Kosovo and
Theater Air Mobility

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O THE SURPRISE of many, airpower played the deciding role in a major theater war. In Operation Allied Force, airpower forced Slobodan Milosevic to the bargaining table and convinced him to withdraw thousands of troops, police, and paramilitaries while letting an international peacekeeping force enter Kosovo. Remarkably, this was accomplished without the loss of a single NATO airman in combat, despite 78 days in which NATO aircrews faced a dangerous, well-equipped enemy. In this endeavor, the US Air Force contributed half of the total air assets and an even greater share of the air refueling, reconnaissance, and precision-weapon-capable aircraft. This successful display of airpower employed a percentage of today’s smaller Air Force roughly equivalent to that required for Operation Desert Storm.

Air mobility played a crucial role by enabling and sustaining the air war that ultimately forced Milosevic to accede to NATO demands. This was no easy task. Unlike Desert Storm, the United States did not have six months to position its forces. Allied Force demanded a continuous air-mobility reinforcement and sustainment effort until the end of hostilities. From the beginning of the air war on 24 March 1999, the US Air Force contribution grew from three to 10 air expeditionary wings. Even while it executed this tremendous force buildup, the air-mobility team provided aid directly to thousands of Kosovar refugees, and it deployed a large US Army contingent to Albania.

Despite the challenges, the Kosovo air-mobility story is a happy one. The integrated effort between theater mobility forces and Air Mobility Command (AMC) produced one of
the smoothest air-mobility operations in Air Force history. AMC-tasked mobility forces bore the majority of the burden, expending nearly two-thirds of the total airlift effort to move US-based fighters, bombers, and support assets to the fight as well as providing munitions resupply and other sustainment. Likewise, AMC tankers delivered continental-US-based fighters to the theater, often while deploying themselves to join the Allied Force tanker fleet.

US Air Forces in Europe (USAFE) was responsible for intratheater air-mobility operations. In organizing and orchestrating theater air-mobility efforts, the command built upon lessons learned in past contingencies and put newly minted Air Force and air-mobility doctrine to the test. While we have much to celebrate, we still have plenty of room for improvement. Leaving the intertheater story for AMC to tell, I will review theater tanker and airlift efforts during the Kosovo contingencies. I also will describe the command and control structures and relationships implemented for theater air-mobility operations and identify some lessons learned along the way. Finally, I propose several steps the Air Force should take as it transitions to a more expeditionary force.

Tanker Operations

The US Air Force provided nearly 90 percent of the NATO tanker force. The total force of 112 active and 63 Reserve-component tankers flew over five thousand sorties to enable nearly 24,000 combat and combat-support sorties. Altogether, they supplied 250 million pounds of fuel and the lifeblood of the air war. Maintainers made the entire tanker effort a success by keeping the KC-135 and KC-10 fleet healthy. While their mission remained largely behind the scenes, the following examples show how tankers were at the heart of the fight. A KC-135 from RAF Mildenhall, United Kingdom, was within 70 miles of two MiG-29s when two F-15Cs shot down the Yugoslav fighters over Bosnian airspace. When an F-117 went down over Serb-bian territory, more than 20 tankers kept a large search-and-rescue package airborne for over six hours until the pilot could be rescued.

While US tankers provided the backbone of the air campaign, finding operating locations for so many KC-135 and KC-10 aircraft was challenging. Between 24 March and 8 June, tanker beddown became a major issue for the theater as the force grew from 55 to 175. Because the ideal airfields reached maximum capacity early in the campaign, USAFE formed 13 site-survey teams to examine 25 airfields for both tanker and fighter operations. Many were former Warsaw Pact or NATO fighter bases that lacked the runway length, ramp space, taxiway width, load-bearing capacity, and refueling infrastructure to sustain tanker operations. While few of these airfields were optimal for tankers, USAFE added seven suitable locations to the five in use when the air war began. The smooth, uneventful flow of tankers to locations ranging from the international airport at Budapest, Hungary, to a French air base at Mont-de-Marsan set the standard for future expeditionary deployments.

There are several reasons why the US tanker force grew so large. As it became clear that the campaign would extend over several weeks or months, NATO initiated a major reinforcement. Each additional aircraft required for an ever-expanding war drove tanker numbers higher. Limitations caused by tanker basing decreased off-load capability and further increased the number of tankers required. The distance of some tanker locations from refueling areas meant less fuel available for off-load, since transit times of up to three hours were required in each direction. Short runways at several locations reduced available fuel off-loads even more by decreasing tanker takeoff fuel. With combat missions launched from as far away as the United Kingdom, fighter basing and transit times similarly increased fuel requirements and total tankers needed. Finally, political constraints impacted tanker requirements by closing the airspace of some countries to air refueling and dictating less direct, less fuel-
efficient routing for strike packages. While each of these factors increased the size of the tanker force, the emphasis of combat operations on mission effectiveness over efficiency also required a larger force than might otherwise have seemed necessary.

Unlike airlift, which must maximize efficiency because requirements often exceed available resources, combat-support air refueling places a premium on effectiveness. The Allied Force tanker plan had built-in redundancy, which ultimately enabled the air campaign to achieve its desired effects. For example, fully fueled KC-10s manned a reliability orbit for the duration of the air war with few or no scheduled receivers. While inefficient, these reliability tankers repeatedly saved the day—salvaging refuelings after scheduled tankers broke, recovering fighters that burned extra fuel to engage enemy aircraft, and providing unplanned fuel to permit in-flight target changes. Similarly, ground-alert tankers, while not efficient, saved countless missions as well, especially when bad weather demanded increased flexibility in refueling times and off-loads. Without the reliability KC-10s and ground-alert KC-135s, rescue ef-
forts for two US pilots downed over Serbia would have been delayed by hours or even days, if not lost completely.

Finally, the tanker force was sized to provide an 80 percent maintenance-reliability rate, closely reflecting an actual KC-135 mission-capable rate of 78 percent and a KC-10 rate of 88 percent over the course of the air war. Unfortunately, the tanker force was not always fully utilized. During a campaign with only 21 days of favorable weather, nearly 20 percent of all strike missions, along with their supporting tankers, were cancelled due to poor weather. NATO targeting procedures caused some strikes to be cancelled on the day of the scheduled missions. In addition, tankers were sometimes airborne when receiver packages were cancelled for bad weather or target cancellation, and they often had to dump fuel to land.

In the final analysis, tanker requirements had to be based upon the most promising conditions; otherwise, they would have come up short on favorable days. Undoubtedly, the Allied Force tanker plan could have been better. In the heat of a daily expanding air war, however, the search for greater efficiency took a backseat to the paramount need for mission effectiveness. Given the nature of the air campaign and the many obstacles tankers had to overcome, their accomplishments were remarkable.

Airlift and Air-Mobility Support

If tankers provided the backbone of the air war, airlift put its elements into place and sustained it until the end. Not only did the air-mobility team increase theater forces from three to 10 expeditionary wings in 78 days, it had to conduct a major humanitarian-relief operation and deploy the large US Army Apache helicopter contingent at the same time. Just as the star of the air war was the B-2,
the C-17 stole the air-mobility show. Flying up to 22 daily sorties with only 12 airframes under USAF's tactical control (TACON), the C-17 exceeded all expectations and supplied departure-reliability rates above peacetime averages. The much older C-130 force of USAFE-assigned and attached assets provided equally impressive rates. Like the tanker contingent, the C-130 team reflected the total force with a mix of active and Reserve-component crews and 31 aircraft at the peak of operations. Airlift crews flew demanding missions in airspace heavily crowded by combat and support aircraft, and as a testament to their airmanship and professionalism, they did so without major incident.

Prior to the air campaign, USAF pre-positioned 64 fighters from air bases in Lakenheath, England, and Spangdahlem, Germany, to Aviano and Cervia, Italy, and these were joined by 18 A-10s deploying to Gioia del Colle, Italy, early in the war. Flying 78 missions, C-130s from Ramstein Air Base, Germany, moved 734 passengers and 630 short tons of cargo to support this fighter movement. The fighter-deployment bill could have been much higher, but it was reduced by an important lesson USAF learned from the autumn 1998 dry run for Kosovo. Rather than deploying with the standard 30-day War Readiness Spares Kit, USAF units brought only the equipment and supplies needed for an initial five to seven days. While the deployment could have been even lighter and leaner, this departure from the traditional way of thinking set the standard for the Expeditionary Air Force.

When the initial phase of the air campaign plan did not meet NATO's desired objectives in Kosovo, AMC and theater air-mobility forces aided the reinforcement of US Air Force assets already in place. At the same time, US Army Europe (USAREUR) was tasked to deploy 24 Apache helicopters to Tirana-Rinas Airport in Albania. Designated Task Force Hawk, this force required 468 C-17 and 269 C-130 missions to move a support and force-protection package that included 36 M1 Abrams tanks and 58 M2 Bradley fighting vehicles. At Tirana, these aircraft were unloaded by an AMC Tanker Airlift Control Element (TALCE) under USAF TACON. Together, the airlift and TALCE team delivered 7,745 passengers and more than 22,000 short tons of cargo. The Task Force Hawk deployment proceeded very smoothly, and USAREUR did a good job marshaling its forces and avoiding takeoff delays. Senior Army leaders worked very hard with USAF to ensure that cargo was airworthy and ready to load on time. Additionally, the Army and the Air Force worked the Intransit Visibility (ITV) equation very hard, resulting in the best ITV the US military has ever had on a major deployment.

As the air war continued and as it expanded with additional Army, Navy, Marine, and Air Force assets, sustainment requirements grew as well. The C-130 became the sustainment workhorse, flying nearly three hundred channel missions to resupply US forces over the course of the air campaign. At their peak, weekly scheduled channels reached 69 missions, and USAF relied heavily upon its Guard and Reserve augmentation to support them. Operational-support aircraft also filled an important niche by delivering mission-essential parts and transporting diplomatic officials, senior commanders, site-survey teams, and other key personnel around the theater. USAF's C-9, C-20, and C-21 aircraft flew 44 channels and 553 other missions for the total mobility effort.

Even while the air-mobility team was busy deploying and sustaining forces for the air war, it confronted a major humanitarian crisis as Milosevic's forces expelled over seven hundred thousand ethnic Albanians from Kosovo. Joint Task Force Shining Hope was formed to relieve these Kosovar refugees, and its center of operations was Tirana. Tirana-Rinas became a busy airfield, with activity increasing from five flights per day before the Kosovo crisis to over 60 flights per day supporting refugee relief plus the Apache movement. Close coordination between the Director of Mobility Forces (DIRMOBFOR) and USAF's 86th Contingency Response Group
(CRG) synchronized international relief operations with the Task Force Hawk deployment. With superb support from the CRG on-site at Tirana, USAFE C-130s delivered over twenty-six hundred short tons of relief for the refugees. The air-mobility team rapidly delivered much needed food, medicine, and shelter, and saved countless lives before supplies could be transported by surface. When Milosevic finally capitulated, these refugees flocked back to their homeland behind the Kosovo Force (KFOR), the international peacekeeping force for Kosovo. Task Force Falcon, the US Army contribution to KFOR, required 253 C-17 missions to move over twenty-five hundred passengers and nearly 12,000 short tons of cargo. This deployment was in many ways a model of airlift efficiency and effectiveness, as C-17s first moved troops from Ramstein to Skopje, Macedonia; flew to Tirana to collect soldiers from Task Force Hawk; and either returned them to Ramstein or delivered them to Skopje as part of KFOR. Many missions required air refueling, and tankers that had supported the air war transitioned to a non-combat role. Together, tankers and airlifters helped bring the air war over Serbia to a close and ushered in the final peacekeeping phase.

Command and Control: Airlift and Mobility Support

In organizing and orchestrating theater mobility forces, USAFE made a concerted effort to implement the body of Air Force doctrine that has been developed in recent months and years. Air-mobility forces are a key component of airpower, and Air Force doctrine provides for an Air Mobility Division (AMD) to be formed within an Air Operations Center (AOC), along with the Strategy, Combat Plans, and Combat Operations Divisions (fig. 1). However, Allied Force fell onto an existing AOC structure. The Combined Air Operations Center (CAOC) at Vicenza, Italy, was formed in 1993 for Balkan operations, and it evolved over the years as the
focus of operations shifted from a no-fly zone to peacekeeping in Bosnia-Herzegovina. At the outset of the Kosovo crisis, the CAOC lacked an AMD as well as a Strategy Division. Without an AMD, the CAOC confined airlift functions to a Regional Air Movement Coordination Center (RAMCC) outside the AOC structure. The RAMCC had no planning role and served mainly to control slot times into Bosnian airfields for the international Stabilization Force. It also ensured that all airlift and commercial traffic into Bosnia was deconflicted from combat activity on the daily Air Tasking Order (ATO). When the Kosovo crisis flared, the RAMCC was reinvigorated with additional personnel and planning tools to better interface air mobility with combat operations. Although the CAOC never fully subscribed to an AMD being part of the CAOC, the RAMCC provided a critical link to Vicenza for the DIRMOBFOR and served in practice as a forward branch of his AMD.

Col Rod Bishop, the DIRMOBFOR, chose Ramstein Air Base instead of Vicenza as the focal point for Kosovo air mobility. He established an AMD at Ramstein to direct US air-mobility operations and grafted it upon the USAFE Air Mobility Operations Control Center (AMOCC). As the nerve center for USAFE air mobility, the AMOCC had emerged from lessons learned during Operation Joint Endeavor, the deployment of an international peacekeeping force to Bosnia-Herzegovina. Characterized by ad hoc mobility command and control structures, unclear relationships between air mobility and the joint theater-command structure, and poor connectivity between intratheater and intertheater air mobility, Joint Endeavor provides an excellent benchmark to contrast how effectively Kosovo air-mobility operations were conducted.

The AMOCC provided the DIRMOBFOR with important capabilities lacking during Joint Endeavor. Most importantly, the AMOCC served as a single command and control layer for theater air-mobility operations, linked to intertheater air mobility with the proper command and control systems and expertise. Sized for peacetime mobility planning and execution functions, the AMOCC received augmentation from the 621st Air Mobility Operations Group, a cadre of deployable AMC air-mobility planners. Together with the DIRMOBFOR's staff from the 437th Airlift Wing at Charleston AFB, South Carolina, AMC and USAFE air-mobility experts fused into a single, synergistic team, ensuring that intratheater and intertheater mobility efforts were well integrated. Additionally, Colonel Bishop had already carefully cultivated relationships with theater mobility users as DIRMOBFOR for other recent operations, and he was the recognized focus of theater air mobility.

The improved command and control structure and strong working relationship that developed between AMC and USAFE mobility forces made command relationships much easier to sort out during Kosovo than for previous operations. Transferring TACON of C-17s and TALCEs to USAFE would have been unwise during Operation Joint Endeavor, when the theater lacked the proper command and control structure and expertise to exercise it. The formation of the AMOCC and the stand-up of an AMD populated with AMC mobility experts changed the equation. In our mature theater, with the right tools and resources in place to manage the operation, transfer of TACON became the smartest way to do business. As a result, AMC transferred TACON of 12 C-17s during the deployment of both Task Force Hawk and Task Force Falcon to the USAFE commander.

The DIRMOBFOR exercised TACON through the AMD, and TACON provided the AMD greater flexibility by reducing the required coordination for each mission exponentially. As a result, the AMD was able to be much more responsive to customer demands. Likewise, USAFE TACON of the AMC TALCE at Tirana for Task Force Hawk and at Skopje for Task Force Falcon also increased mobility flexibility and responsiveness. With TACON, the AMD was better able to ensure that the TALCEs had the proper size and composition for the contingencies. In addition, the AMD could also ensure that TALCEs had the
needed support by being in the same time zone and theater. Even when AMC retained TACON over its TALCEs for intertheater mobility support, the TALCEs still worked closely with the AMD, and the AMD provided an invaluable link between the TALCEs and AMC.

More clearly defined air-mobility command relationships and a better command and control structure enabled a highly effective operation that compiled a tremendous record in which all passengers and cargo for the Kosovo operations were delivered on or before their latest scheduled arrival date. While the theater air-mobility system worked very well, the Air Force can take some further steps to make it even more effective. In the future, transfer of TACON over US Air Mobility Command-assigned assets should become routine whenever it makes the most operational sense to do so. However, TACON will not work in every theater; it requires a mature theater with a robust air-mobility system to be effective.

The AMOCC provides a highly developed air-mobility structure in peacetime, and the melding of AMC and theater expertise in an AMD provides a tested and proven command and control mechanism for contingencies. The next step is for the AMOCC and AMD to be incorporated into joint and combined doctrine. Joint doctrine does not provide for an AMOCC even though USAFE and the Pacific Air Forces have established it in their theaters. USAREUR has already incorporated both the AMD and AMOCC in practice by attaching liaison to the AMOCC in peacetime and to the AMD during the Kosovo operations. Joint doctrine must now formalize these structures for the rest of the Army and other services to recognize.

Similarly, NATO doctrine must better integrate air mobility. In the post-cold-war period, NATO has evolved from a forward-deployed force to one with most forces based at home garrison. The lack of a defined threat prevents forward deployment in today's strategic environment. As a result, air mobility will be a crucial element in rapidly reinforcing any NATO member threatened by an outside power. As it transitions to a more mobile alliance, NATO needs to follow the US Air Force's lead and adopt a command and control architecture that fully integrates air mobility with air combat operations. Because the United States presently owns the bulk of NATO's air-mobility assets, this structure will also require command and control tools that are interoperable with US systems. Only then will NATO be able to fully maximize the mobility resources available to the alliance.

Command and Control:
Air Refueling

Allied Force presented some of the most significant challenges ever faced by the tanker community. The Combined Forces Air Component Commander (CFACC) gave the CAOC director responsibility for intratheater tanker operations tasked on the ATO to refuel combat and combat-support aircraft. This was the same arrangement as for Operation Deliberate Forge, the Bosnian peacekeeping operation. Tanker experts were part of integrated teams assigned to the Combat Plans and Operations Divisions. Led by a major with extensive AOC and tactics experience, CAOC tanker planners worked hand in hand with other combat and combat-support planners to build and execute a well-thought-out air-refueling plan.

Nevertheless, these tanker experts faced some major obstacles. The CAOC was not properly manned initially for a rapidly expanding air campaign of uncertain duration, and it was slow in expanding a tanker staff sized for Deliberate Forge. When augmentees did reach Vicenza, many lacked the requisite tanker-planning skills. The team that eventually assembled was highly motivated, but it was largely a pickup team with widely varying levels of training. With its inadequate size and training in the first month of the campaign, the tanker cadre was nearly overwhelmed.

The tanker-planning staff was charged with producing a daily ATO tanker plan, managing the tanker section of the Allied Force Special Instructions, updating the air-refueling
communications plan, and designing refueling airspace for the Airspace Control Order. At the same time, the staff was responsible for sizing the tanker force and staffing additional tanker requirements needed to sustain an expanding operation. This inadequately manned cadre lacked a senior tanker officer to provide them “top cover” as they were inundated by questions on tanker operations from numerous outside agencies. With the air campaign continuing to grow and with concerns about tanker utilization and beddown increasing daily, the CFACC decided that a senior officer was needed to address tanker issues and explain the Allied Force tanker plan to outside agencies.

One month into the air war, a very experienced tanker colonel arrived as the “single voice” of tankers within the CAOC. He quickly became the focal point for justifying and staffing tanker requirements and helping USAFE identify suitable tanker beddown locations. His presence allowed the chief tanker planner time to design a new refueling-airspace architecture for an air campaign that eventually tripled its original size. The redesigned air-refueling airspace also greatly enhanced flying safety for the duration of the air campaign. Together, this team brought greater efficiency to tanker-planning efforts and explained the tanker plan more effectively to outside agencies.

Air Force doctrine needs to distinguish between combat-support air refueling and other tanker roles. Combat-support refueling derives from a different process, requires different command and control systems, and yields a different product than other types of refueling. It derives from the aerospace assessment, planning, and execution process, a cyclical process with no defined finish short of an air campaign’s conclusion. Supervised by the AOC director, combat and combat-support experts within an AOC use the Contingency Theater Automated Planning System as their enabling tool to develop and execute an ATO. In the combat-support role, tankers are force multipliers for combat and other combat-support aircraft. Tankers enable the application of combat airpower in their contribution to the aerospace assessment, planning, and execution process.

By contrast, tankers are an integral part of the joint-movement process when supporting fighter deployments and air bridges for airlift, and when carrying cargo and passengers in an airlift capacity. This linear process has a defined start and finish that originates with a movement requirement and validation, and ends with pickup and delivery. Directed by the DIRMOBFOR, command and control structures such as the AMOCC and AMD are best organized and equipped to plan and execute intratheater air movements in coordination with AMC’s Tanker Airlift Control Center. Air-mobility planners use tools such as the AMC Analysis and Deployment System

A KC-135 refuels a B-2 Spirit. Ironically, as the key enabler to Global Reach—Global Power, air refueling is old (in aviation terms) and comparatively low tech. Yet, it may well be one of our most envied and, because of the expertise and infrastructure, least reproducible capabilities.
and Global Decision Support System to turn validated movement requirements into actual missions. The final product of the joint-movement process is aircraft, personnel, and short tons of cargo delivered rather than the application of combat airpower.

Ultimately, the key to effective air refueling is to match command and control responsibility with the correct process. Tanker planners must also be allocated according to process. During Allied Force, the tanker planners were placed in the Combat Plans and Operations Divisions so they could be integrated into teams with other combat and combat-support planners (fig. 2). This allowed them to actively shape air-refueling requirements from concept to execution; properly size the tanker force; and effectively plan, task, and execute combat-support refueling. At the same time, an Air Refueling Control Team belongs within an AMD to plan and execute tanker missions other than combat support and to assist with tanker deployment and beddown. In the end, AOC manning must remain flexible enough to allow for the flow of some tanker experts between the Combat Plans and Operations Divisions and the AMD as the operational focus shifts from deployment to employment and finally to reconstitution.

Allied Force also demonstrated a need for a senior officer to represent tankers within an AOC, especially when an operation reaches the magnitude of the Kosovo campaign. A senior tanker officer would serve as the principal air-refueling advisor to the AOC director and Joint or Combined Forces Air Component Commander. In this capacity, a senior tanker representative could effectively coordinate beddown and address air-refueling issues with outside agencies. Although AOC tanker planners would continue to work in Combat Plans and Combat Operations, a senior tanker officer would relieve the tanker cadre of these staff responsibilities and allow them to focus their entire effort on preparing an air-campaign tanker plan. Finally, Allied
Force pointed out a need for a larger cadre of properly trained tanker planners prepared to plan and execute any air-refueling role. These experts will require realistic training exercises to further hone and develop their skills. As a key enabler of the Expeditionary Air Force, air refueling must be supervised and planned by well-trained tanker experts.

The Road Ahead

Kosovo was a major expeditionary test for the US Air Force and its air-mobility team. Tankers provided the backbone of the air campaign and the lifeblood of an operation that would have been impossible without air refueling. Tankers also teamed successfully with airlift to form an air bridge deploying US ground forces to Kosovo. Airlift and mobility-support forces compiled a similarly impressive record by reinforcing and sustaining theater combat forces, deploying the Apache contingent to Albania, and providing desperately needed humanitarian relief to Kosovar refugees. While the air-mobility effort was a tremendous success, an operational test of this magnitude provides a unique opportunity to reassess Air Force doctrine.

Although Kosovo validated much of the Air Force’s air-mobility doctrine, we must reassess how doctrine worked and revise it wherever necessary. The AMD and AMOCC concepts proved highly effective in practice; now, they must be incorporated into joint and combined doctrine. NATO especially should consider incorporating these structures as its dependency on mobility grows. These organizations also provided the means to effectively exercise TACON of strategic mobility assets, so that in the future, transfer of TACON to a theater commander should be routine whenever it makes operational sense. In addition, the Air Force must now evaluate the direction of combat-support air refueling and place responsibility with the AOC director as the process owner for combat operations. At the same time, a senior tanker advisor must be formalized in doctrine to make command and control of combat-support tankers even more effective.

As a central enabler of airpower’s victory, air mobility compiled an impressive record of successful accomplishments, but now is not the time to rest on our laurels. Kosovo raised our awareness about steps we can take to be even better prepared tomorrow. Reflection on the Kosovo air-mobility effort today will yield a more expeditionary Air Force tomorrow.

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Untutored courage is useless in the face of educated bullets.

---Gen George S. Patton