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The Air Expeditionary Force in Perspective

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Executive Summary

The military has conducted expeditionary operations for centuries; airmen began to participate in expeditions from the very early days of flight. Descriptions of expeditions, with and without air components, evoke suggestive lessons for current expeditionary operations. Lessons are seldom a perfect fit. Serious students of military operations know that history does not repeat itself, but some insist that if history does not repeat itself it often rhymes. Frequently the identification of lessons from past events provides planners and commanders the background, wisdom, and the equally important element of context that facilitate better judgment in the imperfect decisions-making process.

The reader will be amazed at the broad range of historical operations, even those without an air element, that offer useful lessons for airmen seeking to better understand the challenges of employing expeditionary air forces at the turn of the 21st century. Even in cases where the air element is lacking, a host of significant factors relevant to contemporary airmen is readily apparent. One will find examples of issues involving intelligence, logistics, force mix, force protection, serial tasking, operational innovation, and many other factors. There are ideas that will reflect planning for the current Air Force Task Forces, particularly Global Strike Task Force, Global Response Task Force, Homeland Security Task Force, and Global Mobility Task Force. The United States has a history of technological advantages, but the products must be understood and applied as regularized operational practices. Military leaders must likewise understand that human nature is quite predictable that lessons identified from the past are likely to be operating in future air operations.

This collection begins with a short description of our Air Force leadership promoting the idea of expeditionary air operations. This is followed by a review of the 1995-6 Aerospace Expeditionary Force I-III deployments to the Middle East. This anthology continues in reverse chronological order to describe various expeditionary operations beginning with examples from World War II, including the British and German expeditions to Norway; The American buildup in the Philippines; the first American operation in the Pacific, Guadalcanal; Rommel in North Africa; Japan's venture in the Aleutians; the first major European campaign for Americans with the invasion of Northwest Africa; and finally the force buildup in England for the Strategic Bombing Campaign.

The interwar years are marked by the nasty little Italian Campaign in Ethiopia and the Spanish Civil War, described here from three points of view: Italy, German, and Soviet. Operations all over the world took place during the World War I era. Here are accounts of the American expedition against Pancho Villa and four specific British expeditions in Africa and the Middle East. The British conducted attacks against the Turks at Gallipoli, at Kut in Iraq, and at various Middle East locations, including Palestine, Egypt, and Syria. The British also sent an expedition against the German colony in East Africa.

Finally, a number of famous campaigns through history illustrate the timelessness of expeditionary campaigns. The Roman legends were invented for expeditions, and Napoleon conducted a number of campaigns in Europe and the Middle East—a favorite place for historical expeditions. Parts of the American Civil War depict expeditionary efforts, as does American operations in China at the turn of the 20th century.

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United States Air Force AEFs

1. Air Force Leaders Promote AEFs

Expeditionary Insights

- 1920, General Billy Mitchell conceived of "brigades" (all types of aircraft) trained and prepared for hemisphere and overseas missions.
- 1940, General Hap Arnold organized "air forces" (all types of aircraft) for hemisphere missions—later numbered air forces for overseas.
- 1944, General Hap Arnold organized "air commando" units (all types of aircraft) for expeditionary missions in China, Burma, and India.
- 1953, General Glenn Barcus, TAC commander, experimented with Composite Air Strike Forces for quick response to distant missions.
- 1955, Generals Nathan Twining and O. P. Weyland organized Nineteenth Air Force (all types of tactical aircraft) for short notice overseas deployment.
- 1990s, General Merrill McPeak formed Composite Wings (mixed aircraft operating together) for effective force packaging.
- 1994, General John Jumper, commander of ACC's Ninth Air Force, circulated idea of Air Expeditionary Force (mixed aircraft, quick deployment force).
- 1998, General Mike Ryan introduced idea of Expeditionary Air Forces (a series of AEFs composed of many aircraft types) for global missions.

Operational History:

The idea of packaging air units for distant missions appears very early in the 20th century. In 1920 General Billy Mitchell, recently returned from command of a composite and joint air force in France, suggested that air units formed into "brigades," composed of bombardment, pursuit, attack, and observation units, could be formed as a deployable organization. He saw this organization as an "efficient strategic reserve" that could to fly quickly to any distant threat to the nation's borders and operate effectively. In the early 1940s, with the outbreak of war in Europe, General Henry H. Arnold organized the numbered air forces, first for protection of the hemisphere, later for global employment. He saw to it that these numbered air forces such as the Eighth Air Force, composite in nature when formed in 1942, became specialized with mission purpose when they were expanded later in the war. The Eighth Air Force is best remembered as a strategic bombing force, flying bombers and escort fighters. Later in the war, Arnold also organized a series of commando groups, equipping them with a variety of aircraft to facilitate independent operations in remote regions. The difficulties experienced in deploying combat-ready tactical airpower in response to the 1950 Korean crisis encouraged commander, Tactical Air Command (TAC), General Glenn O. Barcus, and future Chief of Staff, General Nathan Twining, and TAC commander, General O. P. Weyland, to conceptualize an organization of quick reaction tactical forces for employment in global hot spots. Preoccupation with the war in Vietnam caused the demise of these early composite strike forces. General Merrill McPeak saw a need to revive them even before the Gulf War in 1991. He experimented with composite forces with several types of aircraft operating at one facility. One of these units, the 366th Wing, formed in 1992, operated at Mountain Home until September 2002. General Jumper organized a

temporary, mixed-aircraft force that, with a small footprint, could react to quickly developing missions. These Air Expeditionary Forces provided economical air task forces for short duration missions. The high operational and personnel tempo of air units persuaded the current Chief of Staff Air Force to reorganize a series of ten Air Expeditionary Forces that could take turns responding to small contingency missions that seem to dominate national strategy at the turn of the century.

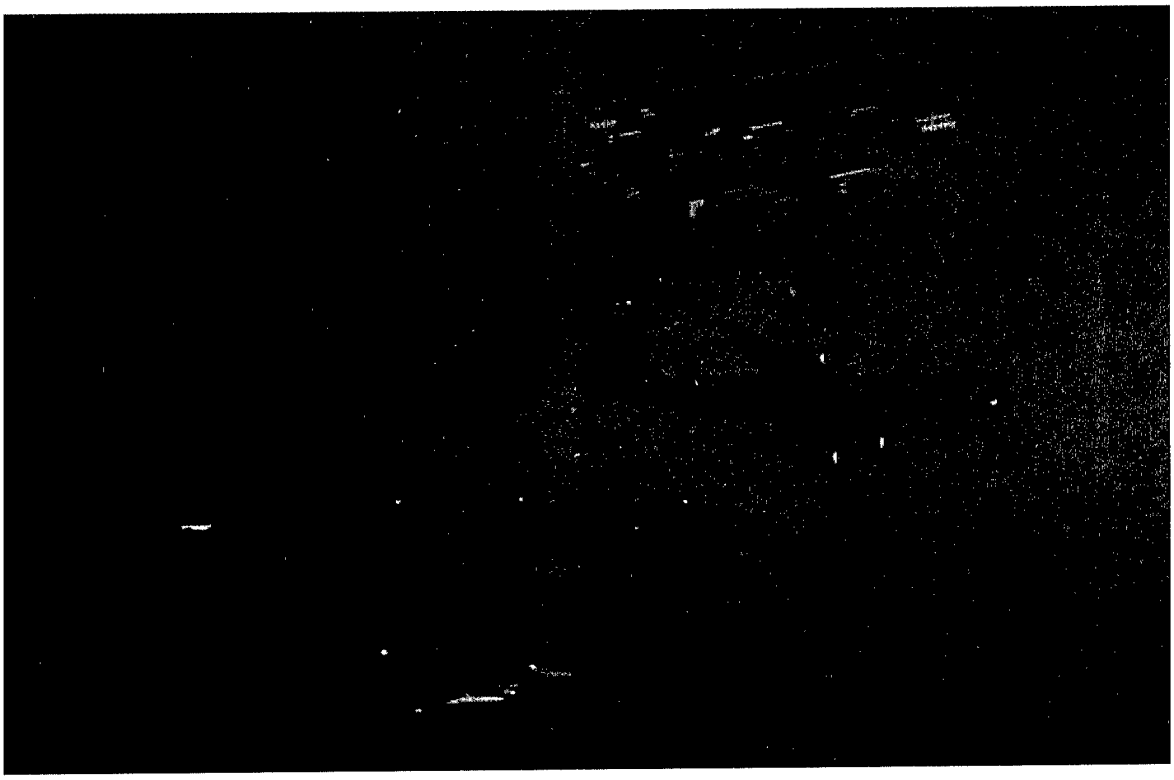


Figure 1. The Composite Model for the Nineties. For nearly ten years the 366th Wing worked well at Mountain Home Air Force Base, operating F-15Cs, F-15Es, F-16CJs, B-1Bs, and KC-135Rs. The 5-ship flight of 366th Wing aircraft flies over Shaikh Isa, Bahrain.

2. First AEFs: 1995-96

Expeditionary Insights

- An AEF deployment can enhance host-country/coalition relations.
- The logical consequence of experience led to the use of rotating units.
- First sorties can be launched within 24 hours of initial landings.
- Established infrastructure in the host-country is critical.
- An AEF deployment provides flexibility in the face of unexpected demands on joint-use assets.
- AEF assets can be interchangeable with other services' expeditionary forces.
- AEF deployments facilitate both joint and combined exercises.
- Reach-back was proven to be a valid concept in augmenting deployed forces.

Operational History

General John Jumper, as foreshadowed by General Merrill McPeak's Composite 366th Wing, initially enunciated the Aerospace Expeditionary Force (AEF) concept when he was Central Command Tactical Air Forces (CENTAF) commander. AEF was subsequently established by General Mike Ryan as the new organizing concept for the USAF. It was first "field tested" under actual operational conditions in a series of three deployments to the Mid-East in 1995-96.

AEF I deployed to Bahrain from 28 October – 18 December 1995; AEF II to Jordan from 12 April – 28 June 1996; and AEF III to Qatar from 24 June – 20 August 1996. Each left behind equipment to support a future AEF. In order to maintain ties with host-nation armed forces, and to lessen family support problems, CENTAF/ Ninth Air Force subsequently assigned three of its component wings to furnish the core or lead elements for future AEFs destined for those three countries.

These first three modern AEF deployments were instructive both in their similarities and in their differences, though the similarities predominated. All three generated a significant proportion of US Central Command's (CENTCOM) required sorties during the periods of their deployments. All three launched first sorties within 24 hours after initial landings. All three had access to well-developed infrastructure of host allies. AEF I, as the first test of the concept, was more modestly sized and tasked, deploying 18 F-16s, bringing in 576 personnel, and generating 637 sorties. In contrast, AEFs II and III had 30 and 34 fighters, 1,150 and 1,200 personnel, and 918 and 1,323 sorties, respectively.

AEF II demonstrated the flexibility of the concept by adjusting to the unanticipated diversion of airlift and the rescheduling/rerouting of air transport to support operations consequent to the fatal crash of Secretary of Commerce Ron Brown's CT-43, as well as humanitarian operations in Liberia. AEF II, by covering the "carrier gap" scheduled between 14 May and 24 June 1996, also demonstrated interchangeability with another service's expeditionary force – at least for certain missions. Another virtue of AEF II was the opportunity

it offered to enhance relations and training with a putative coalition ally, Jordan, which was then anticipating delivery of its own F-16s.

AEF III included four noteworthy initiatives: (1) It further enhanced combined operational capabilities by exercising with other Gulf partners, and it also conducted joint operations with US Navy elements in the Gulf. (2) It combined in-area assets (12 F-15s already in the Gulf) with another 22 fighters deploying from CONUS. (3) In addition to the aircraft in theater, three B-52s and three B-1s were on permanent call in CONUS. (4) Finally, AEF III became the first to stage a Global Power mission when two of its on-call B-52s flew a round-trip mission from Barksdale AFB, Louisiana, dropping 27 Mk-117 bombs on the Udari Weapons Range in Kuwait.

While these first three tests of the contemporary concept of an AEF were rather modest in scope, they certainly were successful in accomplishing the peace enforcement and deterrence missions assigned. Moreover, they were the first cases in a growing AEF experience base that lend confidence and direction to the initiative now under way to implement the CSAF's vision of an Expeditionary Aerospace Force.

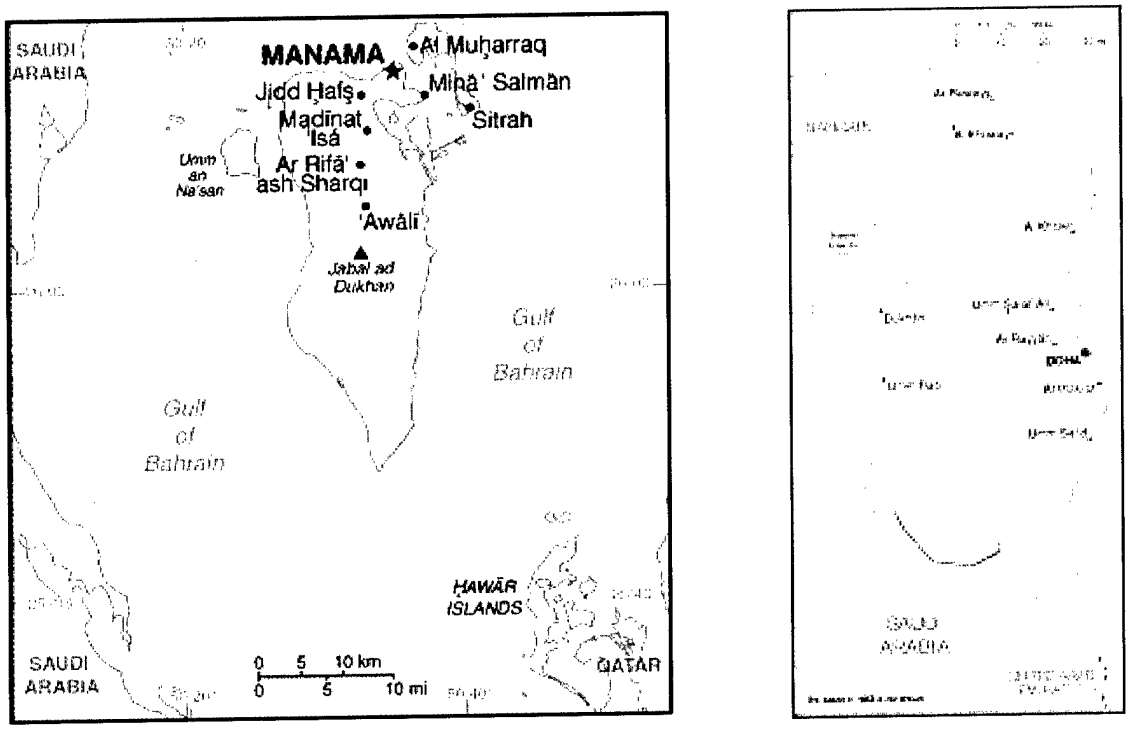


Figure 2. Early AEFs deploy to Bahrain and Qatar.

3. British Expedition to Norway: A Study in Failure

Expeditionary Lessons Learned

- A poorly led superior force will have difficulty defeating a well-led inferior force.
- Airpower dominated the campaign, allowing an inferior force to defeat a larger one.
- Intelligence proved critical in the campaign.
- Combined operations are complicated at best and, at worst, are a recipe for disaster.

Operational History

Norway had been a neutral in World War I and wished to remain one in World War II. This was not to be because of its strategic location. Shortly after the war erupted in September 1939, Churchill proposed mining Norwegian waters. On 8 April 1940 the Royal Navy began to mine. It was only a day before the Germans launched their invasion. The British had some warning of German naval movement but concluded it was an effort to break ships out to the Atlantic; they had not anticipated a German invasion of Norway. Because of poor intelligence, the British moved their superior naval forces in the wrong direction to oppose the invasion, and thus nullified their only major advantage in the campaign, sea power.

Within a week of the German attack, the Allies reacted to German landings with their own landings at three points in Norway. The split Allied forces proved no match for unified German units. The Allies major problems included General confusion, lack of coordination of the polyglot forces, multiple languages, and lack of training, experience, supply, and proper equipment. Rugged terrain and poor weather made matters worse. German airpower was especially effective as the Allies had few aircraft and minimal antiaircraft protection. Luftwaffe dive-bombers battered Allied ground and naval forces, harassed Allied air forces, and effectively bombed supply ports and lines. British carrier and land-based air proved woefully inadequate.

At Narvik the Allies had superior numbers against a small, cutoff German force. Hitler despaired, if not panicked, and authorized the commander to withdraw to nearby Sweden. But tough German troops, solid leadership, and Allied failings permitted the German force to survive. On 24 May London sent orders to evacuate Norway. (The German attack in France on 10 May that reached the English Channel on 22 May changed the complexion of the war.) The Allies decided to take Narvik and destroy its port facilities before pulling out. This they were able to do on 27 May, but the tough German defenders withdrew undefeated into the countryside. The Allied success and stay was brief; in early June the Allies pulled out. The campaign was a clear German victory. The Allies lost the campaign; the Norwegians lost their country.

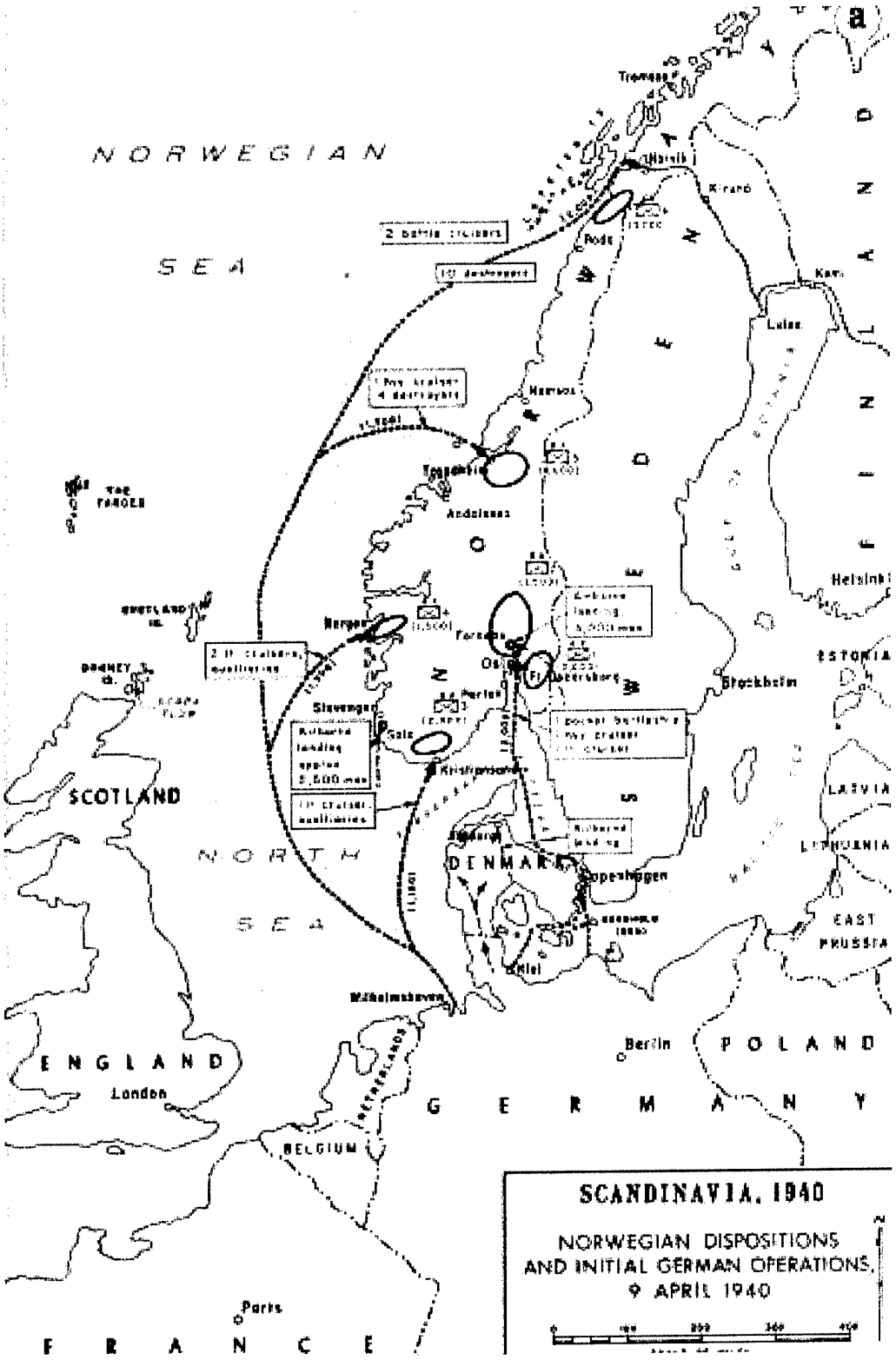


Figure 3. Norway, 1940.

4. German Expedition to Norway: Military Success but Political Failure

Expeditionary Lessons Learned

- A bold plan that simultaneously attacks all the enemy's centers of gravity can overwhelm and prevent reaction.
- Sea power is only decisive outside the range of land-based airpower. In the face of air superiority, surface sea power is ineffective.
- If one target is absolutely essential, then it is worth attacking in two independent ways. Rapid capture of Oslo was essential and the main sea-borne assault failed but a simultaneous airborne assault succeeded.
- Brilliant military success cannot entirely substitute for effective political planning.

Operational History

In early 1940, Germany was at war with Britain and France. Norway was an uneasy neutral courted by both sides. Since she had remained neutral during the First World War, Norway hoped to do so again, but both Britain and Germany were trying to force her to join the war. Not surprisingly, Hitler struck sooner and harder than did British Prime Minister Neville Chamberlain.

The greatest obstacle to German success was British naval superiority, but the Germans had superior airpower. German deception operations enabled their ships to get to Norway safely and, on the morning of 9 April 1940, they launched amphibious assaults on the most important Norwegian ports and communications sites. Simultaneous airborne assaults (some of the first in history) took the critical airfields at Stavanger and Oslo. At Bergen and Oslo, the Norwegian shore batteries held off the German ships, but in both cases German airpower facilitated success. The Germans controlled all the Norwegian centers of gravity by the evening of the first day. In the far north, initially beyond the range of German airpower, the British captured Narvik but were soon forced out.

The Germans' one serious mistake was that when the Norwegian government did not immediately accept German occupation, they allowed the pompous and paranoid Vidkun Quisling to declare himself head of a new Norwegian government. Quisling was a boon to Allied propaganda. Hatred of him strengthened Norwegian resistance to German occupation and forced the Germans to station much larger forces in Norway than would have been necessary under an administration more acceptable to the Norwegian people.

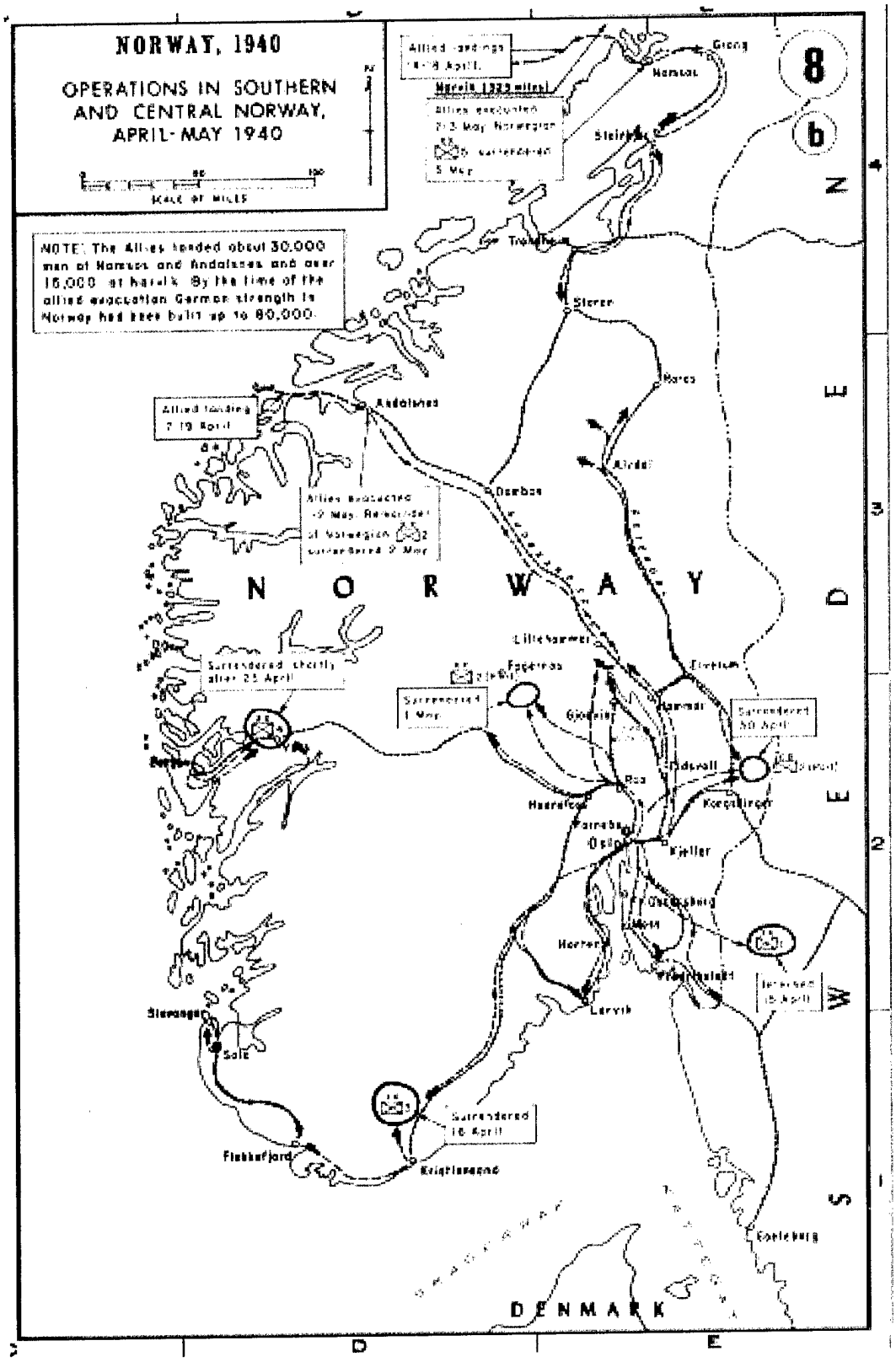


Figure 4. Southern Norway, 1940.

5. Philippine Force Buildup Before WW II

Expeditionary Lessons Learned

- World War II was an expeditionary war of greatest importance.
- Air forces have a powerful psychological effect on the enemy.
- Forces have to be combat ready to survive significant enemy forces.
- Parallel combat operations and surprise attacks are paralyzing.
- The theater commander and air commanders have to understand combat realities.
- Combined and joint relations need to be realistically thought out.
- Base security and alternate landing fields are necessary for large air operations.

Operational History

World War II, composed of many separated theaters, was the biggest expeditionary operation in the history of the United States. Even though this country was not at war in the waning months of 1941, a large expeditionary force, air included, was being rushed to the Philippines in anticipation of conflict with Japan.

One reason for this expeditionary buildup was the political-military intention to deter, or at least funnel, Japanese expansion in another direction. Another was the existence of B-17s. Military leaders, to include Army Chief of Staff General George Marshall, believed that the mere presence of this remarkable large bomber made a defense of the islands feasible. In the fall of 1941, Marshall began to send an allocation of America's best planes (300 B-17s, some longer-range B-24, and many first-line air superiority P-40s) to defend the islands.

Events tumbled quickly for MacArthur's theater command. Japan used its own expeditionary air forces to humble the defenders, producing a physical and psychological military paralysis by hitting several sites at once. The first target was American aircraft. Many of the 35 B-17s on hand were bombed on the ramps at Clark Field. P-40s fought it out with superior Japanese fighter pilots. Within two days there were only a few planes left to contest the multiple Japanese amphibious assaults.

MacArthur gave too much credit to the potential of an air force to give him defensive security, and he had a poor idea of how to employ his airpower. Furthermore, when things got exciting after news of the bombing of Pearl Harbor, he did not seek the advice of his new air commander in regard to dispersion and protection of the vulnerable force. When war surprised him, aircraft were employed with poor results. The Japanese military had an asymmetrical advantage but they also used surprise. The B-17s, bunched together for base security, were destroyed on the ground.

World War II

Combined and joint considerations were poorly developed. Talks with Pacific allies showed forward thinking about combined operations, but the attack came before development of an effective defense and before the Navy would agree to this drastic altering of the war plans. MacArthur was left without a Navy supply line. The Philippines were isolated thousands of miles from support, and the newly birthing expeditionary force was squandered. In effect it was easier to get the expedition started and more difficult to get it adjusted to a larger conflict. All MacArthur had was the promise that "I shall return."

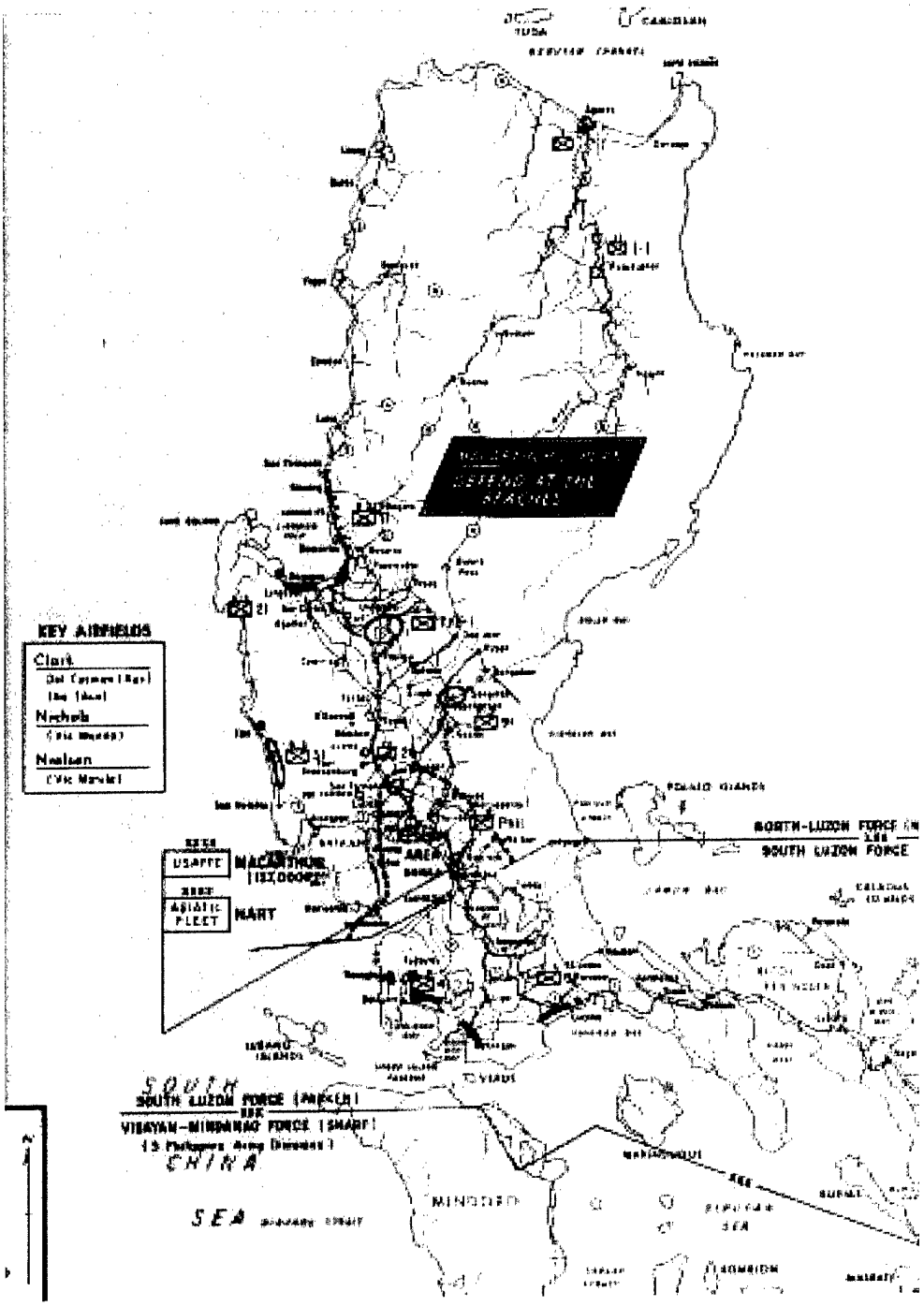


Figure 5. Map of Pacific/Philippines, 1941.

6. Guadalcanal: Success, Just Barely

Expeditionary Lessons Learned

- Land-based airpower was the key to this operation and to Allied victory.
- Interservice cooperation was sadly lacking and its absence complicated successful operations.
- Getting there, "firstest with the mostest" can deliver victory, but at a cost.
- Supply was critical and largely determined ultimate victory.
- Technology was not a key to victory. The Japanese had better torpedoes and fighters.

Operational History

The early months of World War II went badly for the US. The Japanese had won striking victories, were threatening Allied lines of communications with Australia and New Zealand, and had begun building an airfield on Guadalcanal in July 1942. Only a few days earlier, the Joint Chiefs of Staff had agreed to send an expedition there. The American landing came on 7 August and achieved complete surprise. Both sides pumped reinforcements into the brutal ground war fought in terrible terrain by brave, but poorly supplied, troops. The US carriers had to pull back out of danger, but Americans retained air superiority, using joint, land-based airpower. Initially, the Japanese held nighttime naval superiority.

The Marines quickly found themselves on their own as the Navy, fearing for the security of its precious carriers, withdrew. Naval fighting was fierce, with the tactical advantage swinging back and forth. The Japanese had the advantage at night, with superior tactics and torpedoes, while the US had radar and air superiority. One consequence of this hotly contested naval battle was that both sides could only partially supply their forces. The naval losses were about equal in the campaign, but the US could afford such attrition. The Japanese could not.

The land battle was confused, difficult, and deadly. Throughout, the Japanese made numerous attempts to dislodge the Marines, but, as brave as the Japanese were, their piecemeal, uncoordinated assaults did not produce positive results. Losses were high, but lopsidedly against the Japanese. The jungle terrain contributed to the problems, making communications tenuous and movement slow, and reducing the combatants to battle mainly with light weapons, at close range. Supply was a major problem for both sides.

By the end of the year, the outnumbered Japanese were losing the battle of attrition and were no longer capable of offensive action; thus, they decided to pull out. In contrast to the mismanaged ground campaign, the Japanese were able to pull off a brilliant evacuation without detection and without a loss during the first week of February 1943.

The Guadalcanal campaign was one of the critical and decisive battles of World War II. It was the first Japanese land defeat and marked the beginning of the Allied advance toward Tokyo. Guadalcanal shattered he Japanese soldiers' reputation as superior jungle fighters, but this action reinforced their renown for bravery and stamina, dedication and sacrifice. Likewise, the US Marines added to their reputation for courage and tenacity.

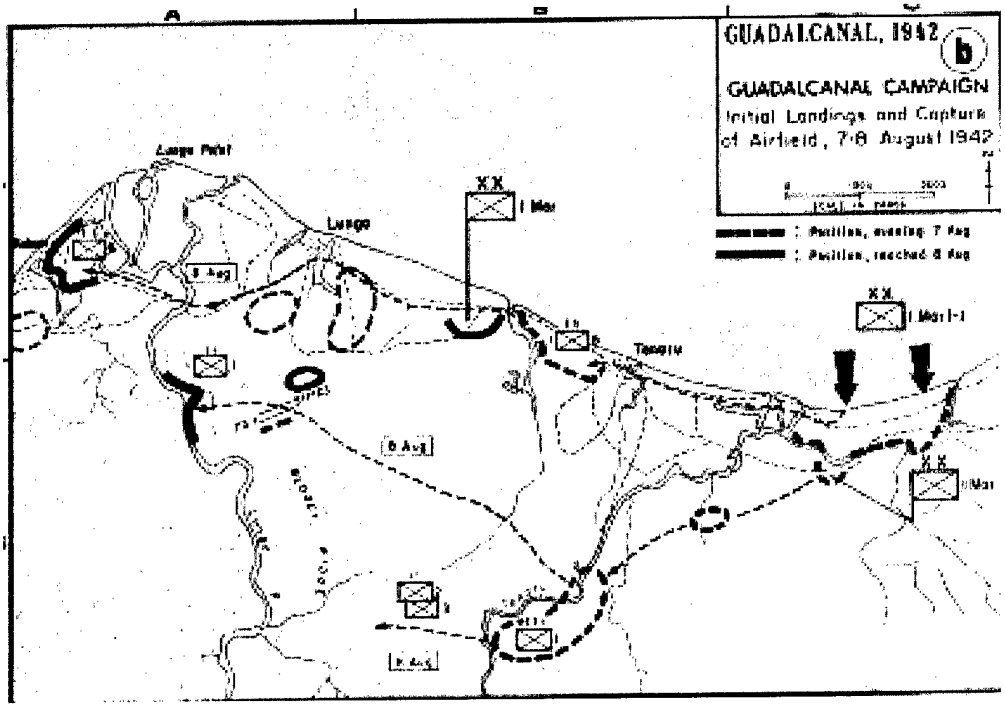


Figure 6. Guadalcanal Campaign, 1942.

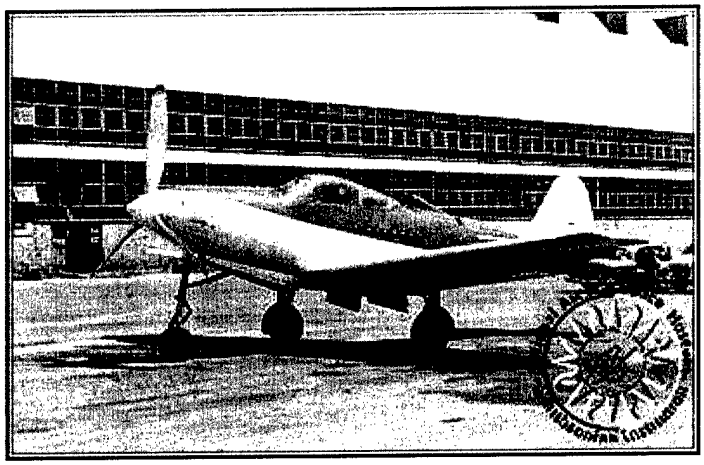


Figure 7. Bell P-39/P-400 type, used for ground support at Guadalcanal.

7. Rommel in North Africa: The Campaign from a German Point-of-View

Expeditionary Lessons Learned

- The campaign in North Africa demonstrated the importance of leadership.
- Supply was critical to victory.
- Intelligence played a major role in this campaign, especially in supply interdiction.
- The Axis performed well with superior tactics and leadership.
- Airpower played a significant role in both battlefield support and supply interdiction.

Operational History

The collapse of Italian forces in North Africa late in 1940 prompted German intervention in the Mediterranean Theater. Although General Erwin Rommel and the German vanguard arrived in North Africa in February 1941, the British did not expect an attack until summer because they knew through intercepted communications that the Germans had logistical problems as well as orders to stay in defensive position. Rommel surprised both friend and foe when he quickly took the offensive. After the Luftwaffe neutralized the supply port of Benghazi, forcing the British supply lines back 200 miles, Rommel attacked and won smashing victories. With air superiority the Germans made good use of decoys and attacked British fuel stocks. German speed, daring, and ruses overcame the lackadaisical, poorly commanded British forces.

For almost the next two years, the war swung back and forth across the North African desert. To a large degree, supply determined victory. Airpower largely determined what could get through to the armies in the desert. The tiny island of Malta proved to be vital for, while badly pounded by Axis aircraft, it withstood the aerial siege and remained a key Allied outpost and base. Although both sides could read each other's communications, the Allied ability to read German messages was crucial in the effort against German supply lines, accounting for 40 percent of the Axis shipping losses. On two occasions, Fall 1941 and Fall 1942, the Axis forces came close to exhausting their supplies.

Even given their tenuous supply situation, the Axis forces performed very well, particularly as the majority were Italians, not considered frontline troops. Much of this success can be attributed to the energetic, inspiring, and brilliant tactical leadership of Rommel. German combined arms tactics, especially coordinated use of tanks and anti-tank guns, were also clearly superior to Allied tactics. In addition, the Germans displayed superior tank recovery methods that were most useful given the limited supply situation. On the other side, British leadership was for the most part inferior, especially at the top level. The British failed to coordinate their forces; troops were not cooperative; and their piecemeal attacks squandered the advantages in men and machines. In brief, Rommel's forces were superior in mobile and offensive warfare.

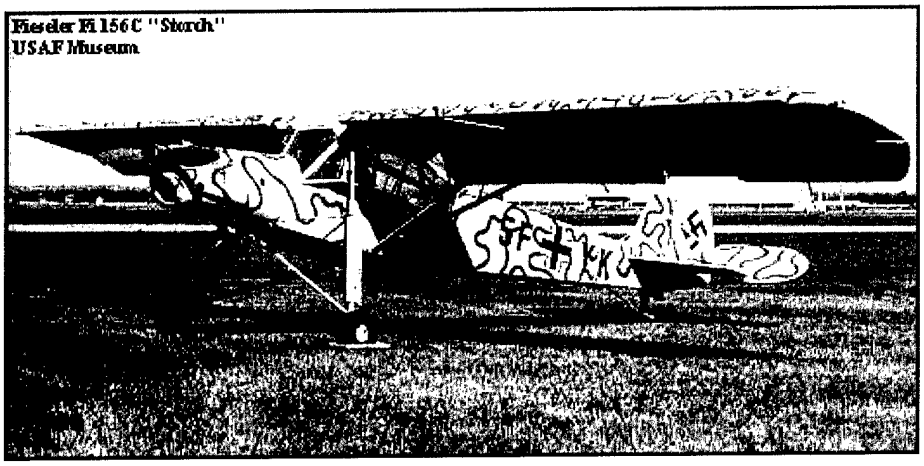


Figure 8. Rommel's personal aircraft, F:156c, "Storch," facilitated his active leadership in North Africa 1941-42.

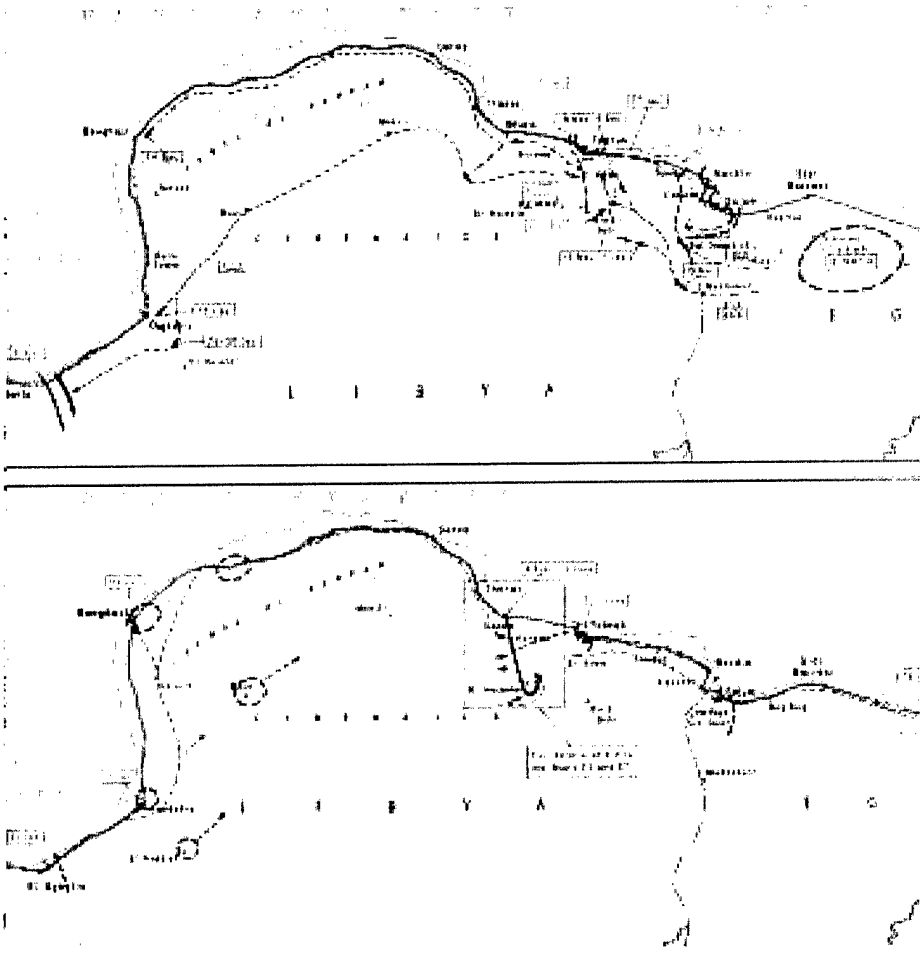


Figure 9. Rommel's North Africa Battlefield.

8. Expeditions to Nowhere: The Aleutians

Expeditionary Lessons Learned

- US code breaking put the Japanese at an enormous operational disadvantage and, as a diversion for Midway, the Aleutians invasion failed before it began.
- Weather and lack of preparation cost more men, ships, and aircraft than combat.
- Divided US command hampered the US response.
- Both Japanese and US expeditions succeeded operationally, but were dead-ends because they served no larger strategy.

Operational History

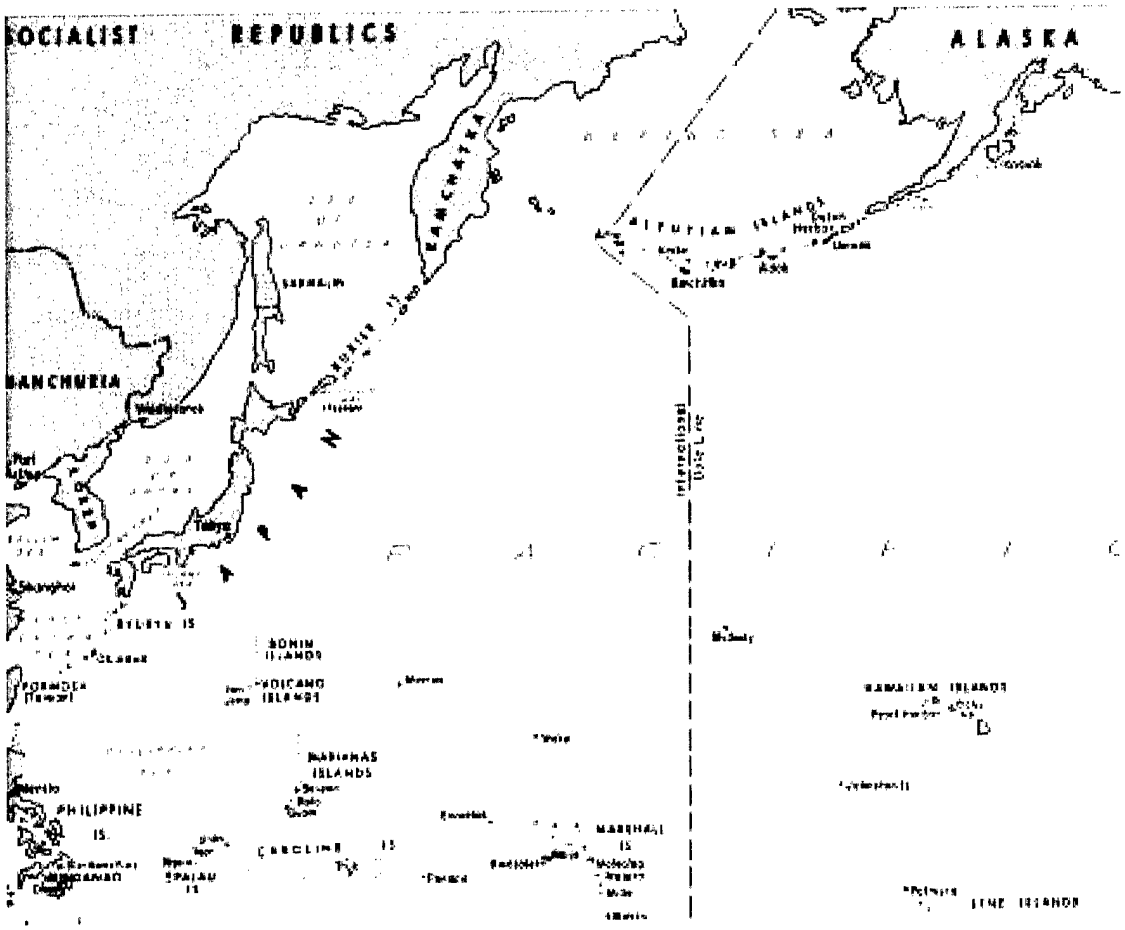
The Japanese invasion of the Aleutian Islands was planned to provide a diversion for their Midway operation. A task force, including light carriers and amphibious troops, would open the Midway operation with an air strike against Dutch Harbor. Additional strikes would be followed by amphibious assaults on the outer Aleutian Islands. These actions were intended to blunt any US buildup which might threaten Japan from the north and to provide bases to anchor the northern end of Japan's new outer defensive line.

The Japanese invasion went according to plan, and the Japanese seized the islands of Attu and Kiska. But even without the reversal at Midway, the strategic value of this new and remote theater was questionable. The Japanese could not support and defend these outposts, and the atrocious climate made a US thrust through the Aleutians towards Japan very unlikely.

The operation failed as a diversion because signals intelligence warned the US command of both the Aleutian and Midway operations. The US commanders decided to postpone retaking the Aleutians and concentrate on defeating the Japanese at Midway. When the US did respond, the ineffective bombardment by US air and naval forces only served to demonstrate strained relations between the two commands (North Pacific Area and Alaska Defense Command) responsible for the defense of this theater.

The US Navy eventually isolated the islands and an invasion of Attu was approved. The troops lacked cold weather items, but the campaign was expected to last only a few days. In a foretaste of later invasions, the Japanese chose not to oppose the landings. Later, as the American troops advanced across the spongy tundra of Attu's valleys, the Japanese attacked from secure positions in the rugged heights. A grim battle of attrition developed that ended when the remaining Japanese troops launched a suicidal night assault.

The follow-on seizure of Kiska was planned as a full-blown invasion but proved an empty victory since the Japanese had secretly evacuated the island. The US Army was philosophical about the campaign, citing the value of lessons learned to later amphibious and cold weather operations. However, for its size, the campaign was one of the most costly of the Pacific War.



P-38s taxi out for a mission in the Aleutians.

An Eleventh AF B-25 based in the Aleutians leads an attack on an enemy convoy near the Kurile Islands.

Figure 10. The Aleutians were a long way from the main battlefields.

9. TORCH: Twelfth Air Force to Africa

Expeditionary Lessons Learned

- Differences can arise between civilian policy makers and military commanders.
- Forward bases are very useful for big operations.
- Training counts heavily when engaging a competent enemy.
- Asymmetrical attack tends to dispirit the enemy quickly.
- Big campaigns require joint and combined planning and operations.
- Centralized command is crucial, especially when allies are part of the campaign.
- Even basic doctrine can be set aside for special emergency situations.

Operational History

Roosevelt, with Churchill's urgings, ordered TORCH. Political decisions can force the military into awkward combat situations. The Americans lacked sufficiently trained airmen and soldiers. Navy shipping was in short supply. But being good soldiers, everyone in Eisenhower's London headquarters quickly got busy with TORCH planning. Ike had hoped that American forces would have time for additional training when they got to Africa. That prospect was denied when Germany decided to contest the battle in Tunisia. The British 1st Army and American forces were hurriedly sent into action. At least Africa offered an opportunity to test American forces and engage Germany from the southern periphery.

TORCH was a combined and joint expeditionary effort out of England, from one forward base to another, but it also included men, equipment, and supplies sent directly to Africa from the United States. The aircraft, short-legged fighters included, would fly from bases in southern England, springboard off the Gibraltar airfield, and land in Northwest Africa, as well as fly off carriers originating from the United States.

The Twelfth Air Force, typical to all numbered air forces at the time, was a composite force, composed of fighter, bomber, attack, and supply commands. This gave it the flexibility to attend to any number of requirements demanded by combat. Arnold also assigned two senior officers, Vandenberg and Norstad, to help Doolittle, who had limited command experience.

Eisenhower followed the premise that the TORCH force would have asymmetrical power for this the most ambitious amphibious assault, to date, in American history. The Allies hoped to quickly dispirit the French, forcing surrender and a change of sides without a grinding battle.

After the French surrender, all air units, earlier divided into three parts for the three separate task force landings, reformed under Doolittle. But the rumor that air operations did not follow doctrine was correct. The Army needed protection from Luftwaffe bombers and, having no anti-aircraft defense, called on the Twelfth AF to protect it. Emergency situations require doctrinal distortions. The need for a centralized command structure to encompass all the Allied forces was not fully implemented until after Kasserine.

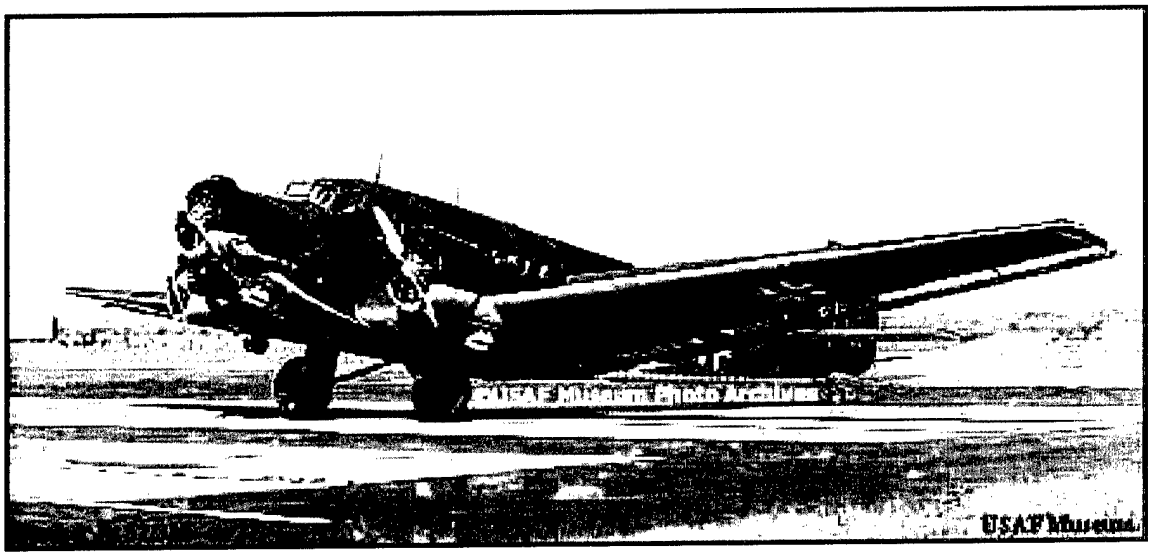


Figure 11. Luftwaffe provided the airlift for the German campaign in Africa. Because of Allied air superiority, German Ju-52s were destroyed in large numbers.

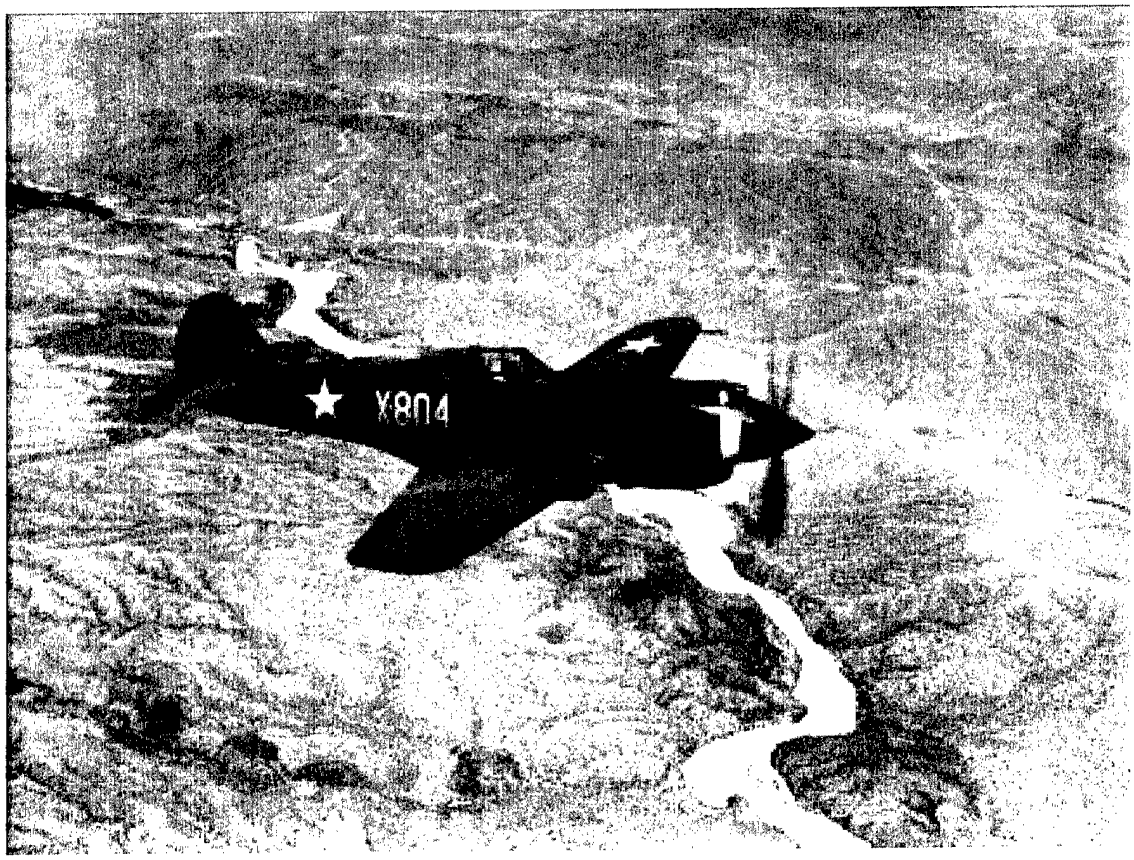


Figure 12. P-40 main air superiority fighter for the Twelfth Air Force.

10. BOLERO: Eighth Air Force to England

Expeditionary Lessons Learned

- A forward base was necessary for major operations.
- Composite expeditionary forces provide flexibility.
- Central command of all air units was achieved under a theater commander.
- A large bomber force was necessary for targeting effectiveness in 1943.
- Ocean transport was a major limiting factor in moving expeditions overseas in WW II.
- Security necessary even for forward bases in a friendly nation.
- Conducting operations in more than one theater at a time compromised allocations.
- The amount of material required for an air-only campaign was difficult to obtain and maintain for political, military, and interservice reasons.

Operational History

The air campaign in Europe against German forces had a slow and troubled beginning. Because of the Japanese threat, a heavy share of air strength was diverted westward, and the expeditionary American air arm in Europe could only limp into battles thirty-six weeks after war began. Even then, events, especially the invasion of Africa, overtook initial planning and BOLERO, the movement of an expeditionary buildup in England, was delayed until 1943.

The Eighth Air Force was formed in January 1942 under a central command. It was a composite air force composed of fighter, bomber, air support, and service commands. Like all early numbered air forces the composite nature was thought to provide flexibility to handle all potential air missions, but bombers were the effective force. Getting forces, trained personnel, equipment, and aircraft ready from a low production baseline was problem number one. Another limiting funnel was sea transport. Resources for operations in Northwest Africa, organized at the last minute, had to be drawn from other expeditions, and Operation BOLERO got hit hard.

Still, General Carl Spaatz and many air leaders hoped to continue the buildup of an air expeditionary force in England's safe haven to create another front against Germany. The important issue to airmen was the bombing campaign against Germany. General Arnold originally wished to withhold the heavy bombers from action until he could unleash a force of considerable size, but this is not how events played out.

American airmen sought to prove the case for service independence by conducting a successful bombing campaign. General Ira. C. Eaker and other air leaders believed the British bombing campaign had the potential to defeat Germany without ground operations. He also understood that time, political factors, and service considerations would not permit an air-only effort and that combined air-ground operations in Europe were inevitable.

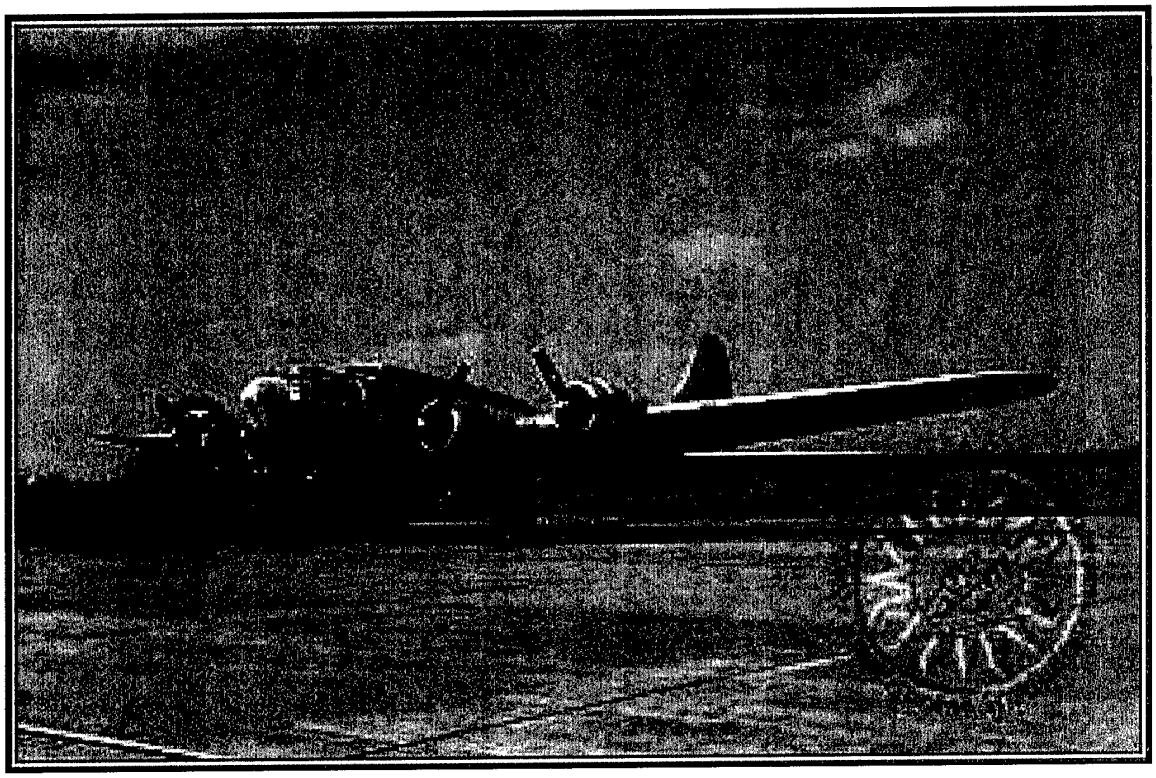


Figure 12. The buildup of the Eighth Air Force B-17 bombers underscored the BOLERO operation.

Figure 13. Eighth Air Force patch.

11. The Italo-Ethiopian War

Expeditionary Lessons Learned

- Logistical and political preparation of the theater was critical to success.
- Roads, port facilities, and air bases were developed well in advance of expeditionary force deployment. Organic military aviation was a decisive factor in all operations – in reconnaissance, communications, and attack missions. It was particularly devastating in a pursuit role against retreating forces.
- Aircraft in large numbers were used for the first time in the resupply of a corps-size unit in the field.
- Italy's winning strategy and tactics were soundly based on knowledge of the Ethiopians' political and military weaknesses and operational propensities in the field.

Operational History

However harshly one may judge the motives of Benito Mussolini in the conquest of Ethiopia in the mid-1930s, a close examination of the operational achievements of Italian expeditionary forces reveals remarkable success in the face of formidable natural obstacles. Numbering around half a million men, deploying thousands of miles from home, and facing a harsh environment and courageous, if ill-equipped, enemy forces, the Italians acquitted themselves extraordinarily well.

It is hard to visualize the magnitude of the task faced by Marshall De Bono and his engineers to prepare the theater for arrival of large numbers of Italian troops in northern and southern operational areas. Ethiopia was essentially devoid of roads for motor vehicles, had very limited port facilities and only two short railway lines, and offered virtually no local resources. De Bono's choice was to rely on development of a road system and thousands of trucks as the chief means of supplying 500,000 men over great distances.

The Italians wisely took advantage of rivalries among numerous feudal chiefs in Ethiopia who not only distrusted each other but also the central government of Emperor Haile Selassie. Italian political agents worked incessantly before and during the war to undermine the loyalty of native chiefs toward the Emperor, and even to gain their complicity in some cases. De Bono calculated that Italy's political preparation of the battlefield prevented some 200,000 warriors from taking up arms against the Italians.

The role of military aviation in this war was multi-faceted, innovative, and highly instrumental to the Italian victory. Principal missions of aircraft organic to all corps-level formations were reconnaissance/observation, liaison/communications, bombing, and strafing. The ever-present menace of aircraft operating from airstrips near the front compelled concealment and dispersion of enemy forces, thus discouraging mass actions and offensive spirit. Perhaps the most decisive employment of Italian military aircraft was in pursuit of retreating troops.

Inter-War Years

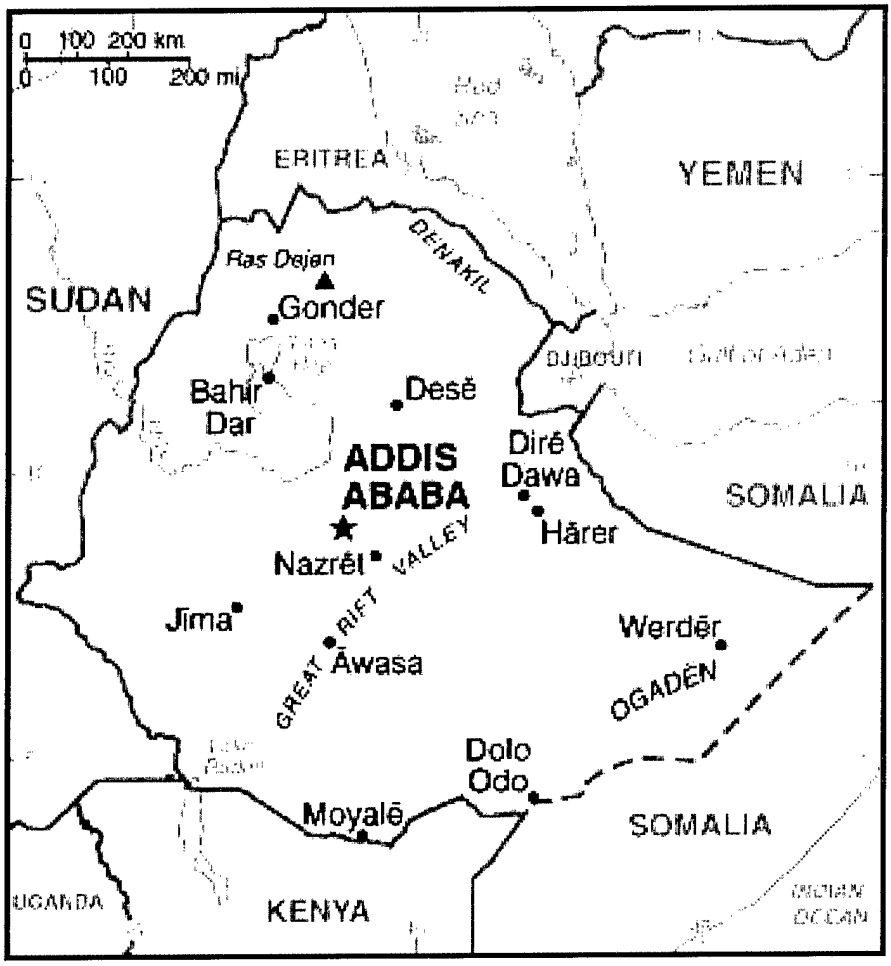


Figure 14. Ethiopia battleground.

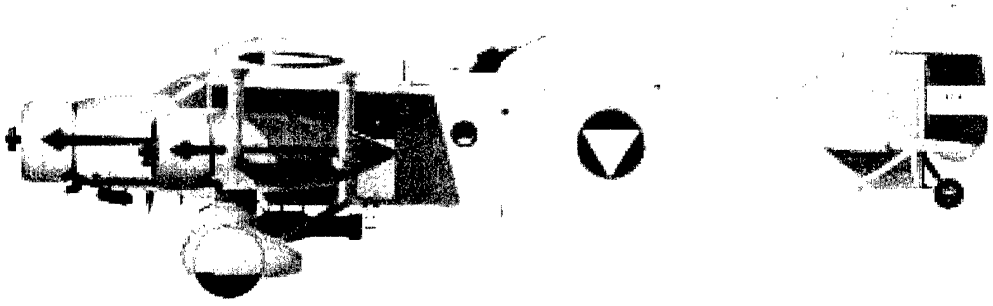


Figure 15.Caproni Ca 133 Italian Bomber used in Ethiopia.

12. Intervention of a Soviet Expeditionary Aerial Force in Spain

Expeditionary Lessons Learned

- Timely intervention can turn events around.
- Victory was associated with technological superiority that rapidly changed. Equipment that had once dominated the battlefield was, in short order, junk.
- Guadalajara showed how airpower could repulse and savage an armor assault.

Operational History

In July 1936 a military revolt in Spain degenerated into a drawn out civil war. The Germans and Italians aided the Nationalists while the Western democracies did little but talk. Only the Soviets lent the Republicans any significant military assistance. The impact of Soviet air aid became apparent when Russian aircraft appeared in combat in November 1936 and quickly established air superiority over the Italian and German biplanes. Later the Soviets employed the even better performing I-16 monoplane that was the first to fly with a number of major technological innovations of the era.

The one major Republican victory came in March 1937 when a powerful Nationalist column broke through northeast of Madrid near Guadalajara. Wet weather forced the largely motorized force of about 1,000 vehicles to string out ten miles along one road, and grounded the Nationalist air force that was operating off of sod fields. Soviet aircraft using a concrete runway were able to get airborne, find the enemy, and effectively attack. Aviation was a major factor in this Republican victory. The Nationalists lost many troops, much equipment, and considerable prestige in this battle.

The Republican advantage was brief. In mid-1937 the Germans regained the technical edge with the Bf-109s that outperformed the Soviet fighters. This technical advantage, greater numbers, and superior German tactics and training led to Nationalist air superiority. This airpower advantage, combined with the Nationalist victories in the ground war, the increasingly tight blockade, and Soviet obsession with the purge of its officer corps, led to the gradual phasing out of Soviet aid in the fall of 1938. The war ended in late March 1939 when the Nationalists took Madrid and Valencia.

The Soviets greatly influenced the war with a relatively small number of personnel, probably no more than 4,000, of whom 1,000 were pilots. The Soviets also sent 1,000 to 1,500 aircraft to the Republicans. The scale of the Soviet contribution is evident when comparing this number with the size of the entire German air force during this same period; the Luftwaffe grew from a frontline strength of 2,000 in 1937 to 2,900 in August 1938.

Inter-War Years

Figure 16. Spain.

Figure 17. Polikarpov I-15.

13. German Airpower in the Spanish Civil War: Maximum Impact, Minimum Cost

Expeditionary Lessons Learned

- Political sympathy for a cause may bring support from other nations even without concern for vital interests.
- Small covert operations, though expanded into large overt operations, may still be heavily influenced by intelligence services.
- Carefully tailored forces, even if small, may match the needs of the recipient.
- Small expeditionary elements are most effective if they emphasize airpower.
- Properly used, expeditionary operations can provide invaluable training benefits.

Operational History

By 1936 Spanish politics was becoming fragmented, polarized, and violent. In July the army rebelled against the recently elected leftist government and the nation descended into a brutal civil war that lasted almost three years. The Germans were drawn into the war ten days after the revolt began.

Much of the rebellious army (the Nationalists) was in North Africa and could not get to Spain because the navy (after the sailors killed their officers) sided with government forces. The Nationalists requested aid from Germany. Against the advice of his army and foreign ministry, Hitler decided to send covert air assistance. The Germans used transport aircraft from their civilian airline to airlift over 12,000 Spanish troops and their equipment from North Africa to Spain in the critical early stages of the war. This was the first time in history that an entire army and its equipment had been airlifted to war, and it saved the Nationalist cause.

As the war progressed, the Germans became more overt about the expansion of their effort, and their support began to include equipment, training, extensive air combat operations, and limited ground combat. Since the initial operation was covert, the German intelligence services became heavily involved at the start and remained key players even after aid became overt. The German expeditionary force in Spain was never larger than 6,500 troops, but it was designed to address the specific weaknesses of the Nationalist forces and had an enormous impact on their eventual success. Germany provided 80 percent of the Nationalists' air forces and gave them air superiority. On the ground, the Germans provided extensive training and technical support. In return, the Germans learned important combat lessons in Spain.

Though 750,000 Spaniards died in the civil war, careful use of a small force that emphasized airpower enabled the Germans to make an important, perhaps decisive, contribution to the war's outcome at a cost of about 300 German lives.

Inter-War Years

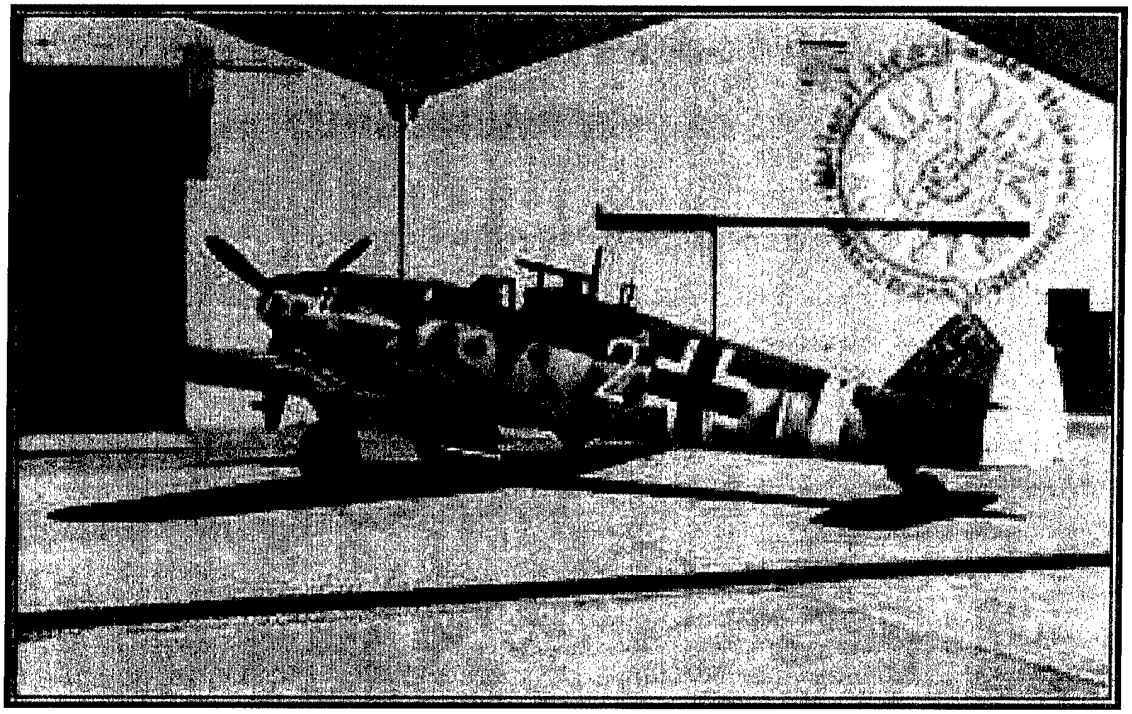


Figure 18. The Luftwaffe tested its WWII fighter, Bf-109 in the Spanish Civil War.

14. Italian Forces in the Spanish Civil War: High Price for Limited Gain

Expeditionary Lessons Learned

- Expeditionary forces must be carefully trained, organized, and equipped to effectively accomplish their missions.
- Large numbers of undisciplined troops created political tensions with the host nation. .
- Even erstwhile allies will be highly contemptuous of a friendly expeditionary force that begins operations with an arrogant attitude, and then subsequently fails. Either don't be arrogant or don't fail.
- Large numbers of ground troops committed to a long war incur casualties that may be out of proportion to the value of the conflict.

Operational History

Benito Mussolini wanted Italy to dominate the Mediterranean, and a friendly Spain would help him achieve this. Shortly after the Spanish generals revolted, Mussolini agreed to assist them, but he was not content to simply train and support the Nationalists. He wanted Italy to make an independent, highly visible, and decisive contribution to the cause.

With this goal in mind, Italy sent large but disorganized and poorly trained ground forces to fight in Spain under Italian generals. Italian troop strength in Spain rose to three divisions and nearly 45,000 troops fighting as an Italian corps. However, the first major Italian offensive (the Guadalajara campaign in March 1937) ended in disaster when heavy rains grounded the Italian air forces but not those of their Republican opponents. Attacks by the unopposed Republican air forces devastated the Italian armored columns. When Republican ground forces counterattacked, the Italians fled (much to the amusement of their Spanish allies).

Over time, the performance of the Italian troops improved, but the size of the force created problems of its own. The Italians became conspicuous in the bars and brothels of the rear areas and too often wound up brawling with "friendly" Spaniards and straining relations between the two nations. Even worse, some of the Italians responded to supply problems and poor leadership by deserting to the enemy.

In all, over 100,000 Italian troops and nearly 6,000 Italian airmen fought in Spain. The large Italian force in Spain made an important contribution to the eventual Nationalist victory, but that victory was really won by Spanish ground forces supported by German air forces. Italy gained little from the war but paid for those meager gains with more than four thousand Italian lives.

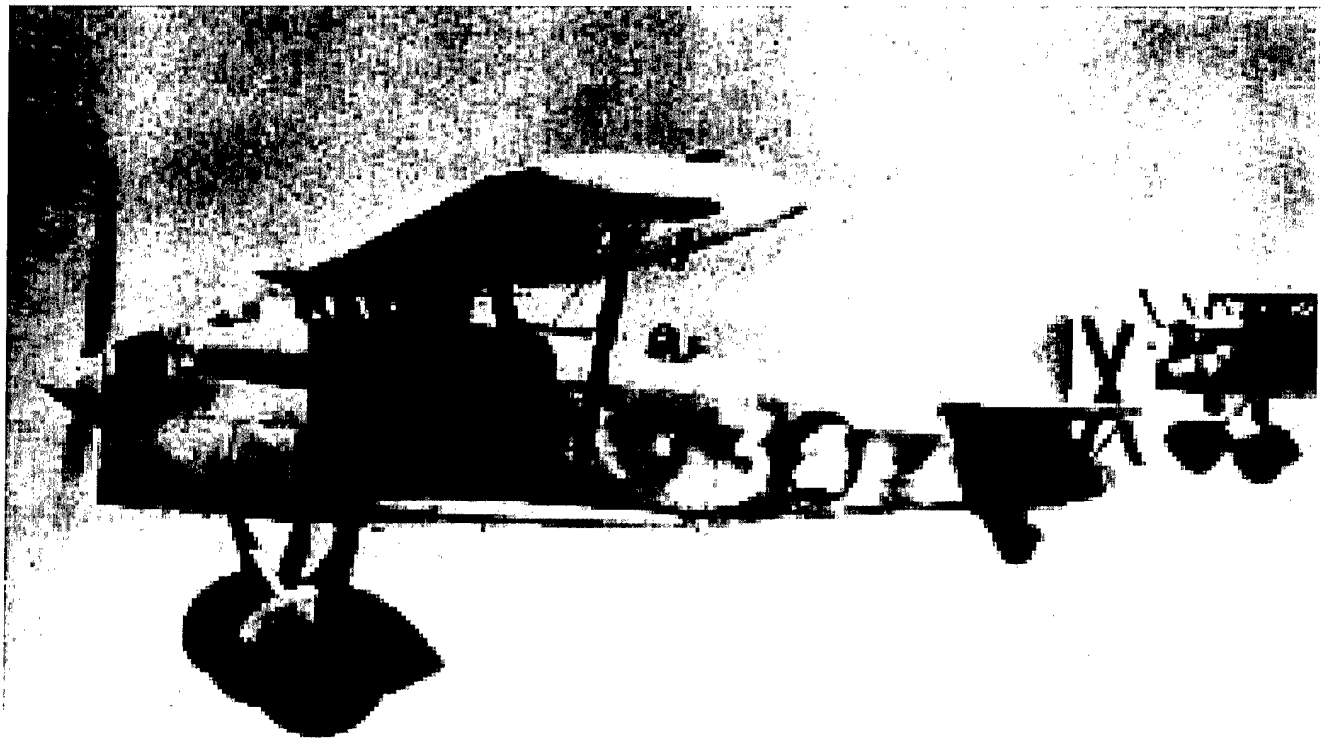


Figure 19. Fiat CR-32 Italian fighter employed by Italian and Spanish National forces.

15. The Mexican Punitive Expedition

Expeditionary Insights

- Proper equipment is essential mission accomplishment.
- Inadequate training can severely limit operations and may spell disaster.
- The American military must be prepared to fight anyone, anywhere, anytime.
- Air operations are dependent on adequate support and logistics.
- An early example of US military in international law-enforcement operations.

Operational History

In 1911 the Mexican government was overthrown, and the country descended into civil war that spilled across the border into the United States. Twenty-seven cross border raids left nine American soldiers and six civilians dead. In January 1916 forces loyal to Pancho Villa killed eighteen Americans in Mexico, and in March 1916 raided Columbus, New Mexico, killing eight soldiers and eight civilians. President Woodrow Wilson ordered American forces under the command of General John Pershing to pursue and capture Villa in Mexico, and Wilson called up the National Guard for the battle on the Mexican-American border.

The fledgling US Army air arm sent into action the 1st Aero Squadron consisting of eight aircraft, ten pilots, and support personnel equipped with both trucks and motorcycles. This was the first expedition for American airmen. Airpower gave the US Army forces a potentially potent tool in this highly mobile operation that covered some very harsh and rugged terrain.

The airmen's service was less than distinguished. Their underpowered aircraft could not cross the 10,000 to 12,000 foot mountains, could only carry a payload of 265 pounds, and suffered from the desert climate. Cracked propellers were one climate-induced problem. In addition the machines were oversensitive on the controls and lacked instrumentation. There were no communications or navigation aids, guns, or bombs. Not surprisingly, all but the two most experienced pilots considered these aircraft unsafe. Training was also primitive, practically non-existent, as only one of the squadron's pilots had flown at night, and he had done it only once.

After one month's operations, only two of the eight aircraft were airworthy. Despite great promise, the American airmen could only deliver mail and dispatches in a campaign in which airpower might have played a significant, if not decisive role. While the US Army was engaged in this guerrilla war in Mexico, Europeans were fighting World War I. With the potential for a major European war, planners were attuned to the plight of American airpower. This operation brought to the attention of the press, public, and decision makers the need to bring American Army aviation up to European quality.

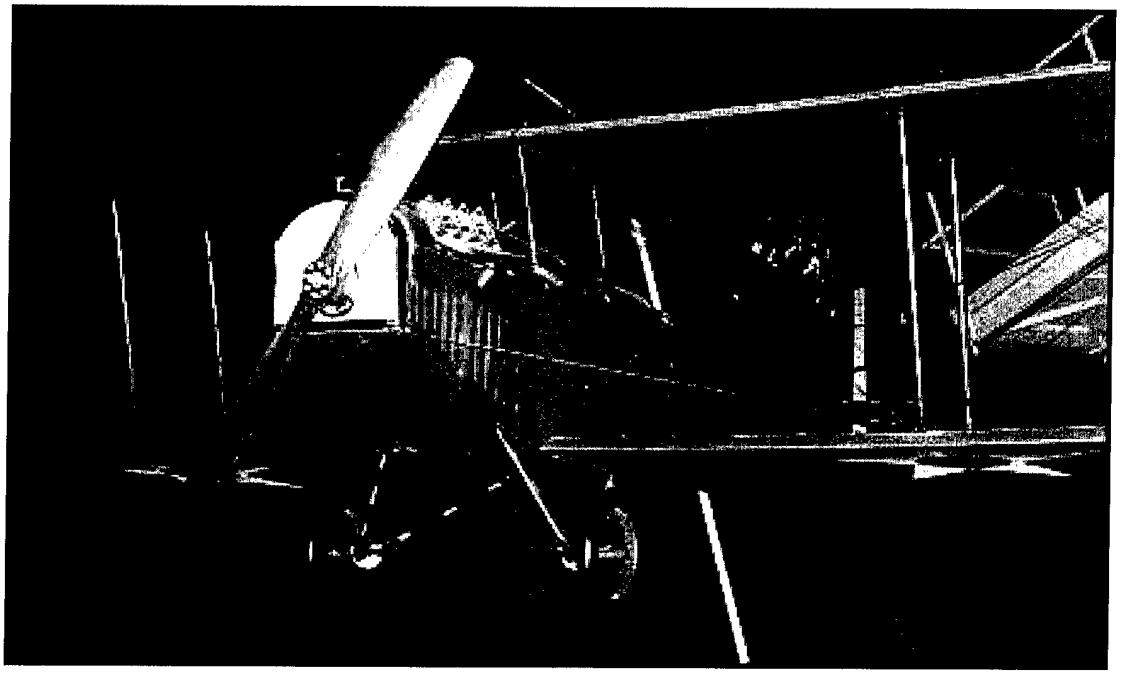


Figure 20. JN-3 cousin of this more famous JN-4 provided air support for the Mexican Punitive Expedition.

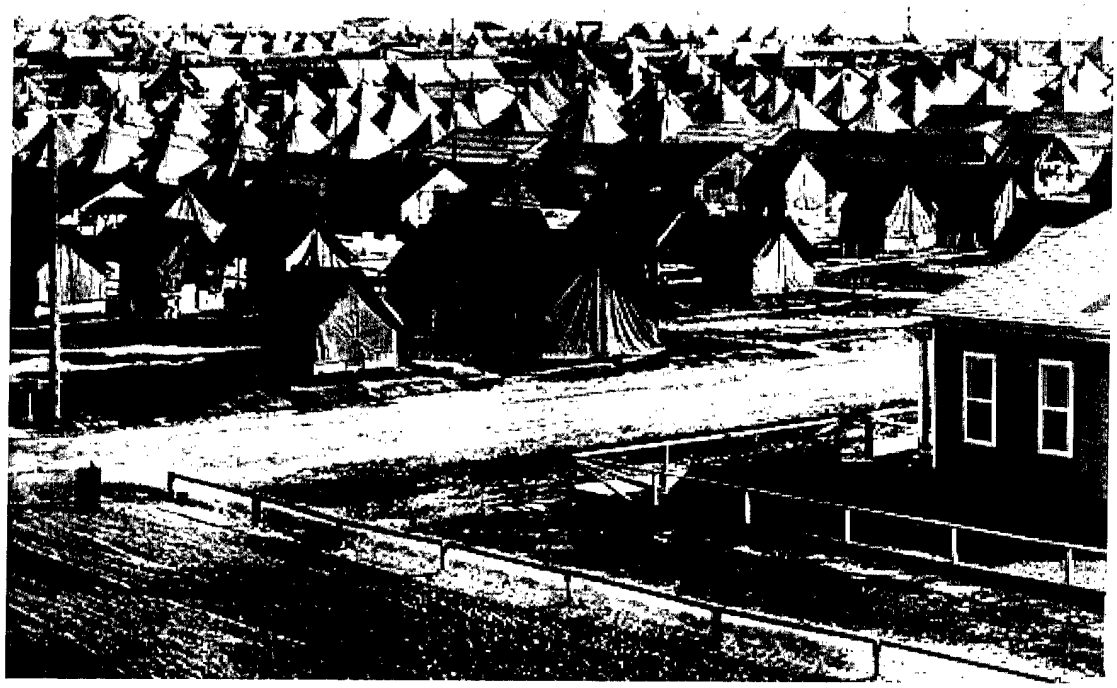


Figure 21. Encampment of the 20th Division. This unit provided much manpower for the Mexican Punitive Expedition.

16. Expeditionary Failure, German East Africa

Expeditionary Lessons Learned

- British control of the sea and information dominance inhibited German resupply.
- Poor leadership, weak troop strength, and underestimation of enemy capabilities and intent led to early British failure.
- British gradualism forced a need for continuing troop reinforcement, none sufficient to end the campaign.
- Allied strategy was hindered by mistrust and hidden agendas.
- Adapting to the harsh environment proved more important than combat.

Operational History

In 1914, fueled by a desire for conquest and a need to eliminate bases, that might support German commerce raiders, the British launched a series of expeditions intended to seize Germany's colonial territories in Africa and the Pacific. Supported by Commonwealth and some Allied forces, these expeditions were largely successful, but the campaign in German East Africa (modern day Tanzania) proved a disaster.

Surrounded by enemy colonies, cut off from the sea by the Royal Navy, and isolated by disrupted radio links, the colony fought the war without much support from Germany. In October 1914, the British launched an amphibious expedition to capture the port of Tanga (northern port near the border of British East Africa). This British force employed rejects not wanted elsewhere, including poorly trained Indian troops led by officers of questionable abilities. Although the landing was initially unopposed, German reinforcements repulsed the attack and the green troops retreated.

Although the Royal Navy launched two memorable expeditions during the next year, fighting on the ground during 1915 was inconclusive. One raid destroyed a German commerce raider in a sheltered river delta. Another overland raid attempted to gain control of Lake Tanganyika. (Source of the movie, *African Queen*)

In 1916 South African troops took the field under General Jan Christian Smuts. Driven south before ponderous Allied columns, the Germans only engaged in battle under favorable conditions--all the while letting supply difficulties and the environment take their toll on the invaders. Allied noncombatant losses (from disease) were 30 times those of combat. By contrast, the German *Askaris* (locally recruited black troops) were supplied less but fought better. Well trained and led they were prepared for the rigors of bush warfare.

By 1917 the Germans were so short of supplies, they even attempted resupply by airship from Europe. Pressured from three sides, the Germans took advantage of poor Allied coordination. Hanging tough before larger British forces of some 200,000, the Germans never exceeded 15,000 and did not surrender until after the Armistice in 1918. In four years of war, a large expeditionary force could not defeat a well-conducted defensive army.

World War I Era

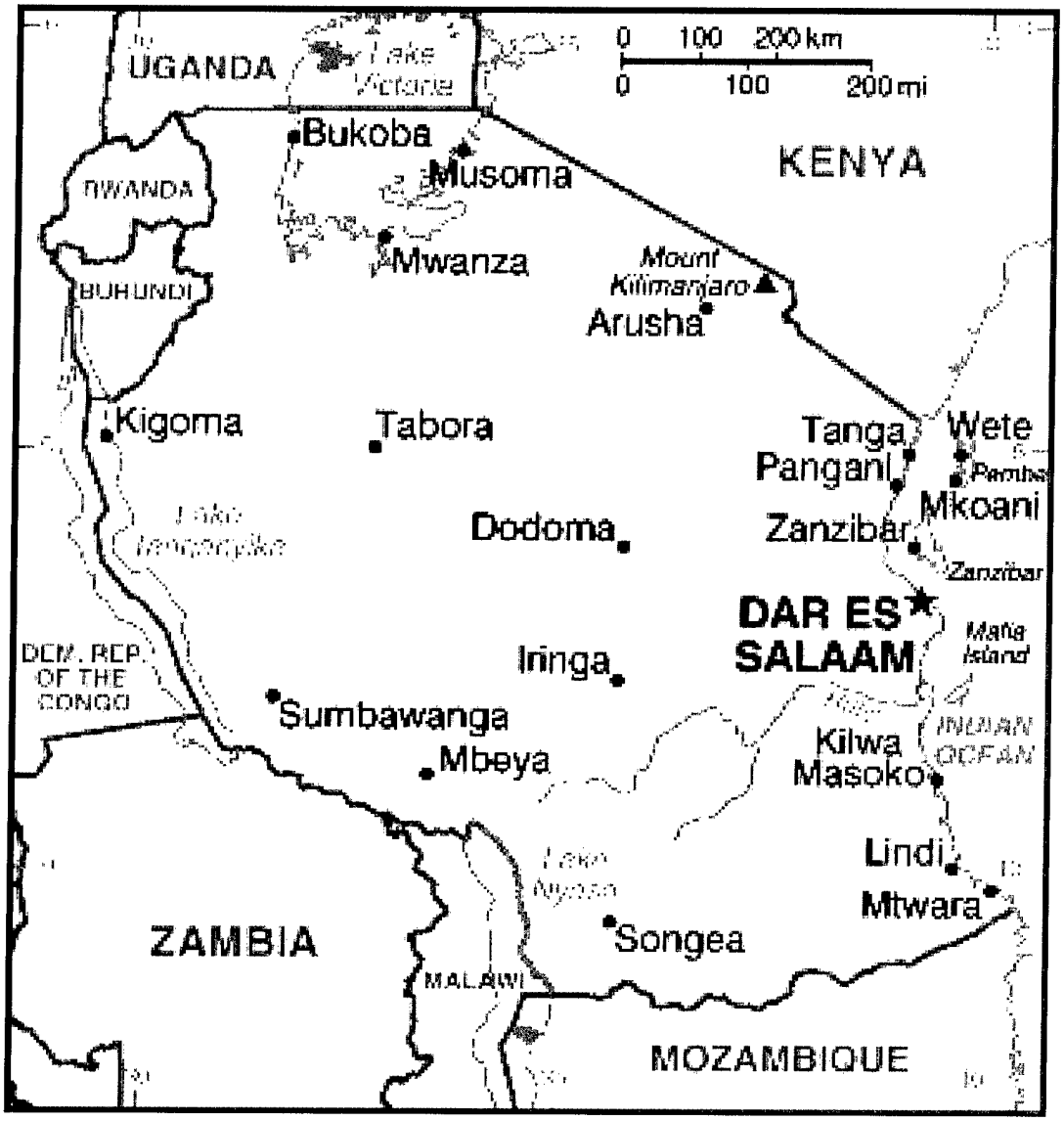


Figure 22. The current nation of Tanzania was the former German East Africa, WW II Battlefield. Map of Tanzania.

17. Gallipoli: How NOT to Run an Expedition

Expeditionary Lessons Learned

- The criticality of leadership. Tentative Allied leadership contrasted sharply with that of the Turks and Germans and was a major factor in the outcome.
- Inattention to details courts disaster.
- War is a team effort. Inattention to all aspects of warfare proved disastrous.
- War is dynamic and timeliness a harsh master. If the Allies had attacked earlier, they might have won.
- Centralized air command was a recognized necessity.

Operational History

In 1915 the Russians, battered by the Central Powers in the west and about to be invaded by Turkey in the south, appealed for British help. An attack through the Dardanelles could knock the Turks out of the war as well as insure supplies to and grain from the Russians. The Royal Navy attacked on its own, fortified by its disdain for the Turks along with the known weakness of the defenses. But the Turks, alerted by a November 1914 naval bombardment, had made some defensive improvements. While the coastal area could only be lightly defended because of its expanse and rough terrain, the Turks laid mines, covered by fixed and mobile guns. Allied operations started in late February 1915, but problems delayed a serious attack for nearly a month. Then disaster occurred when sixteen battleships got entangled in an unswept minefield. Six ships sank or were disabled. Although the defenders were almost out of ammunition, the naval forces were out of drive. The navy brought in the HMS *Ark Royal* and, in the first carrier action, naval planes observed for the ships' guns and even attacked ground targets, but they could not change the direction of the battle. It was now the army's turn.

Army operations were even more botched and much more costly. While the invasion was delayed by weather and reloading of the transports, the Turks reinforced their ground defenses. Although the Allied invasion tactically surprised the outnumbered Turks, the defenders held because of their fighting spirit and superior leadership. The Allied advance stalled with heavy losses due to ineffective naval fire support, tepid leadership, shortages of landing craft and aircraft, too few maps, confusion, poor coordination, and primitive communications. Neither reinforcements nor a second series of landings changed the situation.

All variety of aircraft was brought into the battle. Their tasks now included spotting for artillery, reconnaissance, CAS and interdiction, and even air-to-air combat. At one point London sent out an investigator to evaluate the air operations. His two main critique points were the lack of centralized air command, which was ordered forthwith, and inadequate supplies to match the long-running battle. Even with a stronger air presence, the ground forces finally acknowledged defeat. In sharp contrast to this classic failure, the evacuation of the invading force was a near perfect operation. The Allies effectively used deception and tight security, demonstrated

excellent planning and coordination, and achieved prompt execution in the evacuation, withdrawing without losing a man and completing the operation in early January 1916.

Each side suffered about one-quarter million casualties, Turkey outlasted Russia, and the war went on until Fall of 1918. While some speculate on "what might have been" had the Allies won, most associate Gallipoli with military disaster. Although the Australians and New Zealanders commemorate 25 April (the initial landings) as ANZAC day, their Remembrance Day, the operation is mostly remembered as a costly defeat. Surely Gallipoli is an example of how not to run an expeditionary operation.

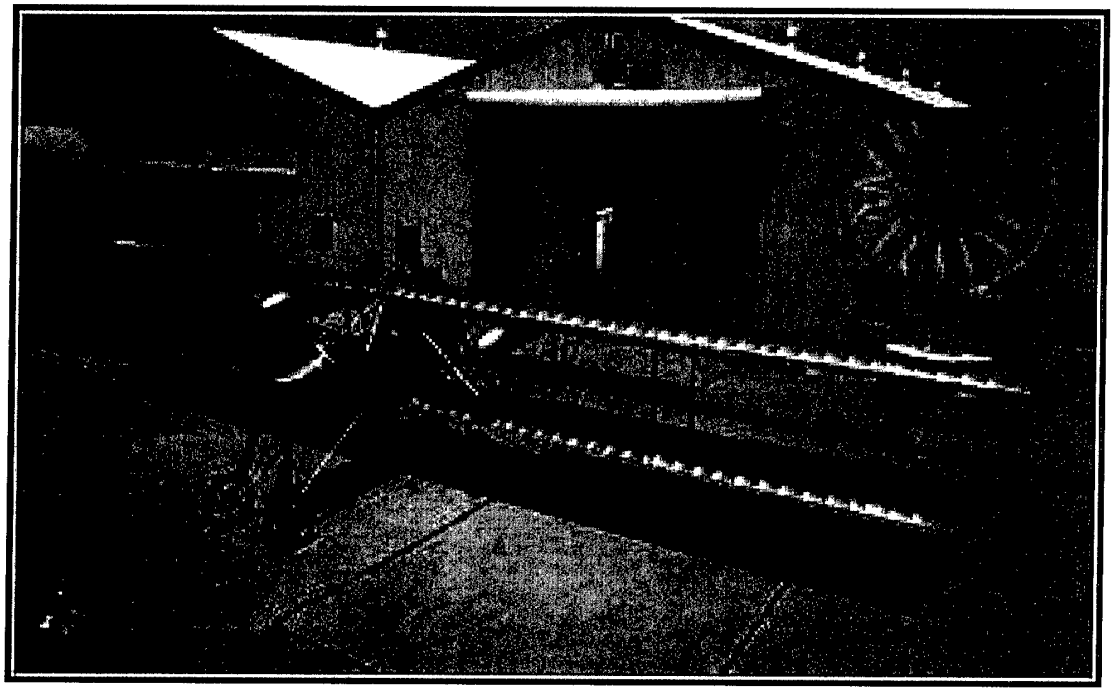


Figure 23. Aircraft were in an early stage of development. A version similar to this Voisin model helped provide support for the Gallipoli Campaign.

18. The Egyptian Expeditionary Force

Expeditionary Lessons Learned

- An undeveloped and naturally inhospitable theater of operations requires extensive logistical preparation. Access will not be quick or easy. Sustainment will be a major challenge.
- Successful integration of forces was highly advantageous. British air and naval forces made land forces much more effective.
- Successful coordination of combined forces requires constant attention. The British understood the purpose of including the Arabs in their campaigning. Friction between Germans and Turks increased as their prospects declined, thus accelerating force disintegration.
- The greater the understanding of the political, diplomatic, and cultural environment by military leadership, the greater the possibility of military success.

Operational History

The British stood up the Egyptian Expeditionary Force (EEF) in early 1916. Composed of garrison troops in Egypt and veterans of the ill-fated Gallipoli Campaign, the EEF eventually launched an expeditionary campaign against Ottoman Palestine, with the ultimate objective of conquering Syria and knocking Turkey out of World War I.

A full year of logistical preparations was required to position the EEF for the offensive into Palestine. Egypt's Sinai Peninsula lay as a formidable natural barrier between the Suez Canal and Gaza, gateway to the Ottoman Empire. The northern edge of the Sinai was the focus of Herculean efforts to simultaneously advance water, road, and rail lines to support an expeditionary force that ultimately grew to several hundred thousand men, tens of thousands of animals (camels, horses, and donkeys), and assorted stores of weapons, ammunition, and equipment. Perhaps most remarkable was construction of a 12-inch pipeline through which water was pumped for a distance of over 200 miles.

From the time General Sir Edmund Allenby assumed command of the Egyptian Expeditionary Force in June 1917, the EEF was hugely successful. Field Marshall Wavell is said to have called Allenby "the best British General of the Great War." Surprise, mobility, and concentration were the keynotes to Allenby's victories, backed by relentless pursuit. But success was strongly abetted by sustained support on his flanks by the Royal Navy and the "Arab Northern Army," respectively. Captain T. E. Lawrence who served as liaison officer, tactician, logistics officer, demolition specialist, and charismatic leader brilliantly managed Britain's Arab alliance. Arab revolutionary forces tied down several Turkish divisions with sieges, diversionary attacks, and guerrilla tactics.

The Royal Air Force was highly instrumental in achieving strategic surprise in two major engagements by denying the enemy aerial reconnaissance. RAF planes were also lethal in pursuit

of retreating troops. Finally, establishment of air superiority made it possible to destroy or degrade the enemy's command, control, and communications centers.

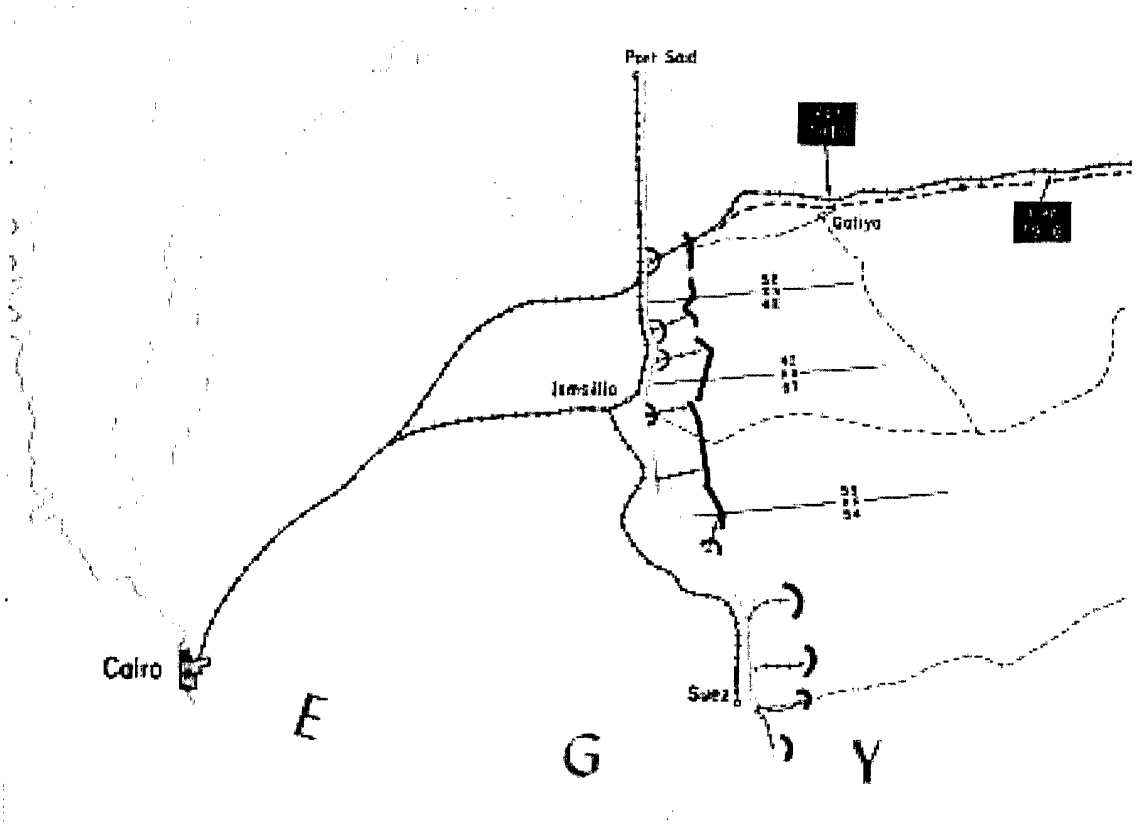


Figure 24. Campaign map for Egyptian Expeditionary Force.

19. Disaster in Iraq, The Battle of Kut

Expeditionary Insights

- Mission creep was a very real problem.
- Tactics must fit the specific technical, military, and geographic situation.
- An army well suited for one kind of war, can easily meet disaster in another.
- Accurate intelligence, especially appraisal of friendly and enemy capabilities, was essential.
- Effective airlift required more than aircraft, aircrew, and good intentions.
- Even the enemy's obsolete technology was sufficient to deny victory.
- Communications and effective logistics underpin success.

Operational History

In late September 1915, a British expedition pushed up the Tigris River and defeated a larger Turkish army at Kut (about three-quarters of the way between the Persian Gulf and Baghdad). The British commander was then ordered to move toward Baghdad, which he did, although protesting that his forces were inadequate and his supply lines tenuous. The high command was seeking a cheap victory to counterbalance the stalemate on both the Western Front and in the Dardanelles, and believed that the concurrent Dardanelles Campaign would draw off Turkish troops. The British also believed that their highly experienced, well-disciplined professional army, which had been so successful in colonial campaigns against primitive tribesmen on the northwest frontier of India, could easily defeat superior numbers of Turkish troops as it had done thus far.

British forces, numbering about 12,000, advanced upstream to Ctesiphon, about 22 miles outside of Baghdad, where in late November they attacked an entrenched Turkish force of 18,000. This bloody battle cost both dearly, the British about one-third casualties and the Turks over half. But the Turks retained both their numerical superiority and positions, and they forced the British to retreat to Kut where the commander chose to await relief.

The Turks besieged the British at Kut and tried to destroy them before relief could arrive. The besieged army withstood numerous Turkish assaults, but did little else. The British did air drop in some supplies, but while this helped, this airlift could not meet requirements. Meanwhile relief forces moved toward Kut and fought a number of battles in early 1916. But while they were able to come close to Kut, they could not lift the siege and suffered 24,000 casualties. A Russian advance through Persia (Iran) reached the Mesopotamian border too late to be of help.

On 29 April the garrison of 10,000 surrendered after holding out for 147 days, one of the longest periods on record. This was also the largest number of British troops to surrender to that date, surpassing the 8,000 under Cornwallis at Yorktown, and this total was not exceeded until Singapore fell in 1942. The defeat at Kut was a blow to British pride and prestige. The British lost because they overextended their communications, overestimated their logistical capabilities,

and used out-moded tactics against the enhanced power of machine guns and magazine loading rifles, manned by determined troops who were well entrenched.

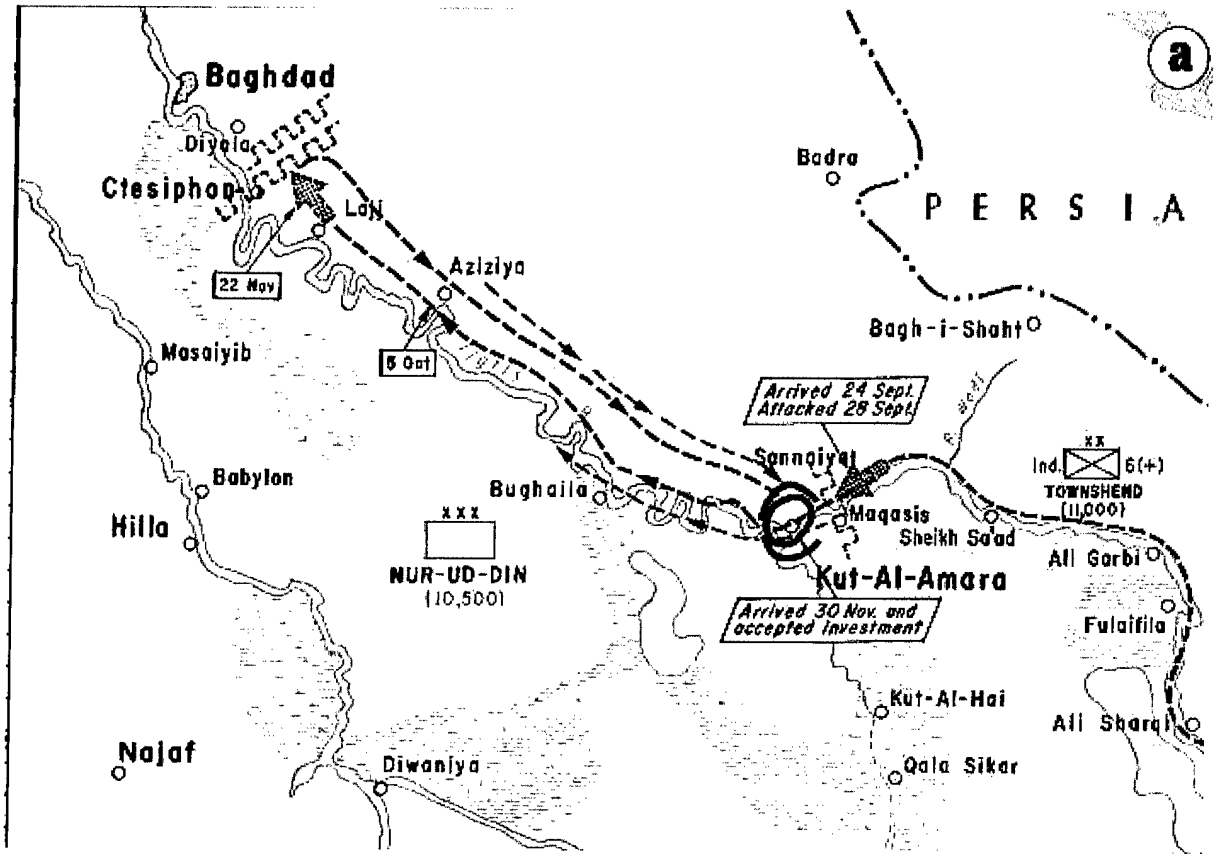


Figure 25. Iraq battlefield in the early Twentieth century battle for Kut.

20. The Roman Expeditionary Legions: 390 BC

Expeditionary Insights

- The small combat units promoted maneuverability, but could also combine for strength.
- Small units facilitated flexibility in equipment, tactics, and organization.
- Light forces and effective transport promoted mobility. *Think of airpower in the context of Roman roads and ships.*
- A legion was composed of infantry, cavalry, engineers, etc., for independent operations.
- These were professional forces that trained and fought together.
- The Romans also had superior technology, organization, and training.
- Asymmetric power: win fights even when outnumbered.
- Legions supported with Roman navy and auxiliaries; coalition of allies as needed.
- Fortified encampments built nightly while on a maneuver.
- Special tailored forces for specific missions.

Operational History

Defeat in the field and the subsequent burning of Rome in 390 B.C. proved that the phalanx battlefield arrangement was too rigid to defeat loosely organized barbarians. The Romans began to reorganize into a large number of smaller units that enabled the commander to maneuver his forces during the battle. To cover the gaps between units and to extend the lethal range of the soldiers' weapons beyond the reach of a spear, the Romans replaced their long thrusting spears with shorter, throwing spears (javelins). To throw these effectively, the troops had to stand further apart. At close range, the Romans relied on their short swords and this open formation.

To control these smaller units, the Romans created a new organization: the legion. Each legion had a set organization of about 5,000 infantrymen along with an organic cavalry contingent. What made them truly independent organizations, however, were the various specialized troops, who not only did the staff and maintenance work but also built and operated catapults and provided the required engineering expertise. Over the next three hundred years, the Romans improved their weapons and tinkered with their organization. The final critical reform took place under Marius around 100 B.C. when Rome dropped the property requirement for joining a legion and the Roman army became a force of long-service professionals. These men trained longer and harder than their predecessors and were more willing to serve on extended campaigns far from Rome. With superior equipment, organization, and training, the Roman Legions were consistently able to fight outnumbered and win, against all adversaries, from Scotland to the Sahara.

The legions, however, rarely operated alone. Instead, they were the core of expeditionary forces fleshed out by auxiliaries and allies who provided most of the cavalry, archers, and light troops. These forces substantially cut the demands made on Rome's limited manpower and were particularly critical for meeting asymmetrical threats (e.g., small hit-and-run attacks by cavalry and archers). Thus, auxiliaries and allies enabled Roman commanders to build carefully tailored

task forces to meet specific threats and maximize the combat power of the small number of legions.

A focus on the equipment, organization, and battlefield successes of the Roman legion should not distract from its extraordinary strategic mobility. The legion moved light and fast, and also used the Roman navy and the extensive network of excellent roads to achieve speeds unsurpassed until the age of steam. Marius is credited with requiring his troops to carry all of their own equipment, and while this made them grumble about being "Marius' mules," it forced them to travel light and made them independent of the baggage train of slow, vulnerable ox-carts that slowed some of their enemies. Even traveling light did not negate force protection issues. On a march the legions built a fortified encampment each night.

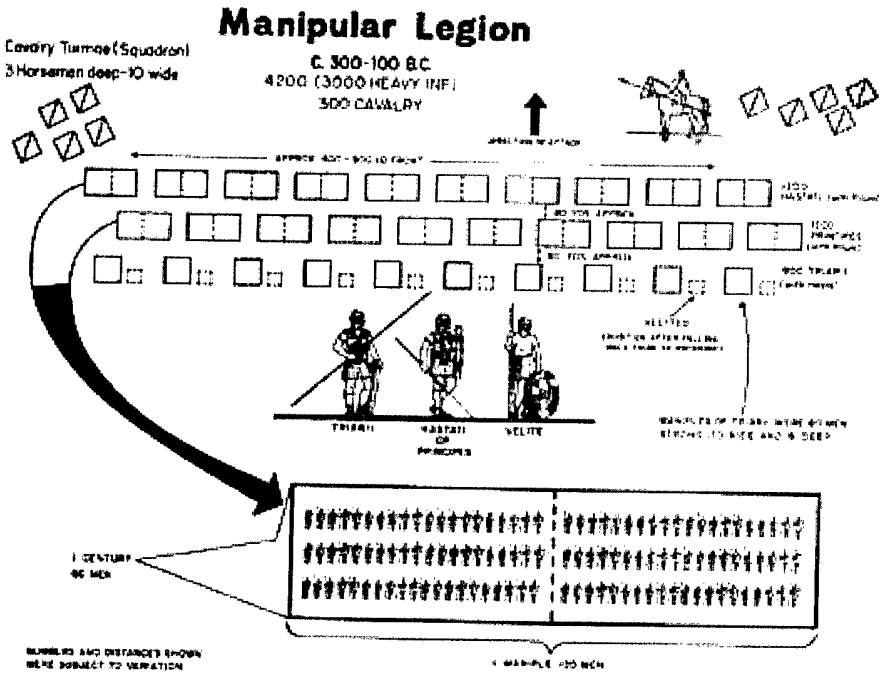


Figure 26. New battlefield formation for the Roman legion.

21. Napoleon's Expedition to Egypt: 1797

Expeditionary Insights

- Naval superiority was able to contain and then defeat a superior ground force.
- The failure to properly equip forces can result in defeat and disaster.
- Mobility advantages help in initial stages.
- There are great weaknesses without friendly forward bases.
- The enemy can innovate and adapt over time.
- Force protection problems increase with local uprisings.
- Danger of allowing domestic issues to drive military expeditions.

Operational History

In 1797, although exhausted by a long and indecisive war in Europe, the French launched a campaign in Egypt. They believed that they could rally the locals to their side due to chronic misgovernment. The French occupation of Egypt would weaken British trade in the area as well as provide a springboard for an attack on the jewel of the British Empire: India. Domestically, Napoleon saw this as a chance to increase his prestige (to emulate his hero Alexander the Great) while the Directory saw the campaign as a way to get the ambitious and dangerous Napoleon out of Europe.

In May 1798 Napoleon departed France in great secrecy with a large expedition consisting of hundreds of ships, about 40,000 troops, 1,200 horses, and 161 guns. The small number of horses was critical, limiting the numbers of guns and cavalry the French could field. In contrast, Napoleon would win overwhelming victories with massed artillery, cavalry charges, and then fearsome cavalry pursuit in Europe. Lacking horses, Napoleon was denied operational mobility, a critical advantage.

The British Royal Navy was taken by surprise when the French headed eastward, not toward Great Britain, allowing the inferior French navy to deliver the expedition without difficulty to Egypt. The French easily swept aside local opposition and won a major and lopsided victory against greater forces in July 1798 at the Battle of the Pyramids. The decisive action, however, was a naval battle the next month when Nelson surprised and annihilated the anchored French fleet in the Battle of the Nile. Napoleon was cut off from the outside. The question now was could Napoleon be defeated and what could he achieve in isolation.

Egyptian civilians did not warm to French rule; on the contrary, they resented and rose up against it. There were outside threats as well. Early in the next year, the French pushed northward to prevent a Turkish assault on Egypt. But while the French won victories, they could not overcome the city of Acre. Again British naval superiority was crucial. A relatively small Royal Navy force captured Napoleon's siege train and delivered it to the defenders of the city. The lack of French heavy artillery, a few British advisors, outside supplies, and fire support delivered by the British navy, helped the city's defenders withstand the two-month siege. (The French army was also ravaged by disease.) After a difficult march, Napoleon did get the bulk of

his force back to Egypt, and although he won one further victory in Egypt, he abandoned his army and returned to France in October 1799. Even without Napoleon, and cut off from outside supply, the French army was superior to its foes but strategically ineffective. It was able to hang on for almost two years before surrendering in June 1801.

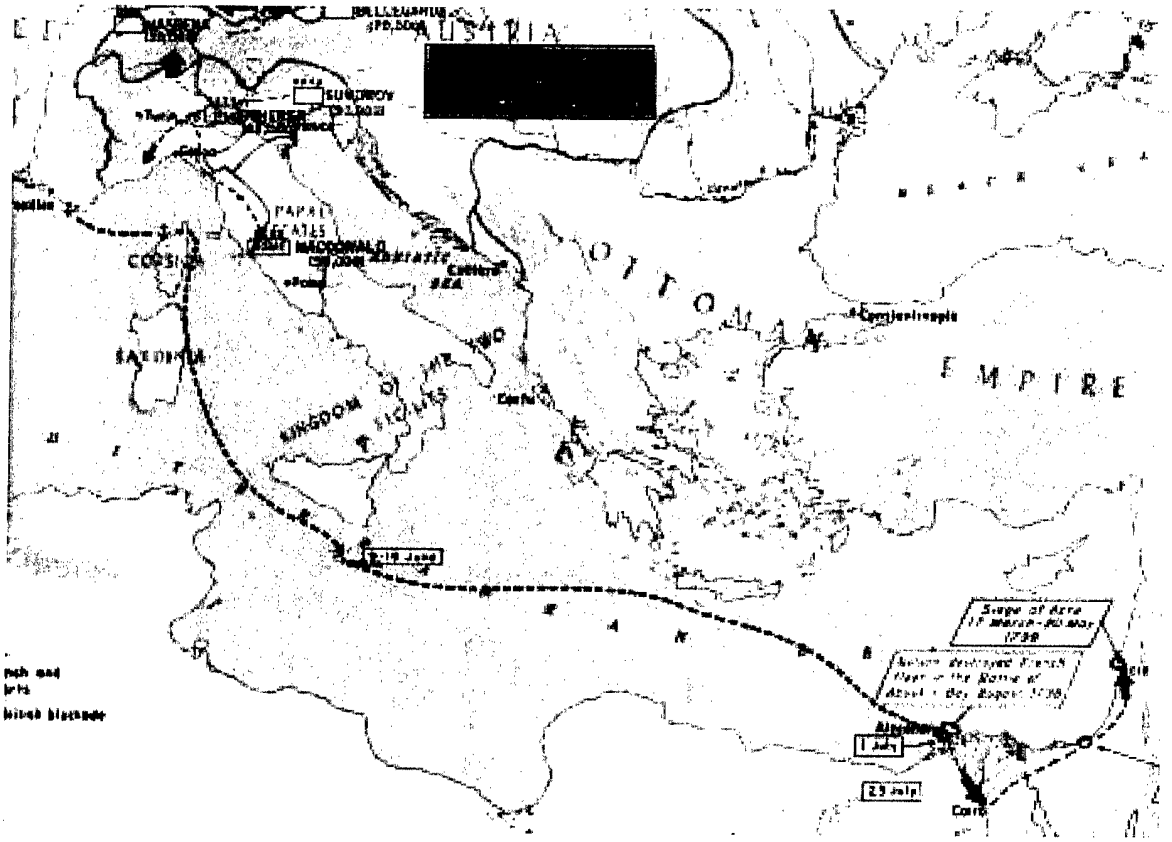


Figure 27. Egyptian Campaign 1798.

22. Napoleon's Serial Force Organization: 1800s

Expeditionary Insights

- Flexibility has always been a key attribute of successful military organizations.
- Effective change requires rethinking and redoing, not one, but many elements.
- Mobility can be gained through equipment, tactics, and organization.
- Mobility is of highest importance even to ground forces.
- Similar building block of serial force structure provides flexible strength.
- Effective communications organized from the start, one using innovative subordinates.
- Force protection is a more sensitive issue for individual divisional forces.

Operational History

Napoleon Bonaparte was a brilliant commander who won great victories with the fastest moving and the most flexible army in Europe. European armies traditionally organized their infantry, artillery, and cavalry into separate regiments and only brought them together when assembling an army for a campaign and then moved them forward *en mass*. This method provided excellent force protection because the entire army could immediately support any part of the army that was attacked. However, it limited the army to moving on one road supported from one forward base, thus restricting army speed, logistics, and size. Moving on a single road also made it very easy for the enemy to monitor the army's progress and thus made strategic surprise almost impossible.

In contrast, the French broke their army into divisions composed of infantry, artillery and cavalry that could move and fight on their own. To improve command and control, they inserted a corps headquarters between the army commander (Napoleon) and the divisions. This new organization enabled the French to advance along many roads, supported from several forward bases, and thus to support larger forces moving faster than their enemies. This enabled Napoleon to frequently surprise and overwhelm his enemies. The logistical, mobility, and intelligence advantages (spies everywhere) of this new organization, however, came at the price of force protection.

Divisions were designed to be strong enough to hold off the enemy's entire army for several hours while a corps (several divisions) could hold off the enemy's army for a full day. The rest of its corps would reinforce the attacked division and before the enemy could overwhelm the corps, it would be attacked from different directions by several other corps of the French army, marching to the sound of the guns to converge on the enemy force. Therefore, even if the entire enemy army attacked a single French division, the French could prevail.

The success of this system depended on effective communications and innovative subordinates. By carefully selecting and developing division and corps commanders, Napoleon had forces upon which he could rely even when they were out of his sight. Though he had no

novel communications technology, he developed a system of written orders and reports that enabled him to coordinate the movements of his widely scattered forces. Using the developed road net of Western Europe and fast moving, enthusiastic troops, aggressive French armies out maneuvered, out marched, and frequently surprised slower moving enemy forces.

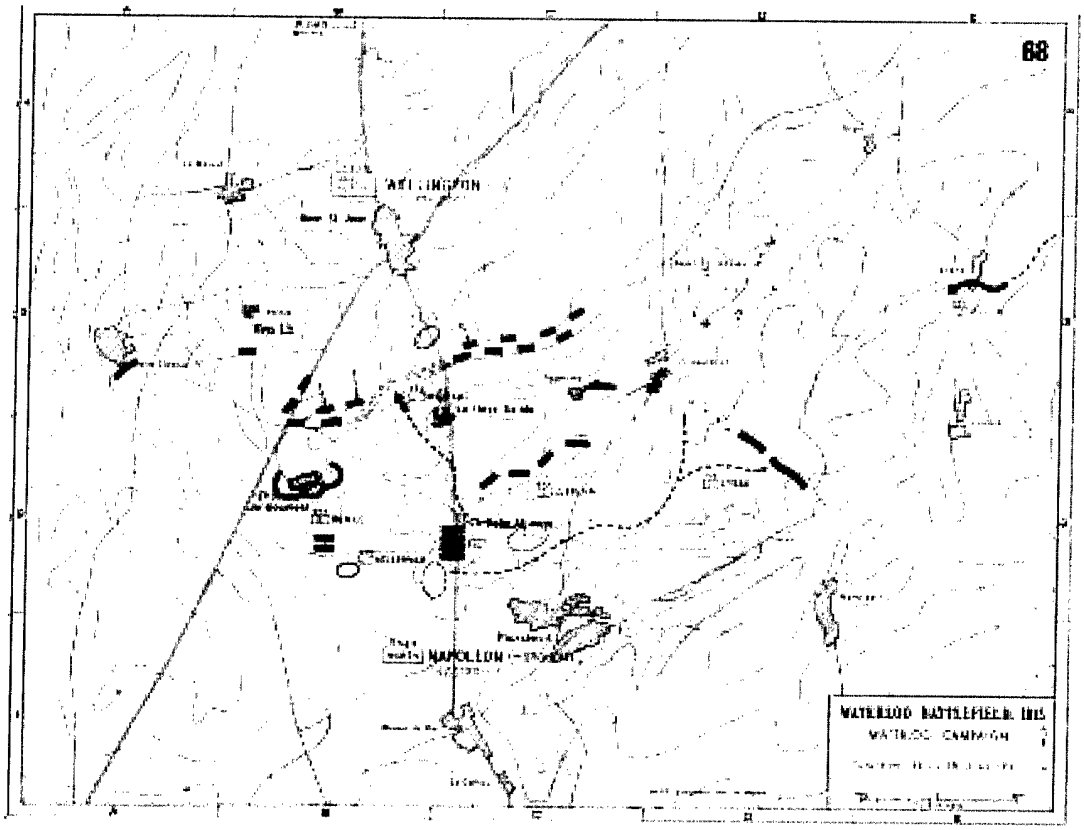


Figure 28. Division organization used at Waterloo.

23. Expeditionary Operations in Civil War: 1865

Expeditionary Insights

- Composite forces—infantry, cavalry, and artillery—desirable.
- Mobility—everyone on horses—for effective composite force.
- Asymmetric advantage with superior weapons.
- Superior intelligence won the situation.
- Innovation of operations required effective and independent leaders.

Operational History

The idea of forming composite expeditionary forces (then meaning a mix of infantry, cavalry and artillery) appeared early in the American Civil War. Particularly famous was the "Hampton Legion" formed by the wealthy southern planter, Wade Hampton. Called to action for the Battle of Bull Run in July 1861, the test of moving a composite force simultaneously failed. Only parts of the force made it to Manassas; the cavalry and artillery were too "heavy" for available transport. Hampton's legion was parceled out to other like units. Another southern effort, Thomas Cobb's legion of three mixed arms, came to be considered too unwieldy and was broken up after Antietam. Michael Corcoran formed a mixed legion for the North that lasted until he died at the battle of Cold Harbor. Clearly personality played a part in military organizations, and that factor needed to be recognized by higher leadership.

Late in the war northern generals broached the ideas of organizing a composite expeditionary force and planning a major attack into the Deep South. In March 1865 Major General James H. Wilson started his new expeditionary force towards the heart of Dixie. He had a forward base on the Tennessee River near Gravelly Springs, Alabama. Here on a railroad, logistically handy to the north, was a place to gather, equip, and train his men. His composite force consisted of highly mobile infantry, cavalry, artillery, and engineers, all mounted. All carried the latest in weapon technology, Spencer repeating rifles. Extensive intelligence work provided assurance of asymmetrical advantage in number as well as equipment. This was especially important given the existence of an enemy force in the region under the famous Confederate cavalry General, Nathan Bedford Forrest. And a salient feature of Wilson's invasion was subordinate innovation; the well-trained and experienced troopers were encouraged to adapt to the environment. Wilson divided his forces into three segments, each independent and self-sustaining. Even with divided forces facing him, General Forrest could not raise a competitive counter force. The Wilson raiders wrecked havoc throughout Alabama. They captured Tuscaloosa, Selma, and Montgomery and had even reached Columbus, Georgia, when Lee's surrender to Grant finally ended this strikingly effective expeditionary operation.

Expeditions Before Airpower

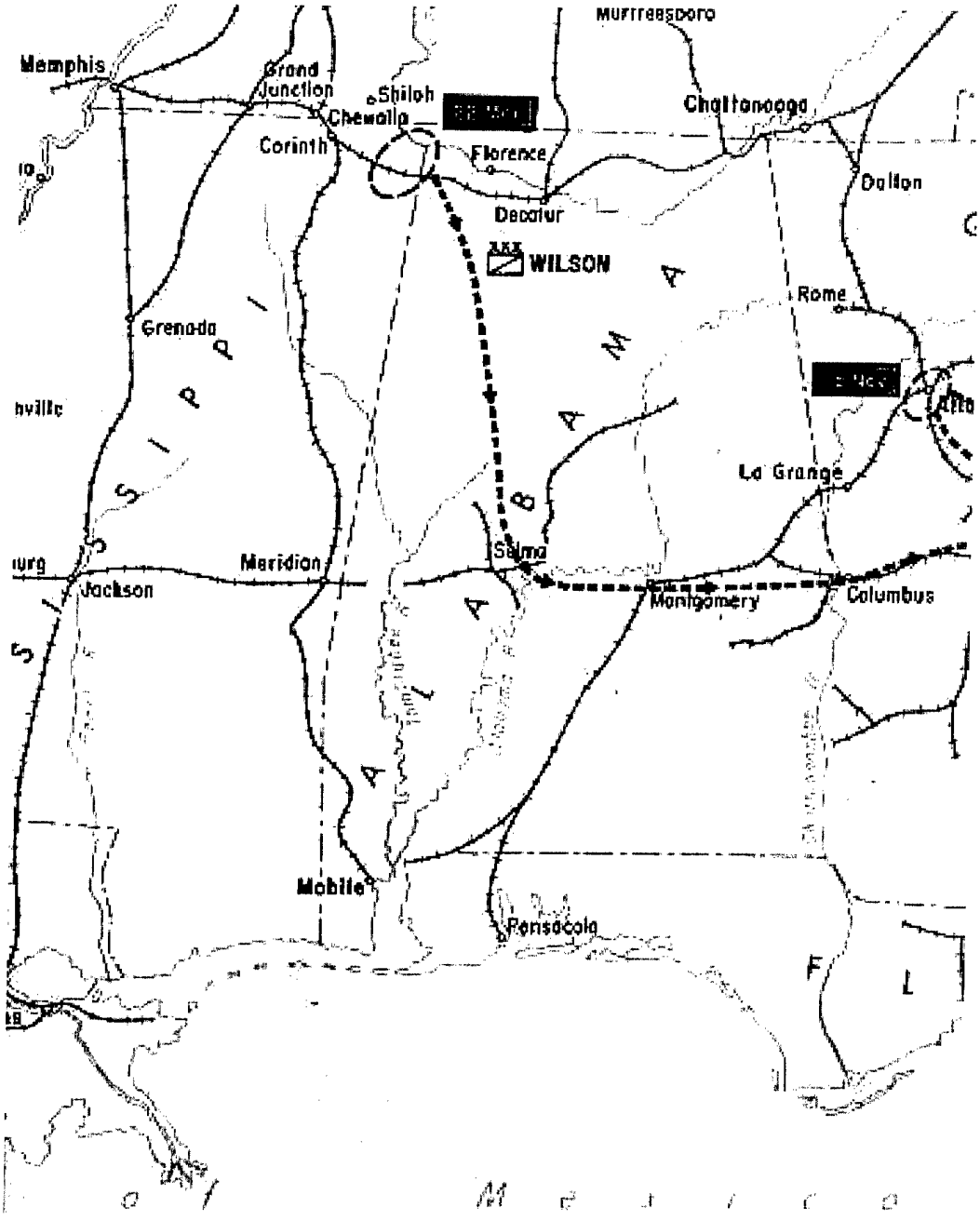


Figure 29. Wilson's raid into Alabama, 1865.

24. The Boxer Rebellion: China 1900

Expeditionary Insights

- Logistics are always crucial to success.
- There is a price to be paid for using ad hoc coalition expeditions.
- Pre-existing combined command can be vital to success.
- Professional forces, well equipped, trained, and led, point to victory.
- Separate forces must be independent and self-contained.

Operational History

The late 19th century was a time of rapid technological, political, and economic change that buffeted China. This led to growing anti-Western feeling and the development of anti-Western insurgencies. Westerners called the largest and most important of these insurgents "Boxers." With government support, these insurgents grew bolder and, in the summer of 1900, cut key rail lines and attempted to kill all the Westerners in China. The Westerners barricaded themselves into whatever defensible places they could find and called for help. The largest and most famous of these besieged enclaves was in the diplomatic quarter of Beijing where 925 Westerners held out for almost two months until help arrived.

The first international force sent to relieve them was made up of troops and warships already in China. This force captured a base on the coast at Taku and rescued the Westerners besieged in Tientsin. However, its ground element was only 2,100 strong, and it could not fight its way through the Boxer and Chinese government forces to Beijing. This failure set off a mad scramble to assemble a larger rescue force. The diverse force that broke through was almost 20,000 strong, including 2,100 US troops.

The relief expedition succeeded because these troops were more professional, better equipped, better trained, and better led than their foes. The rescue forces arrived more disorganized and less well equipped than they should have, and lacked a structure that could control and integrate the eight mutually suspicious national contingents. This slowed the rescue. The larger Chinese forces remained on the defensive and were unable to take advantage of the diverse rescue force. The inability of the allies to effectively integrate the activities of different national forces meant that each force fought almost independently, but fortunately all of the large national contingents had cavalry and artillery and thus could operate separately from the other forces. The three keys to the successful logistical support of the expedition were the secure base at Taku, the decision to follow the river and rely on junks rather than the damaged railroad, and the small size of the expeditionary force. This small, highly lethal force was both effective and supportable while a larger, more lethal but less supportable, one might have failed.

Figure 30. Marines in Peking for the Boxer Rebellion.

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