the change. From London, De Gaulle realized the necessity of keeping in touch with a wide range of Frenchmen who could keep him appraised of German activities and also coordinate sabotage operations, assist downed pilots, and eventually serve as guides for allied units after D-Day. For this, he organized an intelligence directorate combining information collectors and field operators under a single headquarters. It also combined military and civilian efforts, eventually placed under the command of General Pierre Koenig on the eve of Operation OVERLORD. An additional benefit of this integrated approach was a minimizing of political friction between rival underground networks. Armistice Army officers could not understand this new approach and had very little contact with the Gaullist intelligence organization called the Bureau Central de Renseignements et d'Action (BCRA).

As for other support service, forage was the order of the day until the Americans arrived in November, 1942. Organizational supply consisted of either horse drawn wagons or trucks called "le Train." It was probably the most despised branch of the Army and was manned by social misfits and other undesirables. The duties of this branch were enormous: transport-

ing the wounded; carrying the field messes, the food, and everything else from chemical decontamination equipment to mobile blacksmith shops. They did not normally take care of ammunition or other consumables associated with the combat arms. Each arm had its own light organic maintenance and ammunition wagons, but none of these trains could keep up with a modern campaign. The corps and division wagons could carry only one day's food ration. Recalling the close connection between bread shortages and revolutions in France, the 1938 field supply manual reminded officers that "interruptions due to any number of conditions would have grave consequences."⁴⁴ To a very large extent, the French Army lived off the land which might explain why campaigns were so dreaded by the civilian population.

The supply corps, or Service d'Intendance, was essentially a civilian agency with the mission of bulk requisition and transportation of food and clothing to field depots where the unit wagon trains took over. As for maintenance of equipment, if something could not be fixed by the user it had to go back to the factory. There was no such thing as intermediate level supply and maintenance. In this respect, Napoleon would have been entirely at home in the French Army of 1940. Even the Air Force was organized along the same lines. As for the Navy, support facilities were centralized in Brest and Toulon. Ships were entirely on their own once they were at sea or stationed overseas.

When told they had to organize their Army just like the Americans, Giraud's staff became irritated. Not only did they not understand what was required, but they also saw the mixing of supply, maintenance, and motor transport officers in infantry divisions as a social disgrace especially when they served in the same battalions. And so started what is called "the battle of the services" which was to go on until the end

of the war. General Giraud's staff pleaded with the Americans, saying the French didn't need laundry units because they did their own clothing along the way and saw no reason for field maintenance because they had managed without it for centuries with no adverse effects. Moreover, the French leaders wanted their Army to be a great symbol of national strength. According to French perceptions, creating a large number of service units at the expense of combat battalions and divisions would appear unheroic to a population impatient for battlefield victories. Technocratic Americans didn't really understand what the French were saying either, but insisted on their plan and made their point by linking rearmament to acceptance of U.S. organization and techniques. In the end, French units were not identical to the Americans. They generally had only company size service units where the Americans had battalions, and their large supply depot in Marseille was only one-third the size of General Patch's Seventh Army depot. In the end, Americans saw the error of their ways in insisting that Frenchmen do everything on their own and by late 1944, the two large supply depots, Base 901 for France and CONAD for the United States were integrated, producing a much more efficient support system for the entire Sixth Army Group. By war's end, the French Army and Air Force accepted the American method of warfare as the model for their own post-war armed forces. They could not know then that twenty years of colonial wars would delay that modernization until the late 1960s.⁴³

The very best estimates show the Armistice Army could fight a campaign for only ninety days. Beyond that, it had no ability to resupply or reequip its units. The Navy had lost much of its ability to manufacture and repair warships. The Air Force alone managed to reopen one production line of fighter planes but they did not get into the field

prior to the collapse of the Vichy government in November, 1942. Communications systems were very outmoded and intelligence remained strictly conventional, prepared only for order of battle and weather estimates. The only strategic transportation system available was the French National Railroad and it was under heavy attack by the Allied Bomber Forces. Perhaps most backward of all policies was the further weakening of the military support services. Medicine, military justice and the supply corps were civilianized, returning to the practices of the Ancien Régime. The Vichy forces had not corrected the basic structural problems which defeated them in 1940.

Once the American system of maneuver warfare and combat support were mastered, the French ground and air forces had no problem other than the shortage of manpower and total reliance on the Allies for logistic support. Given this assistance, the French operational concepts could achieve the strategic goals as an integral part of the Allied campaign. French military planners were very unrealistic, however, in planning for a large mechanized army after the war when the armed forces would not have outside help. French industrial capacity was not expected to reach normal levels for eight to ten years after war's end.

Pétain's unswerving adherence to the letter of the armistice placed his armed forces at the mercy of his German occupiers, totally unprepared to react to crises at home or abroad. He could have ordered the fleet to sea from Toulon in time to save it but chose not to, virtually assuring its destruction according to standing orders. Had the French Navy rallied to the Allies, it would have provided overwhelming maritime superiority in the European theatre, possibly releasing more Anglo-American forces for duty against Japan. As it evolved, the Royal Navy was not seriously committed to the Pacific until 1945.

The most innovative concept coming out of the French armed forces during the Second World War was Juin's approach to mountain warfare. He looked carefully at his forces which had no significant armor units but did have extensive training and experience in mountain warfare. He cleverly selected the piece of terrain where he could excel and which was delaying the Allied advance past Cassino. He also build up an excellent working relationship with his commander, General Mark Clark, who listened to Juin's advice carefully. In France, de Lattre de Tassigny used these same troops in the reconquest of the Mediterranean Alps, a campaign conducted almost independent of the main drive up the Rhone valley. Generals Devers and Patch took his advice on integrating the French and American combat support organizations in Marseille which ended months of unreliable support for French units fighting under the Seventh Army and later the Sixth Army Group.

As for the Vichy commanders, they were never in the position to select when and where they would fight an opponent. The French were slow to forget about British attacks on the Armistice forces.

IV. Tactical Effectiveness

Tactics used by French ground forces supported the strategic objectives of reunification of the armed forces and rapid liberation of the homeland. De Lattre de Tassigny was placed in a very difficult position when the French provisional government asked that he create entire divisions made up of FFI. He knew the quality, size, and experience of the maquis units varied widely. A few units were made up of regular soldiers who went underground when the Armistice Army folded in late 1942 but most FFI units were small guerilla bands with no conventional warfare experience. All of them had strong internal loyalties making restructuring a difficult task. De Lattre knew he needed the manpower but preferred that they serve in existing divisions as battalion or regimental-size organizations. He followed this plan by filling 18,000 vacancies in his seven divisions during October 1944 to make up for battle losses and to round out others which had left North Africa below strength. Two of his divisions, the 9th Colonial and the 1st Free French Divisions had a predominance of Senegalese infantry. Though very tough fighters, these men suffered terribly from the winter in the Vosges mountains. Consequently, he decided to replace as many of them as possible with FFI from liberated territories. This absorbed another 15,000 members of the maquis. De Lattre de Tassigny also integrated another twenty light infantry battalions of the FFI into his army, attaching one to each regular infantry regiment and armored division. He used them for rear area security and as a general reserve

throughout the remainder of the war. This technique absolutely baffled Americans, who could not understand the reason for this amount of additional manpower. General Devers let the process continue once Eisenhower gave his blessing and promised some additional equipment for these men.⁴⁶

Neither Juin in Italy nor Leclerc who operated on his own in Operation OVERLORD had any of the same problems. Juin had no source from replacements other than trained regulars from North Africa and Leclerc was able to pick very selectively from the mass of volunteers in Normandy. He did take some drivers, technicians and an infantry battalion from the FFI along the way. All three services had reputations for aggressiveness which served them well in the eyes of the liberated population. Their ability to live off the land and forage for everything from food to bridging for the Rhine served the French strategic interest by speeding up the campaign. By comparison with the Americans, French units relied less on their supporting arms and combat support units to get them through. Both in Italy and in France, American heavy artillery was attached at the corps level. Obviously, neither the Navy nor the Air Force had the latitude to develop tactics on their own, as they served in integrated task forces with American and British units.

Throughout the war, French commanders faced manpower shortages and delays in obtaining needed equipment. Except for Leclerc's Second Armored Division, their units were never as strong as their American counterparts. Their greatest tactical success came in Italy with the breaking of the Gustav Line in May, 1944. Juin took careful stock of his units earlier that year and realized he had the unique capability for mountain warfare. Virtually his entire force of five division equivalents came from the Armée d'Afrique, predominantly recruited from

the Arab populations of Morocco, Algeria and Tunisia. His generals were also experienced in colonial fighting, even using Arabic when they wished to keep their radio conversations private. Some had served in the Rif War against Berber insurgents during the mid-1920. That experience in mountain fighting served the entire French Expeditionary Corps well in the rugged Italian countryside between Cassino and Rome.

For the Moroccans, the Italian terrain was just like home. The 4th Moroccan Division was specially equipped with mules and mountain artillery as were three regimental size units called Groupements de Tabors recruited from the Berber tribes in the Atlas Mountains. Two other divisions, the 2nd Moroccan and 3rd Algerian could also operate in mountainous terrain while the mechanized infantry unit, the 1st Free French Division, had to operate in the valleys. Juin devised a way to use his mountain division in conjunction with the three Groupements de Tabors as a separate corps for deep envelopments in the worst terrain. They could sustain themselves entirely by mule pack trains and could march quickly over long distances. He held his armored units in reserve until a situation opened up to exploit a mountainous corridor. The Germans tended to defend the valleys while avoiding the high ground. When the German line weakened, Juin would send his mountain corps through the gap on deep envelopments, keeping them on high ground until they linked up with the other forces in hammer and anvil or conventional link-up operations. He used his mechanized division to exploit opportunities along major corridors while maintaining contact with the British Eighth Army on his right flank. To assure an extra degree of shock in the initial contact, Juin had no qualms about assigning all of his corps artillery of some 200 heavy guns and howitzers to a single division to assure rapid penetration. His Moroccan troops received high

praise from both the Allies and the Germans alike. They had a natural ability to conduct enormous battalion or even regimental size ambushes on isolated German units in the Aurunci Mountains between Cassino and the Anzio perimeter.⁴⁷

In Corsica, Elba and France, Giraud and de Lattre de Tassigny experimented with the use of light shock battalions attached to each division. They used these units, similar to American Ranger battalions, for quick attacks and for seizing isolated objectives. The French commanders liked these units because they were easy to equip and could be manned by the FFI. Their staying power, however, was very poor. The success of these units led to a wholesale restructuring of the Army for Indo-China and Algeria. Unfortunately, it took two colonial wars to learn about the limited application of these troops. As for the Air Force and Navy, they utilized the same tactics as their Allies during the campaign. The fighter and light bomber pilots demonstrated a special knack for close air support, another skill which served them well in the colonial wars to come. In speaking of the French pilots, a British officer commented, "all they wanted was a plane and a bomb."⁴⁸

Generally, the French units followed American procedures for the integration of supporting arms. The amount of support available to each division, however, was generally less than for equivalent American and British units. They made up for this by task organization to cover weak spots and by attachment of American heavy artillery at the corps level. Juin planned his breakthrough of the Gustav Line so that his left flank could have naval gunfire support throughout the advance up the Aurunci and Lepini mountains. French generals picked up quickly on the concept of task organization and combined armed task forces in Tunisia as they worked alongside American and British forces and carried this into the

Italian and French campaigns. It was there that they learned of the American use of self-propelled artillery in mechanized operations. This campaign also saw the end of the famous 75mm field gun which had been the prime French artillery piece since 1897. It gave way to American 105mm and 155mm howitzers except in mountain units where a pack mule version remained in service throughout the war. De Lattre viewed his armored divisions as heavy cavalry, which he used more for exploitation maneuvers rather than on costly penetration operations. Both he and Juin found tactical aviation helpful in their operations but did not rely on it as their major supporting arm. Juin's most innovative use of air support was air dropped resupply when operating in mountains without roads. The French approach to air cover was not all that different from American ground commanders, none of whom exercised direct control over it and had to take what was provided. Amphibious operations were very much on the mind of Giraud and de Lattre de Tassigny, the former overseeing the recapture of Corsica while the latter was the major ground component commander in Operation ANVIL, landing behind the three American divisions. Shipping was always at a premium, so landings had to be timed to match the availability of landing craft which shuttled between the English Channel and the Mediterranean in support of the two major offensives of 1944.

Given a choice between immediate exploitation of a situation and waiting for improved conditions, French commanders tended to move quickly. Perhaps this is the source of their ongoing friction with British ground commanders. De Lattre de Tassigny and Juin understood the urgency of keeping the Germans on the run. Juin spent more time preparing each of his major offensives, but the nature of the Italian front granted him this luxury. De Lattre de Tassigny had the feeling

that delay gave the enemy a chance to consolidate. He was famous for hasty maneuvers, from combined arms assaults to the crossing of the Rhine. The Moroccan and Algerian troops in Italy were very good in conducting night attacks, and Juin used this capability as frequently as possible. The FFI also specialized in ambush and sabotage operations. General Pierre Koenig coordinated their diverse activities which proved helpful in Brittany and essential in the Southwest where they were a major element used in breaking up the German pockets of resistance. Certainly, these units were uneven and had comparatively little staying power but they did cause major disruption of the German withdrawal from Southern France. Koenig has received credit from American and French authorities for keeping a lid on the maquis and for stabilizing the relations between De Gaulle and the Americans during Operation OVERLORD.⁴⁹ Roosevelt still refused to recognize the Comité Française de la Libération Nationale as the provisional French government, delaying an agreement on the political administration of liberated territory. Koenig provided the manpower which filled the gap until a civil affairs agreement and recognition of the CFLN ended the problem in October, 1944.

Traditionally, France maintained three armies each with distinct recruiting bases and jealously guarded traditions. In Europe was the Armée Metropolitaine which had been defeated in 1940 and which never entered the war except in small units which de Lattre de Tassigny attached to his divisions. It was a conscript army made up of French citizens, staffed by an officer corps that rarely saw service overseas. In the colonies, outside of North Africa, was the Armée Coloniale. Until the twentieth century, this force had been an integral part of the Navy. Enlisted manpower came from the colonies and officers, called marsouins, from France who served continually overseas. This was more a professional

than a conscript institution with its strongest units in French West Africa. Charged with territorial defense, it had a secondary mission in Europe during times of crisis. Finally, there was the Armée d'Afrique. Initially formed in 1830 to conquer and patrol Algeria, its duties and recruiting base extended to the protectorates of Tunisia and Morocco. Algerians were conscripted while Moroccans and Tunisians were volunteers. Again, this was primarily a professional army. It was divided into three separate groups along ethnic lines. Arab troops formed infantry regiments of tirailleurs and cavalry regiments of spahis while men of European extraction, called pieds noir, formed infantry regiments of zouaves and cavalry regiments of chasseurs d'Afrique. Finally, there were several regiments of the Foreign Legion which included everybody else. As a rule, racial lines were never crossed in forming battalions or regiments. All of these were organized into divisions and corps, led by officers who served most of their careers in North Africa with occasional tours of duty in Europe. The Armée d'Afrique also had two missions; defense of North Africa and of European France.

In 1940, eight divisions each from the Armée Coloniale and the Armée d'Afrique were in France. Naturally, there were many social distinctions and strong racial feelings which existed in this complex collection of armies. Traditionally, Frenchmen enjoyed good relations with all their colonial populations except for the Arabs. There, the balance was always more precarious, stemming partly from the militancy of Islam running counter to a crusading form of Catholicism. French military authorities did not trust colonial troops anywhere except in infantry and cavalry units. This prejudice built up over the years was a factor in the confrontation with the Americans who insisted that the reorganized French army have a high proportion of service and support

units. Men of European extraction could not possibly staff them all. A few French officers saw this as a flaw in Army thinking but were powerless to change habits overnight. Beaufre said French prejudice would never permit an Arab to shoot a cannon or drive a truck. The only way he got his own battalion of tirailleurs to the Tunisian front was by coopting some zouaves from Algiers who stayed on with him as his motor transport section.

Other problems of attitude and tradition involved the friction between officers and men of the Armée d'Afrique and those of the Armée Métropolitaine who met during the liberation of France. The African units looked with contempt on their European counterparts which collapsed so quickly in 1940. Conversely, the officers of the Armée Métropolitaine disliked the unconventional techniques of their liberators. De Lattre de Tassigny's greatest problem was in blending these two traditions into a single army of liberation. He had to cope with intense feelings of loyalty on both sides and the reluctance of colonial troops to accept Europeans in their midst. Americans fighting alongside the First French Army looked upon this unification of colonial and European troops with stupor and occasional contempt. French commanders found their American counterparts notably insensitive to the importance of morale and élan and overly reliant on technology to solve all their problems.

In the Navy, there had always been a marked separation between the officers and enlisted personnel. The strongly religious tone of the French naval officer corps was enhanced when De Gaulle took a reserve chaplain, promoted him to admiral and made him the Naval Chief of Staff. Thierry d'Argenlieu, also known as Père Louis de la Trinité, treated the war as a religious crusade. Later, he clashed with the more flexible Leclerc during the delicate negotiations with Ho Chi Minh in 1946.

Though the Navy was the most pro-American of all three armed forces, its internal customs always seemed strange to those not steeped in the ways of this service which had always lived in isolation on the fringe of French society. Social and institutional change came very late to the Navy and then only after an agonizing debate in the mid-1960s.⁵⁰ As for the Air Force, the reunification of Gaullist and Giraudist factions went very smoothly, avoiding the resentment which pervaded the other armed forces. The absence of a ponderous tradition and the technical nature of their trade reduced the social separation of aviators from their enlisted ground personnel.

The Vichy forces perpetuated the most rigid of French military social and doctrinal traditions. Perhaps this was inevitable, given the garrison environment imposed on them by the Armistice and the absence of any talent in the officer ranks. Some of the hardest to deal with were the naval officers whose personal loyalties to Admiral Darlan and Marshal Pétain defied the understanding of Eisenhower and Clark during Operation TORCH. Their great emphasis on personal honor and obedience generally baffled the Americans. Genuine social reform in the French armed forces would not come until the mid-1960s when political conditions imposed a dramatic review of the professional officer corps in all three services.

The Tunisian campaign was a school of practical training for the Armée d'Afrique. It persuaded French officers that the entire philosophy of training for static defensive fighting had to give way to an emphasis on maneuver warfare and combined arms combat. They appear to have learned the tactical aspects of this quickly while remaining reluctant to incorporate modern logistical planning into their doctrines. The Air Force in North Africa had a cadre of experienced pilots without any modern aircraft. In the early days of rearmament, the training process

was two sided. Americans demonstrated the new equipment, and French officers trained their Allies in aerial tactics. The fighter and light bomber units had always been the strongest element in French combat aviation. As for the Navy, they had been the best prepared of all the French armed forces for war in 1939. What remained of the fleet after the Toulon scuttling was organized for ongoing Allied operations, notably convoy escorting and naval shore bombardment.

French ground forces tended to operate at or beyond the limit of their service organizations. This never created a disaster but it could have if opposing German forces had counterattacked at critical moments. The classic example of this was de Lattre de Tassigny's decision to cross the Rhine without any of his bridging equipment. He relied entirely on the foraging skills of his engineers to come up with makeshift equipment. In other cases, French units simply outran their supply lines and had to wait for the support to catch up. The psychology of the French troops was something like that in General Anders's Polish Army. Both forces conducted daredevil moves because neither felt they had much to lose. For both these armies, tactical success was of overwhelming importance. By war's end, French commanders realized the benefits of American ground combat organization and used it as a model for their post-war structure. As for the French Air Force, Allied aviation commanders saw more clearly than their Army counterparts that French units did not have the personnel to provide adequate logistical support to the flying squadrons. Consequently, both the American and British air forces provided many of the ground personnel required to keep the French planes in the sky. This arrangement worked smoothly and maximized the combat capability of these units.

Marshal Juin did the most to develop tactics specifically to exploit German weaknesses. He saw that Kesselring's troops congregated in the valleys while leaving many of the hilltops bare. This provided Juin a golden opportunity to employ his mountain troops to their maximum advantage. His deep envelopments bypassed fixed defense works and broke the Gustav line on a narrow front. De Lattre de Tassigny designed his tactics to keep the German forces on the run, attempting to avoid entrenched defenses or counterattacks. In this he was largely successful but did nothing unique. The French Navy and Air Force benefited from the larger Allied naval and air campaigns, enjoying general maritime superiority after mid-1943 and command of the air in both Italy and France.

Conclusion

The French Army of 1940-1945 was not in the main tradition of the Grande Armée of either 1805 or 1914. The rump left behind under the Armistice was a small cadre of professional officers and a few troops whose prime role was to survive and await a better day. In London, De Gaulle surrounded himself with a following whose chief ingredient was personal independence and a rejection of the French military ethic of rigid obedience to the higher authority. In Africa, the odds and ends Koenig commanded in Egypt and Leclerc had in Chad appeared to be individual adventurers more in the spirit of the Foreign Legion where these two generals had served. In Algeria, the Armée d'Afrique lived on, virtually untouched as a strategic reserve waiting to be used. This institution, which had no particular love for De Gaulle, permitted France to reenter the war with a significant military contribution. The Air Force virtually ceased to exist, and the Navy went into a caretaker status, sworn to follow Admiral Darlan and to avoid seizure by any foreign power, whatever the cost. Once reunified, the Gaullist and Giraudist forces blended into a curious mixture of professional colonial troops and guerrilla fighters from the FFI, recalling the levée en masse of 1792. Gaullists were always in the minority. When the war was over, the native troops returned home, many to join ranks with fellow colonial peoples yearning for national liberations of their own. The end of the war also meant a gradual elimination of the Gaullist influence from the top ranks of the military. It had been only a sprinkling of senior men

who retired because of age or went on into political careers. This permitted the Army and Navy to "purify" their officer corps, returning to the Saint Cyr and Ecole Navale cadres who had largely stayed behind and worked for Vichy or hung up their uniforms to await a better day. This retrenchment after 1945 also meant that the armed forces would have great difficulty adjusting to the colonial wars they were to face for the next two decades. It was in these wars that the young officers who first learned their craft in the underground movements or in the colonies now turned their war-making skills on the colonial populations of Indo-China and Algeria and later questioned their support for De Gaulle and the Fifth Republic.

The Gaullist were driven by one central thought; the unacceptability of a French armistice with their traditional enemy when a means to resist remained in their hands. Emerging from nowhere in 1940, this small group rose to lead the country back to victory and an eventual defeat of the Nazi war machine. Arriving exhausted on the Rhine and Danube, national pride would not permit a break-up of the empire on the heels of so costly a victory. Massive help from their Allies was both appreciated and despised. Happy to receive the equipment and training, Frenchmen from all walks of life were embittered by the occasional subjection of their national sovereignty to that of their Anglo-Saxon allies. The story of French foreign and defense policy especially during the Gaullist years of 1958-1974 was profoundly influenced by this feeling, which is only now beginning to diminish.

The Cultural Factor

With comparatively weak military forces, De Gaulle set out on an ambitious program of political and strategic goals for his country. By war's end, most were achieved, though Allied relations were occasionally strained along the way. Few have expressed any regrets about the course which Franco-Allied relations took during the war. Americans remain convinced that their decision to minimize casualties and end the war as quickly as possible was correct. Britons believed that they did their part in restoring the European balance by supporting exile movements and conducting a peripheral strategy. Frenchmen are also sure their path to victory was correct but wonder why their political goals were sometimes misunderstood by their Allies.⁵¹ De Gaulle provides insight to his sentiments about "Anglo-Saxons" which he kept the rest of his life. On the eve of his departure for Algiers in 1943, he bade farewell to Anthony Eden, the only English speaking person whose motives he genuinely trusted. In a friendly chat about their years together, Eden asked his visitor, "Do you know that you have caused us more difficulty than all our European allies?" With a smile, De Gaulle responded in that foreign tongue, "I don't doubt it. France is a great power."⁵²

The friction which existed between Frenchmen and their Anglo-American allies stemmed largely from cultural differences which frustrated many on both sides of the social equation. Much of the story is one of wondering if and how people of very different backgrounds could overcome profound differences of behavior and pull together to defeat a common enemy. This became the paramount issue between France and her two English-speaking allies after November 1942 when a large French Army

could return to battle only by accepting American equipment and operational doctrine. It is far less a story of equipment than one of cowboys and chevaliers struggling to overcome centuries of ingrained habits and military traditions. On several occasions, these threatened to destroy their joint crusade. Fortunately, the common danger and a kind of intangible but very real sense of mutual admiration carried the day. Frenchmen recalled with great nostalgia their role in the American Revolution. Even aristocratic French officers, who had contempt for democracy at home, admired the American republic which their forebears helped spawn. After all, it was two of their own, Rochambeau and De Grasse, who made it all possible at Yorktown. Republican France even named warships after them, immortalizing the men and commemorating their defeat over the ancient foe.

The same ambiance cannot be found in the dealings between the French military leaders and their British counterparts during the Second World War. Their common experiences at Verdun and the Somme just weren't enough to overcome the primeval stigmas of Agincourt, Blenheim and Trafalgar, names which sent shivers down the spines of French Officers even in the mid-twentieth century. On the eve of OVERLORD, Lawrence Oliver produced a patriotic rendition of Shakespeare's Henry V, commemorating the first of these victories over France and dedicating the movie to British soldiers about to make the supreme sacrifice once more in the same fields of Picardie. For years, the French press was filled with anglophobic pieces, written under pseudonyms like Captain John Frog of the Action française. And for those who just might have forgotten, the British attack on Mers-el-Kebir showed that nothing had changed since Agincourt. Old feelings die hard but it is they which drove these men on, knowingly or not.

It was only in the 1960s that social science focused on the cross-cultural and internal problems which plagued the French armed forces for so long. Most of the senior Allied officers who have written their memoirs have commented on the communications problem between French and Anglo-Saxon officers. Americans were constantly baffled by the importance which their French counterparts placed on obedience to higher military authority and their adherence to a rigid bureaucratic hierarchy even when it had outlived its usefulness. This issue came to a head in November, 1942 when Clark, Eisenhower, and others had such difficulty prying the French military in North Africa away from Pétain and his defunct Vichy regime. The emphasis placed on the leader is something which many Latin cultures have in common, although their military institutions exhibit this quality more than the civilian mainstream. The Italians have their tradition of the Condottieri, the Spanish their cult of the Jefe, personified by General Franco, while Latin America has its host of military heroes. The origins of this cult are deep, stemming from the special influence of the feudal system and the Catholic Church on Latin society. In these lands, central authority always competed with the aristocracy for power, the two having great difficulty reaching a compromise. More often than not, a monarch overcame resistance by eliminating the political power of his nobility and by creating a tight centralized regime. In France and Spain, the Catholic tradition is highlighted by the crusade against Moslems, Jews and Protestants over nine centuries. In Britain, the reverse is true. There, the aristocracy served as the representative of the Norman crown in pacifying the Saxons and Celts on the frontier and in the marches while the Anglican Church became the badge of political conformity. In England, a basis existed very early for shared power between central and local authority.

French classical literature is filled with examples of the king's man who is forced to face a moral crisis in choosing between self and crown. The most important of these is Pierre Corneille's play, Le Cid in which the hero chooses the latter with the immortal words, "honor is a duty, love is only a desire." The education of French officers, unlike their Anglo-Saxon counterparts, was filled with the classics, and this theme was heavily emphasized in the rarified atmosphere of those secondary schools which prepared boys for the Saint Cyr and Ecole Navale examinations. Between the world wars, these same preparatory courses also deemphasized engineering and technology, which may explain why French military men were so slow adapting to modern industrialized warfare. The history of the French Army and Navy after 1960 is the story of a nation's attempt to wean its military leadership away from tradition toward a more technocratic concept of war and military organization.⁵³

Having overcome the political and economic difficulties of the post-World War II period, the door is open for France to return to a closer working agreement with their European and American allies in the joint defense of the region. The unification of their armed forces under a single Ministry of Defense and tri-service materiel, medical and intelligence branches are some of the finest legacies which De Gaulle could have left behind. Adequate and efficient political control of the military which plagued France for so long is now an issue of the past. What remains to be seen is how far the forces will move toward the professional institutions which most other Western democracies have adopted. Until then, they remain a curious mixture, placed on display annually at the Bastille Day parade on July 14th. Led by a horse cavalry regiment playing Napoleonic fanfares, the latest in the French arsenal, Hades missiles, follows with Mirage jets overhead, trailing wisps of red,

white, and blue smoke. Hours later, it closes with a regiment and the massed bands of the Foreign Legion passing by at a slow march, as a reminder that the Army is still the symbol of France's diverse social heritage. Will she try to go it alone as she has since 1945 or reassociate with her friends and allies? On ne sait pas, même les Français.

DISCUSSION OF SOURCES

Sources for this essay fall into four categories; monographs, memoirs, official histories and periodical literature. French historians as a rule do not treat recent history as a serious field of study. French analysis of the Second World War remains very much in the hands of journalists, political scientists and participants in the conflict. The best overview of the French Army written in French is by a journalist, Paul Marie de la Gorce entitled La République et son Armée (Payard, 1963). An English translation appeared the same year. One of the few exceptions among historians is Henri Michel, editor of the Revue d'histoire de la deuxième guerre mondiale whose approach is notably pro-Gaullist but who has provided a forum for the serious discussion of problems related to French involvement in that war. The best monographic material is by non-French historians including Robert O. Paxton who is accepted on both sides of the Atlantic as the leading authority on Vichy and the Armistice Army. His major works are: Parades and Politics at Vichy: The French Officer Corps under Marshal Pétain (Princeton, 1966) and Vichy France: Old Guard and New Order, 1940-44 (Knopf, 1972). Philip Bankovitz, also an American, has written the best study of civil-military relations for this period, entitled, Maxime Weygand and Civil-Military Relations in Modern France (Harvard, 1967). Another, less directly interested in military affairs is Robert Aron, a French historian who has written a ten-volume study of the Vichy regime and its aftermath. Only his Vichy Regime, 1940-44 (Beacon, 1969) has appeared in English.

Memoirs of military and political leaders abound on both sides of the fence though few have been translated. If used carefully, they provide a very rich and thorough picture of the war. The most helpful are those of Charles De Gaulle, Winston Churchill, Dwight D. Eisenhower, Maréchal Alphonse Juin, Maréchal Jean de Lattre de Tassigny, and perhaps most perceptive of all, those of General André Beaufre. There are many more French flag and general officers involved in the conflict covering a wide range of military and political experiences.

As for the official histories, the five volumes by the French Army's Service Historique de l'Armée, Les grandes unités françaises: historiques succincts (Imprimerie Nationale, 1967-75) provide excellent background information but no analysis. Their editor, Colonel Pierre Le Goyet, also wrote the very helpful, La Participation française à la campagne d'Italie (Imprimerie Nationale, 1969) where he reveals his conclusions about the French war effort there. His articles in a number of French journals are also excellent. From an American perspective, Forrest Pogue's Supreme Command (G.P.O., 1954) seems to explore the thinking of SHABP extremely well and from Britain P.S.V. Donnison's Civil Affairs and Military Government in North-West Europe, 1944-46 (H.M.S.O., 1961) does the best job explaining the conflict between the Gaullist and the Allied armies after the Normandy invasion. Marcel Vigneras' official Rearming the French (G.P.O., 1957) provides equivalent insight into the problems of getting the French to modernize their forces. We still await the official American history of Operation ANVIL which should help with an understanding of the relationship between General Jacob Devers, Sixth Army Group Commander, and his subordinate, General de Lattre de Tassigny.

On the sociology of the French military, see Michel Louis Martin's Warriors to Managers: The French Military Establishment since 1945 (Univ. of North Carolina, 1981) and Kurt Lang's excellent bibliography, Military Institutions and the Sociology of War (Sage, 1972). Any of Raoul Girardet's works, especially La société militaire dans la France contemporaine (Plon, 1953) are good introductions from an insider with notable bias. My own Royal Republicans; The French Naval Dynasties between the World Wars (LSU, 1985) examines the Navy somewhat the way Martin does the Army.

Among periodical literature, the finest on this subject are in French. The following journals should be consulted. In French see: Revue d'histoire de la deuxième guerre mondiale, Revue historique des Armées, and Revue Historique de l'Armée. In English the best are: Military Affairs, and French Historical Studies. Henri Michel sponsored a colloquium on the Second World War in 1974 where the leading scholars from around the world presented papers along with leading French participants in the Second World War. The results appeared in a large volume entitled La libération de la France (C.N.R.S., 1976), exposing the feelings and conclusions about that war from all points of view. Perhaps this will pave the way to further work on France during World War II based on primary source material, much of which remains under lock and key for an indefinite period of time.

Notes

1. Jean Marie d'Hoop, "L'Armée Française de l'armistice de 1940 à la victoire de 1945; Orientation Bibliographique," Revue d'histoire de la deuxième guerre mondiale, April, 1978, pp. 103-13. An excellent bibliographic essay which is still reasonably up to date. He cover French and English materials.
2. Alistaire Horne, To Lose a Battle; France 1940 (Boston, 1969); and Jeffrey A. Gunsburg, Divided and Conquered; The French High Command and the Defeat of the West, 1940 (Westport, Conn., 1979) are two works concentrating on the campaign, laying the responsibility in the laps of different people.
3. Letter from Walter Lippman of the New York Herald Tribune to R. C. Hood, city editor of the Birmingham Age-Herald, November 20, 1939. Lippman had just returned from interviewing Gamelin.
4. March Bloch, Strange Defeat, trans. Gerhard Hopkins (New York, 1968), p. 36.
5. Robert O. Paxton, Parades and Politics at Vichy; The French Officer Corps under Marshal Pétain (Princeton, 1966), chapters 1 and 2 and p. 238.
6. Henri Michel. Histoire de la France libre (Paris, 1980), chapter 3.
7. Pierre Denis, "Les Finances de la France libre, Juin 1940 à Juin 1943." Revue d'histoire de la deuxième guerre mondiale, January, 1950, pp. 20-27; and Francois Bloch-Lainé, "Le Financement de la Résistance," Ibid., pp. 6-19.

8. Charles De Gaulle, Mémoires de guerre, Vol. 1 L'Appel, 1940-1942 (Paris, 1954), pp. 198-99; Vol. 2 L'Unité, 1942-1944, pp. 213.
9. Marcel Vigneras, Rearming the French (Washington, D.C., 1957), p. 402.
10. Paxton, Parades and Politics, pp. 246-48.
11. Jacques Vernet, "Les Projets de réorganisation de l'Armée de terre française de 1945 à 1946," Revue historique des armées, September, 1979, p. 228.
12. Ibid., p. 222.
13. A. de Dainville, L'ORA; la résistance de l'Armée (Paris, 1974), p. 33 and p. 95; also Paxton, Parades and Politics, p. 290.
14. Dainville, L'ORA, pp. 105-06.
15. Jacques Delmas, "De Gaulle, la défense nationale et les forces armées; projets et réalités, 1944-janvier 1946," Revue d'histoire de la deuxième guerre mondiale, April, 1978, pp. 8-11; and De Gaulle, Mémoires, Vol. 3 Le salut, 1944-46, pp. 22-23.
16. Robert O. Paxton, Vichy France; Old Guard and New Order, 1940-1944. (New York, 1972), chapter 5.
17. De Gaulle, Mémoires, Vol. 1, pp. 139-41 and Vol. 3, pp. 148-49.
18. Jean de Lattre de Tassigny, Histoire de la première armée française; Rhin et Danube (Paris, 1949), chapters 11 and 16; and De Gaulle, Mémoires, Vol. 3, pp. 148-49, 170-71, 180-84; and Forrest C. Pogue, The Supreme Command (Washington, D.C., 1954), pp. 401, 459-60.
19. Alphonse Juin, Mémoires, (Paris, 1959-60), pp. 79-86.
20. Robert Aron, The Vichy Regime, 1940-44, trans. Humphrey Hare (Boston, 1958), pp. 121-134.
21. De Lattre de Tassigny, Première armée, pp. 130-31.

22. Philip Bankwitz, Maxime Weugand and Civil-Military Relations in Modern France (Cambridge, MA, 1967), chapter 8.
23. Paul Auphan, The French Navy in World War II, trans. ACJ Sabalot (Annapolis, 1959), chapter 13.
24. Vignerat, Rearming the French, p. 147.
25. André Beaufre, Mémoires; 1920, 1940, 1945. (Paris, 1969), p. 435.
26. De Gaulle, Mémoires, Vol. 3, pp. 149-49.
27. Brian Crozier, De Gaulle (New York, 1973), p. 165.
28. Pierre Le Goyet, "Réponse aux communications du Général Jilinc et de Monsieur Blumenson, "in La Libération de la France; actes du colloque international, octobre 28-31, 1974, ed. Henri Michel (Paris, 1976), p. 235.
29. Louis Koeltz, Une campagne que nous avons gagnée; Tunisie, 1942-43 (Paris, 1959), pp. 21-22.
30. De Gaulle, Mémoires, Vol. 3, pp. 158-60.
31. Ibid., pp. 184-89.
32. Ibid., Vol. 1, p. 63; Auphan, French Navy, pp. 15-16; and Ronald Chalmers Hood III, Royal Republicans; The French Naval Dynasties between the World Wars (Baton Rouge, 1985), chapter 6.
33. Koeltz, Tunisie, pp. 20-25.
34. Beaufre, Mémoires, pp. 424, 426.
35. Juin, Mémoires, p. 227.
36. Mark W. Clark, Calculated Risk (New York, 1950), p. 338.
37. Pierre Le Goyet, La Participation française à la campagne d'Italie. (Paris, 1969), p. 89.
38. De Lattre de Tassigny, Première armée, pp. 130-31; and Jean Prillard, "La Réconstitution des Ier et IIe Corps d'Armée apres le débarquement en Provence, août 1944," Revue historique de l'Armée,

December, 1969, pp. 114-15.

39. C. Christienne, "Le Débat de doctrine sur l'emploi de l'aviation militaire française," Défense nationale, June, 1979, pp. 116-118.
40. Patrick Facon, "Le Plan VII, 1943-44," Revue historique des armées, September, 1979, pp. 195-204.
41. Juin, Mémoires, Vol. 1, pp. 300-02.
42. Paxton, Parades and Politics, p. 58.
43. De Lattre de Tassigny, Prémier^{er} armée, chapter 7; on the Irish militia see J. C. Beckett, The Making of Modern Ireland (New York, 1977), pp. 258-67.
44. Defense Nationale, Etat-Major de l'Armée, Instruction sur l'organisation et le fonctionnement du service de l'Intendance en campagne (Paris, 1940), p. 64.
45. De Lattre de Tassigny, Prémier^{er} Armée, pp. 27, 259; and Beaufre, Mémoires, pp. 417-19.
46. De Lattre de Tassigny, Prémier^{er} Armée, chapter 7.
47. Juin, Mémoires, Vol. 1, pp. 300-02; and Clark, Calculated Risk, p. 338 and maps pp. 347, 355.
48. Vignerat, Rearming the French, pp. 203-04, 209.
49. Pogue, Supreme Command, pp. 231, 235.
50. Hood, Royal Republicans, chapters 1 and 2; and Michel Louis Martin, Warriors to Managers; The French Military Establishment since 1945 (Chapel Hill, 1981), chapters 3, 8 and 9.
51. Le Goyet, "Réponse aux communications," in Liberation de la France, pp. 235-38 and Martin Blumenson, "La Place de la France dans la stratégie et dans la politique des alliés," in Liberation de la France, pp. 191-208.
52. De Gaulle Mémoires, Vol. 3, p. 102.

53. Guy Michelat and Jean Pierre Thomas, "Contribution a l'étude du recrutement des écoles d'Officiers de la Marine, 1945-60," in Revue française de sociologie, September, 1968, is the best work on identifying the problem of officer recruitment. Michel Louis Martin's Warriors to Managers is the latest study of the French Army filled with statistics. The final chapter in my Royal Republicans brings the problem of recruitment up to the 1970s.

THE SOVIET ARMED FORCES
IN THE GREAT PATRIOTIC WAR, 1941-1945

John B. Jessup

Introduction

Any attempt to rationally explain the complex problem of military effectiveness, as the term may be applied to the armed forces of the Soviet Union during World War II, appears doomed from the outset. There are two dominant obstacles that hinder any such endeavor: the lack of a fundamental definition of Soviet military effectiveness and the equally fundamental lack of accurate data upon which such an estimate might be made. Given the basic nature of the Soviet Union these impediments make successful examination contingent upon setting objective criteria by which to judge those Soviet sources that are available and then Soviet military effectiveness. Indeed, there is information but its value appears to depend more upon how it is used than what it says.

It is possible, of course, to accept a universal concept of military effectiveness or, at least, one that is standard to a particular area of interest. The first of these two choices would make the work of the analyst relatively simple as a universal concept would present measures of effectiveness that could be applied in all cases and to all situations.

Neither the universal concept nor equally universal measures of effectiveness exist and, quite likely, never will. There are simply too many variables to allow for a universal definition. Most theoreticians will admit, however, that these variables are sometimes calculable. Some suggest that it is often possible to establish relatively clear elements within the overall category of military effectiveness but, as defined in this study and elsewhere, military effectiveness is made up of a group of intangible variables that can be defined with some precision only when a sufficiently large data base has been amassed. Even so, the results are often nothing more than oversimplified statements of very complex issues. Nowhere is this more true than in dealing with the history of the Soviet Union during the Second World War. To accomplish the task at hand, therefore, it has been necessary to use a somewhat more specialized logic.

Establishing a coherent enumeration of measures of effectiveness that can be applied to Soviet forces creates a set of problems that must be resolved before any meaningful analysis can be made. Two of the more easily identifiable of these are the nature of the role played by the Party in the operation of the Soviet military apparatus and how that role affected military effectiveness and, second, the character of those forces and other institutions that comprised the whole of Soviet society and that form its basic structure. These two factors are the most important and have to be understood if anything else is to make sense.

To achieve an appropriate level of appreciation of the military effectiveness of the Soviet forces of the Second World War, a cynicism born of experience about the content of published Soviet military histories and an ability to "read between the lines" are vital attributes. There is a rather voluminous amount of material published in

the Soviet Union, and some published in the West in English and other languages, upon which some assumptions may be made. The outpouring of Soviet literature about the war has, as its basis, a deepseated need to prove the "rightness" of the Soviet way. There is also a much more deeply ingrained theophanic need to maintain a position close to Marxist Grace. Because of these and other reasons, it is largely impossible to determine the accuracy of the more subtly written of the Soviet sources as they are almost universally without proper citations or documentation. When one questions Soviet historians on this point, the answer usually received is that "everything of importance" is in the book. Thus, within the Soviet system and under its rules that which is written and published is therefore approved and, if it is approved, it has to be right. In applying this dictum the Soviets probably forgot the old Russian proverb that "Truth will out, even if buried in a golden coffin."

In such an environment, it becomes incumbent upon the analyst to understand in depth the circumstances that surrounded the Soviet participation in the war and the enormous losses suffered by the Soviets as a result of it. The German onslaught and its aftermath and the Soviet's own prodigious blunders have developed in the Russian mind an overweening determination to obscure the truth in order to prove the rightness of Communist doctrine. To accomplish this requires an unflagging loyalty to accept the official version of the war and an unflinching willingness to obscure its sobering reality: a cloud of aphoristic claptrap which claims that, i.e. all things, under all circumstances, the Party's grasp of the situation prevailed and assured victory. Those things that are abhorrent are ignored or are revised to fit the politico-ideological needs of the moment. This is truly

unfortunate as no one who can grasp even a small segment of truth of the Russo-German war can deny the tremendous sacrifices and bitter suffering endured by the Soviet people and the part they played in the final victory. Nor can the heroism of the common Soviet soldier be ignored or go unappreciated. It is also unfortunate that the difficult process by which the Soviet Union was able to take its army, shattered as it was from the first German assault, and turn it into a formidable military machine capable of reaching the Elbe, cannot be completely and clearly understood.

Another important determination that must be made is what point in time constitutes the beginning of a war or, more precisely, the date after which evidence is accepted. If, for instance, the date chosen is 22 June 1941, the time of execution of the "Fall Barbarossa," then all that transpired before is lost except in retrospect. Indeed, a much earlier date must be chosen, a juncture where events of such magnitude occurred that the future was affected. A standard analysis of the war divides the Soviet participation in World War II into eight categories:

1. The Pre-War Period.
2. The German Advance Toward Moscow (22 June 1941 - December 1941).
3. The First Soviet Winter Counteroffensive (December 1941 - May 1942).
4. The Second German Offensive (June-November 1942).
5. The Battle of Stalingrad & Soviet Counteroffensive, to July 1943.
6. The Battles of Orel & Kursk & the Soviet Offensive, to Spring 1944.

7. *The Soviet Summer Offensive of 1944.*
8. *The Final Soviet Offensive (January-May 1945).¹*

This categorization serves only to illustrate the relationship between the chronology of the events as they happened and the tests for military effectiveness that have been applied.

I. Political Effectiveness

The question of political effectiveness takes on a special meaning when dealing with the Soviet Union, even during the crucial war years. Everything that occurs in the USSR has political overtones, and this is more apparent in the "Worker's Paradise" than anywhere in the world. Thus, any conceptualization of the notion of political effectiveness in the Soviet conduct of the war must be tempered by the realization that the influence of the Party permeates every level of Soviet society and the lives of all of its inhabitants. The study of the role of the party, and of the party leadership, the two being synonymous, is, therefore, the basis for understanding how politically effective the Soviet Union was in the prosecution of the war.

One might say that the political effectiveness of the Soviet leadership bordered on perfection as there was no appreciable dissent in the bureaucracy and very little public outcry over shortages of either luxuries or staples during the war. The reason for this phenomenon was wrapped, of course, in the persona of Josef Stalin.

When Stalin took power after the death of Lenin, military acumen was not one of his strong attributes. Although astute at wielding power, the Soviet dictator had shown little skill in dealing with the problem of the armed forces. Some of his early decisions dealing with naval affairs amply illustrate this point as does his apparent inability to grasp the situation facing the Soviet Union on the eve of the German attack. Stalin fully expected the war in the west to be a long one and when it

proved not to be, he was simply not prepared to recast his thinking. Certainly, his commitment to the 1939 Nazi-Soviet Non-Aggression Pact marked his inability to fully understand the German strategy. When the Germans did attack the Soviet Union, Stalin secluded himself and took no part in the initial actions that had to be implemented to prevent total destruction. When he did emerge after two weeks and even after he assumed the grand titles of generalissimo and supreme commander, his role was more ceremonial than real. Yet, by war's end, Stalin had become a competent wartime leader who not only dealt with his allies but also firmly led his own people.

It would have to be granted that Stalin's greatest skill was in terrorizing those around him and this certainly applies to his principal role in the early stages of the war. Many a Red Army commander felt his wrath and many died because of it. Even so, his ability to select highly competent personnel to direct the war both on the battlefield and on the home front is a tribute to his leadership. Stalin had an inordinate capability to retain vast amounts of data and to recall information when it was needed. Soviet staff officers who briefed Stalin did so in the sure knowledge that any small bit of information that was forgotten would surely be caught by Stalin and they would suffer because of it. Thus, briefings were meticulously prepared and this, in turn, meant better estimates and more accurate planning. Most scholars agree that by war's end most senior Soviet officers held Stalin in respect, albeit often grudgingly, for his ability to grasp strategic situations and to blend them with the Realpolitik of the politico-economic situation in the nation. This may be his principal contribution to the war, but it is a large one.

To be sure, Stalin was able to achieve the feat of almost total national dedication to the cause because he was the inheritor of a millennia-old tradition of awesome autocratic power and because he ruthlessly repressed even the slightest indication of opposition to his rule. A second reason for Stalin's success in directing the seemingly overwhelming support of his nation in the war effort was the unconscionable brutality of the Germans toward many Soviets who would have initially responded to a change in regime and who quite often welcomed the Nazi forces with open arms. This changed, of course, and soon Hitler's plans for reducing the Slavs to peonage turned often grudging acquiescence to unrestricted hatred and resistance.

Stalin's suppression of opposition began before the war and was applied equally to both the civilian and the military sectors of the Soviet society. Stalin, more than any other person, both built and destroyed the Red Army by removing the potential opposition he perceived in the military hierarchy, an opposition often called the "Tukhachevsky Group." This activity did not go unnoticed in Berlin and surely played a part in the decision to attack the USSR.

In reality, the extensive purges that emasculated the Red Army's officer corps had their roots in a deep-running debate over strategic doctrine and over the organization of the armed forces, one part of which was the struggle for the establishment of a separate naval administration. Another area of argument dealt with the establishment of the Main Military Soviet (Glavnyi Voennii Soviet (RKKA)). Erickson points out that this organization succeeded another "Military Soviet" that existed until 1937-38, when 75 of its 80 members were shot.² The new Main Military Soviet that Stalin installed consisted of twelve individuals whom he trusted. In addition, the unit commissar was

returned to a level of authority by decree and placed in nine graduated ranks that corresponded to their commander counterparts. These political commissars were charged with the precautionary function of maintaining the political loyalty of the unit to the state; that is, to Josef Stalin. The politruk (political director) served the lowest elements while commissars were designated for battalion and higher units. The politruk was often a private who was an active Communist and was either chosen or chose to follow that course in his military career. As a result of the reinstitution of this system, discipline was adversely affected, and the prestige of the commander fell to a low point. Discipline was thereafter (except in rare instances) within the purview of the commissar.

Before the purges ended in the autumn of 1938, the chief of the General Staff, the commanders of the air force and the navy, the inspectors of artillery and armor, 13 of 15 army commanders, and 57 of 85 corps commanders were executed, exiled, or simply disappeared. There was no formal justice and no appeals after the first few show trials. Rather, the special NKVD teams that were sent into every military unit in the country heard cases based on what they considered evidence, convicted the accused, and executed the sentence. In all, more than 35,000 officers were liquidated or removed, a number that included 90% of all general officers and 80% of all colonels. The purges had exposed the fact that there had been a conflict of major importance between large segments of the Red Army and the Stalinist clique. More importantly, there were clear indications that the political machinery, which had been created specifically to insure army loyalty to the Party, and, to Stalin, had failed.

The obvious result of this debacle was threefold as far as the military part of the Great Purges is concerned. First, the Soviet armed forces lost the cream of its senior commanders and planners who exhibited any independence of thought. Second, it muted any younger officers with talent who would not toe the mark. Third, it brought to high level command and staff positions officers who were more remarkable for their political adhesion to Stalin's system than their ability to command or to plan. There were, of course, notable exceptions in each of these areas, but the overall result of the terror was the destruction from within of the army's will and ability to fight. The military structure of the Soviet Union was totally disorganized and its personnel terrorized. It remained illogically loyal to the leader; however, and, under the new organizational forms instituted by its Commissar of Defense, Marshal Kliment Voroshilov (over his 1927-1940 tenure) it continued to grow in size. By 1939 the Red Army was more than 3,000,000 strong.

After the Finnish War fiasco, many changes took place in the Red Army Marshal. Semeon Timoshenko, who had finally managed to break the Finnish Mannerheim Line, replaced Voroshilov as Commissar of Defense. Timoshenko, a firm disciplinarian, quickly introduced a number of much-needed reforms the first of which was the abolition of the political commissars in August 1940, less than a year before the German attack. This change was motivated by the fact that the commissars had interfered with the proper execution of military operations during the Russo-Finnish War. Another change Marshal Timoshenko introduced was a new Disciplinary Code that replaced the old one which had been in effect since 1925.

At about the same time that Timoshenko was beginning the rebuilding of the Red Army, the ideology of Stalinism was taking hold in the Soviet Union. The emergence of Stalinism introduced new conditions into Soviet

society that affected the military. Stalinism was not merely a political and socio-economic system, it was also a reiteration of the theophanic microcosm that had controlled Russia's destiny for centuries. In this case, it was based on the exercise of power through force and terror. This system was in place when the war began, and it remained the driving force behind all activity in the USSR during the war.

Like most of the armed forces of the world, those of the Soviet Union were faced with the problem of modernization, especially mechanization, during the 1930s. To some extent, the Soviet position was aided by the collaboration between the new USSR and the Germans after 1920.³ Voroshilov had been a principal spokesman and avid advocate of this arrangement and, along with his technical advisors, had played a major role in securing German advice and assistance in a number of key areas. At the same time, however, the political nature of all such enterprises was not overlooked as the period of mechanization was deemed to be a particularly critical one for the military. Thus, from mid-1930, a political deputy to the Commissar had been appointed who watched over the loyalty of the army during the reorganization.⁴ It is difficult to determine all of the causal relationships that were involved in the mechanization program before the war. It is even more difficult to determine how effective the modernization program was in helping slow the German advance when it did begin. What is clear, however, is that no amount of budgetary allocation was going to be enough if the Germans were not stopped. It is probably safe to estimate that all save a very small percentage of the annual budget was devoted either directly or indirectly to the war effort even though the few budgetary figures that are available seem to indicate that the highest percentage of military expenditures took place in 1943 when 58.4% (124 billion rubles) were thus

used.⁵ How this money was allocated among the services is impossible to determine. What can be determined is that the sum of the resources, both financial and material, was probably far less than what would have been required if the West, specifically the United States, had not assisted. In 1942 alone, for instance, the United States supplied over one billion dollars in goods to the USSR under the terms of the Moscow Protocol.⁶ Although the point is vigorously denied by the Soviets, the supplies furnished under the various phases of the Lend-Lease Program were decisive in the subsequent victory over Germany.⁷

For the Soviet industrial and technological base the problem was the same as in every other sector of Soviet life, that was, survival depended upon winning. During the first phase of the war, 75% of Soviet armament plants either fell into German hands or were threatened by them. These plants were concentrated around Moscow, Leningrad, and Kiev.⁸ By the terms of the Military Economic Plan established in August 1941, eastern Russia was to become a new industrial base for the production of Soviet military goods. This plan was renewed without substantial change throughout the war period. It is essential to understand that the basis for the shifting of the industrial capability to the east was established as early as the First Five Year Plan and was confirmed by the Eighteenth Party Congress (March 1941) that ordered a doubling of the capacities of the three principal industrial centers east of the Urals. When war came, and whenever possible, factories were shifted from the west into these regions, some doing so in a period of months and being able to resume production before the end of 1941.

Another important aspect was the fact that, before the end of the war, almost every factory and other industrial enterprise was to a greater or lesser degree involved in war production. In doing so,

especially east of the Urals, there was an exploitation of resources, such as coal production in the Urals basin, that was increased 300% before the end of the war. As one French scholar pointed out, "The whole economic life of the nation moved under the standard of war..."⁹

The use and development of technology during the period of the Great Patriotic War is somewhat unusual in the fact that the Soviet Union produced some exceptionally good pieces of equipment even in the face of the destruction caused by the German attack and even though they were considered crude by western standards. Some of this equipment was a part of the mechanization program that had begun in the pre-war period. These items included the exceptionally good T-34 and the Stalin IS tanks, both of which had diesel engines, and a series of self-propelled guns. Ironically, a large portion of military transport was still horse-drawn at the end of the war, and this may indicate a Soviet rationalization of where to place technical emphasis while operating in a crisis environment. Another example of the use of technology may be found in the development of the Iliushin DB-3F bomber. This was one of the first wartime designs by the famous Iliushin Design Bureau to see service. Because of the lack of ability to produce the needed light-alloy metals, the Soviets were forced to find other materials and settled on wooden main spars for the wings.¹⁰ Similarly, the Soviet Yak-3 fighter was superior to the German Bf-109G and the FW-190A at low altitudes.¹¹

There were about 193 million people in the USSR in 1941. Most sources agree that this constituted the base for a military manpower pool two and one-half times larger than that possessed by Germany. The Soviet armed forces was composed mostly of conscripts, who were called up under the often-modified Mobilization Law first promulgated in 1939. There was, in addition, a small corps of professional officers and senior

non-commissioned officers. Even during the war, there were priorities for selection of otherwise fit draftees with the NKVD having first pick for border and internal security forces. Even though conscripted, the term of service was predicated upon the service to which the individual was assigned. The war, of course, obviated the necessity for mustering-out completed-service individuals. To help control its manpower pool, the USSR evacuated most of its able-bodied men who were not already in uniform to the east after the German attack began. Those who were left behind were largely captured and put into forced labor units that were shipped back to Germany. Many of those who were in uniform and who served on the western frontier during the early phases of the war were also captured; the best estimates indicating that more than 3.5 million Soviet soldiers were taken prisoner in 1941-1942.

In addition to those killed or wounded, these losses constituted a significant depletion of the manpower pool. One method of offsetting these losses was the utilization of women. Women flew combat aircraft, manned tanks, and performed a number of other hazardous duties. Large numbers of women were also in other combat support assignments as well as in the Rear Services. More than 530,000 women served in the Soviet armed forces during the war. The overall low educational level of the average Soviet soldier, male or female, also complicated the introduction of any but the simplest tools of war. Technically capable personnel had to be drawn from engineers, teachers, and skilled factory workers; but here the army had to compete with industry for their services, and it is obvious that decisions had to be made to insure the continuous flow of supplies to the fronts. By war's end more than 71% of all agricultural workers were women.¹²

There is little, if any, information that would indicate that there was any widespread resistance to conscription, which was administered by local military commissariats, but there is some evidence that would support the theory that the traditional Russian soldierly trait of apathy prevailed. German records indicate that Soviet troops were unpredictable, and it may be here that the real nature of the soldier can be found. Certainly the form and content of Soviet regulations and directives for the governing of the soldier were obviously written for the management of individuals who that were something less than what has been the officially accepted image of the Red Army fighting man during the war. He required constant supervision and was given only minimum freedom. There were numerous violations of regulations, however, that ranged from simple drunkenness to desertion. In many cases these crimes apparently went unpunished. At the same time, political unreliability that might have taken any number of forms, as judged by the omniscient political cadreman, or NKVD agent, was severely punished. Officers and commissars were empowered to carry out summary execution of some offenders. Soviet soldiers captured in combat were considered traitors by the government and, along with their families, were severely punished. This treatment, more than anything else leads to the conclusion that the contempt in which the soldier's life was held by his government was a reflection of the overall contempt in which Stalin held human life.¹³

Lastly, it is seemly to mention the ironic fact that patriotism and esprit de corps played a major role in the overall makeup of the Soviet fighting man or woman. It is, of course, impossible to completely characterize every factor that molded the Red Army soldier. The characteristics that can be described and that are important are those which were developed by the general environmental conditions in the Red

Army. In the first category fall such characteristics as patriotism, physical strength, indifference, endurance, herd instinct, and limited mechanical aptitude. In the second category are strict discipline and a lack of initiative. In most ways, the Red Army soldier differed from his western counterparts, and his contradictory traits of character tended to make him extremely effective in some aspects yet weak in others. His conduct in war shows an indifference to human life, whether his own or another's, coupled with natural stamina and a devotion to his country. It was these characteristics that produced his greatest asset, a tremendous endurance. Because most Soviet soldiers were of peasant background, he was always in close personal contact with the elements and, consequently, had developed an innate resourcefulness. Conversely, his century-old heritage of collectivism under serfdom and under the Bolshevik regime developed in him a lack of initiative and a reluctance to assume responsibility. Herd influence and indifference displayed toward fighting made him subject to panic and to chaotic routs especially in the early phases of the war. His general lack of mechanical aptitude and an equally low educational level made it sometimes difficult for him to grasp new techniques easily.¹⁴

Thus, there was a need for rigorous training and severe discipline at the outset, and these helped to develop the Red Army soldier's natural attributes and, at the same time, helped correct many of his inherent deficiencies. These efforts produced some impressive results but were not fully successful in overcoming all or even the greater part of his weaknesses. One of the chief successes was in the Soviet Union's ability to supply its fighting men with weapons and equipment that were simple and rugged in construction, easy to operate, and easy to maintain in the field. Although in some respects below what were considered as

acceptable standards in the West, these Soviet weapons and equipment served the Soviet soldier well.

II. Strategic Effectiveness

In the case of the Nazi-Soviet War of 1941-1945, the single most important national political or military objective that meant anything to the Soviet Union was survival, survival not only of the nation but also of the revolution. Hitler had sworn to destroy both. How to accomplish the unequivocal act of survival was another question, however, as the very existence of the Stalinist system was at stake. Because of this, the USSR had no alternative but to pursue a policy of cooperation with the West. This application of national political strategy, accomplished with the wholehearted cooperation of the West, and coupled with German political and military blunders, saved the Soviet Union from more horrible losses and at most, from probable extinction. Thus, the national political objective of survival was enunciated in a national political strategy of cooperation with the hated and distrusted West.

As a second political strategy, Stalin orchestrated a spectacular resurgence of Russian nationalism. This elemental upsurge not only helped save the nation, it also helped prevent the destruction of the revolution. Later in the war, when victory appeared assured, it may be surmised that Stalin decided upon the addition of the additional national political objective of internationalism and expansionism, that had been there all the time but had been submerged as a result of early Soviet isolation.¹⁵

One could assume that the two earlier political survival strategies and the later addition of a political objective of aggrandizement in

Central and Southeastern Europe were translated into national military strategies and, subsequently, into operational plans and actions. The accomplishment of these activities created few, if any, internal problems for the Soviets as it was more a function of changing hats than of having to convince a larger audience about the viability of a plan. Simply put, the only one who needed to be convinced was Stalin. At his direction, and in order to insure the efficient prosecution of the war, the Presidium of the Supreme Soviet decreed, on 30 June 1941, the formation of an omnipotent body to be known as the State Defense Committee (GOKO). As one might suspect, Stalin was named its chairman, and at its peak it had only about six other members. This body, in effect, replaced the Politburo as the decision-making organ on direction and coordination of civilian and military organizations without recourse to normal legislative or executive procedure. The Politburo did continue to exist and did make major decisions on general policy but, as the principal concern was survival, the GOKO was the primary agent of success or failure. Also, on 19 July 1941, Josef Stalin was appointed defense commissar and commander in chief of the Red Army.¹⁶

The struggle between Nazi fascism and Soviet communism also equally affected each side. Failure for either meant destruction of the dream, although this was more apparent to Stalin and his cohorts in the beginning and probably was not fully comprehended by the Germans until near the very end. An intriguing question in this regard is the often cited notion that there was a possibility that Stalin might have sought a separate peace with Hitler given specific sets of circumstances.¹⁷ The validity of the idea must rest upon whether, after the "surprise" attack on the USSR by the Nazis, Stalin would ever believe Hitler again. There was no question that, from the time he wrote Mein Kampf in 1924, Hitler

meant to destroy communism and this, in essence, meant the destruction of Stalin.

Even though Stalin was in total control of every facet of Soviet life, including the conduct of the war, the actual military control was vested in STAVKA or Supreme Command General Headquarters. As Stalin was both commissar and commander he was naturally also a member of this group. (Zhukov, Bulganin, Vasilevsky, Antonov, and Kuznetsov were its other members in the final days of the war.) The basic operational working group under the STAVKA was the General Staff of the USSR Armed Forces. This group did the actual planning for the military prosecution of the war. There are clear indications that Stalin became in time a competent military leader and, during the daily briefings he received, a better than average strategist. Probably his best feature was his ability to recollect details, and this was the bane of those who briefed him. He often sent senior officers out of the room to reflect on what they had said or suggested before being allowed to continue. In this monolithic environment there was little room for error and less for incompetence. Similarly, the conferring of Stalin's trust was as transitory as the seasons and those who flourished in that survival-oriented world did so as much by political acumen as by military ability. Still, there are examples of those who argued successfully with Stalin and, when proven right, were forgiven the trespass and usually rewarded. Failure, on the other hand, meant disgrace, demotion, or a firing squad. Not all of these punishments can be laid at Stalin's feet, however, as there are recorded accounts of senior commanders such as Georgi Zhukov summarily executing commanders after an unsatisfactory inspection.¹⁸

The growth of the Soviet Red Army, which by definition included the Air Force and Navy, was much the result of the large manpower pool that

was available. In all, about 25 million served in one capacity or another in the Red Army in World War II. Although more than half (about 13.7 million) are estimated to have died in uniform, there was always an adequate supply of manpower even though skills did not often match requirements. As many as 12 million men may have been in the reserves when the war started, with a total of more than 11.3 million on active duty by war's end. The reservist's training was poorly suited to actual warfare and most suffered for it during their initial days in the line. During the early phases, a type of "depot" replacement system existed; but the enormity of losses required a more direct approach which culminated in the establishment of a directorate in charge of supplying manpower.

Where capabilities often fell below desires was in the area of leadership. Junior officer casualties were especially heavy and, by 1942, a type of "90-day wonder" program had to be inaugurated in which candidates were trained in the field at army (later front) level. Some 540,000 platoon-level officers were produced in this manner. In the middle of the war, when the issue of survival became less immediate, officer training was extended to one year for infantry officers and 18 months for specialists. Although these officers, and most of their superiors, were generally rated inferior to their German counterparts, they were obviously successful enough and were available in sufficient numbers to win the war.¹⁹

To properly determine the relationship, between the national political and military strategies of the USSR in World War II and between the Red Army's logistic infrastructure and the nation's ability to supply the fronts requires some definition of terms. First of all, the supply organization of the Red Army, unlike that of the United States Army, operated as a largely independent command known as "Rear Services." This

group was responsible for all logistical activities down to regimental level. Another unique characteristic of the Soviets was the official sanction of the exploitation of local resources and captured equipment. This was not a common practice among the Western Allies.

From the standpoint of the military's ability to get what it needed, the overall procurement policy was theoretically and constitutionally determined by the Supreme Soviet and the Council of Commissars. In actuality it was the Party, in the person of Stalin, that controlled all of the basic policies, including that of military procurement. There is little question that the USSR had made preparations for a rapid and all-embracing mobilization of industry in the event of war. The very nature of the centralized plan-economy would almost guarantee the success of such a plan. The fact that such a plan existed may be illustrated by the report posted in the German War Ministry's mouthpiece, Borsen-Zeitung, that "Soviet Russia's economic policy (was) guided almost exclusively by military considerations..."²⁰ Granting the provocative nature of the German press at this time (1937), it is still indicative of the emphasis placed upon the war-making potential of the Soviet Union by its chief antagonist.

This military-industrial policy was then translated into specific proposals by the Commissariat of Defense (also Stalin). This top down, crisis-management oriented system contributed to success but did sacrifice long-term efficiency. It would appear, therefore, that the ability to reach industry and the nation's technology base was a function of the relationship between the strategy and the leader. Thus, national political strategy allowed for borrowing from the West that which it could and for depriving its citizenry of the barest essentials in order to carry out the national military strategy.

There is little resemblance between the cooperation of the Western Allies among themselves and the cooperation that existed between the Soviet Union and the West. Certainly there were difficulties that had to be faced in the West. Allied disputes were superficial compared to the lack of cooperation that existed at all levels between Soviet officials and their western counterparts. This should not have been considered strange, however, even in the face of the logic of the necessity to defeat the common enemy. The basic xenophobia of the Russian, balanced by conflicting national political and military strategies in the West led to numerous examples of a failure to cooperate. Supplies that were sent into the USSR by the United States were used in great quantity but were never fully reported to the Soviet people. Thus, the impression was laid down, an impression supported by what was reported to the Soviet citizenry as a Western refusal to land forces in western Europe, that the Soviet Union was fighting Nazi Germany virtually alone and unaided.

In these events, the chief purpose was Stalin's apparent desire to maintain the illusion of isolation as a means of insuring continued rule. To this was added a number of other factors, however, that were more real and that directly affected whatever grand strategy there happened to exist. In March 1943, for instance, Churchill informed Stalin that the upcoming Sicily campaign would require curtailment of supplies to the USSR. Similarly, the numerous facets of the Polish question further exacerbated the situation. Even when the West announced plans for the cross-channel attack at the Moscow Conference in October 1943, the Soviets refused to divulge their plans other than in the most general terms. The two subsequent major conferences attended by Stalin, Tehran (November 1943) and Yalta, (February 1945) were held at the Soviet leader's insistence on ground controlled by Soviet troops. In both

instances, the most crucial decisions reflected what was the outcome of the USSR's own strategic plans which were never fully revealed to the West. The Soviet Union may be credited, therefore, with achieving some strategic integration; but it was always based more upon guile and stubbornness than upon cooperation.²¹

Until 1943, and probably well into 1944, the German forces in the Soviet Union were dangerously strong, and the Soviets were constantly made aware of that fact. Probably the single greatest strategic strength-weakness ratio that can be developed existed between Hitler and Stalin. The Germans lost in the East for a number of reasons but one was salient, Hitler. Dupuy sums it up best,

Josef Stalin and Adolf Hitler were two of the most evil men of the 20th Century. They were also two of the most gifted political geniuses of the century. There was little to choose between the military instincts and decisions of both men; they were almost equally bad. Both exercised close to absolute power over their nation's war making efforts, but Stalin proved to be a considerably better war leader.²²

III. Operational Effectiveness

The beginning of the war witnessed numerous deficiencies in the integration of the means of combat within the Soviet armed forces. In the air defense area, for instance, the lack of integration was directly related to heavy losses suffered in the early hours of the German initial attack. The air warning system of the Western Special Military District failed and the result was the devastation of tactical aircraft caught on the ground at well identified airfields.²³ By August 1941, less than 60 days into the war, the first reorganization of Soviet air defense took place as a part of the overall realignment of the Red Army. Fronts were established that incorporated all combat, combat support and rear service elements in a particular linear area facing the enemy. Air defense zones were disbanded and antiaircraft units were assigned directly to the fronts in the dual capacity of AAA and antitank forces. Although German air power constituted a constant threat, the ground power of German armor had to be contended with if defeat was to be averted. Salvation, rather than textbook utilization, was the operative factor during those critical days.²⁴ With this integration, the remainder of the air defense assets were organized to defend areas behind the front's rear boundaries and, in some cases, at politico-economic points within the fronts' area of

responsibility.

Soviet integration of tank and infantry forces into mobile units is another important example of this concept. Originally designed as a primarily defensive force, the concept began to change as the Soviet military strength grew. Out of wreckage of the few tank corps that had existed, and were subsequently destroyed when the war began, a few new tank-equipped formations began to appear in the fall of 1942 and were used successfully at Stalingrad. Soon afterwards tank corps combined with infantry-heavy mechanized corps to form tank armies that were the principal maneuver elements for the great Soviet offensives of 1943-1945. By the end of the war the Soviets were heavily weighted in favor of tanks. In actuality, the formations could be more accurately called divisions than corps, in the western conceptualization of the term, and were made up of small brigades of tanks, motorized infantry and artillery.²⁵

Probably one of the most dramatic applications of the concept of intellectual mobility was the USSR's near defeat at the beginning of the war because of adherence to a strategy of terrain defended inch by inch. This allowed large-scale German encirclements that not only attained specific key terrain objectives but also caused severe Soviet personnel losses. This concept, according to Manstein, when coupled with a lack of initiative and ability almost brought about the total destruction of the Red Army in the first weeks of the war.²⁶ The real exercise of the intellect came in the Soviet ability to recover from this near disaster and to work toward gaining strength while, at the same time, Hitler apparently lost control when faced with the prospect of a Russian winter in the field. Stalin's ability to foster patriotism through the invocation of defending Mother Russia is another indication of the

difference between the two opponents.

In the first phase of the war, the Soviets were able to shift major elements of their industry to the east while simultaneously bringing replacements and fresh units to the west. Although the first Soviet counteroffensive was generally unsuccessful, it illustrated the ability to move troops over often non-existent routes of communications to the point of decision. The fact that the troops did not perform as well as might have been hoped constitutes a different problem. The intellectual acceptance in 1943 that infantry could no longer be the key element in battle if victory was to be achieved helped create the mobile forces that were to be the arm of decision. The end of 1943 saw only 320,000 of about 4,000,000 Soviet ground combat troops in mobile formations. Before the end of the war, however, much larger percentages of combat power were found in these organizational structures.²⁷

For the Soviets the use of technology was a function of time. As the USSR grew stronger, it was able to indulge in innovation. This innovation took the form of a major shift in posture from the defensive to the offensive; and with this shift came the need for better and different uses of available technologies, both those that were home-grown and those that were either borrowed or stolen from the West. By 1944-1945, for example, most soldiers of the Red Army were armed with the PPSH submachine gun. This came about as a result of the mechanization program and the fact that SMGs, especially the PPSH, were more easily manufactured in numbers than were rifles. It is more likely that the technology was pushed rather than its taking the lead in military decisions. Most, but not all, of the innovations seen in Soviet doctrine and equipment were based on already existent technologies and were not developed as a result of the conflict. The 51,000 jeeps that were

delivered to the Soviets are a good illustration of this point as are the more than 1.08 billion dollars worth of machines and machine tools which the United States gave the USSR under Lend-Lease.²⁸

The Soviets did innovate in the area of support with the development of Rear Services concept that included all administrative personnel, supply bases and depot, means and routes of transportation of both men and equipment, and rear defense and evacuation. This was a top-down organization with representation at the ministerial level in Moscow and responsibility for all common supplies.

Soviet intelligence operations were conducted in a somewhat different manner in the Red Army than in the west. One aspect of this is found in the fact that one word, razvedka, means both reconnaissance and intelligence and the Soviets tended to consider the two as inseparable. In the pre-war phase, intelligence had been singled out as the prime source of security and troop commanders had been enjoined to keep close contact with their reconnaissance forces. Yet, there is sufficient evidence to prove that neither Soviet intelligence nor Soviet commanders paid much attention to this rather obvious suggestion. German radio intercept was the most reliable source of information for Berlin before the war and continued to be until the very end.²⁹ Thus, the suggestion may be put forward that the Soviets, much as their predecessors in the Imperial Russian army in World War I, failed completely in the area of radio communications security.

Even so, Soviet intelligence did perform successfully in a broad spectrum of roles that included everything from high-level espionage within the German General Staff down to increased ground and air reconnaissance before an attack. Detailed sketches, along with aerial photos, were often a part of operations orders. Quite often air

reconnaissance were carried out in force as a means of assuring success. This became possible only after the Luftwaffe was no longer dominant in the skies of the battle area. At the same time, the Soviets utilized the eyes and ears of one of their most valuable assets, the partisans, as a source of up-to-date information. The Soviets also practiced deception and perfected the art to a high degree. Deception gave the Soviets the element of surprise. Similarly, most major operations were hidden behind a series of feints, ruses, and demonstrations. It must be concluded, therefore, that, evidence to the contrary notwithstanding, the Soviets did have an integrated intelligence system.³⁰

The fact has already been demonstrated that, as the USSR gathered strength, it was able to shift from a defensive to an offensive posture. This change engendered doctrinal and organizational changes, such as increased mobility, that indicated a flexibility of thinking and planning in the higher Soviet military echelons. A good example of this may be found in the several reorganizations of Soviet air defense. In June 1943, for example, PVO Strany, the national air defense organization in European Russia, was divided into two separate PVO fronts, the Eastern and Western, and Cinc, PVO Strany, his main directorate, and all his organs of control were disbanded. Other air defense assets were returned to the control of their respective military districts to which they were assigned. In effect, PVO Strany ceased to exist, but command and control were simplified as the two PVO front commanders could be responsive to their more localized situations. In April 1944, as German lines began to shift westward, the PVO fronts were shifted so as to become Northern and Southern PVO fronts. The boundary between the two sectors was now perpendicular to the front and moved with it as the lines retreated toward Germany. Other modifications took place into 1945, but all of

them followed this same logic.³¹

It would appear that the Soviets were victorious because of their making fewer mistakes and because Stalin felt himself all-powerful while Hitler, on the other hand, saw himself as infallible. Stalin, and through him his people, took advantage of events while Hitler attempted to force events to his will even, as General Adolf Heusinger, who was Deputy Chief of the German Army High Command (OKH) pointed out, in the face of the most reasonable argument³² Both strategic and operational leverage in the form of a space-time:operational strength ratio also favored the Soviets, even in the desperate early days, by a dangerous extension of German operational parameters. To this must be added the fact that Hitler's cruel treatment of the occupied land and its people gave Stalin the one thing he could not otherwise insure, the patriotic loyalty of the people. This probably was the ultimate leverage.

IV. Tactical Effectiveness

When the German invasion of the Soviet Union began, there was general confusion over how to fight and with what. The attack found, for example, the air defense system less than adequately prepared to carry out its mission. Approximately 90% of all of the fighter-interceptors assigned to the Air Defense Forces (PVO) were obsolete and, at that same precarious moment, about 66% of all its medium caliber antiaircraft cannon were due for replacement. Target acquisition was still primarily limited to visual observation as only 34 primitive radar sets were available. Of this number, only six were capable of doing more than identifying the entry of an intruder into the ranging sweep. If the approaching aircraft could be identified by the existing system as to numbers, direction, altitude, etc., only about 25% of the air warning stations (VNOS) had proper communications to enable rapid alerting of the point or zonal direction center. Yet, by the end of the war, the overall strategic defense of Moscow included the assets of an air defense army that had its own air army of three aviation corps.³³

The development of mobility in tactical organization was concurrent with the change from a defensive posture to one featuring offensive operations. Thus, the military strategy was a function of politico-economic conditions, such as the infusion of foreign aid, and the tactical-operational structure was the result. A part of the accomplishment was the efficient integration of tanks, motorized or mechanized infantry, and supporting weapons. Supporting fires followed

the Soviet custom of controlling their artillery in separate units. Artillery units eventually outnumbered the mobile forces; but the quality of artillery support, although massive, was not very good. There was so much artillery support, however, that its relative inefficiency was not immediately apparent.³⁴

Tracing the history of the field formations of the Red Army during the buildup and fighting phases of World War II is somewhat difficult as the Soviets published little or no information concerning its organizational structure. Prior to the war the Soviets were most secretive about their army organization. Some information became available during the war years, but not much. The war with Finland uncovered many weaknesses in the Red Army, and the tasks facing the Soviets at its completion were reorganization, an overhaul of all levels of training, re-equipment of all echelons and types of forces, and redeployment of those newly established forces based not only on the situation and terrain, but also upon the often capricious whims of the national leadership.

When Plan Barbarossa was executed, more than 155 German division equivalents took part in the attack. The three main Nazi armies were further augmented with two Romanian armies comprising 12 divisions, three Italian divisions, and more than two Slovakian division equivalents. Almost 3,700 tanks were included in this massive force along with better than 2,000 aircraft.³⁵

Standing in opposition to the Germans were 197 Soviet divisions that included 111 infantry, 47 motorized, 7 mountain, 8 cavalry and 47 tank. There was great variety among the infantry divisions as to organization and size. Not all of these units were along the border; some were organized in depth behind the western Russian frontier.³⁶

The length of this frontier precluded the construction of a continuous, permanent system of fortifications of the type encountered in the west either in the French Maginot Line or the German West Wall, even though the function of the Red Army in the pre-war phase was purely defensive.

The organization of the field forces at the beginning of the war centered on the rifle corps and what would be the reconstituted mechanized corps. When the war started, there were also a small number of tank corps in existence that were completely destroyed in the first phase of the German offensive and did not reappear until the fall of 1942. Soon thereafter the reconstituted tank corps was joined with the mechanized corps into tank armies that were, sometime later, redesignated as mechanized armies. By mid-1944 there were 79 army-sized formations, 48 of which were in the main battle area facing the Germans. Most of the remainder were little more than paper organizations. Six of those engaged in the fighting were tank armies. These organizational shifts confirm that the Soviets were keeping their tactical structuring in cadence with their greater dependence upon mobility as the nature of the war shifted from defense to offense and, within this shift, upon the concept of fighting a war of annihilation.³⁷

By the end of the war the Soviets had progressed in all areas of combat but at an unequal rate. The seeming lack of appreciation for human life that marked Soviet planning in the early phases of the war was the result of excess manpower and the shortage of critical items of war materiel. Yet, even the Soviet manpower pool was not inexhaustible and eventually this led to the realization that more flexible and better organized field units were necessary. Therefore, Stalin issued, in 1942, new offensive tactics designed to reduce losses and to increase effectiveness. One result of this order was the rapid establishment of

some 150 rifle brigades. This was done because these reinforced, regimental-sized units could be made ready for combat more speedily than the more traditional division. Each brigade had three rifle battalions, one or more battalions of horse-drawn artillery, companies of engineers and signal troops, and assorted reconnaissance and service assets. This was a wartime expedient, but the general concept followed the decisions that had been made in the 1930s when mechanization had been decided upon. The establishment of the tank-heavy and the infantry-heavy mechanized divisions later in the war appears to have been the natural consequence of these early actions.³⁸

The use of combined arms was manifest in all aspects of the campaign. A Soviet unit on the offensive would plan improvised fortifications to reduce the danger of German counterattacks. These fortifications were the responsibility of combat engineers who were also responsible for the emplacement of hasty minefields within 20 minutes after seizure of the objective.³⁹ The general tactical doctrine that developed during the war was based upon the employment of mass, that is, the combined effect of large numbers of troops supported by armor and artillery gaining and maintaining momentum. To do this the Soviets determined that a better than 4:1 ratio was required at the point of decision and each element of the attacking force was expected to gain that ratio before the offensive began.⁴⁰ Yet, even so, the idea of integrated arms being essential to success was predicated upon the fact that infantry requirements came first and that, in fact, the other arms were there to support the infantry. This apparently also included the use of air power in support of ground operations.⁴¹

Even if everyone else in the Soviet Union and the rest of the world was aware of what was happening, Stalin was obviously taken by surprise

by the German attack in June 1941. Out of his refusal to accept the obvious came a denigration of the importance of the principle of surprise in the Soviet military lexicon. In place of the traditional principles of war that guided military leaders in the past, a new set of rules came into being as espoused in Stalin's permanent operating factors. There was, however, no lessening of the importance of surprise in the minds of trained Soviet commanders. Before Barbarossa, surprise held an important place in the doctrine put forth in the Red Army's 1936 and the 1939 Field Regulations.⁴² Throughout the war speed and surprise were considerations as important as the requirement for thorough preparation, but the concept of surprise as a principle of war was carefully avoided in major presentations in light of the leader's desires.⁴³

It is, of course, impossible to completely characterize the various factors that fitted the Red Army soldier into an organizational mold. The characteristics that can be described are those which were developed by the general environmental conditions that prevailed in the Soviet Union, as well as those formed by the special conditions within the Red Army. In the first category fall such characteristics as patriotism, physical strength, indifference, endurance, herd instinct and limited mechanical aptitude. In the second category are strict discipline and a lack of initiative. In most ways, the Red Army soldier of World War II differed from his western counterparts, and his contradictory traits of character tended to make him extremely effective in some aspects but weak in others. His conduct in war shows an indifference to human life, whether his own or others, coupled with natural stamina and a devotion to his country. It was these characteristics that produced his greatest asset, a tremendous endurance. Because of his generally peasant background he was always in close personal contact with the elements and,

consequently, had developed an innate resourcefulness.

Conversely, his century-old heritage of collectivity under serfdom, the period of "Official Nationalism," and under the Bolshevik regime developed in him a lack of initiative and a reluctance to assume any responsibility for which he could be punished. Herd influence and indifference displayed during the fighting phases of war made him subject to panic and to chaotic routs especially in the earlier phases of the war. His general lack of mechanical aptitude and an equally low educational level made it sometimes difficult for him to grasp new techniques easily.

Thus, there was a need for rigorous training and severe discipline at the outset and these helped to develop the Red Army soldier's natural attributes while, at the same time, helping to correct many of his inherent deficiencies. These efforts produced some impressive results but were not fully successful in overcoming all or even the greater part of his weaknesses. One of the chief successes was in the Soviet Union's ability to supply its fighting men with weapons and equipment that were simple and rugged in construction, easy to operate, and easy to maintain in the field. Although below what were considered an acceptable standards in the West, these Soviet weapons and equipment served the Soviet soldier well.⁴⁴ It is proper to say, therefore, even without overwhelming evidence, that the simplicity of organization and of tactics and weaponry was the result of the rationalization that anything more complex would have been inappropriate given the attributes of the soldiers of the Red Army.

Conclusion

The point cannot be made too strongly that the Soviets entered the Second World War in chaos and panic and came out of it a victorious, major world power. Josef Stalin's style of leadership may or may not have been indispensable to this victory. It is true, however, that once Stalin overcame his initial error in trusting Hitler's word, he straightened his course and presented to the world, and to his own army, the image of an impenetrable wall of indomitable will and courage. Thus, the rejuvenation of the legend of the microcosmic defender of Mother Russia brought out the latent valor of the Russians and other nationalities who made up the unnatural state known as the Soviet Union. Without the courage and the terrible suffering that the Soviet people endured, the outcome of the Second World War might have followed a different course. These terms need to be accepted without recourse to the ever present and totally irreconcilable ideological differences that separate, then as now, East and West. They must also be accepted without the overwhelming necessity present in so much of today's thinking that there must be some way of quantifying the factors involved. The Soviet Union fought the war it needed to fight to survive. It is in this fact that the real measure of effectiveness may be found and it defies aggregation.

Notes

1. cf. John E. Jessup, "Soviet-German Operations, 1941-45," in Encyclopedia Of World War II, ed. by Thomas Parrish (New York, 1978), pp. 586-91.
2. John Erickson, The Soviet High Command (New York, 1962), p. 478.
3. cf. F.L. Carsten, "The Reichswehr and the Red Army, 1920-1933," Survey, 44/45 (October 1962), pp. 114-32.
4. Erickson, Soviet High Command, p. 327.
5. General Augustin Guillaume, Soviet Arms and Soviet Power: The Secrets of Russia's Might (Washington, 1949), pp. 77ff. (Despite its flaws, this is a most useful book.)
6. cf. Georg von Rauch, A History Of Soviet Russia, trans. by Peter & Annette Jacobsohn (New York, 1957), p. 317.
7. cf. J.R. Deane, Ein Seltsames Bündnis (Vienna, n.d.), pp. 84-87.
8. Von Rauch, Soviet Russia p. 316.
9. Guillaume, Soviet Arms, pp. 77ff.
10. Robin Higham & Jacob W. Kipp, eds., Soviet Aviation and Air Power: A Historical Review (London, 1978), p. 5.
11. Generalleutnant A. D. Klaus Uebe, Russian Reactions To German Airpower In World War II, USAF Historical Series: No. 176 (New York, 1968), p. 8n.
12. cf. Guillaume, Soviet Arms, pp. 110-13. Many of the statistics quoted here were presented by Lt. Gen. Pavel A. Zhilin, Director of the Soviet Institute of Military History in a speech presented at

the Conference of the History of World War II in Moscow, 22 August 1970.

13. Albert Seaton, The Russo-German War, 1941-45 (New York & Washington, 1971), pp. 79-81; Department of the Army Pamphlet 30-50-1, Handbook On The Soviet And Satellite Armies: Part 1 - The Soviet Army, March 1953, p. 71. See also USAREUR IMPS AI-2642-S, 1951.
14. Seaton, Russo-German War, pp. 79-81.
15. USAREUR IMPS AI-2246-SP, 1954.
16. USAREUR Training Pamphlet 30-1, "The Communist Bloc In Europe," 10 March 1959.
17. Von Rauch, Soviet Russia, p. 348 mentions at least four German strategies for peace that were put forward by various elements of the German government in 1942-1943, all of which were rejected by Hitler.
18. cf. General of the Army S.M. Shtemenko, The Soviet General Staff at War, 1941-1945 (Moscow: Progress Press, 1970); Marshal of the Soviet Union K. Rokossovsky, A Soldier's Duty (Moscow, 1970); MSU G.K. Zhukov, Vospominaniya I Razmyishleniya (Moscow, 1969); J.B. Jessup, "The Soviet High Command," Encyclopedia of World War II.
19. Trevor N. Dupuy, "An Analysis of the War," in James F. Dunnigan, The Russian Front: Germany's War In The East, 1941-45 (London & Melbourne, 1977), p. 73. See also in Dunnigan his "Organization of Soviet Ground Forces," p. 87.
20. "Borsen-Zeitung" Berlin (18 August 1937). For the general sense of these thoughts see Dunnigan, "Organization," p. 91; DA Pamphlet 30-50-1, pp. 79ff; USAREUR IMPS CI-239, 1956. See also T.H. Vail Motter, The Persian Corridor And Air to Russia (Washington, 1952),

passim.

21. Von Rauch, Soviet Russia, passim.
22. Dupuy, "An Analysis," p. 75.
23. Preparation For And Unleashing The War By Imperialist Powers, Vol. 1 in History of the Great Patriotic War Of The Soviet Union. 1941-1945 (Moscow, 1960), p. 605. Trans. by DA-OCMH.
24. John E. Jessup, The Development Of Soviet Air Defense Doctrine And Practice. Report prepared for Sandia Laboratories, 1979, p. 2-3.
25. USAREUR IMPS AI-2414B, 1955; AI-2414A, 1954. See also Field Marshal Erich von Manstein, "The Development of the Red Army, 1942-1945," in B.H. Liddell-Hart, The Red Army (New York, 1956), p. 142.
26. Manstein, "The Development," p. 141.
27. Dunnigan, "Organization," p. 91. According to Zhilin (1970) more than 1,100 industrial centers were shifted eastward.
28. cf. Guillaume, Soviet Arms, pp. 90-91; Vail Motter, Persian Corridor, passim. Zhilin (1970) mentioned that the Soviet view was that only 4-10% of materiel requirements were delivered by the Lend Lease and that, while it was appreciated, it was indecisive.
29. Department of Army Pamphlet 20-261a, "The German Campaign In Russia--Planning And Operations (1940-1942), March 1955," p. 42.
30. cf. Guillaume, Soviet Arms, pp. 143f; cf. Gilles Perrault, The Red Orchestra, Trans. by Peter Wiles (New York, 1967), passim. See also Earl P. Ziemke, "Stalingrad and Belorussia: Strategic Deception in World War II," in Donald C. Daniel & Katherine L. Herbig, eds., Strategic Military Deception (New York, 1982).
31. Jessup, Air Defense, pp. 2.7-2.10.
32. cf. Guillaume, Soviet Arms, pp. 147-149.

33. Jessup, Air Defense.
34. Dunnigan, "Organization," p. 94, The Soviet view is presented in Razvitiye Tatiki Sovetskoy Armii V Godu Velikoy Otechestvennoy Voiny 1941-1945 (Moscow, 1958).
35. Edward McCarthy, "The Course of the War," in Dunnigan, The Russian Front, pp. 23ff.
36. Ibid. See also P.V. Melletin, Tankovye Srazheniya 1939-1945. (Moscow, 1957) and Max Werner, Military Strength of the Powers. Trans. by Edward Fitzgerald (New York, 1939 [1936]) p. 38.
37. Dunnigan, "Organization," p. 95. See also DA Pamphlet 30-50-1; General Gunther Blumentritt, "The State and Performance of the Red Army, 1941," in B.H. Liddell-Hart, The Red Army, pp. 134-39; Manstein, "Development," passim. A good example of tank army operations may be found in Marshal A. Babadzanyan's "1-ya Tankovaya armiya v Belgorodsko-Kharkovskoy operatsii." Voenny Vestnik (August 1973). See also Marshal P. Rotmistov's "Bronetankovyi i mekhanizirovannye voyska v bitve pod Kurskom," Voenno-Istoricheski Zhurnal (January 1970) and his Tanki Na Voine (Moscow, 1975).
38. DA Pamphlet 30-50-1, p. 68; DA Pamphlet 30-75 "Handbook on Soviet Tactics: The Rifle Regiment," August 1953, p. 7f.
39. WD Technical Manual 30-430 "Handbook on U.S.S.R. Military Forces," 1 January 1946, p. VI-5. See also Inzhenernye Voyska V Boyakh Za Sovetskuyu Rodinu (Moscow, 1970) for details on engineering operations.
40. Hq. Third Army Intelligence Bulletin No. 8, Incl. 1, November 1951, pp. 1-23.
41. Air Intelligence Review, Vol. 2, No. 13 (5 July 1950), p. 1.
42. Guillaume, Soviet Arms, p. 143.

43. General L. Rendulic, "The Russian Command in World War II," DA-OCMH MS# P-079, n.d. See also V.E. Savkin, Osnovnyie Printsipi Operativogo Iskusstva I Taktiki (Moscow, 1972); V.S. Popov, Bnezapnost' I Heozhidannost' v Istorii Voin (Moscow, 1955); N.I. Shekhovtsov, Sposobyi Dostizheniya Bnezapnosti v Godi Velikoi Otechestvennoi Voini. (Moscow, 1957); V.G. Prozopov, Takticheskaya Bnezapnost' (Moscow: 1958).
44. Hq. Second Army Troop information Instruction No. 1-63, 23 January 1963; AGS SS I-6642, "The Soviet Soldier," May 1953; Air Intelligence Training Bulletins, January - March 1951. See also the description of the Soviet soldier in DA Pamphlet 20-230, "Russian Combat Methods In World War II," November 1950.

Military Effectiveness in World War II

Earl P. Ziemke

World War II was perceived as a moral and ideological conflict. The anti-Axis coalition regarded it as a defense of freedom and democracy. The Axis powers saw it as a racially and culturally dictated struggle for national self-fulfillment. Each side proclaimed a firm dedication to commonly held principles in the abstract and left its members free to construe them according to their own lights. In their announced war aims, the governments on both sides committed themselves to crusades: the United States, Britain, and the Soviet Union against fascism and militarism; Germany and its allies against communism; Japan against colonialism. The sense of a righteous cause and the promise of a "brave new world" to follow figured significantly in the military effectiveness of the Axis armed forces as well as those of their opponents -- and in the ruthlessness with which the war was fought.

The war's continuing to be regarded as having been just and necessary has tended to obscure its more fundamental and pervasive character as a continuation, an updated reenactment, of World War I. The political division was essentially the same: Britain, France, Russia, and the United States against Germany, with Japan and Italy, as they had in the first war, following their pure self interest. Although the war

was thought of as global, the decisive theater was in Europe, and there the predominant strategic problem for both sides was again a two-front war. World War II was fought with the same weapons and technology as had been employed in the first war. Those were much improved in some but by no means all instances, and the weapons that could have radically altered the nature of the war, the atomic bomb and the long-range, liquid-fueled rocket, did not come along until after the issue had been decided. The political and military leaders derived their experience and their conceptions from World War I, as did a large part of the adult population.

Moreover, even before it ended, World War I had been regarded as militarily and politically an incomplete war. Germany had been defeated, but the Allies had not secured an indisputable victory in the field. The German military had not signed the armistice, and some were claiming before the ceasefire that they could have kept on fighting indefinitely had defeatist civilians not "stabbed the army in the back." The losers were excluded from the peace conference; consequently, the Germans regarded the Treaty of Versailles as a "Diktat," a contract signed under duress and, hence, neither, morally nor legally binding. Among the former allies, the Japanese and Italians saw the settlement as having been rigged against them; the French saw it as not sufficiently guaranteeing their future security; the British and Americans were reluctant to participate more than passively in its enforcement, the Americans to the extent of refusing to join the League of Nations; and the communist successor to the tsarist Russian Government saw itself as having been treated as if it were one of the defeated enemy states.

The European war of 1939, consequently, broke upon a continent and a world much more specifically conditioned than they had been in 1914 or were likely again to be after 1945. The mood among the belligerents was

distinctly somber. The excitement and near euphoria of August 1914 were nowhere in evidence. Doctrine in all armies assumed another prolonged stalemate and the attendant costs in money, resources, and lives. Verdun, the Marne, and the Somme were not just memories but catastrophes waiting to repeat themselves. Each of the armies expected itself and the others to perform about as they had in World War I, which meant that neither side would have a decisive advantage, the dominant tendency would be toward equilibrium, and the final test would, more than anything else, be one of endurance. In those circumstances, it appeared that the war would follow much the same course to much the same outcome as World War I had. Those assumptions persisted at least until June 1941 and strongly affected the Polish and French campaigns and the initial phase of the German-Soviet conflict.

That the nature and course of the action proved radically different than had been anticipated separated the two wars in one respect (although not as completely as has sometimes been supposed) but cemented the tie between them in others. When the Western Front disappeared in May and June 1940, the illusion of another geographically limited, slow-moving close contest in which a deus ex machina such as the United States had been in 1918 might eventually tip the balance crumbled. For Germany, Italy, and Japan, dreams barely admitted to consciousness in the first war -- complete hegemony in Europe, the Mediterranean basin, and East Asia -- became palpable objectives ready for the taking. For Britain, the Soviet Union, and the United States, the Axis Powers no longer were threats only to their weaker neighbors but to the continental and world orders. As a result, the issues and outcome of World War I acquired new and enhanced significance. The term "the Allies," revived and applied to Britain and France in 1939, attained such natural and widespread currency

that the official name for the anti-Axis coalition, the United Nations, was scarcely used in other than formal state papers. The Soviet Government saw nothing inappropriate in its calling for a British -- and American -- second front in the summer of 1941 and calling on Josef V. Stalin to affirm it, which he did. The Axis, having come into being already in 1936, appeared to constitute a community of interest stronger and of longer standing than that of the Allies. Both coalitions saw their missions as being to correct World War I's most fundamental shortcoming, its failure to mature into a genuine fight to the finish. In the Axis, the remedies taken were to be vision and determination and, above all, goals that would not merely promote national wellbeing but would positively guarantee it for all time. The Allies maintained that World War I had demonstrated the fallacy of allowing aggressors to escape the full military consequences of their behavior, and once it was corrected peace would automatically be permanently restored.

I. Political Effectiveness

Another of World War I's legacies was a trend toward totality. Although the conflict had begun and eventually ended as a cabinet war and exercise in power politics generated in the foreign offices and war ministries and carried on with an eye to price as well as profit, the price had begun to get out of hand already in September 1914 when the virtually unbreakable equilibrium developed and, by 1917 and 1918, had come to include nearly the whole of the belligerents' economic and manpower resources. The European war of 1939 can, without excessive license, also be classed as a cabinet war. Certainly none of the parties was ready for total war; and all were, if anything, relatively less ready than they had been in 1914. In it, however, the stage of equilibrium was not reached in six weeks or on the Marne River but at Moscow in December 1941. By then, both sides' commitments had vastly expanded, and the coincidentally simultaneous shift to world war was making total war inevitable. Concurrently, the military-political relationship, which always had been somewhat different in war than in peacetime, was profoundly altered in all of the involved nations -- and despite the ideological and political divisions among them, in remarkably similar ways.

The most striking and uniform changes occurred in the political sphere. Where independent legislatures existed, which was only in England and the United States, their voices in military affairs were muted. In the Soviet Union, where the legislative function had never

been more than ceremonial, Stalin, in 1941, created the State Defense Committee, a select body of Politburo members and specialists under his chairmanship, and gave its decrees automatic force of law. In 1942, General Hideki Tojo founded the Imperial Rule Assistance Political Association, to bring the parties in the Japanese Diet, which he had already packed with subservient members, under a single, fascist roof. The executive branches everywhere became the exclusive centers of political power and in them the power was vested in the chief executives. The latter, as the political war leaders and personifications of the national spirit, became active military leaders as well and personally exercised the constitutional functions as armed forces commanders in chief that had formerly been delegated directly or through ministers of war to the military professionals. Adolf Hitler, who had assumed the German president's powers as armed forces commander in chief in 1934, supplanted the minister of war as de facto commander in chief in 1938, named himself commander in chief of the German Army in December 1941, and for a time in the summer of 1941 took command of an army group on the Eastern Front. Stalin became supreme high commander of the Soviet armed forces, defense commissar (minister), and chairman of the Stavka (staff) of the Supreme High Command in July 1941, gave himself the ranks of marshal in 1943 and generalissimo in 1945. Both Hitler and Stalin had the absolute last word on strategy and routinely intervened in operational matters to the point of issuing orders in person to army group and army commanders. While neither Churchill nor Roosevelt came anywhere near taking the day-to-day control Hitler and Stalin did, Churchill, as his own minister of war, appointed and dismissed senior commanders and showered his chiefs of staff with advice; and Roosevelt kept the U.S. Joint Chiefs of Staff under his immediate control through

its chairman and his personal chief of staff, Admiral William D. Leahy. Benito Mussolini and Charles de Gaulle, although they possessed considerably less substance, adopted their foreign counterparts' style. Ironically, Tōjō, the only one whose political position was derived from a military base, was the least successful in establishing and maintaining his ascendancy in military affairs.

The national war leaders provided a political-military bond that gave the armed forces direct access to the full resources of the state and generally assured fast response to their requirements. On the other hand, the armed forces lost autonomy in their own sphere. Being brought closer to the centers of political power, if anything, increased their subordination to it. The military profession rose -- proportionately to its ability to provide victories -- in the esteem of the political leadership, but the esteem in which the political leaders held themselves and which popular opinion accorded them was enormously greater. In total war nations wanted leaders with charisma and looked on military professionalism as a quality of a lower order. To take the most extreme example, it appears most probable that given a free choice, the German people would, from start to finish, have preferred Hitler to any of the generals as the supreme military commander. That World War II did not produce a Napoleon Bonaparte goes without saying. It also did not produce a Marshal Ferdinand Foch or the kind of military-political eminence grise General Erich Ludendorff had been in Germany during 1917 and 1918. General Dwight D. Eisenhower, as the supreme commander in the final assault on Germany from the west, was subordinate to the Combined Chiefs of Staff as commander of the allied forces and to the U.S. War Department and Army Chief of Staff, General George C. Marshall, as commander of American troops in the European Theater of Operations, and

his principal British subordinate, General Bernard L. Montgomery, never quite accepted that status. Most of the political leaders maintained a closer relationship with one officer than with any of the others, Roosevelt with Admiral Leahy, Churchill with General Hastings Ismay, Hitler with General Alfred Jodl, Stalin with Marshal Georgi Zhukov; but none of those had a deciding voice in military matters or any at all in political affairs.

Censorship, propaganda, and suppression of political debate were also determinative features of the military-political relationship. Where bona-fide party systems existed, which was only in the United States and the British Commonwealth, the opposition parties received junior partnerships in the governments in return for not raising publicly issues that could be detrimental to the war effort. The Soviet regime restored limited religious freedom and appealed to Russian nationalism. Censorship denied information to the enemy and kept disturbing or inconvenient news from the public. Propaganda sustained the causes and presented the governments and the armed forces as they wanted to be seen. That military and political leadership functioned in controlled climates of political and public opinion in World War II (which, by way of comparison, there was no such thing in the United States during the Korean and Vietnam Wars) was a disadvantage of both but more to that of the latter than the former. The military were obligated to put the political interest ahead of their own; the political leaders did not need to reciprocate beyond the limits of expediency. Hitler, for instance, took his share of credit for the German victories and gave the military both his and their shares of the blame for the defeats. In North Africa, Churchill used his senior commanders as whipping boys. Stalin kept the two marshals who could have created a true army high command, Zhukov and

Alexandr Vassilevskiy, although they were the first deputy defense commissar and the chief of the General Staff, in field assignments away from Moscow almost all of the time.

The coalitions added a dimension to the political-military relationship. For the armed forces, they constituted another political instance to be taken into account. Both coalitions were political arrangements instituted without particular regard for the members' abilities to mount and sustain war efforts; consequently, the United States, British, and German armed forces had to compete to various extents with their allies for shares in their own nations' war production, the British having to compete with the Soviet Union and China in the United States as well. In their origins certainly, lend-lease and the arsenal of democracy theory implied that the United States could more effectively employ its productive capacity by sustaining foreign armed forces than by building up its own.

The climate of total war not only altered the military-political relationship, it also virtually guaranteed the military's political effectiveness in terms of the measurements customarily applied. Non-war-related claims to shares in budgets ceased to be significant. In the second half of 1940, the defense share of the United States budget was 36 percent; in 1944, it was 93.5 percent. Overall, in the years 1940-1945, 90.4 percent of the funds in United States budgets went to defense, 77 percent directly to the armed forces. The German armed forces' direct budget share in the years 1939 through March 1945 was 74.5 percent.¹ Since the United States and Germany are usually taken to have been the two among the major belligerents least willing to impose austerity on the civilian sector, it can be assumed that the armed forces' percentages were as high or higher elsewhere. In any event, the

percentages do not show a great deal about the armed forces' abilities to meet their requirements because funding as such became an almost incidental concern. No government was disposed to economize on its war effort. Budgets were the most elastic of the sources from which the armed forces derived their support.

Readily expansible wartime budgets, on the other hand, did not as drastically diminish the significance of funding as an index of political effectiveness in all respects. If, as appears likely, the amounts governments appropriated came close to being the maximums that could be usefully spent, then the sums allotted to individual claimants could in some degree reflect their political standings. The armies' shares in the budgets, for instance, appear in several instances to have been less than commensurate with their roles in the war. In Germany, the Luftwaffe received almost 42 percent of the total spent on armaments. The British Royal Air Force's share was at least 50 percent and probably went higher. The Army Air Force absorbed over 36 percent of the U.S. War Department's expenditures for material. Over all in the war, for every \$100 the U.S. Army spent, the Navy spent \$85 and the Air Force \$60.² In the United States budget, lend-lease competed strongly with the armed forces as a whole and the Army in particular. The approximately \$50 billion total lend-lease allotment slightly exceeded one year's War Department appropriations at the highest (1944) level, and some \$21 billions of it were spent through the Army Service Forces' procurement system.³

Access to industrial resources supplanted budgets as the dominant aspect of the military-political relationship. As in the case of funding, except possibly in Germany, non-war-related claims were a small to negligible part of the issue: governments and armed forces were

equally determined to maximize war production. The problem was that economic and industrial resources were less elastic than money supplies. They could be expanded, but there were limits on ultimately attainable capacities and, probably more importantly, on the rates at which expansion could be achieved. Even the United States could not increase production fast enough to keep pace with all of the war's demands as they arose. Consequently, industrial resources and the armed forces access to them had to be regulated.

Controlled economies had proved indispensable during World War I, and Germany, Japan, Italy, and the Soviet Union had maintained or reinstituted them during the interwar period. In World War II, economic policy stood alongside strategy as in the words of the British official history, one "of the twin summits of the war."⁴ Strategy set the course; the national economies provided the means. Without the latter, the best strategy would fail. The whole art was to bring the two into consonance, and it required the ultimate authority over both to emanate from a single source. That the political leadership would be the source was not in doubt except in Japan where the military had assumed the political functions. How coordination should be accomplished beneath the summits was much less certain. Custom and constitutions made the armed forces the executors of strategy but provided no guidance on the management of war economies.

To give the armed forces the same roles in both of the war's main aspects was a logical and symmetrical solution, but one that would have had extensive political and military effects. In Germany, where the armed forces traditionally regarded the conduct of war as their exclusive province and the idea of total war was firmly fixed earlier than elsewhere, the Economic Staff under General Georg Thomas established in

the Reichswehr (defense) Ministry in 1934 and transformed into the Economic and Armaments Office of the Armed Forces High Command in 1938 readied itself to take over the whole economy in the event of war.⁵ The U.S. National Defense Act of 1920 gave the responsibility for economic mobilization to the Assistant Secretary of War, but in the early 1930s the War Department decided that none of the permanent departments, itself especially, should be the agency for imposing an economic dictatorship on the country. The last (in 1939) of several War Department plans proposed a temporary War Resources Administration under a civilian administrator who would report directly to the President.⁶ For the political war leaders, the two summits posed a dilemma: leaving the middle and lower reaches of both to the military would extend the already greatly expanded military presence into an essentially civilian, hence political, area and could foster military encroachments upwards; civilian economic control, on the other hand, would split the war effort and would lodge a very strong concentration of potentially political power in the economic agencies.

Except in Japan, the political leaders opted for civilian control over the war economies. For Stalin, the decision was automatic; the transition from a peacetime to a war economy was built into the system. Economic mobilization had been going on in the Soviet Union since the First Five Year Plan in 1928. Hitler -- although Germany also had an early start -- Churchill, and Roosevelt juggled the military interests, the civilian-administered controls, and their own authority, improvising new means periodically to keep all three in the air.

The war economies existed for the military's benefit, but as equal and autonomous partners, they were also competitors. Their mission was to perform feats of production matching those of the military on the

battlefield, and the political war leaders regarded themselves as the commanding generals in the war of production. As a result, the needs of the armed forces to a significant extent competed in the war economies with pressure to raise output for its own sake and with the political leaders' independently formed conceptions. The United States turned out more tanks than any of the others but struck a questionable compromise between effectiveness and producibility. Soviet industry built thousands of T-60 light tanks in 1942 even though they had by then been proved hopelessly outclassed. The Soviet Union manufactured several hundred thousand small-caliber antitank rifles whose fire could not penetrate the armor of any German tank in use, and the United States brought out the Reising gun, an easily producible sub-machine gun that rusted fast and was incapable of aimed automatic fire. Germany, in part because Hitler had an affinity for mechanical things, put quality ahead of quantity but pushed conventional weapons to the detriment of its heavy rocket and flying bomb programs and eventually put the V-1 flying bomb into production ahead of the vastly more effective V-2 rocket because it could be brought off the assembly lines sooner.

The absence of an established military role, other than as user, in war economies left the political leaders free to construe their own roles as they saw fit. In England and the United States, legislative and public opinion imposed limitations that generally, and perhaps not entirely fortuitously, served the military interest. Against rising pressure in Parliament, Churchill ran the British war economy through the Defense Committee (Supply) and the subordinate Ministries of Supply and Aircraft Production until early 1942 when he created the Ministry of Production to coordinate the requirements of the three services, which he had previously insisted was his sole prerogative as Minister of Defense

and chairman of the Defense Committee (Supply).⁷ Roosevelt, who had set up a congeries of boards and offices having to do with military production before Pearl Harbor, created the War Production Board in January 1942 and told its first chairman, Donald M. Nelson, he would have "complete and absolute control over the production of all implements of war and related activities."⁸ Nelson and his associates undertook to manage the war economy in strict accordance with business management practices. In May 1943, after controversies between the military departments and the WPB had boiled over into the Congress and the press, Roosevelt established the Office of War Mobilization, appointing James F. Byrnes, an experienced politician, to be its director and giving him a mandate "to coordinate the work of all the war agencies and federal departments."⁹ Like his opposite numbers in the democracies, Hitler did not give his war economy coherent control until after the world war began. In February 1942, he appointed Albert Speer to be Reich Minister for Weapons and Munitions and thereafter tacitly supported Speer's efforts to bring all the military and civilian economic agencies, of which there were many great and small, under his supervision. Speer first denied General Thomas, who was his likeliest rival, access to the central planning board in the ministry and subsequently dismantled the Armed Forces Economic and Armaments Office.¹⁰

Although the military were often on the fringe of the economic decision-making, they were always very close to the effects. In his January 1942 State-of-the-Union message to Congress, President Roosevelt announced production goals of 60,000 aircraft and 45,000 tanks in 1942 and 125,000 aircraft and 75,000 tanks in 1943. Those figures and some similarly large ones for other items threw the War Department procurement program into turmoil for the better part of a year. The President had

given morale in the United States and abroad an enormous boost at the darkest time in the war and for months insisted his goals had to be met, but doing so would have totally unhinged the armament program.¹¹ Hitler repeatedly declared total war but out of early overconfidence and a lingering concern for his popularity with the German people, was the last of the war leaders actually to resort to it. During the first three years of the war, he kept the armed services on a hand-to-mouth regimen, cutting one's programs and advancing another's to meet the war's short-term demands; and he was slow to cut civilian consumption. The part of the gross national product going to the war effort in England reached sixty percent in 1941, in Germany not until 1943. From 1939 through 1943, forty-five percent of the German and fifty-four percent of the British gross national product went to support the war.¹²

The airplane exerted pervasive influences on the political leaders' management of the war economies and the individual armed services' access to them. It became probably the most politically potent weapon ever to have existed. It was the literal embodiment of national technological and industrial strength. While other weapons had been improved, its development had recently advanced in quantum leaps that dazzled the mind and challenged the imagination. The German and Japanese advances in Europe and the Pacific made the long-range heavy bomber the most promising means for coming directly to grips with those nations on their own territory and, possibly, for defeating them without the necessity of long and bloody operations on the ground. The airplane was also, in terms of industrial resources, by far the most expensive mass-producible weapon. In England, the United States, and Germany, the aircraft industry was the largest single war industry. In England, by late 1941, aircraft production drew so heavily on industrial resources "as

completely to outweigh the burden of other priority demands."¹³ When the armed forces' total requirements exceeded productive capacities and programs had to be "balanced," air forces could generally rely on high-level political support for having their programs put at the head and the others balanced around them. In the fall of 1942, after the War Production Board told the Joint Chiefs of Staff that the armed forces' production objectives could not be met within a realistic time frame, procurement for the Army Ground Forces was cut twenty-one percent and the Army Air Force's programs were not touched.¹⁴ The demands of all British production programs had to be reduced in late 1942, but as the official history states, "the reductions which the Ministry of Aircraft Production was expected to undergo were much less than those of other departments."¹⁵

In a total war effort, access to manpower was crucial to both armed forces and political leaderships. Although its availability varied from country to country, it was a much more finite quantity everywhere than were money and industrial plant. Populations could be more intensively exploited, but they could not be expanded. Moreover, manpower was an economic resource as well as a military asset; the strengths of the fighting forces and the war economies were equally dependent on it; and armed forces' effectiveness involved utilizing as well as securing it.

In the area of manpower the political leaders' conceptions affected the armed forces' conduct of the war more pervasively than in any other. Stalin held to the principle that success depended on the ability of the rear to supply men and material to the fighting fronts in great enough quantity over a sufficient period of time to outdo the enemy. He was, from first to last, willing to contemplate a war of outright human attrition. Roosevelt and Churchill, who never really had to face the

problem of survival in as bald terms as Stalin did, put the cost in lives of their own people above all other considerations. They counted on substitutes: technology, primarily in the form of the airplane, and industry and on Stalin's readiness and ability to expend manpower. Lend-lease was devised to substitute Americans' industrial "know how" for their presence on the battlefield. For Churchill, to avoid another Dunkirk or battle of the Somme was an absolute necessity. Hitler knew to a certainty that the Germans were hopelessly outnumbered. His whole aim in the war was not to allow the enemy's manpower to come fully into play. The Japanese were probably more ready than any other people to give their lives in the national interest, but owing to the peculiarities of its situation, Japan could not exploit its military manpower potential to the full.

Although they were not the sole influences, the political leaders' conceptions were strongly reflected in the force development of their respective armed forces. The United States and Soviet peak armed forces strengths were about the same, 12.2 and 12.5 million; the German peak was 9.5 million, the Japanese 7.2 million, the United Kingdom 5.1 million. The Soviet military dead, reliably estimated at 13.6 million, indicate a total mobilization in excess of 26 million and clearly demonstrate that the Soviet military did indeed treat manpower as a major expendable resource. The German 3.5 million killed indicates that Germany mobilized about as many troops as the United States did and that the German military managed, on the whole, to reduce the effects of their enemies' numerical superiority. The Japanese 1.5 million, United States 292,000, and United Kingdom 262,000 losses probably do not by themselves reveal much other than smaller and shorter combat commitments than those of the Soviet and German armed forces, but other comparisons relating

particularly to the British and American forces can be made. In the Soviet peak strength the Red Army was 81 percent of the total and the Red Air Force including air defense forces was 13 percent. The German Army was 69 percent (with the Waffen-SS, 74 percent) and the Luftwaffe was 18 percent. The British Army was 56 percent and the Royal Air Force 23.5 percent (and 41 percent of the strength of the Army). The U.S. Army was 48 percent and the Army Air Forces 19.6 percent (40.6 percent of the strength of the Army). Although the only available figures on actual ground combat strengths are those for the U.S. Army, it can be assumed that the ratios of combat to service troops were relatively high in the Red Army and the German Army and higher in the former than in the latter. In the U.S. Army (less the Air Forces) the Army Services Forces had 53 percent of the troops, the Army Ground Forces had 47 percent, and the actual ground combat soldiers constituted about 37 percent of the total. Out of a total strength (including the Air Forces) approaching 8 million in March 1945, the U.S. Army had slightly over 2 million in ground combat units, only about 100,000 more than it had had in December 1942.¹⁶

In the war economies (except in the Soviet Union where the German invasion produced a sudden catastrophic drop in plant capacity, particularly for iron and steel), manpower limitations were the first to arise and the most difficult to overcome and, hence, were persistent concerns for the armed forces and the political leaders. The political leaders' conceptions influenced the manpower allotments to the war economies as heavily as it did those to the armed forces, and the armed forces' demands for continuous increases in military manpower and in war production made them, in effect, their own most ruthless competitors. Direct amelioration could only be achieved in a few ways: by diverting

manpower from non-war-related occupations, by substituting women and children for men in the war economies, and by acquiring foreign manpower sources.

The Soviet and German situations were inherently the most difficult. Stalin and his generals discovered that their manpower resources did not automatically guarantee a capability to achieve steamroller effects against their opponents. The Soviet industrial labor force, which had been 31 million in 1940, dropped to 18 million in 1942. That and a simultaneous drop in steel-making capacity from 18 to 8 million tons per year necessitated a drastic reorientation to keep the economy afloat. Since Soviet industry had never been more than marginally oriented toward a civilian consumer market, diversions could only be made from what elsewhere would have been considered war production; consequently, the Soviet war economy concentrated almost exclusively on weapons and ammunition. Women and children accounted for 85 percent or more of the work force of 27 million reached in 1944; and the "Rosie-the-riveter" image prevalent in the West did not apply in the Soviet Union; there women mined coal -- and dug the entrenchments around Moscow in the fall of 1941. The Soviet Union acquired a foreign manpower (and steel) source in the lend-lease program sufficient to provide 410,000 motor vehicles, 2,000 railway locomotives, 10,000 flat cars, and other industrial products by the millions of tons.¹⁷ Hitler and his generals knew that Germany could not compete on terms of sheer manpower. General Thomas's solution was to put the entire economy in military harness and thereby at least prolong the contest. Hitler's solution was to bank on his being able to resolve the contest without confronting the problem head-on. In Germany the reduction of the non-war-related work force was slow, just 15 percent from May 1941 to May 1944. Consumer

goods, which had been 30 percent of the gross industrial output in 1938, were 22 percent in 1944. In 1938, the German labor forces consisted of 24.5 million men and 14.6 million women. The male contingent dropped to 13.5 million by September 1944, but the number of women increased only to 14.7 million. Imported foreign workers and prisoners of war raised the total work force to 35.9 million, 3.2 million less than had been employed in 1938.¹⁸

Whereas circumstances imposed the Soviet and German manpower problems, those of Britain and the United States -- and its own ways Japan -- were largely self-generated. In the British war economy, the aircraft building program, in which bombers predominated, absorbed close to 40 percent of the work force after 1941, and all other military production had to be balanced around it. That large item created a permanent manpower drought and necessitated an increase in the proportion of women in the work force to 39 percent and a 43 percent cut in non-war-related employment. Nevertheless, the British war economy probably could not have been sustained as it was structured without its access to foreign manpower through lend-lease.¹⁹ In the United States, the manpower "crisis" came in late 1942 when the armed forces' projections brought the numbers of men they expected to have in uniform by the end of 1943 to 11 million and by the end of 1944 to over 14 million. The War Production Board and the War Manpower Commission protested that withdrawing the men to meet those demands would impair the war economy. The armed forces defended their exclusive right to determine their manpower requirements, but in late 1943, adopted the view that their decisions ought to take other than exclusively military considerations into account and accepted a 2 million reduction in the projected 1944 strength. For the United States, at worst, a manpower

shortage came within the range of possibility. Consumer goods production, except for automobiles and other mechanical and electrical items, was 16 percent higher in 1944 than in the last depression year, 1941. Women did not enter the war economy in significant numbers until the second half of 1942 and were not encouraged to seek war employment until 1943.²⁰ In its way, the Japanese manpower situation resembled that of the United States. From 1937 through 1943, the Japanese armed forces drafted 3.1 million men at a rate that hardly cause a ripple in the manpower pool. In 1944 and 1945 they took in another 3.4 million, which brought the total drain to just above half that which the roughly equal German population sustained. Consumer goods virtually disappeared in the last two years of the war but mainly owing to the bombing and a poorly organized distribution system. Employment of older and younger males and a modest increase in women covered the loss to the draft and added over a half million to the work force.²¹

On the whole, it appears that effectiveness in exploiting their nations' industrial and manpower resources in the sense of putting those to the most rational and economical uses was not an outstanding characteristic of the armed forces in World War II. The shift from limited access to near-monopoly of national resources did not result in commensurate increases in the armed forces' control over the development of their forces. The political leadership gave them what it believed they needed to conduct the war in accordance with its conceptions.

II. Strategic Effectiveness

The one almost universally accepted judgment on World War I was that it had been the consequence of national goals and strategies, not the instrument of them, that governments and the military alike had stumbled into it and through it. The results appeared to show the greatest shortcoming in the capacity to establish and realize appropriate goals: hence what were needed for the future were not just ad hoc war aims but comprehensive, long-term, constantly operating programs.

Mussolini provided the framework for such a program in the doctrine of fascism, which totally subordinated individuals and groups to the state for the purpose of enhancing the nation's will to power and supremacy and expressing its vitality in expansion. He regarded permanent peace as "neither possible nor worthwhile" and "war alone" as capable of "bringing all human energies to their highest pitch and ennobling nations."²² Hitler added a strategic imperative, Lebensraum was essential for two reasons: because a people could not survive without space in which to grow and because space in and of itself determined a nation's stature in the world. Lebensraum, therefore, made the program open-ended. As Hitler put it, "Wherever our success ends, it will always be only the point of departure for a new struggle." Hitler's first and probably most influential advisor on geopolitics, the former Bavarian general staff officer Karl Haushofer, had based his theories in part on a study of Japan, which he believed had been following the program instinctively since the late nineteenth century.²³

In the early 1920s, the fascist program was the pipedream of a fledgling dictator in a bankrupt Italy and his disciple in a defeated and disarmed Germany; less than twenty years later, it dominated the Axis strategies in World War II. The transition depended on many things but on none more than on the political and military acceptance of war as the preferred instrument of national policy. In Japan, the Army and Navy took the government in tow during the early 1930s although on somewhat divergent courses until after the end of the decade. In Germany, after January 1933, the armed forces enthusiastically supported the first phase of the program, rearmament, but the Army High Command resisted the thought of actual war when Hitler first officially introduced it in late 1937 and was -- ineffectually -- talking mutiny in August 1939. Mussolini flexed Italy's military muscle in Ethiopia in 1934-1935 and in the Spanish Civil War, 1936-1939, and signed a military alliance, the Pact of Steel, with Germany in May 1939 but excused himself from his treaty obligation when a real European war seemed to be brewing in August 1939. The German Army General Staff believed the offensive it planned against the Low Countries and France in the fall of 1939 on Hitler's orders was going to bog down on the Somme River. While the Germans were invading Poland, the Japanese Army was taking a severe beating on the Khalkin Gol River in Outer Mongolia at the hands of the Russians, whose expulsion from the Far East it had long regarded as the highest priority item in the Japanese program.

During the winter of 1939-1940, the war became almost a joke, the "Phoney War" in American newspapers, the Sitzkrieg in Germany. Then, in the six weeks after 10 May 1940, the Germany Army did what it had not managed in the four years from 1914 to 1918, it defeated France and drove the British off the Continent. Mussolini plunged in at the finish to

claim a share in the victory. In late June, three weeks before Hitler first raised the possibility, the Chief of the German General Staff, General Franz Halder, one of those who had talked mutiny in 1939, ordered his operations branch to consider how the Soviet Union could be dealt a "military blow" that would "compel the Russians to acknowledge German hegemony in Europe."²⁴ The German victory in Europe also exposed the French, Dutch, and British colonial possessions in Southeast Asia and the western Pacific, opening a vista that quickly persuaded the Japanese Army to give up its preoccupation with the Russians and join the Navy in promoting a southward expansion. In September, Germany, Japan, and Italy signed the Tripartite Pact, which threatened the United States with a two-front war if it took military action against Japan.²⁵ The program had come into its own.

The anti-Axis coalition had two programs, one Soviet and one American. The Soviet program was attributed to V.I. Lenin, who predicted "a series of frightful clashes between the Soviet Republic and the bourgeois states" on the way to the worldwide triumph of the communist revolution.²⁶ Stalin had elucidated and expanded Lenin's thesis in 1927. War with the capitalist world, he said, was inevitable, as were also imperialist wars between the capitalist states. The Soviet mission would be to delay its involvement -- by "buying off the capitalists," if necessary -- until imperialist wars had made the capitalist world ripe for destruction.²⁷ In the Nazi-Soviet Pact and the Treaty of Friendship of August and September 1939, Stalin bought off Germany and opened the way for an imperialist war. A year later, after the fall of France, he was alone on the Continent with the most dangerous capitalist state.

The American program dated back to the World War I slogans "the war to make the world safe for democracy" and the "war to end all wars" and

to President Woodrow Wilson's faith in collective security, disarmament, and national self determination. Whereas the fascist and Soviet-communist programs justified war, the American saw it as having only one useful purpose, its own abolition. During the isolationist era of the 1920s and 1930s, the American program was regarded as having been something between a hoax and a tragic self-deception, and disillusionment with it strongly influenced the United States attitude toward European war until the summer of 1940. A year later, it reappeared in its entirety, including the "worldwide abandonment of the use of force," in the Atlantic Charter of August 1941, which the entire membership of the anti-Axis coalition reconfirmed in the United Nations Declaration of 1 January 1941.²⁸

While the programs were purported to have renovated war in its political aspect, no similar claim could be made for military strategy. As of September 1939, the lessons and experience of World War I still dominated it. Twenty years' ardent search for ways to restore the war of annihilation had produced some new terminology, "deep operations," the attaque brusque and Blitzkrieg, but the war of attrition and the superiority of the defensive were the accepted strategic realities. The campaign in Poland appeared to show nothing about the potentialities of the Blitzkrieg. On 3 October 1939, General Wilhelm von Leeb, who was then the senior commander on the Western Front, told the Army Commander in Chief, General Walther von Brauchitsch, that an attack on France could not be conducted the way the one on Poland had been; it would be protracted and impose heavy losses and would not "bring the French to their knees."²⁹

In general and particularly for the ground forces, mass was assumed to be the strategic determinant, the objective to be to outlast the

enemy, strategic surprise to be out of the question. Border fortifications, the Maginot Line, the German West Wall, the Stalin line, were expected to frustrate any attempt at a sudden attack. Besides, it was thought to be better to stand on the defensive and let the enemy take the punishment. On 3 October, Leeb and Brauchitsch hoped Hitler could be persuaded to do that, if he could not be brought to see the entire futility of the war. General Maurice Gamelin, the Allies' commander in chief, is said to have prayed for the Germans to attack and fall into the trap he proposed to set for them on the Dyle River in Belgium. To Andre Beaufre, then an officer in the French General Staff, Gamelin looked pleased and perfectly confident of the outcome on 10 May even though the German offensive begun that morning had come as somewhat of a surprise. On the German side that same morning, according to General Heinz Guderian, only three people who knew about it really had confidence in the plan, he, General Fritz-Erich von Manstein, who had conceived it, and Hitler.³⁰

Naval strategy also derived directly from World War I. The battle fleets, consisting of battleships and cruisers, were the "mass," for the main naval powers, the United States, England, and Japan, floating Maginot Lines. Strengths were measured in battleships, which were considered to be the most powerful and most effective weapons in existence. The Japanese Navy believed it had achieved a decisive advantage over the larger U.S. Navy in 1937 when it began building the nearly 70,000-ton Yamato class battleships that were twice the internationally-agreed weight limit. The shift to heavier (and faster) battleships was taken to be the most revolutionary change in naval warfare since the launching of the Dreadnought in 1905. Germany had laid down two 50,000-tonners, Bismarck and Tirpitz, in 1936; and the Soviet

Union, which had not previously shown interest in having a battle fleet, began work in 1938 on three ships that would have topped 60,000 tons each if they had been completed. Aircraft carriers had become a mark of a first class naval power, but the navies did not quite know what to do with them and kept them in limbo somewhere between the battle fleet and the flotilla, the destroyers, submarines, and torpedo boats. As late as 1934, the noted British sea power theorist, Admiral Sir Herbert Richmond, suggested that the nations who had "indulged" in building carriers could have secured "a more serviceable return in war in the shape of surface flotilla craft."³¹ In the United States, the "Two-Ocean Navy" Act of July 1940 provided for increases amounting to 420,000 tons in cruisers -- which were considered to have been particularly neglected in the past -- 385,000 tons in battleships, and 200,000 tons in aircraft carriers.

In the European war, both sides initially considered the navies to be the potentially most effective offensive weapon. The British Government reestablished the World War I-style naval blockade as "economic warfare," for which it predicted, publicly at least, early and decisive results against Germany. German submarines and two pocket battleships to act as commerce raiders put to sea before the war broke out; however, owing to its concentration on building a battle fleet and to Hitler's often expressed determination to avoid a war with England, the Navy only had 22 ocean-going submarines.³²

Air power appeared to be faster acting than either land or sea power; and air forces could take to the offensive at less human cost to themselves than armies could and strike more directly at the enemy than navies could. Since late in World War I, the Royal Air Force's Bomber Command had, with considerable success in political circles, sustained a strategic bombing theory that gave it a claim to being the main and

possibly sole British offensive force in a continental war. In the early 1930s the U.S. Army Air Corps had acquired a coastal defense strategic bombing mission that in early 1940 came to include offensive action against hostile air bases. Germany (in 1936) and the Soviet Union (in 1939) stopped development of strategic bombing components in their armed forces. On the eve of the war Bomber Command promoted strategic bombing as the mainstay of economic warfare and itself as the potentially decisive force, predicting that it could bring Germany's war industry practically to a standstill within two weeks. Between September 1939 and May 1940, however, its plans encountered nothing but frustrations, not the least of them being that all of its planes designed specifically for strategic bombing had yet to make their first flights.³³

In the year and a half between the French surrender in June 1940 and Pearl Harbor in December 1941, the members of both future coalitions committed themselves to the political and military strategies they would follow into and through World War II. Germany and Japan believed the long shadow of World War I had finally lifted and they were on the verge of attaining full strategic freedom. The victory in France had brought the German Navy bases on the Atlantic coast; and the Luftwaffe had gained airfields in France, Belgium, and Holland that put almost the whole of England within a hour's flying time and in effect reduced strategic bombing to operational proportions. The Army was convinced that with adjustments in scale, the Blitzkrieg could be applied as successfully in the Soviet Union as it had been in France. On 31 July 1940, when Hitler announced his decision to attack the Soviet Union and defeat the Red Army by "dismembering" it in large encirclements and "strangling it in packages," none of the generals present objected. The Navy and the Luftwaffe complained that the heavy additional commitment, particularly

of industrial production, would impair their strategic operations against England, but the military did not voice any of the profound doubts it had raised in the previous year.³⁴ In Japan on 27 July, a Liaison Conference decided to "settle the China Incident quickly and at the same time cope with the Southern Question." An Imperial Conference on 19 September confirmed the decision on the assumption that the Tripartite Pact about to be signed would give a fifty-fifty chance of avoiding a war with the United States.³⁵

Although the French defeat was a tremendous shock to England, the Soviet Union, and the United States, it was not a revelation in the same sense that it appeared to be to the Axis Powers. It did not alter the prior assumptions pertaining to the nature of war. Blitzkrieg was taken to be primarily the effect of overwhelming mass in matériel and manpower applied to an unprepared and irresolute opponent. On the other hand, the German drive into western Europe (after the invasions of Poland and Norway and Denmark, the latter in April 1940), which seemed to demonstrate that Germany was following a comprehensive and exact timetable of conquest, spontaneously revived the Anglo-American component of the World War I coalition.

Churchill's various statements of righteous purpose and British determination to see the war through to a victory over Nazi Germany made in the dark days of May and June 1940 were the actual first step in the reactivation of the American program. At the end of June 1940, Roosevelt secured authority from the Congress to stop exports of strategic commodities and to release American military equipment to foreign armies (the basis of the subsequent embargoes against Japan and of the "destroyer deal" and lend-lease). The President was more enterprising at that point than his military advisors, who were working on RAINBOW 4, a "worst case"

plan for defending the Western Hemisphere, and had strong reservations about transferring military equipment out of the hemisphere or taking actions that might provoke a war with Japan.

By the end of the year, the Anglo-American partnership had become firm, and British strategic thinking had progressed beyond the problem of how to meet a German invasion. In the view of the Prime Minister and the Chiefs of Staff, the prospect of attacking the German main forces in the field of the continent had receded into the distant future and economic warfare had become the chief means of striking directly at Germany. The Prime Minister and Bomber Command were also coming to the conclusion that area bombing could destroy German civilian morale and possibly decide the war by itself -- this although the German aerial "Blitz" against England seemed to have demonstrated just the opposite, at least as far as British civilians were concerned. The American military, while they were wary of being tied to British strategy, accepted much of the British thinking in staff talks held during February and March 1941. A subsequent revision of RAINBOW 5, which had been concerned with employment of United States forces outside the hemisphere, incorporated the main principle the British had proposed -- that Europe "is the vital theater where the decision must first be sought." It also included the war plan as projected in the conference report (ABC-1) which established the following order of priorities: (1) economic warfare, (2) a sustained air offensive against Germany, (3) elimination of Italy from the Axis, (4) employment of land, air, and naval forces in "raids and minor offensives" against the Axis (5) resistance movements, (6) a buildup for "an eventual offensive against Germany, (7) capture of positions from which to launch the eventual offensive."³⁶

The shock of the German victory was, perhaps, greatest in the Soviet Union. The capitalist states were manifestly not going to wear each other out. Nikita Khrushchev wrote later, "The most pressing and deadly threat in all history faced the Soviet Union."³⁷ A study done in the Soviet General Staff Academy States, "The problem of preparing the country for war became supremely important."³⁸ In quantitative terms, the Soviet Union had never neglected preparedness, but the Red Army had done astonishingly badly in the Winter War with Finland that ended in March 1940. At a readiness conference in December 1940, Stalin decided the Red Army would need, at the minimum, another year and a half to overcome its deficiencies, and he redoubled his efforts thereafter to buy off Germany. The military, on the other hand, were confident that the strategic doctrine they had developed in the late 1930s -- and in part modeled on the French -- would work. The doctrine held that armed conflict between forces as large and well equipped as the Soviet and German would begin as "creeping war" in which the initial deployment would be slow on both sides. Surprise would not be possible, and the decision would be reached through a series of defensive and offensive encounters that would give the victory to the party best able to tolerate the ensuing attrition. The war plan contemplated meeting and defeating aggression "at the line of the state frontier," then carrying the war to the enemy's territory, and subsequently dealing him "a great defeat."³⁹

Had Hitler and the German General Staff been in a position to recommend a strategy to the Red Army, they could have thought of none that would have suited them better. They were agreed that they had to trap and destroy the Soviet main forces and prevent the sort of strategic retreat Tsar Alexander I had resorted to against Napoleon in 1812, but they did not have the resources in manpower or material to engulf the

entire Soviet front. The General Staff believed a thrust north of the Pripyat Marshes toward Moscow would compel the Red Army to sacrifice itself defending the Soviet political and Russian national heartland. On that score, the Army's thinking and Hitler's diverged: its concern was to achieve a military victory, his was with the program, specifically, the Lebensraum aspect of it. He wanted the victory, but he needed the agricultural land and mineral resources of the Ukraine and the oil fields in the Caucasus. In July 1941, when it appeared to the Army High Command that the final battles were about to take shape on the line of advance toward Moscow, Hitler called a halt and diverted armor to the south toward Kiev and the north toward Leningrad. That the Army was right in believing the war could be won in 1941 on the approaches to Moscow is by no means certain, that it was not going to be won there after a two months' lapse, by the advance Hitler ordered to be resumed in October, was proved in the first week of December.⁴⁰ By December, the Lebensraum aspect of Hitler's program had also prevented the Army from exploiting indigenous anti-Soviet sentiment and had helped Stalin place himself at the head of a Russian national war. Hitler's continued insistence after 1941 that he was fighting the war for the benefit only of the Germans, not the Russians, led him to reject the Army's proposals to recruit a Russian anti-Soviet force from among the millions of prisoners of war and deserters in German hands.⁴¹

The German invasion of the Soviet Union impinged on the Japanese program as well. Although Japan was a Germany ally, the attack was more of a surprise to the Japanese Government than to the British, United States, or Soviet Governments, and it reopened the question of the northern and southern options. In deciding the question, the Japanese military entered on a series of miscalculations that would eventually

ensure their own and the German defeat. At the Liaison Conferences in late June 1941, the Foreign Minister Yosuke Matsuoka argued for striking north first because after the Soviet Union was eliminated the risks of the southern advance would be reduced. The Navy, as it always had, insisted on the south. The chance to settle scores with its old enemy attracted the Army, but in the first week of September, it too decided for the south. In the meantime, the American so-called "oil embargo" of late July had added urgency to the southern venture, and the decision was for war unless the United States accepted essentially all the Japanese demands beforehand. Having gone that far, the Navy went a step further. Knowing it could not outlast the United States in a prolonged war, it decided it had to do maximum damage at the outset and staged the surprise attack at Pearl Harbor on 7 December thereby committing the one act that could have brought the United States into war determined to see it through at any cost. Hitler compounded the Japanese error on 11 December by declaring war on the United States, an act in which he and some of his generals saw vague advantage in terms of encouraging the Japanese but which denied him the single advantage either of the Axis partners could have derived from Pearl Harbor, a possible heavy diversion of American effort to the Pacific.⁴²

Remarkably, the events of December 1941 sustained all programs. To the President and people of the United States, Japan and Germany stood exposed as inveterate and wanton aggressors, and the destruction of their existing political systems and military strength became the key to permanent world peace. Stalin, who was about to expand his success at Moscow into a general offensive that he believed could end the war before summer, told British Foreign Minister Anthony Eden that he was now not in so great a hurry to have the second front he had been demanding and

insisted on having the territorial gains he had made through his pacts with the Germans confirmed in a projected Anglo-Soviet military alliance.⁴³ The Japanese "East Asian Co-prosperity Sphere" was taking shape with astonishing ease and speed; and Hitler could count on another summer's campaigning season in which to finish off the Soviet Union.

The German and Japanese Blitzkriegs reached their height and ended during 1942, and the war of attrition began. The Battle of Midway in June terminated Japan's expansion into the Central Pacific and cost the Navy four of its six fleet aircraft carriers and a proportionate number of its most experienced pilots. From August through November, in the sea battles of Guadalcanal, the Navy inflicted heavier losses than it took but ones it could not afford and in December, it retired from the southern Solomons leaving the United States sea and land forces with a foothold inside the Empire's defensive perimeter.⁴⁴ Stalin's dream of an early Soviet victory evaporated in disastrous battles at Kh'arkov and on the Crimea in May and June and the German summer offensive forced him to permit a strategic retreat in the southern sector and to share the strategic decision-making power with his two best generals, Georgi Zhukov and Aleksandr Vasilevskiy. The Soviet retreat gave Hitler almost all the Lebensraum he had insisted he needed but overextended the German forces while preserving enough Soviet strength for Zhukov and Vasilevskiy to begin the countermarch in earnest at Stalingrad in November.⁴⁵ American landings in North Africa and the British offensive at El Alamein also turned the tide in the Mediterranean Theater in November.

The Axis powers knew to a certainty after January 1943 that they could not win the war and the best option open to them was to defend the territory they had taken strongly enough to force a draw from which they might still extract some profit. Hitler set about relegating the mobile

warfare specialists among his field marshals and senior generals to the command reserve and replaced them with men who had shown promise in static defense. His own authority did not diminish: the majority of Germans had more faith in him than in any other political or military figure.

Had Hitler -- as he prepared after late 1943 to do -- managed to drive the Western Allies off the invasion beaches in June 1944, he might have prolonged the war indefinitely and could conceivably have altered its complexion. When he failed, he was reduced to keeping the military machine running and waiting (with the Ardennes offensive of December 1944 as an interlude) for a second "miracle of the House of Brandenburg," a split in the East-West alliance comparable to the one that had broken the Russia-French-Austrian alliance against the Prussian King Frederick the Great in 1763 and saved him from a devastating defeat.⁴⁶ In Italy, after the King had Mussolini arrested on 25 July 1943, the government and military succeeded elegantly at not quite surrendering unconditionally and almost changing horses in midstream, both directly under the Germans' noses.

Tojo lacked the national stature Hitler had accumulated during ten years in power and could not rely to the extent Hitler could on the political passivity of his military. In early 1943, the jushin, the former prime ministers and some personages in the Emperor's circle began looking for a way to remove him. After the Navy took a decisive defeat in June 1944 in the Battle of the Philippine Sea and the loss of Saipan in early July opened a breach in the Empire's inner defense line, the Diet turned against him and his military colleagues stood aside. Tojo resigned on 18 July, but his successor acquired the impossible mission of seeking a way out of the war without conceding defeat. Although the Army

no longer had a strategy to promote, it, through Tojo as its representative in the jushin, refused until the morning of 14 August 1945 to tolerate a surrender.⁴⁷

As of January 1943, the Axis could not secure a victory on the terms its members had set for themselves, but its early defeat was far from being a foregone conclusion. Neither Germany nor Japan had suffered a disabling setback, and both had manpower and material resources they could still bring into play and the fruits of their initial successes to exploit. The anti-Axis coalitions had turned the Axis tide but had yet to raise its own.

At Stalingrad, the Soviet forces vindicated and reconfirmed the strategy with which they had entered the war. They brought the enemy to a halt -- after seventeen months of fighting a thousand miles deep in Soviet territory -- and began driving him back. While Stalin did not again indicate in an official way that he could get along without a second front, his Red Army Day (23 February 1943) order of the day suggested that the Soviet forces were quite capable of defeating Germany by themselves. Zhukov, as First Deputy Defense Commissar and Deputy Supreme Commander in Chief, became the first military professional to be installed in the chain of command above the operational level. The authority he wielded, however, was not inherent in the posts he held but dispensed by Stalin, who after the summer of 1943, kept him out of Moscow in field commands for the rest of the war and dropped him from the Stavka of the Supreme High Command altogether in February 1945.

Although they appeared enigmatic and sometimes capricious to the Western Allies, the Soviet goals and strategy were consistent and simple. The goals, in keeping with the program, were to expand the area of Soviet direct control as much as could be done without coming into a

confrontation with the Western Allies and, beyond that, to secure the greatest possible influence in the postwar restructuring of Europe and East Asia. As an offensive strategist, Stalin was cautious and thorough going, a believer in the broad frontal advance who judged success by the amount of territory taken and regarded the occupation of territory as necessary to the relegitimization of the Soviet system within its own boundaries and to its extension abroad. After late-summer 1943 when he was sure he had the permanent strategic initiative against Germany, his main concern was to maximize the Soviet share in the victory.⁴⁸

At the Casablanca Conference in January 1943, the Western Allies embarked on a second round of debate over the strategic premises set down in the then two-year-old ABC-1. In the weeks just after Pearl Harbor, at the ARCADIA Conference in Washington, the spokesman of the United States chiefs of staff, General George C. Marshall, had failed to persuade his British counterparts, or Churchill, or Roosevelt to abandon the open-ended, peripheral aspects of the strategy developed in ABC-1. The subsequent decision to expand the campaign in North Africa had scotched the American planners' hopes for a full-fledged second front on the Continent in the spring of 1943. When Marshall failed again at Casablanca and the political chiefs approved further operations in the Mediterranean, the prospect of coming to grips with the German main forces appeared to be receding into the distant future.

Casablanca, however, was the turning point in the Western Allies' strategy. The American's armed strength would soon outweigh the British in all respects; consequently, so would their voice in the partnership when they chose to make it heard. Roosevelt's announcement of the unconditional surrender formula was equally important for the further conduct of the war and perhaps more important in the longer range. It

gave the American armed forces the most unequivocal strategic objective possible in war and dissociated them and the United States Government from all military-strategic considerations not essential to the Axis' defeat. The total destruction of German and Japanese military power and of the political systems from which it derived, if not the whole answer to the problem of world peace and stability, would be all the American forces would be required or permitted to seek through military action. Consequently, the decision to mount Operation OVERLORD taken at the Tehran Conference in December 1943 terminated United States strategy making for Europe, and a year and a half later, when the war against Germany ended, the United States was not notably better prepared militarily or psychologically than it had been on eve of World War II to deal with the situation it then faced.

The war in the Pacific was predominantly an American concern and for that reason much more tractable strategically than the European war. Aside from imposing a strong, at times onerous, commitment to the Europe-first principle, the alliance functioned loosely there. The British primary interest was in the area of the Indian Ocean, the Red Sea, and the Persian Gulf, the American in the western Pacific. Had the Japanese skill and determination in individual engagements from Guadalcanal to Okinawa not been overrated as evidences of national endurance; had Nationalist China and the Soviet Union not been overvalued as potential allies; had the Army and Navy not insisted on maintaining separate shares in the enterprise; and had a less conspicuous figure than General Douglas MacArthur held the command in the subsidiary theater, the conduct of the war in the Pacific could have been a model in economy of effort. As it was, the American strategy in the Pacific accomplished the Japanese defeat more expeditiously than the combined strategy in Europe

did that of Germany.⁴⁹

Advances in science and technology, the trend toward total war, and doubts about the battlefield as the arena in which conflicts could or ought to be resolved stimulated competition in World War II to obtain decisive results by means other than conventional strategies. The object, in short, was to develop superweapons capable of achieving independent strategic effects.

The United States industrial base was one such superweapon and, in the context of the war then being fought, the most effective of them all. It drove the Japanese Navy to the defensive in the Pacific and frustrated the German submarine offensive in the Atlantic, and it enabled the United States to maintain its own forces and support those of its allies around the world. It was an authentically powerful weapon, and ally and enemy alike perceived it as such, but it did not wholly vindicate the President's and its other advocates confidence in it as the ultimate weapon. The assumption that quantity must prevail left the American troops to fight with automatic weapons and artillery of late-World War I vintage and tanks embarrassingly inferior to the German and Soviet types. The preponderance of lend-lease production, the approximately three-fifths that went to the United Kingdom account, did not, as it should have done in theory, bring larger British forces into the field. It apparently, instead, enabled the British Government to devote more of its domestic industrial capacity to its own superweapon, the heavy bomber.⁵⁰

The search for superweapons in the literal sense of the word dated back to the technological revolution of the late nineteenth century. During World War I, experience with chemical and submarine warfare and aerial bombing had shown that to qualify, a weapon had to be able to

inflict intolerable damage against which the victim could neither defend himself nor retaliate in kind. The submarine came close to meeting the requirement to do intolerable damage in both world wars but was itself vulnerable. The bomber, which could not be adequately tested in the strategic mode during the first war, received a full test in the second, in which it inflicted massive but not decisive damage. It turned out to be a less fast-acting offensive means than its advocates had expected, and the strategic premises governing its employment proved to have been overly optimistic on the scores of its capabilities and the enemy's vulnerability. The two weapons that could potentially have met all three requirements for superweapon status, the V-2 rocket and the atomic bomb came into the war after the issue had been decided, the V-2 as a result of having been persistently overlooked at the political level. Although the method of inducing nuclear fission was a German discovery, its military application was also neglected there, among other reasons one suspects, because unclear physics had been something of a Jewish scientific preserve.

It may be that the United States industrial base and the strategic bombing campaigns, nevertheless, performed a vital intangible function, regardless of the degree to which they fulfilled concrete strategic expectations, by giving credible visible evidence of power equal to the war's demands. In that sense, the Blitzkrieg and Hitler's war leadership would qualify as Axis' superweapons. Their dazzling successes in the early years gave the German forces an aura of invincibility; brought Italy, Japan, Finland, Rumania, Hungary, and Bulgaria into the war as German allies; and undoubtedly had much -- perhaps almost everything -- to do with keeping the German armed forces fighting until 1945.

III. Operational Effectiveness

That the war then begun was going to give a scope to operational art undreamed of in World War I was not apparent in September 1939. After twenty years of speculation on the potentials of mechanization and motorization, air power and armor, the defensive, which seemed to be the principal beneficiary of technological progress past and future, dominated operational thinking. On the very eve of the war, B.H. Liddell Hart, who was widely regarded as the world's outstanding authority on military affairs, wrote, "The dream of victory in modern war has nothing beyond mere speculation to sustain it. And it is faced by the hard fact of the long-proved superiority of the modern tactical defensive."⁵¹ Professional military opinion refused to accept the idea of unwinnable war, and doctrine everywhere upheld the primacy of the offensive. The Soviet field services regulations of 1939, for instance stated, "If an enemy unleashes a war on us, the Workers and Peasants Red Army will be the most offensive minded of all the armies that have ever existed."⁵² Nevertheless, for all commands and staffs the superiority of the defensive was indeed the hard fact, and all believed it would determine whether (or not) victory could be attained and how the war would be fought.

The operational problems and prospects were taken to be the same for all parties. Mass armies and masses of material would create deep defenses; hence, offensive operations would also have to be deep, going to depths three or four times the greatest achieved in the late period of

World War I, which was about 35 miles. Movement would be sporadic, a matter of breaking through successive lines. Everybody would try to carry the war to the enemy's territory in order to impose the greater destruction on him; but where they existed, the border fortifications, the Maginot Line and the German West Wall, for instance, were expected to provide security against that. The fortified lines and the general superiority of the defense appeared also to have negated the old maxim "the thrust is the best parry" and to have conferred a positive advantage on letting the other fellow attempt the first blow.

Although the greatest advance since 1918 was recognized as having been in the area of mobility, it, in the sense of being able to cover long distance at high speed, was taken to have more important applications off the battlefield than on it. Forces could be deployed and shifted rapidly, but once engaged, because of the infantry's preponderance, were expected to move at the infantry speed of four to six miles a day to which armor might add another three or four miles under optimum conditions. Sustained forward movement was hardly expected, and a reversion to outright positional warfare seemed to be about as likely as the war of maneuver all the armies wanted to fight. Maneuver would consist in the main of using lateral mobility to keep operations fluid. Since neither side could go very far or very fast as long as both were in good shape, the prudent commander would husband his forces' strength and waste the enemy's -- exactly as Gamelin, whose plan was an impeccable example of the then current operational doctrine, proposed to do in May 1940. On the German side, von Leeb had put it all in a sentence in his work on defense published three years earlier, when he wrote, "It accrues to operative and tactical defenses to exhaust the enemy, so as either to be able to resort to the offensive, or to prevent him from attacking

where he strives for a decision."⁵³

Combined arms, accepted everywhere in principle, was in a state of doctrinal flux. The new weapons, airplanes and tanks, had proved difficult to integrate into predominantly infantry-oriented operational conceptions. Already during World War I, both had engendered pressures for their establishment in separate branches within the armed forces, which had brought the Royal Air Force in 1917, the French Armee de l'Air in 1933, and the Luftwaffe in 1935 into being on equal footings with the armies and navies. Armies saw infantry as the main and aircraft and tanks as support weapons on a par with or as substitutes for the principal traditional support weapons, artillery and cavalry. Air forces regarded themselves as much more than auxiliaries to the ground forces, and armor's proponents argued that it was the rightful main and infantry the support weapon.

Strategic bombing gave air forces a wholly independent operational sphere of their own but one in which the superiority of the defensive figured more importantly than in any other, for which none of them was anywhere near ready, and which would add a new dimension to a war that already threatened to leave nothing to spare from the ground operations. Bomber Command and the GHQ Air Force kept the strategic bombing option open in Britain and the United States. The Armee de l'Air was subordinated to the ground forces commander at the outbreak of the war. The Luftwaffe, having restricted development to light bombers after 1936 (because they could be built faster and more cheaply), entered into operations as an equal partner with the Army by attaching -- but not subordinating -- "air fleets" to the army groups. The Soviet Union, which had the only heavy bomber fleet in existence and the only modern heavy bomber actually in existence, apparently following the French

example, attached and subordinated all of the Red Air Force's combat elements including the heavy bombers to the Army field commands at the army group and, occasionally, lower levels.

Combined arms as joint action by the armed forces was understood to be primarily a strategic conception. Land power and sea power, particularly, would jointly serve national policy, but each would operate according to its own principles in its own sphere. Navies had fewer doubts about their operational effectiveness -- provided they had the ships -- than either of the other services. Although the World War I "fleet-in-being" theory had raised a charge that battleships were to admirals as cathedrals were to bishops, namely, status symbols, the battleship dominated naval operational thinking everywhere. Everywhere, fleets were built or, as in Germany and the Soviet Union, being built around battleships. The German Navy's desire for open-water ports for the fleet it proposed some day to have was instrumental in producing the war's first joint operation, the invasion of Norway in April 1940, which, ironically, also began the surface fleet's decline. Whether carrier aircraft could have any more than a nuisance effect on battleships remained entirely in doubt until November 1940 when planes from the British carrier Illustrious sank three Italian battleships at their moorings in the Taranto harbor.⁵⁴

After June 1940, the British, Soviet, and American armed forces assimilated the lessons of the French defeat without fundamentally altering their previously held operational conceptions. Blitzkrieg appeared to them to be no more than an effect of mass coupled with mechanization and motorization. Although the Allies had possessed manpower and matériel superiorities in France and Belgium and in Norway also, the defeats were taken to have demonstrated that they had sorely

misjudged the German quantitative lead. Since the disappearance of the Western Front had vastly strengthened the German position on the Continent, assured superior weight was thought to be the absolute prerequisite for future operations against them.

The British saw the interim requirements as being to rebuild and expand their forces, wear down those of the Germans, and under no circumstances risk another Dunkirk. ABC-1 converted the second into specific tasks, strategic bombing, the naval blockade, and operations on the European periphery, and, in keeping with the last, left a direct confrontation with the German main forces in abeyance. The British and American air forces believed strategic bombing was the fastest, most effective, and probably decisive means for bringing offensive mass to bear directly on Germany. The German failure in the Battle of Britain (August-November 1940), in their view, confirmed their respective theories of strategic bombing, which agreed in emphasizing weight in aircraft, armament, explosives, and effort.

The Soviet armed forces were ready by June 1941 to meet a German invasion on at least equal quantitative terms. The western frontier military districts, which would become fronts (army groups) at the outbreak of hostilities, had 2.9 million men, as many as 5,500 medium and heavy tanks, and at least 1,540 latest model airplanes. The German BARBAROSSA force consisted of 3.05 million troops, 3,350 tanks, and 2,770 aircraft. The Soviet figures do not include troops, tanks, or aircraft in or adjacent to the military districts but under Defense Commissariat control. A full third of the Soviet tanks were T-34s and KV-1s, more powerful types than any the German Army would have in the first eighteen months of the war. In accordance with the "creeping war" theory, the Soviet operational plans assumed a hiatus of up to three weeks between

the declaration of war and the first actual battles. During that interval, the forces in the military districts, as the first strategic echelon, would cover the border and prepare to repulse the enemy. Meanwhile, a second strategic echelon would form farther back and be ready to join in delivering "an answering blow" and carrying the war to the enemy's territory. The military commands believed they could neither be taken by surprise nor overwhelmed and movement would be slow in the prolonged war of attrition that would ensue. Stalin, who remembered that the Red Army had needed three and a half months to defeat little Finland and that a war game based on the operational plan run in January 1941 had resulted in a red (Soviet) defeat, would by far rather not have had the matter put to a test.⁵⁵

The German High Command was convinced that Blitzkrieg had revolutionized operational art, allowing operations to be conducted on larger scales at higher speeds with smaller commitments in human and material resources than had formerly been imagined to be possible -- that, in effect, technique could be substituted for mass. A comparison of the forces and weapons allotted to BARBAROSSA with those employed in the 1940 campaign in the West graphically illustrates the change in German thinking -- and, of course, some other things as well, namely, a low opinion of the Soviet military capability and the limitations of German resources. The numbers of divisions deployed had been 141 in the West and were 210 for BARBAROSSA, an increase of about fifty percent in numbers but only a bare third in combat-effective strength because 24 of the BARBAROSSA divisions were security divisions composed of over-age and limited-service men who could not be used at the front. The number of panzer groups (armies) was expanded from one, in the West, to four and of panzer divisions from ten to seventeen, but the total tank allotment rose

only by 971. Consequently, the quadrupling of the panzer groups was accomplished with a 70 percent increase in panzer divisions, a 35 percent increase in tanks, and about a 20 percent decrease in the number of tanks per division.⁵⁶ The BARBAROSSA force had less artillery (7,146 pieces) than had been available in the West (7,378 pieces), and the Air Force assigned 357 fewer combat aircraft.⁵⁷ The German High Command apparently believed that the Blitzkrieg's inherent potential would almost of itself be sufficient to sustain the shift from a regional to a continental scale.

Not recognized as such outside Germany, the Blitzkrieg was, nevertheless, an authentic new operational form and would, even though it failed in the Soviet Union, prove to be the most sophisticated and effort-effective of those employed in the war. Although the official Soviet view holds the Blitzkrieg to have been doctrinally unsound, a recent Soviet study states:

The fascist forces' big strategic-operational successes in the early operations resulted from improvements in and new forms of offensive action. Generally speaking, these methods of action were not entirely new, since they had been dealt with in the military literature But the application of them in practice on a broad scale and in close combination with each other took the countries on the defensive by surprise.⁵⁸

True Blitzkrieg did not actually come into being until BARBAROSSA. The Polish and French campaigns were transitional. The technique in both being that of the hammer and anvil, of a maneuver element, the hammer,

acting in conjunction with a solid, slower moving and holding mass, the anvil, to accomplish a single envelopment. In BARBAROSSA, there was no anvil: movement entirely supplanted mass. Concentration, coordination, economy of force, and maneuver combined to achieve mobility. The double envelopment, the Zangenangriff (pincers movement), the employment of two maneuver elements to encircle the enemy, replaced the hammer and the anvil. The hallmark of the Blitzkrieg henceforth was the Kesselschlacht (battle of encirclement).

The encirclement in the form of the double envelopment had been recognized since the Battle of Cannae in 216 B.C. as the purest form of annihilation -- and the most difficult to achieve. Before World War I, the chief of the German General Staff, Count Alfred von Schlieffen, had studied the many attempts made in the eighteenth and nineteenth centuries and found only one to have succeeded, the Battle of Sedan (1870) in the Franco-Prussian War. Schlieffen had concluded that the encirclement would always be a rarity because it required the highest order of skill to execute but was so easy to evade or frustrate that the victim literally had to cooperate to make it succeed. It needed, he said, a Hannibal on the one side and a Terentius Varro on the other.⁵⁹ Schlieffen's own single envelopment attempted in 1914 had further demonstrated the spatial scale and degree of mobility required to make either type of envelopment operationally effective in modern war lay perilously close to the absolute limit of logistical capability. The German General Staff knew this to be nowhere more true than in a war against the Soviet Union.

In 1941, Stalin played Terentius Varro, tying the Red Army down in stationary fronts and therewith allowing the Germans to perform seven great encirclements: Bialystok, Minsk, Smolensk, Uman, Kiev, Vyazma, and

Bryansk. Those, however, were not enough to decide the war. By how much they fell short may never be known. In the last, the battle for Moscow, the one Stalin and the Russian people would certainly have considered the most likely to be decisive, the Blitzkrieg, delayed first by Hitler's August excursions on the flanks and then by the October mud, broke down in the -40° cold of December.

The Blitzkrieg died in the summer of 1942. Stalin, in desperation, allowed his army groups in the Ukraine to retreat, and the German envelopments came up empty. Hitler, as he had the year before, changed his operational plan in mid-course. Canceling his original directive, which had provided for a phased offensive, he ordered simultaneous thrusts to the Volga River at Stalingrad and into the Caucasus. By August, his two forces were advancing out of the great bend of the Don River on diverging lines and outrunning their supplies. On the morning of 4 September, German Sixth and Fourth Panzer Armies closed a ring around Stalingrad on the west and began a two-and-a-half months' battle the like of which had not been seen since Verdun in 1916.

The Red Army seized the initiative on 19 November 1942 at Stalingrad and held it, with the exception of an interval from February to July 1943, from then to the end of the war. The Soviet literature ranks the encirclement of German Sixth Army at Stalingrad as "the Cannae of the twentieth century" and as "the first example in the history of war of such a powerful enemy grouping, equipped with the latest technology, being encircled and totally liquidated." It also maintains that the double envelopment was the Red Army's "main form of maneuver" in the operations conducted from November 1942 to May 1945.⁶⁰

As a prestige victory and in its psychological effects, Stalingrad can, no doubt, be compared with Cannae. It was, like the sea battles

around Guadalcanal and the landings in North Africa, a visible demonstration that the balance of forces had shifted against the Axis. Its ranking as a "first" in history is questionable, even if one accepts the dubious Soviet claim that most of the troops caught in the earlier German encirclements escaped. With Hitler's collaboration, the encirclement at Stalingrad was, in fact, elegantly executed; but the battle took so long to complete that it almost vindicated Hitler in his role as Terentius Varro. By 31 January 1943, when Field Marshal Friederich Paulus surrendered in Stalingrad, the German main forces in the Ukraine and the caucasus were in position to evade the worst of the follow-up blows the Soviet Command dealt them.

The double envelopment was not a reliable instrument in the hands of the Soviet forces. The plans for the winter of 1942-1943 proposed to use it in a Blitzkrieg-style offensive that was to have pushed the front in the south and center west to the Dnepr River and in the north, south and west to the Narva River-Lake Peipus line by March 1943. Of ten envelopments projected, three were completed, that at Stalingrad and two substantially smaller ones carried out against German Second Army and Hungarian Second Army in late January 1943. Four failed completely, and three made substantial territorial gains but also brought on reverses that restored the initiative to the Germans. To clear the entire area up to the Dvina River and Narva River-Lake Peipus lines took the better part of another year. During its summer and fall offensives in 1943, the Red Army did not attempt any envelopments. The Soviet Military Encyclopedia lists nine envelopments completed in 1944 and 1945, but all of those resulted from opportunities that occurred during operations in which they had not been planned, and one, the encirclement of German Army Group Center east of Prague, was executed after V-E Day.⁶¹

While the Soviet accounts frequently allude to the double envelopments as the Red Army's main form of maneuver and always claim a complete mastery of the technique, the envelopment actually appears only as an incidental feature of the operations they describe. From the summer of 1943 on, Soviet offensive operations were conducted on broad fronts, and the single or "salient" thrust was the main form of maneuver, a reversion, with more powerful and mobile forces, to the kind of deep operation developed late in World War I and incorporated into the standard pre-World War II operational theory. The object was to break into the enemy's front deeply enough to compel him to take all or a large stretch of it back. Envelopments that might occur as results of multiple thrusts interacting with each other would be incidental to the grand design, which was to repeat the sequence of breakthrough and advance until the enemy was exhausted or until, as in fact hapened, he simply ran out of space.⁶²

The Western Allies' development of operational doctrine was more diffuse and discontinuous than either the German or the Soviet. Operational techniques on the ground were the predominant means by which the German and Soviet armed forces brought their strengths to bear against the enemy. The Blitzkrieg gave the German forces whatever chance it may have had for a victory, and the skills and experience it produced enabled them to stave off the defeat as long as they did. The Soviet forces conducted their defensive and offensive operations in ways calculated to exploit their quantitative advantages in manpower and matériel -- and to compensate for their shortcomings in other respects. Moreover, after 22 June 1941, the German and Soviet main forces were continuously engaged in conducting operations on a large scale.

On the other hand, the form in which operations were conducted was not the compelling consideration in the Western Allies' conduct of the war. For them, when and whether they came to grips directly with the enemy main forces was a matter of choice, not absolute necessity. They could look to alternatives. ABC-1, for instance, was nothing but alternatives. As late as the winter of 1943-1944, while OVERLORD assumed an opposed advance into Germany, the RANKIN plans contemplated other possibilities ranging from a partial to a total German collapse before the invasion, TALISHAN/ECLIPSE provided for a German collapse after the landings, and strategic bombing sustained a vision of victory by other means. The term "operation" also had a somewhat different meaning for the Western Allies than it did for either the Germans or the Russians. An operation was taken to be essentially an expedition, a self-contained undertaking the most crucial parts of which were the build-up, the landing, and the secure lodgment, in effect a means of dividing the war into manageable pieces each of which could be dealt with, after the initial requirements were satisfied, as its particular circumstances required. Furthermore, the Western Allies' operations were combined ventures in which national objectives, interests, sensitivities, ambitions, and weaknesses weighed so heavily that compromises were likely to prevail over technically more effective courses each of the partners advocated separately.⁶³

In the Pacific war two conditions enhanced the United States armed forces' effectiveness: the absence of combined operational commands and the Japanese forces loss of mobility. After mid-1942, the Japanese ground forces were locked into a war of position in island fortresses, and the Navy's surface fleet, which was to have supported them, could not do that in the face of superior carrier and land-based air power. The

idea of unified command in operations requiring both land and sea forces was, moreover, entirely foreign to the Japanese Army and Navy. Neither the U.S. Army nor the Navy doubted the necessity of unified command, and even though they haggled ceaselessly over which of them was to exercise it, they managed, in the heat of that intramural contest, to keep the war itself in sight. In the Pacific as in Europe, compromises had to be made, but those mainly concerned questions of precedence and were arrived at within stable frameworks of national objectives and operational principles.⁶⁴

During World War II, air power conclusively demonstrated its entitlement to operational coequality with land power and surface sea power. The Blitzkrieg proved that in properly coordinated joint operations, autonomous air power substantially enhanced the effectiveness of both the air and ground forces. The British established air commands in North Africa in 1941. In May 1942, the Soviet Air Force began organizing the air elements attached to army groups into air armies modeled on the German air fleets. The combined commands in North Africa and the Mediterranean applied the British system also to American air elements, and the U.S. Army's FM 100-20, Command and Employment of Air Forces, published in July 1943, recognized air power and land power as "coequal and interdependent." Although, naval doctrine continued to regard the surface fleets as the main battle components in the war at sea, the Battles of Midway and the Philippine Sea showed that battleships could not seek a decision without air support.

On the other hand, a gap between strategic bombing theory and effective strategic bombing operations proved difficult to bridge. Theory required bombing to decide the war either by destroying the enemy population's will to resist or its ability to produce war material. The

Luftwaffe failed at both in succession in the Blitz against England in 1940-1941, raising questions on the score of the objectives' feasibility. The Royal Air Force Bomber Command and the U.S. Army Air Forces, assuming that a larger effort was required (see also second paragraph below), combined the two objectives in the "round-the-clock" operations begun in 1943 and conducted to the end of the war. German civilian morale withstood the assault on it at least well enough not to hasten the end. The German military's main concern after 1943 was the influence worry about their families was having on the troops in the field. The most effective period in the strategic bombing offensive came in the last year of the war, after the war's outcome had been decided on the ground. Even so, although German industry performed erratically after the spring of 1944, fighter aircraft production reached its wartime peak in September 1944 and armored vehicle output its in December. Economic collapse did not begin until late 1944 and did not become general before the spring of 1945. During that interval, it was no longer possible to distinguish between the operational effects of the strategic and tactical air forces, since nearly all German targets were also within the range of the latter. In the Far East, strategic bombing was relatively more effective. It may have enhanced Japanese susceptibility to the atomic bombs and therewith have undermined the Japanese will to stay in the war, but the blockade on the seaward approaches to the home islands undoubtedly did as much or more to cripple the Japanese war economy.⁶⁵

The outstanding, most expensive, and last to be mastered lesson of the war in the air was that air superiority was the operational sine qua non. The concept, as old as air power itself, conflicted with air forces' offensive orientation, which required air power to be brought

directly to bear in some form on the ground. In its own element, the airplane was taken to be a defensive weapon incapable of achieving more than local and transient advantage over the enemy. Theory regarded the fighter as a necessary and useful weapon but always secondary to the bomber; air against air operations as a diversion preferably to be imposed on the enemy; and air superiority to be attainable as a byproduct of the bomber's direct action.⁶⁶

The war experience, which in this instance the air forces were slow -- and reluctant -- to assimilate, showed that direct action was more properly to be regarded as a byproduct of air superiority and that air superiority by itself could be more effective than direct action. In 1940, the British and American Air Forces overlooked the root cause of the German's failure in the Blitz, the inability to get air superiority, and attributed it, in the first instance, to the Luftwaffe's bombers being too lightly armed and, in the second, to their inability to lift sufficient weight of explosives. The Germans, on their part, expended much effort throughout the war on retaliation as the answer to the strategic bombing against which they could have secured greater and possibly decisive success if they had brought their fighter production to the level it reached in September 1944 a year earlier. As it was, the U.S. Army Air Forces' daylight offensive had to wait on the P-51 Mustang, and the whole strategic offensive did not become reasonably cost effective until the Allied air forces had near-total air supremacy. In the Pacific, air superiority counted more heavily in the Japanese Navy's defeat than direct action did, and the strategic bombing offensive benefited more from the Japanese Air Force's relative ineffectiveness by day and complete inactivity at night than from the B-29s improved armament.⁶⁷

IV. Tactical Effectiveness

The aphorism that generals are always ready to fight the last war, although it gained considerable currency later, was only tangentially applicable at the outset of World War II. The military commands believed that tactically, as well as operationally, the war would repeat the World War I pattern on a scale that would make them, if anything, less rather than more able to manage it effectively. Deepened defenses would necessitate deeper offensives, but whether deep penetration could be achieved against ferro-concrete fortifications or even against entrenched infantry was totally in question. The Spanish Civil War (1936-1939), in which the Loyalists' untrained militia had fought the Spanish Foreign Legion and a good part of the Italian Army to a near standstill for almost three years, appeared to indicate that the answer was likely to be in the negative. Maneuver was the great desideratum; positional warfare appeared to be the greater likelihood. All tactical doctrine emphasized the offensive as the only way of securing a decision on the battlefield or in the war, but as a practical matter, the initial advantage seemed to lie heavily on the side of the tactical defensive and the most favorable progression to be from the defensive to the offensive -- after a certain and possibly sustained interval.⁶⁸

Rearmament in the 1930s had centered on the rebuilding of mass, conscript ground forces, and armies ranked the infantry as the indisputable queen of battles. Air and armored forces continued as they had since late in World War I to seek coequality and tactical autonomy,

but only the German Luftwaffe had fully succeeded -- mainly because its commander in chief, Hermann Goering, was also Hitler's designated political heir and he and his service, therefore, could not be subordinate to any other service command. All armies and/or air forces had experimented off and on with parachute troops, but only Germany and the Soviet Union had activated airborne forces. The U.S. Marine Corps, looking ahead to a potential war in the Pacific -- and at landing techniques the Japanese had used in the China Incident -- had developed an amphibious doctrine but lacked the landing craft to make it workable.⁶⁹

Combined arms doctrine, as it had in World War I, designated the infantry as the main arm and the others as its auxiliaries. U.S. Army doctrine, in 1939, stated that "As a rule, tanks are employed to assist the advance of infantry foot troops, either preceding or accompanying the infantry assault echelon."⁷⁰ As late as April 1942, U.S. Army tactical air doctrine stated that "the most important target at a particular time will usually be that target which constitutes the most serious threat to the operations of the supported ground forces" and assigned the "final decision as to priority of targets" to the "commander of the supported unit."⁷¹ Late in 1938, the German Army High Command had merged its armor, motorized infantry, and cavalry into an inspectorate of "mobile troops." Guderian, who was appointed inspector general, believed the High Command's purposes were to deny armor separate status; keep it available for parceling out to the infantry; and because he was armor's strongest advocate, exclude him from direct influence in war planning.⁷² The Soviet 1936 Field Service Regulations, while alluding to some forms of independent "strategic" air and armored operations, had stated, "The infantry...decides the outcome of the battle. Therefore, othe types of

forces operating jointly with the infantry are carrying out their missions in the interests of the infantry." The 1939 revision of the Field Service Regulations gave the air mission as being solely to reinforce the ground forces "in the direction of the main effort."⁷³

Armor's tactical status was vague. The German Army, which had activated three panzer divisions in 1935, had completed only two more by the end of 1938 and had another half-built when the war broke out. The Soviet Army dismantled its large armored units, four mechanized corps, in August 1939 and reassigned their components to the infantry. The U.S. Army and the British Army were engaged, as they had been for several years with very limited means, in programs to create separate infantry-tank and mechanized cavalry forces.⁷⁴ The tank was accepted as indispensable as a confidence builder and source of fire support for the infantry and a more mobile and durable mount for the cavalry, but the antitank gun beclouded its future as an independent offensive weapon. Marshal Mikhail Tukhachevskiy, who had promoted the development of the Soviet mechanized corps in the early 1930s, had predicted shortly before his death in 1937 that armored forces would have to be prepared to sacrifice one or more tanks per enemy antitank gun and that single infantry men armed with small-caliber antitank rifles would be able to oppose tanks on equal terms.⁷⁵

In the Polish and French campaigns, the panzer division emerged as the key component in the Blitzkrieg revolution and brought a new element onto the tactical scene: the self-contained combined arms team, which joined infantry, armor, and air power to achieve offensive mobility. The arms supported and enhanced each other by concerted exploitation of their individual intrinsic qualities, the infantry's staying power and capacity for close-in engagement, armor's battlefield mobility and firepower, the

dive bomber's ability to outrange the heaviest artillery while matching it in accuracy and effectiveness of fire. Existing doctrine -- German included up to the start of the final drive away from the Meuse River on 17 May 1940 -- had assumed that mobility, if it materialized at all, would take the form of pursuit in the interval between a successful breakthrough and the defense's recovery. The panzer divisions achieved continuous movement and sustained their striking power over distances that were positively limited only by the durability of their equipment. During the campaign in the West, they revealed as well and equally importantly that against equal or superior forces not at the same level of tactical proficiency they could be maneuvered with sufficiently devastating precision and speed to control the battle after the breakthrough and thereby, in the envelopment, enormously enhance the damage inflicted.⁷⁶

The German forces' mastery of tactical combined arms in a superior form enabled them to seize and hold the initiative against the Soviet Union in the summer campaigns of 1941 and 1942; but, as the Germany Army High Command knew very well it would if it were allowed to come fully into play, the Soviet space prevailed and by November 1942 pushed victory beyond the reach of tactical virtuosity. The same happened on a smaller scale in North Africa, and thereafter the German forces had to fight on their enemies' terms. Nevertheless, they retained greater tactical proficiency on the defensive than they had themselves encountered while holding the initiative. Consequently, to make the war winnable, their enemies in the East and West could not rely entirely on quantitative superiorities and had also to devise effective offensive tactics.

The Soviet problem was to make armed forces drawn from a predominantly nontechnological society competitive in a technological

war. The industrial Five Year Plans of the 1930s had provided the technological means, but the capacity to put them to use had not kept pace. The Soviet Army, which called itself the Worker's and Peasant's Red Army, was in the great majority a peasant army. The Russian peasant was a stubborn and crafty fighter and, next to the Japanese, the least demanding soldier in the war, but in the millions, he and his fellows constituted an armed force with a low adaptability to the requirements of technological warfare. Twenty some years' intensive effort had brought a Communist officer corps into being and a body of doctrine, some quite advanced for its time most notably in the areas of deep operations and its tactical counterpart, deep battle. On the other hand, even before the military purge that began in 1937 and continued into 1940, foreign observers believed high professional competence to be a comparative rarity in the Soviet officer corps. The Soviet Government had the same conclusion brought home to it almost simultaneously with the outbreak of the war in Europe. Zhukov staged a neat double envelopment against a small Japanese force on the Khalkin Gol River in the late summer of 1939, and the Leningrad Military District thoroughly botched the war against Finland in the fall and winter. In the spring of 1940, the armed forces and the party launched an intensive campaign to stimulate initiative, flexibility, independent judgment and decision making, self-confidence, and imagination in the officer corps; but those were traits the Soviet system did not normally tolerate in its citizens, hence, ones which each officer knew could in specific instances very well be considered criminal.

After 22 June 1941, in part of necessity, in part by choice, which in this instance as in most others was Stalin's, the qualities of the troops and the leadership determined the Soviet tactics. In the higher ranks, the war revealed which officers were competent and which not and

the proportion of the former increased: the best soon mastered the lessons the war had to teach. But the mastery did not extend to the middle and lower commands. They generally could not be relied on to put sophisticated plans into effective execution. The Stalingrad offensive, for instance, which was the kind of operation Germany army groups handled routinely, required two and one half months' advance preparation that drew almost the entire Red Army High Command into the field. The same was true of the two other great show-piece battles, those at Kursk in July 1943 and against Army Group Center in July 1944. The troops provided sustained numerical superiorities but declined progressively in quality after 1942 as replacements had to be drawn from the over-age and under-age groups and from the non-Russian-speaking peoples, who often also did not share the Russian national dedication to the war.

Although Zhukov, Vasilevskiy, and some others perhaps preferred the double envelopment, the Red Army's tactical capabilities found their most effective as well as frequent application in the salient thrust, the rassekayushchiy udar (literally, cleaving blow). It required repeated frontal assaults and breakthroughs, usually did not prevent the enemy from salvaging the better part of his troops and equipment, and probably on the average cost the attacker more heavily than the defender. But it also gave opportunities for mass employment of infantry, armor, and ground attack aircraft and did not require precise timing or coordination; and it sometimes benefited enormously from Hitler's insistence on a rigid defense, which on several occasions transformed what should have been just losses of ground into encirclements. The rassekayushchiy udar was not failure-proof; Zhukov's attempt in April 1945 to break through the Oder River line to Berlin conclusively proved that; but it did not expose tactical shortcomings in the way less than completely successful

envelopments generally did -- as the German escape from the Falaise Pocket in France in August 1944, for instance, did -- and it always accomplished something. Consequently, it served the Soviet strategic interest in two equally important ways: it provided the setting in which the Soviet forces could perform at the highest level of tactical effectiveness they could consistently maintain, and it enabled them to create an illusion of military prowess comparable to that which the Wehrmacht had enjoyed in the heyday of the Blitzkrieg.⁷⁷

The Western Allies and the Japanese were less continuously and compellingly concerned with perfecting land-battle tactics than the Germans and Russians were. Their and their main enemies' territories were not contiguous; and they were sea powers, which, on the one hand, gave them a form of mobility and means of bringing offensive strength to bear that neither the Germans nor the Russians possessed and, on the other, tended to check the evolution of their tactical doctrines. Six months into the war, the Japanese no longer had any choice other than to fight a war of position in isolated strong points, which suited their preference for close engagement but reduced their offensive capability to zero. In June 1944, the British and Americans had to plunge into a war in which, for the previous three years, they had been virtual bystanders basing their preparations on limited direct experience and somewhat hazy analyses of German performance. Moreover, neither they nor the Japanese had expected the outcome either in Europe or in the Far East to depend in the main on their forces' performance in land battles. The British had counted on air and sea power, the Americans on industrial power, and both on the Soviet forces to weigh more heavily against the Germans; and the Japanese had relied on their navy to decide the Pacific war.

The Americans in the Pacific and they and the British in Europe combined land, sea, and air power to stage amphibious assaults on island and continental mainland targets that gave a compelling display of ability to exert military power at will on a global scale. The distances and speeds sometimes achieved over water also lent a Blitzkrieg aspect to their amphibious operations, one, however, that as often as not terminated at the beachhead. Outnumbered and outgunned enemy outfought the landing forces briefly at Salerno, for three months at Anzio, and for the better part of two months in Normandy. In the Pacific, at Tarawa, Peleliu, Iwo Jima, and Okinawa, tremendous superiorities in all arms could not keep the Japanese from calling the tactical tune on the ground and imposing what in a longer term and on a larger scale would have been prohibitive casualties.⁷⁸

Mobility was the common goal of all World War II tactical doctrine, the war's outstanding contribution to military art and most durable legacy. It was the principal combined arms achievement and, after June 1940, the first consideration in tactics and operations. By 1945, the Soviet forces and those of the Western Allies had matched the German rates and depths of advance. On the other hand, the German, Soviet, and American experience indicates that the impressive performances all parties eventually gave are, perhaps, not the most significant indicators of military effectiveness in the development and conduct of mobile warfare during World War II.

The panzer division, as a combined arms team of armor and motorized infantry, was the main German mobile component throughout the war. In the Blitzkrieg phase, the Luftwaffe air fleets added air superiority in the zone of operations and their Ju-87 dive bombers functioned as a third element in the combined arms team (which they continued to do with some

regularity on the Eastern Front until late in the war). Germany also initially possessed the only fully organized and transportable airborne force, which appeared in Crete in May 1941 to have added a new dimension to mobility but did not subsequently figure again in a major operation in its designated role.

After December 1941, as the German hold on the initiative progressively weakened, the panzer division underwent a forced conversion into a defensive weapon of last resort. In the character of a "fire brigade," it exercised its mobile capability increasingly in lateral moves behind the front from one hot spot to another, and its armored elements frequently became intermingled with regular infantry in Kampfgruppen (battle groups), less than division-sized groupings set up to fill out the front line. Moreover, the appearance in steadily growing numbers of the heavily armored Soviet T-34 and KV tanks and the impotence of the German infantry's antitank weapons against them necessitated mounting higher velocity guns in the German tanks, which made them tank destroyers and tended to further disperse the panzer divisions since, as one German report put it, "... everybody had to have a share."⁷⁹ In the summer of 1943, Soviet air power, demonstrated in and after the Battle of Kursk, Anglo-American landings in Sicily and Italy, and the strategic bombing offensive against the Reich burdened the Luftwaffe's fighter arm to the point at which it could henceforth no longer make good a bid for air superiority anywhere.

General Guderian, whom Hitler appointed Inspector General of Armored Troops in February 1943 and who held the post until he became chief of the Army General Staff in August 1944, believed in the mobile defensive. He proposed to reassemble the panzer divisions; rebuild them to strengths of 400 tanks, more than they had previously ever had; and to

reserve them for employment in the defensive equivalent of the Kesselschlacht (encirclement), the Panzerschlacht (tank battle) in which they would force the enemy armor into decisive confrontations. Hitler approved the Panzerschlacht in principle but demanded a rigid defense as well, and that kept the panzer divisions tied to the front and consumed tanks as fast as they came off the assembly lines. The Commander in Chief, West had seven panzer divisions in northwestern France in June and July 1944, enough to stage a Panzerschlacht in Normandy; but those close to the beachhead were committed piecemeal to stabilize the front; and even if Hitler had permitted it, Allied air superiority would have frustrated an attempt to reassembled them and bring the others forward. The two panzer armies Hitler committed to the Ardennes offensive in December 1944 showed that the enemy at his worst was then no longer vulnerable to the 1940-style Blitzkrieg.⁸⁰

The Soviet mechanized corps, which had been the approximate equivalent of the German panzer division, was out of existence from August 1939 to late 1940, when it was reconstituted in much heavier form (with somewhat over 1,000 tanks apparently on the assumption that the panzer division's effectiveness depended on weight of armor) only to be disbanded again in July 1941. At the December 1940 war readiness conference, the deputy chief of the General Staff had objected to the whole idea of large armored formations. The Red Army was organizing five airborne corps when the war broke out in June 1941 but was just beginning, under license, to build a transport fleet of American DC-3s. A large part of the airborne force was subsequently converted to infantry, and the one parachute drop attempted in a mobile setting -- in the Bukrin Bend of the Dnepr River in November 1943 -- was an organizational fiasco and a tactical disaster.

The Red Army's mobile forces began to assume their definitive wartime shape in the spring and summer of 1942 with the activation of tank and mechanized corps and tank and air armies. The tank corps had three tank brigades and one infantry brigade; the mechanized corps, three tank brigades. The number of tanks in each was about the same, around 200. The tank army's normal complement was two tank and one mechanized corps. The air armies raised tactical air command to the army group level but in a subordinate, not like the German air fleets, coordinate status; and close ground support remained the Red Air Force's predominant role. In the entire war, over 90 percent of the air missions were flown within 30 miles of the front line, 80 percent within 6 miles.⁸¹

On 4 August 1943, southeast of Kursk, where the German ZITADELLE offensive had collapsed three weeks earlier, the First Tank and Fifth Guards Tank Armies opened the mature phase in the Soviet conduct of its World War II mobile operations. Passing through a gap the infantry had broken in the German line the day before the tank armies, running shoulder-to-shoulder, headed south past Belgorod and Kh'arkov toward Poltava. Simultaneously, infantry armies hit the German line to the south and east, and where it gave way, tank and mechanized corps went through. By early September, after a major effort by a whole army group had launched the Third Guards Tank Army and several tank and mechanized corps toward Kiev, the two Germany army groups south of the Pripyat Marshes could not close their line anywhere east of the Dnepr River. Subsequently, the German armies and the Soviet armor raced each other to the Dnepr, which was supposed to have been a major segment in a German "East Wall" but was already riddled with Soviet bridgeheads when the Germans completed the crossing in the first week of October. By December, the Soviet infantry, artillery, armor and air contingents were

redeployed and ready to begin the cycle again.

The Soviet technique reduced mobile operations to a standard pattern of breakthrough, exploitation, and pursuit that allowed the forces and the several arms to be employed incrementally and the combined effects of all arms to be secured with a command system that did not possess the ability to conduct a reliably effective fully integrated combined arms effort. With practice and against a weakened enemy, it could even perform in the Blitzkrieg range: the 200-mile advance to the Dnepr took 3 months; that from the Vistula River to the Oder River in January 1945 covered 280 miles in 14 days.⁸²

The wartime development of American mobile forces began in the aftermath of the recent German victory with the creation of the Armored Force in July 1940 and an authorization to initiate studies on tactical employment of parachute troops and air-transported infantry. The Armored Force, which appeared to be set on the course toward status as an autonomous arm that the Air Corps was taking, activated two armored divisions in 1940 and three more in 1941, the only actually new divisions created before Pearl Harbor. Its share in the 1941 Victory Program amounted to no less than a projected 61 divisions. The Army Ground Forces authorized two airborne divisions in March 1942 and eventually activated five.

After Pearl harbor, the Armored Force's course changed; it became a component of the Army Ground Forces in March 1942. A year earlier, General Lesley J. McNair, then Chief of Staff, GHQ, subsequently Commanding General Army Ground Forces, had written an "Evaluation of Modern Battle Forces" in which he concluded that against infantry armed with antitank guns, "armored legions quite conceivably might emerge...an almost total loss."⁸³ In November 1941, at exactly the time the German

Army was becoming convinced that infantry antitank weapons were insufficient, umpires at GHQ maneuvers had ruled virtually all the tanks of two armored divisions out of action, 91 percent owing to antitank guns. On the other hand, the German experience in 1941 and 1942 was taken to demonstrate that the lighter panzer divisions used in the Soviet Union and the Kampfgruppen were an all-around improvement in the means of employing armor. In October 1943, the Armored Force consisted of 16 armored divisions (of which General McNair contemplated inactivating 6), each a third lighter in armor than the 1942 divisions had been, and 75 nondivisional tank battalions, 11 more than were in the divisions. The armored divisions' combat commands were ready-made Kampfgruppen. With regard to the forthcoming Operation OVERLORD, General McNair told the Assistant Secretary of War in February 1944 that "whether armor will pay its freight remains to be seen."⁸⁴

The Army Ground Forces' approach to mobile warfare entered its final stage in June 1943 when the Armored Force became the Armored Command with barely a vestigial claim to autonomy. A month later, an order eliminating "type" commands above the division level terminated four armored corps headquarters that had been formed and established all army and corps headquarters as combined arms commands. Thereafter, although armor could still potentially have been employed in massed formations, the principle of "balance," of infantry, armor, and artillery operating in close tactical association with each other, prevailed; and it was extended to the small unit level after June 1944 when tank battalions became parts of the infantry divisions' normal complements. The airborne divisions narrowly missed being incorporated into the balance in the summer of 1943 (as infantry divisions) and those assigned to the European Theater went on to become part of an ad hoc "type" army,

the First Allied Airborne Army, which staged the largest airborne operation of the war, MARKET, in September 1944, but did not exert significant tactical influence. FM 100-20 upset the balance by removing the air support elements from the combined arms commands' control and by giving third priority to the air and ground forces' combined effort in the battle area -- after air superiority and interdiction. The air forces looked on the tactical effort in all three forms as a diversion from their strategic main mission; and the ground forces believed they received too little direct support; but the ground operations were carried out from D-Day to V-E Day under an air umbrella the like of which had not yet been seen in the war; and that leaves in question the general effectiveness of balance as a means of achieving mobility through combined arms.⁸⁵

Notes

1. R. Elberton Smith, The Army and Economic Mobilization (Washington, D.D.: Government Printing Office, 1959), p. 4; Gustav Stolpher, The German Economy, 1870 to the Present (New York: Harcourt, Brace & World, 1967), p. 165.
2. Deutsches Institut fur Wirtschaftsforschung, Die deutsche Industrie im Kriege, 1939-1945 (Berlin: Duncker & Humblot, 1954), p. 73; Smith, Economic Mobilization, pp. 4, 215; Wesley Frank Craven and James Lea Cate, eds., The Army Air Forces in World War II (Chicago: University of Chicago Press, 1955), Vol. VI, p. 331.
3. Smith, Economic Mobilization, p. 4; Robert W. Coakley and Richard M. Leighton, Global Logistics and Strategy, 1943-1945 (Washington, D.C.: Government Printing Office, 1968), p. 846.
4. H.M. Postan, British War Production (London: H.M. Stationery Office, 1952), p. 197.
5. Smith, Economic Mobilization, pp. 39-78.
7. Postan, War Production, pp. 143-45, 248-52.
8. Donald M. Nelson, Arsenal of Democracy (New York: Harcourt, Brace, 1946), p. 19.
9. James F. Byrnes, All in One Lifetime (New York: Harper and Brothers, 1958), p. 186.
10. Carroll, Total War, pp. 232-39.
11. Smith, Economic mobilization, p. 141.
12. Carroll, Total War, p. 184.

13. Postan, War Production, p. 304.
14. Smith, Economic Mobilization, pp. 156f.
15. Postan, War Production, p. 304.
16. Barrie Pitt, History of the Second World War (London: Purnell & Sons, 1968), p. 2683; Kent Roberts Greenfield, et. al., The Organization of Ground Combat Troops (Washington, D.C.: Government Printing Office, 1947), pp. 231-59; Hans-Adolf Jacobsen, 1939-1945, Der zweite Weltkrieg in Chronik und Dokumenten (Darmstadt: Wehr and Wissen, 1959), p. 641; S.A. Tyushkevich, ed., The Soviet Armed Forces: A History of Their Organizational Development (Washington, D.C.: Government Printing Office, 1978), pp. 364f; Thomas Parrish, ed., Encyclopedia of World War II, passim.; Craven and Cate, Army Air Forces, Vol. VI, p. 33.
17. Akademiya Nauk SSSR, Institut Istorii, Istoriya SSSR (Moscow: Izdatel'stvo "nauka," 1973), Vol. 10, pp. 264-67, 745; Institut Voennoy Istorii Ministerstva Oborony SSSR, Istoriya Vtoroy Mirovoy Voiny, 1939-1945 (IVMV) (Moscow: Voennoye Izdatel'stvo, 1982), Vol. XII, p. 161; Robert H. Jones, The Roads to Russia (Norman, Okla.: University of Oklahoma Press, 1969), pp. 281-84.
18. Deutsche Industrie, pp. 12, 45-48, 159.
19. H.M.D. Parker, Manpower (London: H.M. Stationery Office, 1957), pp. 201-11, 481-483; W.K. Hancock and H.M. Gowing, British War Economy (London: H.M. Stationery Office, 1949), pp. 438-52; Postan, War Production, pp. 303-09.
20. Byron Fairchild and Jonathan Grossman, The Army and Industrial Manpower (Washington, D.C.: Government Printing Office, 1959), pp. 30-36; Hancock and Gowing, War Economy, p. 500.

21. Jerome B. Cohen, Japan's Economy in War and Reconstruction (Minneapolis: University of Minnesota Press, 1949), pp. 287-93, 353-58.
22. Benito Mussolini, Der Geist des Faschismus (Munich: C.H. Beck, 1933), pp. 9-25.
23. Adolf Hitler, Mein Kampf (Boston: Houghton Mifflin, 1943), pp. 130-39, 610-14, 641-45; Adolf Hitler, Hitler's Secret Book (New York: Grove Press, 1961), p. 42f; Andreas Dorpalen, The World of General Haushofer (New York, Farrar & Rinehart, 1942), pp. 29-38.
24. Federal Republic of Germany, Military History Research Office, Das Deutsche Reich und der Zweite Weltkrieg (Stuttgart: Deutsche Verlags-Anstalt, 1983), Vol. IV, p. 9.
25. James W. Morley, Japan's Foreign Policy, 1868-1941 (New York: Columbia University Press, 1974), pp. 80-85.
26. Cited in David Shub, Lenin (Garden City: Doubleday & Co., 1948), p. 394.
27. J.V. Stalin, Works (Moscow: Foreign Languages Publishing House, 1953), Vol. X, pp. 295-98.
28. Sigrid Arne, United Nations Primer (New York: Rinehart, 1948), pp. 1-15.
29. Wilhelm von Leeb, Tagebuchaufzeichnungen und Lagebeurteilungen aus zwei Weltkriegen (Stuttgart: Deutsche Verlags-Anstalt, 1976), pp. 184f.
30. Hermann Poertsch, Kriegskunst heute und Morgen (Berlin: Wilhelm Andermann, 1939), pp. 228-36; Leeb, Tagebuch, p. 184; Paul Reynaud, In the Thick of the Fight, 1930-1945 (New York: Simon and Schuster, 1955), pp. 293-95; Andre Beaufre, 1940, The Fall of France (New York: Alfred A. Knopf, 1968), pp. 180f; Heinz Guderian,

Panzer Leader (New York: B.P. Dutton, 1952), pp. 29-36.

31. Herbert Richmond, Sea Power in the Modern World (London: G. Bell & Sons, 1934), p. 96.
32. Peter C. Smith, The Great Ships Pass (London: William Kimber, 1977), pp. 44-46; Robert A. Hoover, Arms Control: The Interwar Naval Limitation Agreements (Denver: Graduate School of International Studies, University of Denver, 1980), pp. 102-04; Conways', All the Worlds Fighting Ships, 1922-1946 (New York: Mayflower Books, 1980), pp. 89, 178, 224, 325; Hancock and Gowing, War Economy, pp. 97-100; Edward P. von der Porten, The German Navy in World War II (New York: Thomas Y. Crowell, 1969), pp. 31-45.
33. Charles Webster and Noble Frankland, The Strategic Air Offensive Against Germany, 1939-1945 (London: H.M. Stationery Office, 1961), Vol. I, pp. 96-100; Craven and Cate, Army Air Forces, Vol. I, pp. 62-67, 116-21; Great Britain, Air Ministry, The Rise and Fall of the German Air Force, 1933-1945 (New York: St. Martins Press, 1983), pp. 14-17; Olaf Groehler, Geschichte des Luftkriegs 1910 bis 1980 (Berlin: Militarverlag, 1981), pp. 200-03.
34. Reich und Weltkrieg, Vol. IV, pp. 4-13, 237; Porten, German Navy, pp. 167-76.
35. The Liaison Conferences, in which the Prime Minister, Foreign Minister, War and Navy Ministers, and the Army and Navy chiefs and vice chiefs of staff participated, had been instituted in 1937 and were held twice a week. They guaranteed the armed forces' input in political decisions. The Imperial Conferences were held periodically in the Emperor's presence to put decisions reached in the Liaison Conferences in final form and confirm them. Nobutaka Ike, ed., Japan's Decision for War (Stanford: Stanford University

press, 1967), pp. 4-13.

36. Webster and Frankland, Strategic Air, v. I, pp. 147-163; Maurice Matloff and Edwin M. Snell, Strategic Planning for Coalition Warfare, 1941-1942 (Washington: Government Printing Office, 1953), pp. 20-44; Hancock and Gowing, War Economy, pp. 97-100.
37. Nikita Khrushchev, Khrushchev Remembers (Boston: Little, Brown, 1970), p. 134.
38. S.P. Ivanov, ed., Nachal'nyy period voyny (Moscow: Voennoye Izdatel'stvo, 1974), p. 198.
39. Institut Marksizma-Leninizma, Istoriya Velikoy Otechestvennoy Voyny Sovetskogo Soyuza, 1941-1945 (IVOVSS) (Moscow: Voennoye Izdatel'stvo, 1961), Vol. I, pp. 427-74; A. Vasilevskiy, Delo vseu zhizni (Moscow: Izdatel'stvo Politicheskoy Literatury, 1976), p. 106.
40. Department of the Army, Pamphlet, No. 20-261a, The German Campaign in Russia: Planning and Operations (1940-1942) (Washington: Government Printing Office, 1955), pp. 1-21; Franz Halder, Kriegstagebuch (Stuttgart: W. Kohlhammer, 1963), Vol. II, pp. 217-42, Vol. III, pp. 171-76.
41. Joachim Hoffmann, Die Geschichte der Wlassow-Armee (Freiburg: Rombach, 1984), pp. 420-27; Alexander Dallin, German Rule in Russia (New York: Macmillan, 1957), pp. 535-44.
42. Ike, Decision, pp. 64-90, 134-40; Morley, Foreign Policy, pp. 95-103; Da Pamphlet 20-261a, pp. 93f.; Reich und Weltkrieg, Vol. IV, p. 906.
43. Llewellyn Woodward, British Foreign Policy in the Second World War (London: H.M. Stationery Office, 1971), Vol. II, pp. 226-36.
44. Paul S. Dull, A Battle History of the Imperial Japanese Navy (1941-1945) (Annapolis: Naval Institut Press, 1978), pp. 162-68, 260.

45. P.A. Zhilin, ed., Velikaya Otechestvennaya Voina, Kratkiy nauchno-popularnyy ocherk (Moscow: Izdatel'stvo Politicheskoy Literatury, 1970), pp. 148f; G.K. Zhukov, The Memoirs of Marshal Zhukov (New York: Delacourte Press, 1972), pp. 382-387; Vasilevskiy, Delo, p. 242.
46. Earl F. Ziemke, Stalingrad to Berlin: The German Defeat in the East (Washington: Government Printing Office, 1968), pp. 211-13, 286, 410-14.
47. Samuel Eliot Morison, History of United States Naval Operations in World War II (Boston: Little, Brown, 1953), Vol. VIII, pp. 318, 340; P.C. Jones, Japan's New Order in East Asia (London: Oxford University Press, 1954), pp. 421-25, 446-48.
48. Department of State, Foreign Relations of the United States (Washington: Government Printing Office, 1963), 1943, Vol. III, p. 506; Embassy of the USSR, Washington, D.C., "Information Bulletin," 1943, No. 19, pp. 1-3; S.M. Shtemenko, Generalnyy Stab v gody voiny (Moscow: Voennoye Izdatel'stvo, 1981), Vol. II, p. 236; Ziemke, Stalingrad to Berlin, pp. 143-48.
49. Maurice Matloff, Strategic Planning for Coalition Warfare, 1943-1944 (Washington: Government Printing Office, 1959), pp. 10-17, 20-44; Michael Howard, Grand Strategy (London: H.M. Stationery Office, 1972), v. IV, pp. 239-255; Louis Morton, The War in the Pacific: Strategy and Command (Washington: Government Printing Office, 1962), pp. 376-399; Herbert Feis, Churchill, Roosevelt, Stalin: The War They Waged and the Peace They Sought (Princeton University Press, 1957), pp. 105-13.

50. Between 1939 and late-1944, half of the German and a quarter of the British male working populations went into their respective armed services. Between 1941 and the war's end, the British armed forces' troop strength increased by two percent relative to the German. See Jacobsen, 1939-1945, p. 641; Deutsche Industrie, p. 139; Parker, Manpower, pp. 481-83.
51. B.H. Liddell Hart, The Defense of Britain (New York: Random House, 1939), p. 38.
52. IYOVS, Vol. I, p. 441.
53. Leeb, Tagebuchaufzeichnungen, p. 121. See also H. Foertsch, Kriegskunst heute und Morgen (Berlin: Wilhelm Andermann, 1939), pp. 127, 238; Charles A Willoughby, Maneuver in War (Harrisburg, Pa.: Military Service Publishing co., 1939), p. 190; M.N. Tukhachevskiy, "O novom polevom ustava RKKA," Bol shevik, No 9, 1937, reprinted in M.V. Zakharov, Voprosy strategii i operativnogo iskusstva v sovetskikh voyennyykh trudakh (1917-1940) (Moscow: Voennoye Izdatel'stvo, 1965), pp. 113-15; M.V. Zakharov, "O teorii glubokoy operatsii," in Voyenno-istoricheskiy Zhurnal, Oct. 1970, pp. 19ff; Liddell Hart, Defense, pp. 39, 101, 121.
54. Groehler, Luftkrieg, pp. 148-86; Air Ministry, Rise and Fall, pp. 41-49; Craven and Cate, Army Air Forces, pp. 33-54; Morison, Naval Operations, v. 3, pp. 18-34; Cajus Bekker, Hitler's Naval War (Garden City: Doubleday & Co., 1974), pp. 29-35, 94f, 372; S.W. Roskill, The War at Sea, 1939-1945 (London: H.M. Stationery Office, 1954), Vol. I, p. 301.
55. On British and American strategic bombing doctrine in 1940 see Craven and Cate, Army Air Forces, Vol. I, pp. 97-116. On Soviet armed forces and operational doctrine see IVMV, Vol. III, pp. 334-

- 39, 442: Ivanov, Nachal'nyy period, p. 208; I. B. Krupchenko, et. al., Svetskiye tankovye voyska (Moscow: Voennoye Izdatel'stvo, 1973), p. 21; IVOVSS, Vol. I, pp. 427-74; V.D. Sokolovskiy, ed., Soviet Military Strategy (Third Edition) (New York: Crane, Russack & Co., 1975), pp. 122, 232.
56. The Army's change of heart on the Blitzkrieg had not yet extended to armor. Until the panzer groups became panzer armies later in the year, their commanding generals were Refehlshaber, not Oberbefehlshaber as full-fledged army commanders were, and the panzer groups were attached to and technically subordinate to armies.
57. Reich and Weltkrieg, Vol. II, pp. 281-83, Vol. IV, pp. 270, 312.
58. Ivanov, Nachal'nyy period, pp. 224f.
59. Alfred von Schlieffen, Cannae (Fort Leavenworth: The Command and General Staff School Press, 1931), pp. 297-306.
60. I. Kh. Bagramyan, ed., Istoriya voyn i voyennogo iskusstva (Moscow: Voennoye Izdatel'stvo, 1970), pp. 205, 479; IVOVSS, Vol. III, p. 65, Vol. VI, p. 235; S.P. Platonov, ed., Vtoraya Mirovaya Voyna (Moscow: Voennoye Izdatel'stvo, 1958), p. 867.
61. IVMV, Vol. VI, maps 2, 10, and 11: Ministerstva Oborony SSSR, Institut Voennoy Istorii, Sovetskaya voyennaya entsiklopediya (SVR) (Moscow: Voennoye Izdatel'stvo, 1976-1979), Vol. VI, pp. 37, 494-96.
62. K.E. Voroshilov, Stalin and the Armed Forces of the USSR (Moscow: Foreign Languages Publishing House, 1951), pp. 129-32; IVOVSS, Vol. VI, p. 232; Ziemke, Stalingrad to Berlin, p. 146.
63. Forrest C. Pogue, The Supreme Command (Washington: Government Printing Office, 1954), pp. 105-19, 249-56; Omar N. Bradley, A Soldier's Story (New York: Henry Holt and Co., 1951), pp. 197-22,

- 490-22; Omar N. Bradley, A General's Life (New York: Simon and Schuster, 1983), pp. 309-17, 338-40; B.L. Montgomery, A History of Warfare (New York: World Publishing Company, 1968), pp. 256f.
64. Louis Morton, Strategy and Command: The First Two Years (Washington: Government Printing Office, 1962), pp. 376-415, 502-20, and passim.
65. Groehler, Luftkrieg, pp. 346f, 495-97; Craven and Cate, Army Air Forces, Vol. III, 785-808; U.S. Strategic Bombing Survey, The Effects of Strategic Bombing on the German War Economy (Washington: Government Printing Office, Oct. 1945), pp. 249, 257, 263, 279; U.S. Strategic Bombing Survey, Overall Report, European War (Washington: Government Printing Office, Sep. 1945), p. 64.
66. J.C. Slessor, Air Power and Armies (London: Oxford University Press, 1936), pp. 1-21; Richard H. Kohn and Joseph P. Harahan, eds., Air Superiority in World War II and Korea (Washington: Government Printing Office, 1983), pp. 1-12, 29-60; Foertsch, Kriegskunst, pp. 136-39.
67. Groehler, Luftkrieg, p. 389; Webster and Frankland, Strategic Air, pp. 160-72; Air Ministry, Rise and Fall, p. 402; Craven and Cate, Army Air Forces, Vol. III, pp. 751, 756.
68. Foertsch, Kriegskunst, p. 126f; Wilhelm von Leeb, Defense (Harrisburg, Pa.: Military Service Publishing Company, 1943), pp. 115-20.
69. Air Ministry, Rise and Fall, pp. 32f, 48; P.O. Mische, Paratroops (New York: Random House, 1943), pp. 8-21; Alan R. Millett, Semper Fidelis: The History of the United States Marine Corps (New York: McMillan, 1980), pp. 319-43.

70. Mary Lee Stubbs and Stanley Russell Connor, Armor-Cavalry (Washington: Government Printing Office, 1969), Part I, p. 51.
71. Craven and Cate, Army Air Forces, Vol. III, p. 807.
72. Heinz Guderian, Panzer Leader, p. 62.
73. Peoples Commissariat of Defense, USSR, Field Service Regulations, Soviet Army, 1936 (Washington: U.S. Army War College, 1937), p. 3 and passim; IVMV, Vol. II, p. 178.
74. Richard M Ogorkiewicz, Armoured Forces (New York: Arco Publishing Company, 1960), pp. 72-74; I. E. Krupchenko, Sovetskiye tankovye voyska, pp. 12-14; Robert E. Larson, The British Army and the Theory of Armored Warfare (Newark, Del.: University of Delaware Press, 1984), pp. 191, 201; Stubbs and Connor, Armor, pp. 51-55.
75. M.N. Tukhachevskiy, Izbrannye proizvedeniya (Moscow: Voennoye Izdatel'stvo, 1964), Vol. II, pp. 248-50.
76. Heinz Guderian, Achtung-Panzer (Stuttgart: Union Deutsche Verlagsgesellschaft, 1937), pp. 135-37; Reich and Weltkrieg, Vol. II, pp. 289-91; Guderian, Panzer Leader, pp. 36-41.
77. Akten zur deutschen auswärtigen Politik, 1919-1945 (Göttingen: Vandenhoeck & Ruprecht, 1976), Vol. IV, p. 20; Helm Speidel, "Reichswehr und Rote Armee, "in Vierteljahreshefte für Zeitgeschichte, 1953, Vol. I, p. 35; Giffard Martel, The Russian Outlook (London: Michael Joseph, Ltd., 1947), p. 16-24; Carl Mannerheim, The Memoirs of Marshal Mannerheim (New York: B.P. Dutton, 1954), pp. 350-367; SVG, v. V, p. 121; IVMV, v. II, pp. 210-221; v. III, pp. 518-520; v. VII, p. 189; Zhukov, Memoirs, pp. 147-177; Tyushkevich, Soviet Armed Forces, pp. 328-336; Voroshilov, Stalin, p. 130f; Ziemke, Stalingrad to Berlin, pp. 133-35, 145-48, 316-19.

78. The U.S. Marines sustained more casualties on Iwo Jima than the Japanese did and did not achieve decidedly better results at Tarawa or Peleliu. On Okinawa, two and a half Japanese divisions and some Kamikazi pilots inflicted 75,000 casualties on the U.S. Army, Navy, and Marine Corps, as many as twenty-eight German divisions did in the worst American setback of the European war, the Battle of the Bulge. Millett, Semper Fidelis, pp. 395, 431, 438; Pogue, Supreme Command, p. 396.
79. Armeeoberkommando 19, Chef des Generalstabes, Cedanken uber den Einsatz der grossen mot. Verbände im Ob. West-Bereich, 29 Jan. 1944, in Dieter Ose, Entscheidung im westen 1944 (Stuttgart: Deutsche Verlags-anstalt, 1982), p. 316.
80. Guderian, Panzer Leader, pp. 285-300; Ose, Entscheidung, pp. 126-32, 185f, 316f; Miksche, Paratroops, pp. 1-28; Williamson Murray, Luftwaffe (Baltimore: Nautical and Aviation Publishing Company of America, 1985), pp. 142-54; Ziemke, Stalingrad to Berlin, pp. 211-14; Groehler, Luftkrieg, pp. 374-76.
81. Tyushkevich, pp. 281, 318f; Groehler, Luftkrieg, pp. 347, 511.
82. Ziemke, Stalingrad to Berlin, pp. 143-73 and passim.
83. Greenfield, et.al., Ground Combat Troops, p. 389.
84. Ibid., p. 335.
85. Ibid., pp. 56-61, 93-98, 322-35, 340-50, 388-415; Lewis L. Brereton, The Brereton Diaries (New York: William Morrow and Company, 1946), pp. 271, 308f, 344-47; War Department, FM 100-20, Command and Employment of Air Power, in Kohn and Harahan, Air Superiority, Appendix; Craven and Cate, Army Air Forces, Vol. III, pp. 804-08; Pogue, Supreme Command, pp. 123-27.

CHALLENGE AND RESPONSE
AT THE OPERATIONAL AND TACTICAL LEVELS
1914-1945

Lieutenant General John H. Cushman, U.S. Army, Retired

Introduction

"War is the great auditor of institutions." So Correlli Barnett has written in his Swordbearers.¹ The historians whose work is collected in these volumes have audited the performance of seven national military institutions in two world wars and in the long period between those wars. Only two nations, the United States and Great Britain, were victors in both wars. One, Germany, lost in both. Russia emerged defeated in the first and as a victor in the second. Italy and Japan were on the winning side in the first, then lost in the second. France won its first war, collapsed after ten months of the second, and then with new forces raised abroad and at home after liberation by Anglo-American forces could claim to be a "victorious" power at the end.

Each of the three periods was a time of challenge to national military institutions on one hand and of response by those institutions

on the other. For these nations and their military institutions, the two wars were exhausting, terrible, life or death audits. What can we learn from the manner in which these military institutions responded or failed to respond to the challenge of war and of what was, in the perspective of history a period of two decades of preparation for war? And perhaps even more important, how can we apply what we learn, to our current American military institutions?

* * * * *

Our twenty-one authors assessed the political effectiveness of military institutions according to three criteria, the strategic effectiveness according to seven criteria, the operational effectiveness according to six, and the tactical effectiveness according to seven. Although the political and strategic direction of national military forces and those forces' effectiveness in the operational and tactical spheres each have their effect upon the other, this summative essay will address primarily the operational and tactical spheres. These two fields make up the military professional's fundamental line of work. They comprise the realm in which the people of a nation and their political leadership have a right to expect professional military competence.

Appreciating the difficulties as well as the limitations involved, we asked the authors to give a subjective "grade" to the performance of the national military institutions, which they had surveyed, for the

period covered. While some were reluctant, each finally did so.*

Reviewing the authors' texts and the ratings in the operational/tactical areas, I credit the contributing historians with rating fairly and well. The results as to tactical performance were as follows:

Two "A"s	Germany in 1919-1940 and in World War II
Seven "B"s	Germany in World War I Japan in World War I and (based on the first years in those periods only) in 1919-1940 and World War II The Soviet Union in 1919-1941 and (eventually) in World War II The U.S. in World War II
Four "C"s	The U.S. in 1919-1941 The French and British (eventually) in World War I (both "P" initially) Russia (overall) in World War I (composite of a mixed bag of ratings until the late-1917 collapse)

*Some words of caution are in order. Among them: Ratings are highly subjective. They encompass all a nations forces, land, sea, and air. Each rating is an average; in most nations' audits and for most periods, major deviations can be cited from that norm. The period of 1919 to 1939 or 1941 was for some nations (Italy and Japan) in large part of a time of actual fighting; for others (e.g., the U.S.) this was a time of no combat whatever and the test came at the outbreak of war; for others (e.g., the Soviet Union and Germany) there was during this period the combat experience of the Spanish Civil War.

Four "D"s Italy in 1919-1939
 The U.S. in World War I
 Great Britain in 1919-1939 and World War II

Four "F"s France in 1919-1939 and through its June 1940
 defeat in World War II
 Italy in World War I and World War II

The distribution of grades as to operational performance was about the same:

One "A" The U.S. in World War II

Nine "B"s The U.S. in 1919-1941
 Germany in all three periods (with an "A" only in
 the first phases of World War I and World War II)
 The Soviet Union in 1919-1941 and (eventually) in
 World War II
 Japan in World War I and (again, based on the
 first years in those periods only) in 1919-1940
 and World War II

Five "C"s The U.S. in World War I
 Great Britain in 1919-1939 and World War II
 Russia in World War I and (again, a composite
 until Russia's collapse)
 Italy in 1919-1939

Four "D"s Great Britain (overall) in World War I (rated F/D initially, rising to C/B)
 France (overall) in World War I (like Britain, F/D initially, rising later)
 Italy in World Wars I and II

Two "F"s France in 1919-1939 and World War II (first ten months)

Thus, in the spheres of operations and tactics, where military competence would seem to be a nation's rightful due, the twenty-one "auditors' reports" suggest for the most part less than general professional military competence and sometimes abysmal incompetence. One can doubt whether any other profession in these seven nations during the same periods would have received such poor ratings by similarly competent outsiders' observers.

Why should nations wish for a high order of operational and tactical performance? Is performance in these areas essential for success in war? One might assume that success in war requires an order of operational and tactical performance at least equal to that of one's enemy. However, the verdict is considerably mixed. In World War I, victory came to neither Britain nor France until their operational and tactical performances finally reached what their respective historians called a "B". The same was true for the Soviets in World War II. On the other hand, one must note the surprisingly low ratings given to Britain in World War II.

These audits clearly underline that high quality operational and tactical performance is not enough (see twice defeated Germany, highly

rated in operations and tactics but whose political and strategic direction received an "F" in both wars). Moreover, Japan's "B"s in operations and tactics early in World War II were nullified by her failing performance in the political and strategic spheres.

Leaving aside whether effectiveness in operations and tactics is essential for victory, it is clear that first-rate operational and tactical performance is a virtue to be sought by those who are responsible for military forces. One must recognize that competence on the battlefield saves time and conserves lives.* These are the kinds of things military institutions are supposed to do right. Yet, from these auditors' reports, most national forces failed to achieve a high performance in either category. We need to understand how and why this happened. There well may be lessons in these accounts that are useful for those charged with seeking operational and tactical excellence in our own military institutions.

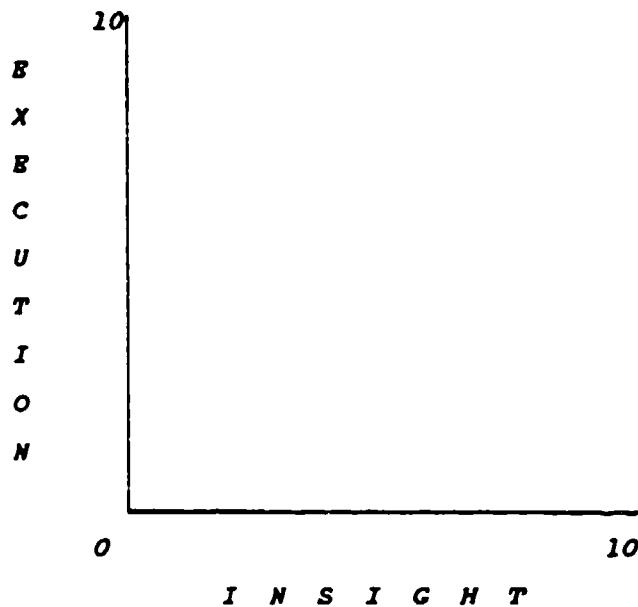
* * * * *

In analyzing the performance of military institutions one must speak of challenge and response. One dimension of an individual's or institution's response is that of "insight". How well did individuals

*For one example, see how superior German effectiveness in the operational/tactical spheres paid off in speed of decision and cost in lives against the British and French in May-June 1940.

responsible in a situation perceive reality? How well did they understand the nature of the challenge that confronted them? The other dimension of response is that of "execution". Understanding the situation in whatever way they did, how well did those in positions of responsibility bring about the measures that they saw as necessary to meet the situation? In other words, how well did they adapt to what Clausewitz called "real war" as opposed to war on paper?

One can portray these two qualities on a two-dimensional chart with each dimension scaled from 0 to 10.

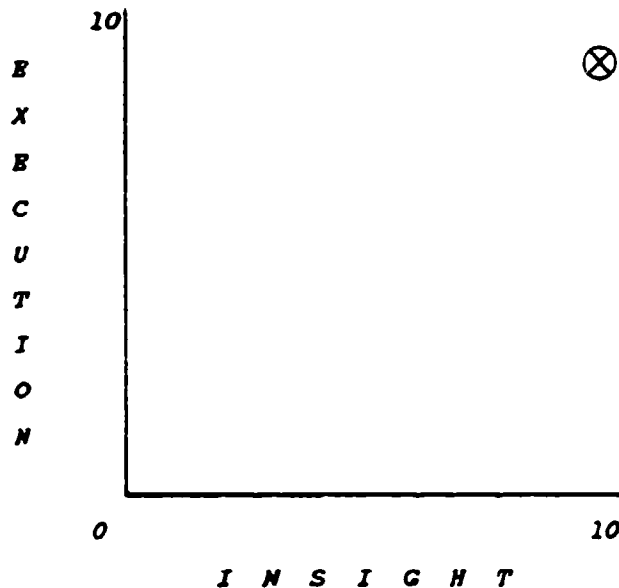


From these volumes, we can conclude that, for the highest quality of response to challenge, military institutions and individuals must have a high rating in both "insight" and "execution".

Let us apply this method of portrayal to one of the major successes in this series of audits -- that of Field Marshal William Slim in Burma, from spring 1942 when he arrived "to help pick up the pieces," to 1944 and 1945 when the corps and divisions in his command were among

the most effective of World War II.² First of all, "insight" is surely there; Professor Murray describes how Slim grasped the essentials of his situation and saw what needed to be done. Second, and equally important, Slim's "execution" left little to be desired. His program took time, but its organized, systematic, and consistent pursuit brought success.

Slim's achievement encompassed the full range of tactics and operations, including logistics and administration. Especially noteworthy, moreover, was his independence of thought and action within a common scheme that he instilled in his senior commanders -- a sine qua non for true tactical and operational competence in a military organization. We can plot Slim in Burma:



In his performance Field Marshal Slim followed the basic approach which holds true for successful leaders at any level of command -- from the tank company and infantry battalion, or naval ship, or fighter squadron, on up. In the simplest terms, it is this:

- a) Take responsibility for the command.
- b) Diagnose the situation accurately and set the objective.
- c) Develop an appropriate action plan
- d) Execute the plan well.

Slim was a major field commander, far from the base that generated his resources. He had relatively little influence on what was provided to him. His genius lay in making extraordinarily good use of the human as well as material resources which were provided. Wise enough to know that the kind of change he sought would take time, he made good use of that time through a consistent, insightful, and orderly program of action.

In his description of the 1917-1918 performance of Admiral William H. Sims, U.S. Navy, Professor Nenninger gives a similar example, except that Admiral Sims' influence extended deeply into determining the kind of resources provided.³ In 1916 the United States had adopted a naval building program to create by 1925 a fleet of 60 capital ships. Nenninger points out that upon America's entrance into the war, the Navy sent Sims to London to determine naval requirements and eventually to become the American naval commander in Europe. The admiral quickly realized that German submarines were the greatest threat to our strategy and recommended that the U.S. concentrate on building antisubmarine craft and merchant shipping. Although other naval leaders continued to push for the 1916 program, the Administration accepted Sims' recommendation and postponed capital ship construction.

As the destroyers and antisubmarine craft arrived, Sims as operational commander deployed and employed them effectively to escort convoys as they passed through the most dangerous U-boat zones. In this

case, the insight and execution which led to the U.S. Navy's successful response to challenge were in large part a cooperative accomplishment, shared by Sims overseas and the naval establishment in the United States.

The accounts in these volumes suggest that success in meeting the operational and tactical challenge demands both insight and execution. One without the other will not do. For example, Professor Knox describes how Italy's Army Chief of Staff in 1941 assessed the abilities of that Army's junior officers.⁴ General Roatta underlined their deficiencies as follows:

- 1) Insufficient capacity for command (lack of authority ... , timidity ... , uncertainty ...).
- 2) Inadequate knowledge of the mechanical side of weapons.
- 3) Limited knowledge of small unit tactics.
- 4) Rudimentary knowledge of communications equipment and organization.
- 5) Insufficient knowledge of how to read topographic maps, and little understanding of the compass.
- 6) Insufficient knowledge of field fortifications.
- 7) Inadequate conditioning for long marches.
- 8) Total administrative ignorance.

Although, from Professor Knox's account, General Roatta may have deserved

an "8" or so in insight, the institutional actions to correct the conditions diagnosed among its junior leaders seems to have been little better than a "3;" consequently, the Italian Army suffered from inadequate junior officer leadership until its 1943 surrender.

Likewise, without the appropriate insight -- that is, without an institution's leadership understanding the situation confronting the institution -- any plan of action, however systematically developed and vigorously carried out, will succeed only by accident and will generally lead to disaster.

Examples of lack of insight abound in these volumes. Perhaps the classic is that of the leadership of the French Army in the 1919-1939 period, described in telling fashion by Colonel Doughty.⁵ Doughty's analysis is devastating. He concludes that, although between the wars "the French had paid close attention to the tactics, organization, equipment, and training of their forces, ... France failed to prepare a military force as effective as that of her enemy". In 1939, "France was prepared to go to war with a system that was supremely logical and closely coordinated ...". However, the army had tragically "come up with the wrong formula." The French nation perished in 1940 because its military leadership in 1919-1939 performed at something like level "2" in insight, even though they may have deserved perhaps an "8" in the execution of the action plans stemming from that faulty insight. With great efficiency, France's army built the Maginot line, trained its infantry and artillery systematically in the wrong tactical conceptions, and prepared for the next war with a self satisfied assuredness that it possessed all the answers.

In this full period, 1914-1945, perhaps the most stirring success in "challenge and response" on the part of a major operational force and by the home base that generated and supported it is that of the Royal Air Force's Fighter Command. From 1936 when Britain first formed Fighter Command to the Battle of Britain which began in July 1940, the RAF created a fighting organization that saved the British people and nation from invasion.

Professor Murray's mention of this performance is brief,⁶ but other sources tell the full story.⁷ The scene was grim indeed in the mid-1930s. Having seized power in 1933, Hitler was rearming Germany and building a mighty air force. Fact, such as the Japanese bombing of Shanghai in 1932, and fiction along the lines of a series of novels predicting catastrophic air attacks had combined to terrify the public. Indeed, near-panic was beginning to appear, which directly contributed to British appeasement policy of 1938.⁸

The British had thus far neglected air defense; they had built the Royal Air Force on the doctrine that "the bomber will always get through". The founder of the RAF, Marshal of the Royal Air Force Sir John Trenchard, said in 1923, that "Fighter defense must ... be kept to the smallest possible number ... in a sense only a concession to the weakness of the civilians, who would demand protection ...". Prime Minister Stanley Baldwin said in Parliament, in 1932, that "The only defense is offence, which means you have to kill more women and children more quickly than the enemy if you want to save yourselves".

Unprotected by a fighter force, in the mid-1930s the British Isles lay open and exposed to air attack. Fifty years later, it is still instructive to study how a "small number of dedicated men" from 1934 through 1939, managed to prepare "the aircraft and the air force that

would be required for modern war". Among these men were Lord Swinton, Secretary of State for Air, 1935-1938; Chief of Air Staff Sir Edward Ellington, 1933-1937; aircraft designers such as Reginald Mitchell at Supermarine and Sydney Camm at Hawkers; and scientists such as H.T. Tizard, P.M.S. Blackett, and R.A. Watson-Watt.

Also among them was Air Chief Marshal Hugh C.T. Dowding, who in 1936 moved from his position as research and development chief of the RAF to take command of the newly formed Fighter Command. In the face of strong institutional opposition within the RAF itself to air defense, his task was not easy. Yet, in November 1935 the Hawker Hurricane made its first test flight. The Supermarine Spitfire's maiden flight came four months later. These two superlative fighters, each with eight wing-mounted machine guns, went quickly into production. Four years later, in the hands of RAF pilots, they won the Battle of Britain.

In the meantime, under the cloak of deepest secrecy, British scientists developed radar, an invention that revolutionized the conduct of air defense. And the manner of its development in the closest harmony with the airmen and the organizations that would depend on it reached a standard for military-technical cooperation in command and control systems development that has probably not been equalled since.

In this milieu, Hugh Dowding established Fighter Command's organization and concept of operations. In July 1940, after Dunkirk's evacuation and despite the loss of the fighters sent unavailing to the continent, Fighter Command stood as Britain's sole defense against the Luftwaffe. Brilliantly using and conserving both fighters and pilots, supported by a maintenance organization that performed miracles of aircraft repair, linked by communications installed by the British Post Office, receiving reports from radars and from ground observers on

hilltops and rooftops along the air routes into England from the Continent, and directing the battle hour-by-hour and minute-by-minute from control centers that they had designed and built, Dowding and his command won the Battle of Britain.* The British political-military air establishment; especially Dowding, his staff, and his commanders, deserves "10"s in both insight and execution.

Notwithstanding that it encompasses the base that generated and supported the operational forces as well as the operational forces themselves, this Fighter Command case also illustrates the basic, fundamental requirements of leadership.

- 1) Take responsibility for the command.
- 2) Diagnose the situation accurately and set the objective.
- 3) Develop an appropriate action plan.
- 4) Execute the plan well, adapting to conditions.

However, in this case the effort was a collective endeavor, with several changes in key personalities over a five or six year period, with no identifiable single leader either in charge or fully accountable for failure, and with a "rolling" action plan, the details of which evolved as the situation developed.

*With displays and photographs, the Battle of Britain exhibition at the RAP Museum at Hendon in northwest London vividly tells the story. The text at the photograph of Hugh Dowding says, in effect, that in any list, however short, of military men of whom it can be said that "he saved the nation," Dowding's name must be included.

The very nature of large military institutions, such as a nation's army, or navy, or air force, or its armed forces as a whole, makes it difficult to have anything other than a collective, or shared, responsibility. Unlike the shaping of an infantry battalion, or combat ship, or fighter squadron, which a keen commander can carry out effectively in a matter of months, and even unlike the bringing of a major command to a high state of effectiveness (as Slim did in Burma over a two to three year period), the improvement of such large military institutions as a nation's army, or navy, or air force involves a very long period of time -- one that stretches out for half a decade or more and includes the terms of office of two or more chiefs of staff.

* * * * *

As in any walk of life, the competence of a military organization is a function of its leadership from the top down to the bottom of its chain of command. Gay Hammerman and Richard G. Sheridan have given us a striking example of the significance of leadership in the tactical sphere.⁹ They compare the effectiveness of 24 representative divisions of the European theater in World War II -- twelve German, five British, and seven American. Using comparative techniques, they rate these divisions in order of battlefield effectiveness. With only one exception, the 88th Infantry Division of the U.S. Army, the first ten divisions are German.

In their study, Hammerman and Sheridan investigate why the 88th Infantry Division was such an exception to the performance of the other

American and British units. They researched such factors as the quality of manpower, the strength of the division's cadre, the division's stability, the length and quality of training, the administrative support provided by higher headquarters, and the fashion in which replacements were introduced into the division in combat. Each of these factors had an effect, but in none did the 88th Division differ in any significant fashion from the other American divisions studied whose performance by no means matched that of the 88th. The essential difference discovered was the quality of the division's top leadership.

In scores of interviews with veterans of the 88th, Hammerman and Sheridan sought the specific characteristics of top leadership. What they found was

strict discipline, courage, aggressiveness, personal presence in the front lines, insistence that every job be carried out properly, efforts to build esprit de corps, prompt relief of any subordinate who could not or would not do his job, and professional competence. In training, strict discipline was the most prominent characteristic; in combat, courage and personal presence in the front lines were most prominent (emphasis in the original).¹⁰

The study provides compelling profiles of the division commander, Major General John B. Sloan, the assistant division commander (and later division commander) Brigadier General Paul W. Kendall, and of the three regimental commanders, Colonels Joseph B. Crawford, James C. Fry, and Arthur S. Champeny.

To conclude that "quality of leadership" is decisive is no profound discovery. From time immemorial, and around the world's military forces today, we know that superior battalion, squadron, and warship commanders and their seniors in the chain of command can take ordinary people and produce extraordinary results. What is of interest to us is the answer to the question: "How can military institutions generate leadership at the operational and tactical levels that is for the most part, and in general, superior?" One cannot rest satisfied with the explanation that Slim was an exceptional case, or that the 88th Infantry Division was one of a kind. Those who are responsible for generating our military forces have the obligation to seek such standards as the normal level of professional military performance.

On what does the generation of such a quality of leadership depend? How do those who govern military institutions go about building in peacetime (and in war, should war come) a pattern of highly competent battle leadership? In the accounts in these volumes, Professors Ziemke¹¹ and Jessup¹² describe the methods that Josef Stalin used from the mid-1930s through the end of the Great Patriotic War. Ziemke describes how Stalin first destroyed the Red Army's officer corps and then rebuilt it. Believing that its officers represent a threat to him personally, to the Party, and to the nation, in that apparent order, Stalin carried out a program of extermination of national military leadership unequalled in its scope and ferocity in modern times, and perhaps in history. In 1937-1938, Stalin saw to the execution, exile, or disappearance of the chief of the armed forces General Staff, the commanders of the air force and the navy, the inspectors of artillery and armor, 13 of 15 army commanders, 57 of 85 corps commanders, 110 of 195 division commanders, and 220 of 406 brigade commanders. In all, more

than 35,000 officers were liquidated or removed, a number that included 90% of all generals and 80% of all colonels.

Having destroyed those officers who showed any independence of thought and silenced those younger officers with talent who might not toe the mark, Stalin then brought to high level command and staff positions officers who were more remarkable for their political loyalties than for ability. Rightly enough, Jessup says that "Stalin's greatest skill was in terrorizing those around him". Although Stalin's purge dealt the Red Army a body blow, Jessup goes on to say that "Even so, [Stalin's] ability to select highly competent personnel to direct the war both on the battlefield and on the home front is a tribute to his leadership"

This was "leadership" of the most ruthless kind; those senior commanders who did not produce satisfactory results on the battlefield were done away with, encouraging a kind of fear-driven competence on the part of those who remained. To produce the necessary junior officer leadership, the Soviet Army in 1942 instituted a program of training officer candidates in a three month course at the field army (later front) level. Ziemke points out that:

some 540,000 platoon level officers were produced in this manner. Mid-course in the war, when the issue of (national) survival became less immediate, officer training was extended to one year for infantry officers and 18 months for specialists. Although these officers, and most of their superiors, were generally rated inferior to their German counterparts, they were obviously successful enough and were in large enough numbers to win the war.

Win the war the Soviet Union did, with a herculean effort at terrible cost which among other accomplishments produced operational and tactical performance at a "B" level. What this 1937-1945 experience and the forty years since means as to the quality of Soviet officer leadership from top to bottom today may be uncertain, but it gives no grounds for complacency.

Now, let us take a look at Germany. Under the personal command and under the strategic and indeed the operational direction of a dictator equally abhorrent as Stalin, the German Army's officer corps in World War II rendered a battlefield performance that was, in general, measurably superior to that of any of the armies with which it fought.

That this is so seems no longer a matter of dispute. We have the testimony of senior commanders who fought the Germans, like Field Marshal Sir Michael Carver, who has said that:

There is no doubt that the Germans, of all ranks, were more highly professional as soldiers than the British. Their knowledge and practical application of the weapons available to them was in almost all cases superior They were tough, skillful, determined, and well-disciplined soldiers.¹³

We have historians' judgments, Russell P. Weigley among others. In the epilogue to Eisenhower's Lieutenants, Weigley sums up his comparison of relative military performance in Europe from D-Day in 1944 through the end of the war:

Pitted against the German army, the United States Army suffered long from a relative absence of the finely honed professional skill of the Germans, officers and men, in every aspect of tactics and operations [The German Army] remained qualitatively superior to the American army, formation for formation, throughout far too many months of the American army's greatest campaign.¹⁴

Trevor N. Dupuy, in his Numbers, Prediction, and War has convincingly laid out measurable evidence of German superiority.¹⁵ Dupuy's comprehensive and methodical analysis of scores of division-level actions in North Africa, Italy, and the Western front from the Normandy landings to the war's end has established a twenty to thirty percent combat superiority on the part of the Germans whenever they faced British and American troops in equal numbers -- meaning that roughly 80 German troops were the battle equal of 100 British or American. This German battlefield superiority was a product of, on the whole, superior combat leadership on the part of the German Army's officer corps.¹⁶

What made the Germans so good? One can simply say that even though its officer corps expanded some sixty times from 1934 to 1944, the German army had thoroughly indoctrinated its officers in how to fight well, and that these leaders behaved in battle as they had been trained.

But how did this come about? Professor Foerster writes that this behavior "was heavily shaped by cultural traditions dating back to Imperial Germany."¹⁷ The officer corps of the German Army in 1939-1945 was partially the product of a tradition of battlefield excellence reaching back to the early 1800s when Scharnhorst, Gneisenau, Clausewitz,

and others instituted fundamental reforms in the Prussian army. In turn, successive generations of senior Prussian and German leadership perpetuated those reforms. The German officers in the field in 1939-1945 were the products of a system of schooling and unit training that for a century had developed and preached a consistent doctrine of battlefield leadership, and a chain of command that uniformly practiced what it preached.

To define in the simplest terms the essence of what German officers were taught and what they practiced, one can go to a document published in 1953 by the Historical Division, Headquarters, United States Army, Europe (USAREUR).¹⁸ In 1949, the U.S. Army had published a new edition of its Field Manual 100-5, Field Service Regulations, Operations. This comprehensive revision of its basic operational doctrine was in essence the U.S. Army's description of its way of fighting based both on its traditions and on its World War II experience. The USAREUR Historical Division gave this field manual to a panel of German officers, consisting of Generaloberst Franz Halder* and four generals and two colonels selected by him. The Historical Division described the panel as "distinguished members of the former German General Staff who had had extensive experience in the preparation of training literature, particularly that dealing with tactical doctrine, and who had proved their worth as commanders in combat".

*General Halder had been Chief of the German Army General Staff from 1938 until 1942 when, according to the biographical summary in the USAREUR text, he was removed by Hitler "owing to differences of opinion on matters of strategy and ethics, and because of alleged obstructionism". In July 1944, the day after the attempt on Hitler's life, the Gestapo arrested Halder and he spent the rest of the war in prison.

Halder and his fellow officers were asked for "a critical analysis and evaluation" of this 1949 version of FM100-5. Their 156 page report begins by describing succinctly the "main objectives in training in leadership" as seen by the German army. These were:

- a) A great capacity for independent action on all levels of command;
- b) Adherence to the mission; that is a moral obligation to act at all times in the spirit of the assigned mission;
- c) Avoidance of a fixed pattern of action;
- d) The ability to make "complete", that is clear and unambiguous decisions and, in carrying them out, to establish a definite point of main effort;
- e) A constant concern for the welfare of the men and the conservation of their combat efficiency.¹⁹

Read these ten lines. Absorb their meaning. They sum up almost everything there is to say about how to fight. And the point is that this is not simply what the German field manual said; this is what German officers generally did on the field of battle.²⁰

Among other trenchant comments, the Halder report has this to say about the U.S. Army's 1949 version of FM 100-5:

[W]ar is full of imponderables and surprises. Only a commander who can depend on his own ingenuity and that of his men will be able to make the improvisations dictated by the moment and master situations not

described in the manuals. True, in order to do this, he will have to know exactly what it is he wants to do The attempt to find a recipe for every single situation with which the lower echelons may be confronted, occasionally results in a cut-and-dried "recipe" far more detailed than is needed.²¹

If the achievement of an equivalent level of skill in the battle leadership of the American Army were simply a matter of rewriting the doctrine, there would be few problems -- but to bring about the actual application of doctrine, in practice, there's the rub.

How did the Germans do it? One commentator argues that the secret to the German Army officer corps' performance was not a matter of genetic superiority, or an inherently superior German military ability, or a product of German culture, but rather a matter of Germany's "more effective military institutions" in particular "the Prussian General Staff, which later became the German General Staff".²²

We should examine that thesis. Even recognizing that for more than a century the Prussian, then German, officers operated within the framework of a Great General Staff, we need to ask if that particular mechanism is the only way today to bring about the institutionalizing of operational and tactical excellence in an officer corps, and in particular in the American officer corps. What the "German General Staff system" provided was, in essence, the following:

- 1) Very high standards of performance.

- 2) A school system which with historical and other study and thought developed and fostered the spread of those standards, and indoctrinated the officer corps with what those standards meant in practice.
- 3) A chain of command which understood what these standards meant and saw to it that they governed what officers did in units and on staffs.
- 4) A system of selection for responsible positions which insured that those selected met the standards and screened out those who did not.

Does that require adopting the German General Staff concept? One would think not.

Now, for a troubling aspect of the 1939-1945 German performance. Professor Foerster writes that, not only was the German army's battle leadership heavily shaped by its Imperial German roots, but that it also derived from "the amalgamation of National Socialism and German soldierly tradition."²³ Foerster (whose opinion, incidentally, of Halder's ethics is not high) says that "ready acceptance of [Hitler's] racial goals by the military... most of the officer corps should not be overlooked." "the deep-seated hostility to 'Russian bolshevism' which permeated the officer corps throughout the Weimar period" and says that when Hitler, in planning the attack into Russia, made known his determination "to convert the Wehrmacht into an instrument of extermination alongside the SS, ... [i]t was the Wehrmacht's senior officers and their legal advisers who cast Hitler's ideological intentions into legally valid form." In Foerster's words, "Professionalism and ideology went together well."²⁴

Later, Foerster quotes Field Marshal von Brauchitsch saying in the winter of 1940-1941 that "there could be not the slightest doubt about the fact that the training of the soldier to a determined and aggressive fighter could not be separated from a lively education in the National Socialist sense." Foerster describes how the German company commander was expected not simply to "forge the company as a compact unit and both lead the individual man into and keep him within the battle-community (Kampfgemeinschaft)" but was also tasked with the ideological training of his troops toward "an emotional 'instinct' of the Volksgemeinschaft's needs and a staunch belief in the Fuehrer."²⁵ (Volksgemeinschaft translates roughly into "people's community" and connotes the sought-for common identity of the German people and their Army.)

It is repugnant to think that Hitler's evil notions had anything to do with the high quality of German operational and tactical performance in 1939-1945. But, as Professor Foerster writes, "[d]ifficult though it is to discuss the ideological bond between Hitler and the military within the framework of (military) effectiveness ... ", it is necessary to do so.

Foerster's thesis bears on fundamental issues of motivating troops and their combat leaders in battle. Conduct of battle is not simply a matter of "doctrine" and "training." Effective unit performance in this most stressful of human experiences is above all a matter of personal character and of leadership in all its dimensions and intangibles.

"Effective" the Nazi motivation method for the German Army may have been -- and, likewise, effective Stalin's and his successors' own brands of motivation may be for the Red Army. While we must be aware that our opponents may well utilize such methods of motivation as were used by Hitler and Stalin in World War II, these are not the methods for the American soldier. The challenge for America is to produce, in our own

way, battle leadership like that of the 88th Infantry Division -- as exemplified by Generals Sloan and Kendall and Colonels Crawford, Fry, and Champeny -- and to do it in every combat formation.

* * * * *

However, for superior military effectiveness in the operational and tactical realms, military forces require more than superior troop leadership. Also needed are the right tools for war. This means:

- 1) Good weapons that are commensurate with the need and are in the right mix.
- 2) Having those weapons in the hands of well organized military formations.
- 3) A fighting style in which both leaders and troops are indoctrinated and that is right for the conditions.

The desired combination is this: material that is right; organization that is right; and ways of operating that are right -- all for the here-and-now time and place -- plus superior troop leadership.

These studies underline that the combination is rarely achieved. For example, in his treatment of the American military in the inter-war years, Professor Spector says that "a general appraisal ... tends to suggest that the Army overemphasized the central role of foot infantry and neglected the role of tanks and mechanization; that the Navy

overemphasized the big-gun battleship at the expense of aviation, anti-submarine, and amphibious warfare; and that the semi-autonomous Army Air Corps tended to overemphasize bombing at the expense of air defense and ground support roles. Only the Marine Corps, with a narrowly defined mission, totally dependent on the larger services for support, appears to have emphasized a balanced all-arms approach to combat.²⁶ Professor Spector might have gone on to say that for the United States the between-the-wars period ended with the Pearl Harbor disaster. Here, the audit of war revealed the most fundamental flaws in the American approach to multiservice operational command in the field.

What went wrong? What caused things to turn out this way, in 1919-1941, in the American operational and tactical realms? And what must our military institutions do today to prevent the audit of war at some future time from making an equally damning assessment? Putting it differently, how do a nation's military institutions generate the right mix of people, organizations, weaponry, and ways of operating? Does it just "happen that way"? Is that how the Roman legions came about? Or the Royal Navy of Lord Nelson's time? Or the mobile armies of Genghiz Khan? No, it's not "chance" that creates superior military institutions and their forces, but men. When results are superior, there are guiding hands. When results are inferior, there are hands that should have guided but did not. There is also "process," but not a simple self-executing process, or a process that anyone can carry out. A high order of institutional and individual insight -- coupled with plain, ordinary efficiency -- is needed for successfully carrying out the process.

Today the Congress by law has assigned the responsibility to "organize, train, and equip" effective forces to the four services

themselves (Army, Navy, Air Force, and Marine Corps) under the three military departments (Army, Navy, and Air Force). For bringing the four services together so that they function as a single coordinated team, the responsibility belongs to the Secretary of Defense, assisted by the Joint Chiefs of Staff, and to those who hold unified command in the field. Far more complex and amorphous than leading a division or corps, this process depends on collective institutional action. In the American Army today it has become the work of an immense multi-layered mechanism called "combat developments," with processes within processes.

To a degree, the mechanics of the process are important. But concentrating on the process risks losing sight of the substance. And ordered or not, guided or not, the process takes place -- in each service and in their multiservice composites wherever they may be. For the enlightened development of forces, the basic sequence is the same as in field command. Someone, or some group of people, has to:

- 1) Take responsibility
- 2) Diagnose the situation accurately and set the objective
- 3) Develop an appropriate action plan
- 4) Execute the plan well, adapting to changing circumstances

Obviously, leadership is linked to all this. Like troop leadership, it is a combination of insight and execution -- but it is exercised at the collective, institutional level. The personal insight and executive ability of the most senior officers is the decisive component.

Thus it was, when time was short and the danger great, with the

Soviet Army from mid-1940 to June 1941. In June 1940 Hitler had just swept Britain from the continent and forced France to her knees. The German Blitzkrieg had been awesome; Stalin feared that the USSR would be next. But in the winter of 1939-1940, fighting the Finns, the Soviet Army had shown grave weaknesses. Professor Ziemke describes how Stalin, his Communist party chieftains, and his generals played for time and urgently coped. They got less time than they wanted, but when Germany struck in June 1941 enough had been done to prevent total disaster.²⁷

The usual problem is not one of short-term urgent change but rather of longer-range evolution; war, although always possible, is usually not imminent. Here, consistent wise leadership must be exercised over a long period of time. These histories indicate that this process was difficult enough forty to seventy years ago. How much more demanding it is in this age of nuclear weapons and microchips, smart missiles and spacecraft, night vision and robotics, not to mention "low intensity conflict." The very range and complexities of combat that are open to our current military forces suggest that the future wars that we fight may well not be the war for which we have prepared. And we will have to adapt to the real conditions, not to what we had expected to find.

* * * * *

In this essay, we have looked at the operational and tactical dimensions of military institutions in three levels:

- 1) The level of the fighting formation -- the U.S. 88th Infantry Division, for example, and its division and regimental commanders.
- 2) The level of the major force -- Field Marshal Slim in Burma, and Air Marshal Dowding of the Fighter Command.
- 3) The level of the higher military institution -- the German and Soviet armies, and the American military services.

In all three, we have said that leadership is indispensable to superior performance. And, in all three, we have said that an essential component of leadership is insight: understanding the situation.

Insight might be highly personal at the level of the division or even at the major force. Insight will of necessity be collective, or institutional, at the level of a nation's services and often with a major force such as Fighter Command. Since I have emphasized "insight;" permit me to introduce here a personal aside. In January 1972, as I left Vietnam for the third and last time, I wrote the required tour-end report for senior officers. It had this to say about "the need for insight":

All too often insight is gained too late, and through adverse experience. I believe that great costs could have been saved in the Vietnam experience if our individual and collective insight had been better as things were developing

... Intellect alone does not guarantee insight. Soldierly virtues such as integrity, courage, loyalty,

and steadfastness are valuable indeed, but they are often not accompanied by insight. Insight comes from a willing openness to a variety of stimuli, from intellectual curiosity, from observation and reflection, from continuous evaluation and testing, from conversations and discussions, from review of assumptions, from listening to the views of outsiders, and from the indispensable ingredient of humility

... while insight is the secret of good generalship in any situation, it is even more a requirement among the intangibles, nuances, and obscurities of a situation like Vietnam. Certainly the responsible officer must be a man of decision, willing to settle on a course of action and to follow it through. But the reflective, testing, and tentative manner in which insight is sought does not mean indecisiveness. It simply raises the likelihood that the decided course of action will be successful, because it is in harmony with the real situation that exists.²⁸

In his recent book on Vietnam, General Bruce Palmer, Jr., U.S. Army, Retired, has described how the United States could have "done things differently ... " in "probably ... a more feasible alternative" to the war of attrition that American forces pursued. Palmer writes that we should have used American troops only in the northernmost part of South Vietnam. We should have deployed them (with South Vietnamese and South Korean divisions) along the 17th parallel's demilitarized zone and into Laos, blocking the Ho Chi Minh trail so as to cut off overland

infiltration of support from North Vietnam. And we should have relied on the Vietnamese civil authorities, armed forces, and militia -- with U.S. advice and assistance -- to take care of the pacification of their own countryside.²⁹

These retrospective insights of General Palmer were available in 1965. To some, they were evident at that time; I was one of that number. In 1964-1965, I was a lieutenant colonel student at the National War College. I had just returned from a year as a division advisor in Vietnam's Delta, where my tour had convinced me that the Vietnamese countryside was no place for American troops, and that, if we could stifle outside support to the insurgents, the Vietnamese could, with our help, master the processes of regaining the countryside from the Vietcong.

My experiences had also convinced me that it was essential to stifle the infiltration of outside support. During my student year, I made an analysis of 14 insurgencies since World War II, seven of them successful and seven unsuccessful.³⁰ From this study I offered the following principle:

In order for a counterinsurgency to succeed, there must be both an internal effort substantially superior to that of the insurgents, and an effective restriction of (or an absence of) external support to the insurgents. Neither action alone is sufficient to success. Both are necessary.

Furthermore, I wrote that:

Revolutionary war being a social, rather than a physical, phenomenon, there may be exceptions to this general principle. However, this examination of 14 cases indicates that a defender against insurgency would disregard the general principle stated above only at very substantial risk to his eventual success.³¹

On file today in the National War College library, still classified Top Secret because it quotes JCS documents, is my 1965 student research paper.³² It recommends, in essence, the strategy and operational employment described by General Palmer above, and for the same reasons. So, correct insights at the time are not all that hard; even lieutenant colonels can have them. The problem is how to arrange the nature of American military institutions so that the senior generals in charge of affairs will arrive at correct insights -- and, having so arrived, will possess the skills to affect the systematic effort for which those insights call. And one must recognize that the obstacles to insight are many: one's own propaganda; accepting the conventional wisdom; superficial thinking; blindness to reality; self-satisfaction; complacency; arrogance.

Professor Boyd describes some of these characteristics and the consequences for the Japanese Navy in 1919-1941. He notes the "fleet-versus-fleet duel" mind-set of the Japanese Navy in 1919-1941 that derived from that Navy's successes around the turn of the century. He cites "the vested interests of most tradition-minded admirals" and says that, "... in the areas of convoy escort and ASW, the Japanese Navy became a victim of its previous rigid thinking." He then writes that a "high price would be paid (for this rigidity) for during the Second World

War U.S. Navy submarines accounted for the destruction of about fifty-five percent (1,314 vessels, 5.3 million tons) of all Japanese naval and merchant vessels lost³³

Doughty describes what happened in France, 1919-1940: the inexorable logic once certain assumptions were made, yet the failure to objectively examine those assumptions; the fixation on total mobilization as the only response; the fundamental misunderstanding of the kind of war for which Germany was preparing; the misconception of the role of armor and of movement in war; a fixed image of how the war would go; the stifling effect of senior officer self-satisfaction. Even to the time of the German attack in May 1940, the French, and the world, saw the French Army as a formidable military force. Yet it was hollow, in decay within. The consequence was the defeat of France in less than six weeks.

Obstacles to execution are equally abundant: inefficiency; poor organization; vested interests; lack of resources; lack of interest; lack of determination; laziness; acceptance of the status quo. Both Italy and Britain between the wars provide examples of the difficulties of "execution," assuming that the insights were present (which they were, to some degree). For Britain, there were the pervasive horror of the Great War, the demands of imperial defense, and the unwillingness of the political leadership to spend money on military forces. For Italy, there was, among other factors, sheer and complete ineptitude in the management of resources and manpower.

As to Vietnam, General Palmer faults the insight of senior American military leaders in the 1960s, and in particular the collective insights of the Joint Chiefs of Staff. Nothing, with superior insight, the execution would have been adequate is another question. At least there would have been a chance for success.

Our histories tell us that -- whether it be through lack of insight, or of execution, or of both -- the consequence, in sum, is military folly and failure. In the Vietnam case, a riveting memorial at the west end of the Mall in Washington, bearing the names of some 58,000 Americans who deserved better of their military institutions symbolizes the consequences. The consequence has also been a legacy of distrust of national leadership in matters military, not to speak of a society which has yet to recover from its psychic wounds.

* * * * *

How to arrange our American military institutions so that they meet the imperatives at the operational and tactical levels -- so that they do not fail when put to the test but rather succeed? The primary answer, above all: Those who are responsible for our military institutions have to concentrate on developing leadership of the right kind. This is self-evident; "leadership" should be an objective. But not self-evident is the "kind" of leadership -- or how to go about assuring superior leadership of that kind.

The American military must develop its own standards, but it could do worse than to start with those listed by General Halder and cited earlier in this essay:

- a) A great capacity for independent action on all levels of command.

- b) Adherence to the mission; that is a moral obligation to act at all times in the spirit of the assigned mission.
- c) Avoidance of a fixed pattern of action.
- d) The ability to make "complete", that is clear and unambiguous decisions and, in carrying them out, to establish a definite point of main effort.
- e) A constant concern for the welfare of the men and the conservation of their combat efficiency.³⁴

Then ways must be found to bring about conditions that produce the desired quality of operational and tactical leadership. We neither need nor want to reproduce the German General Staff system, and we must insist on a far higher performance by our military in the political and strategic realms. But we might best begin with the characteristics of the system that produced generations of superior German performance on the field of battle:

- 1) Very high standards of performance.
- 2) A school system which with historical and other study and thought developed and fostered the spread of those standards, and indoctrinated the officer corps with what those standards meant in practice.
- 3) A chain of command which understood what these standards meant and saw to it that they governed what officers did in units and on staffs.
- 4) A system of selection for responsible positions which insured that those selected met the standards

and screened out those who did not.

The fundamental issue is: What kind of leadership is our high command interested in? The top military echelon of each of our military institutions (each Service and the Joint Chiefs of Staff) must decide the kind of leadership it wants and the basic standards of acceptable performance. Then all subordinate institutions must fall in line -- field commands and schools alike -- to foster development of that kind of leadership, and to ensure that those selected for responsible positions meet those standards. The schools especially must be positive influences for excellence. Indeed, they are the critical component of the second essential: an insight-producing climate that encourages -- and derives from -- open, honest, and reflective thought.

This cannot be thought that generals and admirals generate and prescribe from the top down. This is thought that also, even mostly, comes up from below -- stimulated by the experience and intellectual effort that officers go through in the field and by their research and thought in schools. Among other duties, the duty of generals is to observe, to think, and to listen, even to majors and colonels.³⁵ Break down the compartments -- wherever they exist -- of Service parochialism, of "turf," of hierarchical layering. Let insight evolve from an atmosphere of open, shared thought.

I cannot speak of the other services, but I have come to know the Army rather well. Somehow, in the last twenty or thirty years, our Army has developed a habit of thinking in terms of fads. Buzzwords have become a substitute for thought. The buzzword of the 1960s was "counter-insurgency" -- which as our Vietnam experience proved we completely failed to understand. We have also become a "process-oriented" Army, in

which the "process" may well be followed but the "product" -- formed without the essential ingredient of insight -- turns out to be self-evidently deficient. How else, other than following a process without insight, can one explain the Army's arriving in 1942 at a "Division 86" which amounted to more than 20,000 men (a product later corrected at considerable travail)? How else can one explain the G3 (operations) section of a light (light, mind you) infantry division which today has a strength of 36 people -- two or three times the operations section of Rommel's Afrika Korps -- at a time when a favorite buzzword is Auftragstaktik? How else, other than through process-orientation without institutional insight, can one explain the production in the last dozen years of more field manuals on operations and tactics than the troops can possibly read, including three different versions of the "capstone manual," Field Manual 100-5, that is supposed to be the basis for them all? How else can one explain a pervasive obsession with hardware-oriented "command and control systems" based on stereotyped perceptions of how commanders make and execute decisions in battle -- systems that leave out the all-important human element -- the commander himself and his true operational style?

Insight also stems from honest audits, in the absence of the audit of war. Whatever ideas emerge from the process for developing forces and their ways of fighting, the composite must be tested and subjected to an experience that closely resembles that of war. An honest audit of current and programmed systems for command and control of multiservice forces would reveal them compartmented, data-clogged, slow, and vulnerable. Ways are emerging for achieving an honest audit. With intelligently designed computer support, we should be able to provide commanders and staffs as well as their communications links a practical

experience in the conduct of warfare. The most telling lessons are those of experience, of history in which one has actually participated. Such simulations for commanders, of warfare, can let them experience "military history written in advance."

Finally, there is plain, ordinary efficiency, essential for converting insight into concrete results. One major step toward efficiency would be to cut back drastically on the bloated, yet still "overworked," headquarters in the Pentagon and in stateside provider commands, and to find the time to address the real business of preparing for war. It does not take an immense doctrinal and combat developments establishment to generate superior insight. Indeed, such an establishment suffocates insight. Better to do away with half of it or more, and let an open, enlightened, research-oriented -- as well as instruction-oriented -- school system and the open participation of multiservice field commanders come up with the insights. Nor does it take an immense materiel establishment to convert the products of American industry into weapons and other gear to be used by troops. In this vein, we could do worse than to adopt the recommendations emerging from the Packard Commission.

* * * * *

In 1986 the military institutions of the United States will begin a process of fundamental change. It is clear that the Congress will pass, and that the President will sign, legislation which will not only permit and encourage the development of multiservice professional expertise but

which will mandate its manifestation in the Joint Staff, in the joint schools and colleges, and in the unified commands.

The new institutional alignment, which will establish a Deputy Chairman of the JCS, second in rank to the Chairman, and which will make the Joint Staff responsible directly to the Chairman, will hopefully make possible the emergence of responsible, objective, independent, coherent, continuing, responsive multiservice military thought. A key feature of this new environment will be that unified commanders will have authority and influence, and the means to exercise that authority and influence. This will realign, in favor of the commands, the relationships between those who employ the forces and the Services which provide them. In doing so, it can among other effects bring efficiencies in the evolution of command and control systems and make possible the achievement for multiservice commanders of an insight of twenty years ago: "The major problem today in the design of a command and control system is how to bring the commander and staff into the decision-making process."³⁶

In 1958 (yes, 1958) the Army's Chief Signal Officer wrote:

On the battlefield of 1962, tactical commanders will have increased command control of their firepower and mobility through new communications and automation. The battle group commander will be able to use a small, mobile computer and associated parts of the automatic data processing system to calculate enemy concentrations ... collate intelligence, calculate march tables, and perform other tasks ... Automatic data processing equipment at division level will consist of data recording and storage devices and small-capacity mobile

computers Data introduced in the division system will be transmitted to the mobile computers through the Area Communications System. This data will help the various commanders review the situation; it will help them analyze the probable results of various courses of action (both friendly and hostile) and thus will expedite decisions. The equipment will also be used to compile essential reports -- daily personnel summaries, requisitions by units, strength reports, projections on a schedule basis -- the mass and unwieldy flow of which have always been a problem to combat echelons. Similarly, the intelligence staff will be able to obtain current information more quickly.³⁷

Only now is General O'Connell's quarter-century-old concept about to come to pass. But it is being realized in a data-clogged, hardware-oriented form which fails to take into account the essentials of operational style. This in turn stems from lack of institutional insight as to how to match technology with the commander's operational style and, then, how to place that technology into the field.

Almost fifty years ago, Hugh Dowding and his Fighter Command, working with P.M.S. Blackett, R.A. Watson-Watt, and others and the miracle of radar, showed us how to marry, with great speed and efficiency, technology and operational style. If our military institutions had but possessed in the 1960s and 1970s the sense of history and the insight to see how to do Hugh Dowding's equivalent in the 1960s and 1970s, how different things would be today. But they did not see it then, nor do they seem to see it now.

* * * * *

One can hope that, as the military institutional reforms to be legislated are carried out over the next few years, the matters of leadership, of a climate which fosters insight, and of efficiency will receive from the senior military professionals in positions of responsibility the emphasis which is their due. One can hope that, in their wisdom toward the achievement of insight, those senior military professionals will unleash the creative thought and energies of their (especially the joint) schools and colleges, toward an understanding of the lessons of the past and the meaning of these lessons for the present -- and that they will involve the operational commanders themselves.

The twenty-one authors of these histories have given us a good deal to think about. Now it is up to the senior American military leadership to present the American people with the combination of execution and insight that nations have the right to demand from their military institutions but which they have rarely gotten. If they do not, future historians will judge them deficient when their product is audited by the test of war, and the results of that audit may be even more disastrous than was the Vietnam War.

Notes

1. Correlli Barnett, The Swordbearers, Studies in Supreme Command in the First World War (London, 1963), p. 10.
2. Williamson Murray, "British Military Effectiveness in World War II," Vol. III, pp. 232-35.
3. Timothy Nenninger, "American Military Effectiveness in World War I," Vol I, pp. 255, 268-69.
4. MacGregor Knox, "The Italian Armed Forces, 1940-1943", Vol. III, pp. 321-22.
5. Robert Doughty, "The French Armed Forces, 1918-1940," Vol. II, throughout.
6. Murray, "British Military Effectiveness in World War II," Vol. III, p. 221.
7. See John Terraine, The Right of the Line; The Royal Air Force in the European War 1939-1945 (London, 1985); and Derek Wood and Derek Dempster, The Narrow Margin, The Battle of Britain and the Rise of Air Power 1939-1940 (New York, 1966).
8. See Williamson Murray, The Change in the European Balance of Power, 1938-1939 (Princeton, 1984) and Wesley Wark, The Ultimate Enemy (Ithaca, 1985).
9. Gay Hammerman and Richard C. Sheridan, The 88th Infantry Division in World War II: Factors Responsible for its Excellence (Virginia, 1982).
10. Ibid., p. 35.

11. Earl Ziemke, "The Soviet Armed Forces in the Interwar Period," Vol. II, pp. 4, 25-26.
12. Jessup, "The Soviet Armed Forces in the Great Patriotic War, 1941-1945," Vol. III, pp. 507-9.
13. Michael Carver, Tobruk (London, 1964), p. 255.
14. Russell F. Weigley, Eisenhower's Lieutenants: The Campaign of France and Germany 1944-1945, (Bloomington, Indiana, 1981) pp. 729-730. For the performance of the German army, heavily attrited on the Eastern Front after three years of combat, see also Max Hastings, Overlord (Greenville, NC, 1984).
15. Trevor N. Dupuy, Numbers, Prediction and War: Using History to Evaluate Combat Factors and Predict the Outcome of Battles, (Fairfax, Virginia, 1985).
16. See in particular Martin Van Creveld, Fighting Power, (Westport, CT, 1982).
17. Juergen Foerster, "The Dynamics of Volksgemeinschaft: The Effectiveness of the German Military Establishment in the Second World War," Vol. III, p. 351.
18. Generaloberst Franz Halder, et al., Analysis of U.S. Field Service Regulations, Historical Division, United States Army, Europe, 1953.
19. *Ibid.*, p. 7.
20. See Williamson Murray, "German Response to Victory in Poland: A Case Study in Professionalism," Armed Forces and Society, (Winter, 1981).
21. Halder, Analysis of U.S. Army Field Service Regulations, pp. 8-9.
22. Trevor N. Dupuy, A Genius for War: the German Army and General Staff, 1807-1945, (Fairfax, Virginia, 1984), pp. 300-302.

23. Foerster, "Dynamics of Volksuemeinschaft," p. 351.
24. Ibid., pp. 382-83.
25. Ibid., pp. 402-3.
26. Ronald Spector, "The Military Effectiveness of the U.S. Armed Forces, 1919-1939," Vol. II, p. 162.
27. Ziemke, "Soviet Armed Forces," pp. 48-53.
28. Headquarters, Delta Regional Assistance Command, "Senior Officer Debriefing Report of General John H. Cushman, RCS CSFOR-74, 14 January 1972, p. 2.
29. Bruce Palmer, Jr., The 25-Year War: America's Military Role in Vietnam, (New York, 1985), pp. 183-188.
30. John H. Cushman, Appendix 1 to National War College Individual Research Paper (unpublished), 1965.
31. Ibid.
32. John H. Cushman, "External Support of the Vietcong; an Analysis and a Proposal" (Top Secret), National War College Individual Research paper, 1965. A sanitized version minus the quotations from JCS documents has recently been downgraded to unclassified and is available in the NDU library.
33. Carl Boyd, "Japanese Military Effectiveness: The Interwar Period," Vol. II, pp. 289-90.
34. Halder, "Analysis of U.S. Field Service Regulations," p. 7.
35. See particularly Timothy Lupfer, The Dynamics of Doctrine, The Changes in German Tactical Doctrine During the First World War (Leavenworth, 1981), pp. 8-9 for an outstanding discussion of how the senior German leadership was willing to listen to the captains and majors who were waging the front line battle along the Somme in order to reform and improve German tactical doctrine.

36. Dr. Eugene G. Fubini, "We Must Improve Control of Tactical Forces," Armed Forces Management, July 1965, pp. 52-57.
37. Major General J.D. O'Connell, "Command Control Capabilities, Army Digest, February 1958, pp. 6-10.

THE POLITICAL AND STRATEGIC
DIMENSIONS OF MILITARY EFFECTIVENESS

Russell F. Weigley
Temple University

War in the twentieth century is no longer the extension of politics by other means.¹ It is doubtful whether the aphorism affirming that war is such an extension of politics was ever true enough to warrant the frequency with which it has been repeated. War once begun has always tended to generate a politics of its own: to create its own momentum, to render obsolete the political purposes for which it was undertaken, to erect its own political imperatives. In the twentieth century, as the present collection of essays attests, the hypertrophy of war through war's assuming global dimensions and almost unlimited destructiveness has led most emphatically to the emergence of war not as the servant but as the master of politics.

Twentieth-century warfare sets its own purposes. A war begun to quarantine the Austro-Hungarian Empire against the seditious activities of little Serbia among the empire's Slavic populations generates so much military and political momentum that it cannot end until all the great powers of Europe have been so completely defeated or exhausted that four centuries of European political hegemony over the rest of the world are ended. A war precipitated by American economic sanctions intended to

punish Japan for her military occupation of a remote corner of southeast Asia leads to the shadowing of the globe by the threat of nuclear destruction.

In consequence of this assumption by war of its own momentum and purposes, the questions to which the papers in this collection have addressed themselves regarding the political, strategic, operational, and tactical effectiveness of armed forces have become increasingly difficult to answer. It is a tribute to the skill and insights of the writers of the papers that they have produced nevertheless a series of essays to which students of military organization will turn for reference during many years to come. But to answer the question whether an institution is effective, we must first ask the further question: effective in pursuit of what purposes? And to try to measure the various dimensions of the effectiveness of armed forces involves, because of the self-generated momentum of modern war, a measurement of effectiveness in relation to a continual kaleidoscopic shifting of purposes. Measuring effectiveness becomes almost impossible when the goals to be effected are incorrigibly protean.

Questions about the political, strategic, operational, and tactical effectiveness of armed forces could be dealt with much more satisfactorily if we were considering European warfare in the eighteenth century and before the French Revolution. Then war was waged within a state system in which the members of the system shared sufficient common political and social values that they could usually limit the purposes of war -- they could usually curb war's tendency to create purposes of its own -- by mutual understanding. In particular, the monarchs who guided the principal members of the state system could usually agree that war should never become so unlimited that it might threaten to topple any of

their number from his throne; if one of them were toppled, all would be in danger. (The determination of Prussia's enemies, particularly Russia and Austria, to destroy that state's great-power status in the Seven Years War is a partial exception to these generalizations.) Usually, all the eighteenth-century powers could feel secure in the knowledge that while rivals might seek territorial gains, fortress acquisitions, or marriage alliances at each other's expense, none would pursue another's complete downfall.

The twentieth century's loss of this mutual understanding about the limitation of the aims of war is illustrated by nearly every paper at hand, perhaps most notably Paul M. Kennedy's "Britain in the First World War." Although Great Britain has been less addicted to the more extravagant war aims of our century than many, perhaps most, of the great powers -- increasing awareness of the relative modesty of her resources reinforcing a tradition of political moderation -- the British government decided in World War I, as Professor Kennedy shows, that British security depended on containing German power in Europe -- but with the corollary that it was difficult to envisage how the German capacity to upset the European balance could be contained without a virtually total defeat of Germany. At the least, Great Britain and her allies must be able to defeat Germany completely enough to permit intervention within Germany after the war in order to democratize the regime. The sense of community and mutual forbearance that had characterized the European states in the eighteenth century had eroded almost completely even in Britain by 1914-1918. And in two critical respects, the British experience in the First World War went on to demonstrate how the loss of limitations upon purpose in war has also eroded away the criteria for measuring the effectiveness of military forces.

In the first place, as Professor Kennedy goes on to remark, the total defeat of Germany probably never offered Great Britain the measure of security she sought from it, no more in 1918 when so complete a defeat was not attained than in 1945 when it was. The total defeat of Germany always implied the creation of a power vacuum in central Europe that would be likely to invite the advance of dangers from Russia not much if any less threatening than those that Germany might pose. The policymakers who guided eighteenth-century wars had usually recognized that the total defeat of one's enemy is all too likely to redound upon oneself; somehow, by the early twentieth century even Great Britain had lost much of this insight.

In the second place, Britain's quest for the total defeat of Germany undercut the effectiveness of the British armed forces by imposing upon them strategic, operational, and tactical demands beyond any they could well afford to meet. The quest for the total defeat of Germany assured the prolongation of deadlock on the Western Front. If total German defeat were the object of British policy, then strategy, operations, and tactics had to seek the destruction of the German Army. Nothing less would bring about Germany's complete defeat. And the only way to pursue the destruction of the German Army in 1914-1918 was to engage it in a war of attrition on the Western Front.

In fact, I believe that the inordinate ambitiousness of British war policy in 1914-1918 locked the British into the slaughterhouse of the Western Front more inextricably than Professor Kennedy concedes. He argues that the real issue in British policy during World War I was not the degree to which the military leaders could influence policymakers to seek militarily logical national goals -- one of the fundamental issues to which these papers are to address themselves -- but rather the degree

to which the policymakers could influence the military to pursue strategic goals by practicable means. Unfortunately for the British, there was no truly practicable means of pursuing the strategic -- and policy -- goal of the virtually total defeat of Germany. The only available means was to fight on the Western Front, a means that Professor Kennedy among many others shows was ultimately impracticable in that the costs were hugely disproportionate to the policy objectives.

Altogether, there was no way in which the British armed forces in World War I could be politically, strategically, operationally, and tactically effective, as long as the policy goal was the destruction of German power. Politically, the pursuit of this goal imposed strains on British economic resources and social cohesion that undermined not only Great Britain's very status as a world power -- to enhance which the British thought they were fighting -- but the deepest well-being of British society, the social contract itself. Strategically, the pursuit of total victory left no escape from concentrating the British Empire's principal military effort on the Western Front, to try to destroy the German Army. Operationally, the concentration on the Western Front left no alternative to the Somme, Passchendaele, and similar offensives. Since between the late summer of 1914 and the spring of 1918 the Germans would not take upon themselves offensive operations against the British, London's goals left no choice but to accept the initiative that the Germans eschewed. Tactically, Britain's policy and the corollary of the Western Front strategy left no alternative to costly infantry assaults, because the military technology of the time offered no substitute for hurling human bodies against the enemy's barbed wire, machine guns, and artillery.

This lack of tactical options given the political, strategic, and operational imprisonment of the army on the Western Front has to be underlined. The tanks of the era broke down too readily to be a decisive weapon. As various of the papers addressing themselves to World War I tactics indicate, it is doubtful that the infiltration tactics employed by the Germans in their 1918 offensives could have appreciably changed the outcome if the British and French had introduced such tactics in their own, earlier offensives. Infiltration tactics might have bought somewhat more ground at somewhat less cost; against a still-vigorous and skillful German army, they would not have been likely in 1915, 1916, or 1917 to have overturned the strategic and operational balance.

The other papers on the major belligerents who fought throughout the First World War, certainly Douglas Porch's on the French military and Holger H. Herwig's on the Germans, point to the same conclusions. The earlier European sense of mutual interests shared by all the powers had so broken down, and all the Continental powers except Italy pursued policies so ambitious, that political, strategic, operational, and tactical effectiveness of armed forces in service of governmental policy was all but impossible. Policy demanded the payment of military prices so high in the exhaustion of manpower and resources that the effectiveness of the armed forces was bound to be disastrously eroded, if not nearly destroyed. The issue was not the degree to which policymakers could influence the military to seek strategic goals by practicable means, because no practicable means could achieve the desired goals.

To be sure, the military themselves had all too consistently abdicated their responsibility to influence policymakers to establish militarily attainable national goals. All too consistently, the military conspired in setting up policy goals in quest of which no strategic,

operational, and tactical means could be truly practicable or effective. The conduct of the German military leaders in resisting such efforts as Reich Chancellor Theobald von Bethmann Hollweg initiated toward a compromise peace, insisting instead that some such operational means as unrestricted submarine warfare could produce the total defeat of the Reich's enemies, offers the most conspicuous case in point.

If the armed forces of any of the major World War I belligerents are to be distinguished from the others, in fact, for superior effectiveness according to any of the criteria at hand, it might well be the often-maligned French. With many of the richest industrial departments of their country occupied by the enemy throughout most of the war, the French had less choice than the Germans or the British about the extent of their war aims. They could not very well settle for less than the enemy's complete evacuation of their northeastern departments if France were to remain a great power. They had little choice also but to insist on the restoration of the full independence of Belgium. Given these conditions, they could scarcely pursue any strategy except that of breaking the deadlock on the Western Front, or any operations or tactics except those that offered a hope of contributing to that end. As Douglas Porch indicates, however, in operational and tactical matters the French were at least marginally more innovative and flexible than the British. Once Henri Philippe Pétain, général de division (eventually général d'armée and maréchal de France) rose to the command of their army, his operational scheme of limited, local attacks and his waiting for more tanks and for the Americans were appropriate adjustments to the circumstances.

If France, often maligned for military ineffectiveness in the Great War -- the shadows of 1870-1871 and 1940 no doubt distorting our perceptions of 1914-1918 -- emerges relatively creditably from a comparison with the other principal World War I belligerents, Holger H. Herwig in contrast leaves the German reputation for exceptional military effectiveness in tatters as far as the Great War is concerned. Professor Herwig's paper is a salutary corrective to recent tendencies among American military historians to make the Prussian and German armies after 1866 appear as veritable superarmies. Perhaps less acutely needed, but also useful, is Professor Herwig's corrective to any lingering scholarly remnants of Samuel P. Huntington's depiction in The Soldier and the State of Prussian-German political-military organization as an ideal type of civilian control of the military.²

Out of a tangled web of interlocking civil and military institutions calculated not to foster but to frustrate civilian control, and indeed to prevent any reasonable civil-military communication and understanding as well, came Generaloberst Alfred Graf von Schlieffen's famous plan that shaped at the outset German participation in the First World War. Schlieffen as Chief of the General Staff and therefore chief adviser to the Imperial Supreme Commander had devised an operational plan that was inconsistent with both the policy and the strategic interests of the German Empire on the one hand and with the logistical and tactical capabilities of the German Army on the other. As for policy, while Bethmann Hollweg knew about the plan before the war began, its nature was never adequately communicated to the political authorities; in it the Army unilaterally developed a scheme that was almost certain to add Great Britain to the list of Germany's adversaries in a war against France and Russia, and that would also be detrimental to the defense of Germany's

principal ally, the Austro-Hungarian Dual Monarchy, whose officials were also inadequately informed. As for strategy, the Schlieffen Plan failed to take appropriate account of the Russian threat either to Germany herself or to Austria-Hungary. As for the logistical and tactical capabilities of the German Army, the plan practically assured an advance that would outrun the limited transport facilities of the Army beyond railheads -- outrunning particularly the capacities of the Army's limited truck transport -- and thus assured also a tactical crisis when the Army would have to fight a climactic battle for Paris at the very time when its logistics were stretched to the breaking point.

The response of the German military leadership after the failure of the Schlieffen Plan in 1914 had left the war deadlocked was also even less conducive to military effectiveness than the French response to the same situation of deadlock. The muddled German constitutional arrangements for civil-military relations permitted the Supreme Headquarters of the Army (Oberste Heeresleitung) in effect to take control of the whole government of the empire, practically besieged by opponents on the west, east, and south. This military usurpation stultified German political life, with the further effect of stifling the efforts of Bethmann Hollweg and other politicians to find a negotiated peace. The absolute supremacy of OHL also discouraged operational and tactical flexibility within the Army by establishing an overly centralized control in which almost nothing could be done without reference to Supreme Headquarters.

Nevertheless, it remains not without some reason that military historians have tended to regard the German Army as the most effective in the world operationally and tactically from the campaign of its predecessor Prussian army against Austria in 1866 to the downfall of Führer Adolf Hitler's Germany in 1945. In spite of the crazy-quilt

complexity of the German Empire's military organization, and in spite of the flaws in German military performance during World War I so clearly delineated by Professor Herwig, the German Army also displayed in World War I various noteworthy operational and tactical virtues -- some of them, also enumerated by Professor Herwig, were the artillery reforms that culminated in the introduction of the creeping barrage, and increasingly flexible infantry assault tactics that culminated in the appearance of infiltration tactics. The modern German Army also developed an unparalleled measure of unit cohesion that enabled its constituent elements to survive under brutal casualties and to rebuild themselves with phenomenal speed and effectiveness should only a cadre of commissioned and noncommissioned officers survive some especially costly encounter.

Not the least of the contributions of Professor Herwig's critically analytical paper, however, is its stress on the ways in which even the salient virtues of the German Army contributed to its undoing in the First World War. Particularly, the very tactical strengths of the Army helped shape the climactic 1918 offensives in such a way that they unsystematically exploited tactical advantages wherever those advantages might appear, without imposing on the offensives an operational or strategic coherence, which made probable ultimate failure become inevitable failure.

This climactic German failure of letting tactics control strategy was not completely different, however, from the methods of generalship for which I have praised General Pétain. He, too, let tactical considerations dictate his operational and strategic designs, albeit with a caution and a fundamental realism and rationality that the German commanders of 1918 lacked. The significance of this ascendancy of

tactics over operations and strategy returns us, however, to the main thread of our argument. It was surely an evidence of the extension of policy goals beyond anything that strategy or operations could hope to grasp that military commanders felt obliged to concentrate on tactics and technique. At least a creeping barrage by the artillery or infiltration tactics on the part of the infantry might produce a reward on the battlefield proportionate to the effort that went into them: a small reward, calculated in incremental advantages in reducing casualties or capturing narrow patches of terrain, but nevertheless a kind of success at a time when policy, strategy, and operations all sought goals the pursuit of which had degenerated into bloody futility.

The participation of Japan in the First World War, outlined by Ian Nish, stands out in marked contrast to that of the major European powers. The reason for the contrast lies of course in the limited nature of the objectives of that nation-state and also of its armed forces. Seeking principally to capitalize on Europe's troubles to acquire territory and influence previously held by the European powers in the Far East, Japan felt no need to resort to strategic, operational, or tactical means disproportionate to the objectives sought. At the same time, the armed forces of Japan possessed uncommonly effective means of securing political acceptance of their desires in terms of budgets and force structure in the constitutional right of direct access to the Emperor and through the extraconstitutional institution of the Genrō and the custom that the war and navy ministers must be appointed respectively from among generals and admirals on the active list. While Professor Nish suggests that these arrangements did not result in so much harmony and cooperation between the civil and military branches of government as other historians have sometimes thought, nevertheless civil-military tensions were

moderated because the vital interests of the nation were not directly at stake. There could be and were tensions within the Japanese military, such as Professor Nish's example of disagreements over whether a naval squadron should be sent to the Mediterranean, with some naval officers themselves questioning the worth of this deployment in terms of the naval experience it might impart or the prestige and influence it might buy. But again, no vital national interests were threatened, and the military organizations of the country were not hard pressed to pursue effectively such limited objectives as Japan sought in the Great War.

Italy, as pointed out by John Gooch, may also represent an exception to the succumbing of World War I powers to inordinate ambitions. But the exceptional aspects of Italy's participation in the war must be viewed in the light of Italian weakness. Italy was certainly the least of the great powers; behind her facade of great power status she was in fact an underdeveloped country. Therefore, even the pursuit of relatively modest goals could impose upon Italy strains more severe than the prizes were worth.

The history of the rise of the Kingdom of Sardinia-Piedmont to become the nucleus of the United Kingdom of Italy had been one of continual use of opportunely timed war to take advantage of various distractions vexing the greater powers and thereby to win sometimes remarkably large gains at moderate expense. In World War I, Italy hoped to repeat this pattern. She waited to enter the war until she could judge whether Austria-Hungary or France, both of whom possessed territory that she coveted, seemed to offer the more likely prospect of collapse and easy territorial harvest. In 1915, Italian politicians calculated that the better prospects lay in attacking Austria; France's weaknesses, aggravated by unlimited war, could be exploited later. The Italian

perception of Austria's vulnerability was partly but not entirely wrong. Italy entered upon a more difficult and expensive war than she would have wished for, but eventually the multinational Danubian Empire did collapse, whereupon Italy eventually captured some of her expected spoils, including the Trentino and the city of Trieste along with much of the rest of the Istrian peninsula. (The city of Fiume, initially established by the Treaty of St-Germain as part of the Free State of Fiume, gravitated to Italy later, under the Treaty of Rome of January 27, 1924, which divided the Free State between Italy and Yugoslavia.) In balance, however, the grueling campaigns that Italy had to fight in the Alps before the death-throes overtook Austria-Hungary, and especially the humiliating Italian defeat at Caporetto beginning October 24, 1917, added up to losses and suffering disproportionate by almost any reckoning to the prizes eventually reaped.

Part of the cost consisted of the weakening of Italian parliamentary government to permit the imposition of the Fascist dictatorship of il Duce Benito Mussolini during 1922-1923. In this perspective, the Italian experience in World War I suggests that when the policy goals of one's allies and enemies have grown inordinate, it is almost impossible to extricate oneself from the consequent inefficacy of either strategy, operations, or tactics in quest of those goals, no matter how limited one's own objectives. Only a power remote from the main theater of action, such as Japan, could avoid being drawn into the general calamity that follows when the principal powers of rival belligerent coalitions reach for war aims beyond the capacity of any strategy, operations, or tactics to attain at reasonable cost.

Perhaps the most remarkable aspect of Italy's participation in the First World War, however, was not that the kingdom was sucked into a

maelstrom in which crafty calculations of prizes and prices ceased to be relevant to the circumstances at hand, but that the underdeveloped Italian state contrived to fight with as much operational and tactical effectiveness as it did. Considering the stringent limitations of Italian resources, it was no small feat merely to maintain an army with any respectable operational and tactical capacity whatever through three years of combat in an Alpine arena of nightmarish logistics and yet more nightmarish living conditions for the troops. Merely sustaining the endless battles of the Isonzo manifested no small operational and tactical effectiveness on the part of the Italian Army. It was an achievement that could scarcely have been predicted before the war began. It was an achievement suggesting that the Italian Army had contrived to develop a strength, cohesion, and resilience superior to those of the state it served. Military organizations are often said to be reflections of the societies that create them. While necessarily true in large measure, this axiom is not true in any simple way. The Italian Army of World War I transcended to an impressive extent the weaknesses of the Italian state.

Of course, the Italians were mostly fighting the armies of decadent Austria-Hungary, but the Italian achievement is as impressive as it is because the Austro-Hungarian Army rose to a similar transcendence. It fought World War I with considerably more operational and tactical effectiveness and especially with a greater endurance than the rickety condition of the multinational Hapsburg empire would have led almost any observer in 1914 to predict. Like the Italian Army, the Austro-Hungarian Imperial and Royal Army of World War I was no mere reflection of the society it served, but an entity able to rise above at least some of the weaknesses of that society. Much the same kind of statement might be

made about the Russian army in the same war, as it might be made about the Confederate States Army in another war. During the last phases of the American Civil War, it had been not the Confederate States government that sustained the army but the army that sustained the government. In the papers at hand, the Italian and Russian armies of World War I can be seen as having come close enough to doing the same thing. The contributions of John Gooch and David R. Jones at least hint at a variant of military effectiveness that goes beyond the usual dimensions suggested by the introduction to these essays. Armed forces can sometimes attain lives of their own separate from and more vigorous than the lives of the states and societies that first nurtured them.

Like Japan and unlike Italy, the United States in World War I was fortunately remote from the center of the maelstrom, and therefore not necessarily susceptible to being drawn willy-nilly into the maw of policy commitments exceeding any practicable attainments of strategy, operations, and tactics. The experience of the United States, as presented by Timothy K. Nenninger and followed by Ronald H. Spector to 1939, was indeed not so different from that of Japan, as a cursory reading of the papers might at first suggest. It is true that because the United States in 1917-1918 pursued immensely more ambitious policy objectives than Japan, and because this pursuit demanded an abrupt shifting of political and strategic gears, the military organizations of the United States did not function in World War I with the smooth-running, unhurried effectiveness of the Japanese forces. In spite of the confusions of abrupt and rapid mobilization, however, and in spite of the inability of the American forces during the short span April 6, 1917 - November 11, 1918 to attain all their goals in acquiring matériel and in meeting operational and tactical objectives, the total picture is one of

extraordinarily effective redirecting of the national energies from peaceful to military purposes. And in spite of the Americans' ostensible dedication to policy goals so extravagantly ambitious as ending all wars and making the world safe for democracy, distance and belated entry prevented these goals from devouring all strategic, operational, and tactical effectiveness. The costs of the war to the United States were not altogether disproportionate to the increase in American influence and diplomatic power that came out of the participation, and the costs would have been still more worth paying if the United States had employed its enhanced influence and power more wisely in furthering its national interests.

Of course, there is a contrast between America and Japan also in Professor Spector's depiction of the abrupt American reversion to military inactivity after 1919. The American armed forces enjoyed nothing like the ability of their Japanese counterparts to shape the policies of the civil government in peacetime, and soon after the First World War the American forces again became objects of neglect. When the prospect of a second American involvement in global war emerged at the end of the 1930s, the American military would have to undergo a second rapid shifting of gears, almost as abrupt and jarring as in 1917-1918. Nevertheless, from 1917 onward the effectiveness of the American armed forces in relation to policy goals seems reasonably high.

In particular, we do not find underlying Nenninger's and Spector's periods in United States military history those unthinking antimilitary attitudes and that wanton indifference to the needs of military preparedness with which historians within the armed forces have often charged the presidents and the Congress. After all, small and inexpensive military organizations fitted rationally into American

national policy through almost all of the country's history until 1939 and were also consistent with the inherent geographic security of the United States against all foreign military threats to its vital interests. There was no need to expend large sums of money or large portions of the national energy on military preparedness because the United States, even more than Japan, had no really vital interests to advance or protect militarily in the First World War or in the twenty years that followed. Even to the end of World War II, the American continental homeland was secure against any substantial external military danger. If anything, the most glaring example of ineffectiveness displayed in American military history up to 1939 involved not the strategic, operational, and tactical difficulties attendant upon rapid mobilization and abrupt commitment to Europe in 1917-1918, but rather the political inefficacy of the civil government's forcing such activities upon the military organization when national interests demanded nothing of the sort. No vital foreign-policy objective required large-scale American intervention in the battles in France in 1917-1918; the absence of any such vital interests did much to encourage resorting to irrational, unattainable war aims whose pursuit made matters worse by impeding the nation's understanding that, once it was committed to joining in the war, the way was at least open toward modest gains in influence and relative power that might have been capitalized if they had been better understood.

In any event, contrary to the hoary historical myth of an antimilitary American, the American civil government never consistently denied its military organizations the means to fulfill with reasonable effectiveness the responsibilities demanded of them. When American policy made its dubious plunge into Europe in 1917-1918, the armed forces

were granted just about all that was possible of the resources they needed to attain immensely enhanced purposes. But for most of the twentieth century until 1939, the key to the history of American military organizations was -- as it was also for Japanese military organizations until about the same terminal date -- a confinement to limited objectives. By keeping national purposes limited through most of the period, the United States could with relative ease build and maintain armed forces suitable to those purposes -- just as, conversely, the experience of the major European belligerents in the First World War indicates that when national purposes grow extravagant, no straining of resources can bring about strategic, operational or tactical effectiveness in their pursuit.

Before leaving behind reflections on the military experience of the First World War, it seems imperative to underline the consistent absence of effective cooperation between armies and navies. This theme is at least a subsidiary feature of every paper dealing with World War I in a nation where the navy as well as the army had a major role to play. Around the globe, from Great Britain to Japan -- and conspicuously including those two maritime powers, to the safeguarding of whose national interests their navies were peculiarly vital -- relations between armies and navies displayed less of cooperation than of mistrust and misunderstanding. In no country did either service show much regard even for what the other might contribute to its own operations, let alone to the larger policy and strategy goals of the nation. The detailed staff contemplations that made up Germany's Schlieffen Plan did not extend to considering whether the German Navy might impede the flow of British reinforcements to the French across the English Channel. If army staff planning thus neglected possible naval roles, the navies were in

worse condition; they had almost no strategic or operational planning worth the name. Neither in Great Britain, its leadership in naval development notwithstanding, nor in Germany, its leadership in the development of professional military staffs notwithstanding, did the navy possess in World War I a planning agency comparable to the ones that the Prussian example had made commonplace in armies. No other navy had a head start where these two lagged.

More than interservice competition between each nation's army and navy was at fault here. Interservice competition can go only part of the way toward explaining the dearth of army-navy cooperation. It does not explain why navies lagged behind even in creating the institutions that should have been the agencies of cooperative planning between them and the army general staffs. Why were naval general staffs almost nonexistent? A possible explanation worth further exploring by students of military institutions is that the absence of naval organizations comparable to army general staffs was one indication of a larger lagging of navies behind armies in the development of military professionalism in their officer corps.

When Captain Stephen B. Luce established the United States Naval War College in 1885, he perceived the need for the college in terms of the absence of a desirable degree of professionalism among naval officers, particularly in their lack of an education in strategy. Naval officers were professionals in seamanship but not, Luce believed, in the conduct of war. While his diagnosis and his attempted remedy applied specifically to American naval officers, the American situation was by no means unique. Even the British lacked an articulation of the very principles of naval strategy on which British sea power and the worldwide British Empire were based, soon to be expounded for them at Luce's war

college by Captain Alfred Thayer Mahan. In virtually every country, the tradition of naval education, such as it was, was a tradition of practical and technical instruction, conducted largely on shipboard. Navies had not developed the theoretical and historical approach to the education of officers in operations and strategy that had gradually permeated all the major armies during the nineteenth century. Without such a foundation, there was no professional education of naval officers comparable to that of army officers, and therefore in a real sense only a decidedly limited military professionalism among those officers. It is not at all unlikely that the lagging pace of naval as compared with army military professional development was a major factor impeding communications and cooperation between the services.

The essays that move on into the interwar years and through World War II confirm what has become almost a commonplace of the history of civil-military relations, that the influence of armed forces upon national policy and the relative independence of military organizations from civilian control reached their apogee in the early years of the First World War and thereafter declined. In a narrow view of the effectiveness of military organizations in influencing politicians to meet military ends, this decline meant a loss of effectiveness; in the broader perspective of the principle of civilian control of the military, it was of course a gain. In no major power except Japan did the armed forces possess in World War II the autonomy and the ability to influence policy that they enjoyed to a considerable extent during World War I in all the great powers, including the English-speaking democracies. Earl P. Ziemke's and John E. Jessup's papers on the Soviet Union before and during World War II present something of an extreme case of a military organization's loss of autonomy and influence, in the

increasing subservience of the Soviet armed forces to the Communist party and to party General Secretary, Premier -- and Generalissimo -- Josef Stalin. But the Soviet instance only carried to more radical -- and in the purges, more terrible -- conclusions the process of throttling military independence that occurred in all the powers except Japan.

The exception provides a critical clue to the causes of these developments. Because Japan's aims had been so limited in the First World War and the aims had therefore been largely attained, Japan was the only one of the powers that emerged from the First World War virtually without a backlash of political and public resentment toward the military for failing to fulfill promises. In all the other powers, the military had received a generous measure of both autonomy and political influence during the early stages of their participation in World War I on the at least implied promise that in return each military organization would reward its people and government with victories over foreign foes comparable to those won by the autonomous Prussian army in 1866 and 1870-1871. In 1914-1918, however, the armed forces of all the European powers had repaid the granting of autonomy and influence not with victories but with a bloody stalemate. The consequent disillusionment led to a gradual reassertion of civil supremacy over the military in all the European powers except Germany well before the First World War ended, and the process continued after the war.

Even the United States in some measure fitted this paradigm. In 1917-1918, the American army could have had almost anything it asked for, and General John J. Pershing as commanding general of the American Expeditionary Forces exercised an independence from the control of the civilian Commander in Chief unparalleled in United States military history. But while the American participation in the war was too brief

to include a bloodbath on the European scale, and while geographic remoteness indeed gave the American participation more than a little resemblance to Japan's, nevertheless the American people made sacrifices and invested a fervor in the war that after November 11, 1918 came to seem disproportionate to any rewards that they earned. So the American military, while never sinking into the disfavor that some service historians have alleged, certainly lapsed far from the independence and prestige it enjoyed during the war. More than the difference in personalities between Presidents Woodrow Wilson and Franklin D. Roosevelt was involved when the World War II Commander in Chief proved vastly more active and assertive in his control of the armed forces than Wilson had been.

It is worthy of particular note, however, regarding the interwar years that the reaction in favor of much enhanced civilian control prompted by disillusionment among civilians with the course of the 1914-1918 war -- the decline consequently in the effectiveness of armed forces in securing civilian acceptance of their political goals -- produced no conspicuous falling off in the armed forces' potential tactical and operational effectiveness in qualitative terms. Thus, there was no major falling off of their potential strategic effectiveness, provided always that strategic goals were kept within rational distance of their grasp. There proved to be no necessary correlation between politically autonomous armed forces and militarily effective armed forces. If anything, a case could be made in the opposite direction, that in response to relative loss of political effectiveness during the interwar period, the armed forces, thus obliged to focus upon their military effectiveness within a political framework ordained for them, enhanced their qualitative effectiveness in tactics and operations.

The German military, for example, were among those most drastically deprived of their previous political effectiveness. If the Reichswehr of the Weimar Republic retained disproportionate political weight within the republic as something of a state within the state, it none the less had to tailor itself to the exceedingly severe restraints of the Treaty of Versailles upon its ability to gain through politics the resources it might have desired. After the Führer Adolf Hitler came to power, the German armed forces had to adjust to a more ubiquitous as well as more potent and vigorous political control than any remotely approached in the previous history of modern Germany. Yet the interwar German armed forces depicted by Manfred Messerschmidt look decidedly effective in their tactical and operational potential in contrast to the World War I German forces portrayed by Holger Herwig. The austerity of the Weimar years compelled the German military to prune away most of the organizational anomalies that had hampered them during the Great War. More efficiently organized within, the armed forces then were ready to capitalize on the generous resources awarded them by Hitler to develop the theory and practice of Blitzkrieg warfare, an advance in tactical and operational capacities enhanced rather than restricted by the loss of the military's political autonomy to Hitler, who was himself a champion of Blitzkrieg concepts.

In Britain, not dissimilarly, the efforts of civilian statesmen to recapture and retain ascendancy over the military stimulated an impressive advance in military organization early in the interwar years in the creation of the Chiefs of Staff Committee (COS), which placed Britain in the forefront among the major powers in achieving interservice coordination, but which was also an effective effort to adjust the activities of the professional leadership of the armed forces to more

active civilian control while retaining sufficient safeguards for the assertion of military views on policy and strategy to assure reasonable protection for the military's interests. In Britain also, where the Royal Air Force was the armed service subject to the most active civilian interest, it was eventually this very civilian influence on military policy that was critical in shifting the balance between Bomber Command and Fighter Command enough in the latter's favor to make possible its triumph in the Battle of Britain. Altogether, Brian Bond's and Williamson Murray's essays on Britain between the wars suggests that reduced British military influence on policy produced a healthier effect than otherwise upon strategic, operational, and tactical effectiveness.

In the United States, it was the navy that was the armed service receiving the most intimate civil supervision and control during the interwar years, because the navy with its Pacific Ocean orientation bore the closest relationship to civilian foreign-policy interests during those years. The limitations of the Washington Naval Treaty of February 6, 1922 and subsequent international naval agreements notwithstanding, however, Ronald H. Spector's paper indicates that the very energy and constancy of civilian interest in and shaping of the navy eventually assured that when the foreign policy interests it served in the Pacific were challenged, the navy was of all the American forces the one best prepared, in doctrine as well as material resources, for the trials of World War II. Civilian indifference left the army freer to develop its own choices in weapons design and force structure -- within severe budgetary limits, to be sure -- but the army with this larger autonomy succeeded rather less well than the closely watched navy in readying itself for World War II. For example, Spector's essay shows the navy more flexibly adjusting itself in doctrine and structure to the

aircraft carrier than the army did to the tank.

Of course, the post-World War I pattern of civilian restriction of armed forces' effectiveness in shaping policy could be carried to nearly disastrous excess -- as in the great purges of the officer corps of the Soviet Union in the late 1930s. Even in the Soviet Union, however, active civilian preponderance in shaping military policy and strategy also meant the preparation of the Red Army for an operational and tactical effectiveness in World War II far exceeding the effectiveness of its tsarist predecessor in World War I, not only through the modernization of the state and the economy that supported the armed forces, but also through the political regime's contributions, albeit uneven, toward pushing the army into the age of mechanized war.

Conversely, in Japan, the one major power during the interwar years in which, as Carl Boyd's contribution shows, the political autonomy of the armed forces persisted in the pattern of World War I and earlier, a satisfied and complacent army failed to wrench itself loose from early twentieth-century operational and tactical modes into those of mechanized war. The consequence was a thrashing of the politically autonomous Japanese Army by a politically weak but operationally and tactically effective Red Army in the clashes along the Mongolian border on the eve of World War II.

In the two nations whose armies most glaringly failed to maintain operational and tactical effectiveness during the interwar years, Italy and France, it was neither effectiveness in influencing state policy nor the lack of it that determined the deficiencies. In Italy, the more vigorous civilian control of military policy exercised by Mussolini as compared with the earlier regime was able to correct some of the long-standing operational and tactical shortcomings. Mussolini's encourage-

ment of the air force permitted Italy for a time in the 1920s and early 1930s to achieve a stature in military aviation considerably exceeding the country's resources. But in Italy, insufficient resources for genuine great-power status continued to impose an impenetrable barrier against military effectiveness of great-power standards, notwithstanding the progress attained over the Italy described by John Gooch in his World War I paper. The interwar Italian military weaknesses detailed by Brian R. Sullivan were in tactical and operational doctrine those of forces tied like Japan's army to World War I conceptions, most notably in excessive reliance upon the infantry. But in Italy those weaknesses were rooted ultimately in the inadequacy of the country's resources to equip more modern mechanized forces on a great-power scale.

The accumulating tactical and operational deficiencies described by Robert A. Doughty, in the French armed forces, which had performed remarkably well in 1914-1918, were also fundamentally those of inadequate resources, but in a different sense than with Italy. In France the absolute limitations imposed by the national economy were of course far less severe than in Italy. France possessed enough inherent strength to rank properly as one of the great powers according to the standards of the 1930s. Unfortunately for France, however, she was not permitted to be merely one among the great powers. The peace settlement of World War I required her to be the great power of continental Europe, the policing power that was to enforce the military and other restrictions of Versailles upon Germany, and the military ally to the relatively weak eastern European states, where French support was to assure their viability in spite of the overshadowing potential power of their German and Russian neighbors. It was for this exceptional role as the military arbiter of interwar Europe that the resources of France were much too

limited to permit the French military to face their responsibilities with confidence. The French Army of the interwar years bore responsibilities beyond any tactical, operational, or strategic effectiveness that it might realistically hope to achieve. The sequel was that the confidence of the French military inevitably waned, and with the waning of assurance that it could accomplish its potential missions, the French military withdrew into the siege mentality of defensive-mindedness that during the 1930s eroded its ability even to capitalize on such resources as it possessed. But the sources of France's crippling military predicaments did not lie in reduced military effectiveness in influencing civilian policy as compared with 1914. They were inherent in the international responsibilities of the Third Republic. Permeating Doughty's account of the French Army is the debilitating effect of overlarge burdens upon a force that began the interwar years reasonably effective but gradually crumpled under weights too heavy to bear.

The shift from autonomous military organizations highly effective in securing acceptance of their policy and material desires from the rest of the state -- or in imposing their desires -- to armed forces decidedly subordinate to the political leadership occurred belatedly but most dramatically in Germany. Manfred Messerschmidt's and Jürgen E. Förster's essays on the German military between the world wars and during World War II, respectively, delineate the course of the shift in power to Adolf Hitler as master of the Third Reich in almost every dimension, including the now chastened and subordinated armed forces. In Germany, decline in military autonomy was postponed until well after it occurred in the other European powers, in spite of the external limitations on German military effectiveness imposed by the Treaty of Versailles it was postponed in fact deep into the interwar years, until 1933 and after.

The delay occurred partly because of the deeply rooted German and especially Prussian tradition of respect for the military, partly because during the First World War the German military had seized so complete a grip upon the other institutions of the state that the habit of deference to the military became yet more firmly established than before, partly because the exposure of defeated Germany to the Communist threat in the aftermath of 1918 placed the bourgeois Weimar Republic in uneasy dependence upon the military.

Nevertheless, in Germany as in all other European great powers, the military during World War I had failed to fulfill their implied promise of victories on the 1866 and 1870-1871 models in return for their privileged position within the state. The post-1918 claim of the army that it had not been defeated -- the stab-in-the-back legend -- could not altogether gloss over the reality that whether or not the German Army had been truly beaten, it had certainly not won the war. The First World War left an inheritance of disillusionment with military autonomy and privilege even in Germany. The disillusionment laid the foundation for Hitler's humbling of the German armed forces.

If the humbling of the German military was the most dramatic turnabout in the status of any of the major armed forces after World War I, however, and the subordination of the Soviet armed forces to the political apparatus of the dominant party in the state was the most complete subjugation of the military to politics, these German and Soviet instances also underline the decided limitations displayed by the reassertion of civilian control of the military after about the mid-point of World War I. Those limitations provide by no means the only explanation why the loss of political effectiveness by armed forces in the interwar years did not lead to commensurate losses in strategic,

operational, and tactical effectiveness, but they represent an important factor in the equation. The limitations in question have to do with the penetration of civilian control by militarized values and conceptions.

While Hitler and Stalin were not professional soldiers, civilian control in their hands was controlled by civilians whose judgments of the world displayed a decidedly military cast. Hitler and Stalin alike perceived the world as an arena of almost perpetual military conflict until the perhaps distant day of the triumph of whichever ideology each preferred. Until that day, the state must strain its resources to prepare for war and must frequently engage in war. Hitler's perceptions were so militarized that he gave the military a larger share of Germany's resources than they desired, or at least he diverted resources to the Wehrmacht more rapidly than the officers thought they could assimilate them during the middle and late 1930s. Stalin's whole direction of the Soviet state, particularly the Five-Year Plans, was similarly governed by his unwavering focus on war as the destiny of the state.

Thus, civilian control as it displaced military autonomy from the middle years of the First World War onward did not by any means necessarily imply a loss in the ability of armed forces to secure allocations of resources to military purposes. If anything, in Hitler's Germany and Stalin's Russia, the lenses through which the leader of the state perceived their relations with the world at large were more militarized, more designed to emphasize military force as the necessary arbiter of international conflict, than before. Alfred Vagts recognized long ago the phenomenon of civilian militarism.³ In the sense that civilian control of the military has come to mean control by civilians whose world views are strongly conditioned by a belief in the inevitability of war, his discussion of civilian militarism has proven to

be altogether on target.

Of course, the principal democratic leaders of World War II regarded the world in less warlike terms than did Hitler and Stalin; but with Prime Minister Winston S. Churchill and President Franklin D. Roosevelt, the difference was in degree rather than in kind. Both of these democratic statesmen came to envisage the world as shaped largely by war, Churchill with relish for the echoes of drums and trumpets, Roosevelt more reluctantly. Both became as generous as most military professionals could have hoped for in giving over national resources and energies to military purposes. Even in the Western democracies, the militarization of national policies begun by the statesmen of World War II has remained a continuing phenomenon.

The World Wars have accustomed political leaders to a resort to arms as a habitual instrument of policy. The invocation of military force has tended to become a prompt, almost automatic response to otherwise recalcitrant international problems. In the United States, the departure from past national policies has been drastic. Civilian control of the military was zealously reaffirmed by President Roosevelt during World War II and remains remarkably secure, but national policy since 1945 has nevertheless been conspicuous for resorting to military means in dealing with international irritations with a rapidity and willingness that Americans of pre-1939 generations would have thought inconceivable. We live in an era of reinvigorated civilian control of the armed forces in all of the major powers, but also in an era of militarized civilian leadership.

As for the effectiveness of armed forces, the World War II papers in our collection demonstrate that while reinvigorated civilian control did not in 1939-1945 do much injury to the professional soldiers' desires

regarding national policies or the allocation of national resources, the reinvigorated civilian control did sometimes bring a reduction of the effectiveness of armed forces in the realms of strategy, operations, and tactics. The farther that reinvigorated civilian control reached into the domains of professional expertise, the more it was likely to damage the effectiveness of military organizations.

Once more, Stalin's Soviet Union and Hitler's Germany can be used as the extreme instances; but once more they are not altogether atypical, because they represent only the extreme manifestations of tendencies that were strong in all the great powers.

Professor Ziemke details how the paranoiac concern of Stalin for the Stalinist purity and Communist party loyalty of the Red Army increasingly attenuated the Soviet military establishment's contacts with and knowledge of foreign military developments. The study of war and of military organization must be an international study; as instruments of the international policies of the states they serve, armed forces must be as closely aware as possible of developments in the foreign military establishments with which they are always in implicit rivalry, lest they lose ground in the rivalry without so much as the firing of a shot by failing to keep step with technological and organizational progress. While Stalin, as Professor Ziemke shows, avoided the worst excesses of the notion that there can be a peculiarly Communist art of war freed from the traditions of bourgeois warmaking, nevertheless his distrust of foreign contacts on the part of the military allowed the Red Army to cultivate misguided operational theories that were to injure it badly in the test of 1941. Freer access to foreign information and a more complete break from the delusion of Communist military uniqueness might have helped Russia escape defeat in 1941. A case in point was the belief

that the Civil War of 1919-1920 demonstrated the efficacy of horse cavalry for the Red Army, a folly that not only led to a misallocation of resources but gave disproportionate representation to cavalrymen in the Soviet high command. The consequent conservatism of Soviet military leaders was among the reasons why the Red Army misread the lessons of the Spanish Civil War of 1936-1939 in such a way that it disbanded its mechanized corps in 1939.

John E. Jessup's paper, like most studies of Stalin as a military commander, shows the Soviet generalissimo developing into a competent military chieftain as he met the challenges of war in 1941-1945. Hitler's imposition of his own control over strategy, operations, and tactics was thus considerably more damaging to the effectiveness of his armed forces than Stalin's, as Professor Förster's essay confirms -- all the more because Hitler's control reached further down into the realms where specialized professional expertise becomes increasingly important, even into the tactical conduct of battle. In the phases of the Second World War during which Germany fought on the offensive, Hitler's tactical direction ran too much toward the belief that the Blitzkrieg tactics of Panzer breakthrough, deep motorized envelopment, and strong aerial support represented all that needed to be known about the waging of war. On the defensive, Hitler's tactical direction resulted in a ruinously inflexible insistence on yielding no ground whatever.

While Hitler's all-encompassing version of civil control of the military ended by harming German military effectiveness much more than it helped, it is important nevertheless to underline several of Professor Förster's comments on the acuity or lack of it among the German professional soldiers of World War II. They tended to share, he notes, Hitler's infatuation with the Blitzkrieg after the spring of 1940 as the

sum of the art of war. Hitler in fact seems to have become more realistic at an earlier stage of the Russian campaign of 1941 than some of his generals about whether Blitzkrieg tactics could be expected to carry the Wehrmacht into Moscow if only they persisted. And most important, as Professor Förster observes in his conclusion, while the German professional military leadership of World War II generally maintained a high level of operational and tactical competence, its strategic competence had declined abysmally. (Or, as Professor Herwig's paper suggests, the decline may already have been abysmal by World War I.) The strategic failures of Germany in World War II were shared not unequally by Hitler and the military professionals.

Nevertheless, a few additional words about operational and tactical effectiveness during World War II are in order, not only concerning the German armed forces but in a more general vein. In the reasonably large area where in spite of the growth of civilian control the operational and tactical direction of World War II armed forces remained with the military professionals -- and this area did remain reasonably large even in Germany and the Soviet Union -- it follows from our observations about the interwar armed forces in regard to operational and tactical effectiveness that the performance of most of the major military powers proved on the whole to be impressive.

The German, Russian, British, and American armed forces of World War II, all more narrowly curbed by civilian leadership than their World War I predecessors, all nevertheless performed with a professional efficiency in operations and tactics surpassing their World War I forebears. This advance was most decidedly marked among the Americans; Allan R. Millett's paper suggests an American leap forward in operational and tactical effectiveness under the stimulus of leading the Allied

coalition in global war that is not entirely accounted for in the background developed by Professors Nenninger's and Spector's papers. Perhaps the American armed forces held latent strengths still concealed to even the most astute observer before December 7, 1941. The gain in operational and tactical effectiveness during the Second World War as compared with the First was probably least marked among the British. Williamson Murray's paper contains numerous reminders of the severity of the strains imposed on Britain in 1939-1945 by her effort to grasp approximate military parity with the emerging superpowers, and the strains penetrated downward into operations and tactics. Nevertheless, though in varying degrees, the operational and tactical effectiveness of the Germans, Russians, British, and Americans in World War II appears clearly to have exceeded that of the earlier war.

Advances in such effectiveness were assisted, of course, by superior economic and logistical organization of the states that supported the armed forces, and especially by superior means of transport to assure the flow of logistical support to the fronts. They were assisted also by the ways in which the application of the internal combustion engine to improved tanks, gun carriages, and aircraft partially broke the tactical deadlock inherent in World War I technology. But beyond such matters, the papers on the World War II armed forces of Germany and the three major Allied powers all portray a clarity of operational and tactical doctrine, an efficiency in the execution of doctrine, and an overall competence in professional leadership on the operational and tactical levels excelling the standards of World War I. All the papers at least partially imply that this performance derived in some measure from the very decline of the political autonomy of the military, which compelled armed forces to turn

professionally inward upon their officers' areas of truest expertise. The appropriate verb to describe the relevant papers' accounts of these phenomena is, however, "imply." The correlation between a narrower political effectiveness of armed forces and a larger operational and tactical effectiveness is more hinted at than developed. Military historians should explore the issues further.

In the powers not mentioned in the preceding paragraph, the Italian and French armed forces were held back during World War II as in the interwar years from attaining the operational and tactical effectiveness of their contemporaries by their countries' relative lack of the resources needed to meet the responsibilities they assumed, as well as by the consequent psychological malaise. In Japan, it is significant that in World War II as in the interwar years, military autonomy within the politics of the state, and the resulting ability of the military to satisfy amply its demands upon the resources of the state, failed to produce a commensurate operational and tactical effectiveness. Instead, it nourished among the Japanese military a complacency ultimately antithetical to effectiveness in war.

In the Western democracies, although both the American President and the British Prime Minister exercised far more vigorous personal direction of the armed forces in World War II than had their counterparts in World War I, this civilian activism did not reach so deeply downward from the strategic into the operational and tactical realms as in Germany and the Soviet Union. Here there were differences at least of degree between Roosevelt and Churchill, the latter tending to exceed the former in emulating Hitler's penchant for having a finger in every military pie. Especially during the North African campaigns, Churchill tended to badger his commanders endlessly about issues that were decidedly most

appropriate for resolution by the professional military men on the scene, such as whether to hold Tobruk if it were cut off from relief by land during the Germans' 1942 offensive as it had been retained in 1941. It took military men of strong character to bear up under Churchill's bullying on such matters. Nevertheless, Churchill's sporadic displays of his urge to be a field commander notwithstanding, the overall picture in the West was one of decidedly energetic civilian control, but of a civilian control that mainly left to the professionals the properly professional direction of operations and tactics. Civilian control in the West meant primarily a strong civilian hand directing policy, including those policy matters that involved the military, along with a large civilian share in the making of military strategy, the level of military decisionmaking in which military and civilian concerns most inextricably intertwine in any event.

Appraising the impact of activist civilian control of strategy upon military effectiveness in the Western democracies during World War II has to be a more subjective business than most of the appraisals with which this symposium deals. After all, the United States and Great Britain achieved military victory and did so at a price at least less disproportionate to the rewards than that which Great Britain and France had paid in World War I. Trying to judge whether the victory could have been achieved in a yet more cost-effective manner places the analyst on the slippery slope of counterfactual history, weighing might-have-beens, which is usually a situation to be avoided. Nevertheless, a few observations ought to be risked.

Among the most conspicuous aspects of Winston Churchill's direction of British strategy was his hearty sponsorship of the Royal Air Force's campaign of "strategic" bombing of Germany, including the particular form

taken by that campaign, the area bombing of German cities, leading to the indiscriminate destruction of every kind of life and property within them. More particularly still, Churchill's sponsorship extended to the series of fire-bombing raids from Hamburg on July 27-28, 1943 (in which some 42,000 Germans are estimated to have died) to Dresden on February 13-14, 1945 (killing at least 30,000).⁴ These incendiary raids were intended to turn whole cities into vast crematoria. After Dresden, Churchill at length expressed misgivings, but only when this wholesale slaughter threatened to raise a political furor at a time when the war was already clearly won. There is no doubt that if the Prime Minister had felt qualms about the wisdom or morality of indiscriminate area bombing earlier, the RAF bomber offensive need not have been so important an element in British strategy as it was.

It is understandable, though not necessarily justifiable either strategically or morally, that Churchill should have encouraged the bomber offensive during the months when it was the only means of striking back against the Germans. But Churchill retained the bomber offensive as a centerpiece of British strategy long after Britain in company with her American ally could launch other kinds of offensives. The bomber offensive may well have required the support of as much as one-third of Britain's war effort. Some 55,573 aircrew were killed in conducting the offensive, and another 9,784 were shot down and captured.⁵ These casualties were almost entirely highly-trained commissioned officers and noncommissioned officers. There is scarcely any reason to believe that the bomber offensive was strategically effective in the sense of producing any payoff at all proportionate to the cost. The one conspicuous success of Allied strategic bombing against Germany was in practically destroying the German petroleum and chemical industries late

in the war, but to this success the RAF made a minimal contribution. It was mainly the outcome of the United States Army Air Forces' daylight effort to achieve precision bombing. Admitting how difficult it would have been for Churchill to override the determination of RAF Bomber Command to prove the efficacy of strategic bombing as the means for independent air power to win wars, nevertheless Churchill's prolonged support for the bomber offensive makes it fair to judge it a major failure in the Prime Minister's strategic direction of the war.

Just as without Churchill's leadership there would have been no British bomber offensive of the magnitude that came to exist, so also without Churchill's and Roosevelt's combined direction of Anglo-American strategy there almost certainly would have been an earlier Anglo-American invasion of France. The wisdom of trying to establish British and American armies in northern France earlier than the spring of 1944 is a question demanding even more subjective judgments than those occasioned by strategic bombing. Nevertheless, a strong case can be made -- and was made at the time by American soldiers such as General George C. Marshall, the Army Chief of Staff, and by American civilians such as Henry L. Stimson, the Secretary of War -- that a cross-Channel invasion a year earlier than the actual OVERLORD invasion could have brought substantial dividends both military and political. Fighting earlier in northwest Europe rather than in the Mediterranean area would have permitted the earlier deployment of American divisions already largely formed and trained in 1942. It would have placed the Allies earlier in terrain where, unlike mountainous Italy, they could invoke their strong suit of superior mobility. Politically, an earlier second front could at one and the same time both have diminished Soviet suspicions of the West and placed the Western powers in a stronger bargaining position vis-à-vis the

Soviets in the postwar world.

The strategic decisions that delayed the second front until June 6, 1944, were primarily those of Churchill and Roosevelt, and most critically of Roosevelt. Churchill along with most leaders of the British war effort, including the military professionals of the Chiefs of Staff Committee, consistently preferred peripheral and especially Mediterranean operations against the Germans, to precede a cross-Channel assault that would occur only after the Nazi empire had already been substantially weakened. Against the preference of many American leaders for an earlier cross-Channel invasion, however, Churchill and the British could not have prevailed without having Roosevelt for a long time on their side. Particularly in the decision for TORCH, the invasion of French North Africa on November 6, 1942, a decision that virtually assured the postponement of the cross-Channel invasion until 1944, it was Roosevelt's inclination to agree with Churchill that cast the die. While the President gave lip-service to a cross-Channel invasion through much of 1942, his leaning toward North Africa instead is evident in a re-reading of the whole record of his remarks on the subject from the first discussions of what became TORCH under a different codename, GYMNAST, during the Anglo-American ARCADIA Conference of December 22, 1941 - January 14, 1942. If Roosevelt had not embraced it, there would have been no North African invasion, with all its implications for the timing of the cross-Channel invasion. Thus the controversial Anglo-American strategy of the war against Germany was mainly a strategy determined not by the armed forces but by civilian leaders.

When we survey the total shape of the war, however, the reassertion of civilian leadership in World War II did not bring about a war much different from World War I. In large part, this result occurred because

the civilian leaders of World War II both in the Western democracies and among the dictators had derived from the experiences of the First World War and of the interwar years with their frustrated hopes for enduring peace a militarized perception of the world. The civilian leaders might disagree with the military professionals about strategic, operational, and tactical details. But on policy matters they were essentially as one. In the West, Churchill consistently and Roosevelt by the end of the 1930s believed as firmly as any military man in the centrality of military strength if a nation were to survive in an insecure world. Churchill and Roosevelt like the civilian leaders of all the major powers in the Second World War were generous in their willingness to allocate national resources to military policy. Both regarded military force and war, for the time being at least, as the foundations of their nations' roles in the world.

More importantly, the militarized perceptions held by civilian leaders ensured the most fundamental similarity between the Second and First World Wars, that in the second like the first, all the major belligerents would pursue military victories as complete and clear-cut as could be imagined, and that in consequence the belligerents would persevere in the struggle until one of the rival coalitions dropped out from exhaustion. The much-debated unconditional surrender policy of the anti-Axis United Nations coalition was not so different from the war aims entertained by all the principal belligerents in both this and the earlier world war, including the members of the United Nations coalition even before President Roosevelt publicly announced the policy at the Casablanca Conference on January 23, 1943. Particularly after the accession of Winston Churchill as Prime Minister on May 10, 1940, the British government had already transformed the war from one begun for the

defense of Poland into a struggle for the absolute extirpation of the Nazi regime in Germany. In the Far East, Japan in World War II had largely dropped the restraints that distinguished its policy in World War I. While the Japanese leaders recognized that they could not conquer the United States and would eventually have to negotiate peace with the Americans, they sought a complete enough military victory that Washington would have to abandon all pretensions toward exercising power in Asia and the western Pacific. A military victory of such magnitude was almost certainly beyond the capacity of Japan in the 1940s.

Thus, in the Second World War as in the First -- even more in the second than in the first -- the war aims of all the major powers were so ambitious that the reach of each threatened to exceed his grasp. Once more, just as in World War I the British aim of humbling Germany locked Great Britain into the Western Front strategy so that the operational and tactical imperatives of the Western Front thereafter dominated strategy and policy, so now again the powers had to tailor policy and strategy to fit the cloth that could be cut by those operations and tactics for which their initial war aims offered no alternative. Instead of war's remaining an instrument of policy, operational and tactical feasibility henceforth dictated policy. Instead of war's remaining an extension of policy, war developed its own momentum to which policy had to be subordinated.

Critics of American policy and strategy in the Second World War have often alleged that the United States excessively subordinated long-range national purposes to the short-run expediencies of military strategy. In truth, however, the United States of all the major powers least succumbed to this reversal of appropriate priorities, because the United States was the only power possessing enough of military, economic,

and financial strength that its objectives on the battlefronts were not utterly disproportionate to its means. Thus, for example, in the midst of war the United States could afford to busy itself with attempting through economic and diplomatic pressures to ensure the kind of postwar world economic order it desired -- as wide as possible an arena for free trade and American investments, and secure American access to such coveted raw materials as petroleum and uranium. In the midst of war the United States could afford even to bully its British ally, to create a postwar economic order in which the dollar would displace the pound sterling as the principal medium of international exchange, and in which imperial preference would no longer hamper American commerce. No other power could afford to pay so much attention in wartime to postwar goals.

Instead, except for the United States, every other power including the Soviet Union was until almost the end so fearful of failing to attain its immediate military purposes that operational and tactical considerations constricted strategy and overshadowed all policy objectives except those implied by the quest for absolute defeat of the enemy into which the inordinate ambitiousness of twentieth-century war had locked everyone.

Collectively, these papers portray the sacrifice of the major share of the tactical, operational, strategic, and policymaking effectiveness of the armed forces of the twentieth-century great powers on the altar of inordinate ambition. Whenever any of the principal armed forces was able for a time to establish effectiveness in the four realms of tactics, operations, strategy, and policy simultaneously, it was because for the moment at least that armed force was not required to seek the unattainable. The key to making armed forces effective is to tailor their responsibilities and goals to the limits of tactical, operational, strategic, and policymaking practicability.

Notes

1. The familiar aphorism here referred to is, of course, that of Carl von Clausewitz, On War, ed. and tr. by Michael Howard and Peter Paret (Introductory Essays by Peter Paret, Michael Howard, and Bernard Brodie, with a Commentary by Bernard Brodie; Princeton, New Jersey: Princeton University Press, 1976), Book One, Chapter One, Section 24, p. 87: "WAR IS MERELY THE CONTINUATION OF POLICY BY OTHER MEANS."
2. Samuel P. Huntington, The Soldier and the State: The Theory and Politics of Civil-Military Relations (Cambridge, Massachusetts: The Belknap Press of Harvard University Press, 1957), especially pp. 99-109.
3. Alfred Vagts, A History of Militarism, Civilian and Military (Greenwich Editions, New York: Meridian Books, Inc. 1959), and especially Chapter 13, "The Militarism of the Civilians," pp. 451-83.
4. Max Hastings, Bomber Command (New York: The Dial Press/James Wade, 1979), pp. 208, 340.
5. *Ibid.*, pp. 349, 11.