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Coalition Warfare
*Considerations for the
Air Component Commander*

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School of Advanced Airpower Studies



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Abstract

Political circumstances often dictate that we employ military force as part of a coalition. The youngest military instrument, airpower, has been integrated into coalition forces during several major conflicts of the twentieth century. No historical evidence or current strategies indicate that the likelihood of working within a coalition will diminish. A fundamental question, then, is how air component commanders should be trained to understand and appreciate the nuances of coalition warfare.

This thesis focuses on operational-level coalition air force interactions in three conflicts: the Korean War (1950–53), the Persian Gulf War (1990–91), and the Balkan Air Campaign (1992–95). Each conflict saw significant United Nations involvement, and the United States provided the majority of airpower assets. Nevertheless, air forces of other states provided both political and military benefits for coalition unity. Overall, coordination among air components seemed exceptionally smooth. Several disagreements arose, which, though never fracturing the coalition outright, pointed to potential areas of conflict for future operations.

The capability that coalition air forces offer usually benefits the overall effort, while each member's diverging desires (or will) can degrade overall unity of effort. Analysis of the three conflicts presented here suggests several coalition considerations for air component commanders. Some considerations (responsiveness, training, doctrine and equipment, and language) affect coalition capability, while others (trust and perception of leaders) generally affect members' wills. Still other considerations (liaisons, C³ [command, control, and communications], and intelligence sharing) can affect both capability and will. Because each case in this thesis had unique elements that may have affected the coalition, a comparison of these elements may also reveal considerations which are important to the air component commander.

Finally, the current US programs to train joint force air component commanders and operational-level staffs show promising trends for improving our ability to operate within a coalition. Multinational participation in US-sponsored "flag" exercises and senior officer war-fighting courses has gradually increased, while US defense budgets have declined. In light of this increased emphasis on coalition operations, an in-depth study of past coalition air efforts offers valuable insight for future strategists.

About the Author

Maj Peter C. Hunt earned his commission through the Reserve Officer Training Corps, University of Notre Dame, in 1982. After completing undergraduate pilot training, he flew operational tours in the A-10 at Suwon Air Base (AB), Korea, and England Air Force Base (AFB), Louisiana. Major Hunt then served as an exchange officer and Alpha Jet pilot with the German air force at Oldenburg AB, Germany. Upon his return to the United States, Major Hunt transitioned to the F-117A at Holloman AFB, New Mexico. He then attended the US Air Force Air Command and Staff College and the School of Advanced Airpower Studies (SAAS), Maxwell AFB, Alabama. Major Hunt is a senior pilot with twenty-five hundred hours in the A-10, Alpha Jet, and F-117A. He holds a bachelor's degree in aerospace engineering from Notre Dame and a master's degree in airpower arts and science from the School of Advanced Airpower Studies. Major Hunt is a distinguished graduate of the Defense Language Institute and the US Air Force Air Command and Staff College. In July 1996, Major Hunt was assigned to the Joint Warfighting Center, Fort Monroe, Virginia.

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Finally, I thank my wife, Debbie, and my daughters, Rachel and Kristen, for their patience and understanding during my long hours away from home. Without their support, I could not have successfully completed this project. I feel blessed to have such a loving family that helped me accomplish this work on time.

Research Question

US joint doctrine recommends that the joint force commander (JFC) designate a joint force air component commander (JFACC) when the mission, forces, and nature of air operations deem it prudent. The JFACC should exploit the capabilities of joint air operations through a cohesive joint air operations plan and a responsive and integrated control system.⁷ Assuming that most future US operations will take place within a coalition, JFACCs must understand how to effectively lead or contribute to such an arrangement. This thesis seeks to determine how air component commanders should be trained to deal successfully with the difficult problems posed by coalition warfare.

Overview

International relations theory attempts to explain why and how nation-states ally; Clausewitz and other military theorists point out the general advantages and disadvantages of such an arrangement. In broad terms, coalition-unique considerations fall into two categories: first, the activities that each participating state *wants* to undertake, and second, those in which it is *capable* of participation. To evaluate the impact on operational-level air commanders of coalition partners' desires and capabilities, this thesis investigates three coalition air operations that occurred between 1950 and 1995. By comparing the problems that arose and the ways problems were solved, this thesis seeks to uncover potential problem areas for future air component commanders and the institutions which train them. Although each operation had unique contextual elements that affected the interaction of coalition air forces, a comparison of cases can still be instructive.

The three examples that this study examines are the Korean War (1950–53), the Persian Gulf War (1990–91), and the NATO air campaign in the Balkans (1992–95). The Korean crisis marked the first major military operation under UN auspices and saw the involvement of US, Australian, South African, Royal Navy, and Republic of Korea air forces. Nearly 40 years after the Korean War, the United States led a major coalition air campaign in the Persian Gulf, an action which the UN approved through Security Council resolutions. The Gulf War air forces reflected a culturally diverse conglomeration of 10 American, European, and Arab states. Even as the Gulf War was winding down, unrest in the former Yugoslavia elicited political, and eventually military, involvement of Western nations. The NATO response included the enforcement of UN-designated “no-fly” areas during Operation Deny Flight, which later expanded to include air-to-surface strike missions during Operation Deliberate Force. Seven NATO members sent air forces to the Balkans, including the United States, United Kingdom, France, Germany, Italy, the Netherlands, Spain, and Turkey.

Within each coalition airpower study investigated below, several subsections lead to a summary of lessons for the commander. After outlining the coalition air activity, this thesis describes the political and airpower objectives of the coalition. The subsequent subsections describe significant airpower characteristics that affected coalition operations. Finally, a discussion of the overall coalition cohesion, particularly with respect to the impact of airpower, leads to lessons that air commanders can and should learn.

Definitions

Doctrinally, coalition air operations are a subset of a broader category called multinational operations. Figure 1, adapted from Joint Pub 3-0, *Doctrine for Joint Operations*, summarizes the nomenclature accepted in the US.

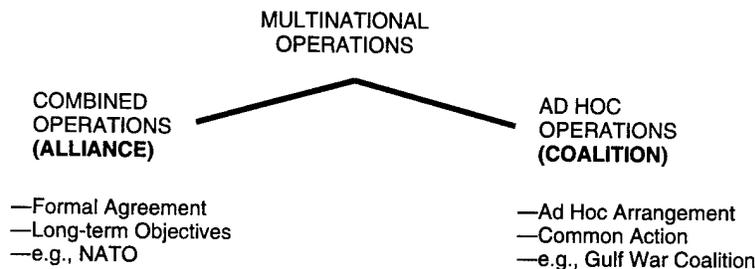


Figure 1. Nomenclature for Multinational Operations

An alliance is a result of formal agreements among two or more nations for broad, long-term objectives. In contrast, a coalition is an ad hoc arrangement between two or more nations for common action.⁸ In practice, the terms *alliance*, *coalition*, and *combined* are often used interchangeably. Several reasons account for this confusion. First, the label *combined* is officially attached only to alliance operations. Though “alliance” and “coalition” represent political alignments, no convenient term has been given for operations within a coalition. Second, the lexicon of the 1990s differs from that of earlier times—the world war alliances fit today’s definition of coalitions. Third, “allies” implies a friendship or common bond, elements of which are normally found in a coalition. In fact, Joint Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms*, defines *coalition force* as a force comprised of military elements of nations that have formed a temporary alliance for some specific purpose. The publication does not define alliance.⁹

For commanders, an important consideration arises from these definitional distinctions. Differences in capability and commitment are normally smaller in an alliance vis-à-vis a coalition. Long-standing alliances have time to formulate doctrine, resolve interoperability problems, and refine agreement

on strategic objectives. The three cases in this thesis include member states who were allies, yet each case properly fits the coalition definition. Even operations of the NATO alliance in the Balkans included French forces who were not part of NATO's military organization. UN peacekeeping forces also included non-NATO ground troops, whose presence influenced the coalition's air operations.

Assumptions and Limitations

This thesis makes several assumptions about airpower. First, the best way to employ airpower is through centralized control at the theater level and decentralized execution by tactical units. Second, airpower's speed, range, and flexibility are best exploited when control of such assets is delegated at the theater level to a single air commander who supports the overall theater commander's objectives. Third, air operations that are artificially separated in time or space will limit airpower's potential.

Several limitations prevent comprehensive and detailed analyses of these case studies. First, the perspectives of non-US participants in the campaigns are difficult to obtain, especially the views of liaison officers at the operational level. US documentation about coalition planners and their activities is scarce, and the search for foreign sources is often complicated by language problems and difficulties in obtaining primary source documents from many countries. Second, the coalitions in the last two case studies have suspended force application missions but still remain engaged in counterair operations. As of this writing, the political resolution of these conflicts is not complete, and UN sanctions remain in effect. For these reasons, political sensitivities may inhibit the free flow of discussion about coalition partners and the problems that arose during air operations. Unintended slights or serious disagreements could threaten coalition unity in these ongoing operations. Third, these case studies focus on operations that concern force application and the direct support of such missions. While the importance of related coalition air operations should not be demeaned, missions such as airlift normally remain within the purview of individual nations. This thesis will, however, discuss significant international airlift operations that affected coalition effectiveness. Finally, an investigation of only three examples can hardly be considered a comprehensive database from which to formulate multinational doctrine. However, the variation in time, place, and circumstances provides a wide span of evidence that, considering the short history of airpower, should offer insight for planners of future coalition air campaigns.

Notes

1. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1976), 81.

2. Thucydides, *The Peloponnesian War*, revised by T. E. Wick (New York: Random House, 1982), viii-xiii.

3. The White House, *A National Security Strategy of Engagement and Enlargement, 1995* (February 1995), 9.
4. *Ibid.*, 13.
5. For a comprehensive description of alliances, both regional and global, see N. J. Rengger, *Treaties and Alliances of the World* (London: Stockton, 1995).
6. *National Military Strategy of the United States of America* (Washington, D.C.: Government Printing Office [GPO], 1995), ii.
7. Joint Pub 3-56.1, *Command and Control for Joint Air Operations*, 14 November 1994, 1-2.
8. Joint Pub 3-0, *Doctrine for Joint Operations*, 1 February 1995, 6-1.
9. Joint Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 23 March 1994, 71.

Chapter 2

The Korean War

Following the North Korean invasion of South Korea on 25 June 1950, the UN Security Council adopted several resolutions condemning the attack. In all, 16 nations sent military units to enforce these resolutions, which authorized any assistance deemed necessary to the Republic of Korea (ROK) to repel the attack and restore peace in the area. Following on the heels of the Berlin airlift and increasing East-West tension, many Westerners viewed the invasion as another Soviet initiative in the cold war. Korea's geostrategic position had global significance—allegedly, communist expansionism challenged the free world on this remote northeast Asian peninsula. Furthermore, Europeans feared that communist aggression in Korea was meant to divert attention and military strength from their primary security threat, Soviet forces in Eastern Europe. In part, this threat assessment influenced the size and scope of military forces sent to Korea. Additionally, some allied countries responded to the UN call by sending only ground troops, because their air forces were either small or nonexistent.

Airpower in the Korean War

Of the 16 UN members who sent forces to Korea, seven nations contributed air forces. Three of these countries (Canada, Greece, and Thailand) sent only transport aircraft, while the other four (United States, Great Britain, Australia, and South Africa) provided air-to-air and air-to-ground capability with a variety of fighter and bomber aircraft. Overall, US airpower flew over 90 percent of the total sorties, but the other states' efforts were not insignificant. Non-US aircraft flew over 40,000 combat sorties, including many critical ones in the summer of 1950 when North Korean invaders pushed UN ground forces back to the Pusan perimeter.¹

Because the North Koreans advanced so rapidly in the opening days of the war, Gen Douglas MacArthur, commander in chief, Far East (CINCFE), realized the need for airpower to stem the tide of advance. Aside from USAF squadrons in Japan, both Australia and Great Britain had airpower assets in-theater during the opening weeks of the war. Even before American ground troops arrived in Korea on 2 July, coalition airpower supported the US-led effort to defend the peninsula. In Japan, F-51D Mustangs of the Royal Australian Air Force (RAAF) Number (no.) 77 Squadron formed part of the

postwar British Commonwealth Occupation Force (BCOF). Ironically, they flew their last sorties of the occupation mission on 23 June 1950 in preparation for their return to Australia. The squadron was enjoying a farewell celebration when news of the North Korean invasion reached them.² Within a week, the squadron was flying escort for US Air Force (USAF) B-26 Invader bombing missions. Eventually, 77 Squadron flew a variety of missions in both the F-51D and the British-made Gloster Meteor Mk 8 jet fighter.

General MacArthur was also fortunate that an aircraft carrier of the Royal Navy was cruising off the Korean coast when hostilities broke out. On 29 June all British naval forces in-theater were placed at his disposal; shortly thereafter, aircraft from the light fleet carrier HMS *Triumph* flew ground attack sorties in support of UN ground forces.³ Royal Navy carrier-based squadrons in Korea flew the Supermarine Seafire, the Fairey Firefly, and the Hawker Sea Fury. Over the course of the war, four British carriers rotated duty in Korean waters, providing continuously available air coverage for UN forces.⁴ For one rotation, from September 1951 to January 1952, the Royal Australian Navy aircraft carrier HMAS *Sydney* relieved the Royal Navy, whose on-station carrier required extended maintenance. The Royal Air Force (RAF) played a minimal role in Korea, as no land-based squadrons were sent in-theater. However, a small number of RAF Short Sunderland flying boats performed maritime tasks such as antisubmarine patrols, escort, mine hunting, and transport.

A third member of the British Commonwealth also provided a significant contribution to the air war in Korea. South Africa's No. 2 Squadron, the famed "Flying Cheetahs" of the East African campaign in World War II, reorganized in August 1950 for service in Korea. They flew the F-51D until early 1953, when they converted to the F-86F Sabre. Like the RAAF, the South African Air Force (SAAF) flew a wide variety of missions, including close air support, interdiction, reconnaissance, and airfield attack.⁵

The final coalition air arm to perform force application missions was the Republic of Korea Air Force (ROKAF). The ROKAF was virtually nonexistent when the war erupted—it had less than 20 trainer and liaison aircraft, none of which were suitable for combat. Shortly thereafter, the USAF transferred 10 F-51Ds to the ROKAF, accompanied by flight and ground crew instructors. As the RAAF transitioned from the F-51D to the Meteor, they gradually turned over their extra Mustangs to the ROKAF as well.⁶

Coalition air transport units also provided support to UN forces in Korea, a service which was particularly critical in the early stages of the war. On 27 July 1950, Canadian C54GM "North Stars" of No. 426 (Transport) Squadron, Royal Canadian Air Force, began airlifting troops and supplies from the United States to Japan.⁷ This resupply effort continued throughout the war, easing the burden on overstressed US airlift assets. In-theater the Dakotas of RAAF No. 30 Transport Unit performed important shuttle missions between Korea and Japan. Over 12,000 casualties were evacuated to hospitals in Japan, while the return missions carried food and supplies to the Commonwealth Division in Korea.⁸ Finally, detachments of Greek and Thai cargo aircraft were attached to the USAF 315th Air Division. Though they did

not comprise a significant portion of the overall airlift tonnage capability, they reflected political solidarity with the UN effort.

Political Objectives

The UN resolutions which sanctioned the use of armed force to repel the North Korean invasion reflected a larger, mostly Western, concern that the spread of communism should be contained. In an effort to emphasize the multilateral nature of this concern, the United States sought political legitimacy by building a coalition. Even at the theater level, some coalition forces believed the United States willingly sacrificed logistical efficiency in the name of coalition cohesion.⁹ Analyzing the broad political objectives of our major airpower partners—Australia, Great Britain, South Africa, and the Republic of Korea—reveals implications for military objectives in general and for airpower objectives in particular.

Australia

After World War II, Australia readdressed its security concerns from both regional and global perspectives. They sought security via three main avenues: US support, support for British interests, and strong self-defense.¹⁰ After the Korean War broke out, Australia worked to build its security in each of these areas. First, Australia highlighted the early contribution of 77 Squadron to pressure the United States to agree to the Australia-New Zealand-United States (ANZUS) security pact. Prime Minister Robert Menzies spoke to the US House of Representatives on 1 August 1950 and the minister for External Affairs, Percy Spender, spoke with President Harry S. Truman a month later. Spender's conversation "was the real turning point which led to the ANZUS Treaty."¹¹

Second, Australia's support of British interests gradually put Korea in the background. When debating whether to intervene in Korea, the Australian government stressed the importance of Commonwealth solidarity.¹² Since the spring of 1950, Britain had pressured Australia for military assistance in suppressing the Malayan insurgency. Two days after the North Korean invasion, the Australian cabinet decided to send Lincoln bombers to Malaya, where London thought the main communist threat lay.¹³ As the Korean situation stabilized in late 1951, the main Australian commitment overseas was toward British interests in Southeast Asia, not Korea.

Finally, Australia participated in the BCOF as a means of bolstering self-defense capability. In 1941, Australia found itself unprepared to defend unilaterally against Japanese aggression. The postwar BCOF helped assure Australia that Japanese rearmament would not go unnoticed. As the cold war developed in the late 1940s, Australia realized that the BCOF might be called upon to defend Japan against Soviet aggression, which in turn could spread to Australia. Thus, the BCOF role was linked to US interests in containing

communism. By 1948, Australian plans assumed that the BCOF would cooperate with the United States, since "the only allies of interest to the US were those prepared to fight."¹⁴

These Australian policy objectives directly influenced the RAAF commitment in Korea. As the casualty rate and financial costs for 77 Squadron rose, the Australian minister for air suggested withdrawing the squadron from Korea. In rejecting this proposal, Prime Minister Menzies took a broader view of security issues and US-Australian relations.¹⁵ He crafted a limited, yet symbolic, commitment to the UN effort that gained long-term benefits for Australia.

South Africa

Aside from demonstrating Commonwealth prominence, a major objective of the South African government during the Korean crisis was to support the UN. As a founding member of the UN, South Africa offered the use of a fighter squadron to help fulfill its UN obligation.¹⁶ Because Britain wanted to garner a large coalition to deter Soviet aggression, she welcomed South African discussions about sending volunteers to augment RAF and British army units for Korean service. When Britain later decided that South African troops were not necessary, South Africa decided to send a fighter squadron to Korea nonetheless.¹⁷ This action foreshadowed several military policy disagreements that later emerged between the two countries.

United Kingdom

The British military commitment to the Korean War was quite limited for several reasons. Britain still sought a global role, maintaining military bases in the Middle East, Hong Kong, and Singapore, among other places. The antiguerrilla campaign in Malaya stretched the deployment of military forces even further.¹⁸ Britain's economic hardships following World War II forced her to be selective about commitments abroad. Since the predominant threat to British security lay in Europe, any efforts toward Korea were primarily to demonstrate support for her strongest ally, the United States. Winston Churchill articulated this position most clearly: "Korea does not matter now. I'd never heard of the bloody place until I was seventy-four. Its importance lies in the fact that it has led to the rearming of America. . . . It's Germany, not Korea, that matters."¹⁹

The collateral nature of Britain's commitment to Korea was not lost on her closest ally. Many Americans resented British policy, though Britain suggested that the United States followed a similar path during the early stages of the world wars.²⁰ Even a belated British commitment was later felt by some Britons to be unappreciated, since the United States did not repay such "loyalty" in the Suez Crisis in 1956.²¹

South Korea

For the Republic of Korea, the overriding political objective was one of survival after North Korean successes threatened the existence of Syngman

Rhee's regime. Before the war, Rhee sought Korean reunification on his terms. His public statements in 1949 about the ability of the South Korean Army to capture Pyongyang in three days may well have spurred North Korea to take the initiative in 1950.²² During the war, however, Rhee's political objectives were moot, as the UN took over setting objectives for Korea, effectively isolating Rhee.

Airpower Objectives

The various political objectives of coalition forces yielded several disagreements about theater-level airpower objectives. US relations with the South Africans and the South Koreans appear to have been quite smooth. Britain and Australia, on the other hand, had serious disagreements with the United States concerning the use of airpower.

By all accounts, SAAF No. 2 Squadron was treated like any other squadron of the 18th Fighter Bomber Wing (FBW), to which it was attached during the course of the war. In 1952, the 18th FBW commander asserted that "the operations of this unit is [sic] conducted in the same manner as the two squadrons of the 18th Group."²³ No. 2 Squadron endured common hardships with their American partners during many unit relocations to austere Korean bases. The shared maintenance, flying training, and social gatherings greatly strengthened rapport between USAF and SAAF squadrons.²⁴

Any real disagreements about airpower between the United States and the ROKAF occurred before the war. In its effort to establish an air force, the Korean government was supported by Gen Claire Chennault, who recommended a one-hundred-plane force (including 25 F-51s) for the republic.²⁵ The United States initially eschewed any commitments of this nature for two main reasons. First, the US Korean Military Advisory Group (KMAG) was not prepared for such an undertaking because they had limited resources. Second, the weak ROK economy could not support the cost of an air arm. In October 1949, when the Korean government established the ROKAF despite US resistance, the KMAG gradually formed an air advisory group.²⁶

After the war began, the United States initiated a special project called "Bout One" to assist the development of the ROKAF. Bout One provided the ROKAF with 10 F-51s, spare parts, and US instructors for aircrew and maintenance personnel. Even after General MacArthur announced that the decision to establish Bout One was final, Lt Gen Earle Partridge, the Fifth Air Force (5AF) commander, harbored doubts about the project because of inadequate ROKAF logistics and "entirely incompetent (Korean) F-51 pilots."²⁷

Led by USAF Maj Dean E. Hess, Bout One's airpower objectives largely reflected the desires of US commanders, on whom the unit depended for guidance and leadership. Hess had unique insight into ROK political objectives as well as ROKAF airpower goals since he had close personal

relationships with President Rhee and Gen Kim Chung Yul, the ROKAF chief of staff.²⁸ The South Korean pilots wanted to serve their country in any way possible—when the United States considered dissolving Bout One, the South Korean crews volunteered to join the army so they could continue to fight. In fact, a major airpower objective throughout the Korean War was to support the outnumbered UN ground troops through close air support (CAS). In this mission, Korean cultural beliefs occasionally undermined the capability of airpower to achieve its objectives effectively. The ROK Army was sometimes reluctant to call for CAS, fearing the perception of weakness and a corresponding loss of face.²⁹

Although the British airpower contribution in Korea was relatively small, their criticism of UN airpower operations raised concern in both the United States and Britain. One commander of a Royal Navy aircraft carrier commented on the limited nature of his commitment, which “is not in any way interfering with the normal peacetime duties of the ships on all the other stations.”³⁰ After the Inchon landing, the House of Commons resisted the use of British troops north of the 38th parallel. Upon Chinese intervention in Korea, Britain sided with the Truman administration in opposing MacArthur’s plan to bomb the bridges over the Yalu River. The US Joint Chiefs of Staff (JCS) eventually succumbed to MacArthur’s desires and secured presidential approval for the operation. A further JCS proposal for “hot pursuit” of Chinese fighters into Chinese airspace, however, was not endorsed by the British. The British feared that a widening conflict could threaten their Far East holdings, such as Hong Kong. While the United States wanted to press the offensive northward despite Chinese intervention, the British proposed a buffer zone and sought direct negotiations with the Chinese.³¹

Perhaps the most controversial airpower operations against which the British argued were the June 1952 bombings of the Suiho complex of hydroelectric installations on the Yalu. Not only did the British consider this action detrimental to the armistice negotiations that began in June 1951, but Britain was embarrassed that the US did not consult London prior to the attacks. Furor in the British Labour Party and an outraged press contributed to this straining of Anglo-American relations.³² In-theater less controversial disagreements occasionally arose when Royal Navy aircraft were assigned to attack well-defended targets that posed a high risk to attackers. Even in the opening days of the war, British admirals questioned whether US planners assigned targets only in consideration of an aircraft’s ability to reach the target without considering the defenses that surrounded it.³³

Unlike the strict British government oversight of its forces’ operations, the RAAF operated with less political control. When MacArthur pressed the BCOF for an early commitment of 77 Squadron to Korea, his use of the media (instead of political channels) to sound the request understandably upset Australian officials.³⁴ During the war, RAAF headquarters provided little operational guidance, primarily because Australia had no officers above the rank of wing commander on the UN command or US staffs. Occasionally,

RAAF headquarters pressed 77 Squadron to match the flying rate of the Americans.³⁵ In December 1950, General Partridge and Lt Gen George Stratemeyer, Far East Air Forces (FEAF) commander, visited 77 Squadron in Iwakuni, Japan. Headquarters RAAF staff officers who were also visiting Iwakuni complained to Partridge about trivial items such as the daily sortie rate. Partridge realized that the Australians were overly focused on tactical-level problems. The Australians were apparently unaware of the host USAF wing's activity at Iwakuni and did not realize that General Stratemeyer had accompanied Partridge to the air base precisely to assess air operations.³⁶

On one occasion, coalition airpower objectives clashed when a member introduced new equipment in-theater. When 77 Squadron converted from the F-51D to the Gloster Meteor Mk 8 in July 1951, the United States and the RAAF disagreed about the missions for which the new aircraft was best suited. This debate was closely tied to the perceived capability of the new jet fighter and its appropriate role in the changing air situation. When high-performance Chinese MiG-15 fighters appeared over Korea in November 1950, General Partridge (and the RAF) encouraged the RAAF to acquire the British-built Meteor.³⁷

The 77 Squadron commander intended to use the Meteor in its designed interceptor role. When the swept-wing F-86 outperformed the Meteor in fly offs, the USAF doubted the ability of Meteors to successfully engage MiG-15s. Thereafter, "a heated argument raged between Americans and Aussies over how the Meteor should be used."³⁸ In the event, MiG-15s shot down several Meteors in July alone. By August, a new 77 Squadron commander received 5AF approval to withdraw his combat air patrols (CAP) southward to minimize MiG engagements. By the end of 1951, yet another squadron commander convinced Lt Gen Frank Everest, the new 5AF commander, that the reduced air threat justified the use of Meteors for air-to-ground operations. Everest gave qualified approval to this concept and soon tasked Meteors for surface attack missions against selected targets, for which they were far better suited.³⁹

Airpower Capabilities

The varying airpower capabilities that coalition members offer may be easier to reconcile than the divergent objectives of the same members. In Korea, several air forces provided unique capabilities that bridged gaps which the United States could not fill. Even the comprehensive US air forces suffered from shortfalls which proved critical at the onset of war. Capability includes more than simply aircraft performance, and the defensively focused USAF units in Japan neglected training for night ground attack missions. Realizing this deficiency, General Stratemeyer asked the RAF chief of the Air Staff for the loan of an officer experienced in that art to help train the US crews.⁴⁰ The most striking US weakness, however, was the lack of suitable

ground attack aircraft that could strike targets in Korea from friendly bases in Japan. By 1950 the USAF had equipped many Japan-based units with jet fighters, whose short range provided only minutes of loiter time over Korean territory. Coalition airpower, particularly the RAAF Mustangs of 77 Squadron, supplemented the limited USAF capability in this mission.

From Japan, Australian F-51s initially escorted US bombers to Korea. The larger payload and range of the F-51 compared to the USAF F-80 made it an invaluable asset for UN commanders who needed air support in the opening weeks of the war. Additionally, the F-51's ability to operate from unimproved airfields enabled it to use Korean bases that were unsuitable for jets.⁴¹ Australian familiarity with US airpower doctrine, procedures, and logistics also helped 77 Squadron.⁴² This interoperability advantage was somewhat negated, however, when Meteors entered service in mid-1951. Furthermore, Meteor performance suffered because the RAAF pilots were not well trained for the air-to-air mission.⁴³

After two years of war and heavy commitments outside Korea, the RAAF was faced with a shortage of experienced pilots. By the summer of 1952, the RAAF was relying on RAF, SAAF, and New Zealand air force pilots to supplement its crew manning.⁴⁴ Experience continued to drain from 77 Squadron, but the reduced North Korean threat prevented further aircrew losses. By the end of the war, new pilots reporting to 77 Squadron averaged only 20 years of age.⁴⁵

Unlike the Australians, the South Africans did not own US-built aircraft when the Korean War began. However, the SAAF purchased F-51s from the United States in the summer of 1950, and by November they began conversion training with US instructors in Japan. Most of the SAAF pilots flew Mustangs or Spitfires in World War II, which expedited the conversion training. No. 2 Squadron flew F-51s until the beginning of 1953, when they converted to the F-86 in conjunction with their parent USAF unit. In fact, proposals for the conversion of No. 2 Squadron placed them in a higher priority than US squadrons that belonged to the same wing.⁴⁶ With respect to equipment, therefore, the SAAF meshed well with their US counterparts, without offering any unique capabilities for the coalition. In total, No. 2 Squadron flew over 12,000 operational sorties in the war, including some of the most dangerous CAS and armed reconnaissance missions; they ended up losing 74 of the 95 Mustangs that they had purchased from the USAF.⁴⁷

Perhaps the most significant capabilities that the SAAF offered, however, were highly trained, motivated personnel. In World War II, South Africa hosted a joint allied pilot training base that produced over 30,000 pilots.⁴⁸ Service in the Korean War was strictly voluntary, and the reformed No. 2 Squadron had no shortage of volunteers, many of whom had World War II experience.⁴⁹ But as with the RAAF, the war also strained the SAAF personnel system as the war dragged on. Aircrews completed their tour after 75 missions, compared to the one hundred that USAF crews required. This higher personnel turnover affected squadron leadership as well—one squadron commander, Maj Johann Blaauw, was only 30 years old during his

combat tour. Overall, however, US commanders praised the high quality of the SAAF pilots. These compliments were more than simply diplomatic niceties; privately, a US commander of the wing to which No. 2 Squadron was assigned called them "the best group of fighting men [he] knew."⁵⁰

In contrast to the SAAF, whose aircraft contributed credibly to the coalition campaign, the Royal Navy initially flew aircraft that were obsolete at best. HMS *Triumph*, the carrier on station from June to October 1950, flew the Fairey Firefly and the Supermarine Seafire. Fireflies required 34 knots of wind over the deck in order to take off with their small ordnance load; when winds were light, the *Triumph's* engines could not achieve this required deck speed. Seafires had no bomb racks, so their mission was limited to fleet defense.⁵¹ These limitations affected coalition airpower in two ways. First, ground attack missions were limited to a one-hundred-mile radius from the ship, about half the range of US carrier-based aircraft. Second, the limited capability of the Seafire required additional fleet defense capability, primarily using USAF F-86s. The need for protection became quite clear when two North Korean Il-2 Stormovik fighter-bombers damaged the destroyer *Comus* in August 1950.⁵² Beginning in October 1950, Commonwealth carriers off Korea carried the far more capable and rugged Hawker Sea Fury in place of the Seafire to improve carrier power projection.⁵³

The weakest airpower capability within the coalition rested in the ROKAF. With about two dozen aircraft, mainly Canadian-built North American T-6 trainers and L-4 and L-5 liaison aircraft, the organization had virtually no combat capability. In the early days of the war, Korean pilots used the liaison aircraft to drop small homemade bombs that they kept on their laps.⁵⁴ The allocation of 10 F-51s for Major Hess's Bout One project eventually grew to 20 fighters by the end of 1951. This expansion was closely monitored by USAF leaders who wanted to control the postwar ROKAF capability without signaling a US commitment for long-term support.⁵⁵

Operationally, Bout One diverted much-needed USAF aircraft and pilots to the ROKAF during a critical phase of the war. USAF plans to dissolve the project were shelved when President Truman specifically authorized the initial F-51 transfer.⁵⁶ Additionally, because most of the Korean pilots could not speak English, CAS was not feasible due to communication problems.⁵⁷ At 5AF the political significance of Bout One forced commanders to personally attend to the smallest matters. General Partridge was distracted by the need to oversee specific details about pilots and missions when the ROKAF and USAF flew together.⁵⁸

Command and Control

Although the coalition of forces arrayed against the North Koreans was ostensibly under command of the commander in chief, United Nations Command (CINCUNC), there was little doubt that the United States was in

charge of the military effort. General MacArthur was "dual hatted" as commander in chief, Far East Command as well as CINCUNC.⁵⁹ In fact, the United States rejected three command arrangements initially suggested by UN secretary general Trygve Lie. These proposals included the creation of a committee on coordination of assistance for Korea, the establishment of a multinational command structure, and the redesignation of ground force headquarters as the "First UN Army."⁶⁰

Within the UN command, control of airpower assets was divided between FEAF and Naval Forces Far East (NAVFE). The only coalition air components that fell under NAVFE were Royal Navy and Royal Australian Navy carrier-based aircraft. To further complicate the naval situation, British Carrier Task Group commanders commanded their ships, but delegated tactical control of their air assets to US carrier commanders within the task force.⁶¹ This concession acknowledged US naval beliefs that carrier aircraft should be commanded by an aviator. Land-based coalition airpower remained under operational control of 5AF, the FEAF component charged with performing air superiority and ground support missions in Korea.

The RAAF 77 Squadron had a history of being under American direction, dating from its position in 5AF in World War II under Gen George Kenney. As part of BCOF in 1950, this relationship had not changed much. The BCOF commander, Australian Lt Gen H. C. H. Robertson, reported both to MacArthur and to the Australian Joint Chiefs of Staff.⁶² The squadron reported directly to BCOF while operating from its home station during the early months of the war. The UN advance northward in the fall of 1950 made it possible to stage air operations from Korean bases, reducing the range to the front. In October, 77 Squadron was attached to the USAF 35th Fighter Bomber Group (FBG), initially operating out of Pohang, Korea. It remained attached to the 35th until Meteor transition the following spring. Upon their return to Korea, 77 Squadron was attached to the USAF 4th Fighter Interceptor Wing (FIW) at various locations.

The dearth of RAAF representation on operational and strategic planning staffs evoked criticism within the Australian parliament.⁶³ Not only were Australians absent from the UN command, but they were not represented at FEAF, 5AF, NAVFE, or Eighth (US) Army. The British chiefs of staff even challenged General Robertson's authority as commander of BCOF. The RAF recalled from retirement Air Vice Marshal Cecil Arthur Bouchier to represent the British in Japan because he had a personal rapport with MacArthur. This move countered Australian beliefs in a single Commonwealth representative in Japan.⁶⁴

To a greater extent than the RAAF, the SAAF integrated into the USAF command structure as if they were an American unit. No. 2 Squadron remained attached to the 18th FBW for the duration of the war, moving with the wing to forward bases when the ground situation dictated. The SAAF had two advisors on the FEAF staff who visited their unit frequently, and seemed to have no overt problems with command arrangements or operational objectives.⁶⁵ These advisors commanded a SAAF liaison headquarters that

was collocated with FEAF in Tokyo. Besides interfacing with UN commanders, the liaison element provided an administrative link between No. 2 Squadron and general headquarters in Pretoria.⁶⁶ In fact, there seemed to be more friction between the SAAF and the British than between the SAAF and the United States. When General Stratemeyer proposed that the SAAF join the RAAF to form a Commonwealth wing, the South African government turned down the offer. Hints of anti-British feeling emerged as No. 2 Squadron joined the Americans in November 1950.⁶⁷

The American airpower system in Korea lacked centralized control at the theater level. A joint operations center (JOC) was established to coordinate Air Force and naval air units, but this arrangement proved unwieldy in practice. British airpower operated within this system, which basically delineated carrier areas of responsibility, as well as their airpower targets.⁶⁸ Generally, British carriers operated off the west coast of the Korean peninsula while US carriers cruised off the east coast. However, coordination of air-to-ground missions was so poor that the Royal Navy did not perform CAS until January 1952.⁶⁹

Despite these difficulties, some British actions helped streamline command and control issues within the coalition. The Royal Navy sent liaison officers to both the JOC and to 5AF, while the RAF also sent a representative to 5AF. Air Vice Marshal Bouchier's access to General MacArthur provided even higher-level insights into the overall theater operations. Finally, an Anglo-American naval training exercise in the Pacific was completed just before the war began. This exercise enabled the carrier task force commanders to coordinate with FEAF, the Naval Forces Far East, and CINCUNC in determining carrier air objectives for the initial crisis stages.⁷⁰

Practically speaking, the ROKAF had to integrate into the US command structure because they depended on Major Hess's instructions from the USAF. American instructor pilots normally led mixed flights of US-ROKAF crews, and ROKAF pilots simply followed the leader. The language barrier essentially precluded the ROKAF from leading flights, because the JOC and the American instructors spoke only English.

Coalition Cohesion

Although coalition airpower objectives remained relatively stable throughout the war, a variety of actions affected this cohesion. On the negative side, several fratricide incidents threatened to deteriorate mutual feelings of trust among the allies. On the positive side, arrangements for combined search and rescue (SAR) missions, pilot exchanges, and formal decorations seemed to increase the perceived unity of effort.

Two fratricide incidents in particular could have seriously damaged coalition relations. First, US aircraft mistakenly attacked a British regiment, killing some 20 soldiers.⁷¹ Though British commanders accepted this loss as a

risk of combat, American leaders went to great lengths to apologize and reexamine the tactical air control system. Second, the first RAAF air-to-ground mission attacked a South Korean train carrying civilians. Before the mission, the RAAF requested target confirmation from 5AF, because the target area seemed too far south. The fallout from this incident was exacerbated when the tragedy became front-page headlines in US newspapers.⁷²

Coalition interactions also helped the morale and unity of effort among the various air forces. One combined SAR effort included forces from the Australian Navy, the RAAF, and the US Navy to rescue a downed Australian pilot. The RAAF squadron commander complimented 5AF for developing "the best rescue operation that has ever operated in any theater of war."⁷³ Numerous pilot exchanges among the USAF, RAF, US Marines, RAAF, SAAF, and Canadian Air Force improved mutual understanding, though the liaison officers at the operational levels probably had a greater impact on theater operations. Finally, a generous distribution of awards and decorations enabled members (particularly the USAF) to recognize the achievements of coalition aircrews. US recognition of RAAF crews, for example, was faster and more generous than the internal RAAF awards system.

Lessons for Air Component Commanders

The benefits of employing coalition air forces in the Korean War outweighed the costs of coordinating and controlling the multinational effort. Politically, the significance of five air forces cooperating to achieve a common goal helped demonstrate UN willingness to use military force for collective security. Although coalition members sometimes disagreed about the use of airpower, the air forces remained engaged in combat operations through the entire three years of conflict. Commanders paid only a small price for integrating the coalition into air operations. The diversion of US assets towards developing the ROKAF, when the overall military situation looked bleak, now seems well worth the political benefits for minimal US effort. For future air component commanders, Korea also offers insights into coalition airpower considerations that transcend the unique facets of airpower in 1950.

The first lesson for commanders about coalition airpower is that friendly airpower capabilities and intentions should be carefully assessed in peacetime. Assuming that airpower can deploy to a crisis location faster than can ground forces, then this relative advantage assumes more importance in theaters distant from home. Airpower may be the primary tool of commanders in the early stage of crises. Even airpower, however, took time to deploy to the Korean theater. In this case, the availability of Royal Navy and RAAF airpower in-theater played a critical role in efforts to fend off the North Korean invasion. General Stratemyer benefited from the early use of coalition airpower for several reasons. First, he was intimately familiar with RAAF capability, since the USAF had also flown P-51s several years before.

The basing of 77 Squadron in Japan, not far from Stratemeyer's FEAF Headquarters, also helped him coordinate early integration of RAAF airpower with USAF units. Second, the existence of a US command and control network for theater airpower, though primitive, minimized the difficulties of integration for coalition units. Finally, the nature of the conflict in the opening weeks allowed the Royal Navy to employ airpower with minimal coalition coordination. The unchecked North Korean advance meant that fratricide was not a concern for airmen attacking targets in the north; with virtually no air threat, the British airmen applied force where the overall situation dictated.

A second lesson for commanders of coalition air forces is that attaching smaller air forces to units of the "lead" air force can reduce coalition-unique problems. Both the RAAF and the SAAF attached their squadrons to USAF wings, which improved the overall airpower capability and provided intangible morale benefits. Sharing maintenance and supply lines proved particularly helpful when US and coalition forces operated the same type of aircraft. The Australian conversion to the British Meteor complicated the logistics situation, especially since no other unit in-theater operated Meteors. Social interaction between US and coalition crews seemed to have enhanced unity of effort at the tactical level, where few serious disagreements arose between coalition partners.

A third lesson that air component commanders can learn from Korea is the importance of liaison officers. Political dialogue among allies set the stage for UN involvement, and the close integration of air forces at the unit level helped tactical-level coordination. However, intermediate levels of command lacked full representation of coalition air forces, particularly the RAAF and the SAAF. Ironically, the British provided representatives on several operational staffs, although their airpower contribution was quite small. The strong political influence of the United Kingdom reflected her position in the world community as well as her interests in the Far East. Nevertheless, the influence of British liaison officers, especially on airpower operations, seemed out of proportion to British airpower in-theater.

Finally, commanders should question the assumption that language differences do not affect airmen, since English is the common language of aviation. American, British, and Australian crews spoke English as their primary language, and the Afrikaaners in the SAAF spoke fluent English as well. Although the ROKAF contribution to the war was small, the inability of their pilots to speak English created significant operational hurdles that were never fully solved over the three years of war. Because most long-term solutions to this problem reside beyond the air commander's purview, he must address work-arounds to this potential problem.

Notes

1. Total sortie counts and the types of missions flown (interdiction, close air support, counterair, etc.) vary widely among the sources consulted for this thesis. However, the overall airpower contribution can be assessed in terms of the relative effort of the individual units

- assigned in-theater. The overall data listed here is from Robert Frank Futrell, *The United States Air Force in Korea, 1950–1953* (Washington, D.C.: Office of Air Force History, 1983), 689.
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 33. Anthony Farrar-Hockley, *The British Part in the Korean War*, vol. 1, *A Distant Obligation* (London: Her Majesty's Stationery Office [HMSO], 1990), 65.

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36. Partridge diaries, 20 December 1950, USAF HRA, Maxwell AFB, Ala., no. 168.7014-1, vol. 2, 266-67.
37. Lyman, 41.
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57. USAF Oral History Interview with Gen Earle E. Partridge, 23-25 April 1974, USAF HRA, Maxwell AFB, Ala., no. K239.0512-729, 657.
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65. Rogers letter.
66. Moore, 2.
67. Odgers, 97; and O'Neill, vol. 2, 315.
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69. Prince, 101.
70. Hallion, 30.
71. Jeffrey Grey, *The Commonwealth Armies and the Korean War* (Manchester: Manchester University Press, 1988), 70. See also Partridge interview, 628.
72. Odgers, 46-50.
73. Bartlett, 251.

Chapter 3

The Persian Gulf War

Forty years after the North Koreans invaded their neighbors to the south, a similar act of aggression surprised the world. On 2 August 1990, Iraqi ground troops moved into the small, oil-rich emirate of Kuwait, overpowering the weakly defended state. Within hours Iraqi troops seized and occupied the capital of Kuwait City, claiming the region as a province of Iraq. Instability in this oil-producing region directly threatened the economic well-being of the world's developed countries. The UN condemned Iraq's violation of a member state's sovereignty and swiftly enacted economic sanctions against Iraq. While UN states deployed forces to defend Saudi Arabia, Iraqi leader Saddam Hussein seemed unaffected by the impact of sanctions. US president George Bush and other Western leaders prepared for the possibility that military force would be necessary to expel Iraqi forces from Kuwait. Subsequent UN Security Council Resolutions (UNSCR) authorized the use of "all necessary means" to expel the Iraqis from Kuwait. In all, 36 countries formed a coalition that sent combat or support units to the Gulf region to support the UN resolutions.¹

Airpower in the Persian Gulf War

Unlike Korea, the Gulf War coalition did not begin combat operations immediately after the invasion began. Diplomatic negotiations continued from August 1990 until January 1991, which gave time for coalition air and ground force deployment into the theater. During the six weeks of combat between 17 January and 28 February 1991, 10 coalition air forces flew missions to enforce the UN resolutions. Coalition representation was split between air forces of Western nations (United States, Britain, France, Canada, and Italy) and those of Gulf Cooperation Council (GCC) states (Saudi Arabia, Kuwait, Bahrain, United Arab Emirates, and Qatar). US airmen flew the majority of sorties (80,000—about 85 percent of the total) and the remaining 12,000 sorties were evenly divided between GCC and Western air forces.²

Coalition air forces included a wide variety of modern fighter and attack aircraft of US or European manufacture. Most Western air forces deployed to Saudi Arabian air bases, where modern infrastructure included hardened aircraft shelters, excellent runways and taxiways, and generally adequate maintenance facilities. Saudi air defense capability, which included US-built

surface-to-air missiles (SAM), airborne warning aircraft, and air superiority fighters, proved especially critical in the early months of the crisis.

Political Objectives

Although the UN approved the use of military force to secure Iraqi compliance with Security Council resolutions, the mandate clearly reflected US political objectives. On 8 August 1990 President Bush stated US objectives as: (1) secure the immediate, unconditional, and complete withdrawal of Iraqi forces from Kuwait, (2) restore the legitimate government of Kuwait, (3) assure the security and stability of the Persian Gulf region, and (4) protect American lives.³ Some of the subsequent UN resolutions matched the US objectives verbatim.

Over the next several months, President Bush garnered international support and participation for a US-led military coalition in the Gulf. Just as US analysts considered the efficacy of using force to achieve these political objectives, so too arose debates within other nations. In the West, the main argument against the use of force was that the UN had not given economic sanctions enough time to take effect. In Britain, some Labour members of Parliament, church leaders, and prominent statesmen, like former conservative Prime Minister Edward Heath, distrusted American policy, leadership, motivation, and military capability. Of all the permanent members of the UN Security Council, Britain had the most favorable domestic consensus for an active military role.⁴ In Canada, controversy ensued when Prime Minister Brian Mulroney decided to send an air force squadron to the Gulf. New Democratic Party and Liberal members of Parliament expressed concern over the financial costs of a coalition commitment and over the perception of supporting US interests.⁵

More than any Western state, France's friendly diplomatic relationship with Iraq complicated her decision to send military force to the Gulf. Furthermore, France had the largest Arab population in Europe and extensive ties with pro-Saddam countries of North Africa. President Francois Mitterand's speech to the UN in late September hinted about concessions to Iraq if they announced intentions to withdraw troops from Kuwait.⁶ While his speech irritated American and British diplomats, Iraqi rejection of further peace initiatives only solidified coalition resolve.

Despite these Western reservations about US strategy in the Gulf, President Bush and Secretary of State James Baker eventually convinced Western leaders of the need for military action against Iraq. Iraqi intransigence and reports of Iraqi war crimes against the Kuwaitis helped sway public opinion towards backing the United States. To enhance the perception of international legitimacy for military action, Bush sought, and received, UN resolutions that supported his actions. When coalition air

operations began in January 1991, Western public opinion and support for political objectives solidified even further.

In contrast to the objectives of Western nations, the Gulf states had national survival at stake. Saddam's actions threatened the regional balance of power as well as GCC security and economic interests. Saudi Arabia considered more than just GCC interests when they requested Western military assistance. The Saudi military commander, a member of the royal family, identified a Saudi-Egyptian-Syrian axis as the "backbone" of the coalition.⁷ Although Egypt and Syria are not GCC members, they represent influential Arab governments. The Arab view of US interests may never have been clear; however, five years after hostilities ended, GCC military leaders still questioned US strategic objectives in the Gulf.⁸

Airpower Objectives

The planning staff for the air portion of the Gulf War campaign consisted primarily of USAF officers who were assisted by sister service and coalition representatives. No combined operations plan existed in August 1990, so plan development proceeded on an ad hoc basis.⁹ Although the United States ultimately provided the bulk of airpower assets, early United States intentions reflected a desire for non-US airpower participation on the first day of combat.¹⁰ Initially, the United States divided its planning efforts into two groups, whose objectives had differing emphases. The first group consisted of planners from US Air Force Central Command (CENTAF), the air component of US Central Command (USCENTCOM). This group developed air tasking orders (ATO) for "D day," which focused on defending Saudi Arabia in the event of Iraqi attack. In an ongoing open forum, the US encouraged coalition partners to help refine the forces, targets, and weapons to be used for this objective.¹¹ USAF led the formation of a second group called the Special Planning Group (SPG), whose campaign plan emphasized offensive air operations. Of the six military objectives in the final Gulf War operations order (OPORD), the SPG focused its efforts on three Iraqi "centers of gravity" (COG): (1) Iraq's National Command Authority, (2) Iraq's chemical, biological, and nuclear capability, and (3) the Republican Guard Forces Command.¹²

To determine appropriate target sets whose disruption would influence these Iraqi COGs, US planners turned to coalition partners for advice. Brig Gen Buster C. Glosson, the director of Campaign Plans, enjoyed a close relationship with military leaders of the United Arab Emirates (UAE). To better understand Arab cultural sensitivities, he discussed possible target categories with the UAE leadership. Attacks on electrical and transportation systems, for example, reflected US planners' desire to increase discomfort to the Iraqi leadership.¹³

US concerns about the security of the offensive plan precluded early coalition involvement, though Saudi officials were notified in August that a

separate plan was under development.¹⁴ Beginning with the RAF in September 1990, the US gradually briefed coalition planners into the SPG. The US agreed to full British participation in planning and coordination in exchange for US operational control of British forces in-theater.¹⁵ By November the SPG included an Royal Saudi Air Force (RSAF) representative, and in December the CENTAF group and the SPG merged. Thereafter, liaison officers from coalition forces had the opportunity to express any concerns about restraints on the part of their air forces.

The objectives of the overall air plan evolved with the political situation, which stabilized somewhat by early 1991. The USAF-sponsored *Gulf War Air Power Survey (GWAPS)* states that the JFACC, Lt Gen Charles A. Horner, did not "unilaterally dictate the scope of US and coalition theater air operations" and that the "governments concerned kept control over the targets that their forces could strike."¹⁶ After the war, General Horner commented that the coalition's general consensus on political objectives greatly facilitated the operations for theater air commanders. His concerns about intracoalition friction never materialized because theater commanders remained committed to the military task at hand.¹⁷ *GWAPS* may have overstated governmental control over targeting, because Gen H. Norman Schwarzkopf made it perfectly clear that air forces unwilling to accept the coalition plan would not participate at all. In reality, such "government control" did not manifest itself at the operational level.¹⁸ In isolated cases, though, General Horner realized that political guidance sometimes restrained coalition air forces from full participation in the air plan.

Among the coalition air forces, the French seemed most constrained by political directives, two of which directly affected coalition air planning. First, the French government insisted that French air be used only in support of French troops. By dealing directly with the commander of the French air force units, General Horner diplomatically solved the problem by acknowledging that the French "flew where it was best for them to fly."¹⁹ Second, the French defense minister, Jean-Pierre Chevenement, initially confined French ground attack missions to targets in Kuwait. President Mitterrand soon overruled Chevenement, and the defense minister's resignation on 29 January seemed to remove another obstacle to the unity of coalition air operations.²⁰ Perhaps because of political interest in Paris about specific targets, the French were slow to fully integrate themselves into the overall coalition targeting scheme. In early January, French liaison officers informed coalition air planners about targets they wanted to strike, but US planners promptly rejected these inputs. The potential disruption to the overall plan that French changes would cause was further exacerbated by their expectation of dedicated air refueling and escort support.²¹ French military leaders realized that their political directives detracted from operational flexibility. In fact, they were somewhat apologetic when informing the US-led planning staff of these issues.²²

Although the US-British relationship was clearly strong in terms of political solidarity and cultural similarity, they still required some

compromises. General Horner's British counterpart, Air Vice Marshal William Wratten, had the right to veto RAF target assignments. On only one or two occasions did he exercise this privilege to avoid targets where severe collateral damage would occur if the weapons malfunctioned.²³ Potentially more disruptive to the air campaign was the British politicians' failure to adopt compatible rules of engagement (ROE) in a timely manner. In the United States, such criteria are a presidential responsibility, though General Horner was given leeway to share appropriate guidance with coalition partners.²⁴ To reduce the chance of engaging friendly aircraft, British air-to-air ROE were more restrictive than US ROE. General Horner viewed the disparity in ROE with enough concern that he considered grounding the RAF fighters.²⁵ Furthermore, an RAF suppression of enemy air defenses (SEAD) mission was canceled because of restrictive air-to-ground ROE. The SEAD mission had a time on target of midnight, yet British ROE would not free it for offensive action until one minute later, an unacceptable delay for this particular operation.²⁶

The influence of nationalism and cultural differences between the Western and the Arab forces accounted for several divergent airpower objectives. On the Arab side, the RSAF basically determined the GCC air forces' objectives, since the RSAF planned all GCC missions and transmitted the tasking to them.²⁷ RSAF leadership in this respect helped improve intracoalition coordination. For the GCC air forces, the RSAF role was undoubtedly appropriate considering the weight of RSAF effort. The RSAF flew over five thousand sorties during the Gulf War, while the other four GCC countries combined to fly only one thousand sorties.²⁸ Understandably, the Kuwaiti air force attacked Iraqi targets in Kuwait from the onset, which boosted morale for both their populace and the Kuwaiti air force. Pilots of RSAF F-15Cs, which are normally employed in the air superiority role, were authorized to drop air-to-surface munitions as a symbolic gesture of Saudi resolve.²⁹ In general, Arab air forces preferred to strike Iraqi targets in Kuwait rather than Iraq proper. Arabs could justify such action as a counter to Iraqi aggression rather than an attack on innocent Muslims. These beliefs did not preclude Arab participation in some vital airpower missions; RSAF Tornados, for example, flew in multinational strike packages that attacked airfields in western Iraq.³⁰ The Arab preference for targets in Kuwait also reflected aircraft range limitations, since many of their home stations were quite far from the targets in Iraq.

Airpower Capabilities

Because most coalition aircraft were modern, Western-built systems, the air component commanders faced few major coalition-unique differences. Interoperability problems were minimized by two major programs, established well before 1990. First, the NATO alliance, which provided the

majority of coalition aircraft, had addressed interoperability and weapon systems integration for several decades. Second, the US foreign military sales (FMS) program supplied several Arab states (most importantly, Saudi Arabia) with modern equipment and training, which proved particularly critical to the coalition air forces.

As early as the deployment phase into theater, commanders realized the importance of optimizing coalition airpower capability. When recommending unit beddown locations, commanders considered not only the base infrastructure but the characteristics of host-nation air forces on station. RAF Jaguars were sent to a Jaguar-equipped Omani air base, from which the RAF unit had flown training missions previously. US F-16s operated from GCC bases whose squadrons had acquired US F-16s through the FMS program. This decision proved fruitful during the war, when US F-16 flights incorporated the GCC F-16s into their strike packages.

Theater planners in the Gulf assessed the capabilities of coalition airpower and attempted to optimize the missions of all weapon systems.³¹ The United States had many aircraft that were specialized for unique missions, such as electronic jamming, lethal suppression of enemy air defenses, close air support, and air refueling. Other air forces supplied unique capabilities which the United States lacked. The British JP-233 munition, for example, which is optimized for runway cratering, contributed significantly to the coalition air superiority campaign by effectively shutting down several Iraqi airfields.³² To support this offensive counterair mission, the French air force used the highly regarded AS-30 air-to-surface missile to destroy hardened aircraft shelters.³³ For night reconnaissance, the RAF Tornado GR-1A supplied the coalition with the only aircraft capable for the mission. Finally, the RAF performed SEAD with the air-launched antiradiation missile (ALARM), which was expedited into service as war neared.³⁴

When feasible, US airpower assisted less-capable coalition systems in order to reduce risk and increase the probability of mission success. After the coalition achieved air superiority, for example, US electronic warfare aircraft provided area SEAD coverage for all coalition packages. The specialized US aircraft, however, were stretched thin by the enormous number of coalition sorties requiring support. In November 1990, the USAF and the RAF informally agreed that US aircraft would laser designate targets for the RAF, thus providing the RAF with precision weapon delivery capability. The RAF had Buccaneer aircraft in the United Kingdom that could laser designate, but the logistical burden of deploying another type of aircraft seemed unnecessary if the United States could provide laser designation. When General Horner diverted large numbers of US laser-capable aircraft to locating Scud missiles, the USAF no longer had excess laser-designation capability to help the RAF. The RAF recognized the impending shortfall and decided to bring the Buccaneers into theater. The Buccaneers had been training in Britain to address this contingency and arrived in-theater within five days.³⁵

Some coalition air forces did not fly their most capable weapon systems in the Gulf. Since the Iraqi air force possessed the French-built Mirage F-1,

General Horner grounded coalition squadrons from France and Qatar that were equipped with the Mirage F-1 until he was certain that the coalition achieved air superiority. The risk of friendly air forces engaging a coalition Mirage F-1 outweighed the marginal benefits that the coalition F-1s offered. France could have eased this problem somewhat by deploying the more capable Mirage 2000. President Mitterand explicitly ruled out this possibility on political grounds, since the Mirage 2000 also formed part of France's nuclear deterrent force.³⁶

The small Italian air force contingent (10 Tornado aircraft) proved to be less capable than some planners anticipated. Their aircraft lacked precision munitions capability and on-board electronic countermeasures equipment. Prudence dictated that they be assigned large, poorly defended targets; a constraint that hardly justified the use of the multimillion-dollar Tornado. Although the Italian air force required its crews serving in the Gulf to have prior experience at a USAF Red Flag tactics exercise, some training deficiencies emerged. On the first Italian air force Tornado strike, seven of the eight aircraft did not complete the mission because of aircraft malfunctions or a failure to complete air refueling.³⁷ On the air planning staff, the Italian liaison occasionally questioned the suitability of assigned targets. The small number of sorties that they flew didn't seem to justify such close attention by planners who assigned thousands of targets daily.³⁸

One deficiency that broadly affected coalition air operations concerned the interoperability of in-flight communication equipment. Unlike the USAF, most coalition air forces lacked secure voice and antijam radios. To ensure that coalition partners could communicate with each other, General Schwarzkopf required aircraft to use unencrypted transmissions. Thus, the USAF did not employ a valuable system, so that they could mesh better with coalition forces.³⁹ The integration of ground-based air defense systems and their various communication capabilities was also an important consideration, one which was not seriously tested in the Gulf War.⁴⁰

Command and Control

The Gulf War coalition operated under a parallel command arrangement that basically divided authority between US and Saudi theater commanders. No single person commanded the overall military operation. On the ground, US commanders controlled the operations of Western forces, while the Saudi joint force commander controlled the ground forces of Islamic nations. General Schwarzkopf, the commander of US Central Command, and the Saudi JFC, Gen Khaled bin Sultan, agreed to sector geographically the theater so that each commander had an area of responsibility. Initially, US forces ceded "strategic direction" to Saudi military command, but both the United States and Saudi Arabia interpreted the phrase to their own liking.⁴¹ Cognizant of past conflicts where history only remembered American leaders,

General Khaled went to great lengths to prevent the establishment of a supreme commander.⁴²

The major exception to the parallel command structure involved the coalition relationship with France, because Defense Minister Chevenement sought autonomous operations for French forces. General Khaled insisted that French troops serve under US or Saudi command; before coalition air operations began, Khaled controlled French forces, because they were located in his portion of the theater.⁴³ When air operations began in January, France transferred tactical control of their forces to US commanders.⁴⁴

Unlike the rigid division between the responsibilities of US and JFC ground commanders, coalition air commanders agreed upon a single plan for air operations, which they expressed through a common tasking order. Before the war, RSAF headquarters simply monitored their squadrons' flying activities. When the US began issuing a peacetime ATO to task their flying units, the Saudis quickly participated in the daily ATO process.⁴⁵ This means of exercising control continued as the coalition transitioned to combat operations. The RAF, in particular, agreed wholeheartedly with USAF doctrine advocating centralized control of air operations at the theater level.⁴⁶

Several procedures enhanced the command and control of coalition air forces. First, the NATO interoperability advantage carried over to the command structure, because NATO had for years practiced composite force planning and ATO development procedures. Gulf War objectives and orders of battle differed significantly from those in NATO plans, but NATO exercised the campaign planning process regularly in peacetime.⁴⁷ The second important aid to command and control rested in the work of liaison officers. The United States dispatched air liaison teams to all coalition ground units (except British) at every command level down to the battalion. The US teams attached to coalition corps provided planning expertise and robust communication capability to facilitate missions such as CAS.⁴⁸ Some coalition air units also had liaison officers, who solved communications difficulties that one coalition representative called "the biggest problem."⁴⁹ Third, the coalition liaison officers on the air planning staff facilitated the integration of all air forces into the command structure. Rarely did coalition air forces voice complaints about proper representation in the command structure. Occasionally, US planners had to actively persuade coalition representatives to fully participate in the campaign planning process.⁵⁰

Coalition Cohesion

Because the coalition was so culturally diverse, many factors threatened to degrade its unity. Efforts to instill a sense of cooperation did not end at the political level—theater commanders played an important role in this mission. The British military commander in the Gulf, Gen Sir Peter de la Billiere, emphasized the importance of the coalition every time he addressed his

troops.⁵¹ On one occasion, General Glosson even briefed political leaders of a nation that sent no air forces to the Gulf, because the country had strong political influence in the region. Near the end of December 1990, General Glosson accompanied General Schwarzkopf to Cairo to inform the Egyptian ministry of defense about the air portion of the campaign plan.⁵²

Clearly, General Horner emerged as the key leader of coalition air forces. The overwhelming amount of US airpower that he commanded and the modern US command and control network enabled him to design and implement a comprehensive air campaign plan. Horner's clearly defined airpower objectives focused the coalition air forces on a common goal. His objectives, however, provided enough latitude for coalition air forces to fly the missions they desired, which was an important factor for coalition cohesion. In the Gulf War, the primary factor that enabled each coalition air force to perform its desired missions was the overwhelming preponderance of coalition air assets. Because resources were not scarce, planners first determined the missions of air forces who faced political restraints or aircraft capability limitations. Then, they coordinated the remaining airpower into a campaign plan designed to accomplish the joint force commander's objectives.⁵³

Despite strong US leadership, several items jeopardized the good relations among coalition partners: intelligence sharing policies, media relations, and fratricide incidents. The first item, intelligence sharing, created suspicions among coalition partners who had fewer means of gathering such information. Intelligence greatly affected coalition plans, about which the British theater commander called the Americans "pathologically secret."⁵⁴ Saudi commanders had feelings similar to the British—when Iraqi deserters underwent prisoner-of-war (POW) interrogations, the Saudis would not share the intelligence with Americans.⁵⁵ Some RSAF officers harbored lingering doubts about the willingness of the United States to share intelligence.⁵⁶ Despite these feelings of mistrust, US air planners claim that they shared relevant intelligence with coalition air forces. General Glosson overlooked US security regulations in sharing classified information with the coalition, and he even bypassed normal channels to expedite the information flow.⁵⁷ Additionally, the Kuwaiti liaison officer assigned to the campaign planning cell helped evaluate the appropriateness of targets in Kuwait proper, based on his personal experience and on information gleaned from the Kuwaiti resistance.⁵⁸ The coalition partners may never agree upon the quantity or quality of intelligence that was shared during the war, but the perceptions about the issue remain important, at least for postwar coalition relations.

The second item that adversely affected coalition cohesion was the impact of the international news media upon public opinion and troop morale. An RAF squadron in Bahrain, for example, enjoyed good relations with their countrymen from the British Broadcasting Corporation, but had poor relations with the US-based Cable News Network.⁵⁹ Even domestic media reporting adversely affected public opinion in countries that sent coalition air forces to the Gulf. In France, a small controversy arose when French airmen

downplayed their overall contribution to the coalition, while expressing astonishment at the prominent media coverage they received.⁶⁰

The last factor that threatened coalition unity, fratricide incidents, also involved the media. On 26 February 1991 nine British service members died when US aircraft mistakenly attacked a British armored personnel carrier. The media quickly reported the incident, which occurred during the opening stages of the coalition ground offensive. Some analysts attributed the incident to pilot errors made under the stress of combat, while others critiqued the US air-to-ground coordination system. In any case, controversy arose in Britain when the United States refused to disclose the pilots' names or permit the pilots to be subjected to civil lawsuits.

That the coalition did not overtly fracture over any of the factors mentioned is testimony to stronger forces that held the group together. Political and military objectives that remained focused on a common enemy explain only part of the reason why the coalition remained intact. From the military perspective, two other factors also contributed to the effort: the overwhelming military success and the personalities of the commanders involved. Initially, the coalition lost only a handful of aircraft due to enemy action, while apparently inflicting great damage on the enemy. Even the RAF, which lost four Tornados in the first week, appreciated the overall success of the air operation.⁶¹

The personalities of the commanders involved also greatly influenced coalition cooperation. The RSAF commander had known General Horner for several years and found him very easy to work with.⁶² The British military commander in the United Kingdom worked very closely with Generals Schwarzkopf and Horner. He concluded that personalities and mutual trust among commanders formed crucial elements of this coalition operation.⁶³ Even the French air force commander, who needed to balance his government's desire for independent military operations with the JFACC concept of centralized control of theater airpower, had kind words about General Horner. He not only credited Horner with the success of the air campaign, but said Horner was "like a big brother."⁶⁴

Lessons for Air Component Commanders

Aside from the specific factors that influenced coalition cohesion in the Gulf War, several general lessons should be useful to future air commanders. First, operational-level commanders may need deep cultural awareness about friendly forces in order to earn their trust. After the war, General Khaled implied that he withheld complete trust in General Schwarzkopf. Although Schwarzkopf was a competent military commander, Khaled seemed to doubt Schwarzkopf's overall qualifications:

Schwarzkopf was of course well briefed on the strategic and military aspects of the area, but the people, the leading personalities of Arab politics, the families, cus-

toms, attitudes, language, history, religion, way of life—indeed all the complexities of our Arab world—were as foreign and unfamiliar to him as they are to the average American.⁶⁵

General Horner's cooperative relationship with his RSAF counterparts, in contrast, seems to have had lasting value. A year after the Gulf War, the RSAF commander noted that General Horner was easy to work with and that the two never had a disagreement.⁶⁶ Members of Horner's staff also learned the value of knowing their coalition partners, especially officers of the host nation. One US planner found that his relationship with a certain RSAF captain enabled them to jointly accomplish common tasks with minimal interference, because the captain was a member of the royal family.⁶⁷

A second lesson for air component commanders is that operational capability depends on more than just the quality of the aircraft and the pilot—the US-developed command and control system played a critical role in coalition effectiveness. Several coalition partners had excellent aircraft and well-trained pilots, but they depended on the US capability to incorporate these assets into a coherent campaign plan. The British recognized this fact early on, and integration into the US command and control network became a prime British objective as the coalition formed.⁶⁸

The final lesson applies primarily to the air commander who provides the most capable airpower assets for the coalition. Instead of evaluating his national forces as a single fighting body, he must assess the strengths and weaknesses of the entire coalition. He should anticipate the diversion of unique airpower assets to assist less-capable coalition air forces. Such action provides synergistic benefits in both the military and political realms. Militarily, the integration of airpower across national lines enables weaker coalition partners to accomplish missions that would otherwise be impossible or too risky. Unlike ground forces, air commanders can integrate airpower quickly, without major troop movements. This capability permits a rapid coalition action to support the overall objectives. Politically, the symbolism of airpower cooperation helps strengthen the bonds of the coalition. In the Gulf War, the international media broadcast the physical effects of airpower operations. Since airpower was the main tool of commanders in the early stages of conflict, coalition members with air forces received a disproportionate amount of media attention. The overall benefits of sharing coalition air assets far outweighed the coordination problems that coalition operations required.

Notes

1. General Accounting Office, *Persian Gulf Allied Burden Sharing Efforts* (Washington, D.C.: General Accounting Office, 1991), 16.

2. Department of the Air Force, *Gulf War Air Power Survey*, vol. 5, *A Statistical Compendium and Chronology* (Washington, D.C.: GPO, 1993), 232–33. Hereinafter, all volumes of the *Gulf War Air Power Survey*, including the *Summary Volume*, will be referred to as *GWAPS*. *GWAPS* facts of publication are identical.

3. "Address to the Nation Announcing the Deployment of United States Armed Forces to Saudi Arabia," in *Public Papers of the Presidents of the United States: George Bush, 1990*, Book

- 2 (Washington, D.C.: Office of the Federal Register, National Archives and Record Administration, 1991), 1108, cited in *GWAPS Summary*, 27.
4. Dan Keohane, "British Policy in the Conflict," in *International Perspectives on the Gulf Conflict, 1990-91* (New York: Saint Martin's Press, 1994), 153-56.
5. Ronnie Miller, *Following the Americans to the Persian Gulf: Canada, Australia, and the Development of the New World Order* (Cranbury, N.J.: Farleigh Dickinson University Press, 1994), 127-32.
6. Jolyon Howorth, "French Policy in the Conflict," in *International Perspectives on the Gulf Conflict, 1990-91* (New York: Saint Martin's Press, 1994), 181.
7. Gen Khaled bin Sultan with Patrick Seale, *Desert Warrior* (New York: HarperCollins, 1995), 172.
8. Col Ali S. Al-Marri (Qatar Emiri air force), "Gulf War: A Case Study of Air Power's Role in the Gulf" (Maxwell AFB, Ala.: Air War College, April 1995), 11. Colonel Al-Marri is the director of Operations, Planning, and Training for the Qatar Emiri air force. During the Gulf War, he commanded the Qatari Air Operations Center.
9. *GWAPS*, vol. 1, *Planning and Command and Control*, 43.
10. Richard T. Reynolds, *Heart of the Storm* (Maxwell AFB, Ala.: Air University Press, 1995), 124.
11. Col Samuel Baptiste, Tyndall AFB, Fla., interview by author, 28 February 1996. During the Gulf War, Colonel Baptiste was the chief of Ninth Air Force Weapons and Tactics, the numbered air force component of USCENTAF.
12. *GWAPS Summary*, 39-40. The six theater military objectives were (1) attack Iraqi political/military leadership and command and control, (2) gain and maintain air superiority, (3) sever Iraqi supply lines, (4) destroy chemical, biological, and nuclear capability, (5) destroy Republican Guard forces, and (6) liberate Kuwait City.
13. Lt Gen Buster C. Glosson, telephone interview by author, 3 May 1996. General Glosson said many US planners were surprised to realize the importance that leaders of the region placed on electricity and automobiles.
14. Lt Col Ben Harvey, working papers, 22 August 1990, that describe General Glosson's meeting with a Saudi prince. Colonel Harvey worked in the office that helped conceptualize an offensive air plan, and he took these notes while in Riyadh in the summer of 1990. USAF HRA, Maxwell AFB, Ala., no. K239.0472-61, 62, 140.
15. Air Chief Marshal Sir Patrick Hine, telephone interview by author, 18 March 1996. During the Gulf War, Air Chief Marshal Hine was the joint commander in the United Kingdom for all British military personnel.
16. *GWAPS*, vol. 1, 57; and *GWAPS Summary*, 159.
17. Gen Charles A. Horner, speech, 11 September 1991, USAF HRA, Maxwell AFB, Ala., no. K239.0472-52, 246.
18. Glosson interview.
19. *GWAPS*, vol. 1, 48; and *GWAPS Summary*, 158.
20. David S. Yost, "France and the Persian Gulf War: Political-Military Lessons Learned" (draft), Los Alamos National Laboratories, 1992, 16-17.
21. Baptiste interview.
22. Col David A. Deptula, Eglin AFB, Fla., interview by author, 1 February 1996. During the Gulf War, Colonel Deptula was the planning cell chief for the Iraqi theater of operations.
23. Keohane, 165.
24. *GWAPS*, vol. 1, 49.
25. Gen Sir Peter de la Billiere, *Storm Command, A Personal Account of the Gulf War* (London: HarperCollins, 1992), 175, 179. During the Gulf War, General de la Billiere was the joint commander of British forces in the Middle East.
26. De la Billiere, 206. Throughout his book, General de la Billiere expresses his concerns about the inconsistent ROE among coalition partners. On the SEAD mission noted here, Air Vice Marshal William Wratten aborted the mission because the one-minute delay would have upset the delicate precision of the entire air operation.
27. Lt Col Abdulhameed Al-Qadhi, RSAF, letter to the author, 16 March 1996. During the Gulf War, Colonel Al-Qadhi served as the RSAF representative to the SPG.

28. GWAPS, vol. 2, 107.
29. Col Bandar A. Bin Mohammed, RSAF, interview by GWAPS team members, 11 July 1992. Notes were taken by team member Wayne Thompson, USAF HRA, Maxwell AFB, Ala., no. TF5-7-124 v. 15, 73.
30. Lt Col Sam Baptiste, "ATO Preparation," briefing to the USAF chief of staff, 4 December 1991. PowerPoint slide presentation, USAF HRA, Maxwell AFB, Ala., no. NA-52.
31. Deptula interview.
32. For a detailed discussion of the challenges faced by RAF aircrews assigned this mission, see Alfred Price, "The Hardest Hundred Hours—TORNADO Operations in the Gulf War," *Military Technology*, September 1992, 87–91.
33. Deptula interview.
34. Group Capt Andrew Vallance, "Royal Air Force Operations in the Gulf War," *Air Power History*, Fall 1991, 37.
35. De la Billiere, 87, 233.
36. Howorth, 187.
37. David Cristofori Earling, "Italy and the Gulf War," Los Alamos National Laboratory, September 1991, 24–25.
38. Baptiste interview.
39. Glosson interview. General Glosson also recognized that some US sister-service air components lacked secure voice and antijam capability.
40. Air Marshal I. D. Macfadyen, letter to author, 16 April 1996. During the Gulf War, Air Marshal Macfadyen was the chief of staff for Gen Sir Peter de la Billiere.
41. Department of Defense, *Conduct of the Persian Gulf War, Appendices A-S*, April 1992, I-9.
42. Khaled, 37.
43. *Ibid.*, 273.
44. *Conduct of the Persian Gulf War, Appendix I*, April 1992, I-12.
45. GWAPS, vol. 1, 46.
46. Macfadyen letter.
47. Air Vice Marshal Sandy Wilson, cited in Charles Allen, *Thunder and Lightning: The RAF in the Gulf: Personal Experiences of War* (London: HMSO, 1991), 15.
48. *Conduct of the Persian Gulf War, Appendices A-S*, I-20.
49. Lt Col Al-Qadhi letter.
50. Baptiste interview.
51. De la Billiere, 113.
52. Brig Gen Buster C. Glosson, interview by Msgt Turner, USAF HRA, Maxwell AFB, Ala., no. K239.0472-52, 133.
53. Deptula interview.
54. De la Billiere, 91.
55. Khaled, 308.
56. Lt Col Al-Qadhi, letter. During a GWAPS interview on 11 July 1992, Brig Gen Ahmad As-Sudayri, RSAF director of operations, asserted that the US intentionally withheld target information from RSAF crews until late in the planning cycle, which reduced available mission planning time for the RSAF. However, subsequent GWAPS interviews with other Saudi commanders cast doubt on As-Sudayri's claims.
57. David A. Fulgham, "Glosson: US Gulf War Shortfalls Linger," *Aviation Week & Space Technology*, 29 January 1996, 59.
58. Baptiste interview.
59. Allen, 97.
60. Yost, 13. Two French pilots were quoted as saying, "It is true that we have not yet lost anyone, but for each sortie that we make the Americans make sixty. In relation to them, we feel useless. If the French [forces] were not there, it would be all the same. We really don't have that much to be proud of, and we would like people to stop treating us like heroes."
61. Price, 91.

62. Lt Gen Ahmad Ibrahim Behery, interview by GWAPS team, 11 July 1992. Notes were taken by team member Wayne Thompson, USAF HRA, Maxwell AFB, Ala., no. TF5-7-124, vol. 15, 73.

63. Hine telephone interview.

64. *GWAPS*, vol. 1, 48.

65. Khaled, 208.

66. Behery interview, 70.

67. Baptiste interview.

68. Hine telephone interview.

Chapter 4

The Balkan Air Campaign

As the world fixated on the Persian Gulf crisis in late 1990, nationalist movements in Yugoslavia threatened to divide the ethnically diverse state. After World War II, Josip Broz Tito ruled Yugoslavia with his strong-handed version of communism. Tito's death in 1980, combined with economic turmoil the following decade, fomented civil unrest among the various ethnic groups. In 1987, Yugoslav Communist Party official Slobodan Milosevic supported minority Serbs in Kosovo province accused of human rights violations. His speeches to this effect ignited nationalist aspirations that accelerated the break-up of Yugoslavia.¹ In 1990, all six Yugoslav republics held presidential elections; previously, the Communist Party directed a figurehead president whose position rotated among the republics.

Civil war erupted in June 1991 when Croatia declared independence, and the Yugoslav army intervened with an "ethnic cleansing" campaign to maintain order. The parties signed a peace treaty in late 1991, and in February 1992 the UN began a peacekeeping mission in Croatia. When further violence broke out in the Republic of Bosnia-Herzegovina, the UN Security Council requested member state assistance to monitor the flights of military aircraft in the region. NATO began flight monitoring in October 1992 and in April 1993 began Operation Deny Flight to enforce a UN-declared no-fly zone over Bosnia. Eventually, the UN Security Council authorized ground attack missions to protect UN peacekeeping forces and to enforce further resolutions. In August 1995, NATO executed Operation Deliberate Force, a coordinated series of air strikes against Bosnian Serb military forces.² This thesis examines both Operation Deny Flight (12 April 1993–20 December 1995) and Operation Deliberate Force (30 August–20 September 1995), with most of the emphasis on Deliberate Force. Reference is made to these operations (Deny Flight and Deliberate Force) collectively as the Balkan Air Campaign. Of particular importance, airpower comprised part of a NATO alliance contribution to an overall coalition of NATO and UN forces.

Airpower in the Balkans

The NATO airpower contribution to the UN peace operations in the Balkans gradually increased from 1993 to 1995. US, British, French, and Dutch aircraft that initially enforced the no-fly zone were augmented by

Turkish fighter aircraft by July 1993. Spain contributed aircraft in 1994, followed by Germany in July 1995. Lastly, Italy began ground attack operations in September 1995 in conjunction with Operation Deliberate Force.³ Italy also hosted most of the combat and support aircraft, which were distributed among seven Italian air bases.

Airpower performed a variety of missions in NATO's first combat operation. Some NATO air forces had combat experience during operations outside the alliance, but fully half of the participating air forces (Dutch, Spanish, Turkish, and German) had not flown in the recent Gulf War. Initially, Deny Flight missions consisted primarily of combat air patrol missions to enforce the no-fly zone. During the first two years of the campaign, NATO struck ground targets on only nine occasions.⁴ Thus, NATO's twenty-five hundred combat sorties (against some 50 target complexes) during the three weeks of Deliberate Force represented a major shift in the allied airpower effort.

As in the other conflicts examined in this study, US airpower contributed the majority of combat sorties in the Balkans, about two-thirds of the total effort. During Deliberate Force, the United States flew 65 percent of the combat and support sorties, followed by the French and the British at about 10 percent each. The other five countries, including the multinational crews on NATO airborne early warning aircraft (NAEW), flew the remaining 15 percent of the sorties.⁵

Political Objectives

In Bosnia, NATO responded to UN requests for assistance in implementing Security Council resolutions. The UN was one of several groups that tried to broker peace among the warring parties. A joint US-British-sponsored peace plan (Vance-Owen plan), several unilateral US efforts, and a five-nation (US, Britain, France, Germany, and Russia) contact group all sought diplomatic means to end hostilities. In conjunction with negotiations and UN Security Council resolutions, NATO policy makers authorized air operations to support UN requests for military force. Some nations had representatives in more than one of the groups involved, which complicated the diplomatic-military coordination process even further. For example, the US and Britain were the only states with full membership in the NATO military structure, the UN Security Council, and the contact group, yet each of these agencies had somewhat unique interests. Within NATO, differing European and American interests hindered the timely achievement of common allied objectives. Especially before Deliberate Force, the Europeans emphasized humanitarian assistance and peacekeeping operations because they feared a widening of the conflict. The Americans, on the other hand, stressed the moral aspects and the desire to assist the victims of aggression.⁶

In the spring of 1995, Bosnian Serbs continued their attacks on UN-designated "safe areas" that were often controlled by Bosnian Muslims. After the Serbs held hostage members of the UN Protection Forces (UNPROFOR) and overran the Srebrenica "safe haven" in July, the international community reacted. On 21 July 1995, British foreign secretary Malcom Rifkind chaired a meeting of representatives from 16 nations, the United Nations, NATO, and the European Union (EU). Statements from the "London Conference" threatened the Bosnian Serbs with a strong military response to further attacks on safe havens.⁷ When Deliberate Force began, the stated allied objectives were to protect the safe havens, using force if necessary, and to deter further attacks on the same.⁸ An implied objective was to demonstrate the resolve of the NATO alliance to achieve a common objective. When Deliberate Force ended, the US ambassador to NATO proclaimed the success of both the operation and NATO resolve.⁹

Despite the appearance of a common political objective in published NATO statements, individual allies sometimes expressed sensitivities that conflicted with the overall effort. On at least one occasion, a member's political objectives affected allied airpower capability. During Deliberate Force, Italy denied the US basing rights for F-117 Stealth fighter aircraft. Italy had long desired a stronger political voice in the overall policy-making decisions concerning the Balkan crisis and felt that the allies ignored their views. The Italian foreign minister justified the refusal to host F-117s because the contact group denied Italy a seat on this important negotiating committee. The Italian decision impacted NATO air operations, but even France (not a member of NATO's integrated military structure) spoke out against Italian membership in the group.¹⁰

Aside from sensitivities within the alliance, NATO also considered the effect of military action on diplomatic relations with Russia. Western leaders wanted to achieve a consensus for military action without incurring outright Russian opposition. Many Russian leaders harbored suspicions about NATO intentions, especially because Russia held historic ties to the Serbs. Western leaders realized that the UN might be unable to agree on resolutions that threatened the Serbs with military action because Russia could veto such a proposition. By establishing the London conference (in which Russia participated) to agree upon air strikes, the coalition accounted for Russian concerns but did not risk the chance that Russia could formally reject their proposals. The London participants made it clear to the Russians that their limited objectives would not threaten the very existence of the Serb population. When Deliberate Force began, Russian president Boris Yeltsin called it "inadmissible . . . [that] Europe is reverting to a battlefield."¹¹ In hindsight, the statement seemed designed to appease Serb supporters in Russia because Yeltsin stopped short of threatening to break diplomatic links with the West. Russia later decided to contribute forces to the UN Implementation Force (IFOR), whose mission was to implement the provisions of a late-1995 peace agreement.

Airpower Objectives

Translating political objectives to military objectives proved particularly controversial for the Balkan War. Several military commanders and analysts doubted airpower's capability to coerce belligerents in a civil war fueled by ethnic hatred. The highest ranking USAF officer in Europe later wrote that NATO airpower could only have a near-term effect on Serb behavior.¹² Instead of clearly defined objectives, the North Atlantic Council (NAC)—NATO's governing political body—established missions that closely paralleled UN resolutions. Officially, the threefold Deny Flight mission was as follows:

1. To conduct aerial monitoring and enforce compliance with UN Security Council Resolution 816, which bans flights by fixed-wing and rotary-wing aircraft in the airspace of Bosnia-Herzegovina, the "no fly zone."
2. To provide close air support to UN troops on the ground at the request of, and controlled by, United Nations forces under the provisions of UNSCRs 836, 958, and 981.
3. To conduct, after request by and in coordination with the UN, approved air strikes against designated targets threatening the security of the UN-safe areas.¹³

Although NATO adopted these missions by August 1993, it only executed a handful of "pinprick" air strikes before August 1995. While all three mission statements appear neutral with respect to the warring factions, NATO's Deliberate Force objectives clearly targeted the Bosnian Serbs. The military objective of Deliberate Force was to end assaults on Sarajevo and other UN-designated safe areas in Bosnia.¹⁴ For airpower, the stated objective was to "execute a robust NATO air operation that adversely alters the Bosnian Serb army's [BSA] advantage in conducting successful military operations against the Bosnian army [BIH]," seeking an end state where "Bosnian Serbs sue for cessation of military operations, comply with UN mandates, and negotiate."¹⁵

For all Balkan Air Campaign missions, however, NATO's southern region air component commander, Lt Gen Michael Ryan, established two overriding airpower objectives.¹⁶ First, he declared that his primary objective was to ensure the security of friendly forces. NATO's conservative ROE sought to reduce the risk to aircraft and aircrew, even if this jeopardized the chances of mission accomplishment. Second, General Ryan outlined strict targeting guidance to minimize unintended collateral damage. Ryan personally reviewed and approved each of the 338 aim points on over 50 Deliberate Force targets.¹⁷ This targeting guidance carried over to the aerial engagement arena, where allied pilots required specific clearance from the Combined Air Operations Center (CAOC) to engage hostile aircraft.¹⁸

Because of the tightly controlled airpower targeting in the Balkans, CAOC planners devised standard force packages that could respond quickly to changing political guidance. Instead of determining the required airpower based on the target objective and threat assessment, planners built generic packages whose target often changed while the aircrews maintained a ground

alert posture.¹⁹ When targets changed, allied aircrews in these so-called cookie-cutter packages had minimal time for target study and mission coordination, particularly since the aircrews were located at different bases.

Political concerns about NATO alliance solidarity often influenced operational-level air planning. Whereas the JFACC in the Persian Gulf issued an air tasking order that directed the missions of coalition air forces, his counterpart in the Balkans issued an air tasking message (ATM). The semantic difference between "order" and "message" reflects the realization that "the alliance must act in a 'politically correct' manner, if only because it has 16 capitals—not just Washington—to please."²⁰ Planners ensured that they included all nations on the ATM as a sign of alliance solidarity. Domestic interests affected the ATM process, too, as various defense ministers pressed for increased sorties to justify their budget battles.²¹

For the sake of coalition cohesion, force packages often included aircraft that were not the most capable for the mission. Within a strike package, aircraft that could drop only unguided bombs were followed by precision-guided munitions (PGM)-capable aircraft from other countries to ensure target destruction. One example of such a mission was the allied attack on the Udbina airfield complex in November 1994. Sufficient PGM-capable aircraft were available to accomplish the entire mission, but some aircraft with unguided bombs were used to ensure that all nations participated in the strike.²²

The most apparent political restriction that shaped an allied partner's airpower objectives involved the employment of German air force (GAF) Tornados. Although German ground attack aircraft deployed to Turkey during the Persian Gulf War, the Balkan mission represented the first operational GAF missions since World War II. The German Parliament constrained GAF aircraft to reconnaissance and SEAD missions in support of the multinational rapid reaction force (RRF).²³ The GAF could not fly independent missions to hunt for surface-to-air missile sites and could only fire in self-defense or to assist allies. To further guard against the chance that GAF aircraft could violate this guidance, the GAF empowered a senior GAF officer in the CAOC with veto power over every mission assigned to German aircraft.²⁴

Airpower Capabilities

NATO airpower in the Balkans included a variety of modern fighter and attack aircraft. Even the countries whose air forces did not fight in the Persian Gulf War sent comparable combat-proven aircraft. Dutch and Turkish F-16s, Spanish F/A-18s, and German Tornados differed only slightly from their US or European variants. As in the Gulf War, the United States provided many specialized weapon systems that were optimized for missions like SEAD and CAS. Additionally, US airpower benefited from widespread

use of the global positioning system (GPS) navigation system and the low-altitude navigation and targeting infrared for night (LANTIRN) laser-designation system.²⁵ The small number of targets and the relatively low-threat environment in the Balkans also influenced US force deployments. Even when Deliberate Force began, commanders did not have frontline aircraft such as the F-15C, E-8 joint surveillance target attack radar system (J-STARS), B-1, B-2, or B-52 in-theater.²⁶

Perhaps the most important capability that non-US air forces provided was airborne reconnaissance. Although the United States employed unmanned aerial vehicles (UAV) for reconnaissance, US planners recognized the value of the allies' manned reconnaissance platforms.²⁷ The Dutch equipped their RF-16s with new reconnaissance equipment, and the British fulfilled this "high priority" task with suitably equipped Jaguars.²⁸

Another coalition capability that complemented US airpower was the ability to provide lethal SEAD. The Spanish air force outfitted EF-18s with high speed antiradiation missiles (HARM) to destroy SAM radars. German electronic combat and reconnaissance (ECR) Tornados also carried HARMs, although none were fired because radar SAMs failed to threaten their aircraft.

Some coalition aircraft adequately performed the air-to-air missions of Deny Flight but proved ill-suited for the ground attack missions of Deliberate Force. Turkish air force F-16s flew only CAP, while air-to-ground-capable Dutch F-16s had no PGM capability. In contrast to these drawbacks, the French provided superior air-to-ground capability with their best fighter, the Mirage 2000D. After the Gulf War, the French air force equipped this aircraft with new navigation and weapon delivery systems.²⁹ The improved French capability was important to air commanders because the objective of limiting collateral damage required that modern PGM-capable systems be employed against targets with collateral damage potential.

Command and Control

Allied airpower in the Balkans operated under a complex and inefficient command structure. Requests for military force flowed through the channels of two distinct institutions: NATO and the UN. On the NATO side, the Supreme Allied Commander Europe (SACEUR) delegated authority for the implementation of Deny Flight to the commander in chief of Allied Forces Southern Europe (CINCSOUTH), who delegated operation control (OPCON) to the commander Allied Air Forces Southern Europe (COMAIRSOUTH). OPCON was further delegated to the commander, Fifth Allied Tactical Air Force (FIVEATAF).³⁰ Collocated with FIVEATAF headquarters was the CAOC, whose director essentially served as the air component commander. The CAOC director published the ATM that tasked coalition air forces. On the UN side, several levels of command existed as follows: the UN secretary

general and his special representative (SRSG); the force commander of UN Peace Forces (FCUNPF) in Zagreb, Croatia; the commander of UN Protection Forces (COMUNPROFOR) in Bosnia; and air operations control centers (AOCC) with UNPROFOR military observers and associated ground units. Figure 2 depicts these chains of command.

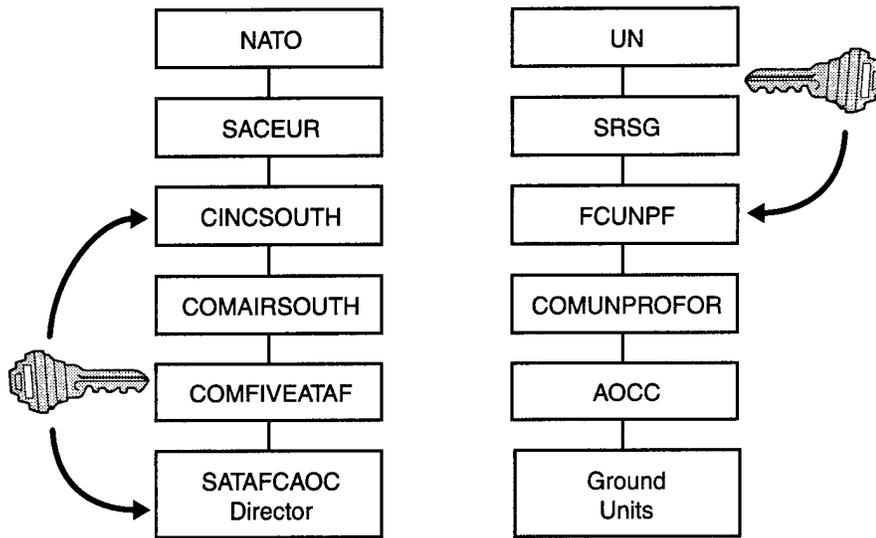


Figure 2. NATO and UN Chain of Command

The agreement between the UN and NATO established a “dual-key” policy, whereby both institutions had to agree on the use of air strikes before they could be carried out.³¹ Because the CAOC director had OPCON of CAS missions, not much coordination was necessary within the NATO chain. UN military observers at the AOCC requested air support (generally CAS) from their supervisors in the UN chain, while simultaneously notifying the CAOC. NATO aircraft responded directly to CAOC tasking, but the UN chain often took hours to coordinate requests. To expedite the process, the agencies exchanged liaison officers at several levels, but UN commanders still turned the UN “key.”³² Non-CAS air strike requests could originate from either agency, but also required dual-key approval. US and NATO commanders strongly criticized the arrangement; and, at the London conference, UN commanders agreed to delegate the approval for air strikes to lower levels such as the FCUNPF, as shown in figure 2.³³

In the NATO chain of command, as well as in the CAOC, the United States manned most of the key positions. SACEUR, CINCOSOUTH, and AIRSOUTH were all US general officers, while the Italian general officer commanding FIVEATAF delegated most authority for daily operations to the American director of the CAOC. US officers also held important positions like the deputy CAOC director, operations director, and the plans director.³⁴ Except

for key personnel in the CAOC, almost all officers served in a temporary duty status that averaged about six months. To optimize information flow with such a high turnover rate, planners held daily meetings with unit representatives and weekly meetings with senior national representatives.³⁵ However, one nation failed to provide a senior national representative—the United States. Since US officers directed the CAOC and filled many critical positions, the United States felt their views were clearly understood without the need for an extra representative. This action understandably caused some coalition partners to view the CAOC as more a US operation than a NATO operation, and it also degraded available USAF support. Because information flowed through NATO rather than US channels, the United States Air Forces in Europe was often unaware of CAOC requirements that a senior national representative could have transmitted.³⁶

Prior to Deliberate Force, the CAOC was not capable of smoothly orchestrating a large-scale air campaign. In the summer of 1995, a USAF team that evaluated CAOC operations recommended several improvements, including staff augmentation and planning and communications upgrades. The US-initiated improvements turned the CAOC into a first-class operations center; in this case, one ally quickly achieved results that the NATO partnership had not made over many years. Shortly before Deliberate Force began, General Ryan and his staff moved from Headquarters AIRSOUTH to the CAOC in Vicenza. Although most senior allied representatives understood that the magnitude of the upcoming operation justified closer involvement by leaders of the nation with the most assets, some NATO partners in the CAOC felt that their views were not given proper consideration.³⁷ The command and control arrangements became critical in this phase, because individual National Command Authorities (NCA) wanted to know the results of Deliberate Force air strikes as soon as possible.³⁸ The importance of the mostly US communication and computer networks made a deep impression on General Ryan, among others. In a postaction briefing to USAF general officers, General Ryan used a slide noting that “He Who’s Ready to Control Will Command.”³⁹

Coalition Cohesion

Several disagreements among coalition members affected the unity of effort for operational-level planning. The United States contributed no ground troops to UNPROFOR, while the Europeans, particularly the French and the British, sent large numbers of troops to UNPROFOR. Participants in the civil war sometimes threatened UNPROFOR with military force. Europeans feared that large-scale air strikes could provoke reprisals from the warring factions, which would endanger UNPROFOR units. To the Europeans, the US enthusiasm for NATO air strikes seemed to downplay the threat that such action could pose for the largely European UNPROFOR. When the Bosnian

Serbs took UN peacekeepers hostage following NATO air strikes in May 1995, the French prime minister criticized the air operation as poorly prepared and unnecessarily risky for ground troops.⁴⁰ The complex command and control system for CAS frustrated one ally when air support could not help Dutch peacekeepers prevent a Serb takeover of Srebrenica. The Dutch minister of defense claimed his "repeated requests to the United Nations and to [our] allies for help in Srebrenica by air were turned down."⁴¹ The UN eventually approved CAS, flown by Dutch F-16s, but the air support proved inadequate for Dutch troops who were outnumbered 10 to one.⁴²

Disparities among the allies' ability to gather intelligence and perform battle damage assessment (BDA) created problems within the alliance. These missions became particularly important during Deliberate Force because political leaders wanted to send clear signals to the Serbs through the targets that NATO struck. Concerning intelligence, one of the largest debates within the CAOC occurred when the French could not get access to US intelligence. Because of the political sensitivities about striking the targets that statesmen desired, General Ryan could not give the French (or other allies) target information until he received clearance from political leaders to do so. The French wanted to use their in-theater reconnaissance aircraft to gather intelligence, and they felt that the United States purposefully reduced the French reconnaissance tasking on the ATM.⁴³ After the targets had been approved by political leaders, the CAOC senior national representatives reviewed the lists and, except for Germany's political restrictions, generally accepted the nominations.⁴⁴

Aside from prestrike target intelligence requirements, coalition members needed accurate poststrike BDA for reporting up to their NCAs and down to their unit commanders. General Ryan also needed accurate BDA to assess if targets needed to be reattacked. The director of the BDA cell in the CAOC, who centralized BDA processing, noted that NATO lacked standard procedures for BDA transmission and analysis. He designed an ad hoc BDA processing system in 1994, but the BDA cell was subsequently dissolved because the small number of air strikes did not justify the diversion of personnel to the task. He reestablished the BDA cell in the summer of 1995 to prepare for Deliberate Force, but the various allied forces still reported BDA in different ways. The BDA processing delays that ensued irritated military and political leaders who wanted information quickly.⁴⁵

Allied concerns about the airpower means employed in Deliberate Force, as well as the overall politico-military strategy, affected allied cohesion. When the United States planned to use Tomahawk missiles in the SEAD campaign, France and Italy questioned whether this weapon represented an escalation of the conflict. Eventually, both governments agreed with the United States that the weapon did not change the mission objective. However, the allies' concerns forced planners to delay Tomahawk employment by one day.⁴⁶ In the diplomatic arena, active negotiations between US assistant secretary of state Richard Holbrooke and Bosnian Serb leaders continued during Deliberate Force. Two days into Deliberate Force, COMUNPROFOR (Gen Bernard

Janvier) and CINCSOUTH (Adm Leighton Smith) agreed to a bombing pause, which allegedly infuriated NATO secretary general Willy Claes. Even though Holbrooke suggested the pause, Claes believed that the action threatened NATO's credibility and unity, as well as the delicate interaction of diplomacy and force.⁴⁷

Lessons for the Air Component Commander

The Balkan Air Campaign provides future air commanders several lessons for dealing within a coalition. First, the nature of this operation required commanders to stay attuned to political interests beyond that of their own government. The political sensitivity of air strikes emerged largely because the United States fought within a coalition—a diverse coalition that included NATO allies, UN representatives, and even former Warsaw Pact states. To address the various political interests, the air commander immersed himself in minute targeting details that consumed a large portion of his time. Political guidance dictated that he concentrate on restraints—such as minimizing casualties and collateral damage—to the detriment of operational mission effectiveness. Meanwhile, the changing political situation meant that airpower operations needed to be able to strike targets on short notice because strike approval could easily be withdrawn. Once Deliberate Force began, statesmen and military commanders feared that military operations would stop too soon. Statesmen were afraid that easing military force could reduce their leverage in negotiations, and military commanders were afraid that politicians would halt military operations before the military objectives could be achieved.⁴⁸ The political situation, not aircraft or environmental limitations, often became a target's "window of vulnerability."

Second, air component commanders should anticipate the influence of coalition partners on peacetime planning assumptions. Non-US NATO airpower in the Balkans provided unique capabilities that the United States lacked, and NATO airpower continues to improve its capability for missions such as SEAD, reconnaissance, and precision attack. Assumptions about the chain of command under which US forces operate must also be scrutinized. Even NATO command arrangements organized in peacetime may function differently if allies occupy key positions. The US decision to unilaterally augment CAOC personnel and equipment demonstrated that US national interests overrode the cumbersome NATO coordination process. However, increased US personnel or technical support cannot be assumed under all situations and may not always be desirable in a coalition operation.

Third, commanders must remember that perceptions about the leading coalition member affect overall cohesion. US airmen flew about two-thirds of the sorties in the Balkan Air Campaign, and US representation in the CAOC was proportionally even higher. Although the United States employs high technology command and control networks, coalition members could readily

challenge the presumption that ownership of such equipment carries inherent command authority. The desires of smaller air forces who are given "proportional" rather than "equal" operational inputs could easily be overlooked. However, commanders may have to give such nations disproportionate representation because of the political clout they carry.

It may be premature to judge the overall effectiveness of the coalition in the Balkan campaign, but certainly NATO learned valuable lessons for alliance operations, particularly airpower. NATO's concerns with weapon systems interoperability received their first challenge in this "out-of-area operation." Instead of operating from home stations under normal manning, NATO air forces shifted to the southern flank to address an unexpected operation. Tactical-level interoperability problems surfaced, but none seemed to jeopardize overall campaign success. At the operational level, CAOC inadequacy emerged as a major concern for the United States, whose efforts enhanced CAOC performance just in time for Deliberate Force.

NATO's out-of-area operation challenges any assumptions that the North Atlantic Council will control alliance operations unilaterally. For air commanders, one implication could be that airpower's responsiveness is vulnerable to real-time political constraints, which dilutes the advantage of using high-technology, high-speed platforms. Despite some differences among allied objectives, the group as a whole maintained cohesion. Again, the unexpected out-of-area scenario challenged NATO's ability to maintain solidarity under an unclear alliance mandate. Had the Bosnian Serbs not resumed negotiations during Deliberate Force, the alliance would have faced significant problems. If airpower hit all 338 "aim points" without political effect, would the allies have agreed to strike targets that were even more politically sensitive? Many political leaders, including the Europeans, drew a causal link between the two-week Deliberate Force operation and the signing of the Dayton Accords. The differences in how each ally internalizes the Balkan Air Campaign lessons should be studied by future air commanders.

Notes

1. "Yugoslavia, Death of a Nation," television documentary, Discovery Channel, January 1996.

2. Relevant UN Security Council Resolutions are 816, 836, 958 and 981. UNSCR texts on-line, Internet, available from [gopher://gopher.undp.org:70/00/undocs/scd/scouncil](http://gopher.undp.org:70/00/undocs/scd/scouncil). Deliberate Force was actually a subsidiary campaign within the ongoing Deny Flight Operation because in June 1993, UNSCR 836 authorized air strikes to protect UN Protection Forces.

3. For the origins of allied air participation, see "Operation Deny Flight," on-line, Internet, available from, gopher://marvin.stc.nato.int:70/00/yugo/odf2112; Air Chief Marshal Sir Michael Armitage, Retired, "RAF Over Bosnia," *Army Quarterly and Defence Journal* 124 (July 1994): 274; Fermin Gallego-Serra, "Heavy Allied Air Activities Maintained Over Bosnia," *Armed Forces Journal International* 130 (July 1993): 15; and Charles Bickers, "Germany and Italy Boast 'Deny Flight'," *Jane's Defence Weekly* 24 (16 September 1995): 50.

4. "NATO Gets Tough," *The Economist* 336 (2 September 1995): 17.

5. The actual Deliberate Force sortie breakdown (combat and combat support) by country, is as follows (percentages of total effort in parentheses): United States: 2,318 (65.9); United Kingdom: 326 (9.3); France: 284 (8.1); Netherlands: 198 (5.6); Spain: 121 (3.4); NATO (NAEW):

96 (2.7); Turkey: 78 (2.2); Germany: 59 (1.7); and Italy: 35 (1.0). See "Operation Deliberate Force," on-line, Internet, available from gopher://marvin.stc.nato.int:70/11/yugo.

6. Willy Claes, "Endgame in Bosnia: The Price of Peace Will Be a NATO That Includes US Troops," *The San Diego Union-Tribune*, 15 October 1995, G-1.

7. "Statement by British Foreign Secretary Rifkind, 21 July 1995," *Foreign Policy Bulletin* 6, no. 2 (September/October 1995): 6.

8. "NATO Resumes Air Strikes against Bosnian Serbs," *Facts on File*, 7 September 1995, 645.

9. Robert Hunter, quoted by Philip Smucker, "Can NATO Cope with Challenge in Bosnia?" *Pittsburgh Post-Gazette*, 25 November 1995, A4.

10. Philip Pullella, "Italy's 'No' to Stealths Strains Ties with Allies," *The Reuter European Community Report*, 4 September 1995.

11. Boris Yeltsin, quoted by Tyler Marshall in "Balkans Campaign Is Risky," *The Gazette* (Montreal), 8 September 1995, A1.

12. Gen Charles G. Boyd, "Making Peace with The Guilty: The Truth About Bosnia," *Foreign Affairs* 75 (September/October 1995): 37-38. Noted British military analyst Lawrence Freedman argued that airpower could punish and deny enemy military capability, but could not control enemy decision making. See Lawrence Freedman, "Bosnia: Does Peace Support Make Any Sense?" *NATO Review* 6 (November 1995): 22.

13. "Operation Deny Flight."

14. "NATO Resumes Air Strikes against Bosnian Serbs."

15. Lt Gen Michael Ryan, "NATO Air Operations in Bosnia-Herzegovina, 'Deliberate Force,' 29 August-14 September 1995," PowerPoint slide presentation, 1996 Corona Conference, USAF HRA, Maxwell AFB, Ala., Balkan Air Campaign Study (hereinafter referred to as BACS) files H2 NPL-16.

16. Lt Col Christopher Campbell, interviewed by author, 29 March 1996. Colonel Campbell was a member of the USAF-sponsored BACS that evaluated the role of airpower in the Balkan crisis of the early 1990s and confirmed General Ryan's two overriding objectives with many of the participants he interviewed in conjunction with BACS.

17. Rick Atkinson, "The Anatomy of NATO's Decision to Bomb Bosnia: Paving Way to Peace Talks; A Milestone in Post-Cold War Military Action," *International Herald Tribune*, 17 November 1995. Atkinson's facts were confirmed by Colonel Campbell interview, 29 March 1996.

18. Tim Ripley, "Reasons for Being," *Flight International*, 24 January 1996.

19. Daniel F. Harrington, USAFE/HO, notes on briefing by Col Jim Turner, 31 OG/CC, "Deliberate Force Lessons Learned: The Objective Wing in Combat," Ramstein AB, Germany, 5 October 1995, USAF HRA, Maxwell AFB, Ala., BACS files G1 AVI-60.

20. Smucker, A4.

21. Ripley.

22. Lt Col Bernd Jansen, German air force, AFSOUTH Air Branch action officer, Sarajevo, interviewed by BACS team member Colonel Campbell, 9 February 1996. Jansen's point is also made by Col Steve Teske, CAOC Director of Plans (C-5) from May-November 1995, interview with Colonel Campbell, 14 February 1996. See Lt Col Chris Campbell, trip report—Balkan Air Campaign Study Research Trip, 26 February 1996. Entire transcript at USAF HRA, Maxwell AFB, Ala., BACS files H4a MISC-22.

23. Bickers.

24. Andrea Spinelli, "Luftwaffe Enters Bosnia Zone," *Flight International*, 13 September 1995.

25. Robert Holzer, "NATO Forces Are Stronger Than in Persian Gulf War," *Defense News*, 10 September 1995, 1.

26. "Operation Deliberate Force."

27. Ripley.

28. Group Capt Andrew Sweetman, "Close Air Support over Bosnia-Herzegovina," *The RUSI Journal* 139 (August 1994): 36.

29. Holzer.

30. "Operation Deny Flight."

31. "Zepa Safe Area Falls to Bosnian Serbs; Western Allies Threaten Air Strikes," *Facts on File* 55 (27 July 1995): 529.
32. "USA Cautious as NATO Boosts Air Order of Battle for Bosnia," *Jane's Defence Weekly* 21 (19 February 1994): 17.
33. "Statement by the Spokesman for UN Secretary General Boutros-Ghali," *Foreign Policy Bulletin* 6, no. 2 (September/October 1995): 5.
34. "Key Personnel—Combined Air Operations Center (as of 30 August 1995)," organizational charts found in USAF HRA, Maxwell AFB, Ala., BACS files B1b(2)-1, 21-46.
35. Capt Ken Calise (US Navy), quoted by Tim Ripley, "NATO's Air Command—Backing Up the Blue Helmets," *International Defense Review* 28 (1 November 1995): 61. Captain Calise served as the CAOC deputy director of plans during Deny Flight and Deliberate Force.
36. Col Gene Renuart, USAFE/ADO, paraphrased in notes by Daniel F. Harrington, USAFE/HO, during briefing by Col Turner, "Deliberate Force Lessons Learned," USAF HRA, Maxwell AFB, Ala., BACS files G1 AVI-60.
37. Maj Mike Holmes, EUCOM/J3, interviewed by BACS team members Lt Col Brad Davis and Maj Chris Orndorff, 16 February 1996, BACS trip report dated 10-24 February 1996. Entire transcript at USAF HRA, Maxwell AFB, Ala., BACS files H4a EUCOM-16.
38. "Early NATO Lesson: Smooth Political Links," *Aviation Week & Space Technology* 143, no. 12 (18 September 1995): 23.
39. Ryan.
40. French prime minister Alain Juppe, television interview on "Sept sur Sept," 28 May 1995 as cited in *Foreign Policy Bulletin* 6, no. 1 (July/August 1995): 14.
41. Joris Voorhoeve, "Protecting the Peacekeepers the Day Srebrenica Fell," letter to the editor, *The Washington Post*, 20 November 1995, A20.
42. Joris Janssen Lok, "The Netherlands: Learning the Lessons of Srebrenica," *Jane's Defence Weekly* 25 (31 January 1996).
43. Maj Marc Anthony, Belgian air force, interviewed by BACS team member Colonel Campbell, 13 February 1996. During Deliberate Force, Major Anthony served in the CAOC C-5 Directorate, Plans and Policy cell. Notes taken by Colonel Campbell, trip report—Balkan Air Campaign Study Research Trip, 26 February 1996, USAF HRA, Maxwell AFB, Ala., BACS files H4a MISC-15.
44. Maj Mike Holmes, EUCOM/J3, interviewed by BACS team members Lt Col Brad Davis and Maj Chris Orndorff, 16 February 1996. BACS trip report: 10-24 February 1996, USAF HRA, Maxwell AFB, Ala., BACS files H4a EUCOM-16.
45. Wing Comdr Andy Batchelor (RAF), interviewed by BACS team members Colonel Davis and Major Orndorff, 14 February 1996. BACS trip report: 10-24 February 1996, USAF HRA, Maxwell AFB, Ala., BACS files H4a MISC-18.
46. "Early NATO Lesson: Smooth Political Links," 23.
47. Rick Atkinson, "Alliance's Credibility and Unity at Stake," *International Herald Tribune*, 20 November 1995.
48. Campbell interview, 29 March 1996. Aside from his work on BACS, Colonel Campbell served as the senior US military advisor to UNPROFOR in Zagreb, Croatia, in 1993.

Chapter 5

Conclusions

Coalition partners need to be involved in more training with us—they will be with us in contingencies and when we fight. They need to be with us in training, including the JFACC course.

—Maj Gen Carl Franklin
Commander, JTF/SWA
“JFACC Smart Book”

The US National Security Strategy clearly identifies the importance of multilateral efforts for effective diplomacy. US military forces play an important role in policy implementation and must therefore prepare to operate within a multinational military force. Commanders of coalition air forces must combine units with various capabilities and objectives into a cohesive fighting organization—some of these challenges are unique to the airpower environment.

A comparison of the lessons from each of these cases reveals aspects common to all coalition air efforts studied. On the other hand, some cases provide lessons for the coalition that are unique to that situation. This chapter summarizes the lessons and compares the problems that air commanders experienced in the three conflicts. By classifying the problems into broader categories, this thesis seeks to help institutions who train future air component commanders. The final part of the chapter proposes several policy recommendations for these institutions to improve the quality of training.

Comparison of Cases

This study has analyzed three airpower coalitions, based on the fundamental premise that commanders try to maximize the coalition-unique benefits while minimizing the coalition-unique problems. On the military level, the coalition benefits studied were the airpower capabilities provided by each partner. The coalition problems centered primarily around a divergence of objectives, either political or (in these cases) airpower, which detracted from unity of effort. Twelve important lessons for air commanders that were derived from the cases are summarized in figure 3.

In keeping with the framework established for the overall paper, each of these lessons will now be classified as differences in either *capability* or *will* among coalition members that affected the overall “coalition factor.” Here, the

	KOREA	GULF	BALKANS
Lessons	(1) coalition airpower responded early	(1) cultural awareness builds trust	(1) NATO and UN objectives differed
	(2) operational-level liaisons important	(2) modern C ² network important	(2) perceptions of leader matter
	(3) integrating coalition wings: ideal plan	(3) share unique airpower capability	(3) non-US airpower capabilities improve
	(4) language barriers between airmen	(4) intelligence sharing perceptions	(4) intelligence sharing restraints

Figure 3. Summary of Lessons

coalition factor is defined as the difference between the effectiveness of a coalition and the effectiveness of a comparably sized and equipped unitary actor. The lessons have been condensed into general considerations that affect the coalition's capability, will, or both.

Figure 4 depicts the two facets of warfare that are coalition-unique. First, the additional capability offered by coalition airpower contribution generally enhances the coalition factor. Three considerations seem to affect primarily airpower capability: (1) responsiveness, (2) training, doctrine, and equipment, and (3) language. Second, the diverse wills of each coalition partner can detract from overall unity of effort. In the airpower coalitions examined, two factors threatened to degrade overall will: trust and the perception of leaders. Additionally, several coalition considerations affect both capability and will; these "dual considerations" (liaisons; command, control, and communications; and intelligence sharing) are depicted in the center of figure 4. The synopsis

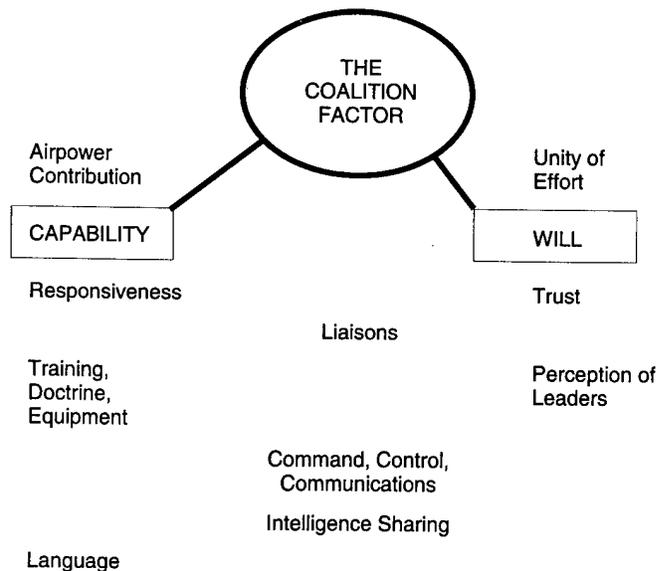


Figure 4. Coalition Considerations

below reviews how commanders dealt with the eight coalition considerations listed here.

Responsiveness

In Korea, Gen George Stratemeyer quickly learned the value of coalition air forces that were stationed in his theater. The Royal Australian Air Force and Royal Navy airpower began combat just days after the North Korean invasion before many American reinforcements arrived from the US. In the Gulf War, General Horner did not employ offensive coalition airpower at the outset of Iraqi aggression because he realized that even modern Western air forces took several weeks to bed down and establish a credible force. The real difference in responsiveness is not between air forces but between air and surface forces. For both deployment and combat operations, commanders should continually assess friendly airpower in their area of responsibility.

Trust

In the Gulf War, the French defense minister intentionally sent his air force squadrons to different bases from those where US and RAF units were stationed, even though the Americans reserved space for the French at Dhahran.¹ Combined with French desires for an autonomous command structure and the initial desire that the French air force only support French troops, perceptions about lack of trust between allies could have arisen. The geographic separation of air forces complicated communications and logistics, but General Horner's relations with the French air force commander reduced any effects of mistrust on coalition airpower operations.

Liaisons

Liaison officers affected both the will and capability of coalition partners. In Korea, Australia's lack of liaison officers in virtually all UN staffs effectively severed their tactical activities from the policy makers in Canberra, which hurt their overall understanding of theater operations. In the Gulf, liaison officers helped the capability of culturally different air forces, if only as human communications links. In the Balkan Air Campaign, liaisons smoothed understandings not only in the CAOC but between the two major actors in the conflict: NATO and the UN.

Training, Doctrine, and Equipment

In each conflict, a member's unique weapon systems bolstered the overall "coalition factor." Asset sharing and integration had synergistic benefits in both the airpower and the political realms. Well-equipped air forces should anticipate a diversion of assets to assist coalition partners. This consideration is particularly important for US air forces, whose SEAD, stealth, and PGM capabilities can enable coalition partners to exploit a US-led effort to achieve air superiority, for example. Likewise, coalition partners may need PGM

capability to participate in air operations that have collateral damage restrictions. Just as General Horner allowed only F-117s to strike targets in Baghdad, so too were non-PGM-capable aircraft (regardless of country) prohibited from attacking many targets in the Balkan Air Campaign.

Perception of Leaders

Though this factor has few aspects unique to airpower, the cases examined showed that coalitions respected mostly US air commanders. General Horner's relationship with his Royal Saudi Air Force (RSAF) counterparts (who were often royal family members as well) boded well for broader US-Saudi relationships. Some NATO officers in the Balkan Air Campaign questioned the leadership capabilities of other CAOC officers but not the ability of General Ryan, which they characterized as quite strong.

Command, Control, and Communications (C³)

The Gulf War tested the technological capability to support a large, centrally controlled air campaign with decentralized execution. RSAF access to this system helped them "get on board" and more readily accept the US-led airpower effort. Conversely, though such a system may improve the overall coalition airpower capability, some NATO allies in the Balkan Air Campaign reluctantly accepted the reality that "he who's ready to control . . . will command."

Intelligence Sharing

In both the Gulf War and the Balkan Air Campaign, coalition suspicions about partners' reluctance to share intelligence threatened to disrupt the unity of effort. On the capability side, intelligence and BDA are particularly important for airpower. One theorist proposes that "in essence, air power is targeting, targeting is intelligence, and intelligence is analyzing the effects of air operations."²

Language

Commanders should question the assumption that "airmen all speak English." In Korea, the USAF program to train and fly combat with the ROKAF suffered greatly from language problems. English had only recently been declared the official language of aviation, and the ROKAF was just being formed. Even in the Gulf War, a US planner suspected that some Arab representatives avoided campaign planning meetings because of language or cultural differences with the largely US planning staff.³ Though air traffic controllers may speak English, the ability to communicate using standard terminology may not be sufficient for operational planners who discuss complex subjects.

Stepping back from the general kinds of airpower lessons of the cases examined, an overview of airpower's role in each conflict may provide

additional insight. The following table outlines contextual elements that may have influenced the coalition air effort and provides a selection of important airpower lessons. Notably absent from the table are the coalition's political objectives, airpower objectives, airpower capabilities, and the command and control arrangement—all of which are discussed previously. Some entries in the table have been simplified to facilitate comparison among the cases.⁴

	KOREA	GULF	BALKANS
Type of Conflict	MRC	MRC	Peace Operations
UN Role for Airpower	UN-auspices	UN-sanctioned	UN-requested, then sanctioned
Multinational Structure of Air Forces	Coalition	Coalition	Alliance
Number of Air Forces	5	10	8
Conflict Duration	3 Years	6 Weeks	3 Years
US Airpower Effort	90%	85%	65%
Airpower's Proportional Military Contribution	Medium	High	Very High

Figure 5. Summary of Contextual Elements Affecting Coalitions

Type of Conflict

The nature of the conflict and the level of interest for coalition members affects the agreement upon common objectives. Theater air commanders often recommend ROE for NCA approval. When coalition interests diverge, commanders should anticipate a slow process for agreement upon ROE. In the Gulf, even small differences in emphasis between British and US political guidance delayed ROE approval, which impacted air operations.

UN Role

One basic reason policy makers prefer to build a coalition is to enhance the perception of legitimacy. Many countries allied against a single enemy may find it easier to justify a moral, if not a legal, basis for the use of force. Although the US essentially led all the airpower cases examined, the UN played a distinct role in each. Commanders need to keep abreast of pending UN resolutions, particularly those that affect airpower. In the Balkans, the UNSCR that called for "close coordination" between the UN and NATO eventually led to the militarily inefficient "dual key" arrangement for air strikes. Theater commanders may be unable to affect such negotiations directly, but communication with their political advisors (POLAD) and judge advocate generals (JAG) can avert barriers to setting congruent political and military objectives.

Multinational Structure

Long-standing alliances such as NATO and the US-Korean Combined Forces Command (CFC) considerably reduce interoperability problems and disagreement upon objectives. For unanticipated coalition partners, air commanders may need flexible planning tools for force integration. Concepts such as General Ryan's "cookie-cutter" ATMs, though designed for a different reason, offer a model for simple, preplanned options that can incorporate coalition air forces on short notice. Commanders should not forget that war is fought for a political object—air operations that involve multinational participation at the expense of military efficiency may be justifiable to solidify the alliance itself, a political object with implications beyond simply the local conflict.

Number of Air Forces

Theoretically, a large coalition increases both the inputs to the "coalition factor" and the required coordination of such assets. When possible, establishing subgroups within the overall coalition may reduce coordination problems and ensure better workload distribution. The RSAF planning efforts for four other GCC countries certainly eased the problem of force integration and achievement of congruent objectives.

Conflict Duration

Particularly in the culturally diverse Gulf coalition, political leaders worried about coalition unity in a drawn-out conflict. The overall airpower strategy must compare anticipated conflict duration with the time needed to achieve military objectives. In a long conflict like Korea, the support for escalatory air strikes against hydroelectric facilities incurred some British criticism. In the politically charged Deliberate Force Campaign, commanders assessed, almost on a sortie-by-sortie basis, the overall military effectiveness against the dynamic political situation.

US Airpower Effort

Commanders should prepare for the possibility that the United States contributes only a small airpower contingent to support an ally. The United States may well have a smaller "voice" in such an arrangement, though unique US capabilities could prove invaluable for the air forces we support.

Airpower's Relative Military Contribution

Some statesmen view airpower as the military instrument of choice in many situations, particularly when viewed as a low-risk option that can apply measured force. For air commanders, capabilities such as deep precision strike can influence political objectives faster and more directly than other military instruments. The effect of airpower on coalition interests follows a corresponding path.

Policy Recommendations

The following section examines US policies that improve our ability to employ airpower within a coalition. Specifically, the section describes doctrinal issues, recent multinational training efforts, and proposals to improve the quality of multinational training for JFACCs and their staffs.

The emphasis on joint operations following the Department of Defense Reorganization Act of 1986 has generated considerable efforts towards joint doctrine development, but the doctrine sometimes addresses coalition considerations only peripherally. The prime doctrinal source for coalition operations is found in chapter six of Joint Pub 3-0, *Doctrine for Joint Operations*. This chapter provides insightful guidance about multinational operations that applies to all theater commanders. For air commanders, however, the corresponding joint doctrine, Joint Pub 3-56.1, *Command and Control for Joint Air Operations*, mentions multinational operations only in passing. The JFACC organization section does not discuss the role of coalition partners on the JFACC staff; recent CAOC experience in the Balkan Air Campaign offers an allied command arrangement that could be useful to incorporate into doctrine. Conversely, the training material used to instruct numbered air force campaign planners offers several considerations for multinational operations, including the assignment of coalition liaisons, an analysis of allied centers of gravity, and an understanding of allied airpower doctrine.⁵

Even before the Korean War, US airmen participated in multinational programs that improved their ability to work within a coalition. Officer exchange programs in operational, staff and professional military education (PME) billets continue to receive strong emphasis within the United States. Operational-level NATO flying exercises and the USAF-sponsored Red Flag exercise still form the basis for multinational airpower operations. At the staff level, the British military recently stood up their first joint headquarters at Northwood, United Kingdom. To the British, "joint" operations connote more than simply integrated air, land, and sea operations; "joint" includes the employment of multinational forces.⁶

Three recent USAF-led initiatives demonstrate an increased emphasis on multinational air operations. First, planners have tailored Red Flag exercises to accommodate increased coalition participation. Previous regulations stipulated that no more than 30 percent of Red Flag participants could be from coalition countries. In 1995, however, the USAF established a biannual "Coalition Flag," which allows up to 50 percent of the participants to be non-US aircraft.⁷ Second, the USAF has recently begun to include foreign officers in its major operational-level air campaign planning exercise, Blue Flag. Allied involvement began with RAF participation in 1994, followed by observers from Canada, Japan, and Korea.⁸ A related training course that instructs personnel on the US system for operational planning and command and control network, contingency theater automated planning system

(CTAPS), began training non-US personnel within the last two years.⁹ Third, Air University established a formal JFACC training course that began in 1995. The instructors consist of active and retired flag officers with JFACC experience. Because of the diverse background of the instructors, many have led coalition forces within US joint task forces or actual multinational operations. Air University expanded the JFACC course to include the participation of NATO officers in June 1996.¹⁰

Aside from the general lessons from this study that could be incorporated in JFACC course materials and joint doctrine, three additional recommendations may enhance JFACC training for multinational operations. First, air component commander staffs should look at how nations, especially those within their area of responsibility, interpret the lessons of recent coalition air operations. Besides the lessons themselves, the policy decisions that incorporate the lessons may have long-term effects. For example, RAAF experience in the Korean War affected their doctrine and equipment for the next several decades. The young RAAF crews who fought in the war became commanders in the 1960s and 1970s and shifted their procurement and doctrine decisions away from the RAF towards the USAF, largely because of close ties with the USAF in Korea.¹¹ Understanding the capabilities and long-term security strategies of potential partners may prove invaluable during crises, when coalition planning time is at a premium.

Second, commanders need a cultural and political awareness of the societies that could affect their operations. Long-term training at the PME level could address international relations theory in general and alliance theory in particular. General PME training that addresses cultural beliefs would best be supplemented in-theater to focus on distinctions among regional powers. US global commitments require a frequent personnel rotation policy within combatant commands, unlike the militaries of many smaller countries whose limited force-projection capability focuses on territorial defense. To strengthen ties between military commanders, social interaction in the context of planning conferences or exercises offers long-term benefits for a small cost. General Horner's interactions with the RSAF commander in the years before the Gulf War paid off handsomely for US-Saudi cooperative efforts during that conflict.

Third, commanders should consider carefully the establishment of a liaison officer system in time of crisis. With no additional cost, properly chosen personnel with country experience, operational expertise, and perhaps even foreign language abilities can add significant value to all coalition members. If staff augmentation is authorized, commanders should work with the personnel system to select liaison officers who are more than just operational experts.

Two overall points concerning the impact of coalitions on the air campaigns are examined in this study. First, US air assets could have fulfilled the required airpower tasks without the help of coalition air forces. For none of these crises did the NCA direct full mobilization of available force. In some instances, the coalition provided unique capabilities which the United States

lacked, but the United States had alternative means to achieve the same objective. Nevertheless, US airpower acting alone would have taken longer to achieve the same objective. Second, estimates on the strength of the coalition cohesion are difficult to accurately assess. With respect to airpower, none of the coalition partners withdrew their air forces during the crises studied. The disagreements that this study presented simply document areas of divergence among coalition members—that such a small number of disagreements surfaced is testimony to the unity of effort achieved by the leaders involved. Today, military leaders recognize the likelihood that future US conflicts will be fought alongside coalition partners. The challenge, then, is to prepare beforehand for such a contingency.

Notes

1. David Yost, "France and the Persian Gulf War: Political-Military Lessons Learned" (draft), Los Alamos National Laboratory, 1992, 16.

2. Col Philip S. Meilinger, *10 Propositions Regarding Air Power* (Air Force History and Museums Program, 1995), 20.

3. Col Samuel Baptiste, interviewed by author, 28 February 1996, Tyndall AFB, Fla., tape recording. During the Gulf War, Colonel Baptiste was the chief of Ninth Air Force Weapons and Tactics, the numbered air force component of USCENTAF.

4. First, the "Type of Conflict" ascribes current US nomenclature to each operation. Korea and the Persian Gulf War are categorized as major regional contingencies. The Balkan Air Campaign fits the doctrinal category of peace support operations, which is part of a larger "operations other than war" activities. See *US National Military Strategy of the United States of America 1995, A Strategy of Flexible and Selective Engagement* (Washington, D.C.: GPO, 1995); and Joint Publication 3-07, *Joint Doctrine for Military Operations Other Than War*. Second, the "UN Role for Airpower" reflects the general language of relevant UNSCRs. Third, the "Multinational Structure of Air Forces" considers the Balkan arrangement an alliance. France is a member of NATO, but the French air force is not integrated into NATO's military command structure. However, the French air force's experience with many NATO procedures in the Gulf War and the French leanings towards full NATO membership permit one to reasonably categorize their Balkan role as an alliance member. Fourth, the numbers in the table have been rounded off to ease comparison—more precise figures are listed in the relevant chapters. The "US Airpower Effort" lists approximate combat sorties flown, which certainly does not account for the variable effectiveness of different sorties. Finally, "Airpower's Relative Military Contribution" reflects the author's subjective determination—in Korea, UN states sent large numbers of ground forces over the course of the war, but airpower played an important role at times, especially in ground support missions. In the Persian Gulf, the coalition committed large numbers of ground forces, but they began combat operations only after a month of airpower missions had attrited large numbers of enemy forces; the ground combat operations lasted only four days. In the Balkans, NATO ground forces only served as part of the multinational Rapid Reaction Force.

5. "Joint Doctrine Air Campaign Course, Air Campaign Planning Handbook," course pamphlet, JDACC Course, Maxwell AFB, Ala., April 1995.

6. Air Marshal I. D. Macfadyen, telephone interview by author, 16 May 1996. Air Marshal Macfadyen is the director, General Saudi Armed Forces Project, United Kingdom Ministry of Defence. The joint headquarters at Northwood, UK, began operations in April 1996.

7. Lt Col Muddy Waters, Red Flag director of Operations, telephone interview by author, 21 February 1996.

8. "Blue Flag Final Report 94-2," unpublished after-action report, Blue Flag Battlefield Training School, Hurlburt Field, Fla.

9. Lt Col Thomas Gordon, telephone interview by author, 5 April 1996. Colonel Gordon is the director of the Joint Air Operations Staff Course (JAOSC), Hurlburt Field, Fla. JAOSC is one of several courses directed by the USAF Air Ground Operations School at Hurlburt.

10. Discussion with Col Dave Stimpson, JFACC Course director, Maxwell AFB, Ala., 28 March 1996.

11. G. B. Lyman, *The Significance of Australian Air Operations in Korea* (Fairbairn, Australia: Air Power Studies Centre, 1992).

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