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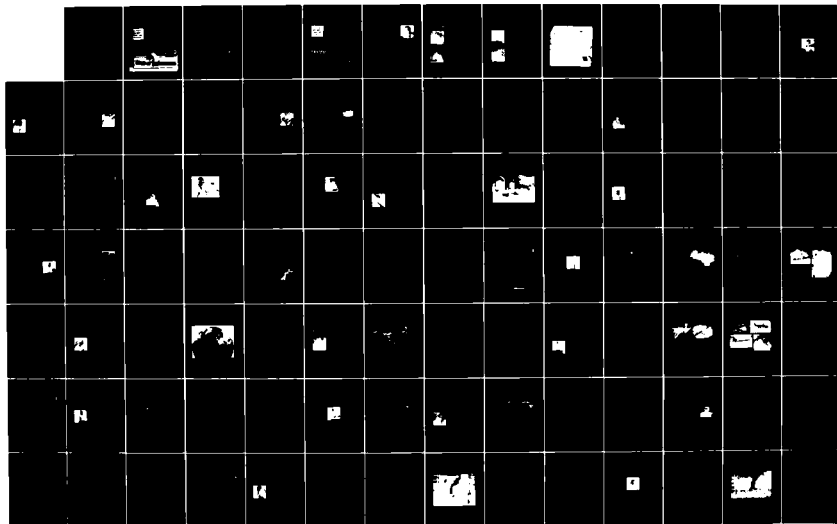
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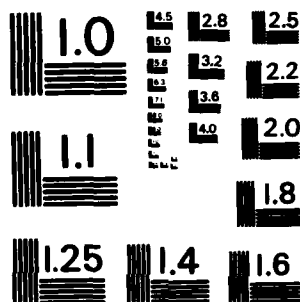
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Worldwide Deployment of Tactical Forces and the C³I Connection

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER ESD-TR-83-130	2. GOVT ACCESSION NO. 454127 335	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) NATIONAL SECURITY ISSUES SYMPOSIUM, 1982		5. TYPE OF REPORT & PERIOD COVERED
7. AUTHOR(s)		6. PERFORMING ORG. REPORT NUMBER MITRE Document M82-64
9. PERFORMING ORGANIZATION NAME AND ADDRESS The MITRE Corporation Burlington Road, Bedford, MA 01730		8. CONTRACT OR GRANT NUMBER(s) F19628-82-C-0001
11. CONTROLLING OFFICE NAME AND ADDRESS Electronic Systems Division, AFSC, Hanscom Air Force Base, MA 01731		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE OCTOBER 1982
		13. NUMBER OF PAGES 102
		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) DTIC SELECTE APR 26 1983 D H		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) ASD AND FORCE PROJECTION IN THE 1990s C ³ I FOR THE FALKLANDS C ³ I AND THE RAPID DEPLOYMENT FORCE COALITION DEFENSE VERSUS MARITIME STRATEGIES EUROPEAN PERSPECTIVE ON THE NATO ALLIANCE (over)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The National Security Issues Symposium 1982, held October 4-5, was cosponsored by the Electronic Systems Division, USAF, Hanscom Air Force Base, Massachusetts, and The MITRE Corporation, Bedford, Massachusetts. The symposium focused on Worldwide Deployment of Tactical Forces and the C ³ I Connection. The diverse and yet complementary views of the tactical C ³ I problem are presented in this summary.		

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19. (Concluded)

EUROPEAN VIEW OF COALITION DEFENSE

MANAGING C³I

NORTH ATLANTIC TREATY ORGANIZATION

PACIFIC COMMAND PERSPECTIVES

POLITICAL/MILITARY CONTEXT FOR U. S. ROLE IN THE PACIFIC

PROJECTING U. S. POWER INTO SOUTHWEST ASIA

ROLE AND LIMITS OF MILITARY POWER PROJECTION

SATISFYING C³I REQUIREMENTS FOR DEPLOYED AIR FORCES

SOVIET PERSPECTIVE ON GLOBAL POWER PROJECTION

TACTICAL AIR FORCES IN EUROPE

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**NATIONAL
SECURITY
ISSUES 1982
SYMPOSIUM**

**Developing the Potential of Technical Forces
and the Role of the Government**

October 4-5, 1982

**San Francisco, CA
Hilton Hotel
14th Floor, Room 1401**

**Co-Chairs:
Dr. Robert A. Serfaty
Dr. Robert A. Serfaty**

**Speakers:
Dr. Robert A. Serfaty
Dr. Robert A. Serfaty
Dr. Robert A. Serfaty**

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Foreword



The National Security Symposium focused this year on Worldwide Deployment of Tactical Forces and the C'I Connection. Of course, the pervasive nature of C'I quickly pulled us into other areas, but we nevertheless received from our speakers some very refined and informative views.

Robert Komer, former Under Secretary of Defense for Policy, underscored the importance of a coalition defense strategy, and decried any tendency to treat our allies as poor relatives. On the same subject, we also heard from Rear Admiral Bjorn Brülund of Norway about the growing internal pressures on Western European governments to achieve arms and force reductions. But, as Lord Zuckerman of Great Britain pointed out, these and other pressures on the NATO Alliance, which have lately become so visible, have actually been at work for some time.

The recent Falkland Islands conflict posed very interesting tactical C'I problems. We were very fortunate to hear of them from Jonathan Alford, Deputy Director of the Institute for Strategic Studies in London.

What changes in Soviet power projection policies can we expect from the new Soviet leadership? William Hyland of the Carnegie Endowment for Peace told us to expect two stages in the Brezhnev-to-Andropov transition, and he warned that this period will hold some danger for us.

General Robert Kingston, commander of the Rapid Deployment Joint Task Force, is responsible, among other things, for maintaining access to vital Persian Gulf oil. The designation of the RDJTF as a unified command beginning in January 1983 is yet another indication of how important this force is perceived to be by our country's leaders. Jeffrey Record, in strong contrast to this view, advocated replacing the RDJTF altogether with another, more agile kind of intervention force.

I am sure you will be as impressed as I am by the diverse and yet complementary views of the tactical C'I problem presented in this summary.

James W. Stansberry

Lt. Gen. James W. Stansberry
Commander, Electronic Systems Division

Session Chairmen



Session 1: Alternatives in Force Projection

Chairman: Dr. Paul M. Doty

Director, Center for Science and International Affairs, and Mallinckrodt Professor of Biochemistry, Harvard University

Dr. Doty holds positions on numerous boards and committees, including: Senior Fellow, Aspen Consortium for Arms Control and International Security; and Chairman, Editorial Board of *International Security*.



Session 2: Theater Perspectives

Chairman: Lt. Gen. Thomas H. McMullen, USAF

Commander, Aeronautical Systems Division, Air Force Systems Command

General McMullen assumed his present duties in August 1982. Recent experience since 1976 includes Vice Commander, Tactical Air Command; Deputy Chief of Staff for Systems, Air Force Systems Command; and Deputy Chief of Staff for Requirements, Tactical Air Command.



Session 3: C³I and Tactical Force Deployment

Chairman: Lt. Gen. John L. Piotrowski, USAF

Commander, 9th Air Force

General Piotrowski assumed his present duties in October 1982. Recent experience since 1976 includes Vice Commander, Tactical Air Command; Deputy Chief of Staff, Operations, Tactical Air Command; Commander for Air Defense, Tactical Air Command, and Commander of the reactivated 552nd Airborne Warning and Control Wing.



Session 4: Policy Issues for the Future

Chairman: Dr. Jack P. Ruina

Senior Consultant for Office of Science and Technology Policy, and Professor of Electrical Engineering, MIT

During two leaves of absence from academic life, Dr. Ruina served first as Director of the Advanced Research Projects Agency in the Department of Defense and later as President of the Institute for Defense Analyses. He has served on many other advisory committees for departments of government.

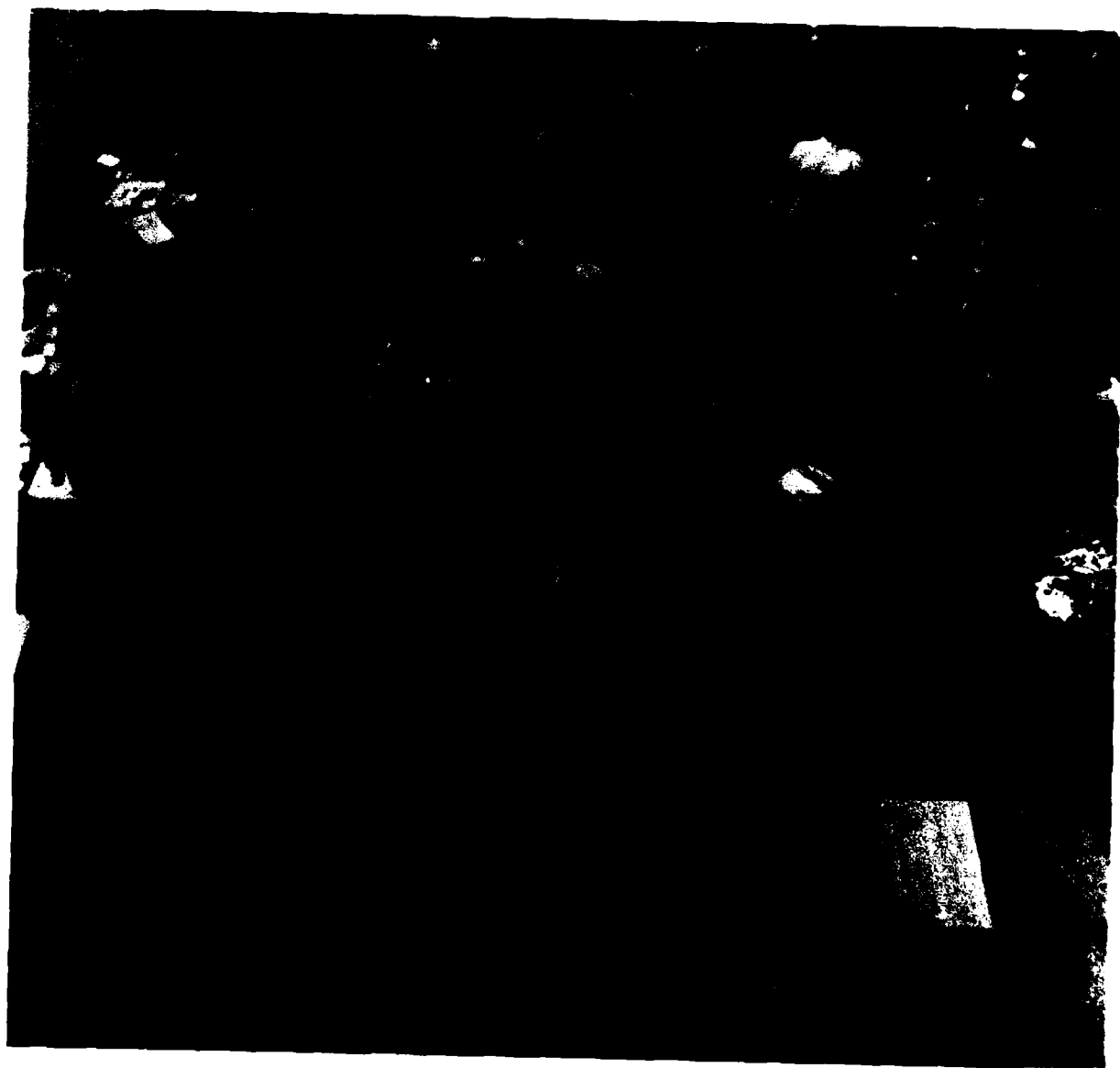


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Opening Remarks and Guest Speakers

Opening Remarks

Lt. General James W. Stansberry, USAF

COMMANDER, ELECTRONIC SYSTEMS DIVISION,
AIR FORCE SYSTEMS COMMAND

Last year, the strategic C'I symposium was held within a few days of the president's national security defense pronouncement stressing the B-1, the MX, the Trident D-5 missile, and, interestingly enough, strategic C'I. In response to that pronouncement, we changed the organization of ESD very significantly, going from a product-oriented to a mission-oriented division.

Several new strategic C'I programs are in progress: the WWMCCS Information System (WIS) upgrade, radar improvements at Thule, the new Space Defense Operations Center, GWEN (Ground Wave Emergency Network), a SAC system to give CINCSAC a positive control launch for the bombers, and many others.

Strategic C'I systems are peace-keeping systems. GWEN, for instance, is a low frequency network



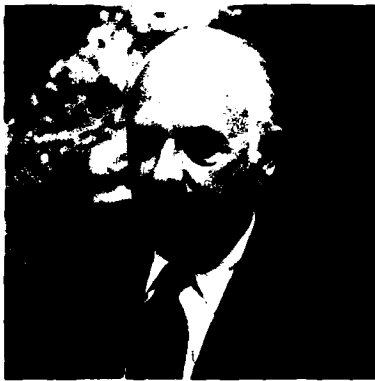
General Stansberry assumed his present duties in February 1981. Recent experience since 1974 includes Deputy Chief of Staff for contracting and manufacturing for Air Force Systems Command, and deputy to Deputy Assistant Secretary of Defense (Procurement), Office of the Assistant Secretary of Defense (Installations and Logistics).

that allows communication even in a "disturbed" environment; in other words, during a nuclear attack. It removes an option enemy planners might consider and, in that way, contributes to peace. Tactical C'I systems function in much the same way, and in addition have a very practical warmaking capability. If we must fight, we must be able to command, control, and communicate with our forces.

Yet with the exception of AWACS, tactical C'I programs tend to be fragmented into too many program elements, making it difficult to grasp the whole picture. We must dedicate more attention, emphasis, and dollars to this area where rapid changes can significantly affect our theater forces. This symposium, concentrating as it does on tactical C'I, will help us to identify our needs, particularly in theaters where even the simplest communications might be a problem.

Robert R. Everett
PRESIDENT,
THE MITRE CORPORATION

Recently, attention has focused on what is called enduring strategic C³I, or C³I that must survive an enemy attack and then contribute to warfighting. But these characteristics are also the essence of tactical operations. Tactical C³I must function before and during the battle,



Mr. Everett has been President of The MITRE Corporation since 1969. Prior to assuming this position, he was Technical Director and later Vice President of Technical Operations at MITRE. He serves on numerous boards, committees, and advisory groups in the areas of science and defense.

surviving attempts by the enemy to destroy, damage, or interfere with it.

Furthermore, the chances of a nuclear war are very small; we hope they are essentially zero. That does not mean strategic C³I is unimportant; it is very important, but its use is unlikely. Tactical wars, on the other hand, are happening all the time. So it is tactical C³I that will probably be put to the test in actual battle.

Tactical C³I presents difficult organizational and managerial problems. Since most tactical operations are multiservice or even multinational in nature, they involve problems of common equipment, common language, and common doctrine, as well as interface and interoperability problems. Perhaps our most pressing need today is for very large-scale multi-organizational information systems.

Despite these difficulties, great progress has been made in recent

years to improve tactical C³I. Possibilities exist for rapid advances in information technology. Improved sensors, very small but powerful computers, communications, software, local area networks, distributed processing, and more, offer great promise for more flexible, adaptable, and survivable tactical C³I. Smart systems, too, are becoming smarter and will profoundly affect tactical C³I, although we do not yet know exactly how.

This symposium will not only provide us an opportunity to voice our concerns and hopes, but will perhaps also help bring to tactical C³I the attention it deserves.

Keynote Address

Vice Admiral Gordon R. Nagler, USN

DIRECTOR, COMMAND AND CONTROL,
OFFICE OF THE CHIEF OF NAVAL OPERATIONS

The Navy deploys surface, air, and subsurface forces worldwide, and must have instantaneous C³ with those forces. We feel that we have the best C³ in the world today for peacetime and crisis management, but we do not have the enduring C³ we would need in a war.

It is easy to design systems based on the experiences of the last war, but few have looked to what the requirements will be in the 1990s and beyond. One great need is for joint efforts in maritime operations. The costs of exploiting technology and the question of connectivity between the Navy and the Air Force at sea are two other matters that require coherent management.

I recognize the value of intrinsic service capabilities, but today one service cannot go it alone, nor can U.S. forces go it alone without our allies. We must prepare for frequent interaction of service forces.

Last year's strategic review was very effective. It resulted, among other things, in the acceleration of the military strategic and tactical satellite program (MILSTAR). We need to take a similar approach to tactical forces to start them moving in the right direction.

Clearly, the decisions we make for U.S. forces affect our allies worldwide. Our Navy, for example, operates daily with foreign navies from NATO, Japan, New Zealand, Australia, and so on; interoperability with them must be affordable.

The non-offensive use of space for communications, surveillance, navigation, and meteorology will greatly affect how we deploy our Army, Navy, and Air Force. Now is the time to ensure that our use of space supports our global, tactical objectives. About half of the military satellites in orbit today can be credited to the Navy. I emphasize, however, that the Navy does not want for itself a major competitive role in space. We are not interested in roles and mission debates; we do not seek to duplicate current efforts. We do seek to

capitalize on every on-going effort that can be applied to Navy requirements.

A recent Navy/Air Force memorandum of agreement proposes the



Admiral Nagler assumed his present duties in September 1980. Recent experience since 1974 includes Commander of Cruiser Destroyer Group Two, prior duty in the Office of the Chief of Naval Operations, and Commander of the Naval Telecommunications Command.

acceleration of joint efforts to enhance maritime operations, particularly defense of the sea lines of communication using Air Force capabilities. The memorandum states:

Anti-air warfare and counterair operations are the mission areas in which the Air Force capabilities can provide the most immediate gains to maritime operations. The Air Force will also improve its *antiship capability* in support of the antisurface ship warfare mission. The primary element will be a training program to include realistic joint training and exercise activity to ensure that the capabilities established are viable within the current operational framework.

Regarding interoperability, the Navy has had the Navy Tactical Data System (NTDS) for twenty years. Over a hundred ships and fourteen hundred aircraft are equipped with this system. Over the years, however, the threat has grown, and our acceptable reaction time has decreased from minutes to literally seconds. Now, almost every hostile platform can fire missiles at us in each warfare area — air, surface, and

subsurface. Each of these areas needs its own data net to manage the complexities of battle information in a jamming environment at sea; one common net will not do the job.

We realized this in the 1970s and developed an advanced JTIDS architecture called Distributed Time Division Multiple Access (DTDMA) for our multifunctional nets. In fact, we even changed how our groups fight at sea. Under the direction of the officer in tactical command, we now have warfare commanders in charge of their battle areas. The flexibility inherent in DTDMA will enable these commanders to concentrate on their battle areas through dedicated voice and data nets and through jam-resistant circuits necessary in a high-threat environment.

From a Navy viewpoint, our critical weakness is the lack of antijamming ability. We fully support the DTDMA approach to JTIDS. The Navy's DTDMA technology, in addition to satisfying the JCS Phase II requirements, is fully compatible

with and encompasses all the functions and capabilities of the Air Force Phase I TDMA system. Regardless of how one argues the JTIDS antijamming capability, we must first get it operational; we can then improve on it through planned product improvement. Here again we must maintain Army, Navy, and Air Force interoperability, which I am concerned may deteriorate. As of today, October 4, 1982, we still have not agreed to implement the common message standard, TADIL-J, which was jointly agreed on and developed over the past four years. Though TADIL-J will heavily affect the tactical data systems software, we need the full capability of this system which is designed to take us into the next century.

The cost of integrating JTIDS into the aircraft cockpit is far too high, but closer cooperation between joint program managers and aircraft sponsors should lower the integration costs.

I am also concerned about our approach to electronic warfare. The Navy has long grappled with electronic warfare on an individual

"black box" level, whereas I believe we must approach it on an area level, with each segment of the system operating to support the others. This is not only an intraservice problem, but also a joint problem. One solution is C³CM, or C³ countermeasures, which to me means the disruption of the enemy's C³ connectivity, including surveillance. No one service can develop C³CM single-handedly; it must be done on a joint level.

All of the services and others, such as Defense Communications Agency, are working on the mobile command center problem. But can

strategic mobile command centers play a role in the tactical arena? I think that command centers designed for strategic uses should serve tactical needs as well. And I am concerned that we might design an unaffordable command center.

We face growing costs daily in major programs; when one program has a cost overrun, others suffer from reprogramming. To improve this situation, we must emphasize research and development, exploit basic technology, critically review our products to find the cost drivers, and learn how to simplify production. Industry should do its own critical product review. To drive costs down, we must look hard at

development. We cannot continue to design systems for technology's sake.

C³ management has in recent years become fragmented. To solve a problem, we would simply form another joint C³ agency. I firmly believe that joint C³ should be managed by the Joint Chiefs of Staff. Meanwhile, the situation within each service is under study. We must streamline our C³ management direction and enforce joint policies. Fragmentation must not continue.

Luncheon Address

Dr. Herman Kahn
CHAIRMAN AND DIRECTOR,
THE HUDSON INSTITUTE

The topic of coalition defense will be addressed more thoroughly by other speakers, but I have a couple of comments.

Coalition warfare is very important, but most coalitions are ad hoc contracts, not marriages. When Americans enter into a treaty alliance, they think of constitutions that last forever. Europeans do not think that way. There is a fifth republic in France; there will be a sixth republic. Changing the government in France is like changing a dress, while there could never be a second U.S. republic. It just wouldn't be the same.

Let me make another point in this regard: Saudi Arabia would prefer an unofficial liaison to a formal security arrangement with the United States. This is a problem in many areas of the world where we might have to use the Rapid Deployment Force or coalition warfare. There could rarely be a marriage ahead of time. It is even difficult to make extensive preparations ahead of time. We could pre-position, but Saudi Arabia and most others prefer pre-positioning and training done by civilian contractors. They do not want uniformed Americans on their soil.

Consider the history of protectorates. Almost invariably the protecting power takes charge of the defense and foreign policy of the protected

party. If it is deemed worthwhile, it takes complete charge of the country later. The Saudis have read history and do not want to be a protectorate of the United States. Basically, the Muslim countries are hostile to us and to Europe. They lost the 1300-year war with Christianity, and found it unpleasant. Moreover, Saudi Arabia is a theocratic country with deeply religious principles.

What part do nuclear weapons play in some of the issues to be discussed in later sessions? There are four basic nuclear strategies. First, there is MAD: "mutually assured destruction." The idea of regulating someone else's behavior by threatening suicide every day of the week, every week of the year, is a little mad — to put it mildly.

Second, there is NUTS, or "nuclear utilization theories." The belief that a nuclear war could be conducted rationally for political aims is "nutty". In particular, maintaining adequate command and control during a war would be very difficult.

Third, "loutish" (or "lucking out") theories. One example of a "loutish" strategy is that held by the West German peace movement. The German peace groups believe

that the Soviets do not wish to occupy Western Europe. They feel that West Germany, and the other European countries with parliamentary traditions, would be much less



Since 1961, Dr. Kahn has directed the Hudson Institute's research programs in such varied fields as U.S. national security, arms control, and foreign policy; U.S. domestic policy; the economic and social development of nations; and international business issues. He is the author or co-author of many books, including *On Thermonuclear War*, *Thinking About the Unthinkable*, *The Emerging Japanese Superstate*, *The Next 200 Years*, and recently *The Coming Boom*.

digestible for the Soviets than Eastern Europe, which itself has not been digestible.

Their attitude can be summarized as "everybody red, everybody dead or everybody neutral." Being neutral, with the Soviet Union as a neighbor, can be very unpleasant, but these groups do not realize how unpleasant. In America we have the suburbia problem; we raise our children with almost no contact with hard reality. West Germany has the biggest problem of that sort. The Germans call their kids the "no hunger" generation. They literally do not understand that some people can do evil things without being extremely evil. A mugger in New York City is not evil — he's just bored, or making a living. Perfectly reasonable people may be muggers there. That is not understood by West German kids. In any event, I consider "everybody red, everybody dead or everybody neutral" a loutish strategy. And if it comes to a choice of everybody red or everybody dead, the Europeans vote everybody red. After all, many would say, even the Catholic church survives in Poland.

In Western Europe the basic approach to nuclear war is "preemptive or preventive accommodation" (or surrender). Every European country prefers surrender to nuclear war. But they really expect to accommodate, not surrender.

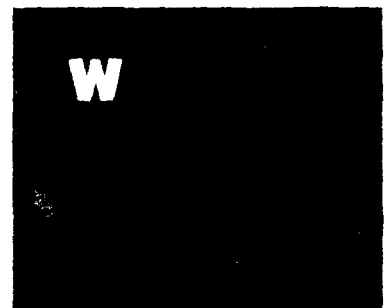
I mention these things because I believe in nuclear utilization, although I have yet to hear a persuasive

argument on how to apply nuclear utilization to the European picture. I predict a disaster unless we make a persuasive argument. I think we can.

The West German peace movement is different from all other western peace movements. It is the only one that is nationalistic. It claims, "We are the only people who speak for Germany — Schmidt and Kohl are running dogs for the Americans." West German troops are told they are not defending West German territory, but NATO territory. Is anyone really willing to die for NATO? NATO has no poetry, no drama, no heroes. This unwillingness of the center and the right to use patriotism, while giving it to the left as a gift, is a tragedy. On the other hand, the Dutch peace movement has cut itself off from the German movement because of its patriotism and nationalism. If you are Dutch, you are wary of nationalistic Germans.

The other peace movements are coalescing for a number of reasons, the most important of which is the congruence of attitudes among upper and middle class elites in all western countries, in particular what we call the Atlantic Protestant countries: Scandinavia, Holland, England, the U.S., Canada, Australia and New Zealand. The peace movements in these countries share views on ecology, resistance to industrialization,

and nuclear disarmament. They are not at all communist-dominated. They are not really anti-American. In the long run, they will be incredibly strong. But for the next decade or so, there may be a backlash against them if we can learn how to present our policies.



President Reagan has spoken about limited nuclear war in Europe. His basic remarks were perfectly reasonable, despite the criticism they provoked. But the controversy they caused should make it clear that no senior American officer should ever make an offhand comment in this field. We must train people in uniform, as well as civilians, to defend our position skillfully in public.

Finally, I want to talk about "gnostic" strategies. They are like gnostic religions, which require a special hidden knowledge that no one else has. An example would be "tit-for-tat" retaliation to limit a

U.S./Soviet nuclear war. The basic strategy is biblical: at least an eye for an eye (the law must be upheld); at most an eye for an eye (no escalation is allowed).

We seldom talk about the most important single tactic and strategy that we have: mobilization, which is also a gnostic strategy. The Reagan Administration has taken this concept and made it national policy. It calls for mobilization one, two, three or four years *before* a major attack on our cities. Some observers have presumed city attacks followed by mobilization, but it is difficult to assemble 40,000 contractors after ten major cities are destroyed!

If the Soviets invade the Persian Gulf and we resist and lose two or three divisions, I do not think we will go to nuclear war. We could not use tactical nuclear weapons; it is too dangerous, and might escalate.

What could we do? We might declare war. Destroying two or three American divisions is a fairly significant act. We then could mobilize. The prototype situation is the Korean War. In June 1950, Congress was arguing whether the defense budget should be \$14, 15, or 16 billion. The previous year it had been \$13 billion. Congress was talking about increasing the budget by 7, 14, or 21 percent. North Korea marched

on South Korea and Congress authorized \$60 billion. That is a quantum jump. It actually had little to do with the Korean War. The authorization was for preparing for the defense of Western Europe, but Korea was a trigger that worked politically.

If the U.S. should be provoked into mobilization, world policies would change in many ways. For example, I can imagine rearmament of West Germany and Japan over the objections, to put it mildly, of the rest of Europe. Or enthusiastic rearmament of China. These are possibilities the Soviets must worry about. Any one of them changes the world balance of power in ways that are quite dangerous, but under some circumstances necessary.

Mobilization is an effective way to regulate Soviet behavior. Within a year after mobilization started, we could have a much improved strategic posture (for example, better command-and-control systems). The biggest insurance for U.S. security is mobilization. The next biggest is Soviet prudence.

There is a "window of vulnerability," a "window of danger," but not a window of opportunity for the Soviets. The Soviets will capitalize on their basic military superiority, but they will not take great risks to do so. Imagine that sometime around 1983 the window of vulnerability becomes terribly clear to everybody, including the Soviets. They work out a war plan with high probability

that they can win some major objectives — say, control of Europe — with almost no great risk. If things go badly there is a risk, but the odds are they will not lose more than 10 or 20 million dead. They may lose their cities, but it is not likely, and they can then rebuild from the rest of the world. If this opportunity is to disappear in the late 1980s, and the Soviet Union is having a lot of problems in the 1980s, they might see this as a way of rescuing themselves.

About six years ago I asked 20 members of a strategic planning panel, "How many of you think the Soviets might utilize this fleeting opportunity?" Only one thought they might. The others were sure they would not. When asked, "Should the United States rely on the Soviets to not take advantage of the situation?" Nobody thought we should. But they all agreed that if we did, it would work. (However, if a Napoleon, a Hitler or an Alexander the Great were in charge of the Soviet Union today, I would start losing sleep.)

The Soviets are in the same position. Originally they thought nuclear war was inevitable, but only after capitalism was near death and in a final spasm of desperation, the West attacked them. They did not believe we would attack them to make a profit. They have since decided that maybe we will not attack them even in desperation.

We have a problem. Most of us put some trust in Soviet caution. But in the nuclear era we are dealing with "not-improbables," "not-incredibles," "not-implausibles," "not-unlikelies." We must decide how much to spend on each not-unlikely. We must make plausible arguments for defense even though we see that the Soviets are prudent. Why? Because we don't want to rely on their prudence.

To get some feel for the importance of events that are not plausible, but also "not implausible," consider the outbreak of World War I. Ask yourself if you could possibly submit this as a scenario to the government. It begins with the assassination of the Archduke of Austria-Hungary in a war-prone situation. The French president was in Russia for a state visit and there were the usual drunken Russian parties. The Austrians held back their ultimatum because they did not want to present it during a period of drunken splendor, when the French president might do something crazy.

While the Austrians were waiting, the German emperor gave them a blank check. He did not trust the Austrians, or even like them. Yet, he said, "I will support whatever you do," and then went on vacation. Kind of implausible?

An important telegram arrived and an experienced Russian diplomat

misread the French. He knew French as well as Russian; why did he misread it? Because he had been drinking for ten days. Can you imagine his hangover? Put that in the scenario: the diplomat misunderstood an important telegram because he had a hangover.

The Chief of Staff of the Russian army received the mobilization order from the Czar. He then thought he would hide so the Czar could not recall the order. Can the chairman of the Joint Chiefs hide so the President can't change an order?

The German concept was to hit the French, destroy them in six weeks and then hit the Russians, who would take a longer time to mobilize. During the crisis, the Kaiser asked Von Moltke, his Chief of Staff, "What if I keep the French neutral?" Von Moltke replied, "It can't be done. No matter what happens, we must hit the French." Many books were later written to show that Von Moltke was wrong. But what do you do when your chief of staff tells you that you will have a mob, not a warplan, if ad hoc changes are made? Fire him just before the war?

The Russian General Staff lacked plans for a partial mobilization directed only against Austria. So, the Czar ordered a general mobilization. There were many such mistakes.

We cannot be reassured by the implausibility of this scenario. At the Hudson Institute, we work on mostly "surprise-free" scenarios, but we always comment that the

biggest surprise would be no surprises. So every scenario has a basic flaw

Once we were asked to do a study of the North Korean-South Korean confrontation. To touch it off, seeing that Panmunjom had an ugly atmosphere, we said, "Let's assume something totally bizarre happens in Panmunjom." Three months later North Korean soldiers armed with axes and metal pikes killed two U.S. officers in the DMZ.

Consider a "not-incredible counterforce first strike" threat posed by the U.S. to defend Western Europe. Can the MX missile give enough of a first-strike ability, or even a second-strike ability, that we might be willing to run the risk? Imagine that Western Europe is invaded, and the United States does not strike right away. Western Europeans ask me, "Will the Americans actually lose 50 or 100 million dead to revenge Western Europe?" I say, "No, I don't think so." They say, "Ah, DeGaulle was right." I say, "But in my considered judgment, we would take the high risk of 10 or 20 million dead." Dead silence: they suddenly realize that I'm probably right and they think I'm crazy. No Western European country would do that for the United States. This is completely a one-way relationship.

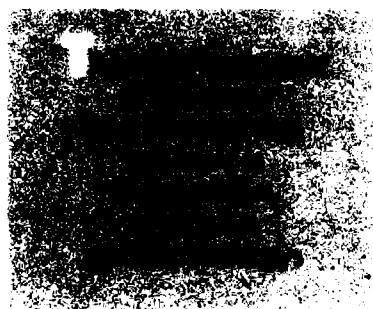
We hold our risk at 10 to 20 million dead by evacuating the cities. It's called "crisis relocation" and is completely practical. It takes one or two days, and improves first-strike

ability so that if we strike, the Soviets cannot do as much damage in return. We do not want an escalation to counter-population attacks, so we avoid Soviet cities, but we try to control Soviet behavior by maintaining an intra-war threat against their cities. We also offer an alternative: get out of Europe. That is an offer that is not-incredible; it can be accepted.

To take a holistic view, we must look at the provocation, the capability, and the scenario for ending the war — all three. Take Vietnam. Our Hudson Institute study on Vietnam asked this question: What is victory? Kissinger once made a totally inaccurate comment: "If you don't win these wars, you lose them." History shows you don't lose them, and you never really win them. They are still fighting in Malaysia. The Hudson study defined victory as getting the violence down to the level of Central Park, New York City!

That concept suddenly turned winning the war from being impractical to relatively practical. The accelerated pacification program was successful. As far as I know, there was no insurgency threat in Vietnam from 1968 to 1969. Instead, the threat was a classic invasion of borders, which we are supposed to know how to handle: 500 tanks, 1,000 artillery — that is not insurgency warfare. In effect, we won the pacification war, and then neglected to win the war we understood.

We won the pacification war without knowing how. These are basically police wars waged by rural constabulary; one cop is worth about 100 soldiers. The only purpose of the soldiers is to protect the police; the police win the war. In Vietnam, we never had a rural constabulary. It



was like having a landing force and leaving the Marines home. You can do very well, but you can't take the beach.

This major lesson of the Vietnam war has still not been learned. It is relatively uncontroversial; almost all the recent scholarly literature agrees. Forget what was said during the war. Look at the revisionist work being done today, some by those who were hostile to the government during the war.

I am saying that we must look at function, rather than components, although we must understand both. As a simple illustration of this point,

imagine an institute of people studying not nuclear war, but chess. They never play a game, they just study moves. They don't even study historical games, just pieces of games. Then someone shows up with about 20 games under his belt. Who do you think is going to win the first few games?

However, let's not fool ourselves. We have no experience with nuclear war. We rely heavily on simplistic theories and we have basically four nuclear strategy choices. We can be MAD, NUTS, loutish or gnostic. I believe that NUTS is far superior to the other three. A good case can be made for the NUTS position, even though it is intrinsically nutty: try to run a nuclear war like a very fast bridge game.

One very important comment: Japan will very likely be nuclear-armed around the year 2000, although not much before. Japan has the second largest GNP in the world. I would bet that if Japan armed to the teeth, it would be good for America. But there is opposition in Japan to such a course. There is fear that a manic Japanese officer corps might come back (although I believe the odds are a thousand to one against that). The Japanese like the "free ride" afforded by U.S. security guarantees if they can keep a low profile. But having the second largest GNP and keeping a low profile is like trying to swim without getting wet. Furthermore, China is pushing Japan to rearm. The Chinese argue that

nuclear armament would be a good thing; that is probably wrong. The Chinese came to imagine that the Japanese might rearm with only 10 or 20 nuclear weapons. But every Japanese I have talked to says, "We are not going to rearm — but if we do, we will do it right. And if we rearm, it will be for our own independent purposes, not to submit to American policies."

I think this is a big issue, the consequences of which have not been well discussed. And it does have an impact on weapons systems. It is in some ways more important than the Soviet issue.

What do I predict for Hong Kong? The treaty by which the British occupy Hong Kong runs out in 1998. The Chinese argue that the treaty is nonexistent and should be ignored. The British would like to renegotiate it. Meanwhile, about 40 percent of

all Chinese trade comes through Hong Kong; Hong Kong is the biggest financial asset China has. There is strong pressure on the Chinese to get nominal sovereignty. The Colony is, in fact, self-governing with British help, and everyone assumes that that will continue. But the Chinese have not said so. They are making everyone very nervous and I think that is part of the bargaining. Will I be surprised when the troops walk in? I think the general expectation that this will not happen is probably right, but we may all be surprised together.

Some Key Issues In A Coalition Security Strategy

Dr. Robert J. Hermann

VICE PRESIDENT,
SYSTEMS TECHNOLOGY FOR THE ELECTRONICS SECTOR,
UNITED TECHNOLOGIES CORPORATION

There are several points I would like to make related to the theme of this symposium. While broader than the specifics of theater Command, Control, Communications and Intelligence, they are very much concerned with the progress which we can and need to make in these areas.



Dr. Hermann was formerly Special Assistant for Intelligence to the Under Secretary of Defense for Research and Engineering. He has also served as Assistant Secretary of the Air Force for research, development and logistics, and as Principal Deputy Assistant Secretary of Defense, with responsibility for command, control, communications and intelligence.

First, I am very concerned about the tendency toward unilateralism which seems to be rising in this country. I want to argue against that trend, and for a national security strategy that places major emphasis on coalitions and alliances. We are part of the Western world, we must help defend it. From a purely and parochial American point of view, it seems important to defend ourselves as far away from the U.S. as is practical, and therefore we should share the burden of a common defense. Further, our emphasis should focus on deterrence and maintaining peace, as well as war-winning. That is best done by aligning ourselves with friends and allies who share common values.

This alignment is important not only from a political/military point of view, but also from the point of view of commerce and industry. We want future Americans to be able to exchange products, services and ideas with others in as friendly a way as possible. Clearly we are not an

economic island. We need and want what others have to offer, and we must in turn sell our goods to others. We must work to establish a world in which exchange is easier rather than harder. That will require political, military, commercial, and industrial cooperation.

Compatible ideology is a primary driver for coalition strategy. Our country was founded by men who valued ideals; freedom and equality were philosophic strengths of our birth. These ideals have inspired our citizens and the rest of the world for more than two centuries, and we must hold to them now. We must support them abroad as well as at home, and cooperate with those whose values are close to ours. For these and many other reasons, we need to be an outward-looking nation — a nation that pursues its interests and ideals globally, and which finds ways to align itself with other nations based on common ideals and benefits. To me that means a coalition security strategy and an externally sensitive commercial/industrial strategy.

A second concern is that too many of us in the U.S. are not sensitive to the unique leadership obligation this country must assume in its alliances, especially NATO. Several factors dictate this.

First, the U.S. has accepted responsibility for providing adequate strategic nuclear capability and for deciding when it should be used — not only by us, but by NATO. This obliges us to behave like the senior partners we are.

Secondly, we are the major economic entity in the West. When we flex our muscles or adjust economically, we make waves that affect all of our allies. They must respond to our behavior whether we intend to be leaders or not.

Third, we have unique industrial capabilities that are particularly relevant to alliance defense capabilities. We have an immense advanced industrial base. We have all the military-relevant technologies; essentially no other Western nation does. The U.S. problem is a global one and our industry, in responding to these global problems, is capable in all aspects of our military needs, from strategic nuclear to special forces and from space to under the seas. Our NATO allies are not so structured; they have much narrower missions and industrial bases. Most importantly, we have military

systems engineers. In our long history of finding solutions to military problems, we have developed a military/industrial complex which I applaud. We have a great abundance of people who can simultaneously handle military operations, technology, science and the industrial process, and we have them by the thousands. Most European nations have only a few. This is a national asset, and we have a responsibility to apply that asset to the common defense of ourselves and our allies.

Fourth, the U.S. operates the most comprehensive intelligence system in the West. Our dominance here is, in my view, more complete than in the nuclear field. We have access; we have applied the best technology; we have employed some of our best talent; and we now have the most comprehensive system in the Western world. Our system includes tactical reconnaissance, surveillance, national intelligence, strategic warning and so forth. If NATO is to be informed, at either the strategic or tactical level, it will be because we arranged it; if NATO is not informed, it will be because we failed to arrange it.

Fifth, the U.S. has the most comprehensive space program in the world. Through technical innovation we have arranged materials, propulsion and electronics into a program the Soviets cannot match, let alone any of our allies. We have become extremely dependent on our competence in space for communications navigation, meteorology,

reconnaissance and other functions. We rely on our competence in space for power projection into areas of the world where we do not have permanent access. We have the opportunity to apply our space systems to a coalition strategy in new ways: sharing communications, cooperating in navigation, meteorological prediction, and satellite reconnaissance. Our allies should enjoy some fruits of these capabilities to leverage their participation in other common interests.

Electronic warfare is also increasingly important in military engagements or, for that matter, in deterrence. The West has a commanding lead in those technologies necessary to support excellence in electronic warfare. The U.S. program is particularly broad and deep. But we are not exploiting the technological advantage nearly as much as we could because of our failures in concept, procedure and organization. Many of these technologies fall under the rubric of "Information Technologies" and if there is one area in which we have an advantage over our adversaries, it may be the information technologies — those processing and information handling techniques in which the civil sector primarily has driven us to excellence. However, we have not fully exploited their military advantages. That is an area where we absolutely must act. To take advantage of our technological leverage, however, we

must adjust our military concepts, organization and procedures to capitalize on the technology rather than simply letting operational requirements drive the technology.

We are weak at creating and implementing new military concepts to exploit information handling tech-

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is an
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niques. But, whether we do it or not, our adversaries will. The Soviets take military cybernetics very seriously. Whether we want them to or not, they will in time gain access to the technology, and they are more likely than we to apply it rigorously and deliberately to their military command and control problem. We need to adjust and structure ourselves to take operational advantage of our technical and industrial lead.

This is also an area of technology where we may be able to engage the Japanese to pull more of their share. They are expert in these technologies, and this may be a reasonable course for them, for reasons of industrial self-interest, and the pressure of

obligations, in support of our common defense.

A third major area of my concern are some of the trends in dealing with technology transfer. Technology transfer is an important issue in a coalition strategy and must be treated with cool, clear, logic. Let me begin the discussion of technology transfer with a tongue-in-cheek fable of contemporary relevance —

It seems that the French have applied the principles of technology in a new dimension — the culinary arts. A spokesman for the French government announced the other day that France feels its culinary base is a national asset and that preservation of its culinary advantage is critical to the country. He also indicated that additional regulations would be established to keep French culinary techniques from leaving the country. The Minister of Culture commented to the press that several factors caused this get-tough policy.

First, he noted that in only 200 years the United States had captured nearly 37% of the worldwide French cuisine market and France's market share had gone from 73% to 32%.

Second, the French government feels it has been too free with the recipes and that it has been too easy for foreign agents to gain access to the techniques of French cooking. In essence, he said France has been conducting a free cooking school for

the world at the expense of French citizens and that the hemorrhaging had to stop. For whatever reasons, the innovation and efficiency of U.S. chefs seem to be better than those of French chefs and the provinces are clamoring for more action.

Gourmet and *Bon Appetit* magazine editors had some reservations about the French action. They noted that the U.S. chefs had been practicing French cooking long enough so that they weren't sure if the new protective measures would affect them very much. In fact, they personally preferred the U.S. version of coq au vin and canard l'orange over the equivalent French offering. I don't know that anything is going to come of that but it typifies the kind of concern troubling people all around the world.

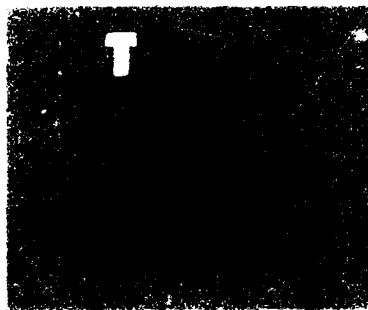
And we should be concerned — our investment in scientific research and development in new technology, which has for years been so much larger and stronger than that of the rest of the world, has been casually exploited by other nations. Since World War II, the Soviets have established themselves as a major military power in part by taking, copying, stealing and applying U.S. technology. Despite great investments and industrial progress, they still feel it necessary to systematically acquire the products of our

research, development and innovation for their own purposes. The Japanese, very often with the fruits of our invention, have bettered us in several key areas.

But let us be careful about how we try to fix this problem. In our zeal to correct this situation, we should not fire live rounds into a crowd hoping to hit pickpockets even if we know they are there. We are in this position for fundamental reasons, some of them at the heart of our free, democratic, and entrepreneurial society.

First, history has been slightly skewed. Following World War II, the U.S. alone had a healthy, vigorous industrial environment and up-to-date experience in applying technology to military problems. Our industry and technology dominated the world in a way that could not possibly be sustained in a balanced world order. Further, much of the improvements enjoyed by our commercial competitors or military adversaries since that time have not resulted so much from our loss of state-of-the-art technology as it has from their efficient application of established technology. The Japanese performance in electronics and automotive products has much more to do with engineering, organization, and finance than with our loss of technology. The effectiveness of Soviet air defense relies more on coherent application of routine engineering, organization, and military procedures than on new technology.

Second, our society is based on the concept of free flow of information to its citizens, and progress of science and technology also requires the relatively free exchange of scientific information and data. We are innovative by the millions, not just by the hundreds. Our strength depends



literally on millions of citizens working individually and in groups to achieve their own objectives. That process must have an environment in which it is natural to share new knowledge. However, access by millions of citizens is equivalent to access by our adversaries as well, so we have a dilemma. Perhaps if we were a controlled society, the controlling element could distinguish what information to share, but we are not, should not be, and such logic cannot apply.

Third, high technology today is largely the manifestation of ideas. Vigorously controlling technology flow means controlling the flow of ideas. Not only is that difficult, but in a free society it must be viewed as potentially dangerous because it implies that some authority would decide which ideas are acceptable.

Fourth, technology is a key element of any nation's commercial and military position. Leaders all over the world recognize that their nations must have access to and take part in high-technology industrial activities. High technology influences essentially every aspect of daily life in the modern state. Increasingly, the same technologies which are the key to military strength, are also directly or indirectly key to commercial success. Separating critical military from critical commercial technology, particularly at the fundamental level, is extremely difficult now and will only become more so.

Fifth, our marketplace is truly global. Commercial success in most high-technology industries today depends on international trade, which depends on our ability to compete internationally.

In summary, the U.S. must participate intensely in world military, commercial, financial, social and political activities. We must apply our great industrial base to our defense, our commerce and our ideals. Often the same technology is essential for both defense and non-defense

affairs. Free exchange of scientific information is essential to the health of science and technology, and thus to our industrial strength. International cooperation is essential for either commercial or military success, and our military allies will always, in a healthy world, be our commercial adversaries. We will not be able to control the flow of key technology without the potential of damaging our free society by controlling ideas, and controlling ideas is likely to be extremely difficult in any case. In the worst case, we could try, fail, and seriously damage our heritage in the process without achieving any compensating benefits.

On the other hand, I believe there are things we can do. I have spent

most of my adult life in the intelligence business and in other activities that do keep secrets and compartmentalize ideas. It can be done and it is done routinely and successfully.

The key is to severely limit the number of things which are so critical that they require serious protection. An idea can be kept secret if its availability is not key to the welfare of a broad base of our society, but if access to it is necessary for the welfare of many, preventing that will be nearly impossible. If we minimize the list of technologies and ideas we believe critical to our national welfare, we should be able to keep the most important, underlying ideas and key technologies compartmented and prevent their flow beyond our control.

To protect ourselves, we must keep critical information secret, but we must be selective about what is critical and then apply really tight controls. A set of cosmetic procedures which are irrelevant to the process of idea flow will not do. Having said that, let us recognize that our main thrust must be to support international cooperation. We must develop an environment where it is safe to cooperate, rather than one that discourages cooperation. And we must do this for our own welfare.

Session 1

Chairman: Dr. Paul M. Doty
DIRECTOR, CENTER FOR SCIENCE AND INTERNATIONAL AFFAIRS, HARVARD UNIVERSITY

The Soviet Perspective on Global Power Projection

William G. Hyland

SENIOR ASSOCIATE,
CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE

On November 10, 1982, President Leonid Brezhnev of the Soviet Union died. This event signaled the beginning of a period of transition and some danger, as the Soviet Union now moves into a post-Brezhnev leadership.*

Yuri Andropov, former head of the Soviet state security apparatus, was named as General Secretary two days after Brezhnev's death. This was somewhat predictable, as Andropov had been elevated earlier in the year to a senior secretary position in the Politburo and Secretariat, putting him in the line of succession.

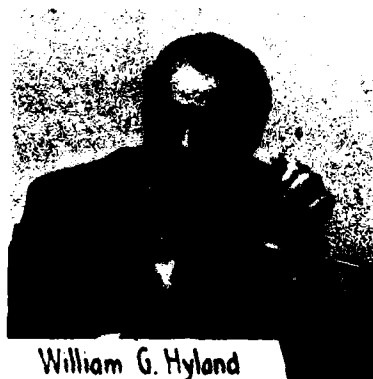
In a sense, we were in the post-Brezhnev era even before his death; Brezhnev had been packing the top ranks with cronies for some time. Most of these men, however, are well into their 70s, and they are not necessarily men with good qualifications to lead. Now that Brezhnev is gone, they are obviously vulnerable to a purge.

In any case, there will probably be two stages in the change of leadership. At first, figures currently in the higher echelons will dominate, under Andropov's leadership. But because of the advanced age of these men, the end of the 1980s will bring a second succession. The first stage

* This presentation has been updated to reflect the death of Leonid Brezhnev.

will be characterized by conservatism and adherence to the status quo — no politician is likely to rise to the top advocating radical change. But the nature of the second stage is less certain.

We know some of the pressures that will impinge on Soviet leadership in those years. The economic situation will continue to be very bad. Productivity and growth have declined, and the Soviet Union has



William G. Hyland

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run out of new frontiers to exploit. The Soviets must now prove themselves in terms of greater productivity and greater efficiency.

This must be done in spite of pressures to reform, or improve standards of living, which will strike at Party legitimacy and control. And there will be pressures to reduce the military burden, which has been growing relentlessly at a rate of 4 to 5 percent (real growth) since the early 1960s. This was not a great burden in the early years of the Brezhnev ascendancy, when the economic growth rate was keeping pace, with about 11 percent of the gross national product allocated to military use. But in the last five years, with the Soviet economy slowed to less than 2 percent growth per year, it has become a serious problem.

What is needed is a substantial cut in the defense budget growth rate over five to ten years. But that will not have great appeal to the new leadership. A Soviet leader who would cut military strength must justify it on the grounds that it is safe. But neither foreign policy nor military power levels offer credible



The late Soviet President, Leonid Brezhnev, greets the 19th Congress of the Young Communist League of the U.S.S.R. in May 1982.

justification. Not only the West, but also China poses a great threat to a major sector of the Soviet landmass. U.S.S.R. forces must defend three major fronts, and military emphasis will be shifting eastward to focus on China by the end of the 1980s.

So the outlook for changes in Soviet military spending patterns is not bright. Present policy is likely to continue, and the economic crisis is likely to deepen.

In the meantime the Soviet economic situation is becoming more deeply entangled in international politics. The Soviets have counted on increasing trade and technology transfer with the U.S., Japan and Europe. Indeed, Europe is the one place where they persist in preserving the detente atmosphere. Now, however, the Polish revolution —

the most important European development of the past twenty years — has stricken at Soviet legitimacy. It is the first genuine workers' movement to oppose Soviet power. The orthodox Polish communist party has totally collapsed, and a military regime has had to be put in power for the first time. Demands on the military are thus growing.

The most important problem for the Soviet Union in the coming decade is not the West, but the Far East — especially China. China will continue to become more powerful as a military and political force. The Soviet Union will find defense of its 10,000-kilometer border with China a tremendous military task. Those border forces, like the forces in Western Europe, must be modernized.

Moreover, Soviet economic interest is strongly attuned to Siberia, which produces about half the nation's supply of oil and some 40 percent of its natural gas. These resources are a stake to be defended against Chinese pressures.

So the Soviet Union is turning to the East — and its position there is similar to what the U.S. and NATO face in Western Europe. The Soviets are bent on avoiding nuclear conflict with China; so they face an enormous demand for conventional defense on their eastern frontiers.

Over the course of two or three years the Soviet Union's dispute with China will be in negotiation. Then, I believe, we can expect it to

UPI PHOTO

blow up. The clash is fundamental; it has little to do with whether the border is adjusted a few hundred miles one way or the other.

The southern flank, on the other hand — Afghanistan, Pakistan, Iran — is the Soviet Union's greatest potential area of opportunism and exploitation. The Soviets have not been very successful in creating opportunities, but they have been quick to capitalize on opportunities presented to them. For example, the U.S.S.R. did not create the problem in Angola; Portugal's control there fell apart. The opportunity must be clear, as the Cuban proxy was in that case; then the Soviets can escalate horizontally, perhaps on the pretext of invitation into some remote area.

The invasion and occupation of Afghanistan is a watershed in this respect. I do not believe the occupation is reversible. The Russians have been trying to get into Afghanistan for 200 years; they are not likely to leave just because their casualty rate is slightly higher than they would like it to be.

In the meantime, the Soviet leadership is substantially supporting Iran. It appears they may be betting that the future of the region lies with the Iranian revolution — if not during Khomeini's time, then after him. They seem to see it as an anti-Western, or at least an anti-imperialist, revolution. If in time the Iranians need to turn to a great power, the Soviets see themselves as a natural ally. Notably, too, Iran and the So-

viet Union have a long-standing treaty permitting the Soviet Union to intervene there.

The prospect, therefore, is that Iran and the Soviet Union will move closer together. That in turn poses a threat to the Persian Gulf. Indeed, the Soviets have been building up a position of power in South Yemen and Aden, which menaces Pakistan. The U.S. has been supporting Pakistan for the day when it has trouble with its neighbors, Afghanistan and Iran. And we may note the signs of nervousness in India; Mrs. Indira Gandhi has now decided it is worthwhile to visit Washington.

When we later look back on this period, however, I believe we will conclude that the Soviet Union has suffered an enormous defeat. It has been frozen out of the Mideast struggle from which it had profited for 25 years.

I think the Soviets must recognize that, if current developments in the U.S. continue, the balance of power will turn against them in the late 1980s. By then the U.S. will have MX missiles and B-1 bombers in place, and perhaps the Trident-2 cruise missile family as well. The Soviet Union will then be under worsening pressure, and there will be an opportunity for the U.S. to be more aggressive in its diplomacy.

That period, during which the post-Brezhnev leaders are getting their feet wet, will be an opportunity

for us to persuade them to make some concessions, while they are still benign. Similarly, Khrushchev accepted the Korean armistice from 1953 to 1957 before he consolidated his power.

But I think we must recognize that the next few years can be a period of danger as well. Now is the optimal time of Soviet power. In another five years, the Soviet Union will become weaker, not stronger. The Andropov regime may well feel that, if it is going to exploit opportunities at all, it had better do so now, rather than at the end of the decade when the Soviet Union will have relatively less strength and therefore less freedom of action internationally. We may liken the present period to the launch of the Soviet Sputnik some 25 years ago. That ushered in a very dangerous period of aggressive Soviet foreign policy, including severe aggression in Berlin, and culminated in the most dangerous of all crises to date, the Cuban missile confrontation. So we must be aware of the possibility that the Soviet Union may try to solve some of its problems in the next few years by scoring successes abroad. And I think the attempt may well center on the Persian Gulf — a major Soviet pressure point for centuries.

We must preserve the basic balance of strategic power — establish the perception that we are rearming and that we intend to redress the current imbalance. I think that is the heart of deterrence. The record of the last 35 years suggests that deterrence is viable and has worked. It has depended not so much on individual weapons as on the states of mind in Moscow and Washington. Without the weapons systems, I think the balance of power would tilt disastrously against the United States, and the danger of war would rise. Imbalance of power has been the basic cause of most wars. A British strategist, Michael Howard, reminds us in *Encounter* magazine that wars do not happen for transient reasons, but because of basic perceptions of the balance or imbalance of power by one adversary or another.

So I believe in the value of deterrence. I am not terribly concerned about how or where weapons would be used. Warplanning in peacetime has little relevance to how the war would actually be fought.

I disagree with opponents of first use of nuclear weapons. I think first use has been a valuable strategy in Western Europe. It must make the Kremlin wonder what would happen should there be a war with the United States, in Western Europe or elsewhere. It is a valid strategy to maintain this element of uncertainty as to whether we might use nuclear weapons. I still think that is basic to



Yuri Andropov, successor to Leonid Brezhnev.

the defense in Western Europe, together with the presence of a large American ground force.

I agree with Churchill: the Russians do not want victory, they want the fruits of victory. Their strategy has not been to prepare an all-out assault anywhere in the world, but to aim for a favorable correlation of forces, so that the fruits of victory will fall into their laps.

I get the strong impression that if we were challenged in the Persian Gulf it would be absolute hell to try to defend the oil. That is why the Gulf is an extremely dangerous place: it is a power vacuum. No local forces are worth a damn, and it is a long way from the United States.

The real Rapid Deployment Force consists, I suppose, of our own forces in Western Europe. But using forces from Germany in the Middle East or the Gulf would put a tremendous strain on the Alliance. This is a terrible weakness, and I have no idea how to repair it.

I do not think the Russians are going "match." Many of us overreacted to Afghanistan, feeling that the Russians would continue to move. But I think they simply saw a power vacuum and hoped one way or another to pick up some big gains. I do not think oil is all that is involved; I think they hope to turn the flank of the Middle East, and I think they will persist.

I find it a little unreal to talk about moving this or that division even to the Zagros Mountains, let alone the Rapid Deployment Force to the Persian Gulf, if the opponent is the Soviet army, navy or air force. It seems to me if we are talking about American troops fighting Russian troops in the Middle East, we are very close to World War III. We are not talking about a minor skirmish when the 82nd Airborne Division has the hell knocked out of it by the Soviet Guards Mechanized Division. This, I would think, would occur at a maximum alert, with everybody poised, and a great deal of concern that windows of vulnerability may actually have some meaning. I would think that we were moving so rapidly toward World War III that it would be a nightmare.

PHOTO: SYGMA/NOGUES

The Role and Limits of Military Power

McGeorge Bundy
PROFESSOR OF HISTORY,
NEW YORK UNIVERSITY

The Western Alliance must move away from a doctrine of possible first use of nuclear weapons.

Critics of this proposed change speak about the usefulness of our present doctrine, but go on to emphasize the urgency of improving conventional capability. And that, in any event, is the first and necessary step.

Some say we can reach a conventional balance in Europe by an effort



Mr. Bundy served during the Kennedy administration as Special Assistant to the President for National Security. He has also served as President of the Ford Foundation.

that provides an annual four percent real growth in the defense budget over six years. Others, like former Secretary of State Alexander Haig, contend it would require a tripling of military budgets.

This debate should be given more careful attention.

The real strategic lesson of the past year is the extraordinary and neglected importance of strategic C'I. The recent recognition of it, and the new command attention to it, is a great and constructive change in defense planning and even defense thinking. It is a change for which the administration, not otherwise distinguished for strategic lucidity or grasp of its own budgetary problems, deserves great credit.

I will address tactical C'I from the point of view of the political and military processes of the U.S. Government.

We in international affairs must mainly pay attention to the political, economic, and national relations between the U.S. and countries very different from our own, the behaviors of which are mainly governed by their own historical evolutions.

Even in an area where there may be significant military or paramilitary action — I would pick the Caribbean as the most likely — that action

must be effectively related to the political realities, and to the interests and concerns of the larger local nations, else the military activities are not likely to be fruitful. The most important country in that area, both in order of magnitude for the U.S. and in its own right, is Mexico.

Throughout the 1950s, General Eisenhower repeatedly emphasized that the foreign policy of the U.S. got more bang for the buck from economic and military assistance than it did from direct military appropriations. I think this will continue to be true in the 1980s, although emphasis on that reality is not as clear — and has not been clear in the recent two or three administrations — as it was in the 50s and early 60s.

There is no question but that really quick and effective communication, and effective translation of that communication into tactical action, is enormously difficult.

While in the Signal Corps, I was the ULTRA officer in the Normandy landings for the Navy. ULTRA was the process by which German communications were intercepted and their contents passed to appropriate commanders. We would get messages telling us to expect a flight of

bombers at such and such an angle, and at such and such an hour.

The problem was to get the message translated. The admiral had to convert it into his "sudden feeling" that we should be particularly alert in a certain direction. I learned there the great difficulty of combining rapidity with security in communications.

The field of tactical C'I poses some interesting political questions. Consider, for instance, the relationship between the process of command and control and the commander-in-chief.

When I think about the large-scale political evolution of command and control in the years since World War II, I am struck by two things: the increasing concentration of higher and higher commanders dedicated to smaller and smaller phenomena, and the degree to which this is necessary, both because of capability and because of the political meaning of the activities reported by military commanders to Washington.

In World War II, General Marshall, and Admiral King, too, were able to maintain a discipline that almost enforced upon their superiors an unwillingness to interfere in not only battlefield decisions but even larger military choices.

One could argue still about what might have happened had different commands been given to General Eisenhower toward the end of World War II, perhaps more along the lines of what Churchill desired. Certainly, it was in the American tradition of that time that no such commands were given.

Korea was a quite different situation, and in the end there was an explosion. Granted, it involved an unusual commander and a particularly stubborn commander-in-chief, but the explosion reflected the fact that political considerations and not specifically military considerations were governing the edges of activity in that war.

In the crises over Quemoy and Matsu, President Eisenhower was extremely careful to say to his commanders that they would have what they needed. He was quite unwilling to say to them just what he thought they would need. In particular, Eisenhower reserved to himself the decisions about any authorization for the use of nuclear weapons.

The first post-action military recommendation after the Quemoy-Matsu crisis was that in the future there should be clear, advance understanding as to the authority to use nuclear weapons. That of course is precisely what presidents then and since have refused to give.

The Suez affair engages another kind of tactical communications:

communication or non-communication with allies. In the Suez case, communications worked better than command and control — better than diplomacy — because in that case the president of the U.S. did have timely information of what was intended by the French, British, and Israeli governments. He knew everything but time and date. Because of the indefiniteness of the information, he chose to not tell the British and French what his feelings would be if they did what they were planning to do. But that was his decision and not a failure of intelligence or of communications.

In the Berlin crisis there were extraordinary problems in communication between Washington and the field commander. After the building of the wall, the president wanted in Berlin a voice he knew and understood. General Clay returned to active duty for that assignment.

During the Berlin crisis, it did seem important for those in Washington to concern themselves with questions such as whether to comply with the request that tailgates on 2.5-ton trucks be lowered so the Soviets could count the soldiers inside: a major diplomatic question.

We had another set of communications problems in Cuba, which we might consider when we plan for the Caribbean.

The failures at the Bay of Pigs were failures of internal communications in the U.S. Government. The new



UPI PHOTO

In attendance at a cabinet meeting during the Cuban missile crisis in October 1962 were (left to right): Robert Kennedy, Attorney General; Don Wilson (half hidden), USIA; Ted Sorenson, Presidential Advisor; Bromley Smith (rear), National Security Council; McGeorge Bundy, Presidential Advisor; C. Douglas Dillon, Secretary of the Treasury; Vice President Lyndon B. Johnson; Llewellyn Thompson, U.S. Ambassador to the U.S.S.R.; U. Alexis Johnson, Deputy Under Secretary of State; President John Kennedy; Dean Rusk, Secretary of State; Robert McNamara, Defense Secretary; Roswell Gilpatric, Deputy Defense Secretary; Maxwell Taylor, Chairman of Joint Chiefs of Staff; Paul Nitze, Assistant Defense Secretary. Not shown are George Ball and John J. McCone, both hidden by President Kennedy.

administration — and this is as much my fault as anyone's — never understood that the intelligence estimates it was receiving from the CIA were not intelligence estimates in the ordinary sense at all, because the professional estimators had been denied access to the problem.

A much more interesting and complex set of communications problems occurred during the Cuban missile crisis. There it became clear that the military actions used in the quarantine were primarily important as instruments of communication to the adversary. This was not the way Admiral Anderson perceived his duty. It required a jury rig of responsibility, quite foreign to the traditions of senior officers but quite understandable to a president concerned that some act or failure of action would be misunderstood, and perhaps lead to an unwanted response from the other side.

During the Cuban crisis, there developed an intensity of communications, and immediacy of command and control, which had not been anticipated by any of the parties beforehand. There also evolved a multiple process of communications with the adversary and a very intense process of communications with allies and other interested parties.

The ability for decision makers on both sides to communicate with one another is exceedingly important. I do not believe that American national interests could be served by fighting a war against decapitated forces.

There are many lessons regarding communications to be learned from Vietnam. But I would emphasize the critical importance of what was missing: candor about purposes and capabilities between civilian and military commanders at all levels.

That kind of candor does not come easily. The relationship between the president, the president's people and the military is an uneasy one. Few are willing to say, "Mr. President, what you are asking us to do cannot be done in the way you are asking us to do it." And presidents seldom say, "Look, if you can't do it my way, I'd rather you not do it at all." And there is also reticence or even deviousness which is sometimes a personality trait and sometimes a product of the training process.

The professional must insist on candor and deal rather firmly with those civilians who are not candid. Firm measures are available.

In Iran there were failures of communication at all levels — much more political than military.

We recently had an extraordinary illustration of the political impor-

tance of timely communications in its evident breakdown during the massacre occurring in Lebanon.

Where there is a communications capability, and sometimes even where there is not, political authority will wish it engaged.

In tense moments, sustained attention from the White House is almost inescapable. When the nation becomes focused on an event, the president must also. A president cannot afford to be scooped very often by network news.

There are situations in which the commander on the scene must decide. Sorting those situations out, while also planning capabilities for reporting and asking for direction, and for reporting when there is not time to ask, should be important elements in our C'I system.

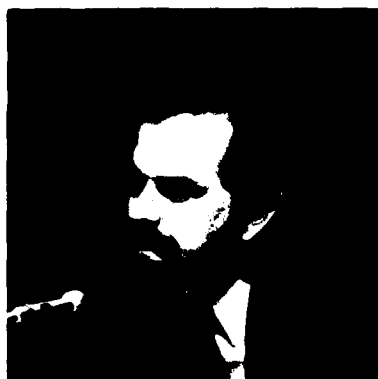
I remember what they used to tell us in the Signal Corps OCS: That we might not think that our jobs as communicators were very glamorous, we might not believe that we were in the front line; but that without us nothing good could happen, and much that was bad was inevitable.

Projecting U.S. Power into Southwest Asia: Problems and Prospects

Jeffrey Record

SENIOR FELLOW
INSTITUTE FOR FOREIGN POLICY ANALYSIS

A smaller, more agile intervention force, capable of projection from the sea, should replace the present Rapid Deployment Force.



Dr. Record was formerly the Legislative Assistant for Military Affairs to Senator Sam Nunn, a research associate on the Defense Analysis Staff of the Brookings Institution, and a research associate in foreign area studies at American University. He has authored and contributed to numerous books, monographs, book reviews, and articles on foreign policy and military affairs.

The RDF was set up in late 1979 to deter Soviet aggression in the Persian Gulf area and to preserve access to Persian Gulf oil. However, intervention forces must have secure access ashore, which means access to ports, airfields, and other reception facilities. To stay ashore, they require continued access to proximate logistical support bases. Neither is available to U.S. forces in the Gulf area. As long as the U.S. military forces are denied peacetime access ashore in the region, the RDF must rely primarily on sea power.

With the exception of the tiny atoll of Diego Garcia, some 2,500 miles from the Straits of Hormuz, the U.S. has no military bases in that vast area of the world stretching from Turkey to the Philippines. Prospects for the establishment of a major U.S. naval facility or air force base in that region are not favorable. The countries of that region do not want formal security arrangements that would entail stationing U.S. troops on their territory.

The Pentagon appears to realize the political barriers to establishing a

permanent U.S. military presence ashore in Southwest Asia and has tried to gain rights of access to selected facilities in times of crisis. Apparently, agreements have been concluded with Kenya, Somalia, Oman, and Egypt.

Yet access to facilities on a contingency basis is no substitute for U.S.-controlled and U.S.-operated bases not subject to the political vicissitudes of host governments. It is worth recalling that during the October War of 1973, the U.S. was denied overflight rights by NATO allies, countries usually considered more reliable than nontreaty "friends" in the Gulf.

The internal political instability of U.S. friends and allies in the Gulf is exacerbated by the questionable capabilities and competence of their military establishments. The recent Lebanese conflict and the ongoing Iraqi-Iranian war have done little to

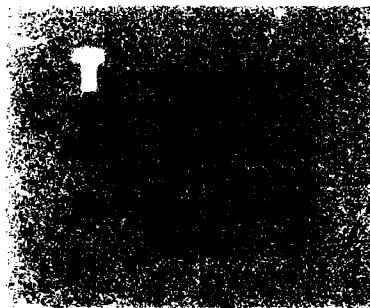
enhance the military reputation of the Arab world. National military forces on the Arabian peninsula are negligible in size, questionable in quality, or both. As a result, U.S. intervention forces could expect little support on the battlefield even from host nations requesting intervention.

Can the U.S. count on Southwest Asian cooperation in the face of aggression by the Soviets or a Soviet client state? Such support is a function of the political stability of the regime supplying it; its effectiveness is a product of the size and competence of the regime's military forces. For decades the U.S. enjoyed in the Shah of Iran a powerful and seemingly stable local client committed to the defense of shared interests in the Persian Gulf. Today, which potential American client among the littoral states of the Persian Gulf and Indian Ocean can be regarded as both politically stable and militarily competent?

In Southwest Asia, the U.S. possesses none of the critical operational and logistical benefits that it enjoys in Europe. Except for naval forces maintained on station in the area, the U.S. would have to start from scratch militarily in the event of a Gulf crisis.

Even where military access in Southwest Asia is not a problem, the

combat commitment of any sizable U.S. force in the region would automatically weaken the defense of critical U.S. interests elsewhere in the world. The decision, reaffirmed by the Reagan Administration, to rely on existing military units for the RDF, almost all of which are ear-



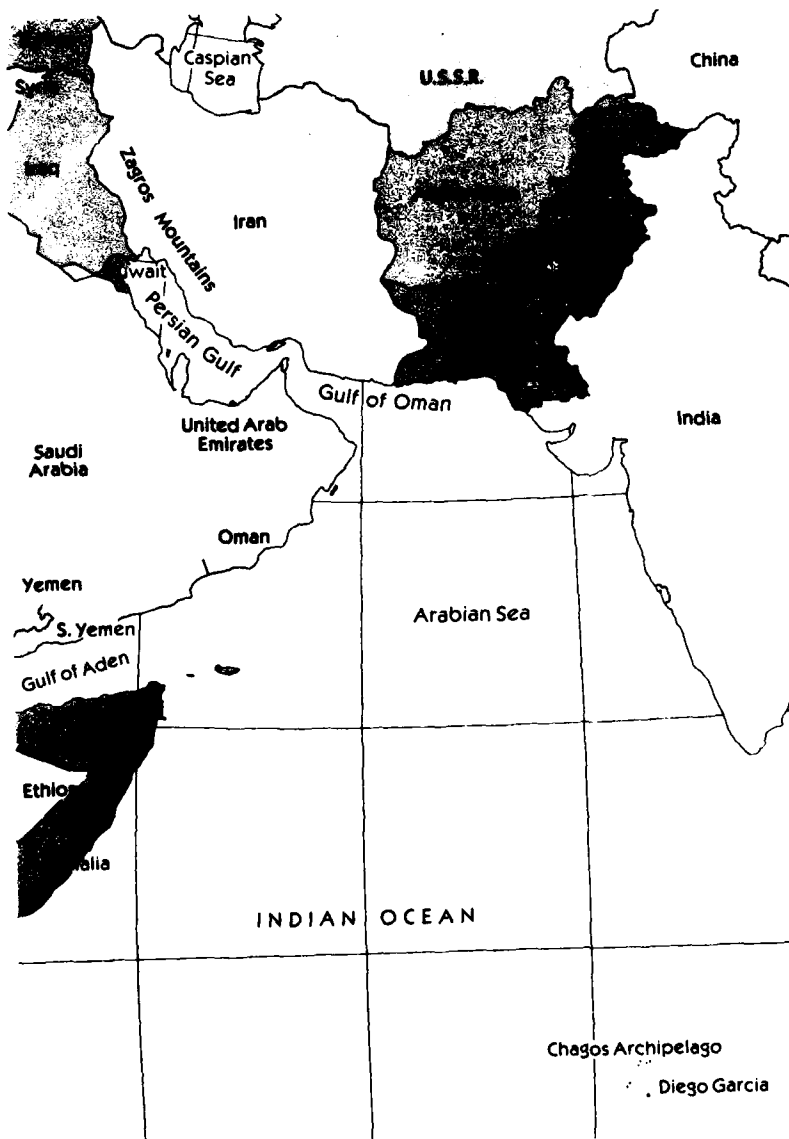
marked for NATO and the Far East, serves to widen the gap between U.S. commitments abroad and U.S. capabilities to defend them.

Our forces cannot at present meet the demands of a worldwide war. They cannot, for instance, concurrently reinforce Europe and also deploy to the Persian Gulf. This will remain the case unless we either return to conscription (which I do not think probable) and comprehen-

sively restructure our economy for war, or, as an alternative, redefine in a major way our military commitments outside Southwest Asia. The effects of continuing to rely on the same forces to support both Gulf and non-Gulf operations would be especially profound in the event of a U.S.-Soviet confrontation.

The Reagan Administration endorsed most of the RDF-related strategic mobility enhancement programs initiated by the Carter Administration. However, with the exception of the Near-Term Prepositioned Ship (NTPS) force, none of the mobility enhancement programs will be realized for at least several years.

The problem of access in Southwest Asia should have propelled the Pentagon to create an intervention force distinctly different from the present RDF. The present RDF should be replaced by a small, agile, tactically capable intervention force that is based and supplied from the sea and supported by expanded sea power, especially forcible entry capabilities. Such a force would stress quality, immediate responsiveness, and logistical self-sufficiency rather than size, air-transported forces from the U.S., and dependence on facilities ashore. In short, as long as the U.S. military forces are denied politically secure peacetime access ashore in the Gulf region, there appears to be no alternative to primary reliance on sea power.



The replacement intervention force should be a variant of the Navy-Fleet Marine Force "team" using tried and tested structures and doctrines associated with successful projection of power from sea to shore. The Marine Corps is the sole U.S. force with amphibious assault capabilities, an essential component of any credible U.S. intervention force in Southwest Asia. In contrast to the Army, the Marine Corps' principal competitor, the Corps is fully compatible with sea power. There is also the Corps' long-standing history of successful expeditionary operations in the third world and its record, as the nation's recognized "force in readiness," of being the "first to fight."

Essential to any credible U.S. intervention force in Southwest Asia is a strong U.S. forcible-entry capability. Serious consideration should be given to increasing the level of amphibious shipping and gunfire capabilities, and to expanding investment in maritime pre-positioning.

A sea-based RDF admittedly would have limited utility in contingencies demanding sustained combat in and beyond the reach of amphibious assault forces and carrier-based air power. Prosecution of sustained inland combat, however, would depend on secure coastal military lodgments, which can be gained only by the ability to project power ashore.

Resolving the insufficient force problem seems to be more difficult than resolving the problem of military access. A massive expansion of U.S. general purpose forces is neither fiscally nor politically feasible. At the same time, the present military power outside of Southwest Asia is hard to justify. In areas such as Europe, indigenous allies are capable of assuming a larger share of the common defense than they are now bearing. Our European allies today possess the human and material resources to assume full responsibility for NATO's forward conventional defense on the ground.

Allied assumption of full responsibility for Europe's forward defense would permit a substantial reduction in the size of our NATO-oriented

army. This would free budgetary resources for reinvestment in the kinds of sea-based force projection capabilities desperately needed for contingencies in Southwest Asia.

Eventually, U.S. ground forces should be withdrawn from Europe. Our allies are more than capable of mustering the manpower and hardware for their own defense on the ground. However, the U.S. would continue to provide air, naval, and (in Europe's case) nuclear forces for their defense. The U.S. would abandon neither its membership in NATO nor its commitment to Europe's defense; only the character of our NATO commitment would be altered, not the extent.

An abrupt withdrawal must, however, be circumvented at all costs. To avoid political shock and military disruption, the withdrawal should be

conducted slowly and evenly over a period of 15 to 20 years. A protracted withdrawal would afford the allies sufficient time to undertake counterbalancing increases and improvements in their own forces, such as re-equipping and upgrading the readiness of their reserve forces. The U.S. should make every effort to encourage and assist the allies in assuming full responsibility for forward defense on the ground in a manner that would ensure smooth and timely substitution of European forces for withdrawing U.S. units.

Political/Military Context for Future U.S. Roles in the Pacific

Dr. Michael Nacht

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If the U.S. dependency on fossil fuels continues to decrease, then the 1990s may well find Asia and the Pacific replacing the Persian Gulf as the geostrategic center of the world.

In the last ten years, the greatest growth in economic power has come from those states in a large vertical strip extending from Japan through South Korea, Taiwan, Hong Kong, Singapore, down to Australia. There is more potential wealth in this region than in any other single area of the world. So it is important that we spend some time thinking about Asia and the Pacific either as a first and only theater of warfare or perhaps as a second theater, after hostilities have already begun elsewhere.

In examining American posture and policies in that region, we must consider some assumptions, some threats, some problems, and some needs.

Assumption 1. American policies have been predicated for some time on a continued, intensified Sino-Soviet rift and conflict. Currently, the Chinese and the Russians are conducting a series of tactical flirta-

tions, both to complicate each other's decision-making and to gain the attention of the United States. Beyond that, however, there is a single word that best describes the two countries' attitudes toward one another: hatred. The Russians dislike the Chinese intensely. The combination of ethnic, political, military, and diplomatic differences between the two governments is so profound that the likelihood of a major rapprochement in the 1980s is negligible. Of course, enemies do sometimes make pacts, but irrespective of changes in Soviet leadership, only modest repairs to the gaping wound between the two governments seem likely.

Assumption 2. Sino-Vietnamese problems will continue. Although the Vietnamese bloodied the Chinese a few years ago, the Chinese do not basically fear the Vietnamese. Vietnam is a second front for China, and a secondary front at that; the Chinese leadership does not expect mortal damage from Vietnam.



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Assumption 3. Japan will remain a free, democratic, stable ally of the U.S.

Assumption 4. South Korea will remain strong and prosperous.

Assumption 5. American access to bases in the Philippines will remain a central lynchpin of American naval strategy.

The final three assumptions call for a brief discussion about threats. In the past ten years, the greatest threats to American interests in the Pacific have been Soviet: the growth of the Soviet navy in the northwestern Pacific; the ability of the Soviet navy to be visible, to project power by deploying Soviet flag vessels near Japanese waters, off the coast of Korea, and in Southeast Asia; the specific military threat posed by the Backfire bomber and the SS20s that could reach many important Asian targets; and, finally, the potential use of Vietnamese bases by the Soviet Union. In view of American strategy and interests, consider the countries named in the last three assumptions, starting with Japan.

Japan is potentially the strongest military power in the region, with the possible exception of China, and therefore deserves the most emphasis. Japan has the second largest

economy in the world and the eighth largest defense expenditure in the world, even though less than 1 percent of Japan's GNP is devoted to defense. The Japanese, however, operate under three major constraints:

1. Psychological pindown. The Japanese have not forgotten what happened to them in the Second World War. Most Japanese fear that continued acquiescence to American pressure to build in the defense sector would eventually lead to the unleashing of military forces in Japan. In the long run, this might only produce the same results that led to the Japanese defeat in 1945. In other words, they are afraid of themselves and would rather be ridiculed and criticized and move slowly than end up as they did in the last war. This feeling has an extraordinarily profound effect on Japanese thinking.

2. The parallel economic and security links between our two countries. The deep links between American and Japanese bankers, economists, and traders on the economic side, and American and Japanese military personnel and defense intellectuals on the security side, have operated in parallel with little interaction between the two groups. This situation is now changing, however. For example, congressional representatives from mid-western states are among the most

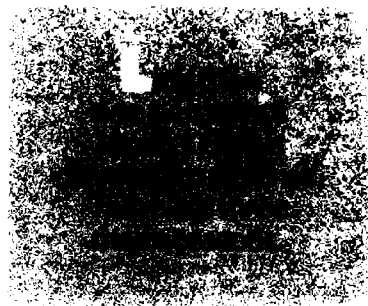


vociferous proponents for increased Japanese defense spending, precisely because these states have been hit by automobile imports from Japan that have produced large unemployment in the American auto industry. Imagine what the effect on U.S./Japan relations would be if the situation were repeated in the computer industry. The likelihood would be high that deep anti-Japanese feeling would develop in this country, followed by the passage of significant protectionist legislation directed at Japanese imports. Clearly we, on the one hand, need to manage our economic relations with the Japanese more carefully, and they, on the other hand, need to adopt a political strategy for their economic export policy to avoid adverse consequences from their economic strength.

3. Extreme Japanese sensitivity to being the Asian bully. The recent revision of Japanese textbooks is a fine example of the deep animosity of many Asian peoples for the Japanese. Not many Americans remember that Japan occupied Korea from 1910 to 1945 and that churches full of Koreans were barricaded and set afire; Japanese occupation in Southeast Asia was extraordinarily brutal. Today Filipinos, Taiwanese and mainland Asians of all stripes are exceedingly nervous about Americans asking Japan to devote 5 percent or 7 percent of its GNP to defense.

At present, Japan has an inferior defense capability as well as a weak

defense program. Their air forces and navy are highly vulnerable to Soviet attack. Their ground forces need new equipment and better training. They have no capability to block the three straits, which would be a key role they could play in the event of war between the United



States and the Soviet Union. From our perspective, we can either watch them do too little for our purposes or run the risk of having them do too much.

Currently, only a small faction of one of the several Japanese political parties advocates a robust defense posture of 3 to 4 percent of GNP. So the likelihood that we will have to live with a low-profile Japanese defense capability, barring some major shock or general war, is very high.

What could change, however, is that Japan could adopt a "Gaulist approach," that is, remain tied to the West, but in a looser, less predictable fashion. They could then be quite independent on most foreign and defense policy issues. They could perhaps acquire their own nuclear capability, a surface navy, and power projection forces.

For our purposes, it behooves us to reduce the element of surprise and uncertainty when dealing with the Japanese. Even our enunciation of a "swing strategy" was a surprise to them. If we want to keep them calm, we need to retain at least one big carrier task group close to Japanese waters at all times. The prospect of no carriers near Japanese territory breeds nervousness in Japan. We need to be visible, to deter the Russians, to pose a credible war-fighting capability, but we must not do too much in any one area. The proper balance requires great artistry on our part.

From an American perspective, the worst case scenario would occur if Japanese high technology and discipline were placed at the service of the Soviet armed forces. We have to

make sure that this situation does not materialize.

As for Korean security, this issue will remain a bilateral Korean-American problem. Neither Japan nor any other state can play a pivotal role in either moderating North/South Korean relations or in improving the economy and military capability of the Republic of Korea. The U.S. has shouldered these problems and must continue to do so. The Korean government itself remains politically stable primarily because of the threat from the north, not because of popular support for General Chun's regime.

Perhaps the Achilles' heel of American strategy in the Far East is the Philippines, which remains essential to American Navy and Air Force planning for the western Pacific. President Marcos — if one studies the tactics and strategies of his reign of power — has been successful in maintaining power primarily through his military staff, who

owe their promotions and their lifestyle to him. Also working to his advantage is that the principal organized opposition to Marcos is non-Christian in a Christian country: Islamic rebels who are geographically isolated. Marcos' reign, however, will end sooner rather than later. He is both medically and politically sick, and there is very little likelihood that Mrs. Marcos, the heir apparent, will be able to retain the loyalty in the military that her husband generated.

If there is an upheaval in the Philippines, Subic Bay and Clark Air Force Base would be at risk. Contingency plans, therefore, need attention.

The remaining countries of that vertical strip, Taiwan, Singapore, and Hong Kong, are basically vestiges, entrails, of China. U.S./P.R.C. relations are absolutely central, therefore, to maintaining a strong Taiwan, Singapore, and Hong

Kong in the Western camp. But it would be a grave mistake to move swiftly toward major rearmament of the Chinese to satisfy our deeper concerns about the Russians. Such action could be of short-term benefit but would be a profound error in the long run. Moreover, a combined British-American strategy is necessary if Taiwan, Singapore, and Hong Kong are to remain in an independent role outside direct Chinese domination.

American naval forces must continue to be visible in the region, demonstrating to our Pacific allies that the United States is firmly committed to their defense, and that the Vietnam experience has not permanently damaged America as a Pacific power.

Coalition Defense versus Maritime Strategies

Ambassador Robert W. Komer
FORMER UNDER SECRETARY OF
DEFENSE FOR POLICY

It is abominable to talk about strategic versus tactical C². Both are strategic as well as tactical. Since the U.S. has never fought a nuclear war and is never likely to fight one, we ought to call it deterrent C² versus war-fighting C², or even nuclear C² versus conventional C², because there will always be a conventional element.

What we should discuss more is coalition strategy and coalition C², because we are ill-prepared to fight a coalition war. Cooperation with our allies is the only way we will be able to preserve the balance of power, given our present capabilities and resource constraints.

Since the essence of strategy is choice — among missions and among our capabilities to execute them — I would like to discuss alternatives in force projection.

Because it is remarkable how little we think strategically, here are a few fundamentals. Strategy must have an aim. For the U.S., the overriding aim should be to preserve the balance of power in three areas of critical interest.

The first area is Western Europe. It has a greater total GNP than the U.S., has more people than the U.S., and is strategically located between "us" and "them."

The second area of critical interest is the Far East, primarily Japan and China. This area is vital because Japan has the second largest GNP in the world and the two countries together are, again, between "us" and "them."

The third area is the Persian Gulf with its oilfields. The Gulf presents us with a third-front problem; it would be useless for the U.S. to defend the oil if we lost the first two critical areas. The U.S. could probably manage without Persian Gulf oil, but our European and Asian allies could not.

My next basic proposition: strategy must relate aims to capabilities and resources. While the U.S.S.R. can give near-absolute priority to buildup of its military strength, democratic societies have a tradition of underfunding the military in peacetime. The Soviets have spent the last twenty years building up while we have disinvested in defense; we diverted approximately \$300 billion to the Vietnam War and an additional \$100 billion to expiation afterward. The U.S. military capability has, until recently, been declining. We are way behind in some respects. We are suffering from what the Joint Chiefs of Staff call "mismatch between strategy and resources." Since this is a big mis-

match, we should be taking another look at strategy as well as trying to get more resources.

Various alternative force projection strategies have been proposed in light of our strategic aims and constrained resources. The first alternative is the "unilateralist" strategy, based on the view that we cannot rely on our allies. So we could retreat to the alternative of defending only



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the Western Hemisphere. This was our dominant strategic aim when the Royal Navy controlled the seas, but there are few who support this isolationist aim today.

The second force projection alternative is a group of "maritime supremacy" strategies. Since resources are constrained and are likely to remain so, and since our strategic needs are so great, proponents of these strategies make a choice — they would put most of our money into command of the sea.

Stansfield Turner's sea control strategy is the first of these maritime strategies. His is based on two facts of life: that six-sevenths of the earth's surface is water and that we always get surprised by the unexpected. So, he favors putting most of our resources into sea control. The problem is that most of our interests are on land; the control of the sea is merely a means to an end. We need both maritime superiority and something else.

Unfortunately, constrained resources force strategists to decide what kind of superiority is best. For example, Turner would have the U.S. add more amphibious force projection to sea control so we could focus more on remote, unexpected contingencies like the Falklands. But the lesson of the Falklands is that it was a strategic aberration. The Falklands victory came at the expense of British ability to fill their Atlantic commitments and to contribute more adequately than

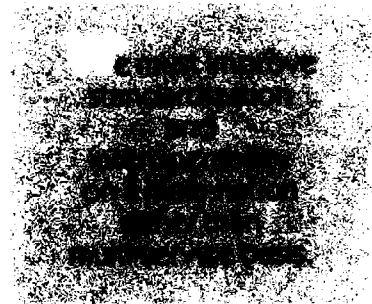
they are at present to the defense of their frontier on the inner-German border.

If we give up on the Europeans, the Chinese, and the Japanese as defense partners, then we must have a maritime strategy. But adding forcible entry to that strategy suffers from two deficiencies: first, we already own all the islands; in a conflict it is the other side which will need the forcible entry capability. Second, it will be very difficult during a conventional war to return via amphibious forcible entry to either Europe or Japan. Unlike the Normandy invasion when the Russians kept the Wehrmacht busy, once we lose an area like Western Europe or Japan, there will not be anyone to keep the enemy occupied while we land our amphibious forces. Therefore, we want to be cautious about such great reliance on amphibious assault. Either we already own the islands, or, if we are forced out of them, it will be impossible to go back.

These remote area strategies also fall prey to the "likelihood fallacy" — designing our strategy and configuring our forces to deal with the most likely contingencies. The most likely contingencies may be in the Caribbean, but I do not understand why the loss of Grenada, several of the other islands, or even some place on the mainland of Central America

is really going to destroy our strategic position. I have even greater difficulty placing strategic value on many African countries.

Instead, we should configure our forces to deal with the most serious contingencies. Strategic nuclear exchange is the least likely contin-



gency of all. However, this does not mean that we should cut back on our strategic C³ and retaliatory forces. While the likelihood of the Warsaw Pact forces sweeping across the inner-German border may also be relatively low, the objective of our strategy, our policies, and our capabilities must be to keep that likelihood as low as we reasonably can while dealing with other areas. This illustrates the problem of the likelihood fallacy: the U.S. military establishment was not wrong to worry about Europe first, or to worry now about the Persian Gulf as an indispensable strategic link to Europe. It would have been wrong for us to program our forces primarily to deal with Angola or Vietnam.

There is another maritime force projection strategy which happens to be the current favorite: using big nuclear-powered carrier task forces to nibble away at the maritime flanks of the U.S.S.R. The problem with using carrier strikes (I will not get into vulnerability issues) concerns offensive capability. These splendid carriers, employing deception and everything else to take advantage of innate Soviet stupidity, will, if successful in getting to the launch point and launching, deliver 500-pound dumb bombs. I am not sure that the Soviet navy can be obliterated by 500-pound dumb bombs, much less the U.S.S.R. I guess this is why, when funds are apportioned in the Kremlin, the Soviet navy has always gotten the least.

Nonetheless, these maritime supremacy strategies are legitimate strategic options. They at least face up to constrained resources by trying to focus on immediate needs in the event of a threat by the enemy, rather than imitating the Army's strategy of planning for mobilization and then responding months or years after an enemy strikes.

So, the U.S. needs another kind of strategy — a kind which will hold onto areas central to our vital interests and prevent a shift in the conventional balance of power. Admittedly, with our constrained resources, the U.S. cannot alone hold

onto Western Europe, Northeast Asia, and the Persian Gulf. Fortunately, we don't have to if we stop ignoring a simple fact: the single greatest U.S. strategic advantage over the Soviet Union is that we have lots of rich allies and they have only a few poor ones. All of their allies are a drain on the Soviet exchequer and only a few of ours are. We must exploit this fundamental fact, because the U.S. is now producing only 20 percent of the world's GNP as compared to one-half in the late 1940's. We have to share the burden — there is no way out of it.

A coalition strategy is the answer. Indeed, it has always surprised me how long it took me to recognize another historical truism: most wars are coalition wars — wars of alliance versus alliance — rather than one country versus another. A U.S. versus U.S.S.R. conflict does not reflect historical reality. Even all four of our own twentieth century wars were coalition wars. Since we can no longer rely primarily on nuclear force as a cheap deterrent, we must develop a stalwart conventional option. Because of resource constraints this must be a coalition option.

The difficulty with coalition strategy and a coalition war doctrine is that coalition burden-sharing has not worked very well in peacetime and coalition operations have not worked very well in war. A number of problems contribute to this.

First, we do not focus on it enough militarily; we are all guilty of what has been called the "sin of unilateralism." We need to talk about combined C¹, rather than joint C¹.

Second, our Achilles' heel is our lack of strategic mobility forces. At the present time, our force projection capability is terribly unbalanced — we have more active regular general-purpose forces than we could deliver in time to the scene of conflict.

The third problem is nationalism, also known as parochialism or protectionism. The interoperability necessary for coalition strategy has not been possible due to our unwillingness to share technology. We must have a more liberal disclosure policy with our allies or we will not be able to reach any level of interoperability.

The fourth problem is that the whole incentive structure is wrong; it puts a premium on taking care of one's own service first, one's own country second, and only then on cooperation with allies. Coalition cooperation has never really been attempted in peacetime. The U.S. armed services must be told that new funding requirements mandate cooperation.

Let me return to those three key areas I discussed earlier — Western

Europe, Northeast Asia, and the Persian Gulf.

Can Western Europe defend itself without nuclear weapons? I agree with Jim Schlesinger that over-reliance on nuclear deterrence has been the fatal flaw in the Western alliance. But I do not advocate getting rid of our nuclear weapons. Instead, we should concentrate on making them survivable and using them primarily to deter the other side from using nuclear weapons. Even so, I believe that NATO could defend itself conventionally without huge increases in defense spending if we strove for more rational burden-sharing and greater efficiency.

The second area of our vital interest, Northeast Asia, is not just a maritime theater. The objectives and chief players are on land; Japan is no longer a maritime power.

The key problem of Far East strategy is China, the Soviets' biggest strategic problem. The Soviets already recognize the two-front threat. Indeed, the classic gambit of a weaker power is to present a superior power with a two-front threat. We ought to think more about that when we look at strategic potential in the Far East.

This does not mean that we should rearm all the Chinese forces. We could not do it; in today's dollars it would take \$100 to \$120 billion. Our problem is a lesser one. We should provide sufficient defensive armaments to the Chinese forces so that

they would not be quite as much of a pushover for the Soviets in north China as they are today. Armaments like hand-held anti-tank weapons and hand-held anti-aircraft weapons would be appropriate.

I will make two points about the Persian Gulf. First, you cannot de-



fend the oil from behind. Second, this means that you cannot defend the oil from the sea. You can defend the oil access routes from the sea, but if we lose the oilfields, I do not want to defend the access routes, I want to close them.

A second corollary: you cannot get out in front of the Gulf oilfields with marines alone. Amphibious ships are just not fast enough. Having had some experience with contingency planning for the Gulf, and noting where the marines went in during our initial exercises, I concluded that we really need something more than forcible entry at the toe of the Gulf. True, the only options for defending it from the front are high-risk strategies. Even so, it would be interest-

ing to think in terms of a trip-wire strategy in the Persian Gulf, more specifically, a trip-wire in the Zagros Mountains. This would present the other side with a very interesting problem of escalation.

I conclude that coalition strategy is still the best way to achieve the capabilities to defend our vital interests. In fact, given resource constraints, it is the only way.

I would like to end on a note faintly related to conventional C³. There is a definite operational need for *coalition C³*. Our research and development must consider standardization, or at least interoperability, on a multi-nation basis, rather than among the American services alone. For example, from an Army viewpoint, it is more important for our C³ to be compatible with that of allied ground forces than for it to be compatible with the U.S. Navy. Also, naval C³ should be compatible first with our allies, then with the U.S. Air Force.

If we do not pay attention to coalition war, then we have a no-win strategy. If we do not pay attention to the logical corollary — standardization and interoperability across the board, instead of on a single-nation, single-service basis — then we face disaster on the battlefield, regardless of how good our own C³ may be.

Session 2

Theater Perspectives

C³I for the Falklands

Col. Jonathan Alford

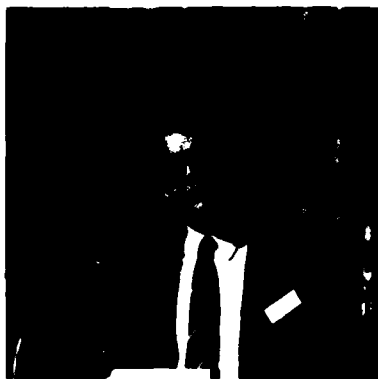
DEPUTY DIRECTOR, INTERNATIONAL
INSTITUTE FOR STRATEGIC STUDIES
(LONDON)

The official Ministry of Defense statement says that the success of C³ equipment was an outstanding feature of the Falklands. Obviously, I can hardly leave it there.

We have to consider not just C³, but C³I — and the "I" may prove most interesting. Furthermore, it was not just the functioning of the equipment, or its adequacy. The real issue is the way in which command was exercised, the philosophy of command, and the kinds of control that were needed under circumstances which were less than usual.

For example, to a quite unusual and indeed unexpected extent, naval gunfire support played a major role, although we have tended to overlook the design of the naval gun in modern platforms. That gunfire had to be directed and controlled, often by artillery observers ashore, and that meant communication compatibility between a small manpack set and the ship's radio fit.

There is a cultural difference between the way the British and Americans traditionally direct military operations. We British tend to let the commander on the spot conduct operations within broad political directives. This is true however good the communications. Our politicians are relatively content to



Colonel Alford assumed his present position in 1977. He formerly served with the British Army from 1951 to 1977.

operate on the basis of broad directives and limited interference with the minute-by-minute conduct of operations. The Cabinet was happy to clear rules of engagement for the navy and to permit action within those rules. This was critical in the sinking of the cruiser *General Belgrano*, which I will discuss later.

This is not to say the Cabinet did not express anxiety from time to time. Nor is it to suggest that there

was not tight political control over the degree and appropriateness of the violence used.

It was a Cabinet decision that no action be taken against the Argentinian mainland. The Cabinet determined the extent of the exclusion zone around the Falklands. And the Cabinet made certain that the pressure on the military junta was carefully synchronized. There was, in short, no absence of political leadership.

The chain of command was from the Cabinet to the chiefs of staff. This link to the Cabinet was made easier by the constant attendance of the equivalent of your chairman of the joint chiefs at the inner Cabinet meetings, from which the war was directed. The chiefs of staff executed Cabinet policy but devolved operational command to fleet headquarters at Northwood. Admiral Fieldhouse, Commander-in-Chief Fleet, was given a land deputy and an air deputy to create in effect a unified land, sea and air headquarters, primarily to coordinate UK-based support. This worked well enough despite being largely ad hoc and unplanned.

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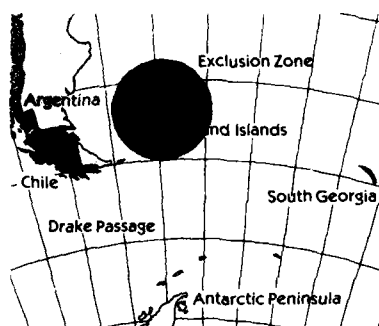
Interestingly, the nuclear-powered submarines did stay under operational control of Commander-in-Chief Fleet. And so far as I can establish, once the Army was ashore, a separate line of command was opened from the land force commander, General Jeremy Moore, to Northwood.

This chain of command seems tidy enough and it worked most of the time. I do not sense that this was an operation that was over-commanded, although it will always be the case that the commander on the ground resents interference by his superior.

I do sense some cases of tension. Errors were made, particularly during subsidiary landings at Bluff Cove. The army-fleet link, perhaps through haste, resulted in inadequate air defense. Those landings, driven by time pressure and the loss of helicopter lift when *Atlantic Conveyor* was sunk, were, I fear, sadly botched.

In the case of the rapid deployment force, the command lines must be straight rather than kinked. I find it impressive the way that the fleet, naval air, air force, marine, parachute and line infantry, together with fleet auxiliaries and the crews of the ships taken up from trade, managed in a very short space of time to make so few mistakes.

A few words about rules of engagement: I think the whole question



came into focus when the submarine *Challenger* sank the *General Belgrano*. The *Challenger* does appear to have had quite direct and specific authorization from London (even, it is said, from the Prime Minister herself) to attack the *Belgrano* within the rules of engagement.

This implies that although the sinking took place outside the total exclusion zone, actions being taken by the *Belgrano* and her escorts gave the submarine commander reason to believe that that particular group was moving to threaten the task force operating within the zone.

Certainly, no one in government had the slightest doubt about the legality and correctness of that action.

I do not know how the submarine commander communicated his request for guidance. I have to assume

that the SSN had access to a satellite channel to Northwood. There is too a question of whether he would have gone into the attack simply on the rules of engagement without specific authorization from London. I think that he would.

I would argue that the sinking of the *Belgrano* was justified on grounds of both expedience and self-defense. What, as someone said to me, was it doing there anyway? It was not on a pleasure cruise.

The sinking of the *Belgrano* was the first of two critical shocks that made people realize this was not an elaborate game. The other of those shocks was the loss of the *HMS Sheffield*. And more than any other incident, the *Belgrano* sinking lost Britain a lot of political support at an important time. The sinking did seem to have the effect of driving the Argentinian navy back to port and keeping it out of combat for the rest of the war, but there may have been other reasons for the Argentinians not to hazard their navy.

Strategic communications worked well enough but I have heard concerns that we were short of channels on the satellite links because we did not have dedicated communications satellites. MARISAT, which we used, was shared. Nor were the press happy with their share of communications. There was moaning that there were no direct transmission facilities for television and that dispatches (conveniently?) got delayed in transmission.

One small detail that I find distressing is that *HMS Sheffield* appears to have had her search radar switched off at the time she was attacked because she was using her satellite terminal. I cannot say this led to her loss but it must have been a contributing cause, for she certainly did not have time to fire chaff in the path of the Exocet missile. If interference between ship's radar and satellite use in a high threat area does lead to the temporary switching off of search radar, something is seriously wrong. One should not have to hazard a ship in order to communicate. The charge becomes more serious when we learn that chaff appears to have been quite effective as a defense against the Exocet when fired in time — time afforded by radar warning of an incoming missile or the presence of its launch platform.

The other Exocet loss, the container ship *Atlantic Conveyor*, sadly became a target through chaff deflection. Chaff broke the missile lock and the missile looked for a new target and found the *Atlantic Conveyor*, which of course, had neither high-definition search radar nor chaff defenses.

There is not much to remark about tactical command and control, so let me turn to tactical communications. I gain the impression that there was adequate net radio and adequate open channels and frequencies. I do not know of any overcrowding.



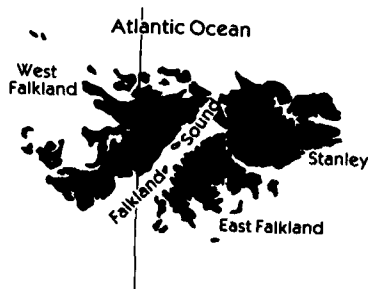
Marines of 1st Raiding Squadron Royal Marines, crouch on Swift Asylum Island, 11 May 1982, prior to invasion of Falklands.

The land force commander complained that he was short of secure radio links which would have speeded up communications. But normal communications security can handle the traffic and my impression is that it did.

One of the few joyous little things to come out of the campaign was the use of the island's telephone network. The brigade commander at Swan Inlet rang forward from a crofter's telephone to a number at Bluff Cove to ask if the Argentines were still there. On being told that they had left the day before, he rushed his men thirty miles forward by such

helicopters as he could muster. The task force also pressed the local CB radio into service to communicate directly with the Argentinians in Port Stanley.

There is a very strong suspicion that Special Air Service and Special Boat Service teams were placed in Argentina to watch aircraft movements and that they used very high speed integrated circuits to transmit messages in bursts to the task force at the rate of some hundred words



per second, thus substantially reducing the danger of intercept. I think that this is one of the very first times that this equipment has been used in anger.

We were never able to read Gen. Menendez' link to the Argentinian mainland, and it is interesting to note that the Israelis were continuing to help Argentina with secure, on-line encryption throughout the campaign. It was actually this, much more than rumored arms supplies, which caused British irritation with Israel.

As for intelligence, there is still great discussion about the failure to anticipate the Argentinian invasion of the Falkland Islands. I believe the warning indicators were there but were discounted at the highest political levels. Heads have rolled. Whether they were the right heads is another matter.

I believe that the Argentinians could have been deterred by preven-

tive deployment at the end of March. It would not have been easy, but it could have been done.

I will content myself with Dennis Healey's misgivings, "Inevitably, once a part of the Foreign Office has taken a view on an issue (such as the Falklands) it tries to interpret intelligence so as to confirm that view and tends to discount intelligence which disagrees with it." An intelligence review body at the highest level, independent of government departments, could prevent future misgivings.

After the invasion, the means of gathering strategic intelligence were extremely meager. American reconnaissance satellites certainly helped but they were badly limited by cloud cover. The distance from Ascension Island to the area of operations made aerial reconnaissance very difficult, and the absence of a capable long-range general-purpose reconnaissance aircraft was badly felt. Once the maritime reconnaissance Nimrods were operating with inflight refueling, they flew some 150 sorties to keep watch on the Argentinian navy.

In the case of South Georgia, we had to resort to a Victor tanker rapidly fitted with cameras to find out what forces were on the island. Although foiled by clouds, the aircraft's ordinary operating radar did at least ascertain that no large Argentinian ships were present in the anchorage.

Special Boat Service parties were landed early, some say a month after the Argentinian landings, to observe deployment patterns and pass this information by radio to London and the fleet. These parties must have come, therefore, from the SSNs which were first on the scene.

Some information may have come from islanders who managed to remain in radio contact with the force. From this I suspect we gained a generally accurate picture of Argentinian deployment, aircraft movements and defenses. I do not think we were surprised in general by what we found.

However, we were very short of tactical photo reconnaissance; there were too few Harriers to do the job and they had higher priority tasks.

It came as a shock to find that the Argentinians had flown C-130 sorties into Stanley Field and continued flying until the very last days. I doubt if the Task Force was getting adequate medium- and high-level photo coverage on a regular basis.

We were also surprised at the number of troops taken prisoner at Goose Green and Darwin; I doubt that the single-battalion attack would have been made if the true strengths had been known. It seems that the Argentinian garrison commander doubled the garrison the night before in anticipation of an attack. To build up an accurate picture takes time, and time is what the Task Force did not have.

In fact, we really had very little idea of the total size of the Falkland's



PRESS ASSOCIATION PHOTO

(Above) HMS Sheffield burns after being struck by Argentinian Exocet air-to-air missile fired from Super Etendard strike plane. The ship was abandoned and later sank while under tow. Twenty men were killed in the attack.

(Right) Argentinian prisoners are searched at Port Stanley prior to being repatriated.



PRESS ASSOCIATION PHOTO

garrison right until the end. I suspect that most of what was known came from Argentinian television, although the size, equipment, and capability of the Argentinian forces was quite well known, even by the organization I represent, the International Institute for Strategic Studies.

So far as I can tell, we never knew where the two Argentinian Type 206 submarines were. They were most emphatically lost to view, despite antisubmarine warfare capabilities of a rather high order. And finally, of course, we were never able to track Argentinian raids from their source.

Most intelligence gathering still had to be done on foot by aggressive patrolling and that is a *slow business*. I do not know to what extent our commanders were surprised. The telephone call incident to Bluff Cove means that we did not know by reconnaissance that the Argentinians had left.

On the Argentinian side, I would simply note that they were largely blind, mainly because they had not invested in aircraft reconnaissance. Also, they made apparently little effort to find out what was going on. That seems consistent with their entirely reactive attitude once battle was joined. They did make an effort to track the fleet on its approach to the South Atlantic, and they just

might have had some Soviet help on the way down, for the fleet was shadowed by Soviet AGIs. But generally, Argentinian reconnaissance was absent. Virtually all of their air missions, so far as I can tell, were of the search and destroy variety rather than specifically targeted.

One of the central issues of the whole campaign was the marked lack of airborne early warning. It was not available and we could not provide a remedy in time. The carriers were, for safety, some 60 miles east of the islands, putting them beyond the range of Argentinian strike aircraft operating from mainland airfields. To get the Harriers into the air in time to intercept raids against the islands required vital minutes which we did not have. Certainly the Harriers sometimes flew combat air patrol but there were too few to operate continuously in that way over all ground and maritime activities. As it was, the Harriers (some 40 aircraft) flew 1650 sorties with the quite remarkable figure of only 1 percent of sorties aborted through unserviceability.

But the task force critically lacked a long range airborne radar flying permanently overhead. Our airborne early warning Nimrod is not yet in service and the Harriers do not have an early warning radar. Planning had assumed that the fleet would always operate within land-based airborne early warning cover.

Radar picket ships could not be posted forward to the west for they would certainly have been lost to air attack. *HMS Sheffield*, only some 20 miles out, was so lost. So this blindness cost us dearly. The cost need not have been so high if we had had something like our Gannet early warning aircraft or the Hawkeye E-2C. We are now scrambling into service a modified Sea King helicopter with a search radar.

Planning for the operation, particularly the logistic planning, can only be described in superlatives. It was, in my opinion, magnificent. Lots of medals will rightly go to the professional, courageous, and very tough soldiers, sailors, and airmen who fought in the South Atlantic. I hope recognition will also go to the staffs who provided the framework without which disaster could so easily have resulted.

I will let W. S. Gilbert have the last word. He once complained (standing on an empty station platform) that "Saturday afternoons, although coming at regular and well-foreseen intervals, always take this railway by surprise." I tend to feel the same way about the Falkland Islands.

Tactical Air Forces in Europe and the C³I Connection

Lt. Gen. Robert W. Bazley, USAF

VICE COMMANDER-IN-CHIEF
U.S. AIR FORCES IN EUROPE

Two things stand out about USAFE and NATO. The first is our proximity to the heaviest, densest military threat ever assembled. While the word deployment



General Bazley assumed his present duties in July 1981. Recent experience since May 1978 includes Commander, 3rd Air Force at Royal Air Force Station, Mildenhall, England; Commander, Sheppard Technical Training Center, Sheppard Air Force Base, Texas; and Commander, Air Force Inspection and Safety Center, Norton Air Force Base, California.

typically implies "moving forces," we are already there.

Second, the C³I connection is vital. I consider it one of the most significant "force multipliers" in any conflict with our Warsaw Pact adversaries.

Proponents of the "simple" in the "simple versus complex" argument do not seem to grasp the situation we face in Europe. We are outnumbered two to one in air forces, and the Soviets are building new aircraft at about four times our rate. We defend "the front;" Soviet fighter-bombers can now take more bombs to London than they could deliver over Frankfurt ten years ago. They have fielded seven new missile systems in the last ten years. In winter, given the combination of night and adverse weather, we operate below 1500-foot ceilings and three-mile visibility more than 80 percent of the time. And the Soviets have troops dedicated to chemical attack and electronic warfare.

To meet this threat, we need the full spectrum of capabilities, and we are getting a lot of it.

We have brought F-15s and A-10s into the theater for modern air-to-air and close air support capability. We have just bedded down our first U.S. F-16 wing, adding the second half of a

one-two punch to the air-to-air and ground attack roles. Our NATO allies are modernizing their fighter forces, too.

In fact, if we are to offset the numerical imbalance, meet Soviet technical advances as shown in the MIG-23 and MIG-27, and overcome the weather conditions of the Central Region, we need the level of electronic sophistication of the F-15 in all new fighters.

We need more fighters to help reduce the numerical disadvantages, and we need places to bed them down. Our 14 U.S. main operating bases are already too crowded and vulnerable, so we have identified over 70 allied bases we could potentially share. Unfortunately, only at less than 15 percent of them could munitions, fuel-storage, and dispersed parking areas be added.

With our proximity to the front, and the chemical warfare threat, we need *survivability* — hardened shelters for aircraft and operations centers and numerous other functions, and a chemical offensive capability that will deter the enemy from choosing that weapon. We have many of the shelters we need, but

rounding out the total requirement in the support areas (like shelters for maintenance activities or ADP facilities) is proving a tedious process.

While weapons provide the punch, sensors help us see where to punch. So to complement the new weapons systems, we are modernizing and

**or planning,
intelligence,
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and C³, we need a
pervasive, high-
fidelity secure
voice system.**

expanding our sensor systems. For example, NATO is readying the first of its own 18 E-3As. And while we have had RF-4s with side-looking radar, ELINT sensors, and real-time downlinking for some time, we will be expanding their range and coverage by adding more remote ground-entry terminals. The TR-1 — an updated U-2 airframe — will carry advanced electronic systems to search for and pinpoint enemy electronic emitters and then downlink data in real time to special ground stations. On the ground, we will replace our U.S. TACS radars, and

other countries are doing the same in their Air Defense Ground Environment systems.

What we need now is a good "C³I connection." These systems, weapons, and sensors typically arrive in the field as discrete packages. The theater commander is responsible for putting them together into a winning combination of aircraft types, C³I systems, support structures, and tactics.

In the NATO structure today, each member nation must provide trained, equipped, and supported forces. Yet the operational command and control is vested in NATO. Our C³I systems are, by organizational and operational principle, part NATO and part national responsibility. For the C³I connection, we are trying to influence both U.S. and NATO planning and programming.

Our new weapons systems, C³I ADP capabilities and communications equipment must be smart, quickly responsive, and above all, survivable. For GLCM and other nuclear capable forces, we need absolute command and control, at mission planning and allocation centers, from the release authorities down to the individual airframes and launchers.

We need high-speed mechanisms at multiple echelons to keep track of airframes, parts, munitions, crews, and air base facilities, and to help build and disseminate mission taskings in real time. That means auto-

mated bookkeeping, quick data retrieval and manipulation, and secure high-speed links.

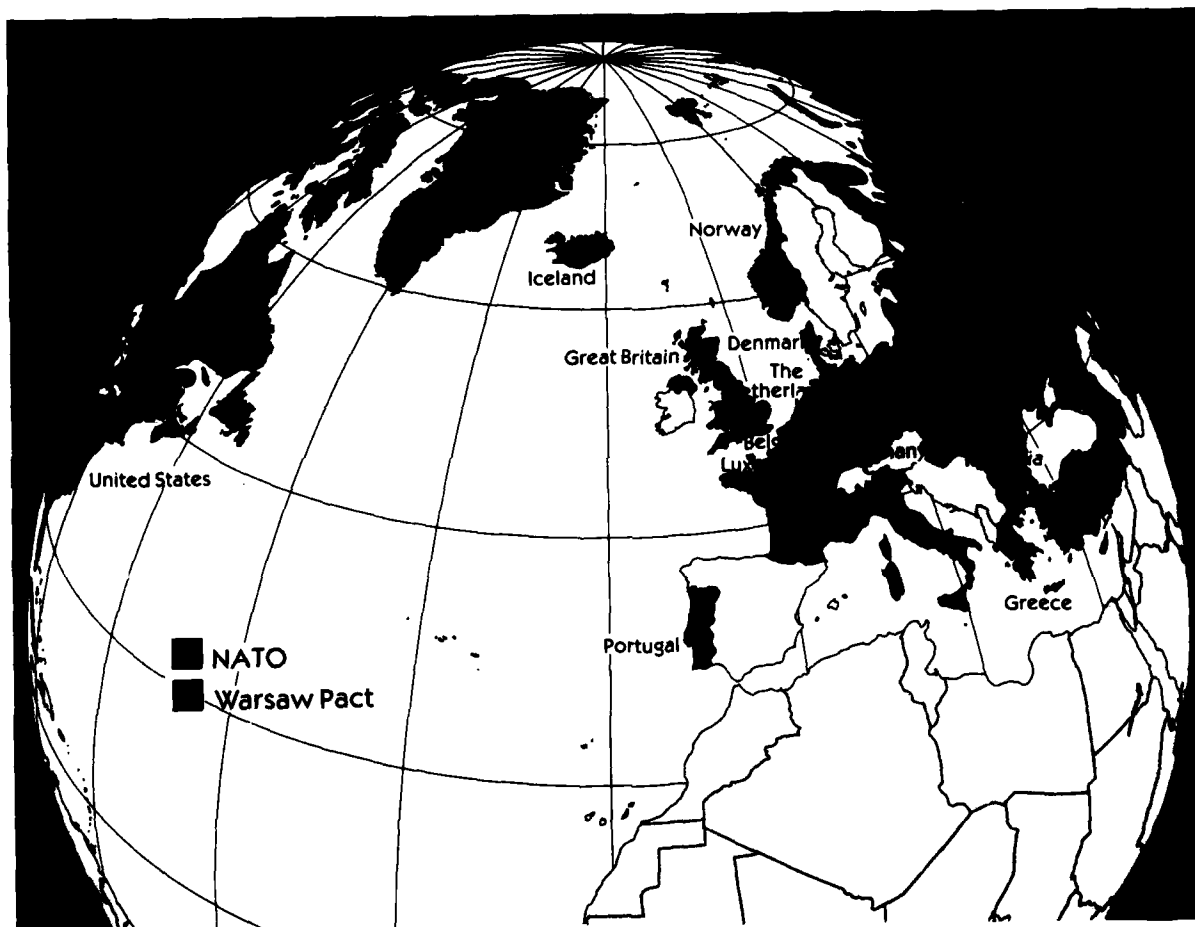
We must combine and quickly disseminate target and threat information to aircrews. That means sophisticated electronic systems to separate the wheat from the chaff, and an extensive survivable communications network.

For aircrews to communicate effectively with the ground and with each other, despite enemy ECM, they will need the time-economy of data links and cockpit displays, the surety of positive identification, and the flexibility of voice links operating over jam-resistant radios.

Overall, to support planning, intelligence, operations, logistics, and C³, we need a pervasive, high-fidelity secure voice system.

Technically, we pretty well know how to do these things. The trick is to sort out who — NATO, the U.S., other countries — should do what and persuade U.S. decisionmakers and our NATO partners to field the needed C³I systems. We approach this task in three ways.

First, we proceed independently and lead by example. We determine U.S. C³I needs and implement projects to meet them. We have just



published, for the first time, a USAFE C'I Master Plan which incorporates over 200 items from base-level computers to satellite radio relays. These include systems in all stages of planning, funding and development, such as HAVE QUICK or the Joint Tactical Fusion System or the new automated teletype message system in our Sembach ATOC. The need is there, and we hope that other nations will follow our technical lead. We are using our C'I Master Plan to organize our thinking and help formulate our program submissions for funding. Our most notable success to date is probably NATO AWACS.

Our second approach is to achieve bilateral or multilateral cooperative efforts with one or more of the other NATO countries. Through a bilateral arrangement with Germany, we developed and fielded the EIFEL automated data processing system for

status-keeping and tasking of offensive air forces. The Germans developed it and together we improved it. We have just installed it at our Sembach ATOC, and under a new multinational agreement that we helped draft, Belgium, the Netherlands, and the United Kingdom will jointly put it into their ATOC at Maastricht, the Netherlands.

The third way we field needed C'I systems in Europe — NATO systems in particular — is to influence their design by technical documentation produced specifically for that purpose. A prime example is our five-volume European Air Command and Control Architecture for the Central Region (the SALTY CONTROL documents). It outlines the operational air command and control needs for the future, the existing baseline C'I

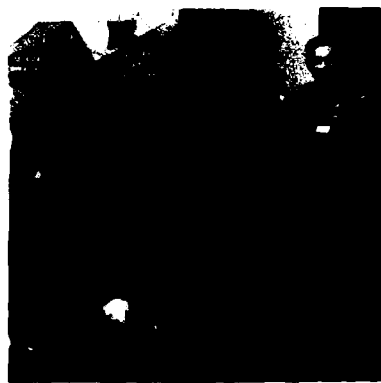
system, several improvement alternatives, and the recommended program. It has had a significant influence on improvements to the NATO Air Defense Ground Environment System.

Another example is the NATO command and control system for ground-launched cruise missiles, which had neither a design nor a precedent until our C'I engineers put one together, first for NATO and then for each of the other participating countries. And finally, our European operations concepts for C'I systems developed in the U.S. — such as our employment concepts for the TR-1 and for the HAVE QUICK radios — help influence their acceptance and use as NATO-wide C'I systems.

Pacific Command Perspectives

Lt. Gen. Joseph T. Palastra, Jr., USA
DEPUTY COMMANDER-IN-CHIEF, PACIFIC

We in Pacific Command have to think of a broader conflict: the air-sea-land battle, with naval forces prominent. The sheer size of our area — more than half the earth's surface, most of it water, and over 60 percent of the earth's



General Palastra assumed his present duties in July 1982. Recent experience since January 1977 includes Chief of Staff, 8th United States Army, U.S. Forces Korea, Commanding General, 5th Infantry Division (Mechanized), and of Fort Polk, Louisiana, and Senior Military Assistant to Deputy Secretary of Defense.

population — makes our operations very complex. From the U.S. west coast, it takes a carrier battle group 25 days to reach the Indian Ocean, and even a modern jet transport like the C-141 requires about 32 hours of flight time. Responsive and reliable command, control, communications and intelligence as a force multiplier is thus not a buzzword for us — it is a fact of life.

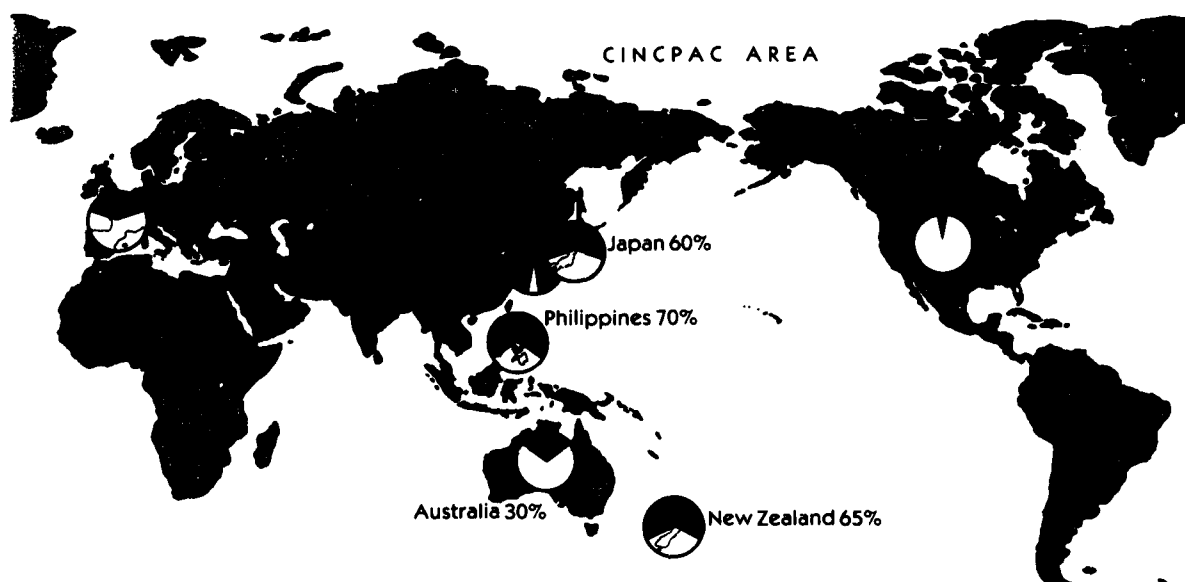
The U.S. has vital interests in the Pacific theater. Our Asia-Pacific trade has exceeded our trade with the European economic community for nearly ten years, and the margin continues to grow. It now accounts for 28 percent of all our foreign trade and over \$137 billion annually. Japan is our largest trading partner. Moreover, Persian Gulf oil, on which our allies in particular depend, transits the Indian Ocean. We have to keep the routes of flow open and unhindered.

Our cooperation with Asia is not a defense arrangement. It is essentially a political-economic grouping that avoids anything that even appears to be entangling defense commitments or alliances. The U.S. has been circumspect in approaching those countries. We do cooperate, by treaty, with Australia and New Zealand, and we have mutual military exercises.

Strategically, U.S. defense is PACOM's top priority; we must protect the gateway along the Aleutians to Alaska. Maintaining the Arabian oil flow is next in importance, followed by maintaining the lines of communication for sea, air and land forces. Finally, we wish to avert radical shifts in the balance of power that might destabilize the region.

The Soviets are the dominant threat in the area, though we also face North Korea, Vietnam and others in Southeast and Southwest Asia. The Soviets have maintained their combat capability in Western Europe while expanding their power to the east and south. The growth has been most dramatic in the Soviet Far East, most dangerous in the southwest. Opposite China and Japan, the Soviets have developed a war-fighting capability to parallel that on their western borders. They have, if not the forces, at least the command and control to fight a two-front war.

The Soviet Pacific naval force is the largest of the four Soviet fleets, with over 80 major surface combatants and 70 submarines, many equipped with ballistic missiles.



Most U.S. allies depend heavily on Persian Gulf oil, with purchases in excess of \$150 billion annually.

They routinely operate in the Western Pacific and Indian Ocean, and have use of bases, ports and airfields in Aden, Ethiopia and Cam Ranh Bay, Vietnam. Their recent tour of the Pacific, with passage along the western shores of the U.S., underscored their freedom of movement.

The Soviet far east air force has almost 2500 aircraft, and is modernizing at an impressive rate. During 1980-81 it replaced older fighters and interceptors with over 200 new-

generation aircraft. The significance of these numbers becomes clear when they are compared with the 250 aircraft the U.S. Air Force has in the Pacific. Soviet Backfire bombers can operate from their home bases against targets as far away as Midway, Guam and the Philippines and return without refueling. Soviet reconnaissance and antisubmarine warfare aircraft

operate from Danang and Cam Ranh Bay over the South China Sea.

The Soviet far east ground forces number close to a half-million men poised mainly along the Sino-Soviet border. An estimated 120,000 men are positioned facing Southwest Asia, and some 100,000 troops continue to occupy Afghanistan and are likely to stay there for some time. Their firepower and mobility are continually being modernized. So the Soviet forces can significantly influence the military balance throughout Asia, and can threaten

the vital oil fields and sea lanes of the Persian Gulf and the Indian Ocean.

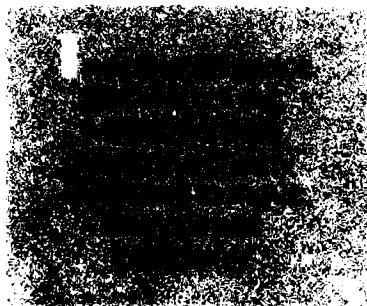
In Northeast Asia, North Korea's forces continue their military buildup at an unmatched pace of modernization. In quantity and quality, they have a clear edge over the south's forces, are positioned well forward, and can attack the south with little or no warning. They present the toughest C'I challenge I have encountered.

In Southeast Asia, the Vietnamese have enough military muscle to threaten regional peace and stability. Soviet military and economic assistance estimated at over \$3 million a day supports some 170,000 Vietnamese troops occupying Kampuchea and raising the tension along the Thai-Kampuchean border.

We depend crucially on our allies in the Pacific. We would not want to lose our trade with Japan or see an enemy get it. So we want to make sure Japan stays in our camp and does not go neutral. Our bases in the Philippines are crucially important; without them, our nearest base would be Guam. If we should lose our Philippine bases, we could probably make up for them, but we'd find it harder to deploy and sustain forces, especially in the Indian Ocean.

PACOM's military strategy is primarily to deter and neutralize the Soviet threat while maintaining

preparedness to react to other contingencies. We must be ready to counter nuclear, conventional, and regional or surrogate wars. Most plausible Pacific war scenarios involve global conflict with the Soviet Union, so we cannot devise PACOM



strategy in isolation from other theaters.

We must maintain credible, survivable and responsive strategic and theater nuclear deterrent forces. We want forward basing because the distances involved are too great for us to move forces as quickly as we want. But we must also be able to project forces to show we can protect our interests. We do not have enough force to do it all by ourselves, so we must rely on mutual defense arrangements with allies, and quick reinforcement and resupply from the U.S. mainland.

PACOM has some 360,000 military and civilian personnel, almost half of them deployed in forward locations throughout the Pacific and Indian Oceans. Their balanced

nuclear-capable and conventional forces must have enough carrier battle groups and support to meet contingencies in widely separated areas. We must have enough air superiority to neutralize the Soviet air threat. With Soviet submarines proving a growing threat in the Pacific, we need beefed-up antisubmarine warfare, mine warfare and other special capabilities. We are seriously short on forward operating bases. We must have survivable, responsive command, control and communications systems to give us the force-multiplying effect of rapidly massed and deployed, widely scattered elements.

Because of the sheer size of the area over which we need to exercise control, we cannot organize and pre-position forces to meet every possible challenge. We must react rapidly and tailor and move forces as conditions change, and this will put unique stress on command, control and communications. We have been practicing with carrier battle groups, aircraft and other units, trying to find the bugs involved in controlling the available forces.

What is the tradeoff between forces in place and strategic airlift? Would I trade a couple of artillery battalions and an engineer group on the ground in Korea for an extra wing of airlift? In peacetime that

costs you nothing, but in war it might leave you unable to hold onto the peninsula. It depends on the situation. Given the expanse of the Pacific theater, even airlift requires days, not hours, and the need for tankers is just as pressing as the need for cargo and troop carriers. There is a deficit in both.

Despite shortfalls, our current C³ systems are effective. But that assessment is based on performance in relatively unstressed conditions. During contingencies we can expect a surge overload and performance degradation, even without enemy disruption. And current technology makes it far easier to disrupt C³ than to sustain it. We must therefore continue upgrading our systems — particularly communications — to ensure that they will be available when we need them the most.

The all-secure digital communications system of the future will dramatically cut the potential for exploitation by an adversary. Once the Soviets cannot exploit our communications systems, we can expect them to mount a major effort to knock out our most critical C³I nodes. So C³ countermeasures are a vital need. Moreover, we must take advantage of existing facilities —

commercial and military systems in Japan, Korea and the Philippines — so we will have a survivable system if the shooting starts.

A critical problem is the Pacific area's heavy reliance on satellite and undersea cable systems. The Soviet Union's demonstrated ability to destroy satellites has made it urgent to implement countermeasures and modernize backup high frequency systems so we can deploy at least minimum essential communications.

From the PACOM point of view, we need supporting communications to accommodate the increasingly high data rates our automated command and control systems require. Our current overburdened dedicated communications must quickly be replaced by an architecture that automatically switches communications circuitry to adjust to malfunctions and jamming conditions. The speed of today's communications control requirements precludes use of a manual system.

Our intelligence function must meet the toughest intelligence and warning problems: for example, learning when the North Koreans will jump off. The warning time available is almost nil. Our warning dissemination is vulnerable and degradable. I'd like intelligence that would tell me, within real

time, when the enemy is starting to move, not just exercising. Is that realistic? I don't know, but it is a requirement, it is being worked by the intelligence and communications communities, and I expect we will have that kind of capability.

Finally, in this era of rapid technological change and innovation in electronics, we must shorten our development cycle. To the people in the field, it seemingly takes forever to bring in the new systems. For example, up until 18 months ago, we had been using the same secure FM tactical radio for 15 years. The requirement for a better product was recognized, but it took 10 to 12 years to put it into the hands of the deployed forces. Not all of that is a funding problem; often we are pushing the technology too hard, or the user is continually coming in with changes. Certainly there are two sides to the responsibility for shortening the development cycle. But we must do it. I know it is costly, but it is not as costly as war. And war is what the U.S. and its allies in the Pacific are working to prevent.

ASD and Force Projection in the 1990s

Lt. Gen. Thomas H. McMullen, USAF
COMMANDER, AERONAUTICAL SYSTEMS DIVISION,
AIR FORCE SYSTEMS COMMAND

What are the problems associated with conducting joint operations in overseas theaters? What is the optimum mix and level of military force to be used, and at what level should the U.S. participate in global conflict?

Pre-positioning is an incomplete answer, for as recent history illustrates, we cannot afford to be everywhere. A long-standing dispute over



General McMullen's biography appears at the beginning of the book

the Falkland Islands erupted into a military conflict in just a few days. The islands were somewhat remote from one participant and 8,000 miles from the other. This example points out that, however we position our forces and however they are constituted, we cannot be totally prepared.

Thus, our forces must be mobile and adaptable. While U.S. forces in Western Europe and the Pacific are certainly appropriate, we must also plan for possible confrontations in other parts of the world. The dependence of the western industrial community on the import of chromium, cobalt, manganese, platinum and other raw materials from southern Africa, and oil from Southwest Asia, Latin America, Indonesia and the southern Mediterranean, demand that our focus remain overseas. And, of course, the western nations must maintain the key trade routes that link it all together. Any of these needs and many others could lead us into conflicts not easily predicted and for which our forces, therefore, cannot be specifically prepared. For these reasons, we must manage our forces with a global perspective.

U.S. forces are significantly outnumbered in key areas around the world. For example, in Europe we are

outnumbered more than two to one in combat aircraft; in the Asian theater the disparity is even greater. The Soviet Union has some 10,000 reinforcement combat aircraft compared to some 4,000 in the U.S.

This force ratio problem is significantly compounded by the relative geographic distances. To move forces from the U.S.S.R. to Central Europe, the Soviets would transit 500 miles through air space and land they control. By contrast, we would transit 4,000 miles of sea or air space over an ocean that is clearly contestable by Soviet surface-based forces and long-range aircraft. In Southwest Asia, the distance ratio is even worse; the Soviets could move 800 miles over land to the heart of the Saudi oil fields, whereas we would have to move 7,400 miles, again by vulnerable air and sea routes.

But it is air power, both airlift and tactical combat forces, that can get us into the ballgame during the critical early innings. Aeronautical systems are the most mobile and the

fastest reacting of our forces. At the same time, they are the most expensive per pound of cargo moved, and over a protracted conflict cannot sustain the necessary mass flow.

Improvements are needed. To improve our deterrent posture, we need better and more airlift and air refueling capabilities to rapidly move personnel, materiel and aircraft. And we must improve the survivability of deployed forces through C³I enhancements such as real time intelligence. To offset Soviet numerical superiority, we must also improve theater force effectiveness. This implies many things including improved sortie rates and night/adverse weather capability. Finally, we must work on the span of control problems, to provide integrated management of all our forces, strategic and tactical, in a global situation.

The Air Force and ASD are working hard to redress these deficiencies. We have several programs in progress.

To improve round-the-clock responsiveness of our tactical air forces, ASD is working on LANTIRN. This program will provide existing F-16 and A-10 aircraft with low-altitude navigation and target-attack capability at night and in poor weather. We are also considering derivatives of the F-15 and F-16 to determine possible benefits of reconfiguring either or both for dual-role missions (air-to-air and air-to-surface). Assuming we could train

flight crews for both kinds of combat, the theater commander could then assign these aircraft to either role. These dual-role aircraft would incorporate LANTIRN and a second crew member to deliver ordnance at night, in poor weather, with great precision, while retaining a good air-to-air capability.

The F-15 and F-16 aircraft are among the world's best. However, our numerical inferiority in Europe necessitates upgrading these aircraft through our incremental multistage improvement programs. These programs will add new weapons such as the advanced medium range air-to-air missiles (AMRAAMs), reduce pilot workload with multifunctional cockpit displays, improve radar capability for better operations in all weather, and update electronic warfare suites to improve survivability. We must also find better ways to identify friendly and enemy aircraft, improve communications equipment — most importantly voice, but also digital — and enhance aircraft availability to produce higher sortie rates.

Essential as these programs are, they are not adequate to meet the air-to-air needs of the 1990s. Our studies indicate that a new air-superiority fighter is needed in the early 1990s to maintain our technological edge over the Soviets. As a result of analyses and the request for information (RFI)

process, we have received more than 20 candidate designs for the advanced tactical fighter (ATF) from manufacturers. They range from a subsonic, low-level craft to a supersonic, high altitude cruiser. The majority of designs are for dash-and-maneuver aircraft able to cruise supersonically at medium altitudes with gross takeoff weights on the order of 60,000 pounds.

Capabilities we will consider for ATF include longer range, lower signature in all areas (such as radar, IR, visual, and noise), supersonic persistence, short takeoff and landing, and dramatic increases in supportability. The ATF program has been authorized \$23 million for FY83 and is awaiting appropriation action to determine whether we will proceed. If we get funding, a substantial part of our initial efforts will go into developing a new engine. Additionally, we plan to fund conceptual studies by several major airframe and avionics contractors less than a year from now. We expect a milestone decision in the summer of 1984 and aircraft entering the inventory in the early 1990s.

We are also working on mobility for global deployment capability in a timely and well supported manner. This requires adequate airlift capability to complement pre-positioning and naval shipping. Specifically, there are four tasks: deployment (movement of the forces to the combat area), employment (movement of forces within the theater), resupply, and retrograde movement (including aerospace rescue and



U.S. AIR FORCE PHOTOS

The F-15 Eagle (refueling in flight) and the F-16 Falcon.

recovery). Intertheater and intratheater airlift support all four of these tasks.

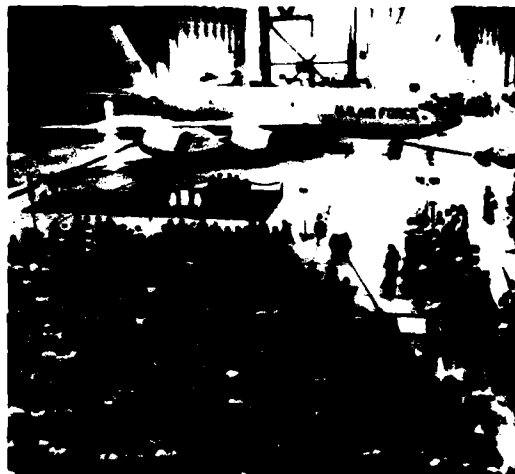
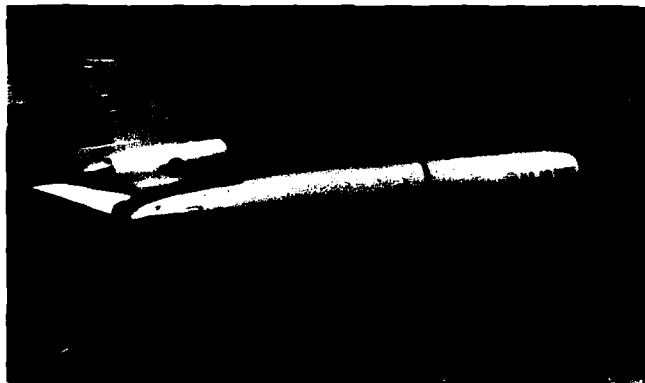
To meet these mobility requirements, ASD is involved in several procurement and R&D activities.

By the mid-80s, for example, we will have modified the wing of the C-5 aircraft with main structures of thicker, fracture-resistant materials. By the late 80s, we will have procured 50 additional C-5s for rapid intertheater deployment of combat forces.

The C-17 will improve U.S. capability to rapidly project, reinforce, and sustain forces used in intercontinental deployment and intratheater employment. It will be a multi-engine, turbo-fan, wide-body aircraft

capable of lifting a substantial out-sized payload over intercontinental ranges without refueling. The C-17 is specifically designed to move combat equipment and cargo into austere airfields operating under contemporary threat conditions. It will be equipped not only for in-flight refueling, to increase both range and payload, but also for airlifting combat forces and supporting equipment including combat-equipped troops, paratroops, litters, pallets, and 20- to 40-foot containers, as well as rolling stock. Currently, a low-level R&D effort is underway that should lead to a production decision in the mid-80s.

Tankers play an essential role in extending the range and utility of our primary airlifters. We are currently procuring the KC-10 and installing new engines on the KC-135. The KC-10 helps our strategic airlift capability by refueling the primary lifters and carrying bulk and oversized cargo. The Mid-East conflict in 1973 accentuated the need for airlift and long-distance capability and demonstrated our air-refueling shortfalls. The dependency of the C-5 and C-141 on foreign bases during that crisis demonstrated the need for a long-range refueling capability to permit nonstop flight operations to trouble spots around the world.



U.S. AIR FORCE PHOTOS

(Top left) The C-17 transport (artist's rendering).
 (Top right) The C-5A transport.
 (Bottom left) The KC-10 tanker.
 (Bottom right) The KC-135 tanker

60/Lt. Gen. Thomas H. McMullen

The KC-10 is also proving to be a great enhancement to rapid global mobility. It augments both the KC-135 and C-141 force, and at considerably less cost. During a single sortie, a KC-10 has refueled Navy aircraft using the hose-and-drogue system and Air Force aircraft using an aerial fueling boom. None of our other tankers can do that.

The current KC-135 is severely strained to meet the long-range air refueling requirements of our strategic forces. The cost-effective solution is to re-engine the KC-135 with a state-of-the-art, high bypass CFM 56 engine. This will reduce fuel consumption, increase takeoff performance and safety, and greatly improve fuel off-load capability by lowering

operating and support costs while enhancing aircraft survivability. We expect to finish this program in the late 1980s.

Our current helicopter forces are inadequate in many mission scenarios, and require new night and adverse weather capabilities. The HH-60D combat rescue helicopter program will add new rescue capability while meeting requirements for special operations. Using a modified version of the Army's Blackhawk and some of the features from the Navy's SA-60B Seahawk, the HH-60D helicopter will include in-flight refueling, pylons for additional

external fuel tanks, electronic warfare countermeasures, and a night adverse weather avionics capability. We expect to complete this program in the early 1990s.

These are some of the ASD programs that address the problems of projecting forces around the world; obviously there are many other programs within the Air Force Systems Command. We at ASD listen to the users and then develop and procure the best possible weapons systems to meet their needs. That is the challenge we face in meeting the requirements for the 1990s.

Lt. Gen. Thomas H. McMullen/61

Session 3

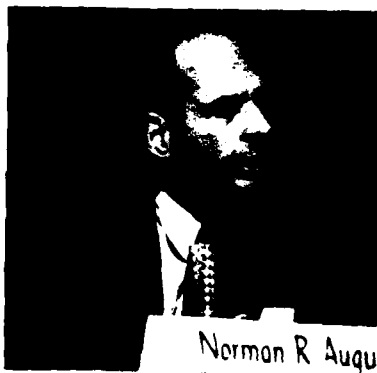


Tactical C³I and Weapon Delivery

Norman R. Augustine

VICE-PRESIDENT, MARTIN MARIETTA,
PRESIDENT, DENVER AEROSPACE

After a recent training exercise, the Soviets lined up a few of the tanks they had used and took movies. There were more tanks visible in that film footage than the United



Mr. Augustine is Chairman of the Defense Science Board and President of the Association of the United States Army. He has served as Assistant Secretary of the Army for Research and Development and as Under Secretary of the Army. As President of Denver Aerospace, Mr. Augustine oversees an aerospace operation with 15,000 employees at major locations in 4 states and sales in excess of 1 billion dollars.

States owns. That is symptomatic of a major problem faced by the free world.

We should let go of some of our traditional perspectives on C³I and generate some fresh thoughts. Specifically, we should look hard at the C³I used for target destruction and make sure that targeting information is highly accurate and very timely.

Fast, accurate targeting C³I can help offset our numerical disadvantage.

Lanchester pointed out that force capability depends on two principal parameters: the capability, or kill probability of the force multiplied by the size of the force, except that the size of the force is *squared*. The relative importance of these factors then is linear with quality, but squared with quantity. This is very significant in light of the numerical disadvantage we face. While history has not completely borne out Lanchester's equation, quantity is certainly very important.

Consider the force ratios of the U.S.S.R./Warsaw Pact to the U.S./NATO. They are 2:1 or 3:1 in many cases. Square that, assuming the qualities are relatively equal, and the disparities are even more enormous.

Given our numerical disadvantage, what about the ability of our forces to deliver ordnance on target?

We have made up for inaccuracy with brute force. The Hiroshima weapon was approximately 20-kilotons; at the peak of the Vietnam war we were delivering the equivalent of seven Hiroshima weapons per month. In "equivalent megatonnage", the measure used to calculate blast effectiveness, we were delivering the equivalent of one quarter of the Minuteman force each month.

If we could deliver ordnance accurately, results could be decisive, especially if time is short. In war, the Russians expect to cover 30 to 60 kilometers a day. At 30 kilometers a day, they would be at the Rhine in seven days and in Paris in three weeks. Time will be of the essence.

What would happen if we could make up for our inadequacies of



Lanchester predicts that quantity will have a decisive effect in battle. Historical data, however, indicates that while quantity is important, there are also other factors at work.

weaponry through better ordnance effectiveness and by tying in the required command and control?

The laser-guided bomb is an extremely effective device. We saw some of that weaponry, both ground-launched and air-launched, used in a recent Arab-Israeli war. About one third of the artillery, tanks, and air-

craft of all the participants was lost in 18 days. Decisive results indeed.

It is not just tanks and vehicles that wind up stacked along the road; the effectiveness of a force can also be reduced without even destroying the hardware. In that regard, I gathered data for aircraft attrition as a function of the number of sorties in a campaign.

In large campaigns, it is hard to find attrition rates above a percent or so. That is not too surprising. But *virtual* attrition can be every bit as important as actual attrition in that the offense controls attrition by adjusting its objectives.

For example, in Southeast Asia our gunships were destroying about 10 trucks per sortie. When defenses improved so that we could not use gunships, we used F-4s against trucks; the F-4s got a quarter of a truck per sortie. Assuming we never lost an F-4, this is still a factor of 40 improvement from the enemy's viewpoint. There are other examples from that war to show that virtual attrition can be much greater than actual attrition.

What does all this have to do with C I?

To paraphrase General of the Army Omar N. Bradley, Congress can make a military force but only C I can make it a winner. If we are to be outnumbered, C I can be the true force multiplier for us.

Going back to Lanchester, assume that a blue force and a red force are each at 100 percent strength at the beginning of conflict. If the red force outnumbers the blue by a factor of 2, we square that factor and it is 4. Assume the forces are roughly equal qualitatively and we end up with the red force having lost only 15 percent of its force when blue is altogether destroyed. The numbers are devastating.

Quantity	System
21,148	Infantrymen
1,291	XM-1 Tanks
1,148	AH-1S Helicopters
754	155mm SP Howitzers
674	AAH Helicopters
624	Hawk Launchers with Missiles
251	F-15 Aircraft
7	Nuclear Cruisers
1	Nuclear Aircraft Carrier with Aircraft

Each of these systems, in the quantity indicated, could be acquired and operated for \$425 million per year, based on life cycle costs. Planners must weigh the advantages of various mixes of personnel and systems.

Suppose we had a command and control system that permitted our blue force to be twice as efficient as the red force. What counts in Lanchester's equations are the force ratios at the decisive point of engagement, not in total inventory. And suppose we could get twice the percentage of our force to the point that counts through better C³I. If we can do this, we can reach parity.

Simplistically, a C³I system consists of a sensor network, a communications system to get data to a central location, a data processing or fusion capability, ability to disseminate commands and targets, and the ability to deliver ordnance on top of those targets. The sensor network I envision is a global, centralized net-

work. It has many kinds of sensors which dump data into many fusion centers. The user is imbedded in this network and can plug in and get only that part of the information affecting his area of the battle.

If this is a good idea, why haven't we done it? Because defending C³I is tough in budget battles and deciding what to buy is also tough.

If we should spend all our money on infantry, we would probably feel that even though we would not have an optimum force, a lot of the enemy would be destroyed in a confrontation. But if we should spend all our money on C³I, everyone knows we would not have an optimum force *nor* would we destroy any of the enemy. This is the frustration of justifying C³I, and we as a community have failed to quantify the payoff that C³I can have. Anti-iam capability has also failed in this category, although I am encouraged by the attention anti-iam has received recently.

C³I is made more difficult with the trend toward a more diffused battlefield, where there are large numbers of units that must draw on external resources. This is particularly true on the ground and in the air.

So, there is a critical interdependence when the person who acquires the data is separate from the one who engages the target.

Extremely accurate ordnance is available today. Further technology developments may make it unnecessary to have a person in the target vicinity. We may someday have

truly autonomous weapons. When launched in the area of a target, such a weapon would go and find the target using its own sensors and its own data processing. I call that a brilliant weapon as compared with a smart weapon. We are close to being able to build such weapons today.



When we have such weapons, we will still not gain what we should from them because of our inability to quickly close the time line. More accurate delivery capability *coupled* with a much more rapid time line will allow us to access a major part of the target spectrum. But if we can overcome many past limitations by doing these things — if the where-withal is in our hands — why have we not pushed ahead more rapidly? What are the pitfalls?

We must not over specify and we must avoid the temptation, particularly in command and control, to

take huge leaps at one time. We must not risk the readiness of present systems as we develop new capabilities. We must maintain interoperability through an evolutionary development approach.

We must keep a countermeasures capability. And bear in mind that the enemy is going to interfere with what we are doing. The fact that equipment works well on test ranges is not very interesting.

We technologists get excited about our microcircuits and the like, but we must keep in mind the logistics problems and think more about the user than we have in the past.

Contractors should be able to spend as much time working on the systems as we spend trying to defend the budgets for those systems.

If we can avoid these pitfalls, we are on the verge of being able to accurately deliver ordnance. We have data processors that can handle enor-

mous quantities of data and we can buy good communications systems if we choose. But we must close that loop — work the *time line* so that within minutes or even seconds we get data to the person in the cockpit or the one holding the lanyard. And that will have an enormous impact on the effectiveness of our forces.

Tactical C³I and the Acquisition Process

Maj. Gen. John T. Buck, USAF

DEPUTY FOR AIRBORNE WARNING AND
CONTROL SYSTEMS (AWACS),
ELECTRONIC SYSTEMS DIVISION,
AIR FORCE SYSTEMS COMMAND

The acquisition of C³I is not a mystery or a black art (although it may be closer to an art than to a science). The process is complex, but three elements stand out above others: discipline, resources, and credibility.

Prior to my assignment to the AWACS, I was in charge of building a hardened communications and control center at NATO SHAPE headquarters. When I joined AWACS, it did not surprise me that the same kind of technical discipline needed to acquire reinforced concrete, or power and cooling, applies as well to the acquisition of communications and computer equipment. Clearly defined objectives and requirements are imperative.

We need to prioritize our efforts, and not average them. This can lead to some difficult choices, but it is very important. Setting priorities requires discipline from both the user and the developer.

The user and the developer must also apply discipline to the budget. As Ambassador Komer has said,



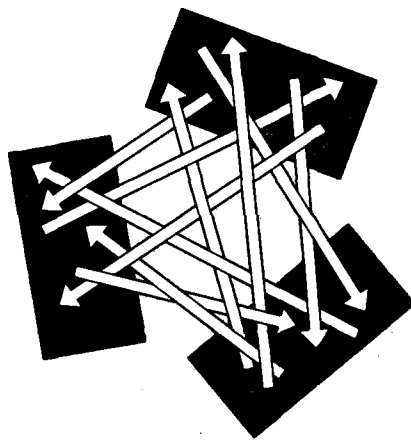
General Buck assumed his present duties in May 1980. He supervises the development and acquisition of an airborne command and control system equipped with radar, computers, displays and communications to direct aircraft against ground and air targets. Recent experience since 1976 includes Deputy for Control and Communications Systems, ESD, and Chief of the Special Projects Office, Supreme Headquarters Allied Powers Europe.

"Aims must relate to resources." Obviously, it is necessary to have enough people and enough money to do the job. It is also important to have the right combination of technical talents. If the job is bigger than the available resources, one must have the courage to scale down or reorient the program.

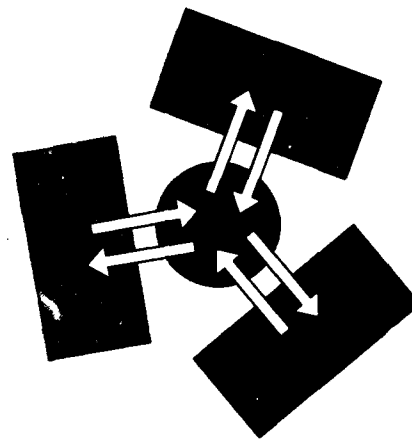
Those involved in the acquisition process must have credibility with one another. The NATO AWACS is an example of a credible program. That credibility is the result of sensitivity: to constraints, to international cultural differences, and to different management techniques. The NATO AWACS is the first time we have had a joint ownership venture with our allies. The international crew of the AWACS will give us credibility benefits long into the future.

Thus, these three elements — discipline, resources, and credibility — are very important to any acquisition program.

Interoperability is too often just a buzzword. Accomplishing it requires budget control at a high level of management. Without budget control, interoperability is very difficult.



Central budget control would help reduce inter-service competition for program funding, and thus should enhance interoperability.



Legislating interoperability tends to put an unfunded requirement in competition with an existing program for a service's funds, which are often scarce. This tends to be very disruptive. The process of interoperability requires compromise. One agency's attempt to intimidate others is not a sound way to achieve interoperability.

In any acquisition, and perhaps especially in C³I, the perceptions the users and the developers have of one another are telling. The users generally assume that if they have a problem, the developers will throw money at it. The users also seem to think that the developers have a tendency to overdesign. They are insensitive to user problems.

The developers, on the other hand, often complain that the users give them specific design requirements rather than performance requirements, do not prioritize their efforts, or support getting funds. The developers must help the users conceptualize the program, and the users and the developers must jointly find direction and funding.

We have had some successes. On the AWACS, we had a requirement for a SATCOM link that was satisfied in less than 30 days. It was done that quickly because we had the right priority in our program management directive. There was also a

requirement for an interim HAVE QUICK. That was done in three weeks, for exactly the same reason. Another good case in point is the Surveillance and Display Interface System. That project worked very well because the user was specific about what the equipment should do, because we jointly solidified the design parameters — we sorted out what was necessary from what was nice — and because the design was left to the developers.

In summary, it is not easy to acquire C³I, but it is important that we do it right.

C³I and the Rapid Deployment Force

Lt. Gen. Robert C. Kingston, USA

COMMANDER,
RAPID DEPLOYMENT JOINT TASK FORCE

The mission of the Rapid Deployment Joint Task Force (RDJTF) is to deter aggression in Northeast Africa, the Arabian Peninsula, and parts of Southwest Asia, and to help area nations resist aggression. Entry of RDJTF forces, however, will occur only by invitation from a nation or nations in the region and with the



General Kingston assumed his present duties in July 1981. Recent experience since July 1977 includes Commander, 2nd Infantry Division, Camp Casey, Korea and Chief of Staff, United Nations Command, United States Forces, Korea.

concurrence and direction of the National Command Authority.

The Rapid Deployment Joint Task Force was established in 1980 as a four-service force operating under a single commander. A year ago, it was designated a separate joint task force, and in January 1983, it will be redesignated a separate unified command with its own geographic responsibilities, service components, and operational forces, still retaining its joint capability for worldwide employment.

While I am greatly interested in developments to improve our C³I capability, it is in today's C³I context that I must plan, deploy forces, and possibly fight. As commander of the RDJTF, I focus my communications capabilities on gathering intelligence and disseminating orders for command and control of forces in pre-deployment, deployment, and employment, including combat.

One key issue in Southwest Asia today is to insure uninterrupted Western access to the region's oil resources. We in the U.S. certainly rely on Arabian oil; however, our Western European, Japanese, and Korean allies depend on oil from the region even more heavily than we do. The U.S. also relies on metals

from Africa for the aerospace industry, but Western Europe's dependency is far more serious. This growing importance of Southwest Asia to the U.S., to our allies, and to the third world is the chief reason that a new unified command is to be formed and assigned responsibility for all U.S. military activity in the region. This command can focus on this key area and not be distracted by other U.S. interests in Europe and the Pacific.

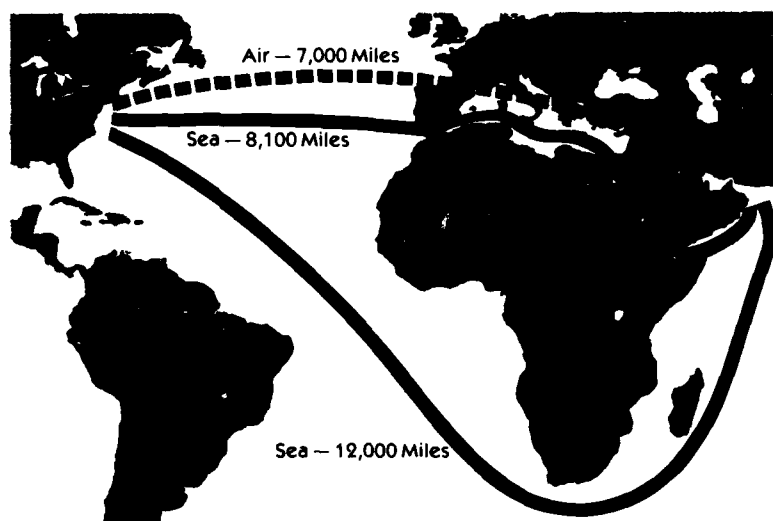
The RDJTF was formed to counter increased Soviet interest in the region and in reaction to recent shifts in the power balance, especially after the revolution in Iran and the Soviet invasion of Afghanistan.

In appraising the RDJTF's role in Southwest Asia, the challenge is increasingly clear. The force must be able to rapidly project substantial power into a region devoid of U.S. military presence, a region that has very limited access to strategic communications, that lacks roads, ports, storage areas, runways, telecommunications, and that will offer little or

no supplies in place prior to the possible closing of sea lines of communication.

Despite these shortcomings, the potential forces at my disposal are significant. Army forces would include the XVIII Airborne Corps Headquarters, an airborne division, an air assault division, a mechanized infantry division, an air cavalry brigade, various ranger units, and combat service support organizations. The commander of the 9th Air Force, my air component commander, has an array of aircraft for defense, interdiction, and close air support of ground forces; strategic bombers, reconnaissance tankers, and airlift aircraft are also ready. My Marine forces would consist of a marine amphibious force, plus a highly mobile marine amphibious brigade. Supporting naval forces include three carrier battle groups, an amphibious ready group, surface action groups, and antisubmarine warfare patrol squadrons. Special operations forces of all the services would also be available.

A full-scale RDJTF deployment could involve as many as 230,000 soldiers, sailors, airmen, and marines. Of course, the first major hurdle is to get there — rapidly. The Persian Gulf is some 7000 air miles from the East Coast of the U.S. and 12,000 sea miles around the Cape of Good Hope. Even if we use the Suez



Canal, our sea lines of communication will be over 8100 miles from the East Coast.

Once reached, the potential area of operation is much larger than the entire U.S. During planning, we often have to remind ourselves of the extraordinary distances with which we must cope. For example, in Iran, the distance from Maku to Kuhak is the same as between Paris and Istanbul or Frankfurt and Moscow.

Mission success will depend directly on our ability to quickly deploy a sizable force, to promptly receive, process, and use intelligence from national, strategic, and tactical sources, to exercise effective com-

mand and control over forces deployed across a large geographical area, and to sustain that force logistically.

Relating this to C³I, the challenge is to establish and maintain strategic communications upward, necessary linkages laterally, and tactical communications downward. Strategic connectivity in the region is limited today. The backbone of the Defense Communications System cannot be directly accessed except by satellite

or HF over long distances. The FLTSAT and DSCS II systems support this need for all the services. DSCS III, the follow-on satellite, will soon be launched with a new booster. The HF programs, however, especially in the anti-jamming arena, need better interoperability. At present, limited HF links must transmit beyond optimum distances to reach DCA entry points and are subject to frequent atmospheric interruptions.

Nor is the tactical situation any better. Most current military communications equipment is old, of limited reliability, and in short supply. The area, moreover, is almost devoid of commercial local and long-line voice and teletype circuits; even what exists is of very limited value.

In short, the lack of adequate and sophisticated host nation infrastructure will require us to carry all required communications with us, and to erect, establish, maintain, and operate critical strategic, tactical C'I communications links, perhaps at the same time we are conducting combat operations. To overcome these deficiencies, the RDJTF C'I system must:

1. Provide reliable, survivable, secure, high-volume, jam-free voice and data handling linkage with National Command Authorities, the Joint Chiefs of Staff, and adjacent supporting unified commands.

2. Establish reliable, survivable, secure, high-volume voice and data linkage with major subordinate headquarters, adjacent U.S. embassies, host governments and, if appropriate, host and allied military headquarters and components.

3. Be able to reliably and rapidly access national and tactical intelligence systems, including sensitive compartmented sources.

4. Have command and control aircraft available to transport me and my staff to the operating area while maintaining secure and reliable contact with all headquarters.

Communications equipment in the C'I area must be compact, air transportable by C-141, tactically mobile, and able to operate reliably under extreme conditions of heat, unstable power sources, and sustained penetration by dirt, dust, and sand. The C'I communications system must also meet high technical standards for reliability, and transfer large volumes of voice, message, and data traffic serving logistics, personnel, medical, and related combat support. It must quickly and reliably transfer high-quality imagery, map overlays, and data collected from modern reconnaissance sensors and digital data bases requiring com-

puter-to-computer transfer and high-quality secure voice circuits for real-time passing of the most urgent traffic.

At present we have several shortfalls in our C'I capability. One involves the collection of intelligence information. Prior to deployment, during increased intelligence warning, watch, and movement preparations, I have sufficient C'I connectivity between my headquarters at MacDill AFB, Florida, and my component force headquarters, other supporting agencies, and the National Command Authority. Once deployment is initiated, however, we must promptly move intelligence sensors and supporting communications systems forward to establish critical strategic intelligence links in the theater, and to begin the collection of tactical information necessary for effective force employment. To serve this need, the deployable intelligence data handling system will soon come into inventory. This system will rapidly process all categories of intelligence and provide intelligence analysts with field ADP capabilities.

We also need large-volume quality communications links within and outside the theater. TRI-TAC transmission and switching equipment, when available, will largely solve the problem. We need upgraded command and control during deployment, since most forces will begin to move from CONUS by air within the

first few hours of the decision to go. I and my battle staff need an improved capability while airborne for maintaining close contact with national authorities and the JCS, to receive current intelligence, to monitor the force flow, and to plan and implement any changes or modifications

then we first arrive
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while en route. Thanks to the Strategic Air Command, I have had the use of an EC-135 aircraft with most of this capability but I need improved data handling equipment onboard,

primarily for intelligence updates, and I also need improved satellite communications.

On first arriving in the theater, our communications capacity will be limited during a most critical time: the buildup of combat power. Several new developments are on the horizon to improve C'I during initial operations:

1. Secure, jam-resistant, high-capacity mobile satellite and high-frequency radio terminals to secure uninterrupted linkage among headquarters, RDJTF components, and major theater force units.
2. The TRI-TAC communications systems, to give more reliable communications support, with the added benefits of digital systems. We need the TRI-TAC tropospheric scatter system to increase reliability and extend our range. We need TRI-TAC message switches to automate the manpower-intensive record (TTY) communications network. These and other TRI-TAC assets will improve our ability to support C'I and logistics needs.

3. A deployable WWMCCS module, to bring together into one system the diverse sources of intelligence and logistics, plus command and control, for more rapid decision-making and dissemination of orders.

4. Extension of the DCS communications backbone into Southwest Asia. Three DCS nodes in the theater are absolutely critical to handle initial C'I demands as well as cope with the high volume of cross-theater communications controlling the forces deployed over that large geographical area.

Each piece of C'I developed must be part of a synergistic whole. Our goals are not realized through fragmented individual buys, but through carefully planning the integration of C'I assets. Only through this kind of hardheaded approach to C'I can we protect our national interests and the interests of our allies.

Satisfying C³I Requirements for Deployed Air Forces

Maj. Gen. Robert A. Rosenberg, USAF

ASSISTANT CHIEF OF STAFF,
STUDIES AND ANALYSES,
HEADQUARTERS USAF

Properly integrated, C³I is the glue that binds our armed forces together. There are two aspects to consider regarding the C³I needed to deploy tactical air forces: the challenge and the fix.

First, the challenge. Many of us have been involved in theater-level defense planning since the end of the Vietnam conflict. We have focused our activities on the central European theater: specifically, the Fifth and Seventh Corps areas. The revolution in Iran and the Soviet invasion of Afghanistan have since stimulated a broadening of our focus to include conflicts in other parts of the world. Formation of the Rapid Deployment Joint Task Force (RDJTF) has caused us to totally reexamine our approach to war-fighting.

Studies and analyses of the Air Force, and of the rest of the defense community, are flawed by a limited-focus approach. Many Air Force theater-force studies involved only central European deployment. Many

of these, however, also examined C³I, so rather than discount them for their limited-focus approach, I have reviewed them for C³I lessons to be learned pertinent to an RDJTF.

Three recurring problems emerge from these studies that could affect the deployed forces: the difficulty of integrating intelligence with command, control, and communications; survivability; and the necessity for secure jam-resistant communications. No matter what theater we are in, installing HAVE QUICK and then the next generation of anti-jam communications is absolutely essential.

Another important lesson is that C³I must become relevant to the battle. It is not an end to a means, but a means to an end. The red-blue imbalance shows that, over the past ten years, the Soviets have outspent us by \$600 billion. In 1981 alone, the gap was \$80 billion. They have 1400 ICBMs to our 1000; they have almost 1000 deployed SLBM tubes to our less than 600; and, regardless of the arguments concerning the range of



General Rosenberg assumed his present duties in March 1980. He was formerly a member of the National Security Council Staff, The White House, serving as Policy Advisor to the Assistant to the President for National Security Affairs. He also served as Deputy Director and then Acting Director of the Office of Space Systems, Office of the Secretary of the Air Force.

the backfire bomber, their bomber force today is equivalent to ours in number of aircraft. They outnumber us five to one in tanks, two to one in fighter planes, over twenty to one in anti-tank weapons per tank, and over six to one in artillery and multiple rocket launchers.

And we cannot rely too heavily on American technological superiority; that superiority is not a birthright. The Soviets are graduating 250,000 engineers each year to our 50,000. Also, they specialize in reverse engineering; they steal us blind and then build copies.

I do not propose to match them one-for-one. That would cost too much. But we can and must make C³I relevant to the battle. We must take advantage of the force-multiplier effect that C³I can give our weapons systems. The way, we can invest a lot less and do a better job.

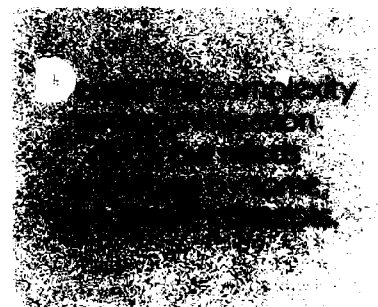
There are significant differences between a fixed-theater operation and a deployment situation. Since the Soviet invasion of Afghanistan, we have focused on Southwest Asia. But the Soviets may find a similar opportunity in southern Africa as well. Therefore, it is important that we do not build a C³I architecture for an RDTJTF that is only good for Southwest Asia.

It is interesting to watch a simulated war-game exercise in the central region of Europe when the communications circuits are removed to simulate loss or destruction. The German Post Office telephone system is used to contact another command center when the primary military lines are down. This system is equivalent to our own telephone system, and, compared to most other European telephone systems, it is quite reliable. Since it exists and is considered available in times of war, it is a reasonable and viable backup system. In most established theaters, a national communication infrastructure often serves as one of the redundant elements of a C³I chain. Unfortunately, we cannot rely on fixed-theater systems to support an RDTJTF — a real problem.

The infrastructure in established theaters also simplifies the C³I mobility problem because of the road networks, available commercial transportation, and other assets that can be adapted for military use in the event of a conflict. Regions where RDTJTF employment is possible often lack this sophisticated infrastructure. This is very important because

the RDTJTF will have to haul its C³I along with it.

When applying design criteria to a piece of equipment in an established theater, mobility often has a low priority. Since fixed sites and hardened shelters are used to house this equipment, there are few constraints



on equipment size, weight, or durability.

A deployable force faces a different problem. Not only does equipment have to be mobile, but it must also be transportable. To illustrate the seriousness of the transportability criterion, I recently did a weight-effectiveness analysis of a system instead of the traditional cost-effectiveness analysis. This analysis selected the most effective system based on the airlift required to get it into the theater. Equipment that can only be sealifted will be of little

value in a short-term conflict unless it is pre-positioned. And even after we get into the theater, there is a high probability that we will have to continue to move the equipment.

In some areas of central Europe, there are 200 usable airfields within a radius of 150 nautical miles. The same 150-nautical-mile circle in Southwest Asia may only encompass one-tenth the number of bases. This lack of density poses some serious operational capability, control, and communications problems. Because of the distances between bed-down locations, we must provide relays and redundancy, which will drive equipment requirements upward. With a constrained airlift capability, this may be critical. Without relevant C'I, we may find it difficult to engage the enemy, to maneuver in the time required, and to sustain a large force.

We must be concerned about the time it takes to provide hardware solutions. Time requirements are driven by threats. We must consider the threats in the intended area of operation when we develop mission requirements for deploying forces. For example, since Southwest Asia covers such a large area, we must use systems that provide not only a wide view of the theater but also a more narrow-scope focus to engage the enemy effectively. One problem is that during the extended acquisition cycles that we experience today,

world dynamics can change to the extent that our system requirements are dramatically altered before delivery. We must address this problem.

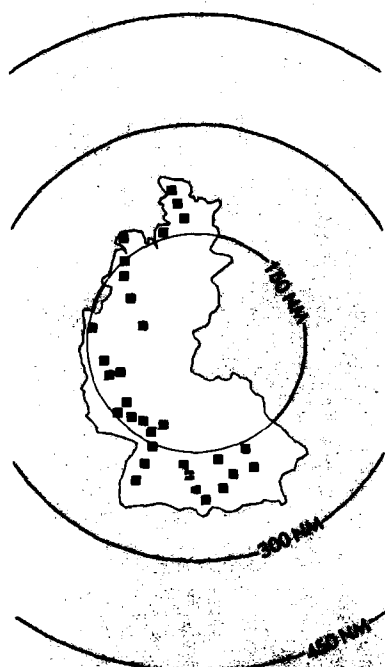
Now for the "fix." Earlier I said that C'I must become relevant to the battle. One possible solution would be to reorganize the defense department, adding another service for C'I. The individual services are simply not putting their resources where they must. However, it is leadership and not reorganization that makes things happen. So, centralizing C'I is not the answer — we do not need another corps of elitists. Instead, we need to integrate C'I with the operational commander's needs, because if deterrence fails, we will need improved CEP, more bombs on the right target, less attrition, and thoroughly integrated C'I. We must stop treating C'I as if it were some special element of the defense department. We must be able to direct the weapons to the right target by using real-time intelligence through a real-time C'I system that is not overcrowded.

At various levels, from planning and procurement through the execution level, the command planners are pushing the organization in one direction, the builders of our control ADP pushing in another direction, and communicators in yet a third. At the same time, the intelligence com-

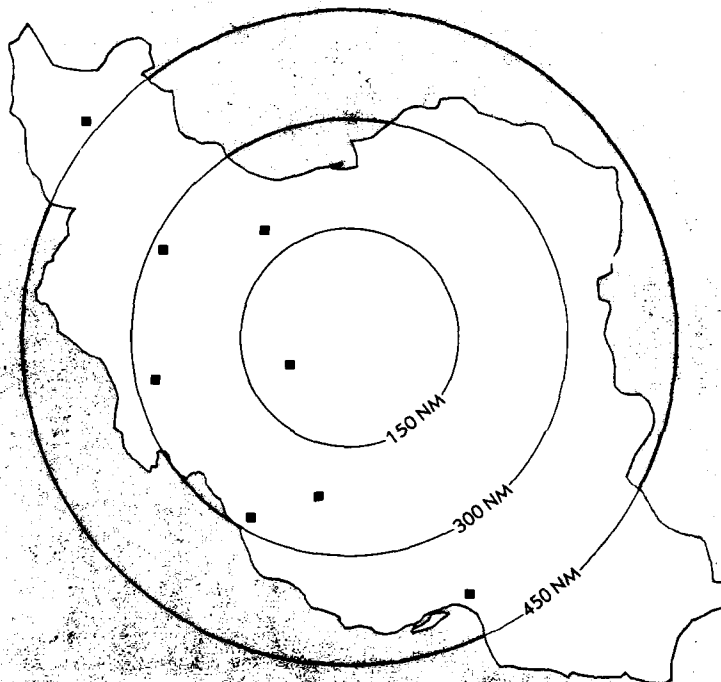
munity is concerned with its own programs and is often reluctant to get involved. So, it falls to the theater commander to try to pull these elements back together at the operational level. For all the elements to be effective, they must be totally integrated. This will be critical because the deployed forces will have limited resources and will have to apply their limited firepower to the wide range of targets in the array.

In spite of the complexity and sophistication of C'I, our needs are driven by some very simple concepts. According to Air Force doctrine, we strive for three important principles: centralized control, decentralized execution, and coordinated effort, reflecting common doctrines and cooperation.

The recent Falkland Islands conflict reinforces the applicability of the three principles. After the political decision to reestablish British control was made, the chief of the British defense staff conveyed to the commander of the task force the clear operational directives on which to base his plans and actions. While asserting centralized control through clear, unequivocal, politically approved rules of engagement, the



■ Air Bases
West Germany



■ Air Bases
Iran

There is a much lower density of air bases (shown here) and usable airfields in Southwest Asia than in Central Europe. Because of this lack of air bases, the U.S. must provide relays and redundancy, driving up equipment costs.

British deliberately made those rules as broad as possible to give the local commander maximum operational flexibility, in other words, to allow decentralized execution. This was not a war where the man in the fox-hole was directed from Whitehall. There is a lesson here — we should resist the temptation to overcontrol our deployed forces simply because we have the worldwide communications ability to do it.

At the other end of the spectrum, the famous World War I German fighter ace Baron von Richtoven believed that a fighter pilot should be allowed to rove in the area allotted to him in any way he liked, and when he spotted an enemy, to attack and shoot him down — anything else was rubbish. Such an approach to warfare is certainly in agreement with our second principle of decentralized execution, but might once in a while violate centralized control and coordinated effort.

We must not lose sight of the realities of cost. We must avoid reaching for ever-increasing operational capability at ever-increasing cost, if we want to field acceptable capability. The key word is "field." If we continue to strive for ever-increasing capability in system design, eventu-

ally we will reach a point where return on the dollar becomes marginal. In fact, it may drive the cost to the point where the project is killed in Washington.

This does not negate the need for sophisticated, advanced technology systems. In many cases, sophisti-

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cated systems are the most cost-effective solution. But we must evaluate each system in view of its desired contribution to the overall mission requirement, and then we must get on with building it.

There is a mistaken consensus that our acquisition process is cumbersome and difficult to change. It

can be changed, and we must make it responsive enough to world dynamics so that we can field appropriate systems when they are needed, not years later. We have an opportunity to break a mold, to shorten the cycle from identification of requirements to fielding of equipment. This may involve looking more closely at stringent mil-spec requirements and the seemingly endless review process. Developers must look at off-the-shelf items that will accomplish the mission, not persuade the customer to spend three or four more years to hobbyshop a better device.

In conclusion, I have three ideas for further consideration. First, we cannot afford the traditional approach to systems acquisition to equip the RDJTF. We cannot plan to avoid war until systems are ready. To deter war, we need these systems now.

Second, integration of C³I components is critical for forces in any theater, but especially for resource-limited forces deploying to newly established theaters.

Third, we must put defense spending in perspective. Some suggest we develop cheaper weapons and turn our attention to the other needs of our economy and our society. In 1960 we spent the same amount of money on defense and on non-defense government spending. In 1982,

we will spend three times as much on non-defense spending. In 1960, we spent three times as much on defense spending as we did on national recreation. In 1982, our expenses for national recreation have almost caught up with those for de-

fense. Last year alone, Americans poured 25 billion quarters into Pac-Man machines. Since 1976, we have annually spent more for booze than on the whole U.S. Air Force budget. Last year we spent two and one-half times more for toys and sports equipment than we did for our Air Force

strategic forces. I do not propose that we have less recreation in America. I merely suggest that as a nation we put our defense spending in perspective — and do something about it.

Session **4**

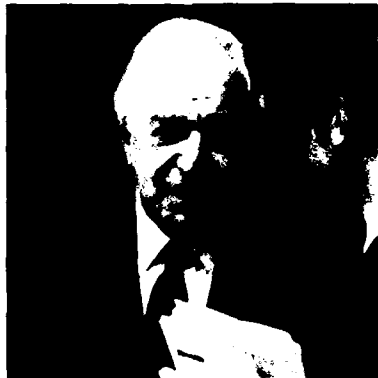
Policy Issues for the Future

A European View of Coalition Defense

Lord Zuckerman

FORMER CHIEF SCIENTIFIC ADVISOR
TO THE BRITISH GOVERNMENT

At the 1961 annual SHAPEX meeting of the military commanders of the Western Alliance, I challenged the NATO doctrine that nuclear weapons could be used as an



As chief scientific advisor, Lord Zuckerman engaged in international nuclear test ban negotiations and also in implementation of the Kennedy/Macmillan Nassau Pact, under the terms of which the emphasis of the British Defense Program shifted from air missiles to nuclear subs. Lord Zuckerman was knighted in 1956, and when he retired in 1971 as chief scientific advisor, he was given a lifetime peerage in recognition of extraordinary service rendered during the three previous decades. He continues to write and lecture on the nuclear arms race.

additional armament in field warfare. My address was subsequently published in *Foreign Affairs* with the authorization of the Prime Minister, to the title, "Judgment and Control in Modern Warfare." I feel that judgment is the element we have not adequately discussed at this symposium.

In the article, I addressed myself to three main propositions. The first was: the more that weapons systems rely on technology, the less flexible they become, and the less are they fruits of military thinking.

My second proposition was that battles and wars are not necessarily won by matching unit powers of destruction, or by having a few more units of destruction than one's enemy.

My third was that the more vast and heterogeneous and scattered an organization becomes, and the more complicated its component parts, the more difficult it is for the organization to control and concentrate its many activities to a single purpose. This difficulty ultimately limits the practical use of good judgment.

I shall return to the question of judgment later. I first want to talk about the human aspects of C'I. C'I is vital at all levels of operation. All military authority depends on it. Yet, targets are not determined by C'I, but by people. Also, no matter how good any component piece of a system, it is the whole system that must work. And a whole C'I system certainly includes people.

While C'I is basic to operational activities, there must be rules of engagement. We know that field commanders often resent interference from above, and that they do not necessarily carry out their orders. I say this from experience.

The argument about the use of the strategic air forces in World War II is one example. Eisenhower, as Supreme Commander, won his case to get them under his control in 1944, but he never really got what he wanted. General Spaatz knew how to get his own way. And so did Bomber Harris.

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There can also be a Nelsonian 'blind eye' at lower echelons. I remember when the Germans fled from the Normandy area and left garrisons in some of the channel ports and Bay of Biscay towns. A Canadian division had been given the privilege of redressing the horrors of the earlier Dieppe raid by taking the town. A bomber force had been sent out to bomb the hell out of the place. But it so happened that the Germans in Dieppe surrendered, and we stood there wondering whether the orders would get through to stop the bombers. Not until the bombers landed were we certain that the order had gotten through and no one had decided to do something on his own.

The better the collecting and disseminating machine we have, the less time there is for human judgment to be exercised at the top. C'I is not the entire formula. It ought to be C'II, with J for judgment. There is a vital divide between conventional and nuclear C'I; one can afford some defects in C'I as it applies in a conventional environment, but not in a nuclear one.

McGeorge Bundy was right when he said that there is a much more acute perception in Europe of what a nuclear war would mean than appears to be the case in the United States. Every study since the 1955 British Government White Paper on Defense spells out the stark reality of

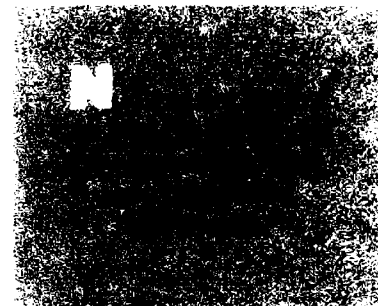
the total disruption of life that would occur in a nuclear conflict in a country the size of the United Kingdom.

I was not at the Bermuda meeting between Eisenhower and Macmillan when the United Kingdom gave permission for U.S. atmospheric tests to be conducted on Christmas Island. Our chief nuclear expert, Penney, was there. Prime Minister Macmillan got rather bored with the discussions and presentations, and asked for a break. Eisenhower said, "But we haven't yet heard from your expert." So Penney was asked by Macmillan to tell the President how many strikes on the United Kingdom would finish her forever. Macmillan likes to tell this story because Penney replied, "Well, say six. Make it nine to be on the safe side. Now can I have a gin and tonic?"

That is a European perspective. It would take very little to knock out any European country. So what, one may ask, is a tactical nuclear weapon? This session is intended to deal with tactical, not strategic issues, but surely what is strategic to the U.S. is not necessarily strategic to the U.S.S.R. or to any one of the European members of NATO, or to the U.S.S.R.'s Warsaw Pact partners. A few so-called battlefield tactical nuclear weapons could utterly devastate Holland, Belgium, Denmark or

Czechoslovakia. Would they not be strategic?

The SS-20, which is referred to as a theater weapon, the most ridiculous term that has ever been brought into the nuclear dictionary, cannot reach the U.S., but could wipe out any European city. Is that a tactical



weapon? Theater weapon? Strategic weapon? There is nothing to prevent the U.S.S.R. from targeting one of their intercontinental missiles on a European capital, and no doubt they have. I can assure you that Europe and the U.S. have very different viewpoints when discussing intermediate range missiles.

The military view in Europe is that it would be impossible, whatever the technical merits of C'I, to prevent

any nuclear exchange from escalating. There can be no assurance that it would not. We could not, therefore, advise our political leaders to take the chance of initiating the use of nuclear weapons without making it clear that the result would very likely be disaster on both sides.

Almost every Chief of the Defense Staff in the United Kingdom has said publicly that it is impossible to conceive of a nuclear exchange that would not escalate.

No one in Europe wants a nuclear war. Europe does not want a conventional war which might trigger a nuclear war. Nuclear weapons can deter, they do deter, but they cannot defend. We cannot fight with them.

But because nuclear weapons exist, we must have rules of engagement. That is where the danger comes in. What reality do rules of engagement have in an environment of nuclear weaponry?

It is said that at a meeting of the British Defense Committee when Macmillan was Prime Minister, one of our Chiefs of Staff said to him in a very nice voice, "But, Prime Minister, we know you would never press the button." The answer: "No."

The other day on television, one of our more recent Chiefs of Defense, Field Marshal Lord Carver, was asked the same question at the end of an hour's program: "Field Marshal, would you press the button?" And he said, "No, no, nor would Macmillan have done."

I very nearly telephoned him afterwards to ask whether he wanted to be court-martialed. Because if Macmillan, who would have been the one to give the order, had said, "You press the button," he would clearly have had to do it.

This brings me to what prime ministers and presidents have to do in the final analysis. It is alleged that in the Falklands crisis our Foreign Office — we do not know the whole story yet — interpreted everything in the light of the past. That is what matters about intelligence — interpretation. That is where judgment, and prejudice, come in.

There are always disputes about intelligence, and there are disputes about strategy. There are important differences of view today. The U.S. is the biggest collecting intelligence agency in the world. Who judges the intelligence gathered in Europe? Is Europe always to rely on those in the U.S. who distill this enormous mass of material and who pass it on to the White House, and then on to your Western allies?

Nationally, within countries, there are differences of view about major issues. Books would not be written about strategy if everyone agreed. Internationally, there are greater differences.

Let me say now, as an European, that insofar as coalition strategy is important for the United States, the U.S. needs to be careful. A coalition that carries the risk of nuclear war must have unity of purpose. We would be deluding ourselves not to recognize the increasing strains in the Western Alliance. There have been strains before; they are increasing now.

The Nassau agreement was the occasion when President Kennedy was persuaded to provide the United Kingdom with Polaris missiles. One result was the first and most decisive rift in the Alliance. The agreement between the U.S.A. and the U.K. was the cause of France breaking away.

We have all heard about the Green movement in Europe. But do you know that it is now the official policy of the opposition party in the United Kingdom to get rid of nuclear weapons? There is also a big and growing movement to turn Scandinavia into a nuclear-free zone, dangerous because it could break NATO.

There are also strains because of the U.S. arm-twisting her European allies on trade. Europe is going ahead with the gas pipeline. West Germany's new Chancellor, Helmut Kohl, has also made it quite plain that he will continue with the policy



In December, 1962, President John Kennedy met in Nassau with Prime Minister Harold Macmillan of Great Britain. The U.S. allowed Britain to purchase the Polaris submarine, which was a major factor in France withdrawing from military participation in NATO.

of detente with the U.S.S.R. and to increase trade with the Warsaw Pact countries. Europe is likely to go its own way in these matters.

Furthermore, Europe is not one entity with a single interest. France has its own strategy. The UK has its own problems — nationalist movements still exist in Wales, Scotland and, alas, Ulster. And so on.

Europe is suffering terribly from unemployment, disinvestment, noninvestment, the feeling that there is no future for the young. This picture is beginning to apply throughout Western Europe. We also have our differences. We take advantage of each other within Europe, but we are becoming united in the wish to avoid war and confrontation, especially nuclear war.

It would be the height of folly not to realize that these social and economic problems are more important to the average European than any feelings he may have about the Russian threat.

If what has been called here coalition strategy is important to the U.S., then the treatment of your allies must be seen to be sympathetic even when one recognizes that all of the allies cannot be treated equally.

The NATO Air Forces in Europe have to piece together disparate national forces, with the help of command, control, communications and intelligence. U.S. allies are not involved in this as equal partners.

They do not share equally in the dissemination of intelligence. I believe the United States exchanges more with the United Kingdom than it does with most other members of NATO. Nor are the allies of the U.S. equal in the freedom and exercise of their judgment.

When I was recently in Scandinavia, I said to Norway's Chief of Staff, "But you agreed to Britain buying the Trident missile, regardless of the protest of your people." And he replied, "What do you mean we agreed? What else could we do?" And he went on, "When we go to Washington and go up the steps to the Pentagon, we are brainwashed straightaway."

The UK's special relationship with the U.S. is often resented in Western Europe. As I have said, the Nassau agreement, which allowed the U.K. to buy the Polaris missile, really broke the cohesion of the West. President Kennedy and Bob McNamara were right to fear that might happen, but they were not skillful enough to stand up to Macmillan.

I doubt, too, that Europeans will share the view stated here by Mr. Hyland when he said "The U.S.S.R. surrendered all claims to legitimacy when Poland rebelled." Would we in the democratic West surrender our claims to legitimacy if, in an attempt

to save the world economy, we were to undertake non-democratic measures? Mr. Hyland also focused on the uncertainty that will result from the change in the Soviet leadership and on the decline in the Soviet economy. I believe the Soviet economy is still growing at the rate of about

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three percent; the United Kingdom is down to zero percent.

The United States has always been the dominant member of the Alliance. Holding together the Alliance, and dealing with the tripwires within it, was a matter of very great concern to General Norstad, the SACEUR of twenty years ago. I wrote then that the General's successors would have even more severe problems holding the Alliance together

than he was experiencing. It has proved even harder than I thought.

One final reference to strategy: strategy must have a purpose. War is not an end in itself. Clausewitz said that war is a continuation of political discourse — not, as is usually misquoted "by other means" — but "with the addition of other means", the assumption being that at the end of a war, a *causus belli* would have been dealt with. Nuclear hostilities would solve nothing. Whatever their cause, the end would be destruction on a scale which would make the cause totally irrelevant.

Helmut Schmidt recently said that while the unification of Germany remains a main goal in the policy of West Germany, it would have to be left in abeyance if it carried the threat of war.

I hope very much that the current talks about reductions of nuclear weapons succeed. I hope the MBFR talks take on new meaning in the context of the present political situation. Let there be action first where it is simple, that is, let us thin out

those 7,000 meaningless battlefield warheads. And let us remember that nuclear weapons deter, but they do not and cannot defend.

I shall end with a quotation from Winston Churchill's book, *My Early Years*. He said, "The statesman who yields to war fever must realize that once the signal is given, he is no longer the maker of policy but the slave of unforeseeable and uncontrollable events. Always remember," he went on to say, "however sure you are that you can easily win, that there would not be a war if the other man did not think that he also had a chance." Mr. Churchill said this before the emergence of the nuclear weapon. Today, neither side would stand a chance.

A European Perspective on the NATO Alliance

Rear Adm. Bjorn Brülund, Norway
MILITARY ADVISOR TO MUTUAL AND BALANCED
FORCE REDUCTIONS (MBFR) TALKS VIENNA

Imagine Philadelphia having its own Army, Navy, and Air Force and a common border with the Soviet Union. And now imagine the problems involved if Philadelphia were expected by its friends to solve the free world's problems in South-west Asia and the Pacific.

When you discuss NATO, you must remember that some U.S. cities are in fact bigger than some NATO nations.

And many of your European allies, the smaller nations in particular, face problems somewhat different from your own. I hope that U.S. policy makers will not get discouraged by frank discussions and different opinions between allies, even though the U.S. as a superpower is taking a greater burden and a greater risk than its European friends.

The highest priority of NATO has always been to organize the defense of the alliance to create a deterrence great enough to prevent war. In the Soviet Union, as well as in the Warsaw Pact alliance, priority one is to avoid war with the U.S. and NATO. They are as aware as we are that war would be a disaster.

The aim of Soviet foreign and military policy is to safeguard the security of the Soviet homeland and that



Rear Admiral Brülund, Norway, was educated at the Norwegian Naval Academy and has attended several courses in the U.S. and the United Kingdom. He has served on submarines and various types of surface ships. From 1961 to 1964, he served at SACLANC, Norfolk, Virginia. He has been Chief of Staff for Operations in the Norwegian Defence Headquarters and has also held the position as Secretary of State in the Norwegian Ministry of Defence. At present, he is attached to the Norwegian Embassy in Vienna as a military advisor to the MBFR talks in Vienna.

of their Eastern allies, and to deal with NATO and the world from a position of strength. It is important for them to be regarded as an equal to the U.S.

The Soviet leaders want a greater influence in the affairs of Western Europe. In their well-organized propaganda, they use every opportunity to try to split the NATO allies and to weaken the Western defense. This process may take time, but the Eastern countries are always willing to let the time factor work for them.

As long as the NATO alliance is effective and the U.S. guarantee to the Western defense is credible, Moscow will not resort to war in Europe.

Furthermore, the Soviet Union, and in particular its Eastern allies, are burdened by enormous defense spendings.

For these reasons, I believe there is growing interest in Moscow in the force reduction talks. This would involve the withdrawal of American forces and their equipment from Europe. But while they are talking about peace, reduced tension, and force reductions, they continue to improve their nuclear and conven-

tional forces both in number and quality. The military balance in Europe has markedly tipped in favor of the East.

For more than thirty years, however, the NATO alliance has managed to deter war in Europe. We have had periods of cold war and tension,

**failure of the force
reduction talks will
most likely lead
to new and stronger
criticism from
Western European
peoples.**

but the Soviet Union has stayed well clear of the NATO borders. Over the last few years the situation has changed. Further evolution of the asymmetrical nuclear balance and, in particular, the conventional balance in Europe could one day make the Soviet leaders believe that they are strong enough to reach goals in Western Europe at acceptable risks.

We must prevent this situation by filling the growing gaps in NATO deterrent strength. This will not be easy for the Western democracies who are faced with a variety of problems.

Unemployment rates are higher than ever since the last world war, and they are increasing. This places Western European nations, which have political systems and traditions

somewhat different than those of the U.S., in a difficult position.

European politicians and governments have to choose between spending scarce money on defense or using this money to improve employment. Unemployed people soon feel they have nothing to defend. This means that it is in the security interests of the NATO nations to keep unemployment down. It might be necessary to use money for employment that otherwise could be allocated to the defense budget. In my opinion, a high degree of employment is a prerequisite for getting popular support for adequate defense budgets in Western Europe.

Western democracies must also give consideration to the recent peace movements in Europe, which have political aims and increasing political influence. They have the widespread support of people from all political parties. More than three million marched last year in Europe, and they were probably backed up by many more millions.

I believe the peace movements are a result of the failure of arms control, the increase in numbers of nuclear weapons of all kinds and the general increase in tension between East and West, which has led to disappointment, fear, and mistrust. People are afraid of a nuclear war.

The goals of the various peace movements in the western countries differ. The movements are not well coordinated. The peace movements plead for regional approaches such as nuclear-free zones in Norway and

Denmark and no deployment of cruise missiles and Pershing II missiles in the Netherlands.

Those millions of protesters believe that if the West takes the first step in the right direction, the East will follow. And they are convinced that since politicians and governments have not succeeded, the time has come to introduce new ideas.

Every possible path, wide or narrow, should be tried to avoid a disastrous ending of the arms race. We should not try to suppress peace movements, nor should we ignore them. That will not work.

Let me prescribe how to create a better NATO deterrence in Europe, in the face of unemployment, poor economies, strong peace movements, and Soviet foreign and military policy.

I believe in the deployment of American cruise missiles and Pershing II in central Europe as planned by NATO to counter Soviet long-range tactical missiles. But at the same time I hope that the Geneva talks between the U.S. and the Soviets will lead to a reduction in tactical nuclear missiles on both sides. When the European nations supported the deployment of cruise



Millions of Europeans have demonstrated against war since NATO's 1979 decision to deploy Pershing II and cruise missiles in Europe. These demonstrations have added to pressures on Western European governments to achieve arms reduction agreements with the Soviets.

Rear Adm. Bjorn Bruland/91

missiles and Pershing II to central Europe in December 1979, they did so because they saw this as the only way to make the Soviets reduce their forces.

If the force reduction talks fail, it will most likely lead to new and stronger criticism from those millions who believe that an increase in power on one side will only lead to a similar increase on the other side, thereby increasing danger. This opposition could lead us to other experiments that involve greater risks.

I fully support increases in the annual Western defense budgets. They are necessary if we are to reach NATO's long-term defense goals.

I believe we can afford a 3 percent increase. The Norwegian government is this year asking for an increase of 4 percent, but I doubt that this is possible for all the Western allies. Such an increase will coincide better with the U.S. military investment in Europe. An increase of NATO's conventional forces would also mean a reduced need for tactical nuclear weapons.

With a more symmetrical balance of conventional forces in Europe,

the NATO deterrence will be more credible and thus reduce the possibility of an Eastern conventional adventure. The risk for the Soviets will simply be too high.

It would be both a military and political disaster for the U.S. to pull out of Europe.

In a time of economic difficulties and strong moves against military expenditures, it would be wise to give priority to military projects that appeal to the nations, to the people. Although there are no sharp dividing lines between offensive and defensive operations in modern warfare, some projects are more distinctly defensive than others.

NATO, including the U.S. in the NATO role, should put greater emphasis on the projects with defensive characteristics. I am thinking in particular of anti-tank weapons, air defense systems, electronic warfare systems, precision guided weapons, and, of course, command and control systems. It is hard to sell the offensive concept in Western Europe, but pure defense is understood by everybody. Why not make more use of that word?

Another area that should be carefully looked into is the cost of military equipment. We must bring prices down. Better standardization and closer cooperation will aid cost reductions and the improved cooperation will help increase deterrence

and strengthen the cohesion of the NATO alliance.

But an alternative to increased build-up of forces would be a breakthrough in the force reduction talks in Vienna between NATO and the Warsaw Pact countries. At these talks, where the U.S. plays an important role, the NATO aim is to reduce forces in central Europe to a lower balanced force level.

This means that the Soviet Union and other Warsaw Pact members will have to reduce more forces than the U.S. and NATO allies. For the NATO nations it is also important to be able to verify all reductions and reduced force levels. Otherwise an agreement would not serve to improve confidence and security in Europe. The Mutual Balance Force Reduction talks have been going on for nine years now. A breakthrough today is not very likely, but there are reasons for optimism.

For the foreseeable future, the security of Western Europe — and I believe also the security of the U.S. — will depend on the U.S. continuing its role as a strong NATO partner on the European continent. I also hope that if the U.S. should ever consider reducing its forces in Europe, it should be done through force reduction talks and be fully compensated for by Soviet reductions.

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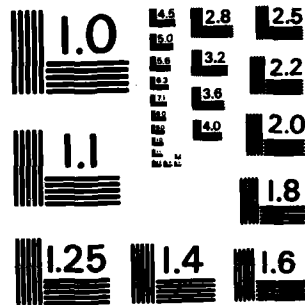
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What Have We Learned?

Dr. Gregory F. Treverton

LECTURER IN PUBLIC POLICY,
KENNEDY SCHOOL OF GOVERNMENT,
HARVARD UNIVERSITY

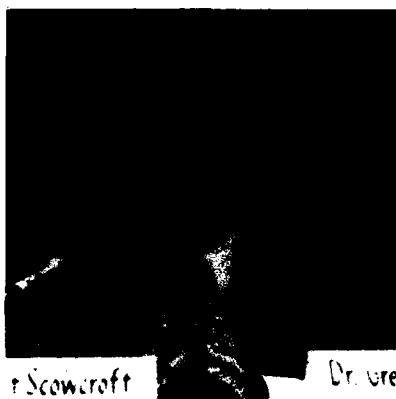
The U.S. will not continue the pace of defense spending it has pursued the past several years. The high-water mark may already have passed. The polls show public sentiment in favor of bringing defense budgets down, and in Congress the dilemma between larger deficits and voting for more defense spending has become a difficult one.

So the past few years may have been a pleasant interlude during which we did not need to make the hard choices. Now, instead of doing more of almost everything, we will have to make the hard choices. And so the debate about strategy will only be more and more with us.

We have discussed four sets of issues here. The first deals with broad questions of strategy.

Should our strategy be more Europe-centered? More maritime? Predictably, we haven't been able to resolve that. My own view is like that attributed to a Soviet diplomat: Europe is the main thing. But Europe is unlikely to dramatically increase defense spending, even under the shock it would certainly suffer should America decide to withdraw its troops, even gradually.

Furthermore, non-European defense contingencies cannot be



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thought of as a "lesser included case" under the responsibility of the forces in Europe. Different capabilities are needed to deal with the situations that arise outside Europe — as, for instance, in the Persian Gulf. Even the Falklands crisis is not an exception to that proposition; it only illustrates the ability of some fairly resourceful people to cobble some-

thing together under pressure. It does drive home the lesson that contingencies are unpredictable. To deal with them, we need contingency arrangements that are flexible, although that will call for hard trade-offs given the advantages of specially tailored forces.

In any case, the debate about U.S. interests is real. What strikes me is that the U.S. public does not see the debate that way. Instead, there is a tendency to view the presence of our troops there as a favor we are doing Europe, rather than a hardheaded, calculated contribution to the American national interest.

A second set of issues deals with the relationship between force deployments and C.I. Whether a commander would prefer to have more forces in place, or to have more mobility, involves considerations of command and control and the stakes of political leaders. It is like the classic intelligence problem: collections are made, filtered and assessed. But there is a cost to responding to those indicators, and it must be

weighed. Will political leaders actually respond? For example, deploying reinforcement forces to Europe during a crisis could be seen as provocative or escalatory. A political leader may be reluctant to make that kind of preparation, and so that consideration may tip us toward preferring forces stationed in the region versus more mobility.

Likewise it might be nice to have American forces in an area like the Persian Gulf. But it may be hard even to move them in without angering rulers or transgressing diplomatic arrangements. In this light, there are advantages to naval forces since they are easier to move. The use of the Navy in the Iran-Iraq war is a case in point; it was a relatively effective use of deterrent power, and more acceptable than aircraft or troops. But, since it is also easier to move out again, naval power is less effective as a signal of American resolve.

A third set of issues is in the realm of crisis management. It is encouraging that speakers here have been relatively confident of our C³I in peacetime and under crisis conditions, even if they have been less so in a fighting war — "encouraging" in the sense that we hope not to be fighting wars. But we have seen that crises, with their murky intelligence and bad communications, also put a very heavy load on C³I. Coordina-

tion is very difficult. Yet political leaders want to exercise very stringent control over every aspect of the action. (It has been observed that American leaders are more "meddlesome" in that respect than, for example, their British counterparts; that may well be true, and given the nature of their responsibility, they are bound to be.)

The Falklands illustrate the dilemma of political control. There is a dynamic to military operations, once begun. I would bet that the British cabinet hoped to avoid an event like the sinking of the *General Belgrano*, but the dynamic made it inevitable, once the action began, that something of the kind would occur. At a minimum, this should make us skeptical of most of the abstract notions of escalation — "thresholds" and the like. Great care must be exercised not to allow the dynamic to take over and push events beyond political leaders' control.

Finally, we must not forget how strategies, doctrines and C³I are intertwined. A simple point, easy to overlook, is that in Europe all innovations in doctrine, whether in maneuver or use of second echelon forces, put a tremendous additional burden on the C³I systems, and we already lack confidence in current

capabilities. The irregular battlefields make air-ground coordination difficult and hamper target acquisition. When considering any innovation, we ought to consider its demands on C³I from the beginning.

The general, more political point is the nature of the relationship between creating military options and having the command and control in place to implement them. Political leaders, especially during crisis, always want military forces to be able to do everything — carry out very selective air strikes in the Cuban missile crisis, for example, or, in the mideast wars, have enough reconnaissance to see everything in the war zone all the time. We know, however, that not every capability can be provided all the time.

Here there may be some parallels to the nuclear issue. We talk of limited or selective targeting options, yet most of us lack confidence that we have the C³I to sustain such operations, at least for very long. The political costs of carelessness in talking about our options in that area are obvious: when we say "limited options," Europeans in the street hear "limited war." There is a lesson here for conventional planning as well. We need to be modest in discussing what we can do, what our options are — especially during a crisis, as political leaders contemplate using military forces as a signal, or even to fight.

The Strategic Dilemma

Lt. Gen. Brent Scowcroft (USAF-Ret.)
PRESIDENT, KISSINGER ASSOCIATES, INC.

In 1952, after fighting in Korea, we turned to massive retaliation as "the great equalizer." We decided to defend ourselves and the free world with nuclear weapons rather than spend the money to do so with traditional force structure.

That strategy is now bankrupt. There are several potential replacement strategies.

One potential strategy is horizontal escalation. The idea is a commendable one. Why should we fight at points of Soviet choosing rather than at points of our own choice? But if we are in bad shape at the place where the Soviets attack, do we help our situation by engaging them in yet another place where we are likely to be outnumbered and outgunned? There are few places where we have a clear cut advantage. One specific suggestion is that we attack Cuba if the Soviets engage somewhere. But what would we do if they took Berlin in exchange?

Another way to seek some relative advantage would be to adopt a maritime strategy. We are a maritime power, as are most of our allies. The Soviet Union is a continental power. A maritime strategy is thus very plausible. However, the areas of vital interest to the U.S. are mostly on the rimland of the Eurasian continent. So while sea power is

indispensable to cut down the Soviet advantage of interior lines, it is not sufficient to defend those areas of vital interest.

A third possibility is economic warfare. We have the greatest advantage over the Soviets in economic



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power, not in deployed military power. The idea that we should expand the confrontation with the Soviet Union to include economic warfare implies that coexistence with the Soviet Union is impossible. This idea seems to be based on the belief that the natural state of man is peace and harmony, that only as a result of evil people or regimes is there conflict in the world, and that if the current Soviet regime would just go away, our problems would be solved. Yet the Soviet Union is not likely to collapse. It is one of the most autarchic powers in the world.

While the Soviet Union has been able to do some technologically impressive things, such as Sputnik, one thing they have never been able to do is grow grain. If we behave wisely, it may be true that by the end of the century the Soviet Union will look like the old Ottoman Empire, the sick man of Europe. But waiting for that is a far cry from a strategy that would have as its goal the economic destruction of the Soviet Union.

Power is the fundamental motive force of the nation-state system. We must ask ourselves the question that the rest of the world is asking itself:

How valuable is it to be a friend of the U.S.? If the reply is largely negative, then we are in deep trouble.

We must establish priorities. The real question is, how much insurance do we need? In other words, how much does it take in capability and in will to convince the Soviet Union that "the game is not worth the candle?"

As I said earlier, most of the areas of vital interest to the U.S. are in the rimland of the Eurasian continent. As Greg Trevorton has wisely said, we are involved in Europe because it is absolutely indispensable for the well-being of the U.S., not as a favor to the Europeans. That is something we need to tell ourselves and our Congress over and over.

Japan should be considered in the same light. However annoying the Japanese economic skills are, would we rather have a Japan that looked the way it did before the Korean War rescued it, when it looked as though it would be an economic basket case and a ward of the U.S. into the indefinite future? I think we are in danger of relying on short term measures at the expense of longer term solutions. If the Japanese rearm substantially, it will not be for our purposes, but for their own. That, in the long run, may cause us more problems than continuing to carry that share of our defense budget that the Japanese may otherwise pick up. By way of example, it might be more advanta-

geous to persuade the Japanese to give substantial economic help to countries such as Turkey and Pakistan, which, because of the Congress, we simply cannot do.

A word about China. We have limited parallel interests with China, and they are almost all strategic. China and the U.S. are also interested in each other's strength as counterweights to the Soviet Union. To the extent that we turn to the Chinese to make up for the military power we would otherwise have to field, we are undermining that triangular relationship. The "Chinese card" is most useful to the U.S. when it is not played. It is not in the interest of the U.S. to become hostage to either China or the Soviet Union.

Conflict with the Soviet Union, if it comes, is most likely to be outside the rimland countries of Eurasia. Miscalculation, the cause of most conflict, is most likely to occur outside these countries. One of the reasons conflict in Europe is unlikely is that the stakes of each side are quite clear. The chances for gross miscalculation are therefore smaller.

In the case of the Persian Gulf, our principal military problem is speed. U.S. military presence in the Gulf itself, even with a small force, would be significant. The Soviets are not

looking for war with the U.S., in the Gulf or anywhere else. But we must be able to operate quickly enough to change their calculations. Therefore, I would certainly be willing to look at trading force structure for lift, or for readiness, if necessary.

The Falklands have demonstrated that we do need some capability for amphibious operations, but for contingencies or police actions, not for Normandy-type invasions or landings in the Gulf against the Soviets.

One of our biggest problems is the Congress. We have a really serious problem with incipient Mansfieldism, and with anti-Japanese sentiment. We must squarely face these issues.

Relative advantage to the U.S. could be restored through C'I. The nature of warfare could drastically change, with C'I itself becoming a major combat objective. AWACS may be the tip of the iceberg. If we can get to a point where each commander knows precisely where he is on the ground, where his units are, and where the enemy is, we can do a great deal to dispel that bane of conflict, the fog of war.

Managing C³I

Ambassador Robert W. Komer
FORMER UNDERSECRETARY
OF DEFENSE FOR POLICY

We must make C³I more manageable. Here are six practical suggestions to that end.

First, C³I requirements grow in geometric proportion to the proliferation of headquarters. We may not be great at producing tanks, but we certainly outdo the Soviets in headquarters.

I can understand why we had PACOM in World War II. The Pacific was a long way from Washington and

we were flying in prop-driven planes. But by the time we got to our third Pacific war (Vietnam), the headquarters in Pearl Harbor only got in the way and served no useful purpose.

Our command structure is essentially unchanged since World War II. Since the costs of C³ are driven up by how many headquarters we have, we should improve C³ but have fewer headquarters.

We and the British have many national headquarters on the continent. In addition, we have multinational headquarters. We should ask ourselves some questions. What are we trying to link together? How many commands? How much control? What level of secure, redundant, survivable communications is needed?

Second, we must think more in terms of coalition or alliance C³ and not just joint-service C³. Whenever we talk about interoperability, we mostly talk about joint service interoperability and not alliance interoperability. The sin of unilateralism pervades the highest reaches of

our staffs. Why do we hear so much talk of U.S. vs. Russian tank comparisons? What about West German tanks? Or British? Our allies field more tanks than we do.

Third, the force designers do a lousy job. Back in the 1970s, the opinion polls told us that NATO was the only commitment to which even 52 percent of the American people were prepared to adhere in the event of a crunch. So we used NATO as justification for finally ending our dangerous disinvestment in American defense. By nailing our flag to the Eurocentric mast, we got 10 percent real growth in 1977 through 1980.

But what did we do with that real growth? The pattern of allocation remained exactly the same. The Navy got its usual lion's share, the Air Force got a big chunk and the Marines and the Army shared the Eurasian defense mission with what crumbs were left.



Ambassador Komer's biography appears on page 37.

We must remember the likelihood fallacy. We have heard warnings not to forget the rest of the big world in our focus on Europe. Well, let's not forget Europe in our excessive focus on Angola or even the Falkland Islands.

Moreover, Europe is already two-thirds of the way to the Persian Gulf. If you put your forces in Europe for NATO, you can also send them to the Persian Gulf if necessary. I hope no one says that because we have committed forces to NATO, they cannot be used elsewhere. NATO-committed forces have been used in Korea, Vietnam and Algiers, and today in Ulster. We can be sure they will be used in such cases in the future.

Fourth, we have gone too far in the design of general-purpose (which really means all-purpose) forces. To help simplify the C'I problem, perhaps we ought to have two kinds of general-purpose forces instead of just one. Let's design a heavy force for

reinforcing Europe — adding to the forward deployment. Let's put a ceiling on that, say a 10-division D-Day force, and then design a somewhat different kind of force for the RDJTF for missions where lightness, mobility, flexibility, and speed are important.

Fifth, interoperability ought to start at the lowest echelon where the fighting is. Look at the way we do it today in NATO. First we link up the Minister of Defense with 10 Downing Street or the White House; then we link the Secretary or Minister of Defense with the four-star generals or admirals overseas. The NATO integrated communication system used to impress me until I discovered that it works only at theatre level, or down to major commands.

We should start from the ground up — the ground being where the fighting is.

Lastly, the ultimate policy issue is how much can we afford to spend on conventional C'I compared to other pressing needs. Before I buy more C'I so the Navy and Air Force can go drop more dumb bombs, I want to

know why there are so many dumb bombs in inventory. Why are smart bombs like Maverick so unintelligent? I do not want to buy C'I for A-10s if they are going to shoot Mavericks at the wrong targets.

There are other pressing needs. We lack collocated operating bases. This is a problem when our airplanes can only make one sortie, because they cannot return to the same base but must land somewhere else to refuel but not re-arm. The result is we lose use of all our aircraft by the fifth sortie cycle. It does not make sense to have enduring C'I if we run out of sortie capability after 24 hours.

We must address these and other problems. We must work to put C'I into proper perspective as part of a total capability, not an end in itself.

Closing Remarks

Charles A. Zraket
EXECUTIVE VICE PRESIDENT,
THE MITRE CORPORATION



Before being named Executive Vice President in 1978, Mr. Zraket served MITRE as Senior Vice President of Technical Operations and Senior Vice President of MITRE's Washington Operations (The Metrek Division). He serves on numerous boards, committees, and advisory groups in the areas of science and defense.

This conference has generally addressed the subject of force projection, but our particular interest, of course, was in the C'I perspective. I have two comments.

First of all, I was struck by the near unanimity and bipartisan agreement on the Soviet threat, especially around the Eurasian landmass. The differences of opinion related more to the strategies and forces needed to combat the threat, rather than to the threat itself.

Secondly, we found that we must address the problem of conventional capability more strongly. Conventional warfighting C'I has only recently been taken seriously in the defense department. The true con-

straints in addressing C'I are not technical, operational, or economic; they are institutional. The JCS reform alluded to during the conference is only a first step toward a solution. We could achieve much more by improving relationships among the services and the using commands with respect to development and acquisition; that is still our most important problem.

I would like to thank all the participants for their time and interest, and the ESD/MITRE symposium staff for its efforts in organizing this outstanding event.

Acronyms and Definitions

ADP Automatic Data Processing	FLTSAT A Navy satellite communications system
AEW Airborne Early Warning	GLCM Ground-Launched Cruise Missile
AGI Soviet Intelligence Ship	GNP Gross National Product
AMRAAM Advanced Medium Range Air-to-air missile	GWEN Ground Wave Emergency Network
ASD Aeronautical Systems Division (of the Air Force Systems Command)	HAVE QUICK Jam Resistant UHF Voice Radio
ATF Advanced Tactical Fighter	HF High Frequency
ATOC Allied Tactical Operations Center	ICBM Intercontinental Ballistic Missile
AWACS Airborne Warning & Control System	JCS Joint Chiefs of Staff
C² Command and Control	JDS Joint Deployment System
C³ Command, Control & Communications	JRSC Jam Resistant Secure Communications
C³I Command, Control, Communications & Intelligence	JTIDS Joint Tactical Information Distribution System
C³CM C ³ Countermeasures	LANTIRN Low Altitude Navigation and Targeting, Infrared, Night
CINCPAC Commander-in-Chief, Pacific	LORAN Long Range Navigation
CONUS Continental United States	MARISAT Maritime Satellite
D-5 Trident II submarine-launched ballistic missile	MBFR Mutual Balanced Force Reduction Talks
DCS Defense Communications System	MILSTAR Military Strategic and Tactical Relay, a survivable communications system
DSCS Defense Satellite Communications System	MX missile An advanced U.S. ICBM system
DTDMA Distributed Time Division Multiple Access	NATO North Atlantic Treaty Organization
ECCM Electronic Counter Countermeasures	NTDS Navy Tactical Data System
EIFEL German-developed data processing and display system used for tasking and status reporting in the tactical/theater environment (Central Europe)	NTPS Near Term Pre-positioned Ship
ELINT Electronic Intelligence	OCS Officer Candidate School
	PACOM Pacific Command
	Pershing II An improved U.S. surface-to-surface missile
	PLSS Position Location Strike System
	P.R.C. Peoples Republic of China

R&D Research and Development
RDF Rapid Deployment Force
RDJTF Rapid Deployment Joint Task Force
REC Radio Electronic Combat (Soviet Electronic Countermeasures)
RFI Request for Information
SAC Strategic Air Command
SACDIN Strategic Air Command Digital Information Network
SACEUR Strategic Air Command, Europe
SALTY CONTROL Office for planning and upgrading the central European command and control systems; also the generic term for the resulting documentation
SAS Special Air Service (British)
SATCOM Satellite Communications
SBS Special Boat Service (British)
SHAPE Supreme Headquarters, Allied Powers in Europe
SIGINT Signal Intelligence
SS-20 Soviet Medium Range Ballistic Missile
SSN U.S. nuclear attack submarine
TAC Tactical Air Command
Time Lines A portrayal of actions and required decisions vs. time elapsed from some triggering event, such as an attack on U.S. forces
TRADOC Training and Doctrine Command
TRI-TAC Joint service communications equipment acquisition program
TTY Teletype

ULTRA A secret British deciphering operation conducted during World War II
USAFE US Air Forces in Europe
UTAJIS USAF Tactical Air Intelligence System
VHSIC Very High Speed Integrated Circuits
VLSI Very Large-Scale Integration
WIS WWMCCS Information System
WWMCCS World Wide Military Command & Control System

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