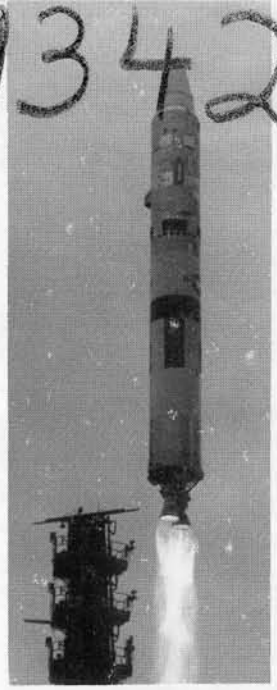
A QUARTER CENTURY OF AIR POWER



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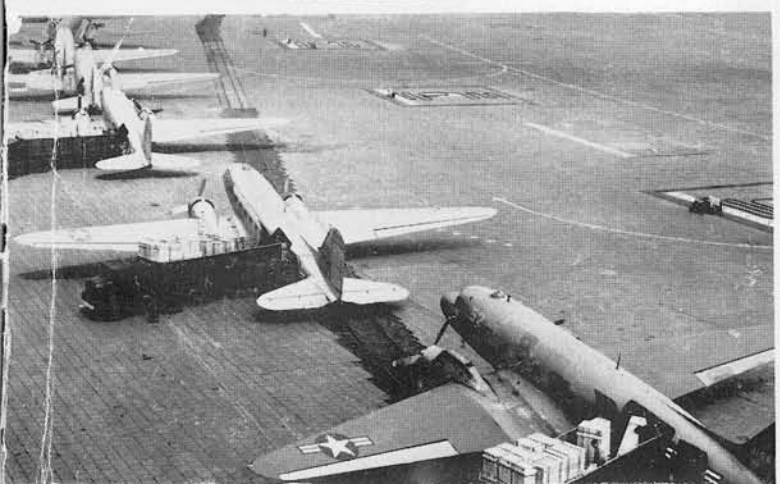

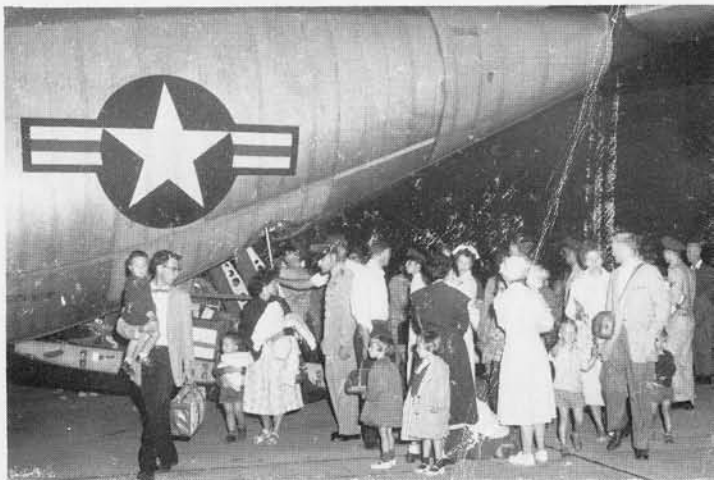

A Quarter Century of Air Power

STUDIES IN THE EMPLOYMENT OF AIR POWER 1947-1972

edited by
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FOREWORD

The basic idea of this book was conceived by Lt Gen (then Maj Gen) Glen W. Martin, USAF, while Director of Plans, Headquarters USAF. It was brought to fruition through the guidance of Maj Gen Robert N. Ginsburgh during his tour of duty as Commander, Aerospace Studies Institute, Maxwell Air Force Base, Alabama. General Ginsburgh worked closely with the late Dr Albert F. Simpson, Chief Historian of the Air Force, in establishing the early goals and criteria of the book. Shortly after the project was begun, ill-health forced Dr Simpson to withdraw from the project, and the present editor took over.

From the beginning, the subjects covered were designed to chronicle the achievements of the United States Air Force during its first 25 years as a separate armed service of the United States. These achievements were born of hard work and considerable risk. Regardless of this, the men and women of the Air Force performed with courage, determination, and a firm resolve that this country's air arm would remain powerful and viable in both offense and defense.

The airplane, a product of the twentieth century, has revolutionized travel and warfare, and there is every reason to believe that, with burgeoning technology, it will continue to do so. Knowledge of the past accomplishments of air power becomes essential for all those who look toward careers in the United States Air Force. Certainly, the limitlessness of space, an area barely opened during the first 25 years of USAF existence, holds a challenge that promises even greater excitement and accomplishment in the next 25 years. This book is meant as an inspiration for those next 25 years, as well as a reflection on past achievements.

Quarter Century of Airpower was not originally designed for use as a text. Because of this, the chapter divisions do not always lend themselves to routine academic assignment. Nevertheless, a general reading of each event, followed by class discussion of the various aspects and impacts of the Air Force role, should prove of value to the AFROTC student. The authors have gone to great lengths to put their particular event into its proper historical perspective and to demonstrate the impact of air power upon that event and time.

The editor is indebted to General Ginsburgh for inspiration and encouragement and to the authors for the cooperation, suggestions, and spirit of helpfulness put forth by each of them. Mr John C. Smith, Academic Publications Division, 3825th Academic Services Group (AU), performed the critical task of removing editorial flaws in each manuscript. Any errors remaining are the editor's responsibility alone. Hopefully, the final product is one of which Dr Simpson would have been proud.

JOHN H. SCRIVNER, JR.

Kent State University
Kent, Ohio
1973

ACKNOWLEDGEMENTS

Although he bears no responsibility for the final result, the original stimulus for the book was provided by Lt Gen Glen W. Martin, now Vice Commander in Chief of the Strategic Air Command. General Martin, as Director of Plans, Air Force Headquarters, conceived of the idea of describing chapters in the history of the United States Air Force in terms of a series of operational events in which the Air Force played a significant role.

As a follow on to this idea, in the fall of 1969, then Brig Gen Robert N. Ginsburgh proposed to a group of the staff and faculty of the Air University a book covering the first quarter of a century of the operational history of the United States Air Force. The following chapters are the result.

Col Arthur B. Swan, USAF (Ret) and Dr Albert F. Simpson, late Chief Historian of the Air Force, established the project under General Ginsburgh's guidance. Colonel Swan retired shortly after the project was begun, and illness forced Dr Simpson to forego his editorial duties.

The editors gratefully acknowledge the editorial efforts of Mr John C. Smith principally, and the advice and assistance of Mr Robert T. Finney and Mrs Virginia Mickey. The authors and the editors wish to express their thanks to many ladies for their typing assistance.

Maxwell AFB, Alabama J.H.S.

PREFACE

Lt Col John H. Scrivner, Jr, USAF

Flying is a phenomenon of the twentieth century. An American invention in 1903, the airplane developed slowly, both in technology and public acceptance. In the intervening years from the first flight by Orville Wright, the acceptance of the first military airplane in 1908, Lindbergh's solo crossing of the Atlantic in 1927, and the development of commercial aviation, the world has become accustomed to a new mode of travel.

The airplane joined the military services early in its existence and, in World War I, gave a sound, if somewhat glamorous, accounting of war in the third dimension. During the Second World War, the airplane came of age as a fighting weapon. The quantum jumps in weapon improvement, plus the awesome lethality of the atomic bomb, placed the airplane and its capabilities in the front line of national defense and made it a basic part of this nation's diplomatic posture. Behind the striking power of the long-range bomber, the United States sought to contain communism with a policy of deterrence—a concept based upon the idea that America could inflict such unacceptable damage upon an enemy power as to make the initiating of war by that enemy too costly to attempt. Previously, it had been the task of the United States Navy to show the flag in foreign countries around the world; it now fell to the United States Air Force to share some of the responsibility. This book describes some of the events in the past 25 years in which the Air Force has acquitted its responsibility.

The National Security Act of 1947 became law on 26 July 1947. One of its primary provisions was the establishment of the Department of the Air Force on an equal basis with that of the Army and Navy and the transfer of the Army Air Corps of World War II fame to the United States Air Force. On 18 September 1947, W. Stuart Symington was sworn in as the first Secretary of the Air Force. In the succeeding 25 years, the air power of the United States has been conspicuous around the world, performing missions ranging from the delivering of coal to a beleaguered city to hauling hay for snow-stranded animals. It has flown millions of hours patrolling the skies around the free world to insure that peace was maintained. When it was no longer possible to keep the peace, air power moved swiftly with awesome capability to stem the tide of the enemy until its sister services could reach the area of conflict. As always, its mission was to fly and fight when necessary and to be ready to do so when called upon. Time and again in the midst of armed conflict, the capability of US air power has been constrained in the interest of diplomacy. Such situations, though seemingly at odds with the popular concept of fighting wars, have proven the tremendous versatility of the airplane and the capability of air power to be an efficient servant of a nation's policy and desires.

The chapters that follow represent special events in which air power played a significant part in the ensuing 25 years since the establishment of the United States Air

Force in 1947. They demonstrate very clearly the additional options given US policy makers because of the availability, flexibility, and potency of air power. An airlift to save Berlin gave this nation a viable option, and a confrontation between east and west, which would have taken place at a time and place considerably disadvantageous to us, was avoided. The ability of air power to discover the presence of missiles in Cuba and then to assist in massing troops and equipment for what appeared to be an imminent conflict permitted the United States to show its determination rapidly and convincingly and thereby avert a possible conflict. The same is true in the Far East when Communist China began its push for the off-shore islands held by Nationalist China. The prompt placement of American air power helped to deter a possible takeover and offered US diplomats another option beside all-out conflict.

When it became necessary to fight, as it did in 1950 in Korea and again in the 1960s in Southeast Asia, the United States Air Force moved swiftly over great distances. In Korea, the strategic air war was over in two months, but the conflict marked the first all-jet confrontation, and "Mig Alley" became a household word in America. Insofar as air power was concerned, the Korean War was a "limited" war, but it did demonstrate the effectiveness of strategic bombing and the ability of air power to support a numerically inferior ground force.

These same truths were reconfirmed when the United States committed its forces in Southeast Asia to aid the beleaguered nation of South Vietnam. There were newer planes and more sophisticated equipment, more powerful armament and considerable restriction, but the Air Force accomplished its assigned mission and continues to do so. Indeed, in the war in Southeast Asia, air power has repeatedly demonstrated its versatility by clearing the skies overhead and making it possible for troops to operate more freely on the ground. The availability of close air support has made it possible for ground forces to operate without the encumbrance of heavy weapons—an important factor in jungle warfare. Because of its timeliness and the length of the Southeast Asian war, two chapters have been included in this book to help the reader understand the background of the war and to gain a more detailed insight into the operation of air power in that theater.

The only significant use of air power since the end of World War II not involving US forces has been certain actions in the Middle East. In that area, Israel, first in conjunction with Allies Britain and France, and later alone, has come into conflict with Egypt and other members of the United Arab Republic. That conflict has served to demonstrate once again the tremendous effectiveness of air power when properly and fully exploited. For that reason, we have included a chapter on the Middle East although much of the material does discuss operations by the air forces of the United Kingdom, France, and Israel.

Inevitably, much of consequence that has happened to the United States Air Force in the last 25 years has been omitted. The editors have chosen what they feel are the most salient events that have occurred since the Air Force became a separate service. No attempt has been made to tell the behind-the-scenes story of the organization of the various commands, of the development of the missions of each, of the constant problems of budget, manpower, and public acceptance, or of the thousands of dedicated men and women who daily uphold their profession and make it the complex and competent armed service that it is today.

Today, the United States Air Force is urgently updating its force in preparation for a conflict that hopefully will never come, but it may come if American strength is not demonstrably strong and willing. In various stages of development are a new strategic bomber, the B-1; a new air superiority fighter, the F-15; and a new close support aircraft, as well as a new early warning platform. Along with these new aircraft, there is under development an updated arsenal of weapons. To uphold its part of the "triad" response, the Air Force is constantly improving its missile and bomber inventory and protecting these vital weapons against a surprise attack.

All of this effort and expenditure is not designed as "saber-rattling" but is done in a determined effort to insure that the Air Force will be ready in the future, as it has been in the past 25 years, to do its country's bidding in an efficient and expeditious manner whenever and wherever it is called upon to act.

Contents

Chapter 1

Berlin Airlift

Maj Richard S. Brown, Jr, USAF

IN JUNE 1948, the Soviet Union severed all surface transportation between West Germany and the city of Berlin. This completely isolated the two and one-quarter million people who lived in West Berlin. Unprepared for such a sudden and drastic Soviet solution to the Berlin problem, the United States faced several options. The actions of the Soviets posed a threat of all-out war. Hoping to counter the Soviet strategy without a war, the United States rejected several options for ground action and began supplying the city of Berlin by air. The result was the now famous Berlin Airlift.

Many events after World War II shaped the Berlin crisis and the response. An amazing story unfolded as the initial response grew into a milestone of US policy and a history-making demonstration of air power. To appreciate and understand the Berlin Airlift, we must understand both the background of the crisis and its perspective in terms of the confrontation between the East and West. Then we can look at the airlift effort, its impact and results, and the lessons learned, as a giant step forward in the use of air power.

ALLIED OCCUPATION OF BERLIN

On 7 May 1945, the Germans signed the surrender ending the war in Europe. Since early 1943, the Allies had worked on agreements as to what would happen to Germany after the war. Through the Teheran and Yalta conferences, they finally reached agreements on zones of military occupation and, at Potsdam, they attempted to unify Germany, but to no avail. Eventually, the zones of occupation became firmer than if Germany had been divided into several new nations. The plans called for each Allied power (France, Great Britain, United States, and the Soviet Union) to govern its specific zone. A multipartite arrangement provided for the government of Berlin as a separate entity. The city was also divided into zones. The highest governing body was the Allied Control Council, composed of the Allied commanders in chief sitting as a group. A separate body, called the Kommandatura, governed the city of Berlin. The members of the Kommandatura were commandants from each power who jointly exercised authority over Berlin under the direction of the Control Council.[1]

Soviet Strategy

Both the Control Council and the Kommandatura governed by unanimous consent. If the Control Council could not agree, each power retained supreme authority in its particular zone. The Kommandatura in Berlin was somewhat different, since it was the actual government directly responsible for the city as a whole. As this apparatus began to function, several trends became apparent. First, the zones of occupation in Germany began to reflect the image and to become economic appendages of the occupying power.[2] This was not true at first in Berlin. Travel from one sector to another was free; policies were more liberal; and the standard of living was generally higher than in the zones outside Berlin. Second, the Soviets began almost at once to question the right of Allied access to Berlin. They insisted that access to Berlin was at the pleasure of the Soviet Union, since the city was located deep within the Soviet zone. The Western Powers insisted that, since four-power government was part of the agreement made by the signatory powers, access was part of that agreement. Nowhere was the right of access specified in writing. After much discussion and negotiation, an air corridor agreement was finally approved. This was the only agreement reached, and the question of surface access was never clarified.[3] This air corridor agreement would have important consequences later. Third, by early 1946, it was apparent that the Soviet Union would not be a cooperative Ally. Even in 1945, it took some drastic actions that should have pointed this out to Western policy-makers. Since the Soviets entered and occupied Berlin well ahead of any Western presence, they took out their anger and emotions on the Berliners. "Nobody knows the precise amount of rape, violence, and looting, but it was very great during April and May 1945."[4] They began immediately to strip Berlin of anything and everything of value, especially in the Western sectors. They also attempted to gain political control of the entire city by establishing trade unions, police forces, and a central banking system under their con-

trol. They controlled the communications, transportation, and food distribution centers. By controlling food, they could determine who received a given quantity, and they based this determination not on need but on political allegiance and performance.

When the members of the US military government group, commanded by Col Frank Howley, set out for Berlin, the Soviets harassed and detained them, ordered circuitous travel routes, and, when they finally reached Berlin, denied them permission to set up headquarters in the American sector. They bivouacked for several days on the outskirts of the city. On Colonel Howley's own initiative, they finally forced their way to the American sector and established the US Command Headquarters much to the chagrin of the Soviets.[5]

Thus began the Berlin occupation, but it was only the beginning. The Soviets began a continuing campaign to frustrate the governing of Berlin on any terms but their own. From 1945 to 1948, the actions of the Soviets and the responses of the Allies, with few exceptions, polarized the city into armed camps. At first, the Allies were surprised and shocked at the Soviets' behavior. Then, they began to understand what they had to face. At least, those who were in close contact with the Russians seemed to understand the situation.

Events Leading to the Blockade

Gen Lucius D. Clay, the American commander in Europe, began to take actions to counter the Soviet strategy. In 1946, after convincing US leaders that a more positive approach to the German people was necessary, General Clay obtained permission in a Joint Chiefs of Staff directive (JCS 1779) to proceed with economic and political reconstruction. Even before this, Clay had foreseen a need for action to permit the beginning of reconstruction. In May 1946, he had suddenly halted the delivery of dismantled factories from West Germany to the Soviet Union. The Soviet Union expected to receive 25 percent of these plants. Since the United States had already spent 200 million dollars on economic aid to Germany, these shipments represented indirect payment from the United States to the Soviet Union. Clay considered this intolerable. Of course, this action caused more hostility from the Soviet Union.[6]

Another significant event was the municipal election in Berlin in 1946. Although a very complex story, it boils down to two basic attempts by the Soviets to control Berlin. First, they attempted to force a merger of the Socialist and Communist parties, a move that would have assured them control of the Magistrat (Parliament). This move failed because the Berlin Socialists flocked to the polls and defeated the issue in a referendum. Then the Soviets launched a campaign to win the election itself. They used a massive propaganda program, intimidation, bribery, ration manipulations, and a liberal dose of plain terror to persuade voters.[7] On 20 October 1946, the Berliners chose their Magistrat. The SKD (Socialist) emerged victorious with almost 50 percent of the votes and the SED (Communist) only 20 percent. In the existing situation, it was a surprising defeat for the Communists. The Soviets then began a terror campaign against the non-Communist members of the Magistrat. Since the Magistrat was physically located in the Soviet sector, the Russians harassed the members at will and to a degree that made any government function a miracle. Members were beaten, bribed, blackmailed, and threatened, but most of them still managed to go about their duties. They were remarkably brave people even as the brutality mounted. "The proud and defiant Berliners, in refusing to bend to Soviet pressure, began to develop a cohesion and toughness which would prove to be one of the most important factors in breaking the blockade."[8]

The stage was now set for the crisis in 1948. These few examples show the tenor of the situation in Germany and, especially, in Berlin. Late in 1947, the Council of Foreign Ministers met in London to try to agree on the unification of Germany and the problems of four-power rule. The meeting was an utter failure in every sense. The Soviet Union refused to discuss meaningful economic unification without obtaining guarantees aimed at further Soviet domination.[9]

As 1948 began, the Allied Control Council, as well as the Kommandatura in Berlin, continued to function despite increasing harassment and abuse from the Soviets. Hour after hour and day after day for weeks at a time, the Allied representatives sat and listened to a verbal barrage from the Soviets. The Soviets also accelerated their terrorist campaign. The Russian secret police (NKVD) made frequent sorties into the Western sectors to abduct or kill "enemies of Russia."[10] The Soviets took every opportunity to bluff the Allies. They blocked all parcel-post service into and out of Berlin for several days. They continually sent armed troops to occupy strategic locations, such as railroad station buildings, under the guise of "going to school."[11]

As spring began, new Soviet tactics became apparent. They began to restrict communications, transportation, and commerce between Berlin and West Germany, giving "technical difficulties" as the reason. At the same time, they began a propaganda campaign accusing the Allies of stripping Berlin and shipping all equipment to West Germany.[12] The general situation became more tense, and the four-power councils began to suffer even more.

The Allied Control Council finally broke up on 20 March 1948, when the Soviet delegation walked out. After a long harangue by the Soviet representative, Marshal Sokolovsky, they left because the Allied

Powers would not give him a complete text of an Allied conference that had met earlier in the month. The whole affair seemed almost prearranged.[13] During April and May, the Soviets increased their harassment and restrictions on all movements between Berlin and West Germany. They began minute inspections of all baggage, goods, and people. In early April, they closed two of the three rail lines serving Berlin and stopped all barge traffic for three days. They further demanded the removal of all British and American Signal Corps personnel from the Soviet sector of Berlin. These people maintained the official telephone lines for the city. Strong protest by the Allies was to no avail. The Soviets launched another massive propaganda program, intimating that the Allies were about to evacuate the city and move to Frankfurt. They cut off electrical power to certain plants in the Western sectors because they were "uncooperative" in export restrictions.[14]

The Berlin Kommandatura dissolved on 16 June 1948. On that day, the members had listened for 13 hours to another Soviet harangue on a number of favorite Soviet subjects that had been argued for months. At 10:45 pm, Colonel Howley requested adjournment of the meeting at 11:00 pm. The Soviets refused. At 11:15 pm, Colonel Howley asked General Ganeval, the Chairman and French Commandant, if he might be excused and have his deputy, Colonel Babcock, assume the United States representation. He was excused. At this, the Soviets literally threw a tantrum and walked out, still refusing to adjourn, even though they were not excused. They blamed the United States and Colonel Howley for destroying four-power rule of Berlin.[15]

Two days later, on 18 June, the Allies announced currency reform for West Germany, a program which they had planned for months. They caught the Soviets napping. For two years, the Allies had done everything possible to make economic and financial reform under four-power rule a reality, but to no avail. The Allies felt that something was necessary to stem the rampant inflation that was strangling economic progress. Since reform could not be worked out with the Soviets, the Allies decided to establish their own currency system. The new currency would not affect Berlin, but it would be the common currency for the Western zones of Germany. This action was a real bombshell to the Soviets, who were determined to maintain control in this sensitive area because it represented political power and potential gains.[16] They reacted immediately and drastically. They halted all traffic on the Berlin autobahn, suspended all passenger trains between Berlin and West Germany, and presented formal charges that, by this action, the Allies had forfeited all rights to remain in Berlin.[17]

On 22 June, the Soviets proposed that Berlin's economy and that of the Soviet zone were now one and the same. Therefore, the Soviets alone would issue and control currency in Berlin. This was completely unacceptable to the Allies, and no agreement was reached. The Soviets then announced their own currency reform for the Soviet zone of Germany, including all of Berlin. Fortunately, the Allies were ready to meet this threat and put into effect a top-secret project, Operation Bird-Dog. The Allies flew in special West German currency for Berlin and prepared it for distribution in West Berlin. The Western powers then announced that a currency reform would be effective on 24 June and that the Soviet laws had no effect in the Western sectors.[18]

The Berlin currency reform prompted the complete blockade of Berlin by the Soviet Union. The Soviets stopped all transport to and from the city via West Germany and, at the same time, cut off most of the electricity normally furnished by East Berlin to the Western sectors. They announced that all food brought into East Berlin would be distributed only in East Berlin. They froze bank deposits and demanded the conversion of all city funds into Soviet currency. They broadcast the impending failure of the water supply in West Berlin, and sewage systems did begin to fail because of the power loss. Rumors flew through the city that the Allies were preparing to evacuate Berlin.[19]

Colonel Howley responded rapidly to the situation with a plea for confidence in Allied intentions. He issued a proclamation that food and powdered milk were available and that water was plentiful. General Clay issued a proclamation that the Soviet Union could force the United States to abandon Berlin only through war. The British and French issued similar statements. The fact remained, however, that Berlin was completely isolated.[20]

THE BLOCKADE

As the first hours and days passed under the total blockade, the Berliners and the Allies faced several crucial questions. Even though, in retrospect, many people had expected it, the blockade caught authorities off guard when it became a hard, cruel fact. No one seemed able to reconcile himself to the fact that the Soviet Union would deliberately undertake the starvation of two and one-quarter million people. The question remained: how long would the Soviets continue the total blockade to achieve their objectives? On the other hand, the Allies faced the alternative of calling the Russian bluff or evacuating the city. The Berliners were caught in the middle. They were the people who faced the stark reality of starvation and, to alleviate this possibility, something had to be done quickly.

Fortunately, Colonel Howley had taken some steps since the tensions had heightened in March. Based as much on his suspicion of the Soviets as on anything else, he had stockpiled crucial supplies,

such as coal, milk, and foodstuffs, in a program called Operation Counterpunch. His goal was to provide a 30-day emergency supply. With the assurances of the Allies, this secret project may have made a crucial difference in the first few days, allowing the Allies time to organize and react to the crisis.[21]

With no specific guidance from Washington, General Clay assumed responsibility during the first few days of the blockade. His initial concern was to insure that the people of West Berlin did not panic. Had they panicked, Berlin would have fallen very quickly. The firm assurances of Clay, Howley, and other Allied officials, together with the stockpiling under Operation Counterpunch, blunted the Soviet campaign to stampede the people.

In making some of the vital decisions, Clay faced a dilemma. Since he had no specific direction from Washington, he had to overstep his authority and commit his country. A decision to withdraw might incur irreversible damage. A decision to stay would commit the United States to a possible showdown with the Soviet Union. In any event, a decision had to be made quickly. Any hesitation and the plight of more than two million people would be in jeopardy. Some of his advisors stated that the situation was a *fait accompli* and that the Allies should concentrate their efforts on an orderly withdrawal from the city. Others felt that the blockade was a big bluff which should be called with all the military force available in Europe.[22]

General Clay had considered the possibility of at least a temporary airlift of supplies to the city and, as an interim measure, requested Lt Gen Curtis E. LeMay, the US Air Force Commander in Europe, to "drop all other uses of transport aircraft so that his entire fleet could be placed on the Berlin run."[23] At the same time, Clay notified the political leaders of West Berlin that he would attempt an airlift of sorts but that it would be minimal.

THE AIRLIFT

In response to General Clay's request, General LeMay swung into action. He immediately marshalled all available aircraft, and, on 26 June, 80 tons of supplies were flown to West Berlin from US bases at Wiesbaden and Rhein-Main. The British had delivered over six tons on 25 June.

At this point, it seems safe to assume that no one realized the eventual enormity of the airlift project. In the initial stages, it was an interim measure, a countermove to gain time. The operations staff of United States Air Forces, Europe (USAFE), conducted the initial effort, and a hodge-podge of crews from a variety of duties within the command flew the missions. Most of the transport aircraft did not have regularly assigned crews. The only available aircraft for the missions were approximately 100 C-47s and a few leftover B-17s. The C-47, a twin-engine transport of prewar vintage, was slow and small, carrying only three and one-half tons. The B-17s flew only two missions to Berlin.

General LeMay appointed Brig Gen Joseph Smith as project officer for this airlift and made the 60th and 61st Troop Carrier commands, with their C-47s, the nucleus force to begin delivery immediately. It is interesting to note that the orders directing General Smith to organize the project specified that the assignment would not exceed 45 days.[24] By 29 June, the Berlin Airlift Task Force was organized under General Smith, an indication of how rapidly the United States responded to the blockade. At the same time that he established the airlift, General LeMay confronted other problems associated with the blockade. Since nobody could accurately predict the Soviets' next move, especially after the beginning of the airlift, General LeMay upgraded US fighter aircraft in Europe and requested the transfer of some B-29 squadrons to England.[25]

Both Clay and LeMay requested additional transport aircraft and, within two weeks, C-54 aircraft (four-engine transports with a 10-ton capacity) began to arrive from troop carrier squadrons stationed in Panama, Alaska, Texas, and Hawaii. By mid-July, 54 of these aircraft had begun airlift operations. Each day, General Clay's requests grew larger; the operation expanded a little more; and additional tons of supplies arrived at the beleaguered city.

Even with these developments, one must remember that direction of the entire operation was provided in something of a vacuum. There was still no real guidance or decision from Washington concerning the Allied stand in Berlin. General Smith worked feverishly to establish and maintain an around-the-clock airlift; General Clay queried Washington for help and guidance; and General LeMay directed the expanding airlift operation without a top-level decision on US policy in the crisis. General Clay left Germany to attend a meeting with President Harry S. Truman on 22 July 1948. During this meeting, President Truman gave his full support to the airlift option, in effect, ratifying the decisions made by General Clay up to that time. Clay also suggested a solution to the crisis—an armed convoy of Allied forces forcing their way to Berlin. He felt that the Soviets would back down in the face of such a show of determination. The President rejected this proposal as too risky and instructed Clay to continue the airlift. This was the first real indication that the airlift would no longer be considered as a temporary or interim project.[26]

President Truman's decision to support the airlift did not represent a final decision on the US stand in Berlin. Hoping for a diplomatic breakthrough, the President bided his time, apparently to determine whether the United States and its Allies would stay in Berlin. His decision came on 28 July 1948 at a

White House meeting. The President interrupted Under Secretary Lovett's discussion of various options to state that no further discussion was necessary on whether the United States would stay in Berlin—we would stay! When asked if this meant that the United States would fight its way into Berlin, the President stated that he would deal with that contingency as it occurred but that the United States was in Berlin by agreement and that the "Russians had no right to get us out by either direct or indirect pressure."[27] The momentum built, and the airlift forged ahead. By this time, the combined British and American airlift was carrying over 2,400 tons per day into Berlin, a remarkable achievement but only the beginning.

Logistics Requirements

During June and early July, various military levels searched for reliable estimates of supplies necessary to sustain the population of Berlin. In normal times, the city of Berlin consumed 20,000 tons of perishable supplies per day. Prior to the blockade, 12,000 tons per day were shipped into Berlin by truck, rail, and barge. Experts finally arrived at a figure of 4,500 tons per day as a bare minimum to sustain Berlin. This figure included various tonnages of foodstuffs, coal, equipment, and other supplies. For example, in food alone, Berlin required 464 tons of flour and wheat per day, together with 125 tons of cereal, 180 tons of dehydrated potatoes, and 38 tons of salt. The magnitude of the problem began to dawn on those faced with the airlift task.[28]

Meanwhile, other experts within USAFE computed the tonnage of supplies that could be delivered by air, based on fixed air-corridor routes, airfield and ground handling limitations, aircraft capacities, and navigation and control capabilities so vital in marginal weather. With the release of an estimated requirement of 4,500 tons per day, USAFE planners on General Smith's Airlift Task Force went to work in earnest. They estimated that at least 225 C-54 aircraft would be needed and that, with the 10-ton load capacity of these aircraft, it would take 450 flights a day to deliver the tonnage needed in Berlin. By landing an airplane every three minutes around the clock, together with rapid off-loading, they could theoretically achieve the goal. However, there was a wide gap between theory and fact. By the end of July 1948, with the airlift in full-time operation, only 2,700 tons per day were reaching Berlin, and the aircraft were flying under ideal weather conditions—a fact of which both General LeMay and General Clay were well aware.[29]

On 29 July 1948, another important development occurred with the arrival of Maj Gen William H. Tunner to assume command of the Airlift Task Force (Provisional). This was the new designation of the force responsible under USAFE for the airlift. General Tunner had been Deputy Commander of Military Air Transport Service (MATS), when, on 23 July, MATS received orders to augment the airlift with aircraft and personnel. Tunner was already famous in airlift circles for his command of the China-Burma-India "Hump" operation during World War II. When he arrived in Germany, he brought with him many veterans of the "Hump" operation to assist in solving the problems that he expected to encounter in Berlin.[30] His first move was to direct an intensive effort in four specific areas: (1) streamlining maintenance procedures and facilities; (2) improving loading and off-loading techniques; (3) improving aircraft utilization; and (4) improving air traffic control procedures, especially in bad weather.[31]

Major Problems

When the airlift began, the Air Force operated primarily from two bases in the Frankfurt area—Wiesbaden and Rhein-Main. Neither of these bases was equipped to handle the increased volume of traffic required by the airlift. These bases and those in the British zone required new and longer reinforced concrete runways, warehouses, hangars, and barracks.

In the city of Berlin, inadequate facilities presented additional problems. Templehof airport in the American sector and Gatow airport in the British sector were the only available fields. Templehof was located well within the city and was surrounded by high apartment buildings. Although the airport was well equipped with hangars and a huge multistory terminal building, the field was woefully inadequate for the increased demands of the airlift. When American forces first arrived in Berlin at the end of World War II, Templehof was still a grass field with one sodded runway, which the Germans had used primarily for fighter aircraft. The Americans had built an improved runway consisting of a rubber base covered with steel landing mats. This runway had been adequate until the airlift began, but the continuous landings of heavily loaded transport aircraft seriously damaged the runway. General LeMay described the situation as follows:

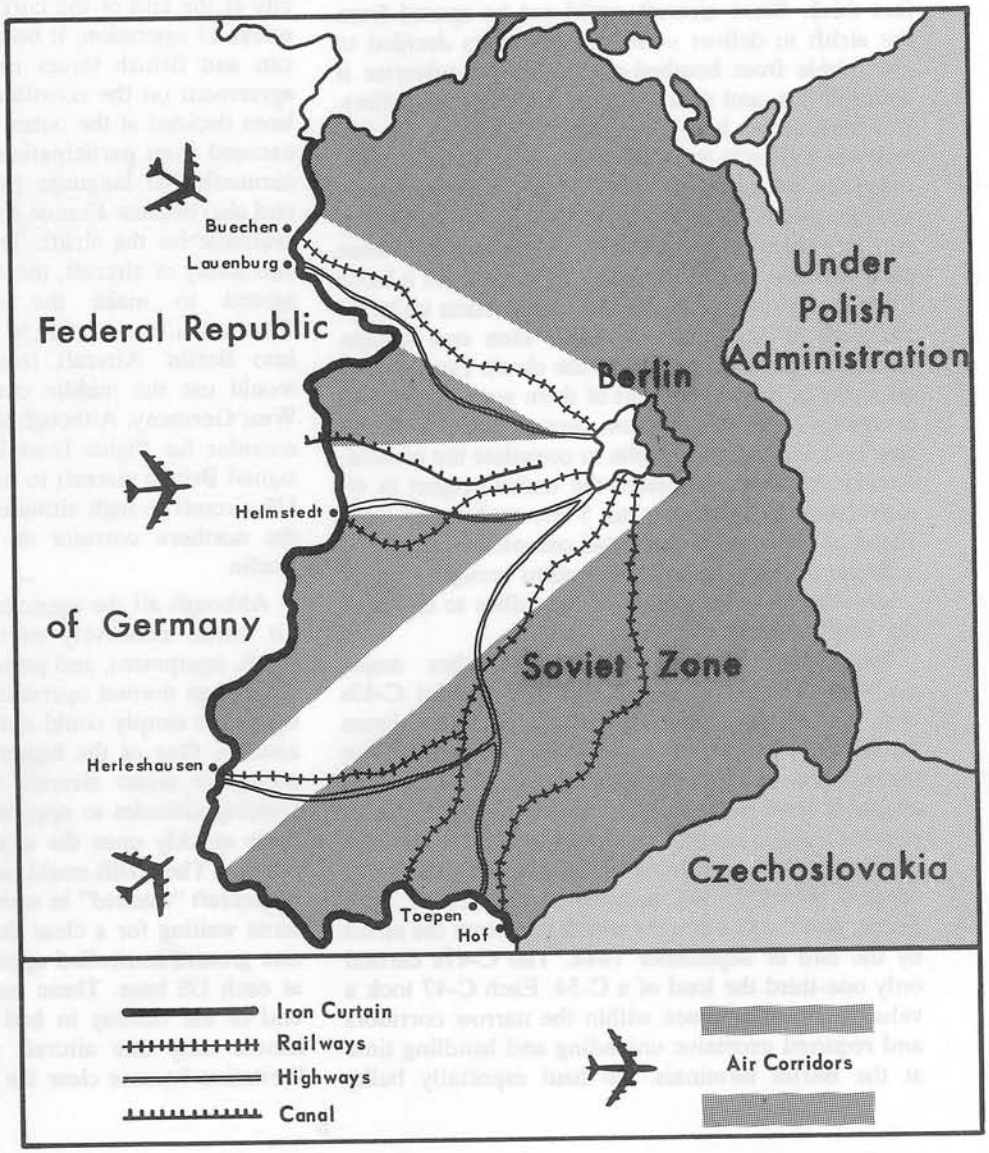
> It got so bad that we had to keep a gang of laborers on the run with asphalt, mats, shovels, wheelbarrows and all. Down one of the transports would come slamming, loose material scattered wildly, out the workmen came . . . they poured, pounded, beat the mats back into place, then they went scrambling back to get out of the way of the next C-54.[32]

US Army engineers worked around the clock and completed an additional parallel runway without delaying a single aircraft. Then, by the end of the year, they completed a third parallel runway of compacted rubble and asphalt. However, even this expansion of the Templehof airport was not sufficient

General Lucius Clay, retiring military Governor of Germany is greeted by Colonel Thomas D. Ferguson, Commanding Officer, Kindley AFB, as he steps from his plane. General Clay spent the night at Kindley AFB before continuing on to the United States. 16 May 1949.

C-47 aircraft moving into unloading position at Tempelhof Air Force Base with another load of food and supplies. During the unloading time, which averaged eight minutes, the pilots received their weather briefing and clearance for the return trip.

Miniature parachutes can be seen dropping from Lt Carl Halvorsen's C-54 as he brings the plane in for a landing at Tempelhof AFB on a "Vittles" flight from Frankfort. Lt Halvorsen dropped parachutes with candy and gum attached. The project was named "Operation Little Vittles."



Access routes to Berlin

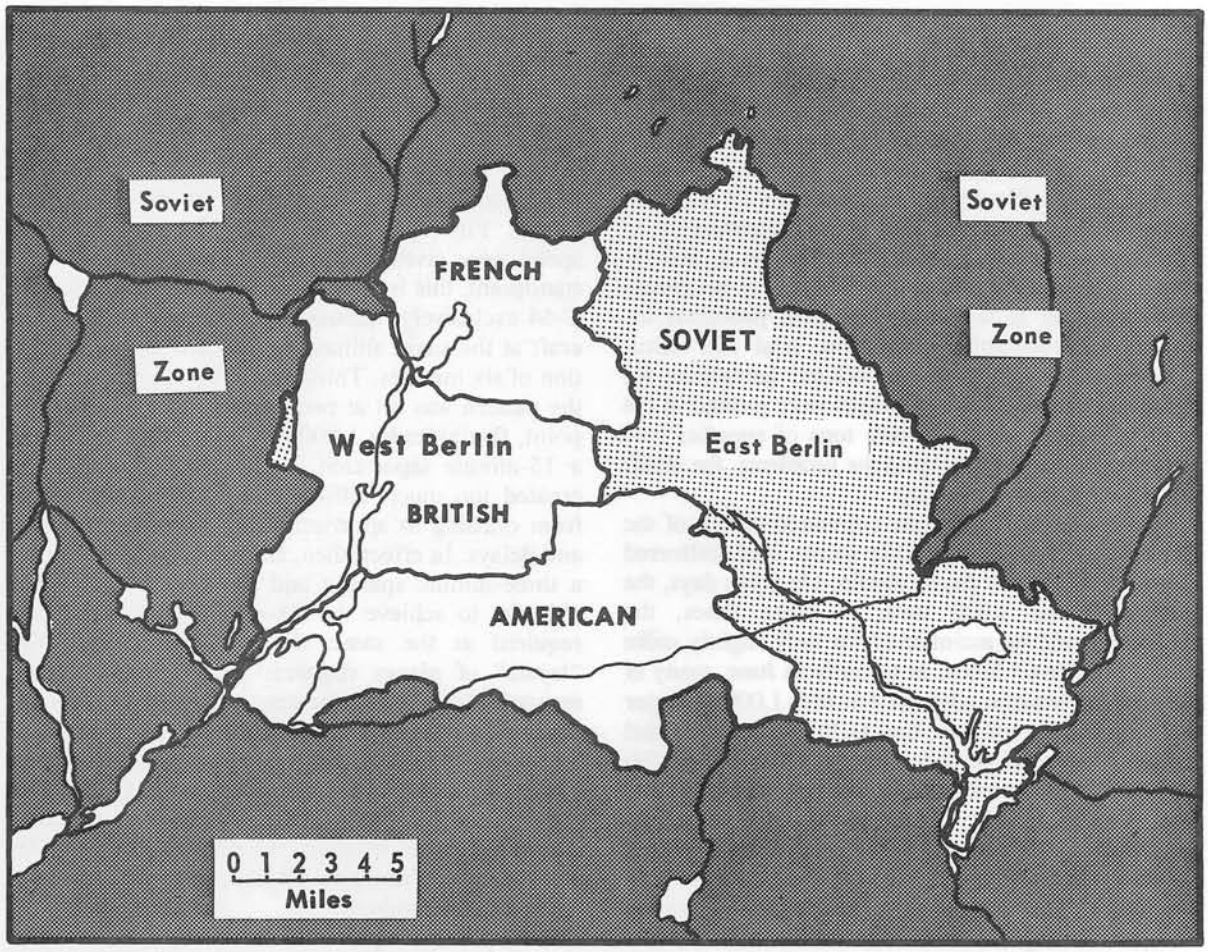
to manage the increasing airlift traffic. The Gatow airport in the British sector had two runways, one built with concrete and the other with steel matting. Neither Templehof nor Gatow could be further expanded because both are surrounded by buildings and located well within the city. The Allies recognized the shortcomings in facilities and, realizing that winter and marginal flying weather was rapidly approaching, decided to construct additional facilities in the French sector of Berlin.

They chose a former German antiaircraft training site at Tegel as the only area in West Berlin suitable for the construction of an airfield. Ordinarily, the construction of an airport, such as Tegel, would be a routine project, but, under the conditions existing in Berlin, construction of the Tegel airport is an epic in itself. No concrete was available for the base of the runway; the city had virtually no heavy construction equipment; and there was an inadequate supply of construction workers to do the job. The specifications called for a minimum foundation, or base, two feet thick. Since aircraft could not be spared from the airlift to deliver concrete, engineers decided to use rubble from bombed-out buildings, pulverize it with tractors, and then compact it with steam rollers. But most of the heavy equipment necessary for this task was too large for air delivery into Berlin. Again, ingenuity solved the problem. Heavy equipment was cut into pieces by acetylene torches, flown to Berlin, and rewelded after delivery. After solving these problems, the engineers issued an appeal for a labor force to perform the enormous construction tasks. At the peak of the project, 17,000 men and women worked in three shifts around the clock. People from all walks of life, 40 percent of them women, crushed bricks by hand, dug ditches, carried heavy loads all day, and worked extra shifts to complete the airfield. Amazingly, they completed the entire project in 60 days from 5 September to 5 November, 55 days ahead of the original estimated completion date. The addition of Tegel as a delivery point brought a major improvement in the ability of the Allies to continue the airlift during the winter months.

Insufficient aircraft presented another major problem. The airlift began with the faithful C-47s and, during July and August, C-54s from bases throughout the world entered the operation. But there were insufficient numbers of C-54 aircraft available from postwar resources of the Air Force to provide the 225 aircraft necessary to achieve tonnage objectives. Two squadrons of US Navy R-5Ds (Navy version of the C-54), augmented the Airlift Task Force, and the C-47s were withdrawn from the airlift by the end of September 1948. The C-47s carried only one-third the load of a C-54. Each C-47 took a valuable bit of airspace within the narrow corridors and required excessive unloading and handling time at the Berlin terminals. To haul especially bulky cargo, the new and untried C-74 flew some missions as experiments, but this aircraft did not fly on a regularly scheduled basis. A decision to operate the airlift exclusively with the C-54 simplified scheduling and traffic control.[33]

The problem of landing an airplane in West Berlin every three minutes and the efforts to solve it resulted in giant strides in aircraft and airways control. The problem was basically one of restricted corridors. The only route available to Allied aircraft flying from West Germany to Berlin was one of three air corridors 20 miles wide, established in agreements with the Soviet Union in 1945. This coordination of large numbers of aircraft flying in close patterns into Berlin and landing every three minutes was a nightmare. At the Berlin end of these corridors, there were seven Soviet airfields, each with a circular restricted area four miles wide. In addition to this restriction, all Allied air traffic was restricted to a 20-mile radius from the center of the city at the end of the corridors.[34] After the first few weeks of operation, it became apparent that American and British forces needed some kind of joint agreement on the coordination of air traffic. It had been decided at the outset that the French would be excused from participation, partly because of an insurmountable language problem in traffic control and also because France simply had no cargo aircraft available for the airlift. To insure the efficient flow and safety of aircraft, the Americans and the British agreed to make the southern corridor from Wiesbaden/Rhein-Main to Berlin a one-way corridor into Berlin. Aircraft from Berlin to these bases would use the middle corridor on their return to West Germany. Although the British used the middle corridor for flights from Berlin, the agreement assigned British aircraft to low altitudes and returning US aircraft to high altitudes. The British established the northern corridor as a one-way corridor into Berlin.

Although all the agencies necessary to control the air traffic effectively were present in Berlin, methods, equipment, and personnel were not geared for other than normal operations. Controllers and tower operators simply could not cope with the volume of aircraft. One of the biggest problems was their inability to direct aircraft to descend rapidly from cruising altitudes to approach altitudes and to land them quickly once the aircraft were in the landing pattern. The airlift could not operate with multitudes of aircraft "stacked" in widely separated holding patterns waiting for a clear descent to the field.[35] Only one ground-controlled approach (GCA) unit existed at each US base. These units guided aircraft to the end of the runway in bad weather, but they could handle only one aircraft every 15 minutes. This limitation became clear the first time there were low



The greater Berlin area divided among the Allies

US Air Force C-54's being unloaded at Tempelhof AFB after the heaviest snowfall of the 1948-49 winter.

clouds and reduced visibility. As the Task Force solved these problems, others became apparent.

The problem was not one of simply flying an airplane loaded with vital cargo from one destination to another. The difficulty was compounded by marginal flying weather of winter and by the requirement to land a plane every three minutes, unload it, and return it for additional supplies. There was no ready-made solution to the many complex problems involved. Consequently, innovation, trial and error, and expediency became operational guidelines for the airlift forces. Men and planes were pushed to the limit to deliver the maximum tons of supplies into the beleaguered city. Despite the problems, the airlift set new records every day.

By the end of August, the combined efforts of the British and American airlift forces had delivered almost 4,000 tons a day to Berlin. On some days, the total exceeded 4,000 tons; at other times, the schedule could be maintained for only slightly more than 3,000 tons.[36] Since, as recently as June, many of the more optimistic advisors felt that 1,000 tons per day would be a miracle, the Airlift Task Force had indeed progressed rapidly. General Clay himself felt that the Allied forces would never exceed 500 to 700 tons per day, and he is reported to have been very pessimistic on Allied chances of sustaining Berlin at all when the airlift began.[37] There was reason for this pessimism. The only other airlift of this magnitude flew the "Hump" in the China-Burma-India theater during World War II. In that airlift, the tonnage grew from approximately 1,000 tons a month in 1942 to 35,000 tons a month in late 1944.[37] This was an all-out effort under difficult, but different, circumstances. Therefore, in the early days of the Berlin Airlift, there was ample reason to wonder whether the goal of 4,000 tons per day could be reached and sustained. Even after the airlift delivered 4,000 tons per day in August, there was still some doubt that this tonnage could be maintained.

The Americans and British learned how to put airplanes into Berlin with the precision of an expensive watch. Actually, the trial and error method continued to the end of the airlifts but, in terms of scheduling and flying the corridors, the basic lessons learned during the summer of 1948 proved useful throughout the airlift.

One of the first things the Task Force learned was that precision, disciplined flying was crucial for success. One slight variation of an individual airplane from outlined procedures created havoc with the traffic control crews at the Berlin end. Similarly, any loss of standardization on the return flight created difficulties at the recovery base and disrupted not only traffic control but loading and off-loading schedules, as well as takeoff schedules for the return flight. The whole operation worked only when each aircraft remained in precise relative position with adjacent aircraft and followed instructions to the letter.[38]

After much experimentation, the Airlift Task Force established a set pattern for the flights into Berlin. First, all aircraft with the same cruising speed were given a separate altitude. From the US standpoint, this is one reason why the airlift used the C-54 exclusively, whenever possible. Second, all aircraft at the same altitude maintained a time separation of six minutes. Third, and after many variations, the pattern was set at two different altitudes. At one point, five altitudes 1,000 feet apart were used, with a 15-minute separation in the same altitude. This created too much difficulty in bringing the planes from cruising to approach altitudes without mixups and delays. In effect, then, each aircraft took off with a three-minute spacing and proceeded to alternate altitudes to achieve the six-minute time separation required at the same altitude. This created two "layers" of planes staggered at different altitudes, maintaining precise time separation to allow an approach and landing at Berlin every three minutes. Since such precision was necessary, all flights were conducted under instrument flight rules (IFR). This meant that, even though the weather was beautiful and the sky was cloudless, the pilot had to fly under instrument and navigational control at all times as if he could see nothing.

Other complex problems faced the Task Force as the airlift grew during the summer of 1948. One of the biggest concerns of General Tunner and his staff was the problem of maintaining all the aircraft involved in the lift. Even under normal conditions an airplane requires a great deal of maintenance. Before each flight, cockpit instruments, hydraulics, landing gear, electrical systems, fuselage, wings and control surfaces, and engines must be checked. A postflight check includes corrections of any discrepancies reported by the crew. A thorough check is mandatory for every 50 hours of flying time. This 50-hour check includes thorough cleaning, corrosion control, inspection of all fuel and hydraulic lines, electrical equipment, the fuselage, rivets, engine nacelles, batteries, wings and flaps, and lubrication of all necessary parts. At the 100-hour point, the check is the same, but it also includes changing oil and spark plugs. A 50-hour check requires about six hours; a 100-hour check, eight hours. An even more detailed and thorough inspection is mandatory every 200 hours. These are scheduled maintenance activities. When a crew reported any kind of problem with an aircraft, the deficiency had to be remedied promptly. This is unscheduled maintenance and is added to the planned maintenance workload. Given the use of C-54s in short-haul flights, an unrelated schedule of maximum load takeoffs and landings, and marginal existing conditions and facilities, even

the most resourceful maintenance crews were taxed to the limit of their capability.

Through the summer of 1948, only the ingenuity and backbreaking work of maintenance people kept the airlift in operation. There were few spare parts, either for C-47 or C-54 aircraft. The supply lines from the United States simply could not keep up. Robbing parts from out-of-commission aircraft became the rule rather than the exception.[39]

Maintenance facilities and the equipment necessary for an operation of this size simply did not exist in Germany or Europe at the time. For example, there were virtually no work stands that maintenance crews could use to reach and work on engines, wings, and control surfaces. Again, resourcefulness came to the rescue as maintenance crews rigged ingenious substitutes from old Luftwaffe bunkbed frames. Many of these frames were used to the end of the airlift.[40] With a shortage of hangars to provide maintenance under cover, maintenance crews improvised covered nose docks and shelters of various kinds, using every piece of available lumber, canvas, and metal. When cold weather arrived, the crews worked under almost impossible conditions. They set up pot-bellied stoves to take the numbness from their hands and feet as they worked on the planes. Nevertheless, they performed maintenance around the clock, with men working in three shifts of 12 hours each. Initially, even longer hours were the rule rather than the exception.

The high number of landings per flying hours made with a very heavy gross weight on substandard surfaces compounded the wear and tear on the airlift aircraft. Even with the best of care, frequent loading and unloading damaged the aircraft. There were very few adequate cargo-handling vehicles, and the constant emphasis on speed manifested itself in damaged aircraft doors and doorjambs. Another problem was the damage to the floors of the aircraft. The C-54 was designed primarily as a passenger-carrying plane, and it had wooden floors. Constant heavy cargo loads, combined with the necessity to secure these loads, tore aircraft floors apart. Each of these problems meant additional maintenance.[41]

The solutions to massive maintenance problems were no easier than the solutions to flying problems. The key was innovation, organization, and hard work. General Tunner and his maintenance staff realized that one necessity was centralized maintenance control. This was a pioneer effort. Although centralized control had been exercised before, it had never been attempted in an operation of this size or intensity. The system that was established called for an hourly reporting of aircraft available to headquarters, Airlift Task Force, and constant updating at group and squadron levels. Headquarters established a master control board showing the status of the entire fleet. Group and squadron levels duplicated this procedure in miniature with the same color code that was used at headquarters.[42] A special form was eventually designed to give complete hour-by-hour history of each aircraft in the fleet as the airlift continued.

Another innovation was the establishment of a US Air Force maintenance depot at Burtonwood, England, to carry out the 200-hour inspections. This innovation did not occur until late November 1948, however. This was also a gigantic task, involving the rehabilitation of a World War II bomber base. When completed, the facility handled eight complete 200-hour inspections each day on a scheduled basis. This eliminated the need for the 200-hour inspection at operating locations in Germany. It also permitted the handling of inspections on an assembly line basis. This prevented tying up too many planes at one time in this major inspection. The 200-hour inspection was a very time consuming task, especially in view of the rough treatment encountered in the airlift. By the time an airplane was scheduled for a 200-hour inspection, it generally looked as if it had been stored in a building filled with blowing lampblack. Grime and oil covered the wings and fuselage, and coal dust blackened the interior. Since coal was one of the major cargoes, load after load of shifting bags, hard landings, and the loading and unloading left the interiors completely coated with the fine, grimy black dust. It reached into every nook and cranny, including the cockpit, controls, wiring, and floor. Maintenance people discovered very quickly that water applied to the interiors of the planes produced a paste more difficult to remove than the dust.[43] They vacuumed the interior before applying water. The cleaning stage of the 200-hour inspection alone consumed an average of 125 manhours; however, by establishing assembly line techniques, the planes were finished quickly and returned to Germany.

The maintenance crews established a central engine buildup facility at Rhein-Main to receive and prepare replacement engines as they arrived from the United States. This is normally a function of each organization, but the supply of the R-2000 engines was so short that a centralized facility was the only practical answer. Using a production line method, the crews transformed the engines from a "stripped down" shipping status to a built-up, ready condition for installation in the aircraft. Engines were in such short supply initially that a separate airlift from Kelly Air Force Base, Texas, the depot that overhauled engines, carried engines for the Berlin operation to Rhein-Main and returned to Kelly Air Force Base with engines needing overhaul.[44]

All of these innovations contributed to the maintenance effort. Without effective maintenance, the finest airplane in the world will not fly very long and, under the tremendous pressure of the Berlin

Airlift, maintenance miracles were performed. The general environment was much the same as a wartime environment insofar as maintenance was concerned. When the weather deteriorated, everything turned to a sea of mud. Maj Vance Cornelius, the maintenance officer of the 1442nd Squadron at Rhein-Main stated: "I see no difference between this and wartime except that during the last portion of the war we had a good supply of spare parts salvaged from flak-damaged airplanes. Here we have less."[45]

Changes in Airlift Organization

As the summer ended, another important phase of the Berlin Airlift began when, on 15 October 1948, an additional change occurred in the airlift organization. This change was the result of needs that had become apparent during the summer months for a joint effort between the American and British forces. The new organization combined the British and American organizations into the Combined Airlift Task Force (CALTF). This organization combined the American Airlift Task Force with the British Air Forces of Occupation (BAFO). Actually, the CALTF assumed operational control and centralized direction, while USAFE and BAFO maintained administrative control over their respective forces. General Tunner was the commander of CALTF, and Air Commodore J. W. F. Merer of the British Number 46 Group was the deputy commander.[46]

This change brought an even more efficient use of Allied resources. The CALTF depended on absolute confidence, trust, and good will between the British and American forces. From the outset, the new organization ran smoothly, and all the expected advantages of a combined effort became a reality.[47]

The change in organization brought with it a change in mission as well. Prior to the change, the airlift had worked under orders to achieve the minimum daily goal of 4,500 tons of supplies for the city of Berlin. In the letter directive establishing the CALTF, General LeMay and Air Marshal Saunders ordered the combined force to deliver the maximum tonnage possible to Berlin in a safe and efficient manner.[48] Therefore, the mission became an all-out effort to deliver the maximum tonnage within existing American and British capabilities. The mission remained the same for the remainder of the airlift. This concept also changed the underlying philosophy of the airlift. No longer was the airlift an interim stopgap measure but a purposeful, measured policy. The Allies felt that the Berlin Airlift could not only help Berlin to survive temporarily; it could provide supplies for the city as long as necessary to resolve the crisis by diplomatic means.

The Diplomatic Front

The summer of 1948 had been an active period on the diplomatic front. Through July and August, the Allies held several discussions with the Soviet Union, both at the Allied Control Council and the foreign minister level. The Soviets seemed amenable to discussion and almost always offered, at least partially, to lift the blockade but always with strings attached. The Western Powers, on the other hand, declared their willingness to settle the whole controversy through discussion, but they demanded lifting of the blockade as a prerequisite to any discussion.[49] After many exchanges of notes, Allied representatives and Premier Joseph Stalin arranged a meeting in Moscow. The meeting consisted essentially of Western proposals and counterproposals by Stalin. As a result, no agreement was reached. The United States refused to admit that it occupied a sector of Berlin only at the pleasure of the Soviet Union, and Stalin refused to admit anything else. Stalin finally offered a compromise that appeared promising on the surface. However, when the time came to work out the details with Vyacheslav Molotov, US Ambassador Walter Bedell Smith discovered fundamental differences.[50] Molotov insisted that the United States postpone establishing a West German government as a condition for lifting the blockade. This proposal was unsatisfactory both to the United States and its Allies. Another meeting was held with Stalin on 23 August, but this meeting also proved unfruitful. Finally, on 27 August, an agreement was reached on a directive to the four military governors. The directive required the removal of the blockade and the introduction within one week of Soviet currency into Berlin under effective four-power supervision.[51] The Allied Control Council met immediately for the first time since Sokolovsky had walked out in March. At this first meeting, it became apparent that the Soviets had no intention of honoring the directive based on the Moscow agreement. Throughout the meeting, Sokolovsky moved to prevent any effective four-power control of Soviet currency and spoke of increasing, rather than eliminating, restrictions in Berlin. The Allies stated their final position to the Soviet Union in identical papers on 22 September. When the Soviets rejected the notes, the Western Powers announced that they would take the dispute to the United Nations Security Council.[52]

In retrospect, the Soviet Union apparently felt that the Allies were desperate in the objective to lift the blockade. The Soviets undoubtedly believed that the airlift could not long sustain Berlin and that the Allies had similar misgivings. They negotiated with what they considered to be "high cards." Even with the success of the airlift at the time, the Russians felt that the airlift would crumble when winter arrived and that Berlin would again be open for negotiation.

Results of the Airlift

As fall approached and the airlift steadily increas-

ed, the operation in no way resembled the first halting efforts in June. By now, it had become a huge venture, far surpassing the wildest forecasts of even the most optimistic observers. The Combined Airlift Task Force worked smoothly; supplies met the demands of the operation; and many of the seemingly insurmountable problems had been and were being solved. Somehow, against all odds, maintenance managed to keep a sufficient number of aircraft operational. There were now almost 200 C-54 aircraft in use, and the C-47s were phased out by the end of September. In addition, five C-82 transports were now available to carry large and bulky cargo into Berlin.

Results proved that the airlift operation was achieving its objectives. The total tonnage delivered to Berlin was 1,404 tons in June; 69,000 tons in July; 119,000 tons in August; 139,000 tons in September; and 147,000 tons in October.[53] Every day, it seemed that airlift personnel found new ways to save another minute, load an additional bag of coal, or unload a plane faster. At the Berlin end, they used ingenious methods to land, unload, and turn the planes around in record time for the return trip. The crews that unloaded the planes were German nationals and West Berliners. The Allies divided them into crews, appointed one man as crew chief at a slightly higher salary, and provided incentives, such as cigarettes, to crews that won daily competition. The plan worked beautifully.

More importantly, the successful airlift gave the people of West Berlin a sound basis for hope. The steady stream of aircraft into Templehof and Gatow airfields continued day and night. Every minute of the day, airplanes approached, landed, or took off in an unending stream. They brought coal for electricity and heat, flour for bread, vegetables, frozen meat and fish, dehydrated powdered milk, salt, fats, cheese, and fruits. They brought petroleum products, industrial supplies, construction material, medical supplies, newsprint, and even office supplies. Known to many as Operation Vittles, the airlift not only kept two and one-quarter million people alive; it sustained them.[54]

Almost as well publicized as the airlift itself, was an operation known as Little Vittles, a completely unofficial action begun by Lt Gail S. Halvorsen, a US Air Force pilot. On one of his missions, Lieutenant Halvorsen dropped candy with tiny parachutes made from handkerchiefs as he approached the airfield at Templehof. The children of Berlin habitually gathered just off the end of the runway to watch the planes land. The idea caught on with other crews and, as it received publicity, with the American people. Housewives and school children throughout the United States began making parachutes and sending candy for the crews to drop. This gesture highlighted the humanitarian aspect of the airlift. Even as they flew under great pressures in all kinds of weather, the crews, according to General Clay, still "had their hearts in their jobs."[55] They understood the impact of their mission. As Christmas approached, other airmen started a project called Operation Santa Claus, and thousands of packages from the United States were delivered to Berlin, delighting young and old alike. General Clay again expressed the impact of these humanitarian projects and the airlift in this observation: "It was inspiring and somewhat heart-rending to witness the spontaneous visits of the women and children of Berlin to Templehof airport to show their appreciation of the airlift, bringing with them some precious last possession as a token of gratitude to the members of the air crews."[56]

As October ended, the most serious threat to the airlift loomed ahead — winter and the dreadful flying weather that would accompany it. In the winter months from November through March, low clouds, fog, freezing rain, turbulence, and icing conditions were common in the European theater of operations. Planning in good flying weather and crews experienced and disciplined in flying precise flight patterns permitted the airlift to continue even though the crews flew well below normal Air Force minimum conditions. In fact, the airlift operated down to 200-foot ceilings with one-half mile visibility. This meant that flight schedulers had to know precisely what the conditions were at a particular time and what they would be three hours in advance. Before the airlift, there had been no need to differentiate between 150- or 200-foot ceilings; both were well below the established minimums and the field was closed. Now it made a difference. The required accuracy and forecasting was simply not possible in the state of meteorological science at the time. The Air Weather Service, however, did its best in a concentrated all-out effort.

The month of November 1948 turned out to be the worst month of the entire Berlin Airlift, as far as weather was concerned. During November, Rhein-Main Air Base was actually closed 35 to 45 percent of the time, and Berlin was closed 10 to 25 percent of the time, even under the minimum standards set by the airlift. The biggest culprit was fog. Sixty-five percent of the field closings were due to the thick, clinging fog typical of the area in the winter months. Still, even though November was the worst month, the airlift delivered over 113,000 tons of supplies to Berlin. This figure represents almost 4,000 tons daily under the worst flying conditions imaginable.[57] Having survived November and its terrible weather, the airlift staff redoubled its determination to save Berlin by air. In December, the Allies delivered a record 172,000 tons of supplies to Berlin and never again dropped below 150,000 tons per month. The Berlin Airlift would definitely succeed.

Although optimism prevailed at the beginning of 1949, there was still a great deal to be done. The aircrews, many now veterans of the tense corridor flights and radar-directed landings in Berlin fog and rain, accepted the task as almost routine. The ever-changing weather, viewed at first as a possible obstacle, became just another irritant to the overall effort. The flights to Berlin, repeated thousands of times, assumed a pattern of similarity even though each flight was a complex technical accomplishment.

The pilots began their missions with detailed briefings on weather, navigational aids, alternate routes and landing fields, and any special information detailing the latest Soviet activity. There was no room for deviation of any kind from the prescribed route, time, air speed, and altitude. Radio beacon points had to be crossed at a precise point and on time. Radio contact between the pilot of a C-54 and the planes in front of him was vital, and it was maintained at precise points along the route to insure proper spacing. Everything depended upon airplanes arriving at Berlin in a precise order of separation, speed, and altitude. Delays and mistakes could not be tolerated. In fact, precise order was so important that, if a pilot missed his approach, he simply returned his aircraft to his base in West Germany, still fully loaded. This proved far more efficient than to upset the seemingly endless line of planes for him to attempt another approach.

Even the newly assigned crews were proficient in the precise discipline of the airlift. This was not mere coincidence. Early in the airlift, the Air Force had seen the need for training crews especially for the Berlin Airlift and its demands. A special Replacement Training Unit (RTU) was established at Great Falls, Montana. This unit duplicated the navigational aids, corridor and approach patterns, and GCA approaches of Berlin. The crews practiced the difficult Templehof approach, which, in effect, involved flying between rows of the apartment buildings that surrounded the field. On the barren Montana plains, the crews learned the harrowing GCA approaches and flight discipline necessary to fly the airlift. This undoubtedly contributed to the outstanding safety record compiled by the airlift. The airlift maintained an average of 21.4 accidents per 100,000 flying hours for the entire period from June 1948 to September 1949.[58] This was approximately one-half the Air Force worldwide average at the time, and it represents an amazing effort, considering the environment and sheer numbers of flights.

A good deal of credit must also go to the men who directed the GCA facilities, still in relative infancy at the time. The dedicated around-the-clock efforts of radarscope operators to direct blind-flying crews through the fog and rain to a safe landing played a significant role not only in safety but also in the Air Force's ability to supply Berlin adequately during the winter of 1948 and 1949.

Once on the ground, aircrews taxied their planes to a special section of the field designated for off-loading operations. There the planes lined up while German nationals unloaded the precious cargo. The crew remained with the planes during the entire time at Templehof. They received food and briefing information for the return trip at the unloading dock. Any minor maintenance was performed on the spot, but major maintenance was deferred, if possible, for completion at Rhein-Main or Wiesbaden. Once the plane was unloaded and refueled and the pilot had been briefed, the plane began its return trip to the Allied zone of Germany. Such repetitious flights by US and British air forces day after day, around-the-clock enabled Berlin to hold out during the long winter months.

The airlift operated in the dead of winter and consistently set new records. On 31 December 1948, the 100,000th airlift flight arrived in Berlin. By the middle of January 1949, the daily ration for each person in West Berlin had increased from 1,600 calories to 1,880 calories per day. One month later, the airlift had delivered over one million tons of supplies.[59]

By spring, the airlift averaged 8,000 tons of supplies every day. On 16 April 1949, it broke all daily records with the delivery of 12,940.9 tons of supplies to Berlin. This delivery involved 1,383 flights that averaged a landing every 63 seconds.[60] By this time, the United States Air Force, together with its British Allies, not only supplied Berlin's immediate requirements but also began stockpiling supplies for the following year. Through the winter, the Soviets tried every tactic short of war to stop the airlift but to no avail. The Allies countered every move, and the airlift continued unabated.

As promised in September 1948, the Allies took the Berlin issue to the United Nations (UN). Only three years old at the time, the UN organization was not prepared to handle a major confrontation of the world's two reigning powers, and the Soviets gave portents of things to come in the considerations of the crisis. They first sought to bar the issue from discussion on the grounds that it was not within the scope of the Security Council. The council voted to consider it anyway. This was the first time that three permanent members of the council had accused a fourth of threatening international peace, and the issue caused a furor within the United Nations.[61] Many smaller nations felt that the Berlin issue would lead to the fall of the United Nations and pressed for a compromise solution satisfactory to both sides. Although the Allies supported several proposals, the Soviets refused to accept any of the compromise proposals.

During the winter, the Soviets had clamped down on foraging in the Soviet sector of Berlin, had

stationed tanks at conspicuous locations within the Soviet sector, had attempted to start riots in West Berlin, had harassed American and British airlift aircraft as they flew the corridors, and had frequently jammed the airways communications. They greatly increased the guards around Berlin, confident that, if they could seal the city, the airlift would have even less chance of success.

Meanwhile, the Allies clamped a blockade of their own on East Germany. Some authorities claim that this was a major factor in the eventual lifting of the blockade on Berlin.[62] The Soviets had previously imported large amounts of steel, chemicals, tires, and farm goods from West Germany into East Germany. The loss of these vital goods and high-grade coal from the Ruhr Valley had a marked impact on the East German economy. Substitute sources proved difficult to find.

By the spring of 1949, a combination of several factors, headed by the airlift, had put the Soviets on notice that the Allies definitely would not be driven out of Berlin. The counter blockade, the beginning of Marshall Plan aid to West Germany, the initiation of a unified defense for Western Europe, and the remarkable economic progress of West Germany under currency reform were contributing factors.

As early as January 1949, there had been indications that the Soviets were beginning to soften. In March 1949, when the Allies made the Western Deutschmark the only legal tender in the Western sectors of Berlin, the Soviet reaction was very mild. A week later, the Soviets replaced Marshal Sokolovsky, the Russian who had helped to introduce the blockade. Soviet police abandoned their harassment tactics. The Soviet propaganda machine began to call for normal trade relations and peace between the East and the West.[63]

Through a series of secret negotiations, the United States and the Soviet Union reached an agreement to lift the blockade in advance of a meeting of the Council of Foreign Ministers. On 4 May, the three Western Powers informed the Secretary General of the United Nations that an agreement had been reached. At the same time, the United States, the Soviet Union, Great Britain, and France jointly announced that the blockade would end on 13 May and that the Council of Foreign Ministers would convene at Paris on 23 May to consider the German problem.[64]

Just after midnight of 11 May 1949, the blockade ended. Soviet power stations resumed transmission to the Western sectors, and travel resumed between Berlin and West Germany by road, rail, and canal. Although the blockade had been lifted, the airlift continued as if nothing had changed. General Clay had decided to take no chances. Finally, on 30 September 1949, the last C-54 delivered its supplies and officially ended the Berlin Airlift.[65]

Since June 1948, the airlift had delivered a total of 2,325,509 tons of supplies to the isolated city. It had taken the lives of 45 British and American airmen. Estimates of the cost ran between 137 million and 350 million dollars.[66] Today, C-141 jet cargo aircraft and the new C-5 transport could airlift this tonnage in a fraction of the time, effort, and cost. The C-54s could carry 10 tons; the C-141 can carry 30 tons for 4,600 miles; and the C-5 can carry 132 tons, the equivalent of 13 C-54s. Tonnage and mileage factors vary with different aircraft and the type of mission, but modern technology provides the means to handle an airlift with much greater ease, economy, and efficiency than in 1948 and 1949.

Most important, of course, is the fact that the Air Force conducted the airlift with what it had. Although the cost was high, the Berlin Airlift not only insured the survival of a city but also provided a number of other more significant results. The airlift became a symbol, both to the Berliners and to the United States and its Allies. To the Berliners, the airlift was a symbol and a cause which drew their wills and spirits to the West. It revived them at a time when they were a tired and defeated people. They emerged from the blockade with a new outlook, renewed energy, and hope for the future. To the United States and its Allies, the airlift was a symbol of resistance. With all its implications, the blockade forced the West either to make a stand or to retreat further from the advances of the Soviet Union. The airlift was a symbol of the decision to make a stand and set a precedent upon which the United States and Western Europe united in a common cause of recovery, resistance to Soviet advances, and mutual aid.

The airlift was more than a mere symbol, however. It was the instrument with which a demobilized United States faced Soviet aggression and forced the Soviets to back off. Air power proved to be an effective instrument not only in war but in peacetime as well. The Berlin Airlift proved that air power could supply and resupply any point on earth under routine conditions and under the severest tests of airmanship, logistics, maintenance, and adverse weather.

It is almost certain that no other method of challenging the Soviet Union would have worked. Some have argued that General Clay's idea of an armed convoy would have been cheaper, quicker, easier, and equally as successful. The US strategic position for a possible ground war inside East Germany, however, was very weak at the time. In his book, *Berlin Command,* Col Frank Howley relates that, in December 1948, Secretary of the Army Kenneth C. Royall asked him: "What would have happened if we had brought an armed convoy into Berlin when the blockade started last June?" Colonel Howley's reply was: "We would have gotten our

derrieres shot off — except that I have never been known to use the word *derriere.*"[67]

Regardless of the arguments, the airlift *was* successful — so successful, in fact, that the Soviet Union was simply forced to back down. Probably no other action short of war could have produced a similar result. The capability of the Air Force and air power to provide a crucial option in maintaining world peace was never more clearly demonstrated. It caught the Soviets completely by surprise and its success must have astounded their strategic planners. A bold Soviet attempt to force the Allies out of Berlin was met with resolute determination, thanks to air power and the courageous action of Allied air forces personnel.

The inherent flexibility of air power as an effective instrument of policy in any situation was vividly proven. It seems likely that the later use of air power in situations short of total war or complete peace may stem from the successful use of air power in the blockade of Berlin.

Finally, the airlift was an accomplishment of spirit —the dedication of thousands of people working together to solve seemingly impossible problems. The Allies proved that the military services of several nations could form an effective team to accomplish a task. Harvey Conover, publisher of *Aviation Operations: A Special Study of Operation Vittles,* made this observation in 1949:

> Today, it's nice to sit back and say, "We knew they could do it!" But during those critical months in Germany when we were living with the men who were working and sweating day and night, with all their genius, strength, and know-how to keep Berlin from starving, it was an entirely different matter. . . . The success of the Berlin Airlift . . . represents a spectacular demonstration of American teamwork at its best. . . . Such inspirational spirit and teamwork cannot be obtained from a regimented nation. If I were a Stalin or one of the men of the Politburo, I would fear it more than the atom bomb — it is a weapon they will never be able to duplicate.[68]

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Chapter 2

The Korean War

Dr Kenneth R. Whiting

THE UNITED STATES, confident in its monopoly of the atomic weapon and envisioning the United Nations as a powerful force for international law and order, blithely dismantled much of its war-making capability in the years immediately after World War II. The only war considered likely was the big one and the weapon systems were therefore tailored for it.

THE STRATEGIC SITUATION FOLLOWING WORLD WAR II

However, as the Soviets proceeded in their envelopment of the nations of Eastern Europe and the Balkans and tried their gambits in Iran, Turkey, and Greece, a new problem arose: how do you use an atomic weapon to check a Communist insurgency in Greece or a Moscow-inspired attempt to set up a Communist-controlled autonomous region in Iran? Although US strategic aircraft could drop atomic weapons on selected targets within the Soviet Union, what would stop the Soviets from overrunning Western Europe—a Western Europe in the midst of political and economic chaos? For all intents and purposes, it was a standoff: the American strategic superiority countered by a hostage Western Europe.

US Response to a Growing Threat

The US response was to strengthen the threatened areas. The Truman Doctrine of March 1947 was designed to put Greece and Turkey back on their feet by supplying military and economic aid and thus blocking Soviet expansion to the south. The Marshall Plan provided an economic transfusion to get the economies of Western Europe out of the doldrums. The rape of Czechoslovakia in February 1948 revealed Stalin's insatiable desire for the expansion of the Soviet empire and helped speed up the development of the North Atlantic Treaty. What George Kennan described as a "containment policy" was taking shape along the western and southern axes of potential Soviet expansion.

In 1949, however, two new elements were injected into the strategic situation. In September 1949, the American atomic monopoly ended when the Soviets detonated their first atomic device. It would be only a matter of time before they would have the strategic delivery capability to go with their new weapon. Almost simultaneously, in October, mainland China was added to the Communist world, an event that immediately posed a threat at the other end of the Eurasian continent. At this point, it was imperative that US strategists revise their thinking and come up with the wherewithal to cope with the increasing Communist military capabilities, the capability of deterring the US strategic threat in the relatively near future, and the overwhelming Soviet advantage in conventional forces based on a population of nearly a billion people.

The Truman administration's military budget of around 15 billion dollars was considerably short of what it would take to expand US military might sufficiently to offset the potential Communist threat. In early 1950, the President asked for a general reappraisal of the nation's military posture and the resulting paper, NSC 68, recommended a drastic increase in military capabilities. Before any action could be taken, the Korean War broke out, and the American people were about to experience for the first time the frustrations involved in fighting a "limited war," a war in which the Communist supplies and weapons, and, after October 1950, the manpower came largely from outside the area of conflict. Moreover, the mightiest weapon in the US arsenal was not to be used.

Almost from the outset, it was obvious that air power would play an extremely important role in the war. Its mobility and its capability of applying enormous firepower had to be relied upon to compensate for the sparsity of US ground forces, a sparsity resulting from the pell-mell demobilization of 1945 and 1946. Just how decisive a role air power played in the Korean drama is the subject of this chapter.

Armed Invasion of Korea

At 4:00 am on Sunday, 25 June 1950, the North Korean People's Army (NKPA) attacked all along the 38th Parallel and the invasion of the Republic of

Korea (ROK) was under way.* The United States Ambassador in Seoul, John J. Muccio, was not informed of the attack until four hours later, at 8:00 pm, and, even then, he received only a garbled version of what was going on at the border. He went immediately to the Embassy, checked with the Korean Military Advisory Group (KMAG) on the available details, and then drafted a cable for Washington which went out at 9:30 am (8:30 pm Saturday in Washington).[1] It was not until noon that Ambassador Muccio and the officers of KMAG knew for certain that the North Koreans actually were invading the south—that it was no feint or border skirmish.

The North Korean infantry, spearheaded by Soviet-built T-34 tanks, smashed through the ROK lines and took Kaesong by 9:00 am. The main thrusts were made in the direction of Seoul and Chunchon, together with the overrunning of the Ongjin Peninsula and amphibious flanking attacks along the east coast. The ROK forces, without tanks, antitank guns, or aircraft, were outgunned from the start. Three days later, on 28 June, the NKPA moved into Seoul; the battered, dispirited ROK forces were in a state of complete disarray south of the Han River.

Any hopes that Washington or Tokyo may have had that the ROK forces could fend off the invasion disappeared when Seoul fell. Gen Douglas MacArthur, during a personal reconnaissance just below the Han River, was briefed on 29 June by Ambassador Muccio, President Syngman Rhee, and Gen John H. Church, who had been sent in 48 hours earlier to survey the situation. The news was not good. According to Church, of the 100,000 troops in the ROK Army, only 25,000 could be accounted for. General MacArthur then drove toward the Han to see for himself how bad the situation was; it was all that Muccio, Rhee, and Church had said it was—disastrous. Immediately upon his return to Tokyo, MacArthur sent a message to the Joint Chiefs of Staff (JCS) in which he stated that the ROK forces were in a state of utter confusion, were leaderless, and were incapable of gaining the initiative. Only the introduction of US ground combat forces could stem the tide.[2] Thus, President Harry S. Truman had to decide whether to move military forces into Korea or to let the newly formed republic be swallowed up by Kim Il-sung's Communist regime.

KOREA AND WORLD WAR II

Korea had long been a focal point of Russian, Chinese, and Japanese tensions. Both the Sino-Japanese War (1894-1895) and the Russo-Japanese War (1904-1905) had their beginnings in Korea. Japanese victories in both wars led to the annexation of Korea in 1910. Japanese domination, an oppresssive one, lasted until August 1945. The establishment of a free and independent Korea was agreed upon in the Cairo Declaration (1943) and the Potsdam Declaration (1945).

Military Occupation of Korea

The 25th Army of the 1st Far Eastern Front, commanded by Gen I. M. Chistyakov and supported by elements of the Soviet Pacific Fleet, invaded Korea on 9 August 1945 and quickly captured the more strongly fortified points in the North Korean plain. By 15 August, the Soviets were able to set up a military government, and, when they reached Pyongyang on the 24th, they ran their new government from there.[3] The dividing line between the Soviet and American forces was established by order of President Truman on 15 August 1945 and cleared with the British and Soviet Governments. The order provided that the US forces would receive the surrender of Japanese forces south of the 38th Parallel, and the Soviets the surrender north of that line. For some reason, Stalin never questioned the 38th Parallel as the demarcation line in Korea. Since American troops could not beat the Soviets to the 38th Parallel and to Seoul, the ancient capital of Korea, Stalin's acquiescence can only be attributed to miscalculation of the importance of the south, to indigestion from all the territory that he was in the process of absorbing, or to an overestimation of American strength in the area.

The Soviet military government lasted from 15 August 1945 until 26 December 1948, during which time Soviet leaders used their "satellization" techniques to insure a properly subservient indigenous regime. Almost from the beginning, there was friction between Mao Tse-tung's Yennan group of Chicom-trained Korean exiles and Kim Il-sung's Soviet-trained group. Moscow backed Kim Il-sung solidly, and it was not too difficult to relegate Mao's proteges to secondary positions. By February 1946, the North Korean Temporary People's Committee, an all-Communist group headed by Kim Il-sung, had control of the political situation north of the 38th Parallel and was able to carry out Moscow's policies. Any area completely controlled by Soviet armed forces meant victory for the pro-Stalinist indigenous leaders.[5]

Kim Il-sung, a minor rebel leader in Manchuria in the 1930s, disappeared into the USSR in 1941 or 1942. When he returned to Korea with the Soviet armed forces in 1945, he was a captain in the Soviet army and even was reputed to have fought at Stalingrad. The Soviets built him up as a legendary figure who had terrorized the Japanese in Manchuria. Faced with the task of creating a loyal and efficient Korean army, Stalin had a trump card in Kim. First, a Peace Preservation Corps was set up in 1946, a force of 20,000 men equipped with captured

*Korean time was 13 hours ahead of Eastern Daylight Time in Washington. All times in this chapter are Korean time unless stated otherwise.

Japanese weapons, whose job was ostensibly to guard the borders and the rail lines but, in reality, it was the nucleus of a future army. Some 10,000 young men were sent to Siberia and trained in the Soviet military schools at Kharbarovsk and Chita as future officers. Finally, on 8 February 1948, the North Korean People's Army, some 60,000 men, was officially activated as a regular army. By June 1950, the date of the invasion of South Korea, the NKPA had 24 divisions, over 200,000 men, with 500 T-34 tanks and 200 YAK-9 aircraft.[6]

Thus, by early 1950, Stalin had a strong "Muscovite," Kim Il-sung, in charge of a monolithic Communist government in Korea and an excellent military force in being. All that was necessary, it would seem, was to loose that force on South Korea and thereby round out the Communist empire along the Asiatic coast of the Sea of Japan.

Evolution of US Policy in Korea

Arriving a month after the Soviets, on 8 September, the Americans had no plan for setting up an independent government south of the 38th Parallel since it was assumed that the country would soon be unified. In the interim, an American military government tried to bring order out of the chaotic situation. An agreement, reached in Moscow at a conference of foreign ministers, provided for a Soviet-American joint commission to create a unified Korea under a four-power trusteeship for five years. It proved unworkable, however; the United States then put the Korean problem before the United Nations in September 1947, and a UN Commission on Korea was created to bring about Korean unification. Finally, in May 1948, under UN supervision, Syngman Rhee's party won the elections held only in South Korea, and, on 15 August, he became President of the new Republic of Korea, thereby terminating the American military government.[7]

The Soviet-controlled Kim Il-sung regime, refusing to allow the UN election commission north of the 38th Parallel, held its own elections. On 9 September 1948, the People's Democratic Republic was proclaimed. The demarcation line, determined in so cavalier a manner in August 1945, had hardened into an international boundary and a cold-war boundary by late 1948.

With apparently little desire on its part, the United States had a protege in the Republic of Korea: it could hardly act in *loco parentis* during the birth of the new state and then stalk off when the infant was scarcely weaned. But, in the year and a half preceding the North Korean invasion of South Korea, one could certainly have gained the impression that the United States had just such an abandonment in mind.

Overall US strategy since the inauguration of the Truman Doctrine in early 1947 was the containment of Communist expansion. But two events in 1949 shook up the policymakers in Washington: the first was the Soviet testing of an atomic device in August and the second, the proclamation of the Chinese People's Republic on 1 October. Obviously, one of the main props of the containment policy, the US nuclear monopoly, was now being weakened, and it was more difficult to speak of a successful containment policy when communism had just netted another half billion people. That the leaders in Moscow were interested in assisting their man in Pyongyang, Kim Il-sung, in expanding his authority to the south should have been at least a serious consideration in Washington.

As early as 25 September 1947, the JCS stated in a memorandum that ". . . from the standpoint of military security, the United States has little strategic interest in maintaining the present troops and bases in Korea. . . "[8] General MacArthur told Secretary of the Army Kenneth C. Royall in February 1949 that he was in favor of a prompt withdrawal of US troops from Korea, and, in March 1949, he informed the National Security Council that the training and combat readiness of the new security forces of the Korean Republic had reached such a level that complete withdrawal of US troops was justified.[9] Except for an advisory group of approximately 500 officers and men, the last of the US troops left Korea on 29 June 1949. The underlying rationale behind withdrawal of the US forces seems to have been the concept that the area would be unimportant in a "global war"; there seems to have been no anticipation of such a thing as a "limited war."

The final signal to Moscow and Pyongyang that the United States was not inclined to defend Korea was Secretary of State Dean Acheson's speech to the National Press Club on 12 January 1950. In this speech, he described the US defensive perimeter as follows: ". . . [it] runs along the Aleutians to Japan and then goes to the Ryukyus. We hold important defensive positions in the Ryukyu Islands. . . . The defensive perimeter runs from the Ryukyus to the Philippines."[10] In an interview on 5 May 1950, Senator Tom Connally, chairman of the Senate Foreign Relations Committee, pointed out that the Communists north of the 38th Parallel were adjacent to the Soviet Union, and this resulted in a situation that ". . . whenever she [the Soviet Union] takes a notion she can overrun Korea. . . ."[11] Whether Senator Connally intended it that way or not, the implication was that the Republic of Korea was indefensible. To anyone sitting in the Kremlin, it must have looked as though the United States had cast the new Republic of Korea adrift.

By 1949, however, it was becoming obvious to many political and military leaders in Washington that US foreign policy commitments were being stretched beyond the military capabilities of the nation. The administration's desire to keep the defense budget below 15 billion dollars was being

implemented enthusiastically by Louis Johnson, the Secretary of Defense, with dire results for the nation's overall military posture. In early 1950, the President asked for a general reappraisal of US military capabilities and the resulting paper, the previously-mentioned NSC-68, recommended that, in view of Soviet capabilities and intentions, military spending should exceed the current 15 billion-dollar ceiling by a fairly wide margin. When the Korean question came up in a drastic form in late June, it justified the apprehensions expressed in NSC-68.

When the news of the invasion hit Washington late Saturday night, most of the key decision-makers were weekending out of town. Even the President had flown to Independence, Missouri. Those available at the Department of State, assistant secretaries John D. Hickerson and Dean Rusk, suggested putting the case before the Security Council of the United Nations, and Acheson, after clearing it with Truman by phone, told them to go ahead. The Security Council, at the request of the United States, was convened in an emergency session at 2:00 pm on Sunday, 25 June, at which time it considered and passed the resolution presented by Ernest A. Gross, acting for Ambassador Warren R. Austin, who was in the wilds of Vermont. The resolution called upon the authorities in North Korea to cease hostilities and to withdraw their armed forces to the 38th Parallel. It also called upon UN members to render every assistance to the United Nations in the execution of the resolution.[12] The absence of the Soviet delegate to the Security Council, Jacob Malik, who was boycotting the Council because of the presence of Nationalist China, facilitated the smooth passage of the resolution.

President Truman arrived in Washington on Sunday evening, 25 June, and, within the hour, was discussing the situation with a select group from the Departments of Defense and State assembled by Acheson at the Blair House. Because of the paucity of accurate information available about conditions in Korea, the group confined itself to recommending interim measures such as directing MacArthur to ship arms and equipment to the South Koreans and authorizing him to use air and naval forces to insure their safe delivery, as well as to protect American dependents then being evacuated from Korea.[13]

At the second meeting of the "Blair House Group" on Monday, 26 June, President Truman, after listening to the views of the Departments of Defense, State, and the JCS, authorized MacArthur to use his air and naval forces to clear South Korea of North Korean military forces. He was to attack only targets below the 38th Parallel. Twenty-four hours later, at 11:45 pm on Tuesday, 27 June, the UN Security Council passed an American-sponsored resolution which recommended that UN members furnish the necessary assistance to the Republic of Korea to repel the armed attack.[14] Malik was still boycotting the Council.

As things worsened in Korea, US involvement grew deeper. On Thursday, 29 June, the air and naval forces were allowed to include military targets in North Korea on their agenda. But they were not to attack beyond Korea. The use of ground forces to protect port and airfield facilities at Pusan was authorized. On Friday, 30 June, the President authorized MacArthur to send a regimental combat team to Korea and, later in the day, added two divisions.[15] By Friday evening, the United States was fully committed to the support of the Republic of Korea.

One of the worrisome questions haunting the "Blair House Group" during its meetings was Soviet intentions. The consensus of the group was that the Soviets were behind the invasion. The problem was: would the Soviets intervene in Korea to support their proxies? Was the attack on South Korea part of a bigger strategy, and, if so, where would the next move take place? The group came to the conclusion that the Soviets would not intervene in Korea. The bellicose statements of Chou En-lai and Mao Tse-tung emanating from Peking on 28 June, however, made the group much more dubious about Communist Chinese intentions.[16]

The Problem of Support for Korea

Committing the United States to the support of the Republic of Korea was one thing, but implementing the commitment was something else again. Korea was at the end of a 6,000-to 8,000-mile logistics pipeline. The military forces—ground, air, and sea—at MacArthur's disposal were limited. And Korea was hardly the ideal place to fight a war, as the JCS had frequently pointed out. Furthermore, military planning had been largely concerned with the prospects of a general conflagration and not with the problem of fighting a limited war in a place like Korea.

The peninsula of Korea, over 85,000 square miles in area, thrusts southward from the Asian mainland somewhat as Florida from the North American continent. It is approximately 575 miles at its longest and only 95 miles at its shortest just below Hungnam. In the north, Korea borders on Manchuria along the Yalu and Tumen rivers except for a common border of a dozen miles with the Soviet Union. To the east is the Sea of Japan, to the south, the Korean Strait, and to the west, the Yellow Sea. Adjacent to China and the Soviet Union and separated from Japan by the 120-mile-wide Korean Strait, Korea has long been a pawn in the territorial games played by its stronger neighbors.

The peninsula is a land of mountains, gorges, ravines, valleys, and, here and there, a relatively level stretch. The main mountain system, the Taebaek Range, stretches along the east coast, where

it rises precipitously to 5,000 or 6,000 feet only 10 miles from the sea and then slopes to the west. The westward slope determines the direction in which most of the sizeable rivers flow—mostly to the southwest. The main rivers, reading from north to south, are the Chongchon, the Han, the Kum, and the Naktong. Movement along the north-south axis, therefore, is difficult as it means crossing gorges, ravines, and valleys. Furthermore, as Futrell points out: "From the air the gray-green ridges and valleys of Korea are so little distinguished from each other as to make target identification extremely difficult."[17]

Since less than a quarter of Korea is arable, and owing to the high density of population per square mile, every bit of arable land has to be cultivated. Rice paddies even extend up the sides of the mountains, and every piece of level land is farmed intensively.

The main transportation system, some 3,500 miles of standard-gauge rail lines, runs northward through the western section of the country from Pusan through Taegu, Taejon, Seoul, and Pyongyang to the Yalu. Lateral lines circle from Taejon along the southwest coast back to Pusan, and two others cross from Seoul and Pyongyang to the east coast. There is also a rail line that runs along the east coast from the border of the Soviet Union down to Samchok. Decent highways that existed in 1950 ran along the Pyongyang-Pusan axis; otherwise, most roads were little better than dirt tracks.

Weather forecasting for Korea was a nightmare from the beginning of the American intervention. The prevailing flow of weather over Korea comes from the northwest; this means that weather information from Siberia, northern China, and Manchuria is needed to predict long-term trends. Although the Soviets continued to broadcast some meteorological data from their Siberian weather stations, the Chinese provided none. Even local conditions were difficult to forecast because of the mountainous terrain of the country itself and also because Korea is a peninsula surrounded by thousands of square miles of diverse ocean currents. The job of the USAF weather forecasters was a nasty one, to put it mildly. Like the air forces, the ground forces were up against a rough deal in weather, for, in spite of a long coastline, the climate of Korea is continental because of its proximity to the enormous land mass of Asia. Temperatures vary from below zero in the winter to hot and humid in the summer, the season of heavy rains.

US INTERVENTION

Because of budget ceilings and strategic planning focused on the big show in Europe, when General MacArthur was directed to intervene in Korea, the US military forces available to him in Japan were somewhat skimpy.

Relative Capabilities of Military Forces

The ground forces looked good on paper four divisions scattered the length of the Japanese islands: the 7th, 24th, and 25th Infantry divisions and the dismounted 1st Cavalry Division. However, these divisions were under strength, with two instead of the usual three battalions to a regiment. The four divisions plus some odds and ends, a total of 82,871 men, made up Lt Gen Walton H. Walker's Eighth Army.[18] These troops, engaged in occupation duties in Japan, were hardly razor sharp in combat readiness.

US Naval Forces, Far East, under Vice Admiral C. Turner Joy, were the only naval forces immediately available to MacArthur in the last days of June 1950. Turner had one cruiser, four destroyers, and some smaller craft. The big power in Asian waters was the Seventh Fleet, based in the Philippines, 1,700 miles from Japan. It consisted of an aircraft carrier, the *USS Valley Forge,* with 86 planes, a cruiser, eight destroyers, and four submarines.[19]

Far East Air Forces (FEAF), commanded by Lt Gen George E. Stratemeyer, had nine combat wings in June 1950. The largest subordinate command was the Fifth Air Force, under the command of Maj Gen Earl E. Partridge, with headquarters at Nagoya. The Fifth Air Force had five wings: the 8th Fighter-Bomber Wing at Itazuke on Jyushu, the 49th Fighter-Bomber Wing at Misawa on Honshu, the 35th Fighter-Interceptor Wing at Yokota Air Base near Tokoyo, the 3rd Bombardment Wing (Light) at Johnson Air Base near Tokyo, and the 374th Troop Carrier Wing at Tachikawa Air Base near Tokyo. In addition, the Fifth Air Force had two fighter all-weather squadrons (the 68th and 339th) and the 8th Tactical Reconnaissance Squadron.

FEAF also included the Twentieth Air Force on Okinawa and the Thirteenth Air Force was made up of the 51st Fighter-Interceptor Wing, plus the 4th Fighter All-Weather Squadron and the 31st Photo Reconnaissance Squadron. The Thirteenth Air Force was composed of the 18th Fighter-Bomber Wing, the 6204th Photo Mapping Flight, and the 21st Troop Carrier Squadron.[20]

In early June 1950, FEAF had 30 US Air Force squadrons, or the equivalent of nine wings. Of the total of 1,172 aircraft in FEAF, less than half (553) were in operational units.[21] The F-80C, the Lockheed "Shooting Star," a jet interceptor, was by far the best and most numerous aircraft in FEAFs inventory. It was, however, the oldest operational jet in the US Air Force. Its radius of action was 100 miles, although with tip tanks this could be extended to 225 miles. Designed as a short-range interceptor, the aircraft had not been intended for ground attack, and, if two 1,000-pound bombs were hung on its wing shackles instead of tip tanks, its radius was only

100 miles. Its best rate of fuel consumption was at altitudes over 15,000 feet, and it paid a heavy penalty in radius of action if used at low altitudes.[22]

The North Korean Air Force (NKAF) was hardly in the same class with FEAF. It consisted of some 150 obsolete Soviet planes, mostly Yak fighters and Il-10s.[23] Futrell specifies 62 Il-10s, 70 Yak-3s and Yak-7s, or 132 combat aircraft, plus 30 transports and trainers.[24] The Yak-7, one of a series of Yakovlev single-seater fighters produced in the last two years of World War II, was a piston-engine aircraft and thus somewhat obsolescent by 1950. The Il-10, an Ilyushin-designed attack plane, first came into service in the Soviet Air Force in 1944. It also had a piston engine and its top speed was slightly over 300 mph at sea level, but it carried a rather heavy armament of two 23 mm cannon and three 7.62mm machine guns, plus rockets and bombs.[25] The NKAF was more than adequate to handle the almost nonexistent South Korean Air Force but woefully incapable of standing up against FEAF. In addition, the North Korean pilots were extremely short on flying experience and had no combat expertise. Apparently, the Soviets either did not anticipate the intervention of the US Air Force in Korea when they unleashed Kim Il-sung, or else they felt that it was impossible to provide North Korea with an indigenous air force capable of standing up to the US Air Force. Certainly, the generous supply of armament for the North Korean ground forces was incomparably greater than the meager equipment doled out to the NKAF.

Phase I: From Defeat to Victory over North Korea

On the afternoon of 27 June, General MacArthur received the go-ahead to use his air and naval forces in support of the South Koreans, and, in turn, he instructed General Partridge, acting Vice-Commander of FEAF, to dispatch air support immediately. Since FEAF had no contingency plan for action in Korea, it was given a broad mission to hit military targets south of the 38th Parallel, to prevent North Korean reinforcements from coming south of the parallel, and to aid in the evacuation of US personnel from Korea. FEAF was also instructed to airlift 150 tons of ammunition to Suwon immediately and to deliver 200 tons a day thereafter until water transport could take over.

The main problem was where and what to attack. The ROK forces were in a state of chaos along and below the Han River, and their commander was unable to come up with a coherent picture of their dispositions. An ad hoc command post was set up in Suwon, a few miles south of Seoul, but communications with Tokyo were erratic at best and often nonexistent. When US Air Force fighters arrived over the Suwon Airfield, they were directed to whatever targets seemed important to those manning the Suwon command post. In the meanwhile, because of communications difficulties, B-29s were bombing Kimpo Airfield, near Seoul, while B-26s were being sent to knock out railroad bridges over the Han—hardly the most efficient use of bombers. MacArthur, who flew into Suwon on 29 June, immediately realized the importance of gaining air superiority in Korea and authorized air attacks against enemy airfields north of the 38th Parallel. That same evening, B-26s bombed the airfield at Pyongyang. The main effort, however, was directed at targets of opportunity just north of the Han River in a desperate attempt to stem the flood of troops and materiel flowing south. On 30 June, it was decided to abandon Suwon and retreat to Taejon as it seemed evident that the ROK forces would not be able to hold the line at the Han.

The rapidly worsening situation in Korea was having its repercussions in Washington, and MacArthur was authorized to use his air forces against airfields and other military targets in North Korea. But he was also firmly warned to stay well clear of the Manchurian and Soviet borders. The next day, he was authorized to send two divisions from Japan to Korea. The 24th Infantry Division, Maj Gen William F. Dean commanding, was dispatched piecemeal to Pusan, one battalion by air and the rest by sea. The airlifted battalion, which came to be called "Task Force Smith," landed in Pusan on 1 July, went to Taejon the next day, and pushed on almost to Suwon. General Dean arrived in Taejon on 3 July, and, on 4 July, the US Army Forces in Korea (USAFIK) was activated with Dean in command. On 5 July, Task Force Smith made contact with the enemy, and the first battle between American ground forces and the NKPA ensued. After a futile attempt to stop the enemy between Suwon and Osan, the Americans had to withdraw to Anson and then to Ch'onan.[26]

The seriousness of the situation in Korea and the difficulty of getting enough ground forces into action before all was lost put a severe load on the available air forces. The Fifth Air Force, with General Partridge in command, was instructed to "maintain air superiority in Korea, isolate the battlefield, and provide close support for USAFIK and ROK troops."[27] Since the 32d and 92d Bombardment Groups from SAC's Fifteenth Air Force were being dispatched to the Far East to join forces with FEAF's own 19th Bombardment Group, General Stratemeyer, on 8 July, organized the Far East Bomber Command with Maj Gen Emmett "Rosie" O'Donnell in command. The Navy got into the air war on 3 July when planes from the aircraft carriers, H.M.S. *Triumph* and the USS *Valley Forge,* of Task Force 77 attacked the airfields at Pyongyang.[28]

It soon became obvious that the various air units

operating over Korea needed coordination in order to get the most out of their employment. For one thing, communications between the naval carriers and Tokyo were difficult, especially since the carriers were preserving radio silence while at sea. But to avoid duplication of effort and to avoid collisions in the relatively restricted air space over Korea, some centralized control seemed necessary. Another problem was the inclination of MacArthur's staff to direct the air operations in Korea from Tokyo. An additional irritant to General Stratemeyer and his staff was the constant pressure to use all available aircraft, regardless of type, in a close-support role. FEAF's job was to lessen the pressure on General Dean's hard-pressed forces by attacking the NKPA ground forces and armor. Even B-29s were used to hit enemy tanks and troop concentrations, which was not the most effective utilization of medium bombers.

The selection of targets was assigned in mid-July to a GHQ Target Group made up of four senior officers representing G-2, G-3, FEAF, and the Navy, but their work on the target group was only part time. When Gen Otto P. Weyland took over as vice-commander of FEAF on 20 July, he immediately pointed out the inadequacies of the GHQ Target Group. He also commented later that the attempt to stop enemy supplies and reinforcements directly behind the battle line "was like trying to dam a stream at the bottom of a waterfall."[29] Weyland recommended the creation of a new committee for the selection of targets, a Target Selection Committee composed of high-ranking officers with wide experience, and MacArthur approved. The new committee met on 24 July and came to the conclusion that B-29 interdiction should be north of the 38th Parallel. Some semblance of order in the control of the theater air forces had finally been achieved. Futrell summarizes the situation that prevailed during July 1950 as follows:

> Belatedly, at the end of July, improvised procedures brought some order to the fantastically confused command situation in the Far East, but these extempore arrangements never achieved the full fruits of unification. Certainly, at the outset of the Korean war, the defective theater command system prevented the fullest employment of airpower, delayed the beginning of a comprehensive air-interdiction program for more than a month, and . . . caused confusion and loss of effectiveness at the very time that every single aircraft sortie was vital to the survival of the Eighth Army in Korea. Had he possessed a joint headquarters staff, General MacArthur might never have encountered these mischievous problems.[30]

In the meanwhile, the situation in Korea was deteriorating steadily throughout July. General Dean began to retreat to the Kum River, attempting to delay the North Korean forces at Chochiwon, 10 miles north of the river. By 12 July, however, the 24th Division crossed the Kum and tried to hold the river line in order to protect Taejon, the command post for General Dean's forces.

While the remnants of the 24th Division were striving to stem the North Korean drive along the Seoul-Pusan axis, more American troops were being committed to Korea. Between 10 and 15 July, the 25th Division was sent in piecemeal. On 13 July, at Taegu, General Walker assumed command of all US forces in Korea. The US forces were now the Eighth Army in Korea (EUSAF). On 17 July, the ROK forces were put under Walker's command, and both forces began to fight under the United Nations' flag. Walker had a total of 18,000 Americans and 58,000 ROK troops.[31]

The North Korean forces crossed the Kum River, and, after futile attempts to hold on, the Americans had to retire to Taejon. The North Korean tactic was to pin down a US unit by frontal attack and then to execute a double envelopment of its flanks. Superiority in numbers, plus a monopoly in tanks, insured the success of such a maneuver. General Dean, realizing that he could not hold Taejon, intended to fight only a delaying action there, but General Walker came to Taejon on 18 July and asked Dean to hold on for two days so that he could get some of the 1st Cavalry troops, then landing at Pohang-dong, deployed south of Taejon to insure the safety of Taegu. Therefore, on 19 and 20 July, General Dean's badly mauled troops held on doggedly in Taejon. The new 3.5-inch bazookas, flown in from the United States just days earlier, finally gave the Americans a weapon capable of destroying the T-34 tank. The infantry knocked out eight tanks during the battle in Taejon. But when the Americans began to withdraw from Taejon, they ran into a North Korean roadblock. General Dean, after wandering about for 36 days in an attempt to get back to the UN lines, was captured. The 24th Division had lost 1,150 of its 3,933 men in the Kum River and Taejon battles, but it had slowed the North Korean push toward Pusan.[32]

While the 24th Division was fighting its delaying action along the Seoul-Pusan axis, the ROK forces were trying to stem the North Korean tide in central Korea and along the east coast. In the last two weeks in July, the battle seesawed back and forth at Yongdock on the east coast and at Andong to the west. By 4 August, General Walker was able to establish the Pusan perimeter, an area of some 3,000 square miles, which protected the port of Pusan, absolutely vital to the maintenance of an American presence in Korea. The perimeter ran from Chingong-ni, on the southern coast, up to the confluence of the Nam and Naktong rivers, and then up the Naktong to Waegwan. From Waegwan, it went east to Pohang-dong on the east coast. Between Chingong-ni and Waegwan, the line was held by the US 1st Cavalry and the 24th and 25th divisions and from Waegwan

to Pohang-dong, by the ROK I and II Corps. On 4 August, General Walker had some 47,000 American and 45,000 ROK troops to oppose an enemy force of around 70,000.[33] The defense of the Pusan perimeter lasted 43 days, from its establishment on 4 August until the Eighth Army went on the offensive on 16 September, right after the Inchon landing.

The role of air power in support of the delaying actions of the 24th Division and ROK forces during July spelled the difference between a fighting withdrawal to the Pusan perimeter as opposed to a precipitous flight. The achievement of UN air superiority was high on the priority list, as high as the desperate need for close air support for the ground forces would permit. As early as 29 June, an attack on Heijo Airfield, near Pyongyang, by 18 B-26 bombers destroyed 25 enemy aircraft on the ground. On 3 and 4 July, planes from naval Task Force 77 destroyed and damaged 12 enemy aircraft. Realizing the formidable opposition presented by the UN air forces, the North Koreans tended to use their aircraft sparingly in South Korea, restricting them mainly to sneak attacks against UN ground forces and avoiding air battles whenever possible. In mid-July, General O'Donnell used his B-29s to crater the runways at Kimpo, and aircraft from Task Force 77 continued to hit the airfields near Pyongyang. On 19 July, seven F-80s destroyed 15 enemy aircraft on a small grass strip near Pyongyang. By 20 July, the UN air forces had virtual air superiority over all Korea, although it was estimated that the North Koreans still had 65 aircraft, with probably 30 of them in operational condition. The attrition of the NKAF went on relentlessly, and, by 10 August, FEAF intelligence estimated that 110 enemy aircraft had been destroyed. This left the North Koreans with only 35 operational planes.[34] From then on, the Fifth Air Force ran reconnaissance on the North Korean airfields, knocking out any aircraft discovered.

The achievement of air superiority in July 1950 was a relatively easy task, since the NKAF was small, poorly trained, and equipped with obsolete machines. But air superiority enabled O'Donnell's medium bombers to range over Korea without fighter escort; it allowed UN aircraft carriers to operate close to the shores of Korea when launching strikes; and the Eighth Army could maneuver by day while the North Korean ground forces were compelled to move only at night. Lastly, the obsolescence of the North Korean aircraft meant that the UN air forces could still use piston aircraft effectively in the first months of the war.

Although gaining air superiority had been relatively simple, coming up with effective close support for the beleaguered UN ground forces and the interdiction of enemy supplies and reinforcements were much more difficult jobs for the air forces. The ground force commanders and the Air Force generals had somewhat different concepts about the best employment of air power under the conditions that prevailed in Korea in July and August 1950. To add to the confusion, the Navy also differed in outlook, and, when the Marines entered the conflict in early August, they, in turn, had their own view of how their aviation should best be employed.

The first problem demanding an immediate solution was cooperation between the Air Force and ground troops in coming up with effective close air support. Since each was operating under its own command, a joint operations center (JOC) was needed so that the Army commander could present his requirements for air support to the Air Force commander and also keep the latter informed on the overall tactical situation. A rather primitive JOC was established at Taejon on 5 July at the 24th Division headquarters, but the Army did not man its side of it. Since the situation was confused, to say the least, and since communications between Taejon and the advanced echelon of the Fifth Air Force in Itazuke (Japan) were almost nonexistent, about all that Maj Gen Edward J. Timberlake could do was to schedule F-80 flights from Itazuke and Ashiya at intervals and have the control station at Taejon direct them to profitable targets.

Existing air doctrine on air-ground operations called for the tactical air force to furnish tactical air control parties (TACPs) to control air strikes from the air controller's forward position. The forward air controller was an experienced pilot, and he was assisted by several airmen to man the jeep-mounted communications equipment. The TACPs with the 24th Division in early July were plagued by unreliable communications equipment—the AN/ARC-1 radio-jeep was too fragile for what passed for roads in Korea. Since the F-80s had very limited time over the target area, they needed fast, reliable target information and they were not getting it.

On 9 July, two L-5G liaison planes began to fly as airborne tactical air coordinators in the Taejon area and, on their first day, vectored 10 flights of F-80s to profitable targets. Almost immediately, the liaison aircraft were replaced with T-6 trainers which had enough speed to avoid being hit by Yaks. After the airborne controllers were given the radio call signs "Mosquito Able," "Mosquito Baker," etc, on 15 July, the name caught on, and the unit was commonly called the "Mosquito" squadron, and the controllers and their aircraft were called "Mosquitoes."

With a relatively primitive system of air controllers established, the air forces were able to take advantage of the North Koreans' major weakness, their inability to cope with hostile air attacks. The destruction of bridges impeded their lines of communications, as was demonstrated when the bridges across the Han River were destroyed on 1 July. Low-level strikes against North Korean columns even-

tually forced them to curtail daytime movements, but, in early July, they were still out on the main roads and paid dearly before they learned better. For example, between 7 and 9 July, some 197 trucks and 44 tanks were knocked out on the roads between Pyongtaek and Seoul. In the first two weeks of July, the F-80s flew most of the combat sorties. With their 6 .50-caliber nose guns and their 5-inch high-velocity rockets (HVAR), their strafing capability was murderous. The only drawback was their limited range. Even with the 265-gallon "misawa" tip tanks, time over target was only 45 minutes, since they had to fly from Japan. One way to solve the problem of time over target was to put conventional F-51 Mustangs on Korean airfields. But, in early July, the only available airstrips in Korea were K-2 at Taegu, a torn-up strip at Pusan, and a potential airstrip, K-3, at Pohang-dong. In early July, however, some Mustangs began to operate off K-2, five miles from Taegu.

As the 24th Division was being driven south from Chonan on 9 July, General MacArthur called on FEAF to devote all its capabilities to attacks on the North Korean columns and armor threatening to destroy the American and ROK forces. General Stratemeyer, albeit somewhat reluctantly, ordered even the 19th Bombardment Group to provide close air support with its B-29s. On 10 July, a large North Korean convoy was discovered lined up bumper-to-bumper before a bombed-out bridge at Pyongtaek. All available aircraft were rushed to the target, and the toll came to 117 trucks, 38 tanks, and 7 half-tracks. On 12 July, the 19th Bombardment Group hit targets up to 50 miles behind the enemy lines, and the next day, on the first combat mission flown by the new FEAF Bomber Command (the combined 22d, 92d, and 19th Bombardment Groups), the marshaling yards and oil refinery at Wonsan were hit. But the relentless advance of the North Koreans along the whole front from coast to coast led MacArthur to insist upon continuing the primary air effort to the main battle line until the threat to the front-line troops had been eliminated.

By mid-July, F-51 Mustangs, operating from Taegu and Pohang-dong, were providing much-needed close support for the hard-pressed UN ground forces. The Mustangs were able to deliver napalm on troop concentrations and on tanks. It soon became obvious that napalm demoralized the enemy more than any other weapon in the UN arsenal. The constant harassment from the air was slowing down the North Korean drive in three ways: it was decimating troops, supplies, and tanks at the battle line; it was impeding communications behind the battle line; and it was forcing the enemy to move only at night or else to use back roads and trails. General Dean pointed out shortly before his capture that the Air Force had blunted the initial North Korean thrust to the south.

By early August, the North Koreans were becoming aware that time was not on their side. The steady flow of troops and materiel pouring into the Pusan perimeter and the fact that the ROK forces were getting better equipment and trained replacements augured ill for the North Koreans in the long haul. Between 24 July and 2 August, the following American units arrived in Korea: the 29th Infantry Regiment from Okinawa, the 5th RCT from Hawaii, the 2nd Infantry Division (two regiments) from Tacoma, and the 1st Provisional Marine Brigade from San Diego. During the first weeks of August, tanks began arriving, and, by the end of August, there were 500 M-26 Pershings and M-4 Shermans in the perimeter opposing the 100 T-34s still available to the North Koreans.[35]

By August, the North Koreans began to suffer from another disadvantage—the ending of their tactics that were so successful during July. Their standard pattern of a frontal attack, to fix the UN unit and then execute a double envelopment on the flanks, could not be used against the Pusan perimeter, since the Eighth Army and the ROK army now manned a continuous defense line around the perimeter. The North Koreans had no alternative to a direct frontal attack and the hope that any breakthroughs could be speedily exploited. But General Walker was able to use his interior lines of communications to get reinforcements to any point where a breakthrough threatened or had occurred.

In early August, the North Koreans launched an attack across the Naktong, near Yongsan, in an attempt to take Miryang, a vital point on the Taegu-Pusan communications route, thus initiating what came to be called the First Battle of the Naktong. If they could take Miryang, the perimeter would be split in half. The 24th Division, which was holding the Naktong in the attacked area, was in such serious trouble by mid-August that Walker called off a promising Marine offensive along the southern shore and sent the 1st Provisional Marine Brigade into the Naktong bulge to support the 24th Division. In a fierce four-day fight, the enemy was thrown back across the Naktong. During the same period, five North Korean divisions were driving toward Taegu and, by 18 August, were within 15 miles of the town. This front was not stabilized until 25 August. The North Koreans drove the ROK 3rd Division out of Yongdok on 5 August and reached Pohang-dong a week later, but they were driven out of the city by 20 August. The perimeter had contracted, but it had held and a lull in the fighting ensued.

On 31 August, the North Koreans launched a series of coordinated attacks all around the perimeter. One attack reached within 10 miles of

Masan, on the southern coast. The Naktong bulge was hit again, and, this time, the enemy got to Yongsan. At the northeast edge of the perimeter, the North Koreans pushed down to Tabu-dong, only eight miles from Taegu; on the east coast, Pohang-dong fell to the enemy again on 6 September. General Walker, dashing from one danger point to another, was able to shift his forces about, and, by 12 September, the crisis was over. The Eighth Army then went on the offensive. The North Koreans had gone for broke and they had lost.

Although outnumbered and defending a long perimeter, some divisions holding frontages of over 20 miles, General Walker had some advantages during August and early September, advantages resulting largely from American air power. The enemy armored forces had been greatly weakened by air strikes. The North Koreans had to move during darkness or suffer destructive air attacks, and they were in danger of air attacks whenever they massed for an assault. But the Eighth Army and the ROK forces could move freely within the perimeter during the day. As General Walker stated: ". . . if it had not been for the air support that we received from the Fifth Air Force we would not have been able to stay in Korea."[36]

During the battle for the Pusan perimeter, General Walker and General Partridge worked closely together. A tactical air control center (TACC) was set up adjacent to the JOC in Taegu, and, when the fighter aircraft, flying from Itazuke and Ashiya, reached Korea, they reported to TACC at Taegu, which assigned specific missions. Then the planes got in touch with the TACPs at divisional or regimental level to receive their target assignments. There was usually a TACP with each American regimental or divisional headquarters and one at each ROK divisional or corps headquarters. The Fifth Air Force provided combat pilots for three weeks temporary duty as forward air controllers. Because the Eighth Army lacked an effective tactical air-request network, the regimental commander learned to have his TACP pass the mission request to the Mosquito overhead and the Mosquito relayed it to TACC, a system that led the ground commander to take a proprietary interest in the Mosquito in his neighborhood, even to the point of claiming it as his own.[37]

When the 1st Provisional Marine Brigade arrived in Korea on 2 August, it brought its own Marine Air Group (MAG-33) with it. MAG-33 consisted of three squadrons of F4U-5 Corsairs, two day fighters and one night fighter. The day-fighter Corsairs began operating on 3 August from two baby flattops, the USS *Sicily* and the USS *Badoeng Strait.* Since the baby carriers were operating just off the southern coast of Korea, the Corsairs had plenty of time over target. MAG-33 was under the overall control of the Fifth Air Force, and, when the Marine planes were not flying close support for the Marine brigade, they operated through TACC and were assigned TACPs from which they received specific targets. When flying close support for the brigade, the Corsairs reported in to the Marine battalion TACPs and were given targets. Since the Marines had no organic heavy artillery, their aircraft acted in lieu of it.[38]

In the meanwhile, the Navy was unhappy. Vice Adm Arthur D. Struble's Task Force 77, with its fast carriers, *Valley Forge* and the USS *Philippine Sea,* operated alternately in the Yellow Sea and in the Japan Sea, returning periodically to Sasebo to replenish. But the admiral was not too enthusiastic over his assignment to provide close support for the ground forces defending the Pusan perimeter. He claimed that the tactical handling of his aircraft over the lines was inefficient. The airborne controllers just could not handle the large number of naval aircraft coming into their areas. Furthermore, Fifth Air Force F-80s, operating from bases in Japan, had little time left to loiter over the target area and had to be handled immediately, thus often leaving the naval aviators to seek out their own targets of opportunity.[39] Adm Edward C. Ewen, Commander Carrier Division 1, complained on 9 August that, because of the absence of reliable communications between the carriers and JOC and the oversaturation of aircraft at the objective, less than 30 percent of the fleet's potential was being used in close support.[40] Admiral Struble wanted to get away from the perimeter and devote most of Task Force 77's efforts to interdiction north of the 38th Parallel. But the resumption brought urgent demands for the use of the carrier aircraft in close support, and the same old troubles with inadequate control again plagued the naval efforts. Admiral Ewen, who was now in command of Task Force 77, sputtered just as loudly as had his predecessor when his planes could not locate a controller or else found one so overloaded that he could not handle the naval pilots trying to check in for targets.

Admiral Struble's desire to use his fast carrier task force to interdict North Korean logistics north of the 38th Parallel was understandable, as General Stratemeyer also wanted to use much more medium- and light-bomber strength in just such a campaign. In the first interdiction campaign, which was begun on 2 August, Bomber Command was responsible for targets in North Korea, and the Fifth Air Force was to destroy key transportation targets between the 37th and 38th parallels. Struble's fast carrier force was to use its aircraft on targets assigned by FEAF. However, the tactical interdiction targets provided by FEAF to the Fifth Air Force and to the Seventh Fleet turned out to be quite useless in altogether too many cases. The fleet air officers then insisted that they were capable of picking out better targets themselves.

In spite of interservice squabbling, the Bomber Command's B-29s proceeded to smash away at key transportation targets. On 4 August, they knocked out Seoul's marshaling yards; on 7-8 August, they did the same for the marshaling yards at Pyongyang; and, two days later, they took out those at Wonsan. These attacks, to quote Futrell, ". . . cleaned up the fat accumulations of supplies at North Korea's main transportation centers. . . ."[41] Bomber Command then concentrated on knocking out key bridges. By 20 August, the B-29s were running out of bridge targets. In early September, when the results of the first interdiction campaign were toted up, O'Donnell reported that his bombers had destroyed 37 and badly damaged 7 of the 44 bridges listed for destruction.

The Fifth Air Force had more difficulty in carrying out its job of trying to stop enemy movements south of the 38th Parallel. Partridge sought to keep a third of his aircraft busy at interdiction, but the Eighth Army's urgent need for close air support had the highest priority. Fifth Air Force light bombers and fighter-bombers hit rail lines, bridges, and convoys, but the North Koreans showed great skill and tenacity in keeping streams bridged, in concealing locomotives and cars during the day, and in portering supplies across irreparable breaches in their transportation system.

Constant armed reconnaissance by F-80s and Mustangs kept the enemy immobile during the day, thus slowing his rate of advance considerably. But he was still able to move men and materiel by night. At the outset of the Korean conflict, the US Air Force had no night-intruder capability. In early August, the newly arrived Marine air group had one night-fighter squadron of 12 F4U Corsairs, which were sent to Itazuke and assigned to the Fifth Air Force; the Marine night-fighters were soon flying 8 to 10 sorties a night. When Stratemeyer learned that the North Koreans were moving lighted convoys at night, he instructed Partridge to escalate his activities to 50 sorties a night. By using some of the 3d Bombardment Group's B-26s, he was able to average 35 sorties a night during August, and, as a consequence, fewer and fewer lighted convoys were sighted as the month wore on. North Korean convoys were forced to feel their way through the dark.

By the end of the second week in September, "the question of who was encircling whom had become meaningful," according to James Field.[42] He goes on to describe the situation as follows:

> In Korea there had developed the extraordinary spectacle of two contending armies, each nearly surrounded by hostile forces and each nourished from afar. For while the enemy controlled by far the greater part of the Korean peninsula, the sea around him and the air above remained the uncontested domains of the U.N. While he pressed against the Pusan perimeter, his own flanks and communications were under continuous attack.

Control of the air and sea by the UN forces proved decisive when, in the last two weeks in September, the combination of the amphibious landing at Inchon and the Eighth Army breakout from the Pusan perimeter destroyed the NKPA as a fighting force.

General MacArthur was determined to effect an amphibious assault in the rear of the enemy almost from the beginning of the hostilities. On 4 July, at a conference in Tokyo, he chose Inchon as the place for the landing, selected the 1st Cavalry Division as the main striking force, and set 22 July as "D-day." The code name of the operation was BLUEHEARTS. But the 1st Cavalry was soon committed to the defense of the peninsula because of the effectiveness of the North Korean onslaught. BLUEHEARTS was cancelled. However, MacArthur was still intent upon landing at Inchon and soon had a staff working on Operation CHROMITE to be carried out by a newly created X Corps commanded by his Chief of Staff, Maj Gen E. M. Almond. X Corps consisted of the 1st Marine Division, the US 7th Infantry Division, and a regiment of Korean Marines. Joint Task Force 7, some 230 ships, including 3 fast carriers and a number of escort carriers, was the armada created to provide the Navy's part in Operation CHROMITE. Throughout the landing operation, air cover was to be provided by carrier aviation, and, when the troops began to move toward Seoul, X Corps would depend upon the 1st Marine Air Wing and MAG-33, which were to set up operations at Kimpo Airfield as soon as the Marines had taken it.

Inchon was hardly an ideal place to effect an amphibious landing. One of the officers engaged in the planning stated: "We drew up a list of every natural and geographic handicap — and Inchon had 'em all."[43] Among other drawbacks, the tidal range at Inchon was 32 feet, one of the highest in the world. To get landing craft ashore, it was necessary to take advantage of the highest tides, and 15 September was the first available date. Otherwise, it would be necessary to wait until 11 October. In MacArthur's opinion, the advantages of overcoming the hazards involved were Inchon's proximity to Seoul, the heart of Korea's transportation network, and the fact that the North Koreans would not expect anyone to attempt a landing in such a difficult place. He remained adamant and, in spite of many initial objections, sold his idea through sheer personal magnetism. As Admiral Doyle said, "If MacArthur had gone on the stage, you would never have heard of John Barrymore."[44]

FEAF's role in the Inchon operation was a peripheral one. Bomber Command hammered away at all rail lines, marshaling yards, and bridges of the transportation network connecting with Seoul and, between 9 and 13 September, interdicted rail transport in and out of Seoul. The Fifth Air Force swept

all airfields from which any Communist aircraft might conceivably operate in defense of Seoul. Otherwise, FEAF was ordered to leave air operations to the Navy's carrier planes and to the 1st Marine Air Wing.

The operation went as planned, and, by 18 September, the Marines had Kimpo secured. On the next day, Corsairs were landing there. Each of the nine battalions of the 1st Marine Division had its own air controller, and the Fifth Air Force had provided the 7th Infantry Division with an equal number. Once ensconced at Kimpo, the Marine tactical air-direction center controlled air strikes and close support. FEAF, however, was called upon to provide air transport to the battle zone. Maj Gen W. H. Tunner, who had commanded the India-China "hump" operations and the Berlin Airlift, had organized the FEAF Combat Cargo Command (Provisional) on 10 September, a command that was designed to handle both air transport operations and air assault missions. His transports turned to and had the first C-54 at Kimpo on 19 September. On the next day, the Combat Cargo Command began an around-the-clock airlift into Kimpo and immediately bettered the planned figure of 226 tons a day.[45]

General MacArthur visualized the Inchon operation as one half of a "hammer and anvil" combination that would pulverize the enemy; the other half was the Eighth Army, some 180 to 200 miles south of Inchon. The Eighth Army was to launch a massive counteroffensive the day after the Inchon landing in order to pin down the North Koreans and prevent reinforcements to the Seoul area. If possible, Walker was to break out of the perimeter and drive north along the Kumchon-Taejon-Suwon axis to effect a juncture with X Corps in the Seoul area. The breakout, therefore, was to be across the Naktong near Waegwan. Eighth Army intelligence estimated North Korean strength on the perimeter at approximately 100,000, an overestimate of probably 30,000 men. Furthermore, it later found that the NKPA's morale was sinking rapidly because of the lack of food and ammunition, plus heavy losses in veterans. The Eighth Army and the ROK army together had some 150,000 troops within the perimeter and weapon firepower superiority of approximately six to one over the NKPA.[46] Moreover, in addition to superiority in manpower and firepower, Walker's forces were able to rely upon FEAF's monopoly in air power, an extremely valuable advantage as was demonstrated in the last two weeks in September.

On 16 September, Walker got a bad break in the weather, and a planned massive attack of B-29s in the Waegwan area, designed to saturate the North Korean defenses, had to be diverted to Pyongyang and Wonsan. The new I Corps, composed of the 1st Cavalry and the 24th Infantry Divisions, plus the British 27th Brigade and the ROK 1st Division, never really got going on the 16th. On 17 September, Fifth Air Force planes napalmed Tabu-dong, which helped. It was not until 18 September, however, that 42 B-29s were able to lay on a highly effective carpet bombing near Waegwan, while the Fifth Air Force flew 286 close-support sorties. It flew 361 close-support missions the next day, and Mustangs napalmed and strafed enemy positions within 50 yards of the UN's front lines. The ground forces, ably supported by air, broke through the Communist lines and proceeded to exploit the breakthrough with armored columns. Enemy resistance began to collapse with startling rapidity as the UN armored columns, covered on their front and flanks by Fifth Air Force Mustangs and Shooting Stars, plunged forward. FEAF's medium and light bombers were now used around the clock to prevent enemy movements in the direction of Seoul. At night, B-29s dropped flares and thus enabled the B-26s to bomb and strafe the fleeing North Koreans.

As Walker's forces drove up the route to the capital, X Corps was busy driving toward Seoul from Inchon. Seoul fell on 26 September, and, on that same date, 82 days after Task Force Smith fought the first American battle with the North Koreans at the same place, a 1st Cavalry battalion met up with part of the 7th Infantry Division at Osan. On 29 September, General MacArthur and President Rhee reviewed a victory parade in Seoul. The NKPA was dead as a meaningful combat organization by the end of September.

An evaluation of UN air power in the first three months of the Korean conflict is a ticklish business, but, within rough parameters, it can be summed up as very effective. Initially, until the end of July, air power was the only real asset that the UN forces had to slow down the North Korean drive to the south and thus enable MacArthur to hold on until reinforcements arrived on the peninsula. The rapid achievement of control of the air forced the North Koreans to move by night, slowed up the flow of supplies and reinforcements, took a heavy toll of enemy armor, and, thereby, enabled the UN forces to establish a defensible perimeter around the key port of Pusan. How many of the 58,000 casualties the North Koreans suffered on the way south to the Naktong were attributable to air attacks is impossible to ascertain, but the shortages in food, munitions, and replacements that weakened the NKPA's effectiveness around the Pusan perimeter were certainly due to UN air power.

During the defense of the Pusan perimeter throughout August and in the first two weeks of September, air strikes, close air support, and the interdiction of North Korean supply routes played an extremely important, perhaps a decisive, role in the outcome. By early August, FEAF had greatly

augmented its inventory of bombers and fighter-bombers; the 1st Provisional Marine Brigade had its own air support, MAG-33; and Task Force 77 was providing close air support and engaging in interdiction. North Korean assaults, especially across rivers, were vulnerable to air attacks, while enemy tanks and trucks found their main nemesis in the UN fighter-bomber. Napalm, delivered by the Fifth Air Force's Mustangs, was deadly against both troops and tanks.

In the last two weeks of September, UN air power came into its own. Massive bombing and strafing enabled the I Corps to break out of the perimeter at Waegwan and to plunge up the route to Seoul. UN tanks, in close coordination with fighter-bombers, quickly knocked out the remainder of the North Korean armor. Simultaneously, Marine and Navy pilots were making life miserable for the North Korean defenders of Inchon, Yongdungpo, and Seoul.

It may well be, however, that the psychological impact of UN air attacks was even greater than physical destruction in lowering North Korean morale to disastrous levels. An analysis of 825 prisoner-of-war interrogation reports that contained comments on the morale of the NKPA revealed that the causes of low morale attributable to air power were the shortage of food (21.4 percent of the answers), fear of tactical aircraft (17.9 percent), and the lack of arms and equipment (11.3 percent). Thus, almost 50 percent of reasons given for poor morale can be traced either to the interdiction of supplies or to the dread of air attacks, and the more important was the choking off of supplies.[47] The UN air forces destroyed over 600 trucks, and truck drivers deserted in ever increasing numbers as the danger of air attacks increased. Rail lines were kept open to some degree by hard work and North Korean ingenuity, but rail capabilities declined continuously as UN air attacks grew more frequent throughout July and August. The NKPA had to depend more and more on animal-drawn vehicles and the human back to get supplies to the front.

One of the great assets of the NKPA during the first month of the war was its armor. The 24th Infantry Division's efforts to slow the North Korean advance during July were constantly frustrated by the enemy's monopoly in tanks and the American lack of tank-destroying weapons. As the Fifth Air Force grew in power, the enemy was forced to get his tanks off the roads during daylight hours; thus, his ace weapon was more and more stymied. One figure for the North Korean tank losses during the first three months of the war is 595, and 452 of those, or 75 percent, were destroyed by aircraft.[48]

Phase II: A Brand New War

The destruction of the NKPA in the last two weeks of September and the retreat of the remnants of the North Korean armed forces over the 38th parallel presented the United Nations, Washington, and General MacArthur with a problem: should the UN forces cross the parallel and complete the destruction of the NKPA in order to unify Korea? As early as 27 September, the Joint Chiefs of Staff had authorized General MacArthur to conduct military operations in North Korea in order to destroy the remnants of the North Korean army, provided that there was no threat of Chinese or Soviet intervention. On 7 October, the UN General Assembly approved operations north of the parallel. Therefore, on 9 October, the Eighth Army began to cross the 38th parallel, and the march to the Yalu River was under way.

In the light of what befell the UN forces on their way to the Yalu, it seems pertinent to describe the strategy and the disposition of the UN forces in this ill-fated attempt to unify Korea. General Walker's Eighth Army was to move on Pyongyang and then proceed north roughly parallel to the west coast of Korea. His right flank was covered by the ROK II Corps. In the meanwhile, MacArthur instructed X Corps, under General Almond, to proceed by sea from Inchon and Pusan to Wonsan on the east coast. It was hoped that this amphibious operation would cut off the retreating North Koreans. Then, from Wonsan, X Corps could cross the peninsula and aid in the seizure of Pyongyang. Both Walker and Almond were to operate independently, reporting to MacArthur in Tokyo. The rationale behind the amphibious operation by X Corps is difficult to understand. It is only 150 miles from Seoul to Wonsan by land as compared to 800 miles by sea. In addition, the 7th Infantry Division had to go by road to Pusan to outload for Wonsan. The whole affair turned out to be a fiasco anyhow, since the ROK I Corps took Wonsan on 10 October and X Corps did not arrive by sea until 19 October, and then only to find the harbor mined. The 1st Marine Division did not complete its debarkation at Wonsan until 31 October, and the 7th Division was landed at Iwon, some 90 miles northeast of Wonsan on 29 October. During all this sailing about, the Eighth Army took Pyongyang on 19 October.

General MacArthur's justification for splitting his forces into two independent commands was based on the geography of North Korea. Above the Seoul-Wonsan corridor, the northern Taebaek Range becomes very rugged all the way to the Manchurian border. The main routes lie on a north-south axis, with only one decent east-west road connecting Wonsan and Pyongyang. Therefore, communications across the peninsula are difficult to impossible, and General MacArthur was convinced that two separate forces coordinated from Japan would be the best solution from both a command and a logistical point

of view. The only danger that threatened such a deployment of forces was a massive Chinese intervention, and MacArthur was confident that such a threat was nonexistent.

On 15 September, General MacArthur and President Truman met on Wake Island. At the meeting, the General assured the President that victory had already been attained in Korea and that all formal resistance would be ended by Thanksgiving. When asked by the President whether there was any chance of Chinese or Soviet intervention, the General said "Very little." If they had intervened the first or second month of the war, it would have been decisive, but not now. According to MacArthur, the Chinese had 300,000 men in Manchuria, with 100,000 to 125,000 along the Yalu. They could only get 50,000 to 60,000 across the river, and, since they had no air force and since the US Air Force now had bases in Korea, there would be the greatest slaughter if they tried to get to Pyongyang.[49]

Unfortunately, at the very time that the General was exuding such confidence in his ability to inflict "the greatest slaughter," the Chinese Communist forces were crossing the Yalu into Korea in considerable numbers. Why and when Peking decided to enter the war and how the Chinese troops were able to get over the Yalu into Korea in such large numbers are still questions involving some guesswork.

Peking had been building up its military forces in Manchuria throughout the early months of the Korean conflict. Between mid-May and early July, more than 60,000 troops, elements of Lin Piao's 4th Field Army, were transferred from South China and Hainan to Manchuria, giving Lin a total of approximately 180,000 men in that area.[50] In late June and early July, undoubtedly as a result of the interposition of the Seventh Fleet in the Taiwan Straits, 30,000 of Ch'en Yi's 3rd Field Army, joined by an equal number of Lin's 4th Field Army men from the south, proceeded to Shantung, and were, therefore, in a position to be used either in Korea or against Taiwan if the United States should withdraw from the Straits.[51] In September-October, another 120,000 troops were moved into Manchuria so that by mid-October there were at least 7 armies (21 divisions) in that area.[52]

In the meanwhile, the Chinese were making increasingly ominous threats, that, if the US forces were to cross the 38th parallel, they would take action in support of the North Korean regime. On 30 September 1950, in a speech to the central People's Government Council, Chou En-lai stated that the Chinese people "absolutely will not tolerate foreign aggression, nor will they supinely tolerate seeing their neighbors being savagely invaded by the imperialists."[53] On 2 October, Chou En-lai summoned K. M. Panikkar, the Indian Ambassador to Peking, to a conference at the Ministry of Foreign Affairs and informed him that, should American troops enter North Korea, China would enter the war.[54] The Indians informed the United States of Chou's statement. The United States discounted all these threats from Peking as so much blustering in chagrin over the disaster then engulfing the fraternal armies of Kim Il-sung.

MacArthur, confident of an early victory, was busy planning the strategy for the final push to the Yalu. The Eighth Army, under General Walker, was located along the Ch'ongch'on River by 24 October. From there, it would push up through east and central North Korea to the Yalu, while the X Corps, under General Almond, would mop up the western part of Korea below the Yalu. Unfortunately, the two forces were not only separated by a 50-mile gap, but they were not even under a unified command, as Almond served directly under MacArthur's GHQ and not under Walker's command. Furthermore, half of Walker's Eighth Army was composed of South Korean soldiers, and his right flank, abutting the gap in the center, was protected only by the ROK II Corps.[55] By the time the big offensive was set to go, the Communist Chinese Forces (CCF) were in a position to wreck MacArthur's strategy. Between 14 and 20 October, four CCF armies crossed the Yalu: the 39th and 40th over the bridge between Antung and Sinuiju and the 38th and 42nd from Chi-an to Manp'ojin. These were crack troops from Lin Piao's 4th Field Army and were redesignated the XIII Army Group in Korea.[56] On 25 October, a ROK battalion reached the Yalu, but it was destroyed by the CCF and the Chinese intervention was revealed. Some vicious fighting went on for the next few days, both against the ROK troops in the Eighth Army and some Marine contingents in X Corps to the west. But the UN Command, unaware of the size of the Chinese intervention forces, went ahead with its plan to finish off the drive to the Yalu by Christmas. During the first half of November, five more CCF armies crossed into Korea: the 50th and 66th joined the XIII Army Group facing the Eighth Army, and the 20th, 26th, and 27th, each with four divisions, were combined into the IX Army Group, which was opposite and around the X Corps. Altogether, the CCF now had 300,000 men in Korea poised to hit the UN forces.[57]

Between the first attack in the last days of October and the all-out explosion on 25 November, the Chinese forces remained hidden in the mountainous areas to the north of the UN forces. This pause has been explained in many ways, all of which probably have some truth in them. First, the Chinese needed more time to build up their forces and deploy them for maximum surprise; second, Peking may have been holding off to see just what the reaction of the United States would be to the first attacks; and, third, in the period of the pause, the UN forces continued

to overextend themselves, thus becoming more and more vulnerable to the coming attack.

Each of the CCF armies consisted of either three or four divisions, which, in turn, were triangular in organization, having three regiments plus an artillery battalion. The nominal strength of a CCF division was 10,000 men.[58] The army group was the largest unit encountered in the Korean War, composed of from two to six armies; thus, the CCF army was the equivalent of an American corps, and the Chinese army group was similar to a US army. The Chinese army groups were controlled by Field Army GHQ, which, in turn, reported directly to the Commander-in-Chief of the Peoples Liberation Army (PLA), Chu Tech. During the early days of the Korean intervention, the headquarters was located in Mukden under the direction of P'eng Teh-huai. It could, and did, override Kim Il-sung and his Soviet advisers. During the whole intervention, the Chinese maintained the fiction that their troops in Korea were all "volunteers," the Chinese People's Volunteers (CPV), but, in this account, the term Chinese Communist Forces is used because it is the fairly standard designation used by most Western historians.

One of the puzzling questions is how the Chinese managed to move some 300,000 troops over the Yalu and deploy them along the entire UN front under the handicap of complete UN control of the air. For one thing, the indigenous intelligence network in Korea was demolished during the precipitous retreat to the south after 25 June, and it was still only partially rebuilt by October-November 1950; second, the CCF troops, without heavy equipment, found it relatively easy to move at night and keep under cover during the daylight hours when they might have been detected by air surveillance; and, third, the UN forces were too weak to send out patrols in the depth necessary to uncover the well-concealed Chinese.[59]

On the morning of 25 November, the advance intended to end the war in Korea by Christmas began. Baker Company of the 9th Infantry Regiment of the 2nd Division set out to take Hill 219 in a routine manner and ran into an entrenched CCF unit. The Battle of the Ch'ongch'on River was on, and, during the next few weeks, the whole strategic situation in Korea would again be reversed.[60] Although the US 2nd, 24th, 25th, and 1st Cavalry Divisions, together with the British Commonwealth Brigade and the Turkish Brigade, put up a stubborn resistance to the Chinese attacks, the ROK II Corps on the right flank disintegrated under an overwhelming Chinese attack. The Eighth Army had no alternative except a rapid retreat to the narrow waist of the peninsula. But this was an extremely difficult job since the Chinese, striking through the gap between the Eighth Army and the X Corps and through the hole left by the destroyed ROK II Corps, were able to cut across the UN line of retreat and bottle up units in the passes which they had to go through. Even the defense of Pyongyang was impossible and it was abandoned on 5 December, the first and last Communist capital to be held by the West.[61]

While the Eighth Army was executing its "bug out" from North Korea, Almond's X Corps was trying desperately to avoid being trapped and annihilated by the CCF IX Army Group in the area of the Chosin Reservoir. Between November and 11 December, the X Corps made a fighting retreat through the Chinese to the sea in the Hamhung-Hungnam area where it was completely evacuated by ship by Christmas Eve—hardly the "home by Christmas" envisaged by MacArthur in late October.[62]

On 23 December, General Walker was killed in a jeep accident and Gen Matthew B. Ridgway assumed command. The retreat continued, and Seoul was evacuated in early January 1951. The Eighth Army had set a new record—its 275-mile retreat from the Ch'ongch'on River was the longest in American military history. Needless to say, the Chinese were in a delirium of ecstasy and proclaimed their determination to push the Anglo-American interventionists into the sea. All now hinged on whether Ridgway could pull his forces together and hold back the Chinese onslaught. By 20 January, Ridgway, who now commanded the X Corps as well as the Eighth Army (made up of I and IX Corps), managed to stabilize a front across the peninsula just below Wonju, some 60 miles south of the 38th Parallel. The CCF New Year offensive had petered out, and a war of attrition was beginning. In the relatively narrow part of the Korean peninsula, about 130 miles in width, the CCF now faced a stabilized front manned by a force capable of delivering devastating firepower. Nothing in the sacrosanct Maoist military doctrine was really applicable to such a situation. In the 300-mile-wide front that existed in November and December, the UN units were widely scattered, dependent upon narrow roads through mountain passes along which they were extremely vulnerable. All in all, it had been a situation dear to the heart of the PLA strategists. Now the lightly armed CCF troops were compelled to assault an enemy that was dug in on a much narrower front and armed with much more powerful weapons than those available to the Chinese at that time. Furthermore, the Chinese found it difficult to mount a sustained offensive because of their extremely inadequate logistics: units had to pull out of the line periodically to replenish such essentials as food.

The big UN advantage in the gruesome days of December and January was air power. During the UN push toward the Yalu in October and November, Bomber Command ran out of lucrative targets; General O'Donnell reduced medium-bomber sorties to 25 per day on 10 October and then to 15 per day

on 22 October. The 22d and 92d Bombardment groups were released to return home on 27 October. Close support was also becoming more and more superfluous as the Eighth Army pushed northwards: there was just not enough enemy opposition to warrant it. The Eighth Army was more interested in air transport than in air support. The roads and railways north of Seoul were so badly damaged that Walker's forces needed air transport to sustain the drive. General Tunner's Combat Cargo Command came through splendidly, and, by late October, it was delivering over 1,000 tons a day to Pyongyang. As ground transportation facilities were improved during early November, some of the airlift could be devoted to the needs of the Fifth Air Force's efforts to deploy its Mustang wings to North Korean fields. Mustangs operating from Sinanju and Pyongyang in the west and Yonpo in the east were able to fly without external fuel tanks, to be over targets earlier, and to stay longer.

When the CCF hit hard in late November, FEAF had a new war on its hands. The hard-pressed UN ground forces were in desperate need of all the air support that they could get. During the last days of November, the Fifth Air Force tried valiantly to blunt the Chinese attack, giving special priority to the support of the 2d Infantry Division that was trying to hold on long enough to enable the other units of the Eighth Army to escape. When the 2d Division itself tried to withdraw along the Kunuri-Sunchon road, it found itself trapped in "The Pass," a defile with high embankments on both sides held by a Chinese division. Relays of fighter-bombers swept in all day in an attempt to extricate the division, and Maj Gen Laurence B. Keiser, the commander, said later that his troops would never have made it without air support. In the east, X Corps was getting air support from the 1st Marine Air Wing and Task Force 77. Two Marine regiments and a regiment of the 7th Infantry Division, trying to get out through the mountains near the Chosin reservoir, were entirely dependent upon air supply for food and ammunition. The C-47s of the 21st Troop Carrier Squadron dropped as much as 10 tons a day. By the end of November, General Almond was asking for 400 tons a day to be air dropped to his cut-off regiments. On 7 December, FEAF Combat Cargo Command even dropped eight spans of a bridge which enabled the Marines to cross a gorge and bring their equipment with them. As Futrell points out, this was "the only airdropped bridge in history. . . ."[63] Altogether, Tunner's C-119s and C-47s, in a period of two weeks, dropped over 1,500 tons of supplies and equipment for the beleaguered Marines. General Almond then called upon Combat Cargo Command to evacuate his forces from Hungnam by air. Between 14 and 17 December, the command airlifted 4,119 people and over 2,000 tons of cargo out of Hungnam.

As the Eighth Army and X Corps broke contact with the enemy in order to withdraw to new defensive lines, the air forces went to work on the CCF. During December, FEAF aircraft flew 7,654 sorties. Bomber Command went after transportation routes, marshaling yards, and supply centers, while the Navy concentrated on east coast targets from Wonsan to the Siberian border. In their eagerness to exploit their initial successes, the CCF moved over the main and secondary roads during daylight, and their truck convoys used their lights at night. This boldness was made to order for the Fifth Air Force fighters and light bombers. General Stratemeyer estimated that his airmen inflicted 33,000 casualties by 16 December. The Chinese were forced to desist from daylight movements by mid-December, and the FEAF estimate of only 6,694 enemy casualties in the second half of December showed that the enemy was becoming more difficult to find. He was now moving by night and expending greater effort on camouflage.[64] Even so, the air attacks cost the Chinese the equivalent of four to five divisions during December.

The Chinese "third phase" offensive, which began on 1 January 1951, was aimed at fixing the Eighth Army in Seoul and then annihilating it. Unfortunately for the Chinese, the first five days of January were clear, and the Fifth Air Force flew almost 2,600 sorties. The estimate was 8,000 enemy casualties in those five days. B-26s were busy at night, especially when C-47s began to use flares effectively. For the next five days, both the Fifth Air Force and Task Force 77's planes had to stand down because of weather but returned to action on 11 January. By the time the "third phase" offensive ran down in late January, the estimate was 38,000 enemy casualties, 18,820 of them credited to the airmen.

A new problem, however, had arisen in the air war—the Chinese People's Air Force. As early as 1 November, a Mosquito pilot sighted a Soviet-built Mig-15 with Chicom markings. The advent of Mig-15s in Korea meant that every American plane in the Far East was now obsolete. The big question was how many Migs did the Chinese have and how effectively would they use them?

The Chinese People's Air Force was a Johnny-come-lately, dating back to around 1948, two decades after the birth of the Red Army at Nanchang in August 1927. During the Chinese civil war, a few Nationalist pilots defected to the Chinese Communists, aircraft and all, and these men and machines formed the nucleus of what became the Chinese People's Air Force. Lin Piao's men secured a few Japanese aircraft in Manchuria in 1945-1946 while the complaisant Soviet occupiers looked on,

and the Soviets also trained a few Chinese pilots in the Soviet Union to fly them. In the spring of 1948, the first aviation training school was established in Manchuria. In 1949, Liu Ya-lou, then chief of staff of Lin Piao's Fourth Army, was made head of the new Chinese People's Air Force, which had a total strength of approximately 100 decrepit aircraft. This was indeed a modest beginning—a nonflying commander-in-chief and a mixed bag of antique planes.[65]

In 1950, the Soviets began to equip the new Chinese Air Force with Soviet-built aircraft and to train Chinese pilots in the USSR. The deterioration of the situation in Korea left the Soviets with the unpalatable options of either building up the Chinese air capabilities or supplying air cover in Korea themselves. They chose the first alternative. In late 1950, an all-weather airfield and a radar warning network at Antung, plus a steadily increasing flow of Mig-15s to the Chinese, posed a serious threat to (UN) air superiority.

The Mig-15 jet fighter was the product of the Artem I. Mikoyan and Mikhail I. Gurevich design team. Their Mig-9 was one of the first Soviet jet fighters to enter squadron service; it was first flown in April 1946 and attained a speed of 911 kilometers an hour at 4,500 meters.[66] In the same year, the team, aided by German technicians, began work on the Mig-15. The acquisition of 25 Rolls-Royce Nene engines in early 1947 enabled the Soviets to produce their own version, the RD45, with a 5,000-pound thrust. This new engine increased the speed of the Mig-15 to 660 miles per hour. The aircraft began to appear in squadron service in 1949, and, by late 1950, Mig-15s were coming off the assembly lines at the rate of several hundred a month.

There was no American fighter in the Far East that could cope with the Mig-15 when it first appeared over the Yalu in November. Fortunately for the UN forces, the Communists did not try for air superiority in November. If they had driven the US Air Force out of the sky over North Korea, had furnished the Chinese ground forces with close air support, and had been able to attack Tunner's transports, life would have been more complicated for the retreating Eighth Army and X Corps. The reluctance of the Communists to push for control of the air gave the US Air Force a chance to get its newest fighter, the F-86A Sabre, to the Korean front.

The first production Sabre was flown in May 1948; therefore, it was roughly contemporary with the Mig-15. Like the Mig-15, it had a swept-wing design derived from the Luftwaffe, a 5,200-pound thrust engine, and a rugged airframe. However, it had a relatively short range, 490 nautical miles even when equipped with two 120-gallon wing tanks. Thus, when flying from Kimpo Airfield to the Yalu and back, it was not able to spend much time in the patrol area.

On 8 November, the F-86A Sabre-equipped 4th Fighter-Interceptor Wing was ordered to proceed from its base at Wilmington, Delaware, to the Far East. Its planes were loaded aboard ship on 14 November. A little over a month later, on 17 December, 4th Wing pilots took off from Kimpo Airfield and headed for the Yalu. On the same day, Lt Col Bruce Hinton got a Mig-15, the first Mig-15 destroyed in air-to-air combat.[67] In the next two weeks, the 4th Wing pilots had a chance to compare their F-86A Sabres with the Chinese Communist Air Force's Mig-15s. The consensus of the pilots was that the Mig had a better climb rate and smaller turning radius at higher altitudes, but the Sabre did a little better at lower altitudes. However, the Mig's instability at high speeds and its inferior armament made the aircraft "an inferior piece of shooting equipment."[68]

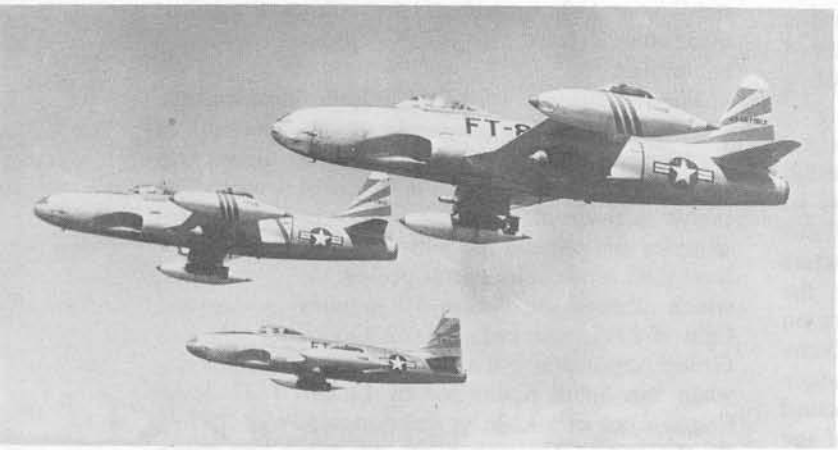
The two fighters were so evenly matched that the 4th Wing pilots quickly realized the necessity of working out effective tactics. The Sabre patrol was standardized at 16 aircraft, 4 flights of 4 each. The flights arrived at 5-minute intervals at different altitudes and entered the patrol area at speeds of at least 0.85 mach. The patrol period was 20 minutes, which allowed the Sabres 10 minutes to stay and fight if Migs attacked. On 22 December, the 4th Group demonstrated the effectiveness of these tactics when two Sabre flights led by Lt Col J. C. Jeyer fought it out with 15 Migs and destroyed 6 of them.[69] By the end of December, the 4th Wing had flown 234 sorties and downed eight Migs, had two probables, and damaged seven others. It had demonstrated its ability to fly combat patrols along the Yalu and to destroy the enemy's best interceptor. UN air superiority had been restored, at least temporarily.

During late January and throughout February, Ridgway made maximum use of his superior firepower in a strategy dubbed by the "GIs" as "the meatgrinder": he was much more interested in the annihilation of the enemy than in any spectacular territorial gains—a strategy that Mao had long advocated and by which he was now being victimized. By this time, the CCF totaled over half a million men, but not even that horde could be fed into "the meatgrinder" indefinitely without morale collapsing entirely.

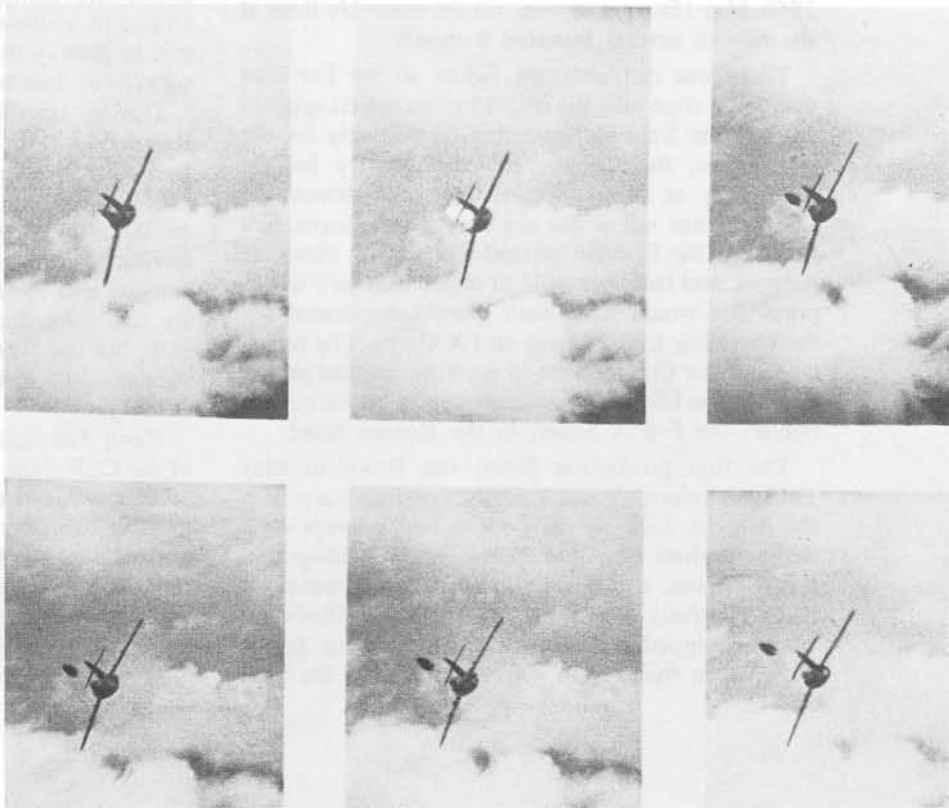
P'eng Teh-huai, now the undisputed commander of the CCF since the retirement of Lin Piao in early 1951, continued to hit the UN front with massive attacks in February and March, but his casualties were horrendous. Furthermore, as each Chinese offensive ran out of steam, Ridgway counterattacked while the Chinese were in their most vulnerable attitude. By April, the UN line had moved up the peninsula well above the 38th Parallel, and Seoul was again

MIG-15 tested by Air Force pilots in 1953. It was found that its performance was below that of the F-86 "Sabre" jet.

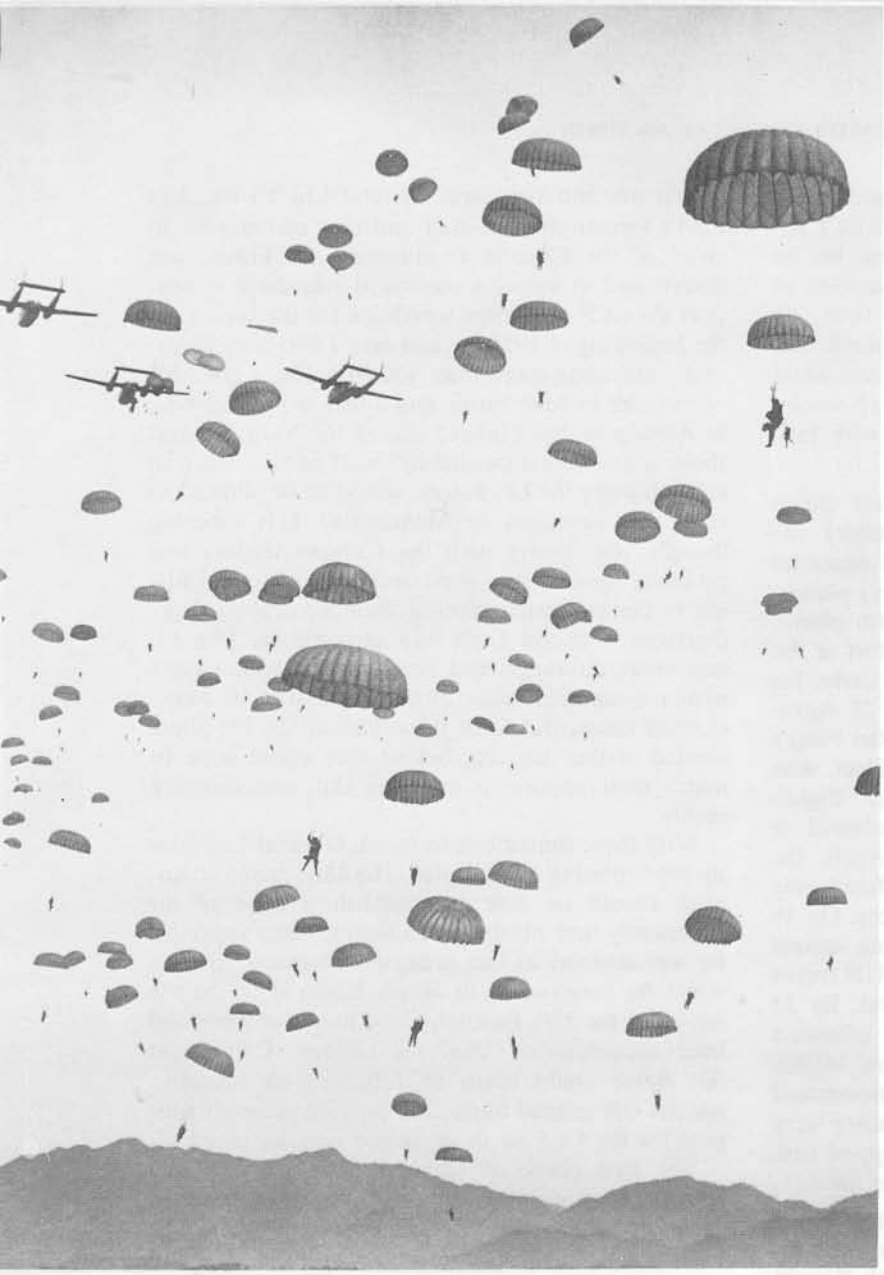
F-86F achieved smashing victories over Communist MIGS in Korean air battles.



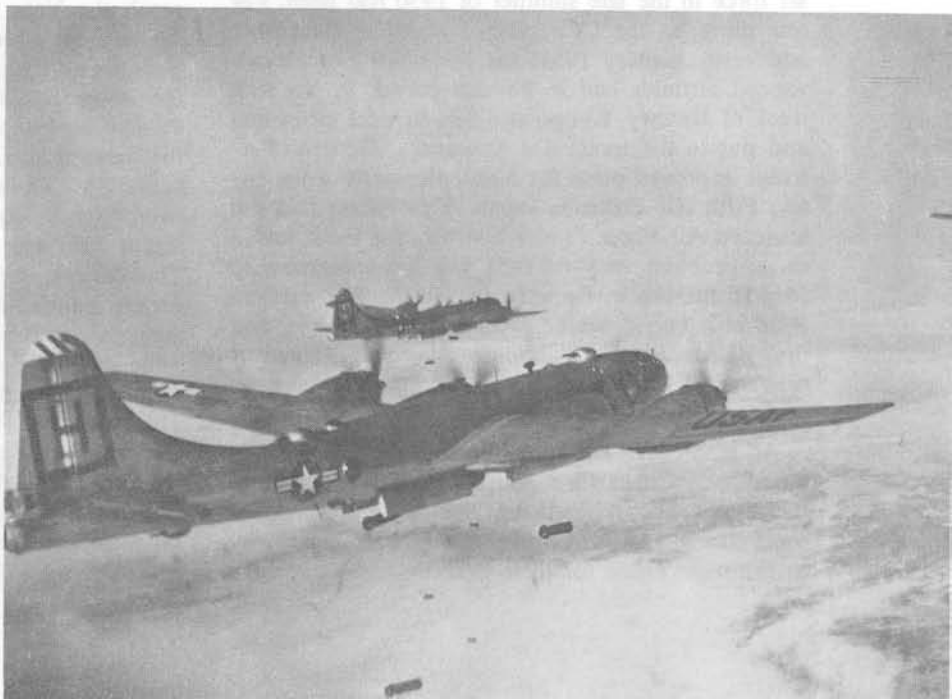
US Air Force F-80's used extensively in Korea.



Sequence taken by gun camera of US Air Force F-86 shows a Communist MIG-15 pilot abandoning his aircraft after it has been hit by the Sabre's gunfire. In the upper left, the MIG has been hit. In the center, the pilot has hit his ejection charge which has gone off. At right, the pilot has just left the aircraft. The bottom panel sequences the separation of the pilot and MIG.



Part of approximately 4,000 battle-seasoned paratroopers dropped from Far East Air Forces transports of the 315th Air Division. The troopers invaded the Munsan-ni territory in March 1951 to block northward escape routes of retreating Communist forces. Equipment and supplies were dropped from US Air Force C-119 and C-46 aircraft until ground supplies were established.



B-29 "Super-fortresses" carried the brunt of the strategic bombing offensive to the Communists.

retaken—the fourth time that it had changed hands in nine months. By mid-April, P'eng had 19 CCF armies in Korea, approximately 600,000 men, but he lacked space to utilize his superiority in numbers in the traditional PLA maneuvers. At this time, 11 April, MacArthur was relieved of his command, and Ridgway replaced him as SCAP. Ridgway had taken over a badly demoralized army, and, in 15 weeks, had transformed it into a fighting force with high morale.

The Chinese, successful in their first phase (November) and second phase (December) offensives, to use their terminology, and unsuccessful in the third (January) and fourth (February) phases, were now set in late April for their fifth phase, "Communism's single greatest military effort of the Korean War."[70] With some 700,000 men under his command, P'eng began his offensive on 22 April, and, for a week, he hit Lt Gen James A. Van Fleet's forces with everything that he had. Van Fleet, who had replaced Ridgway as commander of Eighth Army, gradually withdrew to a new line anchored on Seoul and the Han River, and, by 29 April, the Chinese offensive faded, P'eng having suffered over 70,000 casualties to 7,000 for the UN forces. On 16 May, P'eng renewed his offensive, this time against the east end of the UN line, and again the UN forces were pushed back in a fighting withdrawal. By 23 May, the "Second Step, Fifth Phase" offensive collapsed, this time costing the Chinese 90,000 casualties. P'eng Teh-huai had vividly demonstrated that great masses of poorly equipped infantry were no match for a moderate-sized army equipped with modern weapons and with control of the air.

The battle for control of the air over Korea during the winter and spring of 1951 was a much more arduous task than the destruction of the North Korean air force in the late summer of 1950 had been. For one thing, as the CCF pushed south in December and early January 1951, the Fifth Air Force's advanced airfields had to be abandoned. In the first week of January, Kimpo and Suwon were evacuated and put to the torch. On 5 January, General Partridge approved plans for a redeployment of the entire Fifth Air Force to Japan. This meant that the standard Air Force fighter-bomber, the F-80, had a range problem, and the F-51 was too vulnerable to Mig-15 attacks to fly very far north. The carriers were able to get nearer to targets at this time, and the *Valley Forge, Philippine Sea,* and *Princeton* operated in Korean waters and supplied air support whenever the weather permitted.

As gloomy as the situation appeared to the UN commanders, Lin Piao and, later, P'eng Teh-Huai had their own problem: the lack of air support for their offensives. The Chinese saw UN air superiority as the main cause for their unsuccessful campaigns in January and February. General Liu Ya-lou, Lin Piao's former chief of staff and now commander in chief of the Chinese Communist Air Force, was determined to whip his command into shape to support the CCF offensives scheduled for the spring. At the beginning of 1951, he had over 1,000 combat aircraft, including more than 400 Mig-15s, a complex of airfields in Manchuria, and a forward fighter base at Antung on the Chinese side of the Yalu. Against these assets were some liabilities. If he succeeded in really hurting the UN forces, would he be allowed to retain his sanctuary in Manchuria? This sobering thought was always with the Chinese leaders and probably resulted in a good deal of backing and filling in the implementation of their air strategy. Furthermore, General Liu's best aircraft, the Mig-15, was short on range and could only attack targets within a hundred miles of the Yalu from its Manchurian bases. But most important of all, his pilots needed further training before they could hope to match their opponents in flying skill and shooting ability.

With these limitations in mind, General Liu drew up the following air war plan. His Migs based at Antung should be able to establish a zone of air superiority over northwestern Korea. Once superiority was attained in that area, then forward airfields could be constructed in North Korea down to the region of the 38th Parallel. Once these two steps had been accomplished, then the Chinese Communist Air Force could begin an intensive air offensive against UN ground forces and provide close air support for the CCF in its projected massive attacks.[71]

The first phase of General Liu's plan seemed reasonable enough, since the F-86A Sabres, based in Japan in January, were out of range of the Yalu. The F-80 was not in the same league with the Mig, and even the F-84 Thunderjets, which had the range to reach the Yalu, were slower than the Mig-15s. In January, the Chinese began to repair the airfields at Sinuiju and Pyongyang: Sinuiju could be covered by the Migs based at Antung, but the facilities at Pyongyang had to depend upon antiaircraft artillery for protection. On 23 January, the Fifth Air Force sent 33 Thunderjets against Sinuiju; while two flights strafed the field, the other six flights flew top cover. Some 30 Migs attacked the Thunderjets, and, in the ensuing battle, the Thunderjets claimed four kills, three probables, and four damaged, with no losses for the home team. On the same day, 21 B-29s, accompanied by 46 F-80s to suppress flak, attacked the Pyongyang main airfield. This was the Fifth Air Force's last fling before General Partridge moved his jet wings to Japan and reduced Taegu Airfield to a rearming and refueling stop for F-80s staging through from their bases in Japan. The Chinese were therefore able to go ahead with the rehabilitation of North Korean airfields

from Sinuiju in the northwest to Wonsan on the east coast.

Between late January and early March, the Mig-15s were in control of northwestern Korea, the famed "Mig Alley." When the UN ground forces rolled back the CCF, however, the airfield at Suwon fell into UN hands again, thus enabling the 334th Squadron of the 4th Wing to stage through Suwon by 6 March and to move to the airfield a few days later. At the same time, the 336th Squadron came from Japan to Taegu. Both squadrons of Sabres were again in business along the Yalu. The battle for air superiority over Mig Alley was shaping up during March.

FEAF was anxious at this time to take out the bridges over the Yalu. On 30 March, a force of 36 B-29s bombed a number of bridges and were escorted by F-80s while Sabres flew cover. Although results were good, it was obvious that the F-80s were not an adequate escort—at 25,000 feet, the Mig-15 was 100 miles an hour faster. In two more raids, on 7 and 12 April, the B-29s were escorted by F-84 Thunderjets of the 27th Fighter-Escort Wing; the second of these raids was sheer disaster—three bombers lost and several badly damaged. B-29 attacks in northwest Korea were discontinued for the nonce. About this time, however, the rehabilitation of the airfields in North Korea had progressed to the point that General Liu Ya-lou's plan to provide air support for the ground forces was feasible. Bomber Command's B-29s during the day and Fifth Air Force B-26 night intruders during darkness were directed to neutralize the North Korean airfields. The two squadrons of Sabres had finally gotten together at Suwon by 22 April and were able to keep the Mig-15s from interfering with the bombers as they went about their business of methodically putting the airfields out of commission. As a result, when the Chinese began their ground offensive on 22 April, they were still without air support.

During May, General Liu's Mig warriors showed little energy in Mig Alley, and FEAF continued its reconnaissance of the airfields in North Korea, attacking them as soon as they displayed any potential threat. Liu made another attempt in June to gain control over Mig Alley, putting more aggressive pilots into the air. The new adversaries, called "honcho" pilots by the Americans, could well have been Soviet and Chicom instructors. One reason for the new effort was to get IL-10 ground-attack aircraft into forward positions to support the flagging Chinese efforts on the ground. But the plan, like most of General Liu's schemes, did not work out. The Sabres outfought the Migs, "honchos" notwithstanding, and the lone IL-10 effort, an attack on Sinmi-do by eight aircraft on 20 June, was shot out of the sky by a flight of Mustangs. Suddenly, on 12 July, the Communist air offensive ceased; the attempts to put airfields in North Korea into shape for occupancy by Chicom aircraft came to a halt. The Chinese had tried and failed in their efforts to provide air support for their ground forces. Control of the air over Korea was still in UN hands, an all-important advantage in the war.

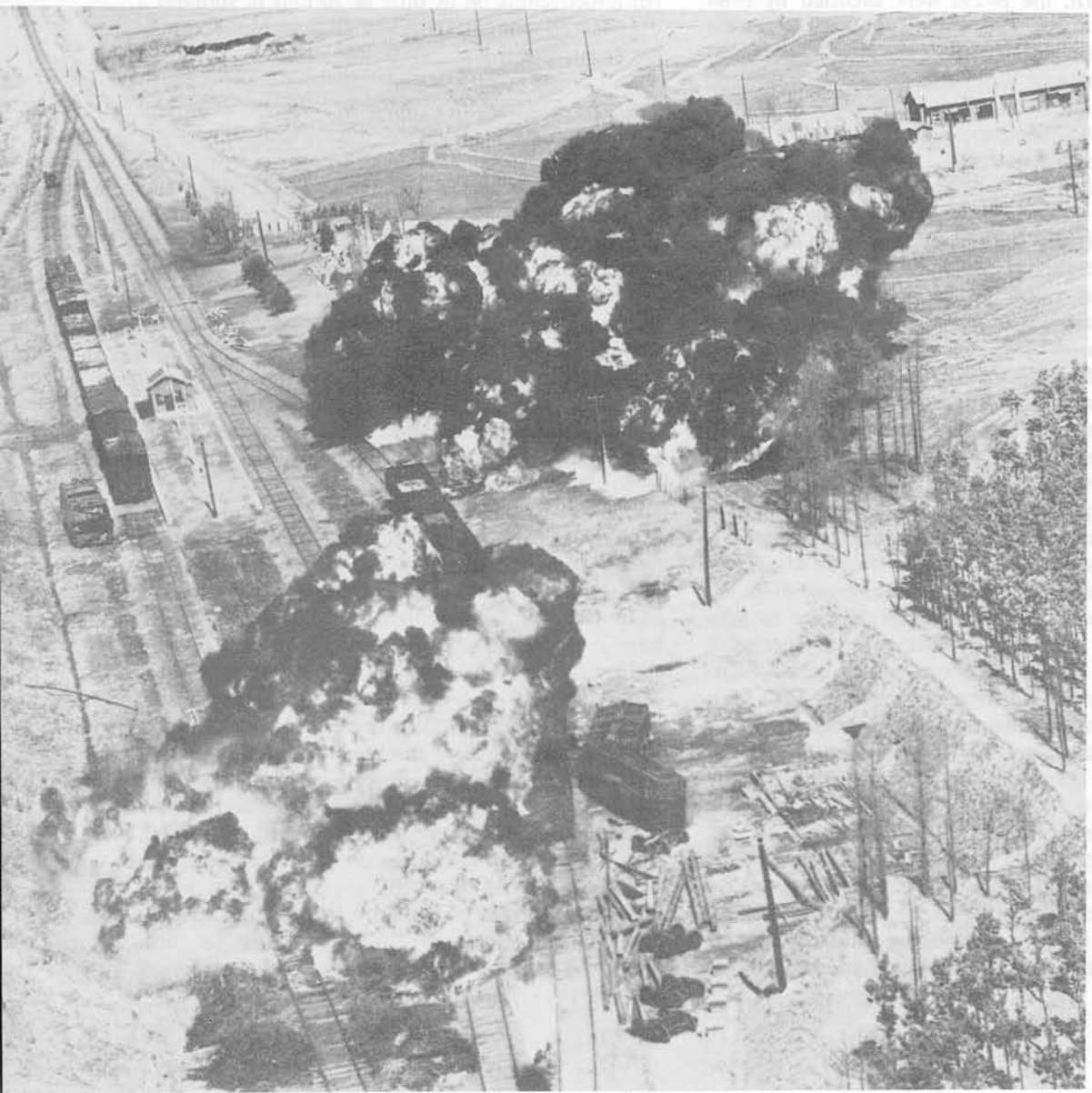
Like the desperate days of July and August 1950, the situation on the ground in the winter and spring of 1951 was again so dangerous that a large percentage of FEAF's medium- and light-bombers were used in close support. However, the air commanders did not see this as the most efficient role for their bombers and fighter-bombers. They were confident that a well-planned interdiction campaign would hurt the enemy most. When the UN forces were near the Yalu in November 1950, UN air power, forbidden to cross into Manchuria, had little chance to interdict the enemy's short logistic lines. But, as the battle moved southward, the Chinese became more and more vulnerable to interdiction. Although it was estimated that a Chinese division could sustain combat effectiveness on as little as 50 tons of supplies a day, that 50 tons had to be hauled from Manchuria to the front, and it was vulnerable to air attack all the way.

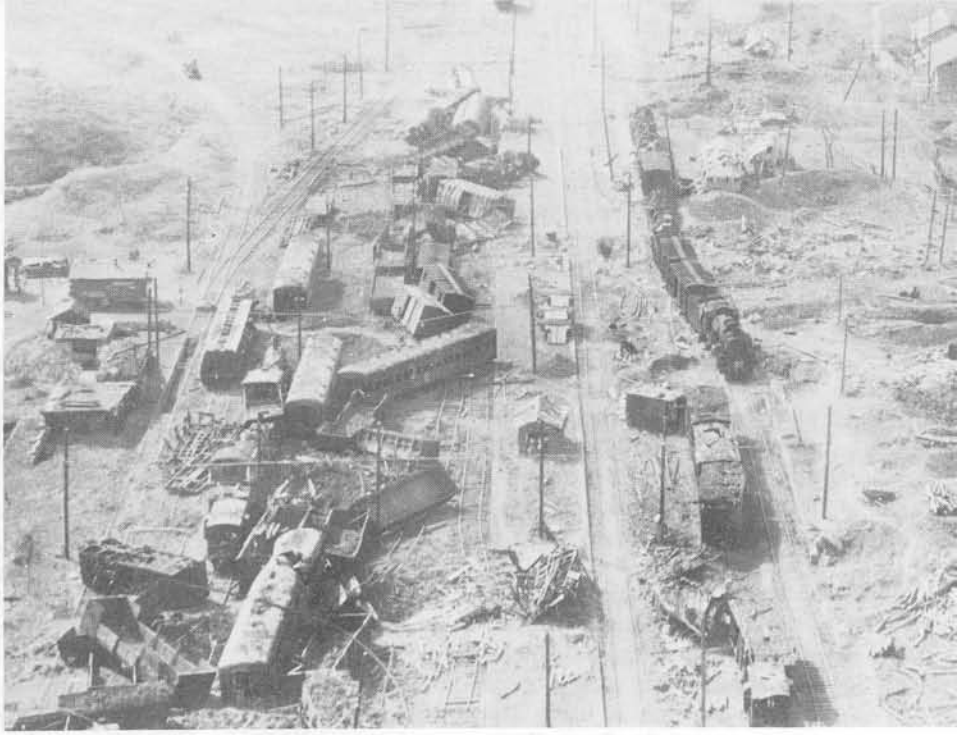
On 15 December, FEAF's interdiction campaign No 4 was issued. Under this plan, North Korea was divided into 11 zones, and 172 targets were selected—45 railway bridges, 12 highway bridges, 13 tunnels, 39 marshaling yards, and 63 supply centers. Bomber Command was to concentrate on railway bridges and marshaling yards in northwestern and central Korea, while the Fifth Air Force went after rail and highway bridges on the principal routes converging toward central Korea. In February, the Seventh Fleet became responsible for interdiction along the east coast north of Wonsan.

The Chinese were determined and tenacious in keeping their supplies moving from the Yalu to the front. To get the 50 tons per day to each division in combat, they had to organize a simple but effective logistical system—keep the rail lines, roads, and bridges repaired and come up with a relatively effective air defense. On the whole, they were able to keep supplies flowing to the front—although at a bare minimum. The main carriers were trucks and trains. A year after the start of the war, the end of June 1951, it is estimated that the enemy was operating 16,000 to 20,000 trucks in Korea although FEAF claimed to have destroyed over 24,000 in that same period. The Chinese were able to haul some freight over their rail lines in spite of all that UN air forces could do to prevent it. The speed with which they either repaired bridges or built bypass bridges was amazing. All this took enormous amounts of manpower, probably around a half million soldiers and civilians. But such a vast personnel, in turn, generated its own supply requirements and com-

Five North Korean tanks knocked out by UN Forces west of Yongsan near the Naktong River.

B-26 light bombers of the Fifth Air Force's 452nd Light Bombing made two direct hits with napalm upon two trains on the main line running between Wonsan and Pyongsang in North Korea.





The systematic destruction of North Korean rolling stock was a prime mission of the US Far East Air Forces.

Bombing of railroad bridges across the Han River, southeast of Seoul, Korea.

pounded the problem. By May 1951, the Communists had built up a respectable air defense system of flak guns and automatic weapons sufficient to keep the UN fliers at higher altitudes.

In spite of their best efforts, however, the Chinese were never able to get enough supplies to the front to sustain their offensives very long. After a relatively short time on the line, Chinese units had to withdraw to resupply. Usually, they just ran out of food and ammunition. Furthermore, the Chinese had to work almost entirely in the dark to avoid unacceptable losses in manpower and supplies through air attacks, while the UN forces were free to move men and material during the day. Since the rail lines and motor vehicles were used only for the transport of supplies, reinforcements had to move on foot the whole distance from Manchuria to the front, over 300 miles by the spring of 1951. And the marching had to be done at night. By the time the "fresh" troops got to the front, they were already fatigued and their morale was sagging before they began to fight.

Bomber Command was not able to concentrate entirely on its assigned interdiction campaign in the spring of 1951 because it was also engaged in bombing airfields and in supplying ground support. By early April, however, Bomber Command had managed to render 48 bridges unserviceable and had put 27 marshaling yards out of commission. Its main default had been in not being able to take out all the bridges over the Yalu, and, in mid-April, Mig Alley had become too dangerous for the B-29s to operate in, at least in daylight.

The most frustrating aspect of the interdiction campaign was the enemy's ability to move at night. Fifth Air Force's B-26 night intruders and the Marine Squadron VMF (N)-513 tried various methods, some quite unorthodox, in their efforts to improve their night capabilities. B-26s teamed up with C-47 Fireflies, the latter dropping flares to illuminate the targets; C-47s dropped roofing nails along the roads in the hope of stalling vehicles long enough so that fighter-bombers could get them in the morning; and some B-26s even carried their own flares. The night intruders were further handicapped by their inability to evaluate the effectiveness of their various tactics.

One of the most profitable areas of interdiction between January and April was the destruction of Communist trucks by the Mustangs, Thunderjets, and Shooting Stars. Inasmuch as the trucks moved mostly at night and were either hidden or camouflaged during the day, the fighter-bombers had to seek out their quarry through painstaking reconnaissance. Certain routes and areas were assigned to the same units so that the pilots could become familiar with the physical and man-made features of their assigned zones and thus be better able to recognize camouflaged objects. Low-level reconnaissance was the most important part of "truck busting," and, as the enemy acquired more and better antiaircraft weapons, it was necessary to fly higher and use more aircraft for flak suppression. By May and June, truck hunting was becoming a more hazardous profession. Estimates of vehicles destroyed declined as the enemy developed better camouflage techniques and acquired more and better weapons. The Fifth Air Force claimed 2,261 vehicles destroyed in March and 2,336 in April, but, in May, the figure dropped to 1,245.[72]

Despite all efforts, Navy, Air Force, and Marine, truck traffic continued to increase. Towards the end of May, General Timberlake, the new Fifth Air Force commander, came up with Operation STRANGLE, an attempt to paralyze the enemy's transportation between the railheads at the 39th Parallel and the front. The main north-south routes behind the enemy lines were divided among the services: the three routes extending south and southeast from Pyongyang went to the Air Force; Task Force 77 was given the central routes from Jangdok; and the Marines were assigned the main routes from Wonsan and Kojo on the east coast.[73] The operation was not very productive: it was more an inconvenience for the enemy than a strangulation. For example, the Fifth Air Force claimed the destruction of only 827 vehicles in June, approximately 35 percent of the April figure.

By the end of June 1951, just before the armistice talks got under way, the war had been seesawing back and forth for a year. During that year, FEAF airmen had flown 223,000 sorties, dropped 97,000 bombs and almost 8 million gallons of napalm, and fired 264,000 rockets and 98 million rounds of ammunition. They had also transported 176,000 tons of cargo and 427,000 passengers. This effort had resulted in 120,000 enemy casualties and the destruction of, or damage to, 391 aircraft; 893 locomotives; 14,200 railroad cars; 1,080 rail and road bridges; 24,500 vehicles; 1,695 tanks; and 2,700 guns.[74] UN airmen had also retained control of the air over Korea, and this control enabled the UN forces to operate freely during the day, a privilege denied the opponent.

Phase III: The Air War During the Armistice Negotiations

In early July 1951, negotiations for an armistice began at Kaesong between representatives of the United Nations and those of the Communist belligerents, but in October, the site of the talks was moved to Panmunjon, a hamlet five miles from Kaesong. Vigorous haggling then ensued. The first debate occurred over where the demarcation line would run when and if an armistice were agreed upon. General Van Fleet's offensive between August

and October so improved the UN position that the Communists gave up their insistence on the 38th Parallel and were willing to settle for the firing line at the time of armistice. On 17 November, the UN negotiators proposed that the current contact line should be the demarcation line in the center of a demilitarized zone, provided that the armistice was signed within 30 days; if not, the demarcation line would be the contact line when the armistice was eventually signed. The Communists agreed to this on 27 November and were thus able to establish a 14-mile-deep defensive zone during what was to all intents and purposes a 30-day de facto cease-fire on the ground.

The de facto cease-fire was probably a mistake on the part of the UN negotiators since, in retrospect, it seems obvious that the only way to secure an immediate armistice would have been through continuous military pressure. The Chinese came to the negotiating table because they were hurting. But once the pressure was off, why should they stop the palavering at Panmunjon? The UN proposal on the demarcation line insured the continuation of the talkfest at Panmunjon for the next 20 months. With their armies dug in at depth, the Chinese were confident that they could maintain the strategic stalemate even though there might be some tactical gains and losses.

From early December 1951 to the signing of the armistice in late July 1953, the stickiest issue was Item 4, the repatriation of prisoners of war (PWs). The UN position was that repatriation must be voluntary on the prisoner's part, while the Communists insisted on the repatriation of all prisoners, whether they wanted to go home or not. Long after the other issues—the location of the demarcation line, the makeup of the Neutral Nations Supervisory Commission, and restrictions on post-armistice airfield construction—were agreed upon, the prisoner-of-war question remained unresolved. Apparently, the fact that large numbers of Chinese prisoners did not want to return shocked and angered the Communist leaders, and they felt that it would be an international humiliation to concede on the issue.

Once the ground front became relatively static during the interminable negotiations, the only way that the UN strategists could pressure the Chinese into signing an armistice was to use air and sea power. If the Chinese were not to be allowed to sit at Panmunjon for all eternity, the continuation of the hostilities had to be made so costly that an armistice would be attractive in comparison. Since the United States and its Allies were not willing to pay the costs of vigorous ground offensives, it was obviously left to the Air Force and the Navy to accomplish the necessary arm twisting.

While the ground forces held the line during the two years of negotiations, FEAF and COMNAVFE faced a fourfold task: protection of the United Nations from Chinese air attacks, i.e., maintenance of air superiority; continuation of close air support; interdiction of enemy supplies to the front; and, finally, enough air pressure to make the enemy's delaying tactics at Panmunjon costly. Since there was a scarcity of aircraft available to both FEAF and the naval carriers, it was obvious that all of these jobs could not be performed simultaneously at top efficiency.

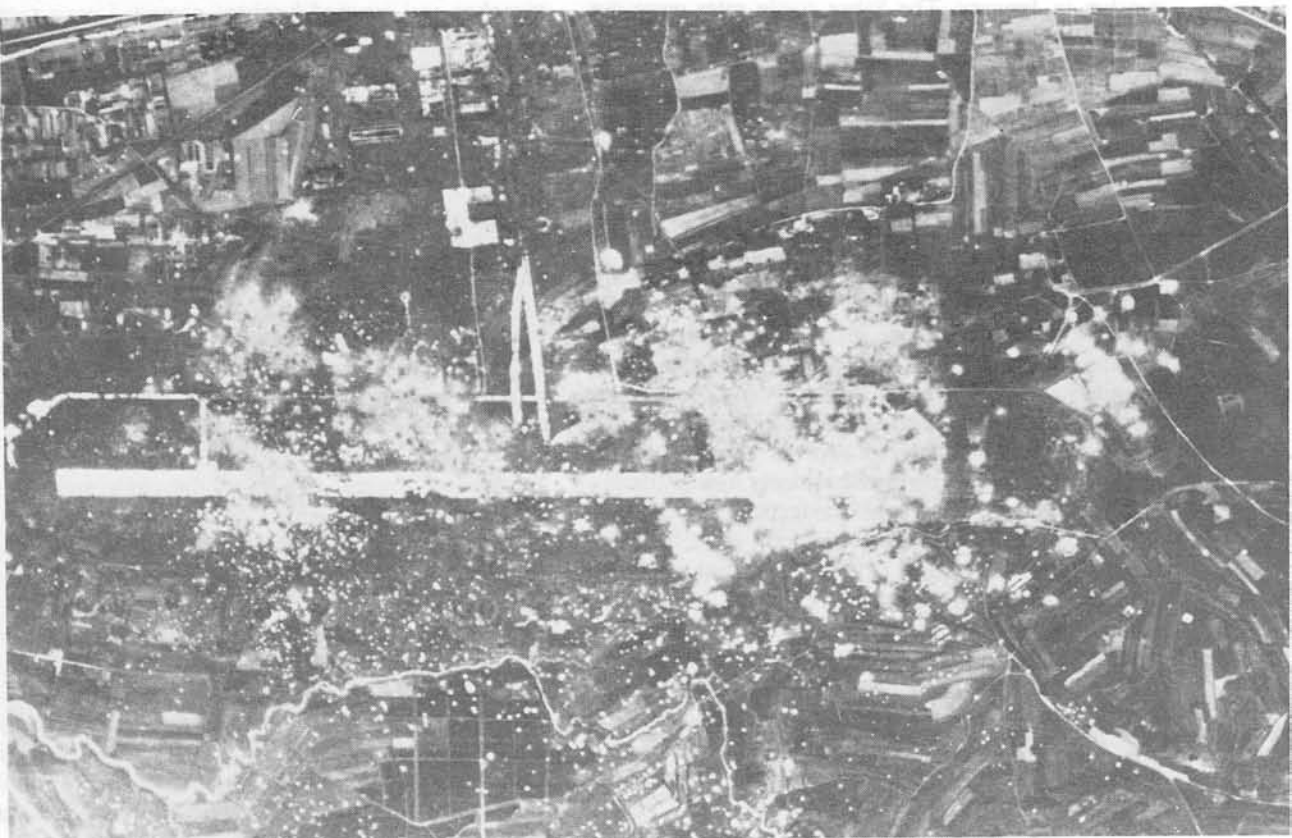
About the time that the opening moves for negotiations were being advanced in June 1951, the Chinese Communist Air Force was becoming an exceedingly formidable threat. At that time, it had over 1,000 combat aircraft. Almost 700 of them were based in Manchuria and 450 were Migs. The Antung airfield complex had been augmented by the addition of two new airfields, Ta-tung-kou and Ta-ku-shan, and it was now able to support a force of 300 Migs. By late July, the Migs, using wing tanks, were flying as far south as Pyongyang and were thus able to attack UN planes returning from missions in northwest Korea. On 1 September 1951, the Chinese, who now had 550 Migs in Manchuria, began an all-out air campaign to wrest air superiority from the United Nations. This September offensive seriously jeopardized FEAF's interdiction program. Fighter-bombers had to keep out of Mig Alley, thereby allowing the Chinese to begin repairing old airfields and constructing new ones in northwest Korea. A complex of three major airfields (the Saamchan-Taechon-Samsi triangle), if made operational, would bring Mig Alley all the way to Pyongyang. The Sabre pilots of the 4th Fighter-Interceptor Wing fought a series of air battles over Mig Alley during October against overwhelming odds, while Bomber Command's B-29s destroyed the potentially dangerous air fields. The Sabres sighted over 2,500 airborne Migs during the month and destroyed 32 of them, again demonstrating their superiority in flying and gunnery. But the B-29s took serious losses in carrying out their assignments.

In the late fall of 1951, new, improved Migs, the Mig 15 Bs with a 6,000-pound-thrust engine designed by Klimov, began to appear in large numbers over Mig Alley. The Chinese Communist Air Force now had enough first-class aircraft, radar equipment, and base facilities in Manchuria to mount an intensified campaign against the UN forces. Communist pilots held the initiative north of Pyongyang during November. However, fear of UN retaliation against the Manchurian bases and industrial complexes was probably a restraining factor. The tacit rules of the conflict implied that UN respect for the sanctuary across the Yalu would last only so long as the UN ground forces were safe from massive Chinese air attacks. The Chinese had to

Strafing attack by F-80 on small village housing North Korean vehicles and troops. Bottom to top on the road can be seen A T-3V Tank and a burning jeep.

These Russian-made North Korean tanks destroyed in Korea are a dramatic example of the use of US tactical air power.

US Far East Air Forces Combat Cargo Command aircraft delivers food and ammunition for UN troops in the field.



prove their ability to control the air over North Korea before they could consider it safe to begin heavy air operations against the UN ground forces and logistics. It would be the job of the Sabres in the next couple of months to prove to the enemy that he had no chance of gaining such control of the air.

Alarmed at the increasing capabilities of the Chinese Communist Air Force, the US Air Force shipped 75 F-86 Sabres to Korea in early November. The 51st Fighter-Interceptor Wing converted from F-80s to Sabres and began to fly missions in the new aircraft on 1 December. FEAF now had 165 F-86s in its inventory. In December, the air war over northwest Korea was fast and furious, with the laurels going almost exclusively to the Sabre pilots. By late December, the Reds let up on any serious efforts to repair and build the airfields in North Korea. Furthermore, they gave up their attempt to wrest air superiority from the UN. They began to follow a cyclical pattern of air operations obviously aimed at providing combat training for as many pilots as possible. Each "class" began by flying high and avoiding combat, and, as the "class" became more proficient, it also became more belligerent. Then the "class" graduated and the cycle was repeated.[75]

It was almost providential that the Reds abandoned their attempt to gain air superiority in late December, since a severe strain on logistics resulted in large numbers of Sabres being grounded for the lack of parts. Some 45 percent were out of commission in January. The Sabre sortie rates were cut drastically in January and February, but, by April, the logistical situation had been vastly improved and sortie rates rose sharply. In May, the Chinese began to employ ground-controlled radar interceptions over Mig Alley, but the 4th and 51st wings, with excellent logistical support, were able to fly over 5,000 combat missions, and they shot down 27 Migs during the month.

While the Sabres were demonstrating their ability to fly in Mig Alley, and to do so victoriously, the B-29s were encountering one problem after another. In the late fall of 1951, it was obvious that escorts of Thunderjets and Australian straight-wing Meteor jets were unable to cope with Migs. Since there were not enough Sabres available to provide escorts for the bombers, the B-29s converted entirely to night bombing, using the short-range navigation (SHORAN) system as their principal method. This worked during the winter months of 1951-1952, but, by June, the Chinese, employing a combination of searchlights, flak, and Migs, were able to inflict unacceptable losses on the B-29s. On 10 June, for instance, a four-bomber attack on a railroad bridge at Kwaksan was a catastrophe—two bombers were lost, one seriously damaged, and the other barely made its escape. Darkness was no longer an adequate cover for B-29 operations.

The need for air support of the ground forces lessened during the summer of 1951 because of the static front. This allowed FEAF to allocate more aircraft for counterair and interdiction and also permitted the air and ground commanders to work on more effective close-support control. In August, General Van Fleet agreed to a reduction of close air support to 96 sorties a day, thereby freeing fighter-bombers for an intensive campaign against the enemy railroad system. X Corps' offensive in the first half of September, an attempt to straighten out its lines, resulted in the fierce combat that typified the action at "Heartbreak" and "Bloody Ridges" in the "Punchbowl" area and in bloody fighting that demanded a drastic step-up in close air support. During September, almost 2,500 sorties were flown in support of the X Corps offensive.

On 12 November, General Ridgway, hoping for a favorable turn of events at the conference table, ordered a cessation of offensives and a reversion to active defense. Now that ground action was limited to clashes between hostile patrols, FEAF sought to decrease its close air support, but the ground commanders, in spite of the static situation, clamored for its continuance. In January 1952, General Van Fleet undertook a month-long artillery-air campaign to impress the Reds with his superiority in firepower. Artillery and aircraft, on alternate days, banged away at the enemy trenches and bunkers with dubious results—the enemy just dug deeper. Deeply dug trenches and covered bunkers provided poor targets for the fighter-bombers.

The static situation along the front and the lack of suitable targets for air attacks made it feasible to assign most of the fighter-bombers to interdiction work. As a result, the pilots were either losing their skill in flying close support or had never flown such missions. In addition, the ground forces were becoming increasingly inept in coordinating their efforts with air attacks. Beginning in March 1952, all fighter-bomber squadrons were rotated to a week's work at improving scramble time and learning to cooperate with the Mosquito controllers. About the best that can be said for all the effort expended is that the pilots were maintaining their proficiency in the event of a future Communist offensive.

Between August 1951 and the early summer of 1952, some 10 months, FEAF, plus Navy and Marine air, made a serious attempt to interdict Communist logistics. The Reds had 60 divisions in the battle zone. Each division needed 40 tons of supplies per day, or a total of 2,400 tons. Although animal and human carriers could be used in the front lines, the supplies had to be hauled to the battle zone by railroad or by trucks. The Soviet-built trucks carried 2 tons and took between 5 to 10 days to make the round trip from Antung. Assuming the optimum five-day round trip, 6,000 trucks were needed to haul

the 2,400 tons a day. But a boxcar could carry 20 tons; thus, it required far fewer boxcars than trucks to get the supplies from the Yalu to the static front, and the Japanese-built rail lines were better constructed than the highway system. All logic pointed to the railroads as the cheapest form of transportation in North Korea. Furthermore, trucks needed gasoline, which had to be imported from either China or the Soviet Union, while the locomotives operated on locally procured coal. To clinch the case as far as the FEAF planners were concerned, rail lines could not be hidden, nor could rail traffic dodge off to side roads or under trees when attacked. For all these reasons, the rail system of North Korea looked like the most promising target for an interdiction program.

The problem was how to disrupt the enemy rail system. To take out the rail bridges would not stop traffic as the Reds had already demonstrated when Navy aircraft attacked bridges in the spring of 1951: the enemy portered the supplies beyond the destroyed bridges and reloaded them on to a train on the other side of the destroyed bridge. Also, repeated attacks on bridges led the Reds to mount strong antiaircraft defenses at those points. The best targets seemed to be the tracks and the roadbeds. Rails were heavy to transport, and the enemy could not protect the entire track mileage with flak. Under a coordinated plan, the Navy was to be responsible for interdicting the lateral line from Kowan, near the east coast, to Samdong-ni, approximately two-thirds across the peninsula, and the east-coast line from Kilchu, near the 41st parallel, through Hungnam, Wonsan, and southwest to Pyongyang. Bomber Command agreed to take out the four key bridges at Pyongyang, Sonchon, Sunchon, and Sinanju. The Fifth Air Force took on the railway lines in northwestern Korea. As the rail lines were destroyed, it was hoped that the Reds would have to shift to trucks, thereby providing targets for the Fifth Air Force's light bombers. The enthusiastic air planners used the same name for the rail-busting campaign as they had for the earlier road-interdiction program, Operation STRANGLE. This was an unfortunate term because it implied a complete interdiction of Communist rail traffic to the front, something that was never accomplished.

Beginning on 18 August 1951, the UN fighter-bombers went to work cutting rail lines with 500-pound bombs, usually attacking the same section twice daily. About one out of eight bombs cut the tracks. The B-29s worked over their bridge targets, but the enemy proved adept at building bypass bridges and at repairing damaged bridges. Along the east coast, aircraft from Task Force 77's three carriers disrupted the coastal routes effectively, but they found the enemy ground fire along the Kowan-Samdong-ni line too deadly. During August and September, rail traffic was drastically reduced, and, during October and November, the North Korean rail lines were being destroyed faster than the Reds could repair them. They were resorting to trucks to make up the deficiencies.

However, the Communists eventually learned to cope with the interdiction program. By the end of November, they were able to maintain bypass bridges at Pyongyang, Sinanju, and Sunchon. Red fighters and the increased Communist capabilities in antiaircraft artillery began to take a toll on Fifth Air Force fighter-bombers, as well as lowering the bombing accuracy. Through efficient methods, the Communists were able to repair cuts in less than 24 hours by November. Repair crews were stationed at regular intervals along the major lines and impressed the local citizenry into doing the heavy, unskilled work.

In early March 1952, Operation STRANGLE was given the more modest appellation of Operation SATURATE, and the new strategy called for a concentration of the fighter-bombers on short segments of track on a sustained day-and-night basis, while the B-29s were to devote their effort to large-scale attacks on the principal river crossings, such as the bridges at Sinanju and Sunchon. The program had some success in the early spring of 1952, but, by April and May, the Fifth Air Force was running low on fighter-bombers; it was receiving fewer than it was losing.

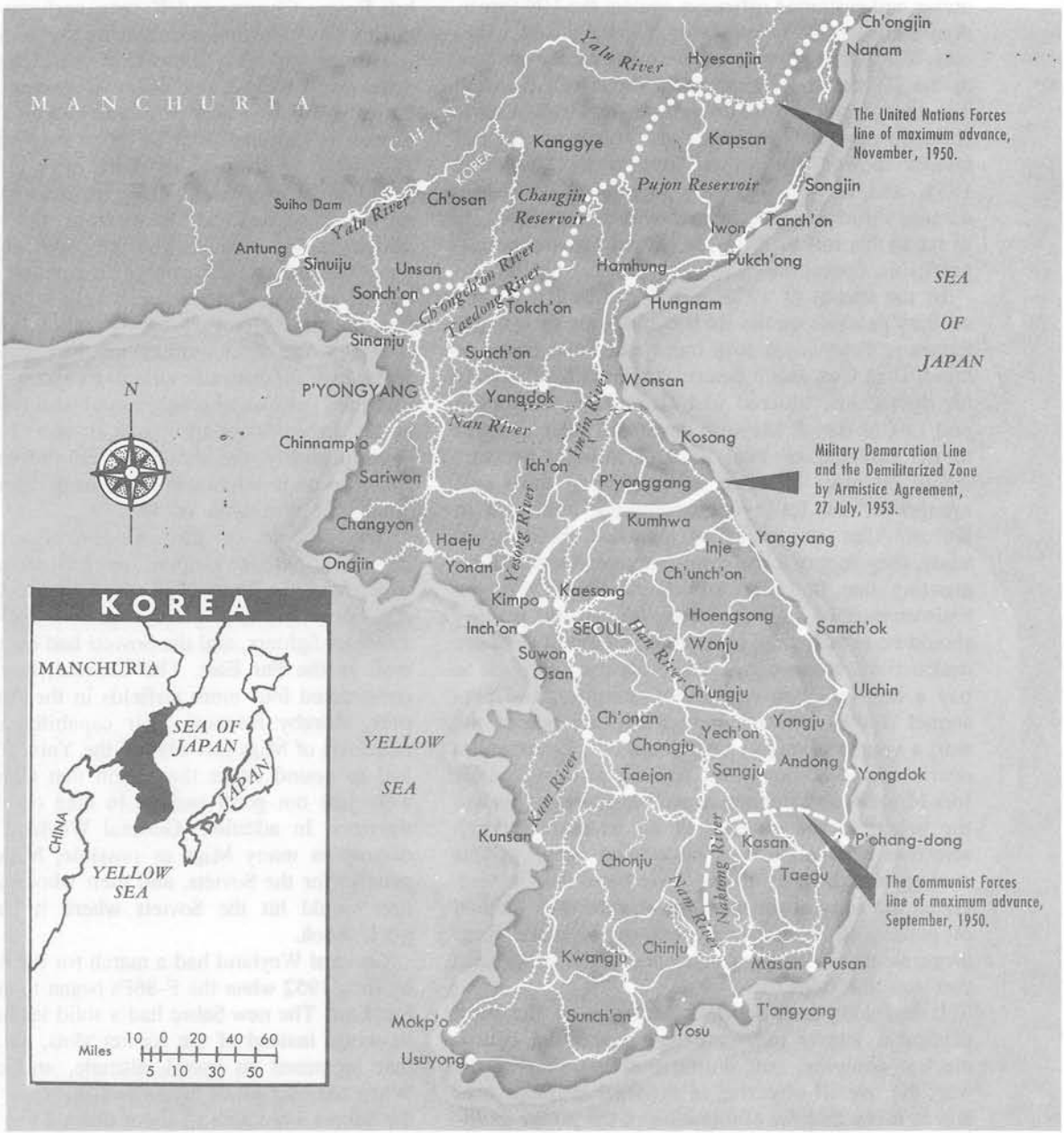
During the more effective period of STRANGLE, that is, September, October, and November, the Reds had to haul much of their freight by truck. At this time, the night intruders of the 3d and 452d Wings and the Marine Squadron VMF-513 reported extremely high rates of destruction of enemy trucks on the highways of North Korea. The two wings claimed to have destroyed over 14,000 vehicles between August and the end of October. The accuracy of these claims is a disputable point. There is some indication that "the crews were claiming vehicles destroyed in proportion to the number of vehicles sighted and the number of B-26 sorties flown."[76] As the Reds overcame the rail blockade in late November, the number of trucks sighted decreased. The Fifth Air Force estimates of trucks destroyed were 4,571 in November and 4,290 in December. During the early months of 1952, truck hunting became poorer and poorer, and, by April, the kills claimed were down to 1,723. Finally, in the summer of 1952, Col G. S. Brown, the Fifth Air Force director of operations, reported that "we were trading B-26s for trucks in a most uneconomical manner."[77]

In the early summer of 1952, the interdiction program came under close scrutiny. FEAF aircraft alone had flown 87,552 interdiction sorties, and the results claimed were 19,000 rail cuts and the destruction of over 34,000 vehicles, 276 locomotives,

At the Kaesong Peace Conference part of a UN convoy near house where armistice negotiations were held.

Gen O. P. Weyland (left), Far East Air Forces Commander, Gen Mark W. Clark (center), UN Commander-in-Chief, and Vice Adm Robert P. Brisco (right), and Far East Naval Commander, take part in truce-signing ceremonies at the UN Base Camp at Munsang July 1953.

Inside Armistice Hall at Panmunjom, Korea, Gen William K. Harrison, Jr. seated at left and Gen Nam Il seated at right, during the Korean Truce signing.



and 3,820 railway cars.[78] But the Communists had supplied their front and built up reserves in spite of the air attacks. For example, in July 1951, the Reds fired 8,000 artillery and mortar rounds, and, in May 1952, they had increased their fire to 102,000 rounds. The degree of success attributed to Operation STRANGLE depends upon how it is evaluated. There is no doubt that it did not "isolate the battlefield"—supplies got through in sufficient quantities to keep the Communist troops well enough fed and equipped to maintain a static front. In short, the operation did not "strangle." If, however, the objective of the operation was to prevent the enemy from accumulating the wherewithal to support a major and sustained offensive against the UN forces, then the interdiction campaign can be judged a success. The North Korean rail network was so battered in the 10 months of Operation STRANGLE that it was never again able to do more than sustain a static front. In retrospect, however, the attacks on the rail system showed diminishing returns by December 1951, and, during the early months of 1952, the damage inflicted was balanced by the enemy's ability to repair his rail facilities; ie, it had become an unprofitable operation.

In the spring of 1952, FEAF realized that only military pressure on the Reds could bring their negotiators at Panmunjon to a more amenable frame of mind. Brig Gen Jacob Smart, the new FEAF deputy for operations, ordered Col Richard L. Randolph and Lt Col Ben I. Mayo to devote all their energies to the problem of what kind of military pressure would be most effective in convincing the Communists of the futility of continuing hostilities in Korea. After six weeks of intensive thought and study, they reported the results of their lucubrations: granting that the first priority of FEAF was the maintenance of air superiority, the second priority should be to inflict the maximum amount of selective destruction on the enemy. The Reds must be made to pay a high price in equipment, supplies, and personnel if they insisted upon a continuance of the war; a system of targets that would cost Communists dearly should be compiled, and the price would affect Moscow and Peking, as well as Korea. This was the origin of the strategy of air pressure through selective destruction. An underlying motif in this strategy was the costs to the Soviets and the Chinese. Given the rules of the war, this was the only method of penalizing them heavily enough to make them more amenable at the conference table, or at least that was the hope.

It had long been obvious that one of the most profitable targets in North Korea was the hydroelectric complex, but, during the first year of the war, the overall objective of eventual unification of Korea mean that the elimination of the power facilities would place an enormous burden on any future all-Korean regime. Then came the era of hope, when it was thought that the Communists were seriously interested in an armistice and there was a reluctance to jeopardize the negotiations by hitting the hydroelectric installations. In the late spring of 1952, the prospects for an early armistice were dim; a pessimism that had been reinforced when the Communists turned down the package deal presented by Admiral Joy in April. Something had to be done to get the Red negotiators off dead center, and, at this point, Washington approved the plan to destroy the North Korean hydroelectric complex.

On 23 June 1952, a coordinated Navy-Air Force effort was launched against the power plants at Sui-ho, Fusen, Chosin, and Kyosen and was continued during the following day. During the two-day strike, Air Force and Navy pilots flew over 1,200 bombing missions, knocked out over 90 percent of North Korea's electric power potential, and also cut off the electricity supplied from Sui-ho to the Chinese, some 10 percent of that used in Manchurian industry. The grand opening of the air-pressure strategy was a tremendous success, at least from the economic-military point of view. The only sour note was the furor that the attacks aroused in London and in the US Congress. Unfortunately, this reduced the psychological effect of the operation, since it encouraged the Communists in their belief that a destructive air-pressure campaign could not be long sustained because of domestic political repercussions in the United States and Great Britain. To their surprise, probably, the strategy of air pressure through selective destruction was continued throughout the summer and autumn of 1952.

The success of the strategy of air pressure, however, depended upon the maintenance of air superiority. In June 1952, the Chinese Communist Air Force had nearly 2,000 planes, including over 1,000 jet fighters, and the Soviets had over 5,000 aircraft in the Far East. The Chinese, moreover, had constructed four more airfields in the Antung complex, thereby insuring their capability of keeping hundreds of Migs just beyond the Yalu. FEAF again had to pound home the lesson that Chinese pilots were just not good enough to take on the UN air warriors. In addition, General Weyland wanted to destroy as many Migs as possible; Migs were expensive for the Soviets, and their wholesale destruction would hit the Soviets where it hurt—in the pocketbook.

General Weyland had a match for the Mig-15 BIS by June 1952 when the F-86Fs began to arrive in the Far East. The new Sabre had a solid leading edge on its wings instead of the former slots, an innovation that increased its speed, altitude, and climb rate. When the Mig pilots began to fight again in August, the Sabres were able to shoot down 33 at the cost of only 2 for the home team. In September, the score

was increased to 63 Migs, and, in the following month, the Chinese pilots reverted to their more customary practice of avoiding combat. The Sabre score in Migs destroyed went down to 27 during October. Mig Alley was again becoming Sabre Alley as the Chinese pilots lost their belligerency. With a Sabre margin of superiority of eight to one, the Mig pilots could not but be aware of the sobering fact that they were trying to play outside their own league. Even more to the point in the overall context of the cold war, the Soviet leaders were being made conscious of the danger of tackling the US Air Force in other arenas of potential conflict throughout the world.

To make the strategy of air pressure costly enough to influence the enemy negotiators at Panmunjon, new and more vital targets had to be found. Because of the policy of hitting only "military targets" and of not wanting to upset negotiations, Pyongyang had been free from air attacks for nearly a year. It had grown fat with lucrative military targets: supply dumps, troops concentrations, and marshaling yards were bursting with freight cars. The Reds had also been storing supplies in the towns and villages along their supply routes and billeting troops in them. In order to wring the most out of the destruction of these targets, the FEAF planners decided to drop leaflets that warned the civilians of impending attacks and urged them to get out of town before the bombs began to fall. This, it was thought, would tend to erode the worker's morale and slow down production in North Korea.

Finally, on 11 July 1952, Operation PRESSURE PUMP began with a massive attack on 30 military targets in and around Pyongyang, an attack in which the Navy, Marines, and Air Force coordinated their efforts. Over 1,200 sorties were flown that day and the military targets in the city were devastated. The rest of July was devoted to such targets as the mining and metallurgical industries, the hydroelectric installations when repairs were showing any progress, and communications centers. During August, UN planes, blessed with good flying weather, assaulted troop concentrations and what was left of the industrial structure and communication centers of North Korea.

In the second week of August, General Nam Il's complaints at Panmunjon and the screams emanating from Peking and Moscow were vivid demonstrations that the enemy was aware of the strategy of air pressure and that he was hurting badly. Morale was becoming a major factor in North Korea—workers were fleeing back to their villages. The prestrike warnings seemed to be paying off in two ways: they were causing the workers to stay away from the threatened installations, and they were also revealing the inability of the Communists to fend off air attacks even when told when and where they would occur.

In mid-August, Chou En-lai headed a Chinese mission to Moscow for consultations, and UN planners decided to exert additional pressure on North Korea in the hope either of convincing the Peking and Moscow leaders jointly that meaningful negotiations should begin or of splitting the Chinese and Soviets over the issue of continuing the war, since the war was causing the Chinese to postpone inauguration of their first Five-Year Plan. Some 1,400 sorties were flown against Pyongyang on 29 August, and, on 1 September, planes from the carriers, *Essex, Princeton,* and *Boxer,* smashed the oil refinery at Aoji, located only eight miles from the Soviet border. On the night of 12-13 September, 29 B-29 medium bombers hit the power plant of the Sui-ho hydroelectric installation, and, at the end of the month, 45 B-29s destroyed the Mansi-ni chemical plant near Sui-ho. The increased tempo in air pressure, unfortunately, neither split the Sino-Soviet alliance nor did it make the Red negotiators less obstinate at Panmunjon. The air attacks may have been reducing the economy of North Korea to primitive levels, but the leaders in Peking and Moscow seemed to regard the costs as bearable. Nam Il and his colleagues continued to sit stony-faced and imperturbable while the industrial structure of North Korea was being wrecked and Chinese casualties were running high. The UN negotiators were experiencing that peculiar, maddening frustration that characterized negotiations with Communists.

A new threat appeared in Manchuria in early 1953, the IL-28 jet bomber. It was estimated that the Chinese had approximately 100. The IL-28 had a radius of about 700 miles and a speed of 400 knots; therefore, it was too slow for daylight attacks, but it had a great potential for night work. The advent of the IL-28 made it more necessary than ever to maintain UN control of the air. The Mig-pilot "class" that had begun its training in November reached peak efficiency in January 1953. Of the 2,248 Mig sorties sighted in January, 648 challenged the Sabres. These pilots "used almost every maneuver in the book," but the score was overwhelmingly favorable for the Sabres — 37 Migs to 1 Sabre.[79] Then a new three-month cycle began, and the audacity of the Mig-15 pilots decreased. The score was 25 Migs in February and 34 in March, while the Sabre losses for the two months totalled only 4. The Sabres were still in control of the skies over Korea.

The B-29s, however, were still having their troubles in early 1953. Following the catastrophe over Kwaksan in June 1952, Bomber Command was hard put to keep the medium bombers in the air north of the Chongchon. Electronic countermeasures, compression of the bomber streams over the target area, and multiple SHORAN aiming

points helped to keep the losses down. By early 1953, the B-29s were no longer sent into the area between the Chongchon and the Yalu in the bright moonlight or in meteorological conditions that were conducive to the formation of contrails. Bad weather became the B-29's best friend in northwest Korea. Bomber Command was able to keep its ageing aircraft going during 1953, but the effort seemed always on the edge of catastrophe. If the Chinese had come up with airborne radar on their interceptors, the B-29 would have been doomed — fortunately they did not.

The sustained air pressure campaign began to run out of juicy industrial targets by late 1952; the main attacks were then directed against enemy troop concentrations and supply dumps near the main line of resistance. Early in the winter of 1952-1953, Lt Gen Glenn O. Barcus, the Fifth Air Force commander, turned his attention to a new type of interdiction — destructive interdiction. The idea was to bomb a bottleneck in the enemy's rail system and then go after the rail equipment stalled around the incapacitated section and the motor transport that would be used in lieu of the rail transport. The main bottleneck in the Communist rail network was in the Chongchon estuary, northwest of Sinanju, where the rail lines crossed the Chongchon and Taeryong rivers. If the bridges over those rivers could be kept out of use for a meaningful period of time, rail equipment would accumulate in targetable quantities, and more trucks would be used to bail out the immobilized rail transport. In a massive five-day attack (5-10 January), 54 percent of all FEAF combat effort was devoted to the task of knocking out the bridges at Sinanju and Yongmidong: some 2,292 combat missions were flown by B-29s, B-26s, and Fifth Air Force fighter-bombers. The rail and bridge complex in the area was devastated.[80] The interdiction campaign slowed in February, but, in March, to prevent any buildup for a Red spring offensive, operation SPRING THAW was initiated, an effort that covered all forms of transportation on all supply routes. The enemy was forced to use manpower in prodigious amounts to counter this air pressure and even to build an entirely new 70-mile-long railroad to bypass the Chongchon bottleneck.

One of the unique aspects of the war in Korea was that, while two large armies faced each other along a stalemated front for over two years, a stalemate periodically broken by fierce engagements, and while the UN air forces methodically devastated North Korea, the representatives of both sides continued to talk about an armistice. Beginning at Kaesong in July 1951 and then moving to Panmunjon in October, the talks went on and on. As early as January 1952, General Ridgway stated that they had reached a stage of complete paralysis—by then, the two sides had become deadlocked over the question of PW repatriation. The Communists, in order to strengthen their side of the debate, instigated PW riots in the prison camps on Koje Island in early June 1952. In July, Maj Gen William Harrison, who had replaced Admiral Joy in Panmunjon, offered to repatriate "all" prisoners after removing from PW status those not desiring to return to their country of origin. This attempt to save Communist face was turned down. Then, on 1 October 1952, PW riots were instigated in the camps on Cheju Island.

A new development occurred in October, when, as a result of an indefinite recess of the talks at Panmunjon, the argument was shifted to the United Nations, where the Korean question received top billing late in the month. The Soviet delegate, Anddrey Ya Vyshinsky, tried unsuccessfully to get the actual truce talks transferred to the United Nations, and then, on 10 November 1952, he told the UN General Assembly that the Soviet Union would never budge from its opposition to voluntary repatriation. Moscow seemed to be calling the shots on the armistice negotiations.

In the autumn of 1952, Ambassador Chester Bowles held talks with the Indians concerning the impasse over the PW issue in Korea, talks which undoubtedly influenced New Delhi to undertake the role of mediator at the United Nations. On 17 November, the Indian delegate presented a proposal which called for an agreement that precluded any forcible repatriation and also urged the creation of a neutral nation repatriation commission. The fate of those who did not want to return after a 90-day interval would be decided upon by the postarmistice political conference. This last item was rejected by the United States, and the Indians then proposed that the responsibility for the nonreturners after 120 days be left up to the United Nations. The resolution was adopted by the United Nations by a vote of 54 to 5 on 3 December. The strange part of the drama was China's rejection of the UN resolution since Chou En-lai had voiced no objection to the Indian plan when it was shown to him prior to its submission to the United Nations. New Delhi was convinced that the Chinese wanted out of the war and only Soviet pressure was keeping them in.

While the PW issue was bouncing from Panmunjon to the United Nations in New York in the late months of 1952 and the early part of 1953, the air war was following its customary course in Korea. The UN air forces were becoming bigger, better managed, and more sophisticated. Some 17 airfields in Korea itself made the range factor less significant, and the logistical situation had been improving steadily. In the spring of 1953, the Fifth Air Force was building up to a strength of four Sabre wings: the 8th and 18th Fighter-Bomber Wings now joined the 4th and 15th Fighter-Interceptor Wings. In March, the pilots of the Fifth Air Force began to

drop leaflets designed to enrage the Mig-15 pilots to the point of coming up to fight. One leaflet asked the taunting question: "Where is the Communist Air Force?" In April, a reward of $50,000 was offered for the delivery of Mig-15s to UN airfields, and an additional $50,000 for the first one. This was the so-called project "Moolah." Although no Mig was delivered during the war, it is possible that the reward offered persuaded the Soviets to get their pilots out of the combat area. The sorry lot of Mig pilots who engaged the Sabres during May and June were definitely not "honchos." In May, the Sabres shot down 56 Migs, while losing only one aircraft. The Sabres now took the offensive and, in June, destroyed 77 Migs, got 11 probable, and damaged 41.

Stalin died on 4 March 1953, removing what may have been the main impediment to a resolution of the PW problem at Panmunjon, and, on 29 March, the Communists proposed an exchange of sick and wounded prisoners. Called 'Little Switch," the exchange began on 20 April. In what looked like a more reasonable atmosphere, talks were resumed at Panmunjon on 26 April. But sweetness and light evaporated as the talks droned on, and, by 16 May, Communist obduracy and the tirades of abuse loosed upon the UN negotiators led to a suspension of negotiations.

To pressure the Reds into a more positive attitude at the negotiating table, FEAF began one of its most effective operations of the war, the destruction of the North Korean agricultural irrigation dams. The two provinces of Hwanghae and South Pyongan on the west coast of Korea produced almost 300,000 tons of rice, most of which went to feed the Communist troops. The blasting of the dams in this area would not only ruin the rice crop but would also wash out large segments of rail line and highway. On 13 May, Thunderjets bombed the Toksan Dam about 20 miles north of Pyongyang, and the results were beyond expectations. One of the two main rail lines to Pyongyang was rendered inoperative, since six miles of roadbed and five bridges were gone. Two days later, the Fifth Air Force fighter-bombers destroyed the Chasan Dam. This resulted in the destruction of a large segment of Pyongyang's other main railroad line. Albeit at the last hour, FEAF had discovered an extremely lucrative target system.

Talks at Panmunjon were resumed, and, on 25 May, the UN delegates presented their final terms on the PW issue; the talks were then recessed so that the Communists could look over the proposal. On 4 June, the Communists announced that they were in basic agreement with the UN proposal, and, after a little dickering, almost pro forma in the context of the Panmunjon negotiations, an agreement was reached on 8 June. President Rhee, who was opposed to any armistice that did not result in a reunification of Korea, almost sabotaged the PW agreement when he released 25,000 North Korean prisoners on 18 June. The US Assistant Secretary of State for Far Eastern Affairs, Walter Robertson, had to argue vigorously with Rhee for two weeks to persuade him to agree to the armistice, which he finally did on 11 July. On 26 July 1953, the armistice was signed; the talkathon at Panmunjon came to an end and it was high time. The truce talks had droned on through 575 dreary meetings over a period of two years and 17 days.

The agreement that emerged provided for the following: (1) the freezing of the military fronts as the demarcation line with a four-kilometer demilitarized zone between the fronts; (2) a Military Armistice Commission of 10 senior officers, 5 appointed by the UN Command and 5 by the Communists, to oversee the armistice as a whole; (3) the creation of a Neutral Nations Supervisory Commission (Swedish, Swiss, Polish, and Czechoslovakia representatives) to supervise the details of the armistice; and (4) the appointment of a Neutral Nations Repatriation Commission (made up of Swedish, Swiss, Polish, Czechoslovakian, and Indian delegates) to deal with the exchange of the PWs. The longest, nastiest, and most violent overt engagement of the cold war up to that time had ground to a halt, and the outcome was, to all intents and purposes, a reversion to the *status quo ante bellum.*

The air war had been costly to both sides. The Chinese Communist Air Force and its North Korean predecessor lost 850 Migs and 150 other types of aircraft. These kills were verified by gun camera films. In their personal war with the Migs, the Sabres suffered only 58 losses. The grand total of verified kills came to approximately 1,000 Red aircraft. But based upon USAF experience in World War II and the Korean War, the Reds probably lost another 400 planes in crashes enroute to home bases, plus 1,400 or so in training accidents, mechanical failures, etc. Therefore, the total was probably in the neighborhood of 3,000 aircraft, 2,000 of which were Migs. The United States lost somewhat more aircraft than the Communists. Air Force losses from all causes came to 2,000 planes, mostly fighter-bombers that were exposed to ground fire during low-level action. In addition, the Navy and Marines lost over 1,200 aircraft and the Army several hundred light planes.[81] Although the losses in aircraft were almost equal for the two sides, the Communist investment netted them very little. The United Nations, on the other hand, got enormous returns on its investment. It had control of the air over Korea during most of the war; it was able to subject the Communist armed forces and their logistics to continuous air attack; and the economic costs to the Communists from UN air attacks far exceeded the costs of the UN aircraft loss in the process. In addition, the UN ground forces and

their logistics were secure against Red air attacks, an advantage that is hard to overestimate.

THE AIR WAR IN RETROSPECT

Thus far, this chapter has been largely a narration of the military action in Korea as the war seesawed up and down the peninsula, and the main emphasis has centered on the activities of the UN air forces. Discussion of the larger problems of the war has been deliberately reserved for the concluding section in the hope that the reader will have an overall picture of the war in mind before he is subjected to a series of generalizations and evaluations derived from the specific events.

Military actions in Korea, air and otherwise, were conditioned, to an important extent, by forces outside the peninsula and even outside the military. For three years, Korea was the location of overt military action, but that action was limited by the rules of the cold war — rules that forbade the expansion of the war beyond the borders of Korea lest the conflict widen into World War III. The larger political and strategic considerations necessarily had a direct bearing on the air war in Korea, and much of the Monday morning quarterbacking that pundits have engaged in since 1953 has been based upon a questioning of the political and strategic assumptions which the Truman administration felt to be valid at the time.

This section deals with the larger problems of the war, proceeding from the relatively specific to the more general. An evaluation of the effectiveness of air power in the war is the first consideration followed by a discussion of "limited war" within the context of the overall cold war and the manner by which the "limited war" affected and was affected by domestic politics. Next, an attempt is made to answer the provocative, and probably unanswerable, question of who or what finally prodded the Communists into an acceptance of the armistice and the even more intriguing question of whether the negotiations could have been speeded up. Finally, for what it is worth, an attempt is made to derive some lessons from the air war in Korea.

The UN air forces carried out several assignments in Korea: close support for the ground forces, interdiction of enemy logistics, air pressure through selective destruction, and, finally, erosion of enemy morale through the exercise of control of the air. Air power was an integrated whole. It is impossible, for example, to separate completely the interdiction from close air support or air pressure. However, it should be possible, within rough parameters, to evaluate the effectiveness of each of the assignments.

Without close air support, it is doubtful that the UN ground forces could have survived the first two and one-half months of the Korean War. Close support had to compensate for the ground forces' lack of organic fire support during the retreat from Seoul to the Pusan perimeter during late June and July 1950, and it was absolutely essential in the defense of the perimeter during August. Roy Appleman, an Army historian, summarizes the role of close air support during part of this period as follows:

> The Far East Air Forces probably exercised greater relative influence in August 1950 in determining the outcome of the Korean battles than in any other month of the war.[82]

In July, FEAF flew 4,635 ground-support sorties and increased the sorties to 7,397 in August. Both General Dean and General Walker paid generous tribute to the close support that they received from the air forces.

The necessity for such intensive ground support decreased in the period from late September through most of November; then a "new war" came into being with the Chicom intervention, and the air forces were again called upon to devote most of their efforts to close support. Between late November 1950 and mid-January 1951, the whole force—fighter-bombers, light bombers, and medium bombers—flew night and day against the moving columns of Chinese and even against individual machine guns nests and artillery emplacements. The ground forces needed every bit of help that the airmen could provide to avoid being pushed right off the peninsula.

The relative stabilization of the main line of resistance after January permitted the fighter-bombers to transfer their main attention to the enemy's logistics. However, the ground commanders insisted on close air support although it was becoming much less effective as the enemy dug in along a static front. The main criticisms leveled against the performance of the fighter-bombers in close air support came during the two years that they were trying to destroy an enemy ensconced in dugouts and other underground shelters. As General Weyland later commented: "As a matter of fact, because of earlier successes in fluid situations, we had come to expect too much of air in close support."[83] Even during this period, however, there were times when close support was greatly appreciated by the foot soldiers, and one of these occasions was the intense fighting at "Heartbreak" and "Bloody" ridges in the autumn of 1951. The following comment by General Ridgway apropos close air support during this engagement is a real tribute, since he is usually far less laudatory about the role of the air forces:

> In all this action, close air support and air drops of food, ammunition, and medical supplies were of inestimable value and I know the foot soldiers often gave open and fervent thanks for the intrepid actions of their brothers in the air, who seemed to ask only a little clear sky and a bit of daylight to work in.[84]

In summary, it seems fair to say that close air support played a decisive role in those situations where it was not only badly needed but also where it could operate advantageously, namely, when the enemy was engaged in a furious offensive. Once he was dug in deeply on a static front, the attempt to use aircraft like artillery was bound to be less than a howling success. It was a misuse of the weapon.

The criticisms leveled at the supposed inadequacies of close air support are as nothing compared to the acid comments of many of the ground commanders concerning air forces' interdiction efforts. For instance, the same Ridgway, who is so laudatory about close air support in the torrid action in the "Punchbowl," makes the following evaluation of air power in the interdiction role:

> Whatever may be said for the value of air power—and there is no question that without it many of our advances would not have been possible—it simply could not keep the enemy from bringing in the armament he needed. It could slow him down and keep him working nights; but it could not isolate the battleground.[85]

Ridgway's use of the phrase "isolate the battleground" is the gut of the argument that interdiction was a failure, and FEAF's unfortunate use of the term "strangle" to designate one of its interdiction campaigns gave the ground commanders the impression that the airmen were guaranteeing an isolation of the battle zone. Therefore, when the enemy was able to get enough materiel to the front to enable his forces to hold on and even launch a limited offensive now and then, the ground commanders tended to "throw the baby out with the bath" and describe all interdiction efforts by the air forces as failures.

The air forces could not totally choke off the flow of supplies, but this did not mean that the whole interdiction effort was a failure. Although exact measurement is impossible, educated guesses seem to hover around the figure of 90 percent as the amount of materiel destroyed en route from the Yalu to the front. The remaining 10 percent was enough to keep the enemy in business on a static front, but he was never able to stockpile enough to conduct a vigorous and sustained offensive. The prevention of the wherewithal to carry out a sustained offensive would seem to be more than ample justification for all the effort devoted to interdiction. Furthermore, the vehicles and supplies being destroyed came from the Soviet Union and China, thus putting an economic load on those powers, about the only way in which the UN forces could get at their economies.

In his evaluation of the air war, General Weyland complained that "nothing is so bad in air campaigns as not to have enough force to do a job completely." He pointed out that his planes stopped all but 4 or 5 percent of prewar rail traffic in Korea, but the traffic that got through, supplemented by trucks and A-frames, was enough to sustain a static supply line. "The last 10 percent of interdiction or armed reconnaissance," said Weyland, "gets the real pay-off."[86] This last truism leaves out a vital statistic — how many aircraft would it have taken to get that last 10 percent? Probably far more than the Air Force and Navy were able to spare for the Korean War. The last 10 percent of the enemy's logistics was hardest to interdict, and additional aircraft assigned to the task would probably have run into the law of diminishing returns to the point where the investment would have been worth more than the return. The enemy's ability to keep some rail traffic flowing over bypass bridges and speedily repaired rail cuts, plus his ability to porter supplies by pack animal, oxcart, and A-frames on humans around the destroyed points, made complete interdiction of the static front an almost impossible accomplishment.

Complete isolation of the battleground would probably have required an expansion of the war. As General Vandenberg pointed out in May 1951:

> . . . the proper way to use air power is initially to stop the flow of supplies and ammunition, equipment of all types, at its source.
>
> The next most efficient way is to knock it out along the road before it reaches the front line.
>
> The least efficient way is after it gets dug in at the front line.[87]

Vandenberg pointed out that the USSR was the source of most of the materiel. Therefore, even attacking Manchuria and the principal cities of China would not necessarily be conclusive.[88] The UN air forces, given the rules of the war, were restricted to the "next most efficient" and "least efficient" ways of interdiction, and 90 percent effectiveness was about all that could be expected under these circumstances.

There was one other way in which the enemy's logistics could have been reduced below an acceptable level but that would have entailed a series of UN major ground offensives. These would have escalated the enemy's logistic requirements, probably beyond his capabilities. But the UN losses in carrying out such a program were regarded as prohibitive.

Once the decision was reached to negotiate and once the UN ground forces were restricted to a holding action along a static front, the problem was how to persuade the Communist representatives at the truce talks to negotiate in meaningful terms. What could the UN command do to persuade the regimes in Peking and Moscow that a continuation of the war in Korea was too costly in terms of any contemplated gains? The persuasion was largely up to the UN air forces. During the last two years of the war, it was hoped that air pressure through selective destruction would be convincing to the Reds. The

campaign began with the destruction of the hydroelectric facilities of North Korea and then followed with the methodical wrecking of almost everything north of the 38th Parallel that could be of any value to the enemy in the conduct of the war. But the enemy continued to fight and the Red negotiators continued to talk, although not to the point.

In retrospect, it seems that, as long as Communist China provided the troops and the Soviet Union the weapons and equipment, the destruction of industrial and transportation targets in North Korea would not coerce either Peking or Moscow into a more amenable attitude at Panmunjon. FEAF's B-29s flew 21,000 sorties and dropped 167,100 tons of bombs,[89] while its fighter-bombers worked around the clock napalming, strafing, and bombing. By late 1952, profitable targets were getting scarce, and still the haggling over the PW issue went on and on at the conference table.

It was only in the last months of the war that the airmen were allowed to hit what was probably the most profitable target system in North Korea — the dams that impounded the water so necessary for the cultivation of rice. There was an understandable reluctance to bomb these dams, since destruction of the food supplies would give the Communists a potent propaganda weapon to use throughout Asia. The destruction of the Toksan and Chasan dams not only destroyed large tracts of choice rice land but also turned out to be the most effective blow against the rail and highway systems during the war. These attacks must surely have made a serious impact on the enemy's sagging morale.

An evaluation of air power's role in the erosion of enemy morale is fraught with difficulty. Unlike counting dams destroyed or vehicles blown up, the factors that contribute to lower morale are difficult to quantify. But the interrogation of North Korean and Chinese PWs did turn up some significant data. As noted previously, almost 50 percent of the North Korean prisoners interrogated in the fall of 1950 attributed their sagging morale to the continuous air attacks and the interdiction of supplies and equipment. Alexander George, who worked with Chinese prisoners in Korea in the spring of 1951, found a good deal of evidence of low morale engendered by UN air attacks and interdiction.[90] In one group of 18 veterans queried about the chief difficulties experienced by the PLA in Korea, 14 listed UN air power as the leading factor and one sergeant, after listing the shortage of provisions and footwear and the absence of weapons and ammunition, went on to say:

> . . . restriction of our military operations to nighttime only, which was equal to being half defeated. Summarizing these difficulties, we know that they were all caused by the enemy's command of the sky which contrasted with our lack of an air force.[91]

George states that, in addition to inflicting casualties and physical destruction, "UN air power had far-reaching disruptive and psychological effects. . . "[92] Aware of the erosion of morale because of the UN monopoly of the skies, the PLA commanders promised their troops that the PLA would soon have air support from the Soviets. When it did not appear, the officers tried to push the propaganda line that "the time has not yet come."[93]

George sums up the main causes for the erosion of morale in the PLA as follows:

> The junior combat cadres began to view the war as a grossly unequal, senseless struggle. It became evident to them that Mao Tse-tung's doctrine of protracted war could not be successfully applied in the present struggle, which had to be fought on a continuous front in a narrow peninsula against a determined foe who possessed superior weapons and modern equipment. For the first time in their military experience, Chinese Communist leaders found that lack of naval and air power were a severe handicap to accomplishment of their military objectives.[94]

He then points out that the decline in Chinese combat morale in a prolonged war outside China was a lesson not lost on Communist China's military leaders when contemplating involvement in similar situations.[95]

The Korean War was a new experience for the American people in that it was not an all-out crusade aimed at completely crushing the enemy, but a limited conflict with certain rules governing its conduct. A limited war, according to one authority,

> is one in which the belligerents restrict the purposes for which they fight to concrete, well-defined objectives that do not demand the utmost military effort of which the belligerents are capable and that can be accommodated in a negotiated settlement. . . The battle is confined to a local geographical area . . . [and] demands of the belligerents only a fractional commitment of their human and physical resources.[96]

The Korean War fitted Robert Osgood's definition except for the "concrete, well-defined objectives" part of it. In the Korean conflict, the objectives shifted with the tide of battle. In the first five months of the war, the objective was the destruction of the North Korean armed forces and the unification of the country, but, in the last two years of the war, a negotiated settlement along the *ante bellum* division of Korea was all that was aspired to by the UN representatives at Panmunjon. However, the conflict was confined to the Korean peninsula, and neither the Communists nor the United Nations group committed all of their human and physical resources.

Unfortunately, the United States was not adequately prepared for a limited war, either militarily or psychologically. The armed services were geared for a major confrontation with the Soviet Union in the West and not for a limited operation in the East. It could have been worse, however, as at least a good deal of the American

military force structure happened to be in Japan and the Far East. The Truman administration, not at all sure that the attack in Korea was not just a feint to pull the US forces away from the West, was never willing to commit more than a part of its military capability to the Korean conflict. The political objectives in Korea, and even in the Far East as a whole, were not regarded as vital enough to risk seriously jeopardizing the defense of Western Europe. This was one of the considerations that impelled the administration to keep the conflict limited.

The geographical limitations imposed upon the UN military commanders in Korea were a constant source of frustration. Especially after the entry of the Chinese into the war, the ground commanders were well aware that, as long as Manchuria was respected as a sanctuary, there was little chance of accomplishing a complete interdiction of enemy supplies, equipment, and personnel — enough was bound to get through to enable the enemy to hold a static ground front. The UN air commanders were even more frustrated. The enemy Migs were able to sally forth from their inviolate airfields just across the Yalu and to flee back to them if the combat got rough. Furthermore, the luscious industrial targets in Manchuria dangled just out of "political" range of the American bombers, not to speak of the concentrations of troops destined to march south under the cover of darkness. The airman felt that he was being forced to fight with one hand, or even both hands, tied behind his back. To top off his aggravation, political considerations prevented his use of the big weapon, the atomic bomb. One fighter-bomber could have delivered the equivalent of hundreds of bomber loads if it had been allowed to drop the nuclear weapon.

On the other hand, the enemy, to some extent, accepted certain limitations. The Soviets never supplied enough medium-range bombers to the Chinese to enable them to carry out sustained bombardment of the UN front or its logistical system. The Navy was able to operate in Korean waters throughout the conflict without being subjected to submarine attack, a capability that the Soviets could have provided the Chinese. Finally, Soviet air power in the Far East, a very respectable air power at that, was never utilized other than in a camouflaged form in Mig Alley. All these restrictions were the Communist *quid pro quo* for the limitations observed on the UN side.

The Truman administration's resolve to keep the Korean conflict limited, however, was not popular with many people. For example, General MacArthur, who felt able to live with the restrictions during the early months of the war, began to chafe under them when his forces were being driven down the peninsula in the winter of 1950-1951. He began to express his dislike of the restrictions, which he felt were endangering the UN capability to maintain itself on the peninsula. When queried by the Joint Chiefs as to what he thought should be done if the Chinese drove the UN forces out of Korea, he replied, on 29 December 1950, that the coast of China should be blockaded, that its industrial capacity to wage war bombarded, and that Chiang Kai-shek's Nationalist troops should be used in Korea and allowed to attack the Chinese mainland.[97] The final episode in what had become a Truman-MacArthur collision of wills occurred when the General, on 20 March 1951, answered a letter from Joseph W. Martin, Jr, the minority leader of the House of Representatives, in which he agreed with Martin that the Chinese forces on Formosa should be used in order to meet force with maximum counterforce because there "is no substitute for victory."[98] Martin read the MacArthur letter on the floor of the House on 5 April, and the President reacted immediately by firing MacArthur. The MacArthur dismissal led to the famous hearings by the Senate committees on Armed Services and Foreign Relations between 3 May and 25 June 1951, a marathon affair during which over two million words of testimony were transcribed, and US policy in the Far East was given a meticulous scrutiny.

The Senate hearings can be boiled down to the following question: were the limitations imposed upon the military commanders in the Korean War necessary in order to avoid widening the war into an all-out conflict with the Communist camp? General MacArthur represented the view that there was nothing to lose by escalating the war against Communist China since that nation was already doing all that it could to drive the UN forces out of Korea. He also felt that the Soviet Union would not enter the war to save the Peking regime. Furthermore, MacArthur saw the main Communist thrust to be in the Far East and regarded the administration as being too worried about the danger to Western Europe. The administration's defenders (Acheson, Marshall, Collins, Vandenberg, et alia) feared that the combination of attacks on mainland China, plus the use of Nationalist troops, would bring the Soviet Union into the picture; the confrontation of the two superpowers, in their opinion, might well touch off World War III. Needless to say, the differences of opinion were not resolved during the hearings, nor have they been resolved since.

Events since the Korean War, especially the war in Indochina, have done little to ease the differences aired in the early summer of 1951. Did the United States set a bad precedent in allowing the major Communist nations to sit secure in sanctuaries while attacking through their proxies along the perimeter? Or is it better to suffer the restrictions of limited war than to chance a major conflict between the superpowers? In other words, is victory, in the

popularly accepted sense of the word, precluded in the present international situation? This seems to be merely another way of saying that a limited war within the context of the cold war is usually fought for limited objectives; once both super-powers have engaged their prestige, neither will accept a complete defeat. The outcome may be either compromise or escalation.

As the war surged up and down the peninsula in its first year, popular approval of the war declined within the United States and among the UN Allies. The exhausting negotiations and the static ground front of the last two years of the conflict eroded domestic and allied enthusiasm still further. The Truman administration found itself between the Scylla of the domestic hawks who wanted to broaden the war and the Charybdis of the domestic and foreign doves who became almost hysterical at the idea of increasing the tempo of the conflict. The clamor for Acheson's resignation, the uproar over the MacArthur dismissal, the fears of the Attlee government, and the hysteria of the McCarthy movement were manifestations of national and international dissatisfaction either with the limits imposed on the conflict or with any hint that the limits might be relaxed.

For example, while the Chinese were sending the UN forces reeling back from the Yalu, President Truman, in a press conference on 30 November 1950, stated that the United States would take whatever steps were necessary to meet the military situation. When asked if this included the use of the atomic bomb, he replied: "That includes every weapon we have."[99] When the President's reply became known in London, an uproar ensued. Prime Minister Clement Attlee arrived in Washington within days, and it took all of Truman's and Acheson's best persuasion to calm him down. This is just one example of the administration's dilemma of trying to act as the executant of UN policy in Korea and of attempting to build a viable NATO at the same time. In neither case did it feel free to ride roughshod over the fears and reservations of its Allies. To make things worse, the opinions of the Allies were usually bruited all over the world, thereby weakening the US stance at the conference table, but dissensions that may have existed in the Peking-Moscow axis remained unknown.

At the United Nations, once the Soviets resumed their presence there, the Communists proceeded to exploit fully the propaganda assets available to them. They pictured the war as one between a technologically developed superpower and a small, economically backward nation striving for liberation. The accusations that the UN air forces were using bombs and napalm to devastate both military and civilian targets in North Korea and even the charge that the Americans were using germ warfare were designed to alienate the economically underdeveloped nations of the Third World and to induce a guilt complex among the more susceptible elements within the United States and Western Europe. As a result, the airmen had to make sure that their targets were strictly "military," not "civilian." The fear of further alienating the underdeveloped nations may also have had some influence on the decision not to use the atomic weapon.

On the domestic front, President Truman's popularity sank to an all-time low in the Gallup rating, some 26 percent in early 1952. His Secretary of State, Dean Acheson, was the target of vicious attacks, even from Congress, and George Marshall, his Secretary of Defense, was the victim of Senator Joseph McCarthy's outrageous allegations of treason. John Foster Dulles, the Republican expert on foreign affairs, began his criticism of the "containment policy" as inadequate and his advocation of a policy of "liberation" as early as the spring of 1951. The Republican presidential candidate, Dwight Eisenhower, took up the Dulles cry for "liberation" and, in August 1952, called for a rollback of Communist control over the captive nations. Although the Republicans spoke of the "bogey of militarism and backruptcy" while simultaneously pushing the "liberation" thesis, so great was the public's dislike of the Korean War that few saw the inconsistency of the two ideas. The dilemma was to be resolved by more reliance on air power and atomic weapons, a reliance that was later expressed in Dulles' policy of "massive retaliation." In short, the American public was no longer sold on the Truman-Acheson concept of a limited war fought with conventional weapons, and the election of 1952, which repudiated the Truman policy and brought in Eisenhower and the Republicans, registered its verdict.

As the outcome of the election of 1952 and, later, the erosion of public enthusiasm for the war in Vietnam pointed up, the broader question is whether the American public is willing to support "limited wars," conflicts that are by definition fought with limited means for limited objectives. Such wars, even if successful within their own terms, achieve only limited victories in conventional terms. Both President Truman and President Johnson suffered awe-inspiring declines in popularity once they became involved in extended limited wars. Both Mao Tse-tung and the late Ho Chi-minh advanced the thesis that this inability of democracies to sustain a long war of attrition was the main weapon in their respective arsenals.

The Eisenhower administration, well aware that its continued popularity depended upon extricating itself from the Korean conflict, sought the means of pressuring the Communists into an armistice

agreement. Even before the inauguration, President-elect Eisenhower stated that an indefinite delay at Panmunjon would invite the United States to enlarge the war, not only against Korea but also against China itself.[100] On 17 December 1952, Eisenhower and Dulles met with General MacArthur in New York, and he presented them with a paper entitled "Memorandum on Ending the Korean War," which, among other things, advocated "the atomic bombing of enemy military concentrations and installations in North Korea and the sowing of fields of suitable radioactive materials . . . to close major lines of enemy supply and communications leading south from the Yalu . . ." He also reiterated his plan to destroy China's airfields and industrial and supply bases and to bring Nationalist troops into the conflict.[101] On 2 February 1953, President Eisenhower stated that the Seventh Fleet would no longer screen the mainland from Nationalist attack, a step in the direction of MacArthur's proposal to bring the Nationalist forces into the conflict. The death of Stalin on 5 March, the UN threat to break off the truce talks, the Dulles warning, conveyed through New Delhi to Peking, that prolonging the armistice negotiations would mean a "broadening" of the war, and the destruction of the irrigation dams at Toksan and Chasan in mid-May, helped push the Communists into an agreement on an armistice. Which of the threats or pressures, or even other circumstances, brought about the armistice has long been the subject of debate.

Admiral Joy, long the target of Communist abuse at Panmunjon, summed up his opinion in his book published in 1955 as follows:

> The threat of atomic bombs was posed; defeat for Red China became a possibility . . . . In understandable prudence they took the only step open to them to remove the growing threat of a holocaust . . . . It was as simple as that. It had always been as simple as that.[102]

Had it "always been as simple as that"? In the first place, did the United States have a sufficient arsenal of atomic bombs in 1950 or 1951 to expend the necessary number in Korea and China and still have enough to face the Soviet Union if their use in the Far East triggered off a Soviet attack in Western Europe or in the Middle East? When General Vandenberg stated on 29 May 1951, at the Senate hearings, that the "United States is operating a shoestring air force in view of its global responsibilities," was he also referring to its arsenal of atomic weapons as "shoestring"? He pointed out that "we can lay the industrial potential of Russia today waste . . . or we can lay the Manchurian countryside waste, as well as the principal cities of China . . . [but] we cannot do both."[103] This seems to imply a relatively sparse supply of atomic weapons. Second, were the targets in North Korea and China worth using atomic bombs? The main supplier of armaments in the Korean War was the Soviet Union, and no one could be sure that taking out targets in North Korea and Manchuria would prevent the sinews of war from continuing to flow into the combat zone from the Soviet Union. Third, would a victory in Korea, obtained through the atomic bombing of North Korea and China, be worth the alienation of world opinion and the public uproar within the United States itself?

On the other side of the coin, there seems to be some evidence that the Eisenhower-Dulles threat to "broaden" the war, a threat that implied the use of atomic weapons, did hasten the armistice negotiations. Even though the US strategists may have been dubious about the efficacy of atomic bombing in North Korea and China, the enemy probably saw little to be gained in holding on in Korea when faced with the danger of an atomic destruction of the industrial potential of Manchuria. Furthermore, the atomic arsenal must have been considerably larger in early 1953 than it was three years earlier.

Air pressure through selective destruction, a campaign that had been taking its toll on the Communist economies, not only in North Korea but also in China and the Soviet Union, was probably a very important factor in bringing about the armistice. The air attacks on the irrigation dams could well have been the last straw. What had the Communists to gain by continuing the palavering at Panmunjon over the PW issue when the costs were hideous and increasing? Stalin, probably living in an unreal world in his last years, was an obstacle in the way of a solution to the PW question, but he was out of the way by early March 1953. The new "collective leadership" in Moscow was beginning to demonstrate a desire to tone down the more absurd aspects of the cold war, and the leaders in Peking were anxious to embark upon their first Five-Year Plan. The Korean conflict was impeding both aspirations, so why not wind up the obviously stalemated affair? This type of thinking was bolstered by the Communist realization that the impasse in Korea was unbreakable, at least on their part. If it were to be broken, it would probably be in the United Nations' favor, especially if the new administration in Washington were to implement its threat to "broaden" the war. Under these circumstances, an armistice that settled the division of Korea along the prewar boundaries appeared to be the best deal that the Communists could hope to get.

Peace came to Korea on 26 July 1953, an unstable peace, but at least a peace of sorts. What had the US Air Force learned from the conflict? The first lesson was that all its eggs should not be put in the "big-war" basket. When the Korean War broke out, the Air Force was not prepared in any way for local conflict along the periphery of the Communist

world. Its doctrine for air-ground coordination had to be worked out all over again, and the lessons learned in Europe in 1944-1945 had to be relearned. Only the Marines had a working system for close air support and that system was the result of having to fill in for the Marines' lack of organic artillery. The US Air Force, however, could not model its close air support on the Marines as it did not have enough aircraft to provide that many specific air units to the support of specific ground units on the scale that the Marines committed aircraft to a single brigade.[104] Given the aircraft available, the best method was to vector the arriving aircraft to the support of the ground units needing help and against worthwhile enemy targets spotted by airborne controllers.

Another serious problem during most of the war was the shortage of engineer aviation troops. The building of airstrips and their maintenance in both Korea and Japan was a nip-and-tuck affair, especially in the first year of the war. In June 1950, FEAF engineer organizations had a total of 2,322 officers and men equipped with obsolete and war-weary World War II machines.[105] It was not until late 1951 that engineer aviation battalions began to arrive in Korea in anything like the number required.

The beginning of the war found the command and control system for synchronizing the Air Force, Navy, and Army efforts in bad shape. Although, by the end of July 1950, some order was brought into the confused command situation in the Far East, "these extempore arrangements never achieved the full fruits of unification . . . ."[106] As noted before, a joint headquarters staff would have eased the problems encountered by General MacArthur.

Perhaps the greatest lesson that should have been learned in the Korean War was a bit of humility concerning the ability of air power to interdict logistics in a relatively primitive environment. Korea is a rather narrow peninsula; thus, control of the sea around it and control of the air above it gave the UN command about as favorable a situation to interdict logistics as can be imagined. The most important supply route from the Yalu to the main line of resistance ran along the west coast, thereby restricting the area to be interdicted. And when the enemy was engaged in sustained offensives, as in the summer of 1950 or the winter of 1950-1951, UN interdiction was effective. But when the enemy had settled down along a static front, he proved capable of more than adequately supplying the forces holding the front in spite of all the efforts of the UN air forces to cut off his logistics. Through the prodigious use of manpower, he was able to keep some rail lines open, to keep the necessary minimum of highways operational, and to supplement both with animal-drawn vehicles and A-frames on human backs. The primitive nature of the Korean environment made complete interdiction almost impossible. Furthermore, the supplies and equipment came largely from outside the country, and this prevented the air forces from attacking the best interdiction targets — the sources of the materiel. All the Communists in North Korea had to do was push a relatively small percentage of the materiel from the Yalu to the front, and they were able to do the job. It is true that they were never able, after the early spring of 1951, to get enough materiel through to maintain a sustained offensive but, for over two years, they were able to supply a force of over 60 divisions on the front in spite of continuous air attack and naval bombardment.

On a more positive note, it may be said that the decision to intervene in Korea resulted in several pluses for the containment policy. It served notice on the Communist leaders that attempts to expand by overt military operations would be met with force. South Korea, almost two decades later, is still independent of Communist control, and, thereby, Communist pressure on Japan has been kept at a low level. The ability of the UN air forces to maintain air superiority in spite of a determined effort by the Chinese to wrest control of the air from them during the 1951-1952 period was a dramatic lesson for both Peking and Moscow. A Communist victory in the air war in Korea would undoubtedly have been a signal for a far more aggressive strategy, not to speak of the UN defeat that would have followed such a victory in the air. If the United States Air Force was not geared to fight a local war in 1950, the Soviet instigators of the North Korean attack failed even more to take air power into consideration in their preparations. A half-way adequate North Korean Air Force in June and July 1950 could easily have spelled defeat for the UN military forces as the line between defeat and victory was delicately balanced during those months, and Communist control of the air could easily have tipped the scales. Instead, it was the UN air forces that proved to be the decisive factor in the crucial days of July and August 1950. Again, in the winter of 1950-1951, the Chinese intervention sans air support is difficult to understand. Without UN air superiority, the Eighth Army and X Corps would have had little chance of extricating themselves from the massive Chinese envelopments. Air power was again the decisive factor in a touch-and-go situation.

Although the decision not to use the atomic bomb in the Korean War was probably correct, given the political and military situation that existed in those years, it was a mistake to proclaim that decision from the housetops. The alarm of the UN Allies notwithstanding, every effort should have been made to keep the enemy in doubt about US intentions concerning the use of the bomb, especially in Man-

churia. Such psychological pressure might well have speeded up negotiations at Panmunjon.

The UN forces had momentum in the spring and early summer of 1951 and had the capability of exacting a murderous toll on the Communist forces, but the relaxation of the military pressure gave the Communists time to dig in and to establish a defensible front. Once their forces were dug in, there was little reason for the Communist negotiators at Panmunjon to accede to an armistice. But even worse, the combination of a static front and a UN go-slow policy in the ground war downgraded the UN's main military advantage — its superior air power. If the military pressure on the ground had been maintained, the Communist requirements for logistic support would have been much greater and would have been open to more effective air attack. The lesson seemed to be that, when Communists agreed to negotiate, they were hurting, and the best way to insure the success of the negotiations was to continue to hurt them. Once the pressure was relaxed, the Communist penchant for palavering over nonessential details was unlimited.

In conclusion, UN superiority in air power was its main asset in the Korean War. Without control of the air, UN ground forces would never have been able to maintain themselves on the peninsula. But the advantage of superior air power could not be fully exploited during the Korean War because it was a limited war, limited in area, weapons, and objectives. Whether it should have been limited to the extent that it was is a question open to endless argument and probably not amenable to any definitive answer. Since the prevailing type of war in the second half of the twentieth century seems to be the "limited" variety, the United States should make sure that its air forces maintain flexibility in doctrine and training and the range of equipment necessary to cope with whatever type of conflict may emerge.

FOOTNOTES

1. Glen D. Paige, *The Korean Decision,* (New York: The Free Press, 1968), pp82-85.
2. *Ibid,* pp237-238, for the complete message.
3. P. A. Rotmistrov, *Istoriya Voennogo Iskusstva,* (History of Military Art) 2 Vols, (Moskva: Military Publishing House, 1963), VolII, p551.
4. Harry S. Truman, Memoirs: *Year of Decision,* VolI, (New York: Doubleday, 1955), p 445. In his memoirs, Truman points this out clearly " . . . the 38th Parallel was too far for any American troops to reach if the Russians had chosen to disagree."
5. Kim Ch'ang-sun, *Fifteen-Year History of North Korea,* (Seoul: Chi Mun-gak Publishing House, 1961), pp19-45. Translation JPRS, No18,929, April 26, 1963. This is a detailed discussion of the confused political situation between 1945 and 1949.
6. Kiwon Chung, "The Korean People's Army and the Party," *North Korea Today,* R. A. Scalapino, ed, (New York: Praeger, 1963), pp107-110. For different figures on the strength of the North Korean Army, see Roy E. Appleman, *South to the Naktong, North to the Yalu,* (Washington, DC: Office of the Military History Department of the Army, 1961), ppl0-11. He gives from 135,000 to 175,000 men.
7. Truman, *Memoirs: Years of Trial and Hope,* VolII, pp316-326. In his memoirs, President Truman describes the frustrations encountered in trying to make the Soviet-American joint commission work; the Soviets sabotaged every proposal advanced by the Americans.
8. *Ibid,* pp325-326, the entire memorandum.
9. *Ibid,* p329.
10. Dean Acheson, *Present at the Creation: My Years in the State Department,* (New York: Norton, 1969), p357. Acheson points out, however, that his "defensive perimeter" was identically the same as that which MacArthur had described on 1 March 1949 in an interview in Tokyo, except that MacArthur's went south to north and Acheson's north to south.
11. *U.S. News and World Report,* 5 May 1950, p40.
12. Department of State, Office of Public Affairs, *U.S. Policy in the Korean Crisis,* (Washington, DC: Government Printing Office, 1950), p15.
13. Truman, *Memoirs,* VolII, p336.
14. Paige, *The Korean Decision,* pp204-206.
15. Acheson, *Present at the Creation,* pp411-412.
16. Paige, *Korean Decision,* pp209-211. Chou En-lai stated that President Truman's decision constituted "armed aggression against the territory of China."
17. Robert F. Futrell, *The United States Air Force in Korea, 1950-1953,* (New York: Duell, Sloan, and Pearce, 1961), p60. This is the classic work on the air war in Korea and will be cited frequently using the short title: Futrell, *USAF in Korea.*
18. Appleman, *South to the Nakthong, North to the Yalu,* pp49-50.
19. James A. Field, Jr, *History of United States Naval Operations: Korea,* (Washington, DC: Government Printing Office 1962), pp45-49.
20. Futrell, *USAF in Korea,* pp5-6.
21. *Ibid,* pp55-56. On p56, Futrell lists the following aircraft in operational units: 365 F-80s, 32 F-82s, 26 B-26s, 22 B-29s, 25 RF-80s, 6 RB-29s, 24 WB-29s, 26 C-54s, 23 SB-17s, and 4 SB-29s.
22. *Ibid,* p59.
23. Gen Otto P. Weyland, "The Air Campaign in Korea," *Air University Quarterly Review,* VolVI, No3, (Fall, 1953), p3.
24. Futrell, *USAF in Korea,* p19.
25. Richard M. Beuschel, *Chinese Communist Air Power,* (New York: Praeger, 1968), p129.
26. Appleman, *South to the Naktong, North to the Yalu,* pp59-76.
27. Futrell, *USAF in Korea,* p45.
28. Field, *US Naval Operations: Korea,* p62.
29. Weyland, *Some Lessons of the Korean War,* [an unpublished manuscript], 10 October 1950. Quoted in Futrell, *USAF in Korea,* p52.
30. Futrell, *USAF in Korea,* p55.
31. Appleman, *South to the Naktong, North to the Yalu,* p110.
32. *Ibid,* p179.
33. *Ibid,* pp262-264.
34. Futrell, *USAF in Korea,* pp94-95.
35. David Rees, *Korea: The Limited War,* (New York: St Martin's Press, 1964), p44.
36. Futrell, *USAF in Korea,* p139.
37. *Ibid,* pp100-101.
38. Lynn Montross and Capt Nicholas Canzona, *US Marine Operations in Korea, 1950-1953,* VolI, *The Pusan Perimeter,* (Washington, DC: Historical Branch, G-3, HQ US Marine Corps, 1954), pp98-99.
39. Field, *US Naval Operations: Korea,* pp138-141.
40. *Ibid,* p143.

41. Futrell, *USAF in Korea,* p122.
42. Field, *US Naval Operations: Korea,* p155.
43. Lt Commander Capps, gunnery officer on Admiral Doyle's amphibious staff, as quoted in Robert D. Heinl, *Victory at High Tide: The Inchon-Seoul Campaign,* (Philadelphia: Lippincott, 1968), p24.
44. *Ibid,* p41.
45. Futrell, *USAF in Korea,* pp148-150 and 153.
46. Appleman, *South to the Naktong, North to the Yalu,* pp545-548.
47. Futrell, *USAF in Korea,* p163.
48. *Ibid,* p165.
49. For the whole of Miss Anderson's transcript of what transpired at Wake Island, see R. Rovere and A. Schlesinger, Jr, *The General and the President,* (New York: Farrar, Straus, 1951), pp253-262.
50. Allen S. Whiting, *China Crosses the Yalu: The Decision to Enter the Korean War,* (Santa Monica: Rand, 1960), p23.
51. *Ibid,* pp64-65.
52. *Ibid,* pp118-123.
53. *Ibid,* p108.
54. K. M. Pannikar, *In Two Chinas: Memoirs of a Diplomat,* (London: Allen & Unwin, 1955), p108.
55. Appleman, *South to the Naktong, North to the Yalu,* pp607-776. See for a detailed account of the events in October and early November.
56. *Ibid,* p766.
57. *Ibid,* pp767-768.
58. Rees, Korea: *The Limited War,* p138.There is some disagreement among authorities as to whether the CCF divisions in Korea were up to strength, and Rigg, for example, puts them at 7,000 to 8,000 men. But Appleman says that, if you count the ancillary units attached to most divisions, the figure 10,000 is a solid one to use.
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61. Rees, *Korea: The Limited War,* pp155-161. A relatively succinct account of the retreat of the Eighth Army.
62. *Ibid,* pp161-166.
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64. *Ibid,* pp244-245.
65. John Gittings, *The Role of the Chinese Army,* (New York: Oxford University Press, 1967), p136.
66. "Rozhdenie reaktivnykh istrebiteley," (Birth of the Jet Fighters), *Aviatsiya i Kosmonavtka,* No8, 1970, p10. This was an interview with Mikoyan.
67. Futrell, *USAF in Korea,* p235.
68. Asher Lee, *The Soviet Air Force,* (New York: John Day Co, Inc, 1962), p119.
69. Futrell, *USAF in Korea,* p235. J. C. Meyer became VCS, USAF in 1969.
70. Rees, Korea: *The Limited War,* p243.
71. Futrell, *USAF in Korea,* pp266-267. General Liu's plan for the air war was obtained by FEAF intelligence late in 1951. A summary of the plan is given in Futrell's book.
72. *Ibid,* pp305 and 307-308.
73. Field, *US Naval Operations: Korea,* pp357-358.
74. Futrell, *USAF in Korea,* p344.
75. *Ibid,* p387.
76. *Ibid,* p423.
77. *Ibid,* p425.
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80. James T. Stewart, ed, *Airpower: The Decisive Force in Korea,* (Princeton: Van Nostrand Press, 1957), p157. Details in Chapter 12, "The Bridges at Sinanju and Yongmiddong," pp141-165, a study by the *Air University Quarterly Review* staff.
81. *Ibid,* pp286-288. The statistics were compiled by the editors of the *Air University Quarterly Review.*
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83. Weyland, "The Air Campaign in Korea," p20.
84. Gen Matthew B. Ridgway, *The Korean War,* (Garden City, New York: Doubleday, 1967), p189.
85. *Ibid,* p186.
86. Weyland, "The Air Campaign in Korea," p26.
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88. *Ibid,* p1,379.
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91. *Ibid,* p165.
92. *Ibid,* p172.
93. *Ibid,* pp184-187.
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97. Rovere and Schlesinger, *The General and The President,* p159.
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99. Truman, *Memoirs,* VolII, p419.
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Chapter 3

Air Power in the Middle East

Dr Joseph Churba

IN THE MIDDLE EAST, a region of continuing geopolitical importance in global strategy, the use of air power is best understood in the perspective of the larger interplay between great power and local rivalries. In every serious challenge to the status quo for the past 15 years, whether it emanated from within or outside the region, air power played a crucial, if not decisive, role in either preserving or altering the equation. In each case, air strategy in the Middle East was either dominated or conditioned by political forces external to the region. Thus, in the Sinai-Suez imbroglio of 1956, Israeli, if not Egyptian, air power was totally subordinate to a broader Anglo-French strategy. In the Six-Day War of 1967, however, the regional powers alone determined the strategy of the air war behind the mutually deterrent power of the Soviet Union and the United States.

Events since 1967 demonstrate that the area remains a rare example of an authentic confrontation of conventional air power. French intervention in 1956 failed to alter the regional equation because of inadequate political preparation. But, on 5 June 1967, the Israel Air Force (IAF), within a period of 170 minutes, did alter the relationship of forces in the Middle East. Overt Soviet interposition in the postwar period fully dramatized the limited power of local air forces and their complete dependence on the superpowers for aircraft and missilery.

Thus, the postwar period witnessed a tremendous growth in Middle East defense budgets and an accelerated demand for the most sophisticated air armament in the superpower arsenal. The Arab-Israel issue focused on Egyptian-Soviet attempts to reverse the strategic equation to the *status quo ante bellum* and on twin Israeli-American objectives of deterrence and retention of the existing balance. Significantly, in this war of momentum and with more advanced weapons threatening to expand the dimensions of the conflict, the Israel Air Force evolved from its traditional role as a supporting arm of ground forces into a versatile and indispensible instrument in Israel's diplomacy. As a result of the 1967 victory, the IAF emerged as the most effective and the most economical means for balancing Egypt's war of attrition and thereby deterring the resumption of full-scale conflict. Moreover, as the first line of Israel security, the IAF is today the *sine qua non* condition for maintaining Israel's position in the Middle East.

But if the employment of Israeli air power demonstrates the capability of a local power to alter the regional balance, the mere *deployment* of Soviet or American power in peripheral conflict can either alter or help to preserve regional stability. Deployment of American air power, as well as ground forces, in the Lebanon crisis of 1958 helped to avert what was considered an imminent collapse of Western influence in the Arab East. On the other hand, Soviet assumption of Egyptian air defense, though designed to prevent the possible collapse of Soviet influence in the Arab states, also poses a threat to regional balance. The two interventions are similar, perhaps, only in the sense that both the United States and the Soviet Union considered a rapid military response necessary to counter threats of *fait accompli* or to stabilize crisis situations which, if left unchecked, threatened to escalate into general war. They are also similar in the sense that each superpower sought to display its strategic mobility and capability for projecting conventional force over great distances. Nevertheless, expansion of the Soviet air defense role in Egypt vividly demonstrates the comparative ease with which a superpower, if left unchallenged, can either threaten or radically alter the Arab-Israeli power balance. By further increasing the risk of a wider war, Soviet interposition nullified the Israeli option to strike into the Egyptian heartland and thereby compromised Israel's dependence on air superiority to balance the numerical superiority of surrounding Arab ground forces. Moreover, the gradual movement eastward of the Soviet-made antiaircraft missile system until it was deep enough within the combat area to cover the air space above Israel's front line diminished, if not neutralized, Israel's control of the air over the Suez combat zone. And, since the missile challenge threatened to neutralize Israeli air power and

enhance Egypt's offensive capability, Israel requested electronic countermeasures (ECM) to neutralize the missile deployment. Thus, in cyclical fashion, employment of the IAF to neutralize Egyptian numerical superiority triggered missile deployment to neutralize the IAF. This, in turn, brought ECM to neutralize the missiles. Clearly, the dynamics of modern warfare has placed within reach of the local protagonists the most sophisticated conventional weapons available. Therefore, in the sharpened contest for control of the air over Suez, the Moscow and Washington governments maintain important roles in the Middle East strategic equation.

THE SINAI-SUEZ WAR OF 1956

The employment of air power in the Sinai-Suez imbroglio of 1956 cannot be understood without first acknowledging its role in the development of the common, though disparate, objectives of Britain, France, and Israel. To be sure, in the three-month interim between Egypt's nationalization of the Suez Canal Company (26 July) and the outbreak of hostilities (29 October), national objectives varied with shifting diplomatic circumstances. Yet all plans for military intervention in Egypt followed the basic principle of air warfare strategy—the achievement of air superiority at the outbreak of conflict. Unless the Egyptian Air Force (EAF), with its Russian-built jet fighters and bombers, could be neutralized, no invading force in either Sinai or the Suez Canal area could operate successfully.

The original Anglo-French plan evolved in early August 1956 without consideration of Israeli action. It proposed the destruction of the EAF and the capture of Alexandria as the prelude to an attack on Cairo.[1] By mid-September, however, the British decision to use force in Egypt had become more difficult for political reasons at home and abroad. Only then did the Arab-Israel issue begin to figure prominently in Anglo-French planning as a new but essential pretext for intervention. Israel would create a threat to the Suez Canal and, under the pretext of separating Israeli and Egyptian forces, Anglo-French forces would take preventive military action to capture the canal. Indeed, by capturing the canal, they would separate the regional belligerents. Thus, by mid-September, Anglo-French strategy focused on the canal, and the final plan designated Port Said as the initial objective. The basis of the plan, however, remained the same—Egypt's rejection of an ultimatum, neutralization of the EAF, a coordinated land assault by airborne and seaborne forces, and rapid exploitation by an armored column with tactical air support.

Though similar in general purpose, the objectives of Britain, France, and Israel were hardly identical. For the British and French, securing freedom of traffic in the canal was the common and positive objective. But, whereas the British also hoped to reaffirm their position in the region with or without Egypt's Abdel Nasser, the French considered his depostion as *sine qua non* for a solution to their Algerian dilemma.[2] Except for the joint agreement on the priority of gaining control of the air as a prerequisite for successful ground operations, the British and French commands were seriously divided regarding the pace and the magnitude of the operation. Operation MUSKETEER was patterned after the wartime landing tactics of the British and American forces in the Mediterranean during World War II, when political considerations were not such limiting factors. Unlike the French, the British failed to grasp this basic distinction and the necessity for quick and decisive action. British plans made a *fait accompli* impossible. Nevertheless, the French agreed to a limited military operation as a last resort in the hope that something could be accomplished. This disparity more in method than in objectives contributed to ultimate failure in achieving the primary objective of insulating the canal from the control of any single government, the establishment of air superiority notwithstanding. Events would prove that the military problem was not how to overcome the Egyptian forces but how to overcome them within the restrictive political framework.

Israel, for its part, understood that France would not act without Britain, both because France had committed its forces to the integrated command of Operation MUSKETEER and because only Britain had the bombers necessary to destroy the EAF. Indeed, according to General Moshe Dayan, "If it were not for the Anglo-French operation, it is doubtful whether Israel would have launched her campaign; and if she had, its character, both military and political would have been different."[3]

Although a preemptive attack was necessary for their security, the Israelis were hostile to Anglo-French intervention. They did not wish to become allies of the colonialists and lose the good will of the Bandung countries. Cooperation with Britain was as repugnant as cooperation with Israel for Britain. Nevertheless, collusion was far more attractive than continued isolation and refusal of the West to redress the arms balance upset by the Czech-Egyptian arms deal of September 1955.[4] The high priority in the Anglo-French plan to destroy the EAF would protect Israel's populated areas from Soviet-built *Ilyushin* aircraft. It would also permit destruction of the Arab terrorist bases in Gaza, then under the direction of the Egyptian General Staff; destruction of the Egyptian military before it assimilated the new Soviet equipment; and opening the Gulf of Aqaba to Israeli shipping as an alternative to the Suez Canal.

These plans implied large-scale ground operations in the Sinai Desert and command of the air. Unless

the potentially powerful EAF was destroyed before the major ground offensive in Sinai began, Israel would neither commit her infantry nor expose her populated centers to possible attack by Soviet-built Egyptian bombers. Accordingly, in the secret meetings held at Sevre (23-25 October) to coordinate MUSKETEER and the Israeli plan (KADESH), Israel Prime Minister David Ben Gurion sought confirmation from the French and British governments that the EAF would be destroyed before the major ground offensive began.[5] With major Israeli production and population centers only eight jet-flight minutes away from the nearest enemy base, he also sought aerial surveillance of Egyptian airfields from the moment Israel crossed the frontier. In the tough bargaining that ensued, Britain agreed to begin bombing Egyptian airfields 36 hours after the beginning of the Israeli offensive. With aircraft based on Cyprus, France would provide fighter cover for Israeli cities and paradrops of food, ammunition, and trucks to the advancing Israelis. Only for the sake of indispensable air cover did the Israelis consent to simultaneous action with the British and French. This concern was the potential threat of Egyptian air power also led to an assumption of other Israeli objectives (ie, Straits of Tiran, Gaza Strip) by the Anglo-French and the latter's problems of Suez by Israel. Thus, operations MUSKETEER and KADESH became interdependent and coordinate parts of a carefully orchestrated diplomatic ultimatum. Anticipated rejection by Egypt would permit the neutralization of the EAF, an Israeli thrust into the Sinai, and Anglo-French occupation of the Suez Canal Zone.

Operation Kadesh

Operation KADESH began with an air drop of a paratroop battalion on 29 October at the Parker Memorial[6] monument, near Mitla Pass, some 30 miles east of the Suez Canal. Flying at low altitudes under the cover of 10 meteor jet fighters, 16 Dakota transports carried 395 paratroopers.[7] Since it was impossible for the high-altitude fighters to provide complete protection for the carrier force, 12 Mysteres flew north-south screening movements at varying heights 10 miles from the canal. This action cluttered up the enemy radar, permitted direct observation of possible enemy takeoffs from the canal zone, and promised to draw off Egyptian fighters if they headed for the monument area.[8] From the beginning, Israeli pilots stayed at least 10 miles east of the canal to give the appearance of as small an operation as possible. Under strict orders not to fight unless attacked, the IAF at this stage provided cover for the Mitla Pass and observed the three highways and one railroad that cut across Sinai. Although Israeli jets flew the length of the canal for one-half hour before and after the paradrop, they were not challenged. Despite the fact that the drop zone was only 35 miles from the nearest Egyptian air base (Kabrit) and that Egypt probably picked up the jet formations on radar 100 miles before they arrived above that zone, the sole reaction was to disperse their planes that were on the ground.

An hour before the paratroopers dropped at the monument, Col Ariel Sharon, commander of the airborne brigade, moved his men across the frontier for a sweep into southern Sinai to join with the parachute battalion. Thus, the purpose of the opening phase of the campaign was to create a "threat" to the canal and provide a pretext for the British and French to intervene and "protect" the waterway. Its purpose also was to confuse the Egyptians as to Israeli intentions, while allowing the Israeli Government sufficient time to pause, evaluate, and adjust. Israel made no further significant moves until Britain and France delivered the ultimatum requiring Israeli and Egyptian troops to remain 10 miles away from the canal on either side and announcing the landings of Anglo-French troops to insure uninterrupted navigation. If the British and French were to have second thoughts, the Israelis wanted sufficient flexibility to withdraw and claim that the action had been no more than a large-scale reprisal.[9] Under the circumstances, Israel accepted the ultimatum, as given, while Egypt declined as expected, since there was nothing to gain.

Despite his initial success, Dayan regarded the balance of air strength as the pivotal factor for the ensuing 24 hours.[10] His forecast of Egyptian inertia in the opening phase was accurate. "If we would not attack their airfields, they would not extend their activity beyond the border of Sinai."[11]

In the opening hours, however, the implications were that extra risks would be required by Colonel Sharon's parachute battalion at Mitla Pass and by his mobile column on its way to join the paratroopers. When four Egyptian Vampires attacked the ground column on the first morning, Israel's Air Staff believed that the main danger had passed.[12] Prior to these attacks, the IAF passed up numerous opportunities to inflict substantial damage on the EAF and operated as a protective force over the Mitla Pass. Immediately after the attacks, the IAF received orders to attack enemy ground forces wherever they appeared and to provide preliminary strike or other direct support. Thus, from the outset, the Sinai campaign was limited in objectives, area, and forces. Without discussion or contact, the protagonists tacitly agreed to confine the war to Sinai and not to attack the cities or bases of the other.[13] However, Egypt did not know that Anglo-French intervention would soon neutralize the EAF. This allowed Israel to forego superiority over the battle area in return for immunity of its cities and air bases from attack.

Nevertheless, throughout the first night of the campaign (29 October) and two days preceding the Anglo-French assault (30-31 October), Egyptian air activity, with the exception of one occasion, proved insignificant.[14] Egypt delayed for the better part of a day before using its air force against Israel, and evidence does not substantiate claims that Egypt deliberately limited air operations in anticipation of the Anglo-French attack. Moreover, by the time of the air assault on Egyptian airfields during the night of 31 October, the campaign on the ground had escalated to its final phase, and the Israelis had gained control of the air over Sinai. Indeed, this accounted for Dayan's decision to press on despite British failure to bomb Egyptian airfields within 36 hours after hostilities began, as agreed earlier. Furious at the delay, Ben Gurion wanted to withdraw his troops from the advanced post at Mitla, but Dayan dissuaded him.

It later developed that the British postponed the bombing because strategists had prepared to destroy the airfields by night and not by day.[15] An additional delay occurred when London received word that 15 US transport planes were waiting to evacuate American civilians from the Cairo West airfield. The delay between the expiration of the ultimatum and commencement of the air assault led Cairo to conclude wrongly that Britain was bluffing. Accordingly, Egyptian leaders ordered an armored brigade and other reinforcements against Israel in Sinai.[16] Contrary to expectations that Britain and France would intervene 12 hours after issuing the ultimatum, the air assault did not begin until Wednesday, 31 October, 25 hours after the ultimatum expired. With the first British attack, Abdel Nasser ordered a withdrawal from Sinai and grounded the EAF in preparation for a long struggle. By noon of 1 November, no Egyptian aircraft were observed over Sinai. The IAF, for its part, made no operational changes; it had already restricted its planes to limits of 10 miles from the canal zone. The remainder of the campaign consisted of interdiction and close support missions. Major action had shifted to the canal zone, and the Anglo-French bombings sealed the fate of the EAF, completely eliminating it as a factor in either the Sinai or Suez fighting.[17]

Operation Musketeer

The Anglo-French air offensive began at dusk on 31 October. Although political directives limited their targets, the British and French, paradoxically, chose to fight a war against Egypt according to the classical doctrines of air power. They would first win aerial superiority, destroy whatever air threat still existed on the ground, strike other military installations and, finally, by a process of interdiction, isolate the battlefield from its sources of supply.[18] Consequently, the elements of time and speed were not considered as decisive factors in the final outcome.

During an Arab broadcast from Limassol warning Egyptians to stay clear of the targets, RAF Valiants and Canberras roared in from Malta and Cyprus and dropped bombs on runways and hangars at four airfields in the Nile Delta and eight in the canal zone. The targets included Almaza, Bilbeis, Cairo West, Inchas, Abu Sueir, Deversoir, Fayid, Ismailia, Gamil, Kabrit, Shalufa, and Suez.

For 72 hours, 200 RAF bombers (Valiants, Sea Hawks, Sea Venoms, and Corsairs) and 40 French Thunderstreaks operating from the aircraft carriers *Albion, Bulwark,* and *Eagle* and from land bases in Malta and Cyprus swept over the 12 airfields. With aircraft taking off and landing at the rate of one per minute on airfields and one every two or three minutes on the carriers, the volume of air activity was impressive.[19] The planes met no opposition in the air, and the EAF, taken completely by surprise, paid dearly for its unpreparedness. No less than 260 Egyptian aircraft were destroyed on the ground. After 36 hours of concentrated bombing, the British and French had destroyed the EAF and thereupon shifted their primary emphasis to interdiction. The new targets were concentrations of Egyptian armor, lines of communication, and ground forces operating in the canal zone or moving into the area. They also directed the offensive at roads, railways, and canals leading to Port Said. Attacks on Egyptian shipping were also part of the aerial prelude to the ground invasion. Yet, despite efforts to keep the canal open to traffic, the Egyptians succeeded in sinking 47 cement-filled ships within the first 48 hours. At the same time, the Syrian Army blew up their pumping stations on the Iraq pipe line. Thus, Anglo-French intervention brought precisely what the two governments sought to avoid—blockage of the Suez Canal and interruption in the flow of oil.

In opting for a strategy of prolonged precision bombing that would destroy Egyptian military potential with as little damage to life and property as possible, the British hoped either to force Cairo into accommodation or to persuade the Egyptian people to change their government. An ill-conceived and poorly prepared psychological campaign to turn the Egyptians against the regime accompanied the bombing. The British dropped one million leaflets on Cairo to warn the Egyptian people of retribution. But, by taking extreme measures to avoid civilian casualties and prevent damage to the communications and transit centers of Cairo and Alexandria, they nullified the effect of the leaflets. Although the British intended to overawe the Egyptians with a show of overwhelming air power, they confined their targets to strictly military objectives and provided advance warnings for civilians to keep away from airfields or other potential targets. The

reaction, however, was the exact opposite—Egyptians rallied to the regime. Abdel Nasser was highly successful with his skillful use of Radio Cairo to maintain Egyptian support. By claiming to have shot down large numbers of attacking planes, he made it appear that successful resistance rather than Anglo-French forebearance accounted for the immunity of urban areas from attack.[20] Accordingly, the psychological assault not only enhanced Nasser's prestige but also strengthened his hold on the Egyptian populace. Moreover, as the slow methodical bombing continued, world opinion began to crystallize against the British and French. Both President Dwight D. Eisenhower and Secretary of State John Foster Dulles stated that no Egyptian provocations had justified the resort to arms. The Soviet Union bitterly denounced the intervention and demanded an immediate end to hostilities. On 1 November, the UN General Assembly, by a vote of 64 to 5, approved the US proposal for an immediate cease-fire, and opposition that ran across party lines mounted steadily in Great Britain.

Faced with the menace from the United Nations and the necessity for speed, the French now intensified their efforts for some adjustment of the slow timetable of MUSKETEER. Because of Prime Minister Anthony Eden's insistence on maintaining the juridical fiction that intervention would "separate the belligerents," the order to put MUSKETEER in motion did not come until after Egypt's rejection of the ultimatum. This meant that the expeditionary force would not reach Port Said until 6 November—too late to intervene, for, by then, the Sinai campaign would be over and the UN would have intervened. The French proposed a modified plan for a lightning strike on Egypt, known as Operation OMELETTE. Indeed, on 31 October and 2 November, the persistent French had proposed the landing of airborne troops along the canal, but the British refused this proposal on the grounds that the Allies were not yet in the position of "no opposition" or "all opposition can be ignored."

At the time, the French argued that the problem of support for the airborne troops during the three days before the expected arrival of the assault fleet would be solved by relying on Israel.[21] Ben Gurion, it seems, accepted this arrangement, but Premier Mollet would not move without Britain. Nevertheless, modifications in MUSKETEER allowed for an airborne drop on 5 November—24 hours before the arrival of the ships.[22]

The plan called for the seizure of Gamil airfield, west of Port Said, by British paratroops, while French airborne forces took the southern approaches to the town and suburban Port Fuad. If resistance were slight, the British would occupy Port Said. If the city could not be captured, they would wait for the seaborne force. To limit Egyptian civilian casualties, naval bombardment planned for November would include only that necessary for a safe landing. The ground attack on Egypt would be made in two stages—airborne assault and seaborne assault.

Airborne Assault.—At 7:00 am on 5 November, 600 British and 487 French paratroops boarded their transports at Nicosia and Tymbou airfields on Cyprus and landed at key points around Port Said. The British troops landed on Gamil airfield, and the French landed near a twin bridge connecting Port Said with the road to the south. The scope of the initial assault and the size of the parachute force depended on the number of transports that could operate from the restricted airfields in Cyprus. Not only did the British have inadequate numbers of aircraft, but those on hand were obsolete and unsuited to the purpose.[23] The timing of the assault was linked with the arrival of the seaborne assault group, mainly from Malta.

With complete command of the air afforded by offshore carrier-based planes, the paratroops made a successful landing but met considerable resistance. After the landings, the Fleet Air Arm was primarily responsible for air support in the assault area, while the RAF in Cyprus continued its attacks on military installations deep inside Egypt to insure that remnants of the EAF did not intrude. From the time British troops touched ground, an excellent liaison existed between the army and the Fleet Air Arm. Army air control teams operating with the paratroops could call on aircraft at short notice to attack specific targets.[24] Within one hour, all formal opposition ceased at Gamil airfield. By midday, the airfield could have received additional reinforcements and equipment, but none was available and none came. The British transports (Hastings and Valettas) required longer runways. Although Gamil was built to receive Dakotas, Dakotas were not available. Consequently, reinforcements and supplies were airdropped.

Meanwhile, the French overcame strong opposition in taking Junction Canal and employed an innovating system for air support. Overall direction for seizing the vital link in the Port Said-Suez route was under a French general circling above the area in a Nord Atlas aerial command post exercising fingertip control of the battle.[25] After naval Corsairs attacked defensive gun emplacements, the ground forces experienced little difficulty. Throughout the operation, the general directed his troops, controlled air support, and reported progress to his superiors at sea and to Force Headquarters in Cyprus.

With an additional paradrop on the other side of the canal, the French, by early afternoon, had captured not only the twin bridges but the waterworks. By midafternoon and despite a delay caused by a false Egyptian surrender, Franco-British troops

sealed the southern approaches to Port Said and captured Port Fuad. One can only speculate that, had the Allies possessed a greater degree of strategic mobility and landed additional reinforcements and tanks to exploit the success of the initial phase more fully, they might have seized not only Port Said but Ismailia and Suez with little difficulty. Yet the airborne assault had never been considered as more than a preparation for the seaborne attack.

Failure to obtain the surrender of Port Said was a serious military and psychological blow. Political developments gained momentum, and speed was now essential. By 5 November, Israel had captured all her objectives. Gaza had fallen, and, with the capture of Sharm Al-Sheikh and the islands of Tiran and Sanipir, the Gulf of Aqaba was free at last for Israeli shipping. Israel was now anxious to accept the UN cease-fire, provided that Egypt also accepted. Dayan recalls that Britain and France reacted to this idea and "almost jumped out of their skins. . . . Britain, therefore, asked France to use the full weight of her influence to persuade us to retract our announcement."[26]

Ben Gurion reluctantly agreed and presented some conditions designed to delay acceptance of the cease-fire. However, it was now clear that, inasmuch as the Sinai fighting had ceased, the rationale for intervention no longer existed. Moreover, in addition to mounting dissent in Britain and the United States, the Soviet Union had now assumed a more threatening posture. Though preoccupied with the revolt in Hungary, the Soviets realized, after six momentous days, that Washington genuinely opposed the Anglo-French action and only then sent threatening notes to Ben Gurion, Eden, and Mollet.[27] Almost tantamount to an ultimatum, the warnings threatened rocket bombardment of Britain and France and "put a question mark against the very existence of Israel as a state." Given the structure of Soviet missile forces at the time, the threat was manifestly false, but Eden and Mollet did not discount the possibility of Soviet "volunteers" arriving in the Middle East.

The Soviet involvement transformed the crisis and, for the first time, opened up the fearful prospect of a third world war. Together with other public assurances, it strengthened Nasser's determination not to yield and to order increased resistance at Port Said. Confronted with the choice between capitulation and escalation, the two Western Powers proceeded with the seaborne invasion.

Seaborne Assault.—Throughout the night of 5 November, British and French troops consolidated their respective positions in preparation for the naval landings. At dawn, the Anglo-French armada arrived off Port Said. The British fleet was the larger, comprising 100 warships, 2 rapidly converted "assault" carriers, and 3 aircraft carriers, as compared with the French fleet of 30 warships and 2 carriers.

To keep casualties to a minimum, the British and French held the naval bombardment of Port Said to about one-tenth of its potential and restricted the depth of the target area.[28] In addition, two hours before assault, the Voice of Britain from Cyprus continually warned the people of Port Said to take cover.

The pre-assault fire was a comparatively light bombardment directed at known Egyptian positions from destroyers only. Since airborne troops already held Port Fuad, the French landing received no supporting fire. At Port Said, British troops, tanks, and supplies landed with minimal losses and quickly captured the waterfront. The major innovation of the campaign was the landing of 400 British commandos by helicopter from HMS Ocean and Theseus. Within 90 minutes, 22 Sycamore and Whirlwind helicopters put the commandos ashore and, in 40 additional minutes, brought in 23 tons of supplies.[29]

The ground forces advanced steadily into the town and overcame pockets of resistance by calling in either a Centurion tank or a naval strike fighter. Rocket attacks from Sea Hawks finally ended the resistance of one such pocket at the Admiralty Building, strongly defended by Egyptian sailors.

South of the town, armored cars attacked French troops, but the French beat them off with the aid of supporting aircraft. The final surrender of Port Said came late in the afternoon although sporadic sniping continued. By early evening, an Anglo-French armored column moved south to Suez. It reached El Cap at the 38 km mark at midnight. By then, however, international and national pressures had become too strong to withstand. The Anglo-French cease-fire and halt order known to the troops four hours earlier became effective and left the main force 75 miles from Suez.

Total Allied losses during the two days of fighting were 30 dead and 150 wounded; British losses were twice those of the French. Egyptian losses ranged from 650 to 1,000. The Allies lost 10 aircraft, and the Egyptians 260. The outcome of the Suez crisis now lay in the hands of the diplomats.

Assessment

Among the manifold lessons to be learned from the Suez affair, two, perhaps, are most significant. First, political leaders must define their national objectives with the utmost clarity, and, second, the military must prepare plans and select suitable weapons to achieve the desired goals.[30] The exact political aims of Operation MUSKETEER were never clearly defined; hence, military methods were not always in harmony with any of the stated objectives. The two Allied governments, especially the British, lost sight of the only real political objective

—securing the Suez Canal. Amid the confusion of political and diplomatic debate, the British and French alternately stated at various times that their primary objective was either to set up an international regime for the canal, depose Abdel Nasser, reoccupy Egypt, or place a shield between Egyptian and Israeli forces. The shifts in mutually contradictory objectives could not but raise fundamental questions for military planners. Did the switch in the initial objective from Port Said to Alexandria and back to Port Said imply that Egypt would or would not be reoccupied and that a new government would be founded in Cairo? If, as claimed, the Suez Canal constituted the sole objective of the expedition, then it failed. If, however, the capture of Port Said represented the attainment of political objectives, then these objectives must have been at variance with military objectives.[31] Despite air superiority, a display of overwhelming air strength, and a ground invasion, the British and French realized none of their objectives. They had hoped to secure their oil supplies and give some sort of international status to the Suez Canal. Instead, Egypt blocked the canal; Syria cut the pipelines from the oil fields of Iraq to the Mediterranean; and, after Saudi Arabia banned oil shipments, Western Europe faced a serious oil shortage. Although the canal was eventually cleared, it remained under Egyptian control. Abdel Nasser's position was strengthened rather than weakened. Conversely, Anglo-French prestige virtually disappeared, while the Soviet Union gained considerably with minimum risk and cost. The two Western Powers not only antagonized the United States, but the Afro-Asian bloc denounced them as ruthless suppressors of small nations. In short, Britain and France incurred all the liabilities of intervention without deriving any benefit.

If the canal was the primary political objective, then the military objective should have been to land troops at key points along the canal with the greatest possible dispatch to prevent the Egyptians from blocking or damaging the waterway. Yet, for different, though comparable reasons, neither Britain nor France was prepared to act at the outset of the Suez crisis with the kind of force required by the situation. Public opinion in the immediate aftermath of Egypt's coup favored intervention, but the Allies lacked a reserve of fully trained and well-equipped forces, transport aircraft, amphibious craft, and tactical air support. Indeed, it is even credible that, had Britain possessed the military capability to react immediately, Egypt might not have risked nationalizing the Suez Canal Company.[32] In any event, the long delay allowed time for foreign and domestic opinions to crystallize against intervention. Thus, when scarce resources were finally mobilized, the favorable moment to strike had passed. Moreover, the political assumptions under which Britain and France undertook the operation were manifestly false. Prime Minister Anthony Eden wrongly concluded that President Eisenhower's interests would permit a certain freedom of action in the Middle East. Even worse was the assumption that Eisenhower would be rendered inoperative by the pending presidential election, partly because of the Jewish vote in New York. Furthermore, rightly or wrongly, Eden concluded from an earlier meeting with Premier Nikita Krushchev that the Soviet Union recognized the Middle East as a Western preserve and would not prevent Britain from protecting her interests in the region if they were threatened.[33] This may have been the case in July, but, in November, Soviet leaders were obliged to take some action to compensate for, or obscure, their use of force in Hungary. Intervention in Egypt was an obvious choice, and the Soviets shrewdly guessed that, to Africans and Asians, the invasion of Egypt was far more horrifying than the reoccupation of Hungary. By coming to the aid of Egypt, the Soviet Union would redeem itself after its Hungarian crimes.[34]

Significantly, at all stages of the Suez crisis, Eden reassured his ministers that Russia would not interfere with whatever he did—except in the medium of propaganda. In the events that actually took place, neither the United States nor the Soviet Union was neutral, let alone benevolent. What ensued was a clear demonstration that Britain and France could no longer act independently in defense of their vital interests if their actions ran counter to the purposes of the two superpowers.

Errors in military judgment of timing and enemy capability were at least partly the consequence of political vacillation, miscalculation, and interference with the conduct of the operation. Largely because of a desire to cut casualties to the barest minimum, Britain and France relied too heavily on aerial strategy accompanied by psychological warfare. Fundamentally inconsistent, the plan assumed both an imminent collapse of Egyptian will to resist and an exaggerated estimate of potential military capabilities.

Five days of air preparation preceded the commitment of airborne troops in the Port Said area, and seaborne forces landed a day later. During these six days, the Egyptians had ample time to send blockships, dredges, and cranes to render the canal inoperative. Thus, in advance, the Anglo-French command threw away the prize which they hoped to acquire by a resort to force.[35]

In emphasizing psychological strategy, the British may have been influenced by the traditional RAF experience with the concept of air control in limited war.[36] As early as 1920, the RAF had been charged with the primary responsibility of maintaining order in mandates of the League of Nations administered by Britain. An instrument of national policy in

limited war, the RAF, with a minimum of ground forces and with less casualties and cost than traditional punitive expeditions, policed primitive areas of the Middle East, particularly in Iraq and the Aden Protectorate. Air control then proved to be a humane and effective policing technique in subduing primitive tribesmen, but its extension to a sophisticated city, such as Cairo, with middle class leaders was a gross miscalculation.

With primary emphasis given to the need of avoiding casualties, British and French pilots were limited in the targets available for attack.[37] Because of this, there is merit in the French complaint that Prime Minister Eden wanted psychological results without psychological methods. Quite possibly, the severe restrictions placed on the bombings negated the desired psychological effect.

Of no less importance, the British failed to exploit the military opportunity created by Israeli successes on Sinai. Although the Israelis demonstrated the total incapacity of the EAF to intervene effectively in any of the fighting, the British continued to view the EAF as operational—an assessment made on the quality of the opposing aircraft rather than on the quality of the pilots. Based on the orthodox viewpoint, it is highly dangerous to attempt an amphibious or airborne landing while a hostile jet-powered air force is still operational. But even after neutralizing the EAF 36 hours after the beginning of Operation MUSKETEER, the British failed to exploit the opportunity.

In retrospect, had the British not grossly overrated the extent of enemy operations, one day of air bombardment might have been sufficient to justify airborne and amphibious landings in the canal zone. This would have placed Anglo-French forces in possession of no more than a slightly damaged canal, and the Allies would then have confronted the United Nations with an accomplished fact—Anglo-French possession of the canal. An eventual transfer to UN control and temporary operations might have been feasible, pending the establishment of some international authority.[38] Instead, the Anglo-French assault proceeded along strictly orthodox lines, with no meaningful adjustment to either Egyptian military inertia or the Israeli sweep across Sinai. The obvious lesson is that, in limited war, not only is the seizure of military and political opportunity often required, but military means must be in harmony with precise political objectives, for time will rarely permit correction of the initial error.

The Anglo-French operation in Egypt stands in vivid contrast to the politico-military coordination, thorough planning, and bold execution of the Israeli offensive in Sinai during the same period. To be sure, Israel freed the Gulf of Aqaba, destroyed terrorist bases in Gaza, and ruined Egyptian military prestige. But even these gains lost much of their value because of the Anglo-French fiasco. Egypt could obscure the stark facts of defeat in Sinai by pointing to Anglo-French intervention in Port Said. Although intervention hastened the Egyptian military collapse, Abdel Nasser could explain the failure of the EAF to contest the air over Sinai more effectively on the untenable grounds that he deliberately limited operations in anticipation of the Anglo-French assault.

The shrewd tactic served not only to obfuscate, in good measure, Israeli successes but also to delude the British into overestimating Egyptian military potential. It tended to confirm and justify British inhibitions against an earlier airborne assault, despite the continuous proddings of the French. EAF inability to react in the air until the day after Israel struck was thus hidden in the fog of a wider war.

In contrast to the EAF, the Israeli Air Force proved itself aggressive, well-trained, and effective as a fighting force over Sinai. Though on the defensive, the IAF allowed the bases and fields of the EAF to remain untouched for two days. In so doing, Israel deliberately limited the extent of its aggression, and Egypt tacitly agreed to the limitations on the use of air power. While it is doubtful that Israel would have taken the gamble without Anglo-French collusion, the IAF seemed prepared for retaliation if its estimate of Egyptian inertia had proven incorrect.

Israeli pilots were trained primarily for close support of infantry and armor as well as interdiction. The IAF interpreted the decision to go after enemy ground forces with an elasticity and engaged in air-to-air combat as well. All aerial fighting took place within the first 48 hours—from the morning of 30 October until the morning of 1 November and within 35 miles of the canal. The IAF downed five Mig-15s, six Vampires, and one Meteor. The sole Israeli loss in the aerial fighting was a Piper Cub. Another Piper was destroyed on the ground, and two jets were lost to ground fire.

Estimates credit the Egyptians with 50 sorties on 30 October and 100 on 31 October. The Israelis flew at least several hundred each day. In observing the three highways and one railway in Sinai and the Egyptian airfields in the Suez Canal zone, the Israelis had to operate at much greater distances from their bases than did the Egyptians. Even so, the IAF claimed a sortie rate of four to four and one-half per day per plane with its jets and two and one-half per day with its Mustangs and Mosquitos. It is unlikely that the EAF attained a rate of even one sortie per day per plane. Impressive as these figures are, however, Dayan's decision to continue the ground offensive, despite the failure of Britain to commence air operations at the agreed time, was of pivotal importance. He based the decision on the

IAF's established command of the air in Sinai. Had it been otherwise, it is doubtful that Israel would have pressed toward its maximum objectives.

THE LEBANON CRISIS—1958

Viewed in the context of the abortive Anglo-French invasion of Suez, the Arab-Israel conflict, the virulent anti-Western propaganda issuing from Cairo, and the Syro-Egyptian merger, the outbreak of armed rebellion against the pro-Western government of Lebanon on 9 May 1958 conformed to a pattern of trends and events that threatened the collapse of Western influence in the Arab East.

Domestic tranquility in this country of minorities had rested on a Christian-Muslim balance maintained only by an adroit juggling of a wide variety of religious and tribal loyalties. The urge for unity under Nasser's leadership, together with the inept administrative policies of President Camille Chamoun, brought Muslim grievances to the surface and a demand for a new census that, in effect, would have ended the political fiction of a Christian majority. Chamoun's alleged design to succeed himself as President by amending the constitution and his endorsement of the Eisenhower Doctrine combined to sharpen the unresolved issue between loyalty to an independent state with a destiny of its own and loyalty to a larger Arab nation.[39] Muslims construed Lebanon's failure to sever diplomatic relations with Britain and France in 1956 and Chamoun's support of the Eisenhower Doctrine as betrayal of the Arab cause. Christians, on the other hand, saw an Egyptian plot to force Lebanon to abandon its neutral position between Arab nationalism and the West.

Once fighting started, the government could not restore order, partly because the commander of the army, General Fuad Chehab, feared that, if he ordered destruction of the rebel strongholds, his army might divide on a strictly Muslim versus Christian axis, resulting in even greater internecine conflict. Still another reason for the failure to restore order was the support given by Syria to the rebels in men, weapons, and supplies. The crisis, therefore, consisted of two elements—outside intervention and the internal issue of whether the incumbent president would, or should, succeed himself in office for a second term. With the invasion of men and supplies from Syria and the army adopting a neutral stand, the struggle became truly partisan and threatened to end in Egypt's favor. Indeed, this possibility became greatest on 14 July, after the unexpected Iraqi revolution abolished the monarchy. Not a few observers saw the lightning-like coup as the "climax of a gigantic Nasserist-Communist conspiracy, carrying the threat of a comparable coup in Jordan and a final victory for the rebels in Lebanon, placing within the grasp of Egypt and perhaps the Soviet Union the overlordship of the Middle East."[40]

The US Role

On the morning of the Iraqi revolt, Chamoun handed the American Ambassador an urgent request for US military assistance within 48 hours. Although the American ambassadors in Beirut and Amman did not believe that the danger to the existing governments was appreciably increased by events in Iraq, Washington had reliable information that a similar coup had been scheduled against King Hussein of Jordan for 17 July. Thus, events in Iraq had the immediate effect of rivetting attention on the unresolved civil conflict in Lebanon and on the incipient threat to the surviving Hashemite crown in Jordan.

The United States expected Lebanon's call for help in a general way but did not expect it at the time and under the circumstances that it came. As early as 10 May, before the Iraqi coup, the Lebanese foreign minister suggested that US Marines might be required to preserve the government. The United States, however, wisely chose to observe the situation closely rather than intervene, but, as a precautionary measure, it placed the Sixth Fleet and other US forces on ready alert status for possible deployment. In addition, Washington submitted a clarification of terms regarding possible American intervention to the Chamoun government on 14 May.[41] When the situation eased somewhat toward the end of May, the Sixth Fleet and other military forces reverted to normal alert status.

The violent upheaval in Iraq, however, radically altered the regional balance and the decision to intervene. By this time, Lebanon had fulfilled the political conditions for contingent military support. President Chamoun had repeatedly assured the American Ambassador that the presidential election was no longer an issue. His only concern was preservation of the territorial integrity and political independence of Lebanon. Accordingly, 24-½ hours after Washington received the request for aid, the first Marine units landed unopposed on the shores of Beirut. Simultaneously, a Marine combat unit from Okinawa moved into the Persian Gulf. An airborne battle group from Germany and a Composite Air Strike Force (CASF) from the United States arrived at Adana, Turkey. The Strategic Air Command assumed an increased alert status, and the Sixth Fleet concentrated in the eastern Mediterranean. In conjunction with these moves, Turkish troops began to concentrate on Iraq's borders, and, two days later (17 May), British paratroopers landed in Jordan at the invitation of King Hussein.

The nature, scope, and timing of the military moves into Lebanon and Jordan suggested that the United States and its Allies were preparing to intervene in Iraq should the need arise.[42] Nevertheless, Washington and London moved cautiously. Although

Russian intentions were not then known, the Soviet Union reacted with large-scale maneuvers on the frontiers of Turkey and Iran and also staged an impressive airlift from Odessa on the Black Sea of Bulgaria. The Soviet diplomatic and propaganda apparatus sought to mobilize world opinion against what it termed "American aggression against the Arab world." The United States later learned that the Soviet Union had no intention of intervening on behalf of Iraq. Its objective was to restrain the United States by posing the possibility of Soviet intervention.[43]

Events proved, however, that Egypt did not directly stimulate the revolt in Iraq and that the new government had achieved public acceptance and complete control. No part of the Iraqi army took up arms in defense of the deposed regime, and the United States declined to use King Hussein's claim as constitutional chief of the Arab Union of Iraq and Jordan as the pretext to intervene. Yet, unlike the Suez-Sinai war 10 months earlier, this crisis was much more significant because of the greater interests at stake and because all the involved parties had moved troops to the fringes of Iraq. Unlike the Suez imbroglio, the rapid buildup of powerful land, sea, and air forces in the eastern Mediterranean was an impressive demonstration of how military and political actions may complement and reinforce one another in limited war. The naval role was even more dramatic; yet, the part played by the Composite Air Strike Force and the airlift of troops from Germany provided an initial test of new concepts for the worldwide deployment of tactical air forces in peripheral conflict.

Blue Bat

BLUE BAT, the code name given to the first integrated US airborne-amphibious operation in peacetime, was designed primarily to support and assist the Lebanese Government in maintaining or restoring order. The US operational plan called for American troops to enter the country by airborne or amphibious assaults to establish airheads or beachheads for a subsequent buildup of forces. Prior to operations, the United States obtained authorization to overfly Turkey, to utilize the Adana air base complex as the principal staging area, and to overfly and stage through Libya, France, Italy, and Germany. Under the plan, land-based aircraft would bring in airborne units and join with carrier-based aircraft to establish air superiority in the objective area. These aircraft would also provide air cover and close support to ground forces and aerial reconnaissance for any indications of external interference.

Overall command of the operation was the responsibility of Adm J. L. Holloway, Jr, Commander-in-Chief, Specified Command, Middle East (CINCSPECOMME). Three major commands provided USAF units to CINCSPECOMME.[44] USAFE (US Air Forces Europe) transport aircraft, supplemented by MATS (Military Air Transport Service) C-124s from the United States, would airlift the first US Army battle group from Germany by the most direct route over non-Communist territory to the forward staging area at Incirlik Air Base, Turkey, some 200 miles north of Beirut. The second battle group would follow on the same transport aircraft when they became available after turnabout. Support troops and US Army resupply would move by air or sea, depending on the situation in the objective area.

Two alternative methods guided the deployment of combat air power. If time permitted, Tactical Air Command (TAC) would fly directly from the United States, while USAFE forces remained in place in Europe. If time were critical, USAFE would deploy its own combat units, initially, and then return them to Europe after TAC units had arrived in the area as replacements. Thus, in either case, TAC would provide a Composite Air Strike Force (CASF) as a major element of the Specified Command, Middle East.

Originated in 1955, CASF was a scheme for the rapid assembly and deployment of tactical air forces to deter or fight minor conflicts. It was designed to meet the need for a rapid military response not only to cover threats of a *fait accompli* but also to stabilize crisis situations which, if left unchecked, might escalate into general war. Thus, CASF provided for the rapid assembly and overseas movement of balanced force packages comprising tactical fighter, bomber, reconnaissance, and support aircraft, together with the personnel and equipment needed to sustain them for periods up to 30 days.[45] The size and composition of these preplanned force packages varied according to projected areas of operations and the nature of anticipated threats.

As the basic priority force for the Middle East, the major elements of CASF Bravo at the time of the Lebanese crisis consisted of a command element stationed at Headquarters Nineteenth Air Force, Foster AFB, Texas; two squadrons of F-100s stationed at Cannon AFB, New Mexico; a composite reconnaissance squadron of RF-101s, six RB-66s, and three WB-66s stationed at Shaw AFB, South Carolina; and 12 B-57s stationed at Langley AFB, Virginia. KB-50s at Langley would also support Atlantic crossings with refuelings near Nova Scotia, Bermuda, and the Azores. Indeed, in the three years that had elapsed since the creation of the Nineteenth Air Force and the CASF concept, operational and logistical planning had advanced with the delivery of improved aircraft types and equipment. By July 1958, TAC had progressively improved its rapid-alert posture so that one F-100 squadron of CASF Bravo would arrive in the Middle East 17 hours after

an execution order, and all combat aircraft would arrive within 48 hours.

Theoretically, combat air power to support the amphibious landing was available from TAC, USAFE, and the two attack carriers, USS *Essex* in port at Athens, and USS *Saratoga* at Cannes. Yet, when TAC ordered the deployment of CASF Bravo to Adana, US forces in support of Operation BLUE BAT were scattered throughout the Mediterranean, Western Europe, and the United States.[46] According to planned schedules, CASF was expected to close at Adana within 48 hours. Though less specific on projected deployment times, substantial numbers of USAFE aircraft were expected to reach Adana in less than 48 hours. Although far from the objective area, either carrier, after clearing port, could dispatch its air group ahead to operate temporarily from either Adana or Cyprus. Nevertheless, when the first Marine battalion landed on Red Beach, south of Beirut, they were deficient not only in tanks and artillery but in air support.[47] The only aircraft in the vicinity were those of the Lebanese Air Force, which, fortunately, offered no opposition. About 20 minutes after H-hour, seven AD-6 propeller-driven attack planes and four FJ-33 jet fighters (carrier-based on the *Essex* but staged through a British airfield in Cyprus) appeared on the scene to support the amphibious landing. Had resistance been encountered, these planes would hardly have been adequate to ensure air superiority over Red Beach. The Marines, however, secured their first objective, the Beirut airport, in less than an hour.

In the meantime, extensive preparations were underway in Germany and France for the mobilization of the initial airborne assault and the deployment of CASF Bravo to Adana from the United States. At approximately the same time as the Marine landing at 9:00 am, the commander of the 354th Tactical Fighter Wing at Myrtle Beach AFB, South Carolina, received orders to launch a flight of 12 F-100s nonstop to Adana within seven hours and to follow with another flight of 12 fighters nine hours later. For reasons subsequently explained, the 354th constituted a substitute force for the Bravo squadrons at Cannon AFB, New Mexico, and, as such, was ill prepared for the mission. Nevertheless, the first flight was airborne within 30 minutes of the appointed time. Most of the tactical bomber and reconnaissance aircraft also left on the 15th, followed shortly by 43 C-130s carrying essential support equipment and personnel. On the following morning, the second Marine battalion landed, this time with ample air cover available from the carriers *Essex, Saratoga,* and the *Wasp* in waters south of Cyprus.

Unforeseen contingencies similarly affected the movement of ground forces. By the evening of the 15th, the 1,800 men of the 1st Airborne Battle Group, 187th Infantry (Task Force Alpha), and 59 transport planes had assembled at two departure airfields near Munich. In little more than 24 hours on 19 July, they closed at Adana after flying 2,100 nautical miles, largely over water and mountainous territory.[48] Overflight and staging problems hampered the enroute movement since, for political reasons, two friendly governments felt obliged to restrict flights over their countries. Consequently, the transports had to be rerouted by more circuitous flight paths, and some aircraft had to reduce cabin loads and take on additional fuel. While Task Force Alpha was held on alert for two days in Adana as a ready reserve for an air assault capability should the need arise, 36 Marine transport aircraft airlifted another airborne Marine Corps battalion from Cherry Point, North Carolina.[49] This battalion arrived in Beirut on 18 July, preceding the arrival of Task Force Alpha by one day. At the same time, a second US Army airborne group, designated as Task Force Bravo and originally scheduled to follow Alpha, was held in Germany on 24-hour alert. In its place, the support element organized as Task Force Charlie, comprising some 1,700 men and large quantities of cargo, completed its airlift in the following seven days. Other ground force units continued to arrive by sea and air. By mid-August, Task Force Bravo arrived by sea and brought US Army and Marine ground force strength to 15,000.

The Buildup of Air Power

Considerable operational and logistical difficulties characterized the deployment of CASF Bravo to Adana. At Cannon AFB where the BRAVO F-100 squadrons were stationed, construction activity partially blocked the runways and prohibited full-load, night takeoffs, except in emergencies. But, to meet programmed schedules for the air-refueled flight to Adana, the F-100s had to leave before daylight. C-130 transports were already en route to pick up their ground echelons when TAC deleted these squadrons from the CASF, either misunderstanding the real situation at Cannon or believing that alert instructions from Washington precluded a declaration of emergency.[50] Thus, TAC substituted two squadrons of the 354th Tactical Fighter Wing at Myrtle Beach, South Carolina. Although both squadrons were ill-prepared for the mission, orders came to launch a flight of 12 F-100s nonstop to Adana within seven hours and to follow with another flight of 12 fighters nine hours later. Neither squadron had previous deployment experience. Air crews were only partially qualified in aerial refueling. Flyaway kits received five days earlier were incomplete. Shortages also developed in maps, radio facility charts, exposure suits, and other important items. Nevertheless, the first flight was airborne within 30 minutes of the appointed time. Of the 12

aircraft launched, one crashed in Nova Scotia (the pilot bailed out and was rescued), seven landed enroute, and four made the trip in 12-1/2 hours flying time.[51] The second flight eventually reached Adana, in three flights instead of two, far behind scheduled times. Only one-third of Bravo's quick reaction force met the required time objective established by the Joint Chiefs of Staff.

Had the ground forces encountered opposition, CASF would not have been able to provide timely support. Actually, five days elapsed before the entire CASF reached its destination. Contrary to plans, the hasty deployment led to an inversion in tactical doctrine which, in effect, placed the airborne assault units at the scene well in advance of the combat aircraft. Thus, all the airborne forces had reached Adana by 17 July, but only 70 percent of the fighters and bombers and half of their support equipment had arrived.[52] Although reconnaissance information was then the most urgent requirement for the airborne forces, none of the reconnaissance aircraft had yet arrived. Weather, mechanical trouble, training deficiencies, refueling problems, and the lack of operational bases in the region contributed to the slippage in the deployment schedule. Contrary to plans, the early saturation of Adana also delayed the buildup of air power. Inasmuch as all units had been directed to reach Adana at the earliest time possible, the airfield filled with whatever aircraft happened to enter the traffic pattern. By 17 July, the 147 planes on the field had taken up all useable space; yet many of the Bravo combat aircraft and half their supporting transports were still en route. Only when Task Force Alpha, with more than 50 transports held on alert status, began leaving on 19 July, did the traffic pattern ease. Finally, by the night of 20 July, the full complement of 63 combat aircraft were on station in Adana, but, by then, the political crisis in Lebanon had receded. Although fighting between rival factions continued on a limited scale after the arrival of the Americans and even intensified in late September, the scale of intervention exerted a calming influence and allowed negotiations to begin for a compromise settlement.

The Crisis in Perspective

Operation BLUE BAT constituted the first integrated airborne amphibious operation conducted by the United States in peacetime and the first ever undertaken by American forces in the Middle East. Although US military forces did not actively engage in combat during the Lebanon crisis, the rapid movement of troops and aircraft over thousands of miles revealed possibilities and limitations in mounting large-scale airborne assaults over great distances, particularly in situations complicated by intricate diplomatic and political problems. Consequently, the operation should be viewed as the result of a political-diplomatic decision. The decision was based largely on the assumption that Egypt directly encouraged the coup in Iraq and that any further intervention, direct or indirect, by the United Arab Republic could have produced violent repercussions in Lebanon and Jordan.

Although Abdel Nasser supported the Iraqi revolt, events in Iraq were beyond his control, and a purge of his followers occurred within a few months. Thus, in retrospect and in terms of forestalling the seizure of the Lebanese and Jordanian governments by Nasserites, it appears that military action in both cases was unnecessary. On the other hand, Syria actively engaged in the Lebanon conflict, and, given the trend of revolutionary momentum, the Iraqui revolt symbolized another step in this momentum. Who can truthfully argue that the American intervention did not influence the rival revolutionary circles in Baghdad and Cairo? Clearly, the situation appeared fluid and the President of the United States had to make a practical decision, if only as a demonstration of continued support to the remaining members of the Baghdad Pact—Turkey, Iran, and Pakistan—and to such vacillating states as Saudi Arabia, Sudan, and Libya. If anything, US intervention in the region destroyed the myth of local Soviet power that grew out of the Suez crisis, and it may have had a salutary but limited effect on the thinking of political leaders in Cairo and Moscow.

From another perspective, the experience gained in Operation BLUE BAT revealed the difficulties of deploying air power over great distances. Most of the operational and logistical difficulties encountered in the deployment stage resulted from a lack of adequate facilities and procedures to meet either scheduled or unscheduled requirements. Thus, the last minute substitution of tactical fighters in CASF not only led to the re-routing of C-130s in flight and the overtaxing of strained facilities but also underlined the need for adequate advance warning. The movement of naval and ground units before CASF was alerted further emphasized the need for a standard, joint alerting system. In addition, MATS believed that it could have reduced its reaction time with adequate warning. But these problems were relatively minor compared with those of Adana—the only American base in the region that could be used for the Lebanon operation. Quickly saturated with men and planes, the facilities proved inadequate, and operations suffered accordingly.

In addition to the airlift of Army troops, air operations consisted mainly of flybys over Lebanon, leaflet drops from C-130s, photo and weather reconnaissance, and air defense readiness. The greatest operational requirement was to provide visual and photo reconnaissance information requested by the ground force. Nevertheless, the problem of control and coordination of air operations proved difficult,

reflecting the basic conflict in traditional principles governing air and naval warfare.[53] Compounded by a lack of common radio frequencies and incompatible equipment, the problem was brought to a compromise solution only after two weeks of deliberations by Admiral Holloway's staff. Had actual combat ensued, air operations would have proceeded on a patchwork basis, but the inefficiencies of a divided command would have resulted in severe penalties. Indeed, had CASF Bravo become involved in combat rather than in deterrent action, the results might have been less than bright.

"There is considerable doubt," reported a TAC staff officer after visiting Adana, "as to the conventional combat capability of the F-100 units. Only a few of the F-100 pilots had strafed; none had shot rockets or delivered conventional bombs." The B-57 crews were not much better qualified. They were also regarded as "incapable of performing efficient conventional weapon delivery." On the other hand, because of the heavy emphasis given to training for nuclear war, all CSAF units were fully qualified in the delivery of nuclear weapons. Yet no target anywhere in the Middle East, least of all in Lebanon, could justify the use of nuclear weapons.[54] Col A. P. Sights best summarized the dilemma as follows:

> Paradoxically, these USAF forces (CASF) trained almost exclusively for nuclear war, assumed a posture totally unsuited for such a war. Indeed, they scarcely could have contrived a more inviting target for enemy nuclear attack than by concentrating all air power resources on the exposed forward base at Adana. The contradictions inherent in this nuclear strike force disposed for conventional conflict well illustrated the ambivalence of strategic planning at that time. On the one hand, preoccupation with the damage our nuclear strikes could inflict on the enemy, and on the other, unwillingness to consider what his strikes might do to us; recognition that our nuclear weapons might not always be usable, but disinterest in the improvement of conventional weapons and tactics; reduction of conventional weapon training, coupled with buildup of conventional weapon stockpiles at forward bases, deployed aircraft neither dispersed for nuclear war nor revetted for conventional war. In the final analysis, it seems an inescapable conclusion that USAF forces came unprepared for either type of war.[55]

Operational and logistical difficulties notwithstanding, American intervention in Lebanon was a qualified success. With the help of President Eisenhower's personal emissary, Robert Murphy, the internal political crisis in Lebanon moved toward compromise on the basis that General Chehab would succeed to the presidency.[56] Without doubt, the American presence was a factor toward the formation of a government of "national reconciliation." Inasmuch as the United States had formally justified its actions in terms of the Lebanese situation alone, loss of prestige was not a factor in its withdrawal from the area. The Soviets and Egyptians appeared content with their "victory" in Iraq and the removal of the pro-Western Chamoun in Lebanon. For its part, the United States was satisfied with the continued independence and territorial integrity of both Lebanon and Jordan. In addition to gaining valuable experience in the peacetime projection of conventional forces over great distances, the US had displayed a much needed readiness and ability to deploy prompt and strong aid to friendly governments in the Middle East.

The challenge was hardly confined to that region. No sooner had the Lebanese crisis peaked than a critical situation arose in the Formosa Straits. While CASF Bravo was involved in the Lebanese operation, the Chinese Communists began to shell the offshore islands of Quemoy and Matsu. In the test of wills that followed, a deployment order on 29 August dispatched CASF Xray Tango. Modified according to the lessons learned from the earlier deployment, CASF Xray Tango helped to preserve the status quo in the Far East. Quick reaction and readiness to engage in limited war was no longer a mere concept.

THE SIX-DAY WAR

Increased tension between Israel and the Arab states, especially Egypt, in the early part of May 1967 culminated in the Six-Day War (5-10 June), shattering in its wake the structure of politics in the Middle East. With Israel's defeat of the combined Egyptian, Jordanian, and Syrian armies and with Israeli defense forces in control of the Sinai Peninsula, the Gaza Strip, the Golan Heights, and the West Bank of Jordan, including east Jerusalem, the regional balance of power shifted decisively in Israel's favor. The shift influenced not only Arab-Israel relations but those among the Arab states as well. It was a radical change made possible only with the decisive role of the Israel Air Force, which, within 170 minutes, all but eliminated Arab air capability. In contrast to the Sinai campaign of 1956, when air operations had a marginal effect on the outcome of the battle, air operations in June 1967 were decisive, giving the Six-Day War the distinction of being the first war ever to be won primarily by air power.[57]

Events Leading to War

In a rapid sequence of political and military moves beginning in mid-May, the United Arab Republic, with Soviet encouragement, challenged the tenuous status quo in the Arab-Israel zone, making full-scale hostilities inevitable. Reacting to charges by the Soviet Union that Israeli troops were massing to invade Syria, Abdel Nasser suddenly decided to dispense with the United Nations Emergency Force (UNEF) along the Israeli border and in Sharm el-Sheikh. Then, on 22 May, the fourth day after UNEF began its withdrawal, Nasser announced that the Strait of Tiran was closed to shipping bound for Israel and that Egyptian sovereignty over the strait

was nonnegotiable. Not only had the UN buffer along the Egyptian border and the Gaza Strip been removed, but, now, the Gulf of Aqaba reverted to Egyptian control as it had been prior to the Sinai campaign of 1956. On 23 May, Nasser declared before the Egyptian National Assembly that the issue was not simply navigation in the Gulf of Aqaba but the entire Palestine question, supporting unequivocally the right of Palestinians to fight for their homeland. On the following day, King Hussein of Jordan paid a surprise visit to Cairo to sign a treaty of common defense that placed Jordan's armed forces under Egyptian command in case of war. At the same time, Jordan agreed to allow the entry of Iraqi troops into its territory.[58]

With these moves, Egypt had once again directly challenged Israel's very existence. Israeli Government officials announced that Israel's reaction depended upon whether the United States and Great Britain honored their 1956 commitment to guarantee the right of free and innocent passage through the Gulf of Aqaba. Although the United States upheld the Israeli claim, it failed to convince the maritime states of the importance of Israel's right to free and innocent passage through the Strait of Tiran. Great Britain had drafted a declaration that the strait was an international waterway, but only the United States, the Netherlands, and Iceland joined in giving this statement unqualified support.

In the meantime, Israeli military leaders viewed the blockade primarily as a challenge to Israel's deterrent power.[59] Consequently, unless Israel itself nullified the blockade, Nasser's challenge would prove successful, encouraging further encroachments and harassments and ultimately leading to war under less favorable conditions. As the diplomatic effort to defuse the crisis dragged on, the military began agitating rather openly for a preemptive strike before the strain of prolonged mobilization adversely affected Israel. To many Israelis, the choice now lay between fighting an immediate war or facing a blockade and generalized guerrilla warfare under clearly unfavorable conditions. Under the impact of an enormous wave of popular dissent and the threat of an imminent cabinet crisis, Israeli Prime Minister Levi Eshkol finally capitulated and appointed the popular Moshe Dyan as Minister of Defense. The failure of great power diplomacy, the futile debates in the UN Security Council, the rallying of the Arab countries, the Egyptian seizure of the Strait of Tiran, the airlift of Egyptian troops and material to Jordan, and the movement of Iraqi troops to Jordan convinced even the most hesitant members of the Israeli cabinet that military action could no longer be postponed. Accordingly, the government unanimously authorized a preemptive strike, leaving it to General Dyan to choose the exact timing.

In terms of sheer numbers, Egypt, Jordan, and Syria had an appreciable numerical superiority in all categories of weapons. In the vital category of supersonic fighter-bombers and interceptors, Egypt possessed 258 of the total 298 Arab planes (MIG-21s, Sukhoi-7s, and MIG-19s) against Israel's 116 (Mirage-III and Super-Mysteres). In the subsonic fighter-bomber category, 100 of the total Arab force of 168 were Egyptian (MIG-15/17s) against Israel's 150 (Hawkers-Hunters, Mystere IVAs, Ouragans, and Fouga Magister trainers). In light bombers, 43 of the 47 Arab total were Egyptian (IL-28s) against Israel's 24 (Vautour IIAs). Egypt and Syria had an infinite lead over Israel in medium jet bombers (30 of the 45 TU-16s were Egyptian). Although the TU-16s were suitable for bombing strategic targets (i.e., population centers and large installations), the Israeli light Vautour bombers could really be used effectively only against military targets. Their loads were too small for anything approaching saturation bombing.[60] The smallest margin of superiority, paradoxically, was manpower. Egypt accounted for 210,000 in the combined Arab force of 335,000 against Israel's 275,000.

Israeli Objectives

Although Israel's primary objective was simply national survival, the Israeli Government did not possess an overall, rigid master plan of operations. Circumstances dictated that Israel first destroy its strongest adversary, Egypt, and then remain generally on the defensive elsewhere. Israel further assumed that King Hussein would offer only token assistance to Egypt but that Syria would take an active part in the impending campaign. The Syrian army of 60,000 men was firmly entrenched in the Golan Heights, 1,000 feet above the Israelis in the Huleh Valley. Consequently, a quick and decisive defeat of Egypt was necessary for a successful Israeli assault on the heights to drive the defenders from their bunkers and tunnels. However, since Egypt had assembled so deadly an air arsenal, Israeli planners realized that the tactics used in the Sinai campaign could not be employed. In view of the Egyptian threat to Israeli airfields and population centers, control of the air would not be sufficient.

Unlike 1956, Israel had only a few short hours to achieve absolute air superiority. Consequently, the primary objective of the initial air strike was to render the Egyptian runways unusable and, at the same time, destroy as many MIG-21s as possible. These were the only aircraft that could effectively prevent the IAF from achieving its more fundamental objective—destruction of Egypt's long-range bomber force.[61] Only after the neutralization of Egyptian air power would Israel be able to repeat the blitzkrieg tactics of the 100-hour Suez campaign. Israeli armor and mechanized infantry would then thrust deep into the Sinai along three major roads to destroy the for-

ward bases of the Egyptians and cut off their retreat at the Suez Canal. Paratroops and gunboats would seize the Egyptian-held fort at Sharm el-Sheikh at the entrance of the Strait of Tiran and open the Gulf of Aqaba to Israeli shipping. If necessary, the Arab Legion would be driven off the West Bank and out of the Old City of Jerusalem. The fourth thrust of the Israeli attack would be against Syria, whose artillery regularly harassed Israeli farmers in the region. It was a bold plan conceived on the basis that time would be limited. It amounted to an audacious gamble with a total commitment based upon the assumption that the Egyptian high command would require one hour to make an accurate assessment, another hour or so to notify its Syrian and Iraqi allies, and still another period before its allies began operations. By this time, the bulk of the Egyptian Air Force would be destroyed or temporarily neutralized. Only then would the IAF be able to provide full support of ground operations and destroy the air forces of Syria and, if necessary, Jordan. If the plan failed, Israel would certainly be bombed, and thousands of civilian casualties would be the result.

The great fear, however, was the prospect of a premature cease-fire. Political success meant confronting world diplomacy with *fait accompli.* But unlike the British and French in the Suez fiasco of 1956, the Israelis had calculated the risks with great care and had a very exact appreciation of the enemy capability. And since it was a question of win or lose all, the IAF was prepared to commit everything it had for the initial strike on Egypt. Thus, the IAF would leave only 12 aircraft to guard Israel and its home bases. The stakes could not be higher, but, in retrospect, Israel had no other alternative.

The Air War

At 7:45 am Tel Aviv time and 8:45 am Cairo time, Monday, 5 June, the first wave of attacking Israeli aircraft reached their objectives at precisely the same moment.[62] The targets were the 10 most important of Egypt's 18 military airfields. Three of these 10 airfields were located in the Cairo region (Cairo-West, Almaza, and Inshass), three in the canal area (Kabrit, Fayed, and Abu Suweir), and four in Sinai (El Arish, Jebel Libni, Bir Thamada, and Bir Gafgafa). To achieve maximum surprise, the aircraft took off in flights of four at carefully measured intervals and flew to their targets from many directions. To elude the Egyptian, Jordanian, British, American, and Russian radar screens, they flew low and observed complete radio silence. Some of the planes took a short, circular right-hook flight over the Mediterranean to the bases around Cairo, on the canal, and in Sinai.

In subsequent waves and in attacks on other airfields (Cairo International, Dekhelia, Ghurdaka, Luxor, Minia, Mansura, Bani Suweif, Ras Banias), the Israelis flew by the most convenient routes available, since surprise was no longer possible or necessary. The first wave caught all of the Egyptian planes on the ground, with the exception of four unarmed trainers. As the first wave of aircraft struck their targets, the second wave was already on its way, and a third wave had just become airborne.

To achieve the necessary concentration of power, the Israeli launched these successive flights every 10 minutes. During the first 80 minutes, groups of four planes attacked each of the 10 Egyptian airfields at intervals of 12 to 19 minutes. Each flight had from eight to nine minutes over its targets—adequate time for three or four passes (one bombing run and two or three strafings). For aircraft in the vicinity of the canal, the fast turnaround time allowed a second assault over the target within an hour of the first attack. The schedule was 22 1/2 minutes to reach target, eight minutes for the attack, 20 minutes to return to base, and 7 1/2 minutes for refueling and rearmament operations.

Remarkable serviceability and rapid rotation were major factors underlying the Israeli ability to keep most of the 18 Egyptian airfields under continuous attack for three hours. In a reference to the serviceability of the IAF, General Hod of the Israeli Air Force stated:

> At 0745 on Monday morning the serviceability of our combat aircraft was better than 99% and we maintained that level of serviceability throughout the week of the war. Although it might have taken up to an hour to patch up holes in one or two of our aircraft, at no stage was any of our aircraft unserviceable if you exclude our losses. Never did we have a situation of pilots waiting for aircraft.[63]

As a result, Israeli planes and pilots averaged from five to eight sorties a day. On the basis of prewar exercises, IAF pilots expected to destroy four or five Egyptian planes per raid on each airfield, but the average during the first few hours ran twice as high.

Of several thousand sorties flown by the Israeli during the war, IAF pilots flew 1,000 the first day. Abdel Nasser recognized this effectiveness when he stated that Israel employed an air force three times its strength. By contrast, a captured Egyptian operational plan revealed that the Egyptian air command allowed 175 minutes between sorties for MIGs operating from Sinai against targets in the Eilat region of Israel.

Flexibility was another major factor in the success of the air strikes. As the IAF destroyed primary targets, it shifted to secondary ones, including all types of planes, SAM-2 sites, radar installations, hangars, fuel depots, and ordnance dumps. In the initial strikes, IAF headquarters updated target information and often relayed it to the pilots in the air.[64] With detailed knowledge of Egypt's bomber and fighter-bomber disposition, training schedules,

On the flight line of Furstenfeldbruck Air Base, Germany, army airborne infantrymen prepare to board US Air Force C-130 troop transports for airlift into Adana, Turkey and Beirut, Lebanon, 18 July 1958.

Inside a US Air Force C-124 Globemaster troop transport, double decked to carry the Army's 1st Battle Group of the 187th Infantry, en route from Germany to Adana, Turkey, in the troubled Middle East.

On the flight line at Adana, Turkey, Air Force personnel are briefed by their commander while waiting for any development in the Middle East, July 1958.

United States troops ready to board waiting C-124's at Adana, Turkey, enroute to Beirut, Lebanon, 19 July 1958.

and reconnaissance activities, the IAF plotted with remarkable accuracy, even identifying dummy aircraft. The result was so devastating that only two flights of four MIG-21s each were able to take off, only to be destroyed after downing two Israeli craft engaged in ground attack. Two and one-half hours after the bombs fell, the IAF reported that Egyptian air power was demolished. Within 170 minutes, the IAF destroyed over 300 of the long-range Tu-16 bombers. Israel had accomplished in hours what the British and French air forces took three days to accomplish in 1956.

Some three hours after Israel struck, the air forces of Jordan and Syria entered the fray. Three Jordanian Hunters attacked the Natanya coastal area north of Tel Aviv with rockets, injuring seven persons in an insecticide plant and causing a fire before a single Israeli Mystere drove them off. The Israeli satellite air base at Kfar Sirkin also suffered a light air attack. Syrian planes made a number of ineffective forays against Megiddo airstrip and Haifa Bay. Two of the three MIG-15/17s went down over Megiddo, and a third later crashed over Tawafik. Tiberias also suffered a light bombing attack. These attacks came too late, however, because the bulk of the IAF had again become available.

In a series of raids on Jordanian airfields at Amman and Mafrak, the IAF destroyed King Hussein's entire air force. At the same time, it destroyed no less than 32 Syrian MIG-21s and some 23 MIG 15/17s, comprising about two-thirds of the Syrian Air Force. General Hod remarked that it took 25 minutes to deal with the air forces of Jordan and Syria. Although the element of surprise was absent in this action, the results were as swift and decisive as those on the Egyptian front.

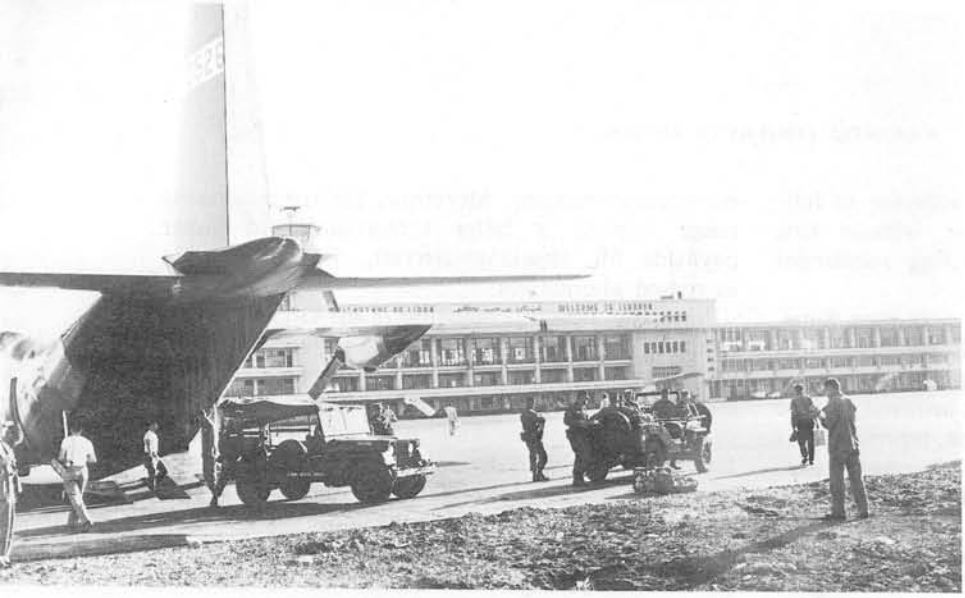
The only serious air penetration over Israel occurred on Tuesday, 6 June. An Iraqi TU-16 bomber dropped three of its six bombs on the town of Natanya, mistaking it for Tel Aviv. While the bomber was en route home, antiaircraft fire downed it in the Afula area. Israel retaliated with attacks on the Iraqi air base H-3, a pumping station at the Kirkuk pipeline near the Jordanian border, and destroyed the greater part of a single MIG-21 squadron that had flown there earlier.

The IAF destroyed more than 450 Egyptian, Jordanian, Syrian, and Iraqi planes during the war. The 19 Israeli aircraft destroyed were either shot down by ground fire or intercepted from a base while carrying out ground attacks. These aircraft included two Mirage III CJs, four Super-Mysteres, four Mystere-IVAs, four Ouragans, one Vautour light bomber, and four Fouga Magister trainers. In 64 dog fights, according to the Israelis, Egypt lost 50 MIG-16s, and Israel suffered no losses.

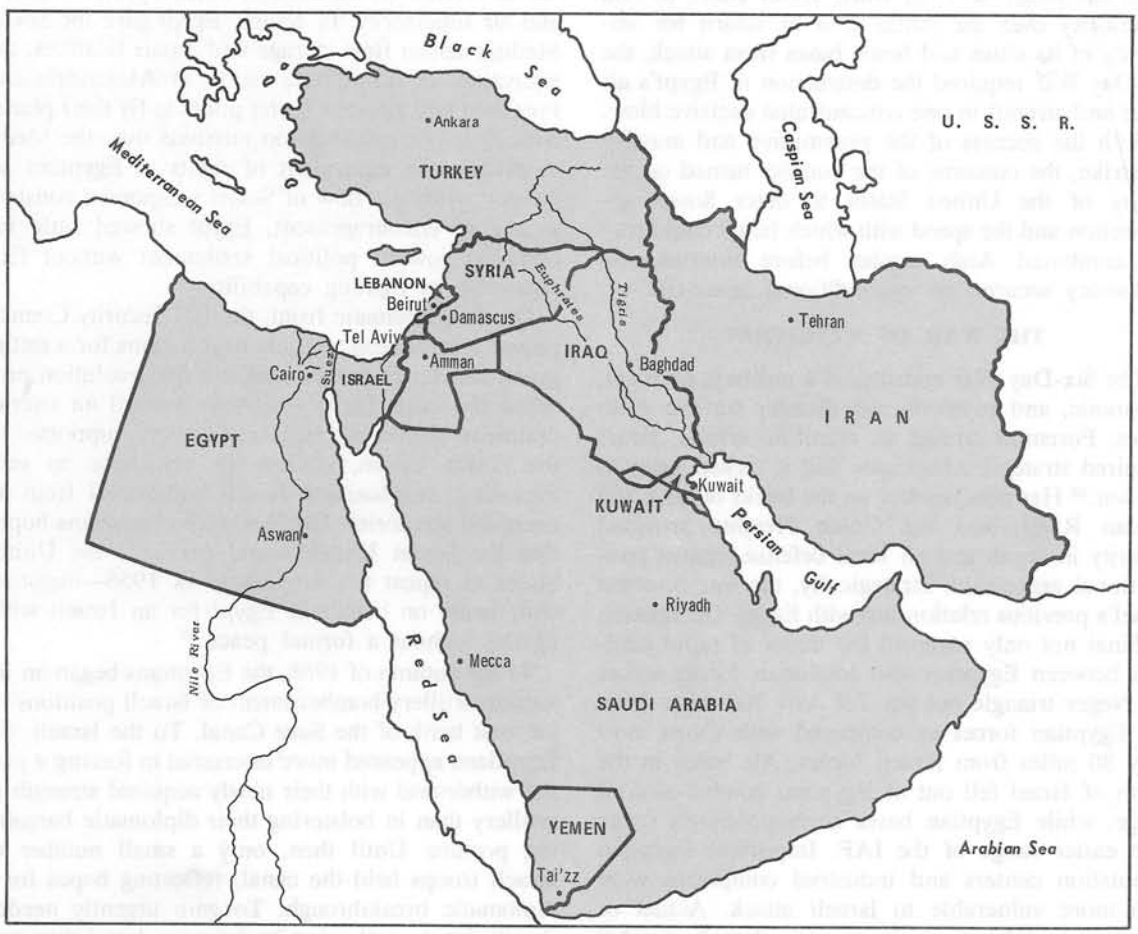
That the IAF "scratched the bottom of its drawers" to carry out as massive an attack as possible on Egypt is evident from the employment of obsolete Ouragan fighters and slow and lightly-armed Fouga Magisters. By achieving air superiority at the outset, the IAF facilitated a speedy and decisive victory on the ground. Although two-thirds of all sorties supported ground operations, few planes were available for ground support on the first day, except the Fouga Magister trainers. In the days that followed, however, the IAF played a crucial role in ground operations even though it inflicted much of the damage while the enemy was fleeing from Israeli armor. Professor Nadav Safran points out that, while the IAF had an incalculable effect on demoralizing the enemy and turning his retreats into routs, Israeli ground forces made their first crucial breakthrough at Rafah on the morning of 5 June when the IAF was busy elsewhere. They made a second decisive breakthrough at Abu Egila in night fighting when the IAF was unavailable. In these two battles alone, Israeli armor knocked out one-fourth of the Egyptian armor destroyed during the entire war. Nevertheless, a large part of the credit for the speed and decisiveness of the victory is given to the IAF, since ground units, assured of air support, could take greater risks in pursuit of their objectives. Control of the air was the necessary condition for the heavy concentration of manpower, firepower, and armor at decisive points on the ground.

Israel's dramatic victory in the Six-Day War was a military classic, due largely to the effective use of air power in obtaining national objectives. Adhering to the classical principles of war (i.e., surprise, flexibility, concentration of power, economy of effort, intelligence, planning, and training), the Israel Air Force, within three hours, demolished Egyptian air power, thereby altering the relationship of forces in the Middle East. In the ensuing 127 hours, Israel smashed the Jordanian and Syrian air forces, destroyed a four-nation military alliance, conquered territories nearly six times her own size, severely damaged Soviet prestige, and changed the entire political and strategic structure of the Middle East. Above all else, the IAF demonstrated the efficacy of air power as a decisive and pivotal balance in conventional war waged without military restrictions imposed by political considerations.

In both the Sinai campaign and the Six-Day War, however, political factors governed the use of Israeli air power. In the former case, the IAF stayed away from the canal zone to facilitate Anglo-French intervention. Consequently, the IAF remained on the defensive through the campaign and limited its roles to patrolling the three main east-west highways and destroying enemy columns moving from the canal. In that operation, its two principal tasks were to attack all main roads against enemy armor and transport in motion and drop a parachute battalion at



US Air Force C-130 offloads Army jeeps and troops at Beirut, Lebanon.



The Middle East

Mitla. The IAF thus confined its activities to full-scale support of the land battle, without first achieving air superiority or inflicting substantial losses on the Egyptian Air Force.

Unlike the campaign of 1956, won over Sinai, Israel won the Six-Day War of 1967 over Egypt, Jordan, Syria, and Iraq. The Sinai campaign was limited in objectives, area, time, and forces involved, but the Six-Day War was unlimited in scope, representing a total effort without precedent in the Arab-Israel zone. For this war, Israel tapped its economic, industrial, scientific, and manpower reservoirs to the maximum.[65] Every housewife under the age of 55 and every child from the age of 12 had an assigned task. If they had not been drafted for civil defense, the auxiliary police, or the Home Guard, men over 50 with automobiles, assumed responsibility for the transportation system. High school students replaced postmen and telegraph messengers. Under an overall mobilization rate of 10 percent, it was hardly probable that the Israelis would foresake the first principle of air warfare—the achievement of air superiority at the outset of the conflict. Unlike the Sinai campaign of 1956 when Israel chose to risk superiority over the battle area in return for immunity of its cities and home bases from attack, the Six-Day War required the destruction of Egypt's air bases and aircraft in one concentrated decisive blow.

With the success of the preemptive and massive air strike, the outcome of the conflict turned on the ability of the United States to deter Soviet intervention and the speed with which Israel could rout the combined Arab armies before international diplomacy secured an unconditional cease-fire.

THE WAR OF ATTRITION

The Six-Day War constituted a military, political, economic, and psychological disaster for the Arab states. Foremost among its manifold effects, Israel acquired strategic advantages that it lacked prior to the war.[66] Her new borders on the banks of Suez, the Jordan River, and the Golan Heights provided security in depth and an ideal defense against conventional aggression. Strategically, the war reversed Israel's previous relationship with Egypt. Occupation of Sinai not only removed the threat of rapid junction between Egyptian and Jordanian forces across the Negev triangle but put Tel Aviv 300 miles from the Egyptian forces as compared with Cairo, now only 80 miles from Israeli forces. Air bases in the north of Israel fell out of Egyptian combat-aircraft range, while Egyptian bases correspondingly came into easier range of the IAF. Important Egyptian population centers and industrial complexes were also more vulnerable to Israeli attack. Actual or potential air bases in Sinai gave Israeli combat planes 15 minutes more loitering time than they had before the war and deprived Egyptian planes of comparable margins. Moreover, the easier striking range implied a faster turnaround and larger payloads for attacking aircraft, not to mention increased alternatives.

Similarly, Israeli occupation of the Golan Heights reversed the prewar strategic relationship with Syria. Control of the heights removed the long-standing threat to a score of villages, gave Israel unchallenged control of the Jordan River headwaters, and placed Israeli forces within 40 miles of Damascus. In like manner, Jordan's loss of the West Bank resulted in a 40 percent reduction in the kingdom's population and the denial of a critical base of operations against Israel. Israeli troops were now within 25 miles of Amman and in a stronger position to threaten Mafraq and Samakh—Jordan's main links to Syria and Iraq.

Soviet Involvement

Despite the new strategic configuration, peace did not follow. Immediately after the Arab defeat, the Soviet Union rearmed Egypt, partly by expensive airlift, to thwart any possible movement toward a *modus vivendi* on the basis of Israel's prewar borders and air superiority. In return, Egypt gave the Soviet Mediterranean fleet storage and repair facilities, the equivalent of naval base rights, at Alexandria and Port Said and allowed Soviet pilots to fly their planes with Egyptian markings on missions over the Mediterranean, the equivalent of rights to Egyptian air bases.[67] With the flow of Soviet weapons a constant source of encouragement, Egypt showed little inclination toward political settlement without first regaining its fighting capability.

On the diplomatic front, the UN Security Council passed a resolution to guide negotiations for a settlement. But Israel maintained that the resolution provided the basis for negotiations toward an overall definitive settlement, and Arab leaders, supported by the Soviet Union, viewed the resolution as self-executing, emphasizing Israeli withdrawal from all occupied territories. Obviously, the Egyptians hoped that the Soviet Union would persuade the United States to repeat the procedures of 1956—negotiate with Israel on behalf of Egypt for an Israeli withdrawal without a formal peace.[68]

In the autumn of 1968, the Egyptians began an intensive artillery bombardment of Israeli positions on the east bank of the Suez Canal. To the Israeli, the Egyptians appeared more interested in forcing a partial withdrawal with their newly acquired strength in artillery than in bolstering their diplomatic bargaining posture. Until then, only a small number of Israeli troops held the canal, reflecting hopes for a diplomatic breakthrough. To gain urgently needed respite for strengthening its defenses, Israel then embarked on a series of helicopter-borne commando raids against bridges, dams, and power lines deep in-

side Egyptian territory. The relative ease with which the IAF penetrated Egyptian air space temporarily stunned Cairo and forced the Egyptians to let up on the shelling and disperse their forces. Under an umbrella of diversionary tactics, the Israeli hastily constructed the Bar-Lev Line—a network of fortifications, facilities, and underground bunkers reinforced by rails from the Cairo-Gaza railway line. When Egypt finally overcame its fear of the commando raids and resumed its bombardments along the canal, the Bar-Lev Line had been completed.[69]

By then, also, the Egyptian army had concluded an unprecedented reorganization and a program of training under the supervision of Soviet experts. A new spirit of confidence now pervaded the officer corps, and Abdel Nasser found himself in a dilemma between the impatient demands of his officers to cross the canal and the cautious counsel of his Soviet advisors, who still believed that Israel could be compelled by political pressure to withdraw from the canal. In the confrontation that followed, the officers, led by Chief of Staff, General Abdul Muneim Riad, convinced Nasser that a restricted operation in areas best suited to Egypt might succeed.[70] As a possible preliminary for a canal crossover sometime during the summer of 1969, this new offensive began on 8 March with some 10,000 artillery shells landing on the Israeli lines and more than 35,000 in the days immediately following.

Attrition and Reprisal

On 1 April, Nasser disavowed the cease-fire agreement of 1967 and formally launched his war of attrition. Its purpose was to take advantage of Egypt's numerical superiority in manpower and artillery along the canal and inflict heavy casualties on Israel. This would not only force Israel to mobilize more of its reserves but also undermine its economic capacity to sustain war.[71] The effect of massive shellings and commando forays across the canal was to send the Israeli casualty rate spiralling upward. By the summer of 1969, the Israeli casualty rate stood at 70 per month along the canal alone, in addition to casualties from bombardment in the Jordan Valley and the actions of guerrilla-terrorists. From the standpoint of its size and population, Israel regarded an indefinite continuation of this casualty rate as prohibitive. Furthermore, the shelling made it more difficult to supply the exposed fortifications, much less repair the damage caused by the shelling.

Meanwhile, there were growing indications that Nasser, as in 1967, was again beginning to get carried away with local success. The immediate problem was casualties, but the Israeli did not rule out an Egyptian crossing of the canal, even though control of the air seemed to preclude that eventuality. Confronted with the necessity of solving a pressing tactical problem, Israel decided to employ air power as the most effective and economic means of balancing the war of attrition and deterring a wider war that might trigger a possible collision of the superpowers. Air power served both as a long-range tactical weapon and as a short-term solution for day-to-day problems. But, to neutralize the Egyptian artillery, the IAF had first to eliminate the anti-aircraft positions, including the SAM sites that defended gun lines and troop positions along the canal. Accordingly, on 20 July 1969, Israel sent its air force into action on a regular basis, as it had against Arab artillery and guerrilla strongholds in Jordan and in Syria.

Not since the Six-Day War had Israeli jets been dispatched on ground attack missions in the canal sector. Until then, air combat had been held to a relative minimum. In the period between the end of the Six-Day War and 20 July 1969, Israel claimed kills of 26 Egyptian MIG-19/21 fighters. This action in July marked the escalation of hostilities and the turning point in the war of attrition.[72] Five times during the week of 20-27 July, Israeli planes in Sinai streaked across the canal to make bombing and strafing runs from Port Said in the north to Port Suez in the south, and, three times, the Egyptian Air Force reacted but, on each occasion, ignored Israeli planes and headed straight for installations behind Israeli lines. Air battles ensued, however, and, by the end of the week, the score, according to Israeli accounts, was 12 Egyptian and 2 Israeli jets downed, some by ground fire on both sides. Israel also reported that it had destroyed or damaged six missile sites, a radar station, and scores of gun emplacements.

Thus, the first attempt of the rebuilt Egyptian Air Force to challenge Israeli air superiority since the Six-Day War failed. In the space of one week, the IAF proved that Egypt clearly lacked the air power necessary to support a major ground offensive across the Suez Canal into Sinai. Henceforth, Egypt would concentrate on intensified local attacks on Israeli positions along the canal and on shallow penetration of Israeli air space with low-level hit-and-run air strikes.

In committing the IAF to daily action on the Egyptian front and by refining its role in the postwar fighting, Israel took the initiative in the war of attrition. It now placed greater emphasis on air power to balance Cairo's war of attrition and, possibly, to restore the cease-fire along the Suez Canal. After a series of major air battles, Israel's air superiority permitted a spectacular amphibious operation along the Egyptian coast of the Gulf of Suez in September. Exploiting the element of surprise, an Israeli armored force, accompanied by infantry and strong air support, landed on the Egyptian coast from assault craft and, in a 10-hour operation, cut a swath some 50 kilometers in length along the coast. In the

process, it destroyed radar and antiaircraft installations protecting the approaches to Egypt from the Gulf of Suez. The complete absence of Egyptian land, sea, or air forces, other than those directly engaged by the Israelis, proved that the Egyptian line could be outflanked and that Cairo itself was not safe from an armored thrust.

Israeli leaders believed that, by maintaining access to the Egyptian interior, they could neutralize from the air any massive buildup behind Egyptian lines. Thus, in highlighting the increased IAF involvement in the Suez Canal and Sinai sectors on the eve of the amphibious thrust, General Bar-Lev declared that Israeli air strikes had postponed a new war with Egypt and served to decrease Egyptian military activity along the Suez Canal.[73] The ratio of vulnerability was impressive. In the period between 20 July and 8 September, the IAF carried out nearly 1,000 sorties into Egyptian territory at a cost of three aircraft, as compared with 100 Egyptian sorties into Israeli territory at a cost of 21 aircraft. On the other hand, the Israeli chief of staff conceded that Israel was unable to force the Egyptians to maintain an absolute cease-fire.

Nevertheless, the IAF continued to employ Skyhawk bombers to pound Egyptian artillery and widen the gap created by the destruction of antiaircraft defenses. On 10 November, a high-ranking Israeli official declared that all Egyptian ground-to-air missile sites along the Suez Canal had been destroyed in two months of airstrikes. The statement confirmed that the entire 250-mile Egyptian front from Port Said on the Mediterranean coast to the Red Sea lacked a ground-to-air missile defense against attack. Israeli strategy seemed to imply that the whole of Egypt was fair game to the IAF. In terms of relieving the pressure on the Bar-Lev line, the summer and autumn air offensives against Egyptian artillery and against radar and missile sites along the Suez front had been highly successful. Israeli casualties dropped dramatically from 106 in July to 30 during the month of December. [74] Moreover, in December 1969, Abdel Nasser admitted at the Arab summit conference in Rabat that Egypt lacked the capability of waging all-out war.

On 7 January 1970, Israel embarked on its new strategy of deep penetration bombing at the heart of Egypt. The arrival of the first F-4 Phantom jets during September 1969 considerably enhanced its capability to carry out these operations. The IAF had now entered a new period of absolute superiority, plane for plane and pilot for pilot, that had not existed in the past. Moreover, the Phantom aircraft were highly suited to Israel's concept of preemptive strategy—itself the outgrowth of Israel's geographic and psychological environment.[75] Specifically, the Phantom's excellence as an offensive fighter-bomber was best suited for extending the political-military attacks into the strategically vulnerable Nile Delta.

The new strategy had several alternative objectives. Militarily, it aimed at easing Egyptian pressure along the canal and at further deterring the Egyptians from contemplating a cross-canal invasion. Politically, the Israelis gave Abdel Nasser the choice of tolerating continued deep-penetration raids, with all the implications of such a choice on his regime, or reinstating the cease-fire, either tacitly or openly. Other political and strategic objectives, though never officially defined, probably included breaking Egyptian morale, creating a credibility gap between Abdel Nasser and the Egyptian people, precipitating the downfall of the Nasser regime, or, alternatively, forcing a major change in Egyptian foreign policy.[76]

The outcome of Israel's experiment in the selective use of air power to achieve political and diplomatic objectives was different from that expected. Toward the end of January 1970, after two and one-half weeks of bombing, all parties concerned—Israelis, Egyptians, and Russians—misinterpreted the effectiveness of bombing.[77] Although the evidence suggested that the renewed humiliation of Egypt had enhanced, rather than impaired, Egyptian morale, many sources believed that Nasser's regime faced imminent collapse. After some time, however, the Israelis, at least, began to doubt this possibility; moreover, Abdel Nasser probably realized that the bombing was not menacing his political position in Egypt. Nevertheless, the dye had been cast. The Egyptian leader chose neither to restore the cease-fire nor to negotiate, but, in a secret visit to Moscow, he requested an even more direct and active Soviet role in the air defense of Egypt.

The Soviet Military Presence

Moscow's decision to assume the responsibility, even in piecemeal fashion, and its willingness to face the uncertainties of interposition necessarily raised the risk of confrontation with the United States. Yet this development was but a logical continuation in the erosion of the ground rules of limited war—a process initiated by the local protagonists in the unremitting conduct of their rival strategies of attrition and deep-penetration bombing.

On 18 March 1968, US sources confirmed that the Soviet Union had begun the delivery to Egypt of large numbers of SAM-3s capable of dealing with low-flying aircraft. Introduction of the SAM-3s and their initial deployment in the Egyptian interior marked the first phase in a progression of escalating military steps undertaken directly by the Soviet Union. The second phase came in mid-April when Russian pilots in MIG-21Js began active combat air-defense patrols over the heartland areas of Egypt,

freeing Egyptian pilots for offensive and defensive missions over the Suez and Sinai areas.

Through these Soviet moves, the Suez war reached a new and unpredictable phase. The Soviet Union had stationed an entire air defense brigade in Egypt, comprised of Soviet-manned SAM-3 antiaircraft missile batteries and between 100 and 200 Soviet pilots, who provided their own air umbrella for the SAM-3s. The Israeli response was to delineate the front-line area in the war of attrition by agreeing not to attack Alexandria, Port Said, or Aswan (attacks in the Cairo area had ceased earlier on 17 February). Israel indicated that its air force would avoid direct confrontation with Soviet pilots so long as they stayed clear of the vital 25-mile strip west of the canal. The IAF would continue its operation in this area as part of Israel's immediate defense zone. Thus, the immediate result of the Soviet introduction of the SAM-3s, as well as Soviet pilots, was a more precise definition of the area in which the IAF would operate to offset Egypt's superiority in artillery and ground forces. The Soviet military presence released additional Egyptian resources for the war of attrition and made it unnecessary for Egypt to disperse its forces. The overall effect was to increase the concentration of resources and firepower in the combat zone. This, in turn, forced Israel to search for countermeasures in the war of attrition.

Soviet reluctance to challenge the IAF in the so-called free zone along the Suez Canal tacitly affirmed the Soviet Union's acceptance of the Israeli proposal. The first test came after a highly successful Egyptian commando raid in the vulnerable northern section of the canal. In retaliation, the IAF unleased heavy attacks on Egyptian positions north of Kantara on 30 May 1968. Soviet pilots did not venture into the Suez combat zone, and the IAF, thereafter, unleased daily bombardments of 10 to 15 hours duration along the entire Suez Canal region.

Despite the increased Soviet military presence, the IAF regained the initiative, if only in the immediate combat zone. With Soviet efforts to extend the ground-to-air missile network from the Egyptian interior to the battle zone, however, the pendulum began to swing in the opposite direction. As early as 18 May, reliable sources reported that the Soviets were building 15 T-shaped SAM-3 concrete shelter sites, spaced at 7½-mile intervals along the entire 100-mile length of the Suez Canal.[78] On 30 June, Israeli reconnaissance detected a new interlocking, 17-mile-deep Egyptian air defense belt. This area included improved high altitude SAM-2s and low altitude SAM-3s, supported by more than 1,000 conventional antiaircraft weapons and Soviet technicians. This new deployment in the central sector straddled the imaginary red line running 25 miles west of the canal and brought the missile concentration, including the SAM-3s, into the Suez combat zone. The Suez war had reached an even more ominous stage.[79]

With the establishment of the new Egyptian air defense system along the southern and central sectors of the canal, a reevaluation of the SAM-2 missiles became necessary. The Soviets concentrated the missiles in "packs" in mutually overlapping supporting positions. Another concentration of conventional antiaircraft batteries protected the missile system. These batteries consisted primarily of rapid-fire triple gun mounts, many of them directed by radar. Since they were concentrated in packs, the improved SAM-2 missiles could be launched in volleys as compared with previous single firings. They could also be fired from temporary sites in contrast to the earlier well-constructed and easily detected concrete emplacements.

In view of the Israeli analysts, extension of the ground-to-air missile network from the Egyptian heartland to the canal proper was inevitable because the Soviet buildup continued from March through June without vigorous censure from the West. From the beginning, Israeli strategists, unlike their American counterparts, strongly contested the view that the Soviet Union installed the SAM-3s and introduced air squadrons for defensive purposes.[80] To them, the Soviet Union did not move by mistake or by force of circumstances into direct military involvement in the Arab-Israel conflict. On the contrary, Soviet involvement over the years, and especially in the preceding months, was deliberate, provocative, and boldly calculated to confront Israel, the United States, and other Western interests with high risk. In Israel's view, the new missile deployment marked the third phase of direct Soviet involvement in support of Egypt's offensive attrition strategy.[81] It was an attempt more to upset the status quo than to stablilize it. At the least, neutralization of Israel's air superiority in the combat zone would presage intensification of the war of attrition; at the most, it would be the opening phase of an offensive to push back the lines and reopen the Suez Canal unilaterally. Inasmuch as any crossover of the canal presupposed at least neutralization of the IAF, Egyptian plans depended entirely on parallel Russian moves.

The emerging pattern was a gradual edging forward of the antiaircraft missile system to a point sufficient to cover the air space above the Israeli forward line with missile fire and, at the same time, keep the missile sites beyond the effective range of Israeli artillery. The Soviets had the capability to probe even further without the appearance of escalation. They could position the SAM-3s outside the 24-mile free zone and still threaten Israeli planes operating within the zone. To a far greater extent than previous Soviet initiatives, the challenge to

Israeli control of the air threatened to bring a dramatic shift in the regional power balance, which, since 1967, had prevented the outbreak of full-scale hostilities.

At this juncture, Israel confronted a choice between heavy losses in continued air operations to hold the front line and the risk of crossing the imaginary red line to hit Soviet missiles. It was not a question of whether the established strategy of forward defense and retaliation enhanced or impaired Israeli security.

The problem grew more complex when Israeli leaders realized that the new missile challenge required additional strike aircraft and advanced electronic equipment, neither of which appeared forthcoming. On the assumption that Moscow was ready to bargain diplomatically on the regional power balance, the urgent US objective was not elimination of the missile zone but political solution that would meet the legitimate concern of the local protagonists. Therefore, when Israel requested an additional 100 to 150 Phantoms and 100 Skyhawks, the US Government held the purchase in abeyance and sought renewed negotiations between Israel and Egypt and between Israel and Jordan. Although all concerned parties, including the Soviet Union, had rejected US Secretary of State William Rogers' plan in December 1969, it now reappeared in capsule form as a "new initiative" linked to a proposed 90-day standstill cease-fire agreement.

Earlier in June 1969, the Israeli premier had categorically rejected a limited cease-fire agreement, believing that termination of the air strikes would allow time for the badly bruised Egyptian army to regroup and for the Russians to establish their missile line. At the time, Israel considered a limited, three-month cease-fire arrangement a threat to the IAF's freedom of action in the combat zone. But once the Russians abandoned their policy of first building hardened sites for the missiles and switched to the tactic of deploying clusters of mobile missile launchers, the IAF could do little to prevent their advance.[82] Even as the IAF continued to bomb the heavy concentrations of Egyptian artillery in other sectors of the canal to ease the pressure on the front line, it recognized that its air superiority was in jeopardy. Neither the Phantom nor the Skyhawk could survive the new missile deployment without incurring heavy losses, for which replacement would be problematical.[83]

Two Israeli jets were lost on 30 June 1969; one was lost on 7 July, another, on 18 July; and a fifth, only two days before the cease-fire became effective on 7 August. On the other hand, IAF jets shot down four Russian-piloted MIG-21s on 30 July in the last air battle above the Suez before the cease-fire. Israel did not publicize the air clash at the time to prevent increased tensions. Also, on 6 August, the last day before the cease-fire, Israel revealed that the IAF had dropped more bombs than it had on any day since the Six-Day War. For 79 days, the IAF had conducted a total of 3,500 bombing sorties and inflicted losses on the Egyptian forces estimated at 10,000 dead and wounded, as well as substantial losses in equipment. Events indicated that the Soviets had reached the upper limits of great power confrontation. Israel also recognized that the air war had receded to the same border perimeter that contained the ground forces. There appeared to be no acceptable alternative to a cease-fire and political negotiations. Under the pressure of world opinion, Egypt and Israel gave affirmative replies to the proposals of Secretary of State William Rogers, though not as stipulated by the secretary. With Abdel Nasser's willingness to consider a separate peace, a marked shift in Israel's position regarding occupied territories, and recognition by both sides of the need to settle the Palestinian refugee question, a breakthrough in the Arab-Israel controversy seemed imminent.

SUMMARY

Unable to obtain an Israeli withdrawal without a peace agreement, the Soviet Union entered Abdel Nasser's war of attrition in the mistaken belief that Egypt's preponderance in manpower and artillery would weaken the Israel resolve to exchange the *status quo* for anything less than genuine peace. The Israeli reaction, however, was to exploit the advantage of aerial superiority. In a series of helicopter-borne commando raids into the Egyptian interior, Israel won the necessary time to strengthen the Bar-Lev line. Subsequently, the IAF became Israel's most effective means of balancing the war of attrition and forcing Egypt to disperse its defenses over a much larger area to second and third defensive lines.

After achieving its immediate military objectives, Israel embarked on the selective use of air power to achieve a variety of undefined political and diplomatic objectives. But extension of the air attacks on military targets in the Egyptian heartland did not serve the general purpose. They did not force negotiations nor restore the cease-fire. Indeed, renewed pressure on the Egyptian armed forces and Abdel Nasser improved, rather than impaired, Egyptian morale. It contributed to even greater reluctance to negotiate and to an intensified war of attrition.

On the other hand, the air attacks may have served another purpose. Israel had vehemently rejected US proposals for a political solution. The raids may have ruled out all possibility of a political settlement along lines bitterly assailed by Israel. If so, and the evidence is hardly conclusive, then Israel's use of air power to influence US policy or to abort political negotiations met qualified success.

In any event, the overall effect was to increase Soviet military involvement in the air defense of Egypt. Introduction of the SAM-3s and initial deployment in Cairo, Alexandria, the Nile Valley, and the Delta, however, marked the first phase in a progression of military escalations undertaken by the Soviets. There followed the infusion of Soviet pilots in the defense of Egypt and the gradual edging forward of the antiaircraft missile system in support of Egypt's offensive or attrition strategy. Thus, in shifting the balance to Israel's disadvantage from month to month, the Soviets reduced the surface perimeter of the air war. This not only threatened Israel's air superiority in the combat zone but increased the risk of a wider war and confrontation with the United States. By the summer of 1970, the interplay between the rival strategies of attrition and deep-penetration bombing altered the character of the limited war. Henceforth, in the sharpened contest for control of the air over the Suez Canal, maintaining the regional balance would depend largely on the availability of missiles and electronic countermeasures. Obviously, the air war had lost its limited character. This was the situation in August 1970. Further rapid changes would occur as new circumstances evolved.

FOOTNOTES

1. A. J. Barker, *Suez: The Seven Day War* (New York: Praeger 1964), pp.25-40.
2. Merry and Serge Bromberger, *Secrets of Suez* (London: Sidgwick and Jackson 1957), p16.
3. Moshe Dayan, *Diary of the Sinai Campaign* (New York: Harper and Row 1966), p22.
4. Nadav Safran, *From War to War: The Arab-Israeli Confrontation 1948-1967* (New York: Pegasus 1969), p52.
5. Hugh Thomas, *Suez* (New York: Harper and Row 1967), p112.
6. A memorial to Colonel A. C. Parker, British Governor of Sinai from 1910 to 1923.
7. Dayan, *Diary of Sinai Campaign,* p77.
8. S.L.A. Marshall, *Sinai Victory* (New York: William Morrow and Co, 1967), p258.
9. Barker, *The Seven Day War,* pp69-85; Safran, *From War to War,* pp53-56.
10. Dayan, *Diary of Sinai Campaign,* p80.
11. *Ibid,* p88.
12. Marshall, *Sinai Victory,* p259.
13. Alfred Goldberg, *Air Operations in the Sinai Campaign* (Air University Historical Liaison Office, November 1959), pp36-37.
14. Dayan records that "Egyptian air strikes against Israeli ground targets were grave on only one occasion—during the battle of the Heitan at Mitla . . . on all other occasions when Egyptian planes attacked out units . . . our casualties in men and vehicles were insignificant, and did not affect the course of the battle." Dayan, *op cit,* p109.
15. The RAF, fearing the Soviet-built Egyptian MIGs, declined to engage its Canberras, other than at night and at an altitude at which they were practically invulnerable—45,000 feet. Thomas, *Suez,* p129; Brombergers, *Secrets of Suez,* p71; *Air Pictorial* (London), August 1965.
16. Thomas, *Suez,* p128; Abdel Nasser on BBC Television, 20 September 1966; *Sunday Times* (London), 24 June 1962.
17. Brombergers, *Secrets of Suez,* pp98-99. Robert Henriques, *100 Hours to Suez* (New York: Viking 1957), p164; Edgar O'Ballance, "The Israeli Campaign in Sinai," *Army Quarterly* (April 1957), p50.
18. Barker, *The Seven Day War,* pp97-108.
19. V. Flintham, "Suez 1956: A Lesson in Air Power," *Air Pictorial* (August 1965), p272.
20. Arthur K. Marmor, *Air Operations in the Suez Incident* (Air University Historical Liaison Office, July 1959), p52.
21. Thomas, *Suez,* pp135-136.
22. Barker, *The Seven Day War,* pp116-129; Cyrus Falls, "Operation 'Musketeer'," *Brassey's Annual* 1957, pp74-83.
23. Barker, *The Seven Day War,* p116.
24. Flintham, *Air Pictorial* (September 1965), pp320-322; "Operation 'Musketeer", *Flight,* 22 March 1957, p592.
25. Barker, *The Seven Day War,* p128.
26. Dayan, *Diary of Sinai Campaign,* p181.
27. O. M. Smolansky, "Moscow and the Suez Crisis of 1956: A Reappraisal," *Political Science Quarterly* (December 1965), pp581-605.
28. Barker, *The Seven Day War,* p144.
29. *Ibid,* pp152-153.
30. George F. Eliot, "Lessons from Suez," *Ordnance,* Vol 41 (March-April 1957), pp787-790.
31. Barker, *The Seven Day War,* p195.
32. Evidence of Egyptian claims that, in their assessment, Britain was not capable of a military movement before three or four months. BBC TV September and Third Programme, July 1966. See also Muhammed Heikal's article in *al Ahram,* 7 October 1966 (quoted in *Times* (London), 8 October 1966.
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34. *Ibid,* p123.
35. George F. Eliot, "Lessons from Suez," p789.
36. Eugene M. Emme, "The Relationship of Air Power to National Policy," (unpublished lecture to the Air War College, 11 September 1958), p13.
37. Brombergers, *Secrets of Suez,* p17.
38. *Flight,* p592, Robert Saundby, "Problems of Mobility," *The Aeroplane,* 16 November 1956, pp720-22.
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41. Robert McClintock, "The American Landing in Lebanon," *U. S. Naval Institute Proceedings,* Vol 88, No 10 (October 1962), p69.
42. Safran, *From War to War,* p115.
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44. Albert P. Sights, Colonel, USAF, "Lessons of Lebanon: A Study in Air Strategy," *Air University Review* (July-August 1965), pp28-43.
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Chapter 4

The Cuban Missile Crisis of 1962

Col Charles Blake, USAF

THE CUBAN missile crisis arose during the last 10 days of October 1962 as a result of Soviet effort to establish missile bases in Cuba. It was a confrontation between the United States and the Soviet Union which, if it had not been resolved, could have rapidly moved into military action involving nuclear weapons. As the crisis heightened, aerospace power became a principal instrument for achieving US purposes—to a greater extent, perhaps, than at any other time since World War II. Only the will to use the power could be regarded as more decisive.

The intensity of US concern in this crisis is not difficult to understand. It was a response to a Soviet aggressive act that had placed offensive missiles within a few miles of the US mainland. The Soviet Union could not possibly have cited any other target than US territory as justification for its action. Cuba's proximity to the United States alone made the Soviet offensive activity unacceptable, but the island's special location athwart the sea and air lanes to Panama made it doubly unacceptable. It was not a matter of an unfriendly, or even a hostile, Cuba, for the United States could tolerate such a Cuba so long as it was not armed with nuclear weapons. But, under Soviet guidance and control, a hostile Cuba with nuclear weapons was a threat.

US concern increased with the realization that Soviet leaders must have been aware of the risks involved in their maneuver. This indicated that they attached a high level of importance to the operation. The missiles themselves also added to the concern, for they probably had the range and power to bring destruction to many American cities and installations. And finally, the clandestine nature of the buildup signified an ominous intention to surprise the United States. US officials were keenly aware of these factors as they contemplated other points of conflict with the Soviets. In Berlin, particularly, the Soviets were always seeking ways to upset the balance of strategic power.

The crisis over Cuba came quickly into focus. On one day, the US Government seemingly discounted the Soviet presence in Cuba as an irritant but not a threat; on the next day, officials awoke as in a nightmare. They were too late to take preventive action, for they were now in danger of stepping into a trap that was almost ready to spring. Under their very noses, the Soviets had gained an initiative, and completion of their missile installations would confront the United States with a *fait accompli*. Was there yet time for the United States to turn the tables? Was there time to bring the aircraft and missiles of the Strategic Air Command into full alert and to confront Soviet Premier Khrushchev with the awesome power of SAC before he could complete his missile emplacements? Necessity dictated that the effort be made.

The first step was to deploy and achieve a full alert without delay. The second step was to lull the Soviets into believing that they were getting away with their gambit. President John F. Kennedy took this step in his historic meeting with Soviet Foreign Minister André Gromyko, who was given no indication that the President had knowledge of Soviet offensive missiles in Cuba. Only after this meeting could the United States achieve its own *fait accompli* and, with one thrust, regain the initiative and psychological advantage over the Soviets.

The key to this changeabout was US strategic air power mobilized and ready. With it, the next practical course of action was to demonstrate with overwhelming speed, the superiority of this air power over that of the Soviet Union. At this point, the United States could decide whether to take the next step. This would be to use the power or to show a willingness to use it, if the Soviets did not desist and dismantle their operations in Cuba.

The foundation for this series of actions was the weaponry of aerospace—nuclear-armed bombers on air alert and missiles ready for firing from both land and sea platforms. Without this weaponry and the armed forces trained to use it, the United States could not have turned the tables. Instead, the Soviets could have persisted in their objectives, risking an incident at sea or elsewhere as an excuse for launching an attack or for threatening to launch an attack on the United States. But the reality of US aerospace power, its rapid mobilization, and the willingness to apply this power deterred the Soviets. Secretary of

State Dean Rusk summarized the confrontation in these words: "Eyeball to eyeball, they blinked first."

EVENTS LEADING TO THE CONFRONTATION

A number of prior events led inevitably to this confrontation. Almost immediately after coming to power in 1958, Fidel Castro began a series of anti-American tirades, followed by expropriation of various US properties. These acts soon alienated public and private opinion in the United States. Only 24 months after Castro came to power, Washington and Havana severed diplomatic relations.

Soviet Involvement in Cuba

The Soviet Union began its initiatives in Cuba in February 1960 during a visit by Anastas I. Mikoyan, First Deputy Premier of the Soviet Union. Subsequently, the two countries signed a trade agreement, and Premier Khrushchev offered Soviet protection to Castro against invasion. Khrushchev reiterated the offer on 9 July 1960:

> Figuratively speaking, in case of necessity Soviet artillery men can support the Cuban people with their rocket fire if agressive forces in the Pentagon dare to start an intervention against Cuba.

The United States became increasingly concerned that the close economic and military relationship between Cuba and the Soviet Union might result in a direct Soviet intrusion into the Western Hemisphere. This prompted President Dwight D. Eisenhower to reemphasize the principles of hemispheric independence. The President warned Premier Khrushchev that he would never permit "the establishment of a regime dominated by international communism in the Western Hemisphere."[2] Khrushchev, in his turn, rejected the Eisenhower warning and proceeded on an open and vigorous policy of Soviet involvement in Cuba and Latin America. In November 1960, the US State Department openly reacted with a report citing "quantities of arms" delivered to Cuba from the Soviet bloc and asserting that, since July 1960, over 30,000 tons of arms and ammunition had been delivered. These arms included rocket launchers, Mig fighters, automatic rifles, and submachine guns.[3]

In the fall of 1960, Khrushchev and Castro displayed their friendship before the United Nations, and, on 31 December, Cuba asked for an urgent meeting of the Security Council to consider evidence of US plans to involve Cuba. According to the charges, the United States was using fraudulent information that the Soviet Union was constructing rocket launching sites in Cuba as a pretext for the invasion. Then, on 3 January 1961, after further hostile statements by Castro, President Eisenhower broke off United States and Cuban relations with this statement: "There is a limit to what the United States in self-respect can endure."[4]

Bay of Pigs Invasion and US Trade Embargo

In April 1961, the Bay of Pigs invasion followed these early brushes between the United States and the Soviet Union. Although the invasion placed the US Government in an ambiguous position, it served to clarify what was feasible and what was not feasible in relations between the United States and Cuba. But the invasion also gave propaganda advantages to the Soviets, with Premier Khrushchev keeping alive the notion that the United States would again attempt an invasion of Cuba. It also established a basis for the Soviet Union to make erroneous judgments of the US Government's resolution leading directly to policy revisions and scaling upward the aggressive intentions of Soviet leaders.

Until the Bay of Pigs invasion, Cuban Government leaders had consistently described their revolution in terms other than communistic. Castro had denied Communist influence while visiting the United States in 1959.

On 1 May 1961, however, he declared that Cuba was a "socialist republic." He stated: "If Mr. Kennedy does not like socialism 90 miles from his coast, we don't like the existence of a capitalist, imperialist regime 90 miles from our coast."[5] Again, in December 1961, Castro announced: "I am a Marxist-Leninist and will be one until I die—there is no half way between socialism and imperialism. Anyone maintaining a third position is, in fact, helping imperialism."[6]

Combined with evidence of US vacillation, the failure of the Bay of Pigs invasion apparently encouraged the Soviet Union to take the initiative in creating a Communist power base in the Western Hemisphere and enhancing its national influence in this area. As later revealed, Soviet plans included the covert installation of offensive missiles in Cuba.

On 22 January 1962, the foreign ministers of the Organization of American States (OAS) met at Puerta del Este, Uruguay. Secretary of State Rusk denounced Cuba as a Communist "bridgehead" in the Americas and proposed her expulsion from all OAS bodies. He also proposed the termination of all trade with Cuba by OAS members and the establishment of a special security committee for protection against Sino-Soviet intervention.[7]

As adopted by the conference on 31 January, the final resolution included the US proposals and proclaimed a policy that, with the exception of Mexico in effect, isolated Cuba from Latin America. When the OAS Council put the Puerta del Este decisions into effect on 14 February, it denied the Cuban delegate the right to speak, and he walked out of the meeting.

The United States followed the OAS action with a decree announcing a total embargo on trade with Cuba, except for medicines and food supplies. The

purpose of this action was to reduce Cuba's capacity for engaging in acts of aggression, subversion, or other activities that would have endangered the security of the United States and other nations of the Western Hemisphere. The United States sought cooperation in this embargo from its Allies, including both NATO and other OAS members, but cooperation was not fully successful.[8]

Communist Military Assistance to Cuba

Communist aid to Cuba began to increase in the spring of 1962. The United States announced that the Sino-Soviet bloc had furnished about 100 million dollars worth of military equipment and technical services and that several hundred Cuban military personnel, including pilots, had received training from Soviet advisors. Arms included 50 to 75 Mig fighters, 150 to 250 tanks, 50 to 100 assault guns, 500 to 1,000 field artillery pieces, 500 mortars, 200,000 small arms, and some patrol vessels and torpedo boats. Evidence also showed that Cuba received missiles and bombers at this time.[9]

In July, Raul Castro, Fidel's brother, went to Moscow, where he met with Defense Minister Malinovski and several other top Soviet military leaders. Shortly after this visit, US officials noted that Soviet-Cuban trade had doubled the rate of the 1961 volume and that this new volume of trade included accelerated arms shipments. In August, more than 30 Soviet ships unloaded at Cuban ports, discharging such war material as surface-to-air missiles, patrol boats with missiles, and Mig fighters, in addition to some 2,000 Soviet personnel.[10]

Near the end of August 1962, the Cuban Minister of Industry, Ernesto (Che) Guevara, led another mission to Moscow. Following this visit, the Soviet Union announced an increase in economic aid of more than one billion dollars because of the "imperialist" threat to Cuba. It also announced that it was sending more technical specialists to train Cuban servicemen.[11] This open announcement triggered a new phase in Soviet-US relations, with Cuba becoming a focal point for tensions between the two great powers.

In a statement on 4 September 1962, President Kennedy called attention to this increased Soviet aid and stated that 3,500 Soviet military technicians were known to be in Cuba or on their way to Cuba. He added, however, that the United States had no evidence of a "significant offensive capability. Were it to be otherwise, the gravest issues would arise." He warned that the United States would prevent by "whatever means may be necessary" any Cuban attempt to export its aggressive purposes by force or threat of force.[12] On 7 September, President Kennedy requested Congress to give him the authority to call up 150,000 reservists primarily because of the Berlin problem, but also because of the possible Cuban emergency.

The Soviet Union labeled the Kennedy statement and other US actions as provocations that might plunge the world into thermonuclear war. Premier Khrushchev stated: "One cannot now attack Cuba and expect that the aggressor will be free from punishment for this attack."[13]

Khrushchev went on to say that the Soviet Union was supplying Cuba with only "defensive weapons," making the point that Cuba had no need for offensive weapons, since those within the Soviet Union were sufficiently powerful to provide for Cuban needs without offensive emplacements beyond Soviet boundaries.[14]

Indications of increased Soviet military assistance continued during the summer, but, until September, the evidence appeared to support the President's belief that Soviet military aid to Cuba was defensive in nature. As late as 29 August, photographic reconnaissance indicated that the missiles in Cuba were air defense missiles. Although American reaction was moderate, Senator Kenneth Keating of New York took the Senate floor on 31 August and vigorously protested the Soviet military buildup in Cuba. Partly in response to this and other congressional pressures, President Kennedy ordered a stepup of reconnaissance flights over Cuba by U-2 aircraft, which, until late August, had been limited to two flights per month. Beginning on 29 August, U-2s flew at more frequent intervals to photograph the island and the ships approaching it.

The Threat of Offensive Weaponry

The President held to his belief in the defensive nature of the buildup as late as 13 September, when, in a news conference, he again assured the country that the arms shipments to Cuba "do not constitute a serious threat to any other part of the hemisphere."[15] However, he did not rule out the possibility that the arms buildup might become such a threat.

In the meantime, Senator Keating again sounded the alarm. He stated that his own sources of information, "which have been 100 percent reliable," had substantiated a report that six intermediate-range missile sites were under construction in Cuba. He did not specify the location nor did he reveal his sources of information. He then pressed President Kennedy to confirm or deny the report.[16]

The results of U-2 flights during September had, in fact, aroused the suspicion of specialists in the Defense Intelligence Agency (DIA). On 28 September, they discovered that shipping crates aboard a Cuba-bound freighter contained Il-28 medium bombers. One of the DIA specialists, Air Force Col John R. Wright, Jr, noted that the trapezoidal pattern of SAM emplacements resembled those photographed by U-2s over the Soviet Union. On 9 October, he further

suggested to his superior, Gen Joseph Carroll, that the San Cristobal area of western Cuba might justify a closer look. However, the weather did not permit U-2 overflights for the next four days. In the meantime, Secretary of Defense Robert McNamara took steps to bring the Air Force directly into the reconnaissance operation, which had been an undertaking of the Central Intelligence Agency (CIA), using USAF pilots. On 12 October, the mission was assigned to the Strategic Air Command, and, during the following days, the President again ordered an increase in the number of reconnaissance flights.

On 14 October, Air Force Majors Rudolph Anderson, Jr, and Richard S. Heyser returned from a reconnaissance mission with new and conclusive evidence of site preparation near San Cristobal. Their photographs revealed MRBM and IRBM launching sites in advanced stages of construction, although they had not existed a month previously. A sequence of photographs taken on 14 and 15 October showed detailed tracings of missiles hidden under tarpaulins and moved by truck convoy from Cuban ports to the launching sites.

Options Considered by the United States

President Kennedy viewed these photographs in the early morning of 16 October. After studying them, he called an emergency meeting of certain Government officials and a few private individuals. He entrusted the group with the task of reviewing all possible US responses to the Soviet threat and of recommending options for the President to take. The group worked under the title of Executive Committee of the National Security Council and met as often as two or three times a day during the crisis period.[17]

The situation required that the United States take two basic actions: *First,* the United States and its military forces had to be readied for any eventuality. *Second,* the case had to be presented to international organizations for their members to judge the Soviet actions. In its deliberations, the Executive Committee accepted certain assumptions. Since the United States realized that the Soviet Union, and not Castro, was the real danger, Cuba, *per se,* did not figure in their alternatives. One assumption was that any action to be taken had to be swift and decisive, under coordinated military and political control. Another assumption was that nuclear war was indeed possible. The choices of action available to the United States ranged between two extremes. It could do nothing and accept a Communist power base in the Western Hemisphere, or it could conduct strong air attacks on the missiles sites, followed by possible invasion. Somewhere between these extremes lay a range of choices that could lead to a negotiated settlement, to a breakdown by either party, or to war.

Basically, the committee discussed six alternatives. *First,* the President could present the evidence to the Soviet foreign minister the next day, 18 October, and demand immediate dismantling of the sites. The committee rejected this option because it felt that, since military action was possible, advanced warning to the Soviets should be held to a minimum. *Second,* the United States could send an emissary to advise Premier Khrushchev privately that the President knew of the missiles in Cuba and that they must be withdrawn immediately. This alternative was unsatisfactory because it could result in diplomatic initiatives by Khrushchev to mobilize nonaligned nations against the West. In turn, this might require unbearable accommodations on the part of the United States regarding Western Europe. *Third,* the United States could call the Soviet Union and the Cuba delegations before the UN Security Council and confront them with the evidence. The Committee rejected this single course of action on the grounds that the Soviet representative in the Security Council was acting as the Chairman and could not be counted upon to permit the matter to come before the Council. *Fourth,* the United States could impose an embargo on all military shipments to Cuba and enforce it with a naval and air blockade. Most members of the Committee saw advantages in this alternative. It had inherent means of applying restraints and, therefore, was less provocative than a more dramatic military response. *Fifth,* in a surprise air attack, the US Air Force could eliminate the missile installations by pinpoint bombing. The Committee agreed that this option would involve the possible killing of Soviet technicians and place heavy pressure on Premier Khrushchev. Also, Gen Walter C. Sweeney, Jr, Commander, Tactical Air Command, told the President that he could not be absolutely certain of destroying all the missile sites and nuclear weapons in Cuba with a surprise attack.[18] The Committee shelved this option as a possible future action because of the time element. It was estimated that as many as 32 Soviet missiles would be ready for firing within one week. Even though contingency plans were available, it would be difficult to plan an invasion of this magnitude in the available time frame without informing the Soviet Union and Cuba.[19]

CONFRONTATION—MOVE AND COUNTERMOVE

The Executive Committee deliberated a week before deciding on the following responses, all to be initiated together: (1) a US Navy "quarantine" of Cuba to prevent the introduction of additional offensive weapons; (2) a coordinated, forceful public expose of Soviet deception, carried out in the United Nations and elsewhere; (3) acquisition of moral support from the Organization of American States; and (4) total mobilization of conventional and nuclear

strike forces to attack Cuba if the Soviet Union refused to withdraw its offensive weapons.[20]

On 22 October, the crisis came to a head when the President and Secretary Rusk informed congressional leaders of estimates and plans. Reaction on the part of the legislators was mixed. Some favored the action being taken; others, notably Senators Richard B. Russell (D, Ga) and William J. Fulbright (D, Ark), demanded an invasion. The State Department brought together, in Washington, 46 ambassadors to the United States and briefed them on US plans.[21]

The Quarantine Proclamation

President Kennedy spoke to the nation and the world by television and radio on the evening of 22 October to discuss the Soviet military buildup in Cuba. He stated that the purpose of the Soviet action was to provide a nuclear strike capability against the Western Hemisphere. Although the United States was the most important target, Kennedy emphasized the threat to the entire hemisphere—obviously to establish unity of purpose should direct action against Cuba be required. The United States was accustomed to living under the threat of nuclear war, but, as the President pointed out, this was the first threat to Latin America. Mexico City, the Panama Canal, and Caracas, Venezuela, were not within range of Soviet missiles.

In the course of his remarks, President Kennedy announced the following actions:

1. Quarantine of all military equipment under shipment to Cuba. This involved the resolve to turn back any and all ships with cargoes of offensive weapons;
2. Continued and increased surveillance of Cuba;
3. Reaffirmation of the policy of retaliation upon the Soviet Union for any nuclear attack launched from Cuba;
4. Readying of the US Armed Forces for any eventuality;
5. Meeting of the Organization of American States to consider the threat to the Western Hemisphere; and
6. Emergency meeting of the United Nations Security Council for the same purpose.[22]

Recognizing the enormous hazards involved, the President made certain that the announced actions in his speech did not close out all of his options or the actions available to the Soviet Union.[23]

The President included two important considerations in his speech calculated to weigh heavily on the mind of the Soviet military man or, more importantly, on the mind of Premier Khrushchev. The first was a reference to World War II directed to the world's attention. President Kennedy stated that "the 1930s taught us a clear lesson that aggressive conduct, if allowed to go unchecked and unchallenged, ultimately leads to war." He directed the second statement to the Soviet Union: "It shall be the policy of this nation to regard any nuclear missile launched from Cuba against any nation in the Western Hemisphere as an attack by the Soviet Union on the United States requiring full retaliatory response upon the Soviet Union."[24] The importance of these two statements cannot be overemphasized, for they declared that the United States was prepared if attacked, to go to nuclear war. However, military power has little importance in diplomacy unless a nation is willing to use it. And the United States had experienced some lack in credibility during the cold war period since World War II. Therefore, the actions taken by the United States following President Kennedy's speech were, in part, to provide credibility to his implied threat. The outcome of the Cuban crisis shows that these actions were feasible. Evidently, the Soviet Union did believe that the United States had the will to use any means at its disposal to provide security for the Western Hemisphere.

President Kennedy signed the Quarantine Proclamation on 23 October 1962, but it did not go into effect until 10:00 am on 24 October to allow time for OAS approval. It should be pointed out that the choice of the quarantine was a key factor in focusing Soviet attention on the US strategic arm and its power. If the quarantine were resisted, the Soviet Union, not Cuba, would confront US power, since shipments were in the hands of the Soviets. This automatically brought the potential confrontation between the two major powers; if it escalated, it could lead to nuclear strikes, with missiles playing a dominant role. In the last months of the Eisenhower administration and throughout the 1960 presidential campaign, much was said of the so-called "missile gap." It was now clear that the United States was superior in strategic weapons and in delivery vehicles and that the Soviet Union recognized this superiority. The President seemed confident that, if Premier Khrushchev had enough time to appreciate US strategic power, he would retreat.

The Diplomatic Front

The day after the quarantine went into effect, Premier Khrushchev gave his reply to a letter from British philosopher Bertrand Russell. Khrushchev pledged that the Soviet Union would make no "hasty decisions" and suggested a summit conference to consider the Cuban crisis and outstanding world problems. Both the tone and the context of the exchange suggested restraint and the desire to negotiate. As if to verify this, US sources reported that some Soviet vessels bound for Cuba had altered their course.

The US Navy intercepted its first Soviet vessel on 25 October. Since oil was not included on the list of contraband, the Navy did not board the Soviet tanker *Bucharest* and allowed it to maintain its course. On

the same day, in a continuing sequence of preparedness measures, SAC bombers flew to other dispersal bases in the midwest.

With detailed accounts of the quarantine and subsequent developments, the news media kept the American public informed of US actions. The press even reported the movements of military units into southern Florida, the establishment of antiaircraft missile defenses on Florida beaches, and high-and-low-level reconnaissance flights by Air Force aircraft.

On the diplomatic front, Secretary of State Dean Rusk appeared before an emergency session of the OAS on 23 October to brief the member nations on the missile sites, and US Ambassador Adlai Stevenson appeared before the UN Security Council to inform its members of the crisis. At the OAS meeting, Secretary Rusk cited the Rio Pact of 1947 and requested the delegates to authorize the use of force to make the US quarantine effective. The Council of the OAS voted its unanimous support by adopting the US resolution calling for the "immediate dismantling and withdrawal from Cuba of all missiles: and other offensive weapons." The council further recommended that its member states "take all measures, individually and collectively, including the use of armed force . . . to ensure that the government of Cuba cannot continue to receive military material from the Sino-Soviet powers."[25]

In New York, the United States requested the UN Security Council to adopt a resolution calling for "the immediate dismantling and withdrawal from Cuba of all missiles and other offensive weapons" under the supervision of US observers. The draft resolution also proposed talks between the United States and the Soviet Union; Cuba was ignored. The Soviet reply challenged the right of the United States to attack vessels of other states on the high seas" and to "dictate to Cuba what policy it must pursue . . . and what weapons it must possess." The Soviet Union also demanded that the United States withdraw its quarantine.[26]

Ambassador Stevenson dramatically challenged the Soviet Union's UN representative, Valerian Zorin, to deny the presence of Soviet missiles in Cuba. Zorin refused to answer. The display of Soviet evasiveness in the United Nations supported the US decision to justify its acts on grounds of national interest and to appeal to world opinion on the basis of a moral right to self defense rather than legal right to institute a quarantine against hemispheric intruders. At one point in the Security Council meeting on 25 October, Stevenson declared to Zorin: "I am prepared to wait for my answer until hell freezes over, if that is your decision." To this, he added: "I am also prepared to present the evidence in this room." He then proceeded to show the Security Council and the television audience enlarged photos demonstrating the existence of missile sites in Cuba.[27] Meanwhile, in a three-hour talk with William Knox, the President of Westinghouse Electric, Premier Khrushchev admitted that the Soviet Union had missiles in Cuba and would use them, if necessary. Knox, who was in the Soviet Union on corporate business, returned to Washington on 26 October with the message.[28]

Washington maintained the tough attitude exhibited by Ambassador Stevenson. Rumors spread that a US invasion of Cuba was imminent and that bombing of the missile sites would occur if the Soviet Union did not quickly yield. Representative Hale Boggs (D, La) bolstered these rumors with the statement: "Believe me, if these missiles are not dismantled, the United States has the power to destroy them, and I assure you this will be done."[29]

Reports of the arrival of Marine contingents in the Florida Keys and a continued military buildup in the area increased the belief that invasion was imminent. The White House reiterated that the only acceptable formula was the verified removal of the missiles. Without this assurance, the Administration declared that it would not accept any limitation on its freedom of action. On 26 October, the Administration also asserted that the Soviets were "rapidly continuing" work on sites and showing no intention "to dismantle or discontinue work on them."[30]

Military Alert and Deployment

In the meantime, the United States sent Dean Acheson to brief NATO Allies on the US action in Cuba, and, as part of the overall military alert, both the Strategic Air Command and the Tactical Air Command further increased their readiness status. The military buildup continued in the Caribbean and in the southeastern United States.

The United States initiated military steps to meet the emergency during the first week in October. Tighter than normal security was maintained. US capability was enhanced by the previous scheduling of routine amphibious and other naval exercises in the Caribbean and the Atlantic areas and by the gradual buildup of air defenses in the southeastern United States started earlier in the year. Although rumors of increased military activities began to circulate, maximum secrecy was vital to the success of US policy. The United States could release no information on military activities until it had firmly established its course of action, until it had complete information on Soviet activities, and until the Armed Forces had prepared to carry out their assignments.

Since it did not know what course the Soviet Union would follow, the United States ordered the Armed Forces "to prepare for any eventualities" and placed most of the Department of Defense on alert status.

If the Soviet Union decided to unleash a nuclear

attack, US retaliatory forces were ready to counter. Beginning on 20 October, the Strategic Air Command (SAC) dispersed its bombers to continental and oversea bases and placed all aircraft on an upgraded alert fully equipped—ready to take off within 15 minutes. This reaction time was in line with Ballistic Missile Early Warning System (BMEWS) detection and warning capabilities. During the President's address to the nation and world on 22 October, the Strategic Air Command placed its B-52 force on continuous war alert. This was a massive airborne alert, involving 24-hour flights and immediate replacement for every aircraft that landed. As one B-52 returned from airborne alert, another immediately took its place in the air. Approximately 50 B-52s carrying thermonuclear warheads were continuously airborne within striking distance of the Soviet Union between 22 October and 21 November.[31] This SAC alert directly involved over 150,000 crew and maintenance personnel on an average workweek exceeding 80 hours. Almost 400 on-station land and sea-based ballistic missiles were also placed on immediate readiness status. The United States deployed this tremendous nuclear force to discourage any reckless challenge by the Soviets.

When President Kennedy stated that the Soviet Union would be answerable for attacks launched from Cuba, he directly threatened nuclear war—a fact that must have given pause to Premier Khrushchev. Likewise, Soviet leaders must have shared extreme apprehension over SAC's alert and the possibility that a miscue would touch off a general war. On 7 November 1962, Premier Khrushchev stated that, during the Cuban crisis, "we were very close—very, very close—to a thermonuclear war—if there had not been reason; then we would not be here tonight, and there might not have been elections in the United States."[32] And, in his address to the Supreme Soviet on 12 December 1962, Khrushchev emphasized "the direct menace of a world thermonuclear war, a menace that arose in connection with the crisis in the Caribbean." He noted that "about 20 percent of all Strategic Air Command planes, carrying atomic and hydrogen bombs, were kept aloft around the clock."[33]

When SAC aircraft went on alert, it was impossible for the Soviets to overlook it. Their warning systems must have shown aircraft constantly flying in and out of bomber and tanker bases, as well as other bases supporting the strategic mission. US aircraft logged over 48,000 hours on airborne alert sorties. Reports from Canada, Spain, Okinawa, the Philippines, and other nations hosting SAC installations reinforced reports from the continental United States. Communications traffic increased enormously. The alert not only increased the US strategic capability but also communicated a strong commitment. The bomber force was the most visible part of the deterrent force, but the Soviet Union also understood the capability of approximately 270 ICBMs and 9 on-station Polaris submarines, even though they were not visible. Their presence behind other strategic and tactical forces added credibility to US expressions and communications of resolve.

The SAC alert also allowed for deescalation to conventional military actions. Khrushchev indicated that he was aware of this in his statements of concern. This factor probably brought the Soviet deescalation that ensued.

Although the threat of a conventional invasion of Cuba was a major factor considered by the Soviets, the most serious aspect of the confrontation was the strategic implications of SAC bombers on around-the-clock alert and poised on their launching pads. Thus, although the public was more aware of naval tactical and conventional units, strategic air forces in alert deployment were crucial to US power and crucial to Soviet assessment of US capability and resolve. US resolve, as communicated by the alert of these strategic forces, thus contributed the last element necessary to persuade the Soviets to reconsider.

Both US conventional and strategic forces were closely linked in the overall plan for handling the crisis. Local superiority provided by conventional forces foreclosed to the Soviet Union any military alternatives less than strategic war; strategic forces decidedly favored the United States.

In his speech of 22 November, President Kennedy emphasized that the blockade was the initial step. He ordered the Pentagon to make all preparations necessary for further military actions. Secretary McNamara listed the requirements for an invasion as 340,000 men and 2,000 air sorties. Plans for this eventuality moved ahead.[34]

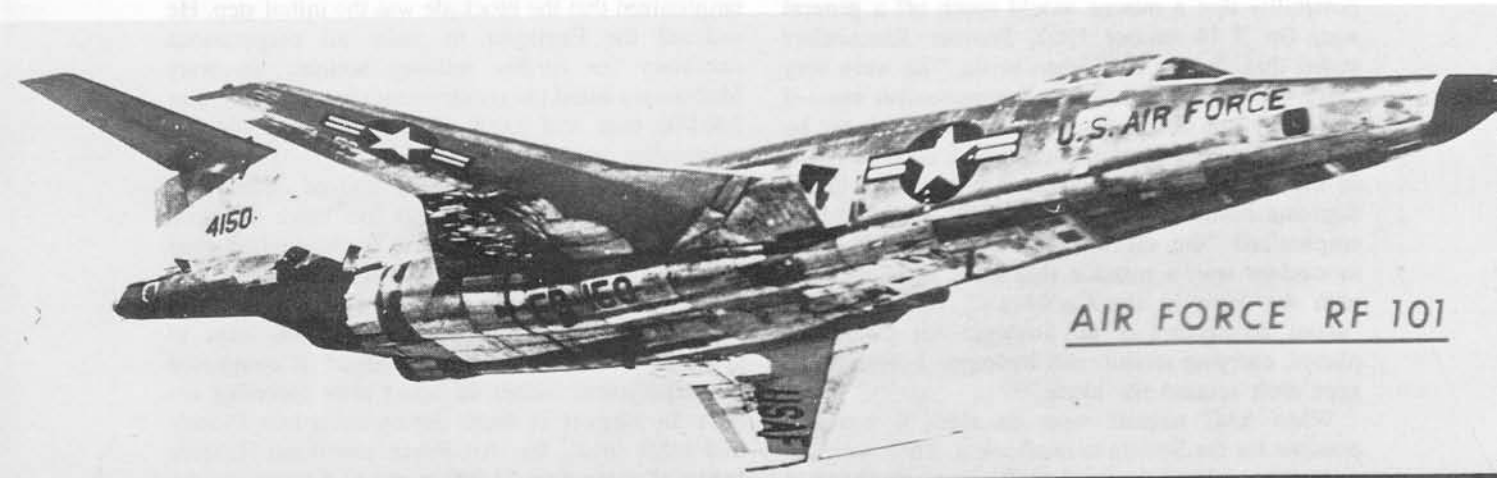
The 1st Armored Division moved from Fort Hood, Texas, to Georgia, and five more divisions were placed on alert. The Navy deployed 180 ships into the Caribbean. The Tactical Air Command continued the deployment of some 1,000 fighter and reconnaissance aircraft and over 15,000 men to areas in the southern United States.[35] It completed the deployment within 48 hours after receiving orders. In support of these deployments into Florida and other areas, the Air Force mobilized Reserve forces of more than 14,000 men and 8 troop-carrier wings. To protect the armed camp in Florida, Air Force fighter-interceptors flew over 2,000 individual sorties in that vicinity during the crisis.[36]

The Military Airlift Command (MAC), then known as Military Air Transport Service (MATS), began the airlift of conventional ammunition and support equipment for the Tactical Air Command and its composite air strike forces to Florida bases. Additionally, MATS airlifted Army units from several US bases and Marine Corps units from Camp

President John F. Kennedy

Secretary of Defense Robert S. McNamara

Low altituded reconnaissance aircraft used over Cuba on 23 Oct 1962.



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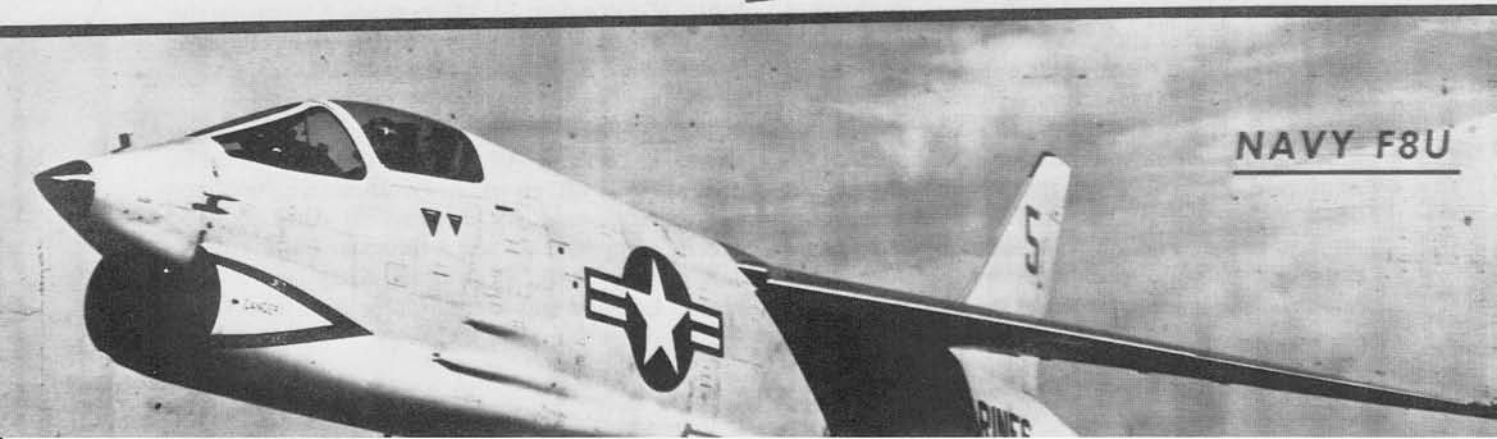

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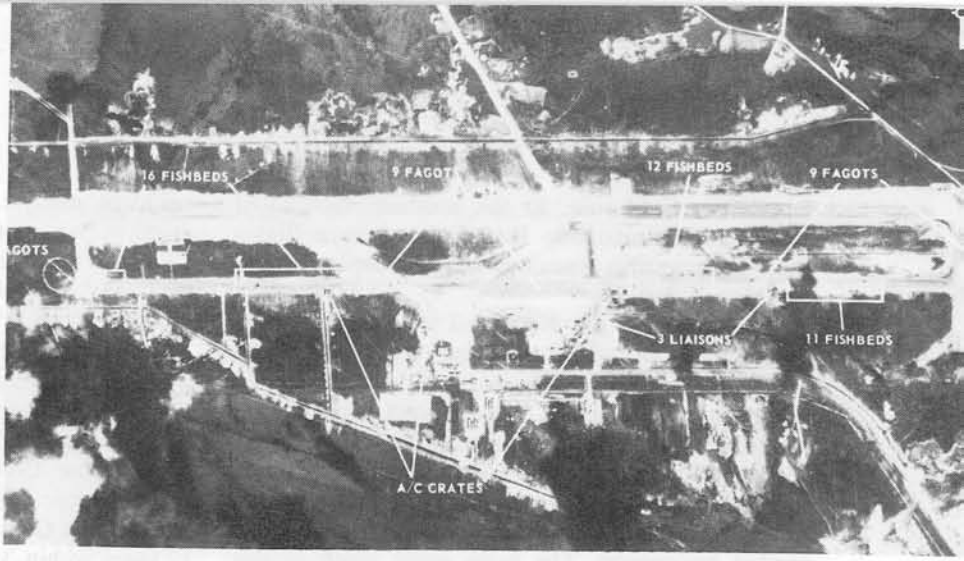
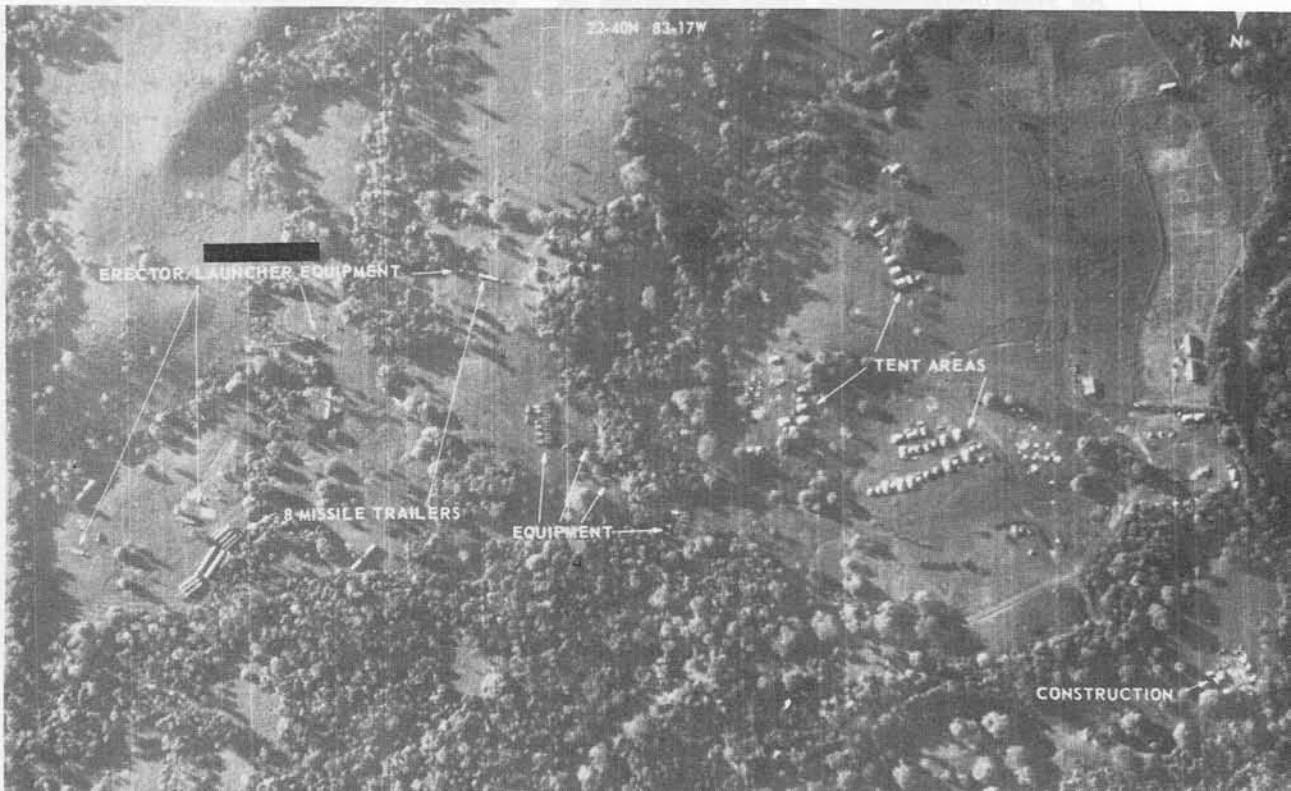


Cuba, Camilo Cienfuegos (Santa Clara) Airfield 17 Oct 1962.

Guanajay IRBM site. This vertical photograph was taken at an area near Guanajay, Cuba on 29 August. At that time, there was no military activity evident. The outlined area was later to be the site of extensive construction for a Soviet IRBM launch facility.

Medium Range Ballistic Missile Field Launch Site, San Cristobal 14 Oct 1962. This was the first photographic evidence of Soviet offensive missile deployment in Cuba.



Pendleton, California, to the southeastern United States and Guantanamo Bay, Cuba. Return flights from Guantanamo evacuated military dependents to the United States.

Coincidentally, the Navy and the Marine Corps were already engaged in exercise "Philbrighles-62." This exercise involved approximately 20,000 men, including 7,500 Marines, 20 destroyers, and 15 troop ships. The scenario of this exercise called for a Marine assault on Vieques Island, near Puerto Rico, to liberate a mythical Republic of Vieques from the tyranny of a mythical dictator named Ortsac (Castro spelled backwards). The press made much of this exercise, but the Administration denied any connection between it and the buildup with respect to Cuba.[37]

These conventional military activities of the United States undoubtedly played a major role in causing Premier Khrushchev to reconsider on 27 and 28 October. They gave the President alternatives that enabled him to command a challenging position at all levels. Khrushchev acknowledged this to the Supreme Soviet on 12 December when he pointed out the threat posed by US conventional forces in Florida. He stated that "several paradrop, infantry, tank, and armored divisions—numbering about 100,000 men—were detailed for an attack on Cuba alone." He further stated: "In the morning of October 27 we received information from our Cuban comrades and from other sources which directly stated that this attack would be carried out within the next two or three days—immediate actions were required to prevent an attack against Cuba and preserve peace."[38]

Air Force reconnaissance forces also carried the message to Khrushchev. Both he and Castro took note of these steadily increasing flights over Cuba. While awaiting further developments and communications from the Soviets after 27 October, President Kennedy noted that the Soviet Union continued to expedite work on missile sites. In conjunction with this observation, he ordered a gradual increase in pressure, by expanding the number of low-level flights over Cuba from two a day to one every two hours.[39]

During one of these crucial U-2 flights over the island on 27 October, Air Force Maj Rudolph Anderson, Jr, was shot down and killed. On that same day, another U-2 on a "routine" air sampling mission over Alaska wandered 800 miles into Siberia. The Soviets sent up interceptors, but Air Force aircraft from bases in Alaska escorted him to safety.[40] It appears that both of these U-2 missions registered with Premier Khrushchev. When he accepted President Kennedy's proposal for resolving the conflict on 28 October, he referred to the U-2 intrusion over Siberia with great concern. "Is it not a fact," he asked, "that an intruding American plane could be easily taken for a nuclear bomber which might push us to the fatal step; all the more since the US Government and the Pentagon long ago declared that you are maintaining a continuous nuclear bomber patrol?"[41]

US air defense forces also helped to bring the crisis to a conclusion without resort to air strikes. The 175,000 men, the aircraft, and the equipment under the operational control of the North American Air Defense Command (NORAD) were ready for any emergency. At the beginning of the crisis, the Air Defense Command dispersed 173 interceptors to 17 bases within 3 hours. Many of these interceptors, together with HAWK and NIKE-HERCULES missile battalions, moved to the southeastern United States to support local defense forces. To increase the survivability of interceptors in the event of a Soviet ICBM strike, the force was brought to a 15-minute alert.[42]

The Sword and the Shield

The United States used all its military forces in concert to end the crisis. In explaining this at a NATO ministerial meeting in December 1962, Secretary of Defense Robert McNamara referred to nonnuclear forces as the sword and the nuclear forces as the shield.[43] Ideally, military power is a spectrum ranging from the lowest levels of tactical power to the highest level of strategic nuclear power, combined with a will to use this power. The Cuban crisis fully exemplified the requirement for this spread of capabilities. The alerting of Army and Navy forces, together with the Tactical Air Command, the Military Airlift Command, and the Strategic Air Command, indicates that the United States took full advantage of the link between strategic and general purpose forces. The movement of tactical forces not only reinforced the effect of an alerted SAC but also indicated a willingness to engage in action less than general war, including an invasion of Cuba. The superior logistical capability of the United States permitted the rapid transportation of versatile and mobile surface forces, including more than 100,000 Army troops, to the southeastern United States. This regional superiority during the crisis, backed by superior strategic forces, presented the Soviets with a balanced force capable of either restraint or escalation.

The United States interwove military actions with declaratory statements as it communicated its resolve. No more persuasive argument could have been advanced for the effectiveness of sword and shield than the fact that strategic weapons had never been used in conflict. By virtue of their very existence, together with the "cutting edge" of conventional forces, the United States effectively communicated the potential of its strategic air power to the Soviet Union.

The only US forces that encountered potential hostile resistance were naval ships enforcing the quarantine and reconnaissance aircraft subject to ground fire over Cuba. Both sides exercised restraint—a recognition that short-term national objectives and national interest itself must be accommodated to the realities of thermonuclear power. Both nations were conscious of the risk of initiating a nuclear war by ill-considered action. US military actions alone lessened the likelihood that the crisis would escalate to general war. Through a close coordination between political and military actions, the United States communicated its intent, its aims, and its restraints. Indeed, virtually every act was a form of communication with Soviet leaders. After the crisis, Secretary McNamara stated: "To the best of my knowledge there has never been since World War II a closer relationship between the State Department and the Defense Department at all echelons."[44]

Throughout this crisis between the two nuclear powers, the prime objective of the United States was to force or to persuade the Soviets to withdraw. It achieved this objective by showing the Soviet Union the portal of nuclear holocaust and, at the same time, keeping a way open for peaceful withdrawal. Air power was indispensable in realizing this objective.

RESOLUTION OF THE CRISIS

History probably will mark the Cuban missile crisis as a masterpiece of nuclear diplomacy directed by President John F. Kennedy. During the tense confrontation, the President vividly demonstrated that power in and of itself is not credible unless it is perceived as usable. The same strategic force that did not deter the Soviet Union from placing missiles in Cuba impelled Premier Khrushchev to remove them. President Kennedy fully understood US military power and used strategic forces to escalate and then to deescalate the conflict.

Communications Between Heads of Government

The first break in the tense situation came in the afternoon of 26 October with reports of a direct communication by letter from Premier Khrushchev to President Kennedy. Judging from reports of its contents, (it has not yet been made public), Khrushchev wrote a long and emotional, but very coherent, letter. He accepted the US proposal for removal of weapons from Cuba under international inspection and agreed to halt further shipments of such weapons. But he stipulated that he made these concessions in return for an end of the quarantine and an assurance that the United States would not invade Cuba. This interpretation of Khrushchev's communication is consistent with the account of a television reporter, John Scali, who had been approached by an official of the Soviet Embassy with essentially the same conciliatory proposal. In the meantime, Premier Khrushchev accepted UN Secretary General U Thant's appeal to keep Soviet vessels bound for Cuba out of the interception area.[45]

President Kennedy answered Premier Khrushchev on 27 October with this statement:

> We, on our part, would agree . . . upon the establishment of adequate arrangements through the United Nations, to insure the carrying out and continuation of these commitments . . . (a) to remove promptly the quarantine measures now in effect and (b) to give assurances against an invasion of Cuba.[46]

Another letter from Khrushchev to Kennedy arrived on 27 October changing the earlier terms. In this letter, he proposed that, in return for the withdrawal of Soviet weapons from Cuba, the United States would remove corresponding weapons from Turkey. The Soviet Union would then give a pledge of no invasion on Turkey, and the United States, on Cuba. The US reply to Premier Khrushchev did not mention Turkey, except to state that the present problem was strictly limited to the Western Hemisphere.[47]

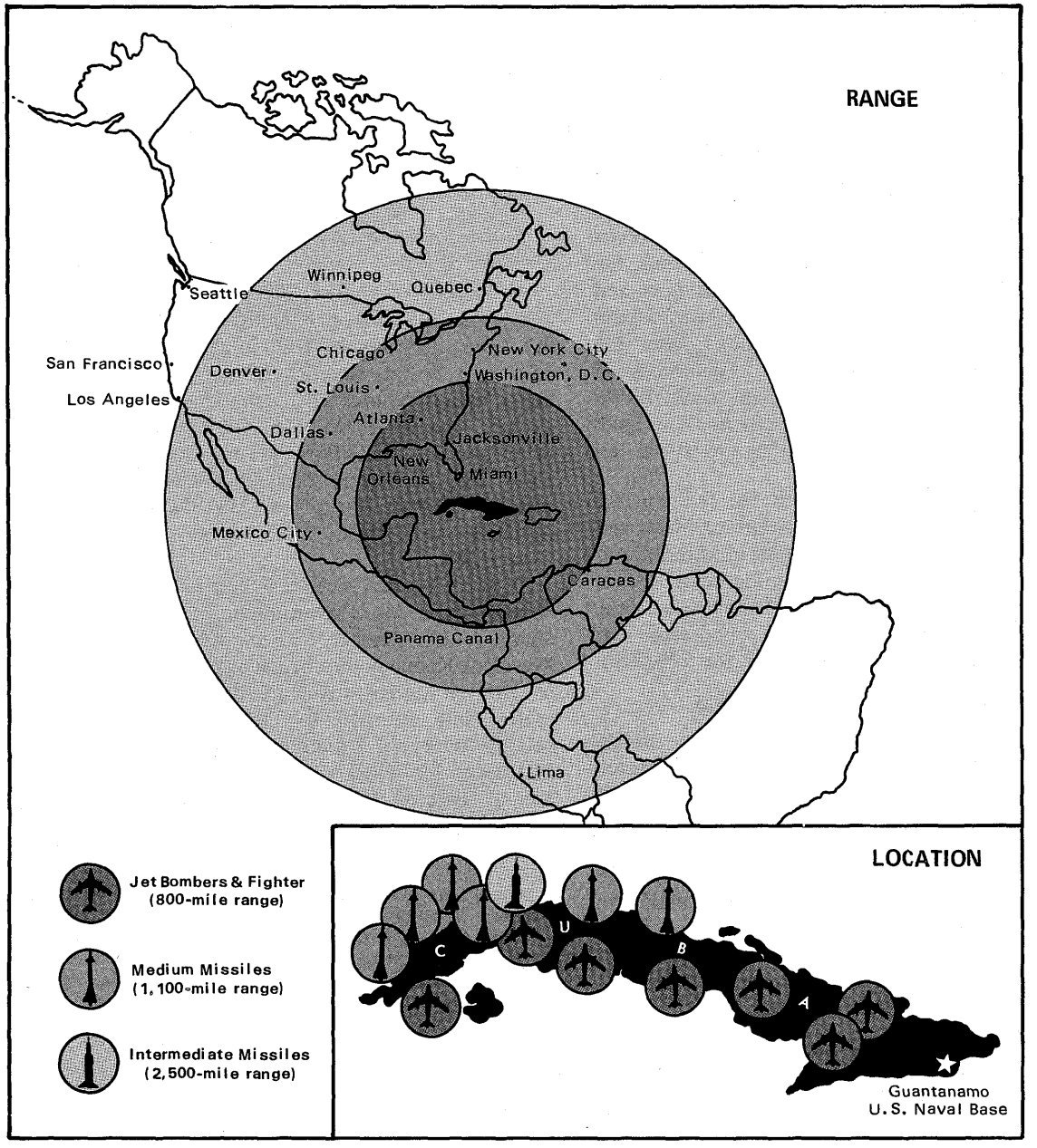
Of the 10 letters known to have been exchanged between the heads of government, the key was that of Sunday, 28 October, when Khrushchev wrote President Kennedy that he had ordered the cessation of work on the bases and that the missiles would be crated and returned to the Soviet Union with verification by the United Nations. He further stated that, since his reasons for placing missiles in Cuba was to forestall invasion, he had succeeded in his purpose:

> I regard with respect and trust the statement you made in your message of October 27, 1962, that there would be no attack, no invasion of Cuba, neither on the part of the United States, nor on the part of other nations of the Western Hemisphere, as you stated in the same message. Then the motives which induced us to render assistance of such kind to Cuba disappear.[48]

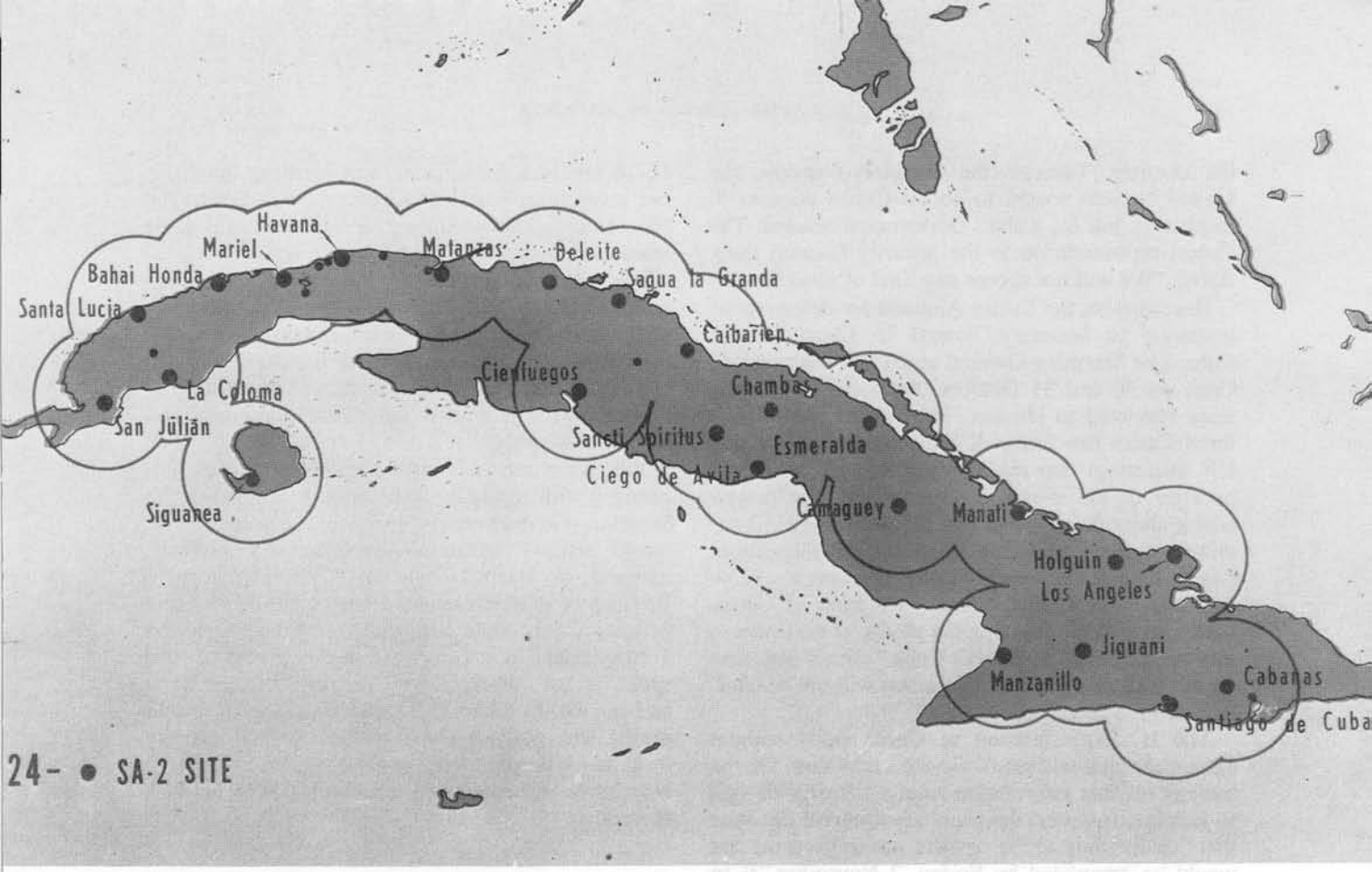
President Kennedy replied to Khrushchev, describing his message as a "welcome" and "important contribution to peace." He stated that he considered this letter and his letter of 27 October to be "firm undertakings . . . promptly carried out." Also in this letter was a hint that the arrangements between President Kennedy and Premier Khrushchev might cover a wider area than Cuba, for President Kennedy agreed with Khrushchev's suggestion that the two countries should devote greater attention to the problems of disarmament and the proliferation of nuclear weapons.

Role of the United Nations

In their exchange, both the United States and the Soviet Union agreed to UN inspection, but neither included Castro in their negotiations nor, in fact, consulted with him, despite his position as head of



Threats from Cuban Bases



SA-2 SAM deployment in Cuba

Russian IL-25 Bomber

the country. Through the Secretary-General, the United Nations sought to obtain Cuban consent to inspectors, but the Cuban Government refused. The Cuban representative to the Security Council flatly stated: "We will not accept any kind of observers."[49]

Nevertheless, the Cuban Ambassador delivered an invitation to Secretary-General U Thant to visit Cuba. The Secretary-General and a UN party visited Cuba on 30 and 31 October, but their movements were restricted to Havana. The United Nations offered Castro two forms of inspection. The first was UN inspection that would bring into effect the US promise of no invasion. The second was a new Soviet alternate proposal that an international committee of the Red Cross carry out the inspection. Castro replied that any kind of inspection would be an "act of humiliation" and a violation of Cuban sovereignty. As to bringing the pledge of no invasion into being, Castro stated that Cuba "cannot negotiate on the basis of a promise that crime will not be committed."[50]

The U Thant mission to Cuba ended without agreement on any form of on-site inspection. On the basis of reliable information received during his visit to Havana, however, the Secretary-General did state that "dismantling of the missiles was in progress and would be completed by Friday, 2 November."[51] In succeeding days, the United States announced that, even though the Soviet Union was, in fact, dismantling the missile bases, it would continue its program of aerial surveillance until inspection was permitted. The Air Force continued its reconnaissance mission.

Castro's Conditions

On 28 October, Premier Castro laid down the conditions on which a possible US pledge of no invasion would be acceptable to the Cuban Government:

1. Cessation of economic blockade and of all measures of commercial and economic pressure being carried out by the United States against our country throughout the world.
2. Cessation of all subversive activities, of dropping and landing of weapons and explosives by air and sea, of the organization of invasion by mercenaries, and of the infiltration of spies and saboteurs—all of which activities are being carried out from the territory of the United States and certain accomplice countries.
3. Cessation of piratical attacks being carried out from bases in the United States and Puerto Rico.
4. Cessation of all violations of our air space and territorial waters by United States aircraft and warships.
5. Withdrawal from the naval base of Guantanamo and return of the Cuban territory occupied by the United States.[52]

Soviet Withdrawal

Meanwhile, the Soviet Union proceeded along the lines of Khrushchev's promise to President Kennedy. By 12 November, it had withdrawn 42 "offensive" missiles from Cuba and had ordered the destruction of launching sites. On 6 December, it removed 42 IL-28 bombers from Cuba. Still insisting upon on-site inspection, President Kennedy did not order the Navy to board Soviet ships purportedly returning the missiles and bombers to the Soviet Union. At a 20 November press conference, President Kennedy announced that he had been informed by Khrushchev of the Soviet withdrawal. All evidence indicated that the missiles had been dismantled. In return, Khrushchev promised immediate withdrawal of all the IL-28 bombers. The United States lifted the quarantine on 21 November.[53]

Premier Castro's basic position remained unchanged with regard to inspection. In a letter to the Secretary-General on 15 November, he stated that he would refuse "unilateral inspection by anybody, national or international, on Cuban territory."[54] Because of this difference, a rift in the relationship between Castro and Khrushchev became apparent on 1 November. In a broadcast to the nation, Castro spoke of the "divergencies" existing between Cuba and the Soviet Union.[55] These differences persisted during the visit to Cuba of Soviet First Deputy Premier Mikoyan, who arrived in Havana on 2 November and conducted talks with Castro until 25 November.

SIGNIFICANCE OF CUBA

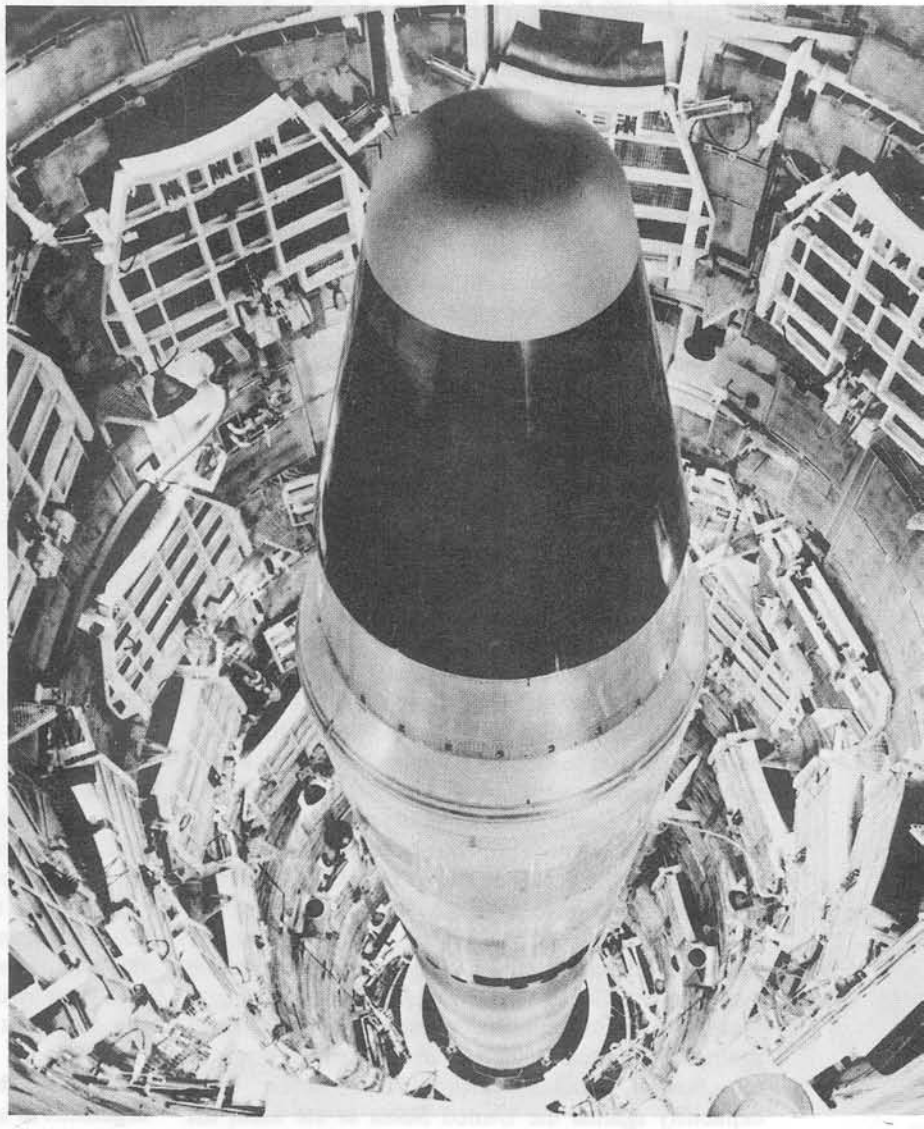
Soviet objectives in attempting to transform Cuba into a strategic base may have been either one of two or both of the following: First, a continued presence of Soviet missiles in Cuba would greatly improve the overall Soviet strategic position, adding credibility to Soviet strategic threats. Second, the emplacement of strategic missiles in Cuba would give the Soviets bargaining power for concessions by the United States in other areas, such as Turkey or Berlin, before withdrawing missiles from Cuba. The first objective seems plausible, although it was doomed because of Soviet miscalculation.

The Soviet Strategic Position

In 1961, the Soviet Government confronted President Kennedy's armament program, which was intended to close the assumed "missile gap" between the United States and the Soviet Union. The President's program did, in fact, considerably increase American superiority over the Soviet Union in long-range strategic forces. His defense budget provided for 800 MINUTEMAN ICBMs in hardened sites, some 40 POLARIS submarines, more bombers for the Strategic Air Command, and an increase in the strength of ground forces. It is possible that Khrushchev prepared the Cuban maneuver for an advanced Soviet nuclear base to upset US nuclear superiority.

The illusion of a "missile gap" had its roots in the 1957 and 1958 Soviet launchings of Sputnik I and II, the unmanned space satellites. This mythical gap was

Alert by members of a Strategic Air Command B-52. During the Cuban crisis many US Air Force personnel were placed in alert status.



Titan II missile in silo. US clear superiority in strategic weapons and in delivery vehicles was a factor in Premier Khrushchev's decision to dismantle weapons in Cuba.

highly acclaimed by the Soviets and frequently debated by the US Congress. Spurred by the challenge of Sputnik and by revived threats against Berlin in the late 1950s, the Western Powers shook off the suggestion that the balance of strategic power had turned against them. They responded to the Soviet initiative with actions that dissolved the myth of the missile gap and strengthened the bases for Western resistance around the world.

The much publicized Soviet missile lead was, in reality, wholly nonexistent. By mid-1962, the Soviets simply could not maintain their part of the strategic equation with the United States. The generally accepted assertions of Western strategic superiority pressured the Soviet leadership to repair their image in the world balance.

At the time of the Cuban crisis, the US strategic arsenal included 90 ATLAS; 150 MINUTEMEN, with plans for 600 by 1963, and 800 funded; 36 TITAN Is; 850 B-47s; 90 B-58s; and 600 tanker aircraft for refueling. Additionally, the United States had nine operational Polaris submarines and plans for a total of 40. The RAF and French forces included another 230 nuclear bombers, and Great Britain, Italy, and Turkey had more than 100 MRBMs.[56]

Most sources believe that the Soviets could have had several hundred ICBMs in inventory at the time of the Cuban missile crisis, if their priority had been sufficiently high. As it turned out, their strategic force consisted of approximately 75 ICBMs, 700 MRBMs and 1,200 medium- and long-range bombers.[57] Their ICBMs and long-range bomber forces had not attained the levels anticipated by the West. During the period 1958-1960 before the Cuban crisis, Khrushchev felt that he could provide security for his country with relatively small forces of bombers, ICBMs, and submarines. He had hoped to devote more national resources to nonmilitary programs and bolster the Soviet economy.

The bulk of the Soviet nuclear strike force was effective only within 2,500 miles of Soviet territory. This posed a potent threat against Western Europe but not against US territory, except Alaska. Therefore, the Cuban deployment could have appealed to Soviet leaders as a means to achieve a substantial improvement in Soviet strike capability against the United States. Cuban-based missiles would have greatly improved Soviet first strike capabilities. A force of some 40 MRBM and IRBM launches would have narrowed in one quick stroke the actual margin of the US advantage in strategic forces. In effect, it would have transformed readily available missiles of 1,100-to-2,200-mile range into "intercontinental missiles" insofar as their threat against the United States was concerned. In terms of the Soviet Union's existing first strike salvo capability against the United States at the time, the Cuban missiles would have constituted an increase of almost 50 percent.

The resulting change in the strategic balance would also have greatly reduced the credibility of US strategic deterrence of local Soviet aggression in places like Europe or the Middle East and could have brought a substantial portion of US nuclear bases with an essentially no-warning attack range. There was also no assurance that the Soviet buildup in Cuba would have stopped with the sites already under construction. Once the base had been established, the strategic balance could easily have been further tipped.

It is plausible, therefore, even in view of the great risks, that the Soviet Union's inferior strategic strength made the Cuban deployment attractive. There probably was no other way to improve its strategic position as quickly or as cheaply. Even though the balance might not have been totally altered, the deployment of Soviet missiles in Cuba, in the words of President Kennedy, "would have politically changed the balance of power, it would have appeared to change the military balance, and appearances contribute to reality."[58]

A Search for Bargaining Power

An alternative Soviet objective was possible, i.e., a preplanned withdrawal in return for a US pledge not to invade Cuba, to remove US missiles from Turkey, and, possibly, to offer concessions in Berlin. But, even if these objectives had been fully achieved, they probably would have represented gains too small for the means expended and for the costs and risks incurred in the undertaking. To have achieved these objectives, the Soviet leaders would have invested and risked less. Instead of the 42 IL-28 bombers and an equal number of offensive missiles brought into Cuba by Soviet ships and instead of the nine missile sites—six of them with four launchers each for the MRBMs and three with fixed sites designed to provide four launching positions for IRBMs—only a token force of a few conspicuously-placed MRBMs could have provoked a US demand for the Soviet Union to remove them from Cuba. At this stage, Khrushchev could have brought pressure on the United States to withdraw its missiles from Turkey in exchange for a Soviet withdrawal from Cuba. At the time, this maneuver might have succeeded, since US missile deployment in Turkey amounted only to a single squadron of 15 Jupiter missiles.[59]

However, the Soviets risked a force three times larger than was necessary to achieve this objective, if this was indeed their objective. Actually, it appears that their real objective was something else, despite the argument expressed by Premier Khrushchev in his letter to President Kennedy on 27 October.[60] Events may have compelled Khrushchev to use this argument as a cover-up for another motivation, since

it is not credible that he would have undertaken the Cuban maneuver on such a large scale if he had been playing for small stakes. He must have known that the United States was already phasing out its missile deployment overseas, as revealed by Secretary McNamara before a congressional committee in early 1961.[61] He only had to wait, for, in January 1963 (less than 60 days after the Cuban crisis), the United Kingdom, Italy, and Turkey announced their decisions to phase out IRBMs in their respective countries.[62] Khrushchev must have known of this possible development from testimony in Robert F. Kennedy's *Thirteen Days* published after his death. Kennedy stated that a US-Soviet dialog was already in process with respect to US missiles in Turkey. He had personally assured the Soviet ambassador to the United States that arrangements could be made for their withdrawal.[63]

Although Soviet objectives in Cuba were not entirely clear, they must have contributed in some measure to Khrushchev's willingness to face risks in the covert emplacement of missiles. If his venture had been successful, unveiling the missiles at the appropriate moment would have dramatically strengthened the Soviet Union's position in Berlin. He may have reasoned that an improved Soviet position was necessary, since four years of threats, beginning in 1958, had not succeeded in achieving a Berlin settlement on Soviet terms. He could have been seeking (and probably was!) some quick and dramatic means for achieving a breakthrough that would strengthen Soviet positions on a whole range of issues, particularly Berlin. Statements in Pravda during September 1962 suggested a link between Khrushchev's Cuban adventure and his strategy for Berlin. Pravda acknowledged Soviet military assistance to Cuba because of a possible US attack and declared a moratorium on further Soviet initiations in Berlin until the United States held its congressional elections. At this point, the Cuban missiles would have been operational had Khrushchev's gambit succeeded. In 1962, however, US strategic superiority made it risky for the Soviet Union to play or even to threaten to play the Berlin trump card by itself.

Although some US officials feared that the Soviet Union would use the Berlin issue to dissuade the United States from calling its hand in Cuba, Soviet leaders apparently felt that a threatening move in Berlin, particularly during the Cuban crisis, would be dangerously provocative. In December 1962, Foreign Minister Gromyko told the Supreme Soviet: "This crisis . . . made many people think how the whole matter might have developed if yet another crisis in Central Europe had been added to the critical events around Cuba."[64] US strategic superiority and determination to preserve its rights in West Berlin made it too risky for the Soviets to employ their local superiority for a Berlin settlement. Had the Cuban gamble paid off, however, they might have challenged US strategic superiority.

Few would argue that Khrushchev had no interest in easing East-West tensions, at least temporarily, after the Cuban crisis. He had not succeeded in his attempted shortcut to alter the strategic balance. In fact, he now had every reason to believe in US superiority. Soviet political bargaining power had been eroded by the US strategic advantage, which the crisis underscored.

Impact on Soviet Prestige

Premier Khrushchev faced two alternatives in his efforts to improve the Soviet position and prevent his immediate political downfall. One choice was to plunge into an arms race with the United States at a time when US resources greatly outmatched those of the Soviet Union. The other was to find ways to reduce the level of competition and hopefully to keep the strategic military gap from widening further. This second choice meant that he would temporarily settle for a position of second best in strategic power. But he would keep open the political struggle with the West, and, as the Soviet economy permitted, he could work on strategic factors.

At least two other factors dictated such an approach. The Soviet annual economic growth rate stood at a low 3 percent in 1962-63 and represented an estimated 100 percent drop from a decade earlier.[65] This economic decline was further highlighted by the two-way squeeze of providing defense and space funds and, at the same time, meeting the rising consumer expectation with the Soviet Union. Khrushchev had to strike a balance between these demands.

Another factor was the poor state of Sino-Soviet relations. Although Red China had challenged Soviet leadership in the Communist world for some time, a rapid deterioration in Sino-Soviet relations followed the Cuban crisis. Peking was outspoken in its criticism of Soviet withdrawals, viewing them as evidence of cowardice and betrayal of revolutionary Cuba. On 5 November, the Chinese Communist Party newspaper, *Jenmin Jih Pao,* stated: "to compromise with or meet the Kennedy government's truculent demands can only encourage the aggressor and in no way ensure world peace." It continued: "It is the sacred task of all socialist countries to stand firmly on the side of the Cuban people."[66]

China's hard line found some supporters, and, even though most western Communist parties supported Khrushchev's retreat-to-avoid-war policy, for the most part, they remained stunned and silent.

Peking repeated its criticism for months after the crisis. For example, in an official statement in March 1963, the Chinese Communist Party assailed

the Soviet Union for committing "the error of adventurism" toward Cuba and "the error of capitulation." It went on to accuse the Soviet Union of wanting Cuba "to accept humiliating terms that would have meant the sacrifice of the sovereignty of their country" and reiterated the assertion that "imperialists are paper tigers."[67]

These sharp divergencies between the Chinese and the Soviet analyses of the crisis exacerbated their relations, and Peking used the differences to condemn Soviet lack of will in dealing with the West. The Chinese charge of capitulation lessened any Soviet reluctance to risk alienation of Peking by moving toward detente. Moreover, China's challenge for Third World leadership and her determination to acquire nuclear weapons posed another challenge to the Soviet Union. This was ample notice for Khrushchev to choose the politics of detente, once the Cuban crisis was behind him, to repair his leadership position and to meet the growing Chinese military threat.

The fact remains, however, that the end of the Cuban missile crisis did not eliminate the goals that seemed to underlie Soviet policy. Instead of receding, Soviet-US tensions gradually became taut again, the scene of competing effort shifting only from Cuba to other theaters, such as the Middle East and Southeast Asia.

Since the mid-1960s, when the United States had a four to one edge in strategic weapons, the Soviets have relentlessly pursued a buildup of their nuclear power. As a result of their emphasis on strategic forces, which began with Khrushchev's ouster from power two years after the Cuban crisis, they now have more land- and sea-based missiles than the United States and a two to one advantage in terms of nuclear payload. Moreover, in the critical areas of defense and space research and development, US experts estimate that the Soviet effort is 15 to 20 percent greater than that of the United States, and it is growing at a rate of about 10 percent per year.

A greatly expanded navy is ample evidence that the Soviet Union does not limit its efforts to achieve military preeminence solely to the development of strategic aerospace power. Recent years have witnessed the increased Soviet naval presence in the Mediterranean and Caribbean areas. And in the field of tactical fighter aircraft, the Soviet Union has flown more than a dozen prototypes, while the United States has flown only three—the F-4 itself is a 24-year old design.

Several treaties have been consummated over the past decade, such as the Limited Test Ban Treaty, the Arctic Free Zone Treaty, and the agreement to prohibit nuclear weapons in space.

Relations between the Soviet Union and the United States are ever moving. As the Cuban crisis came to an end, both sides appeared to recognize the folly of precipitating a nuclear war, but this recognition did not remove war as a credible possibility in the continuing struggle between the two powers. Should the Soviet Union achieve a first-strike capability against the US land-based missile and bomber force, the threat of such a strike would itself become a factor in tipping the strategic balance in favor of the Soviet Union. In the Cuban crisis, US strategic power, comprised largely of missiles and bombers and the evident will to use them, made it clear to the Soviets that they did not possess a first-strike capability. This fact gave overwhelming significance to US aerospace power in resolving the missile crisis.

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