Reflections on the

e Balkan Air Wars

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(Overleaf) A 53rd Fighter Squadron F–15C Eagle aircraft returns to base after a mission during Operation Deny Flight, the enforcement of the United Nations-sanctioned no-fly zone over Bosnia and Herzegovina. *(USAF photo.)*

Much insight can be gained by looking back at the Balkan air wars of the 1990s, with a view toward considering how they have affected our use of air power ever since.[1] Those three wars began with the badly-mishandled Operation Deny Flight against the Bosnian Serbs in 1993 and 1994 during the ugliest years of the Yugoslav civil war that had erupted three years before. Viewed in hindsight, it was a feckless and ineffective first attempt by NATO to stop the rampant killing that had been unleashed by the end of Tito's rule and the ensuing resurfacing of all the ethnic hatreds that had simmered in the Balkans ever since the reign of Vlad the Impaler during the Middle Ages.

After Deny Flight came NATO's more successful effort to suppress continued Serbian excesses in Bosnia-Herzegovina. That second endeavor, called Operation Deliberate Force, lasted eleven days in September 1995. In that more determined campaign, led by the air commander for NATO's Allied Forces South (AFSOUTH), U.S. Air Force then-Lt. Gen. Michael Ryan, NATO finally got it right in the alliance's first-ever high-intensity air operation, which also was the largest combat action to have taken place in Europe since the end of World War II.

AIR POWER'S ALL BUT SINGLE-HANDED ACHIEVEMENT IN DESERT STORM WAS A TRULY FIRST-OF-ITS-KIND/ EXPERIENCE—ONE THAT STRUCK MANY AS "THE FIRST TIME IN HISTORY THAT A FIELD ARMY WAS DEFEATED BY AIR POWER"

Finally came the capstone seventy-eight-day Operation Allied Force against Serbian strongman Slobodan Milosevic between late March and early June 1999, in which NATO, under the military leadership of the Supreme Allied Commander for Europe (SACEUR) at the time, U.S. Army Gen. Wesley Clark, began by making all of the same mistakes with regard to restrained targeting and concern over "proportionality" that had rendered Deny Flight such an abject waste of effort and that looked, for way too many weeks, like the start of a replay of Vietnam. Fortunately, once Milosevic's ethnic cleansing surge left NATO with no choice but to approve an expanded bombing campaign, Allied Force ended up being the first successful use of coercive air power on a major scale since Operation Desert Storm against Saddam Hussein's Iraq eight years before. Yet that undertaking, by a defensive military alliance that had lost its main mission when the Soviet Union collapsed less than a decade before and that often was divided nineteen different ways over strategy and goals, was not over until it was over. It nearly ended in failure for NATO.

Viewed in hindsight, one of the main contributions of Allied Force, although no one could have anticipated it at the time, was to spotlight some key aspects of an emerging American way of war that have recurred in every subsequent major use of air power by the United States since the first bomb landed in Afghanistan on the night of October 7, 2001, when the nation's military response to the terrorist attacks of September 11, 2001, first got under way. For that reason alone, it is worth reflecting on those themes from the Balkan air campaigns of the 1990s that have so heavily influenced how the nation has conducted aerial warfare ever since.

The Recent Sweep of American Air Warfare

Looking back over the recent history of American air power employment starting with Operation Desert Storm, when the air component of U.S. Central Command (CENTCOM) played such a key role in driving Iraq's forces out of Kuwait in 1991, most of air power's detractors tended to dismiss that achievement as a one-off anomaly. It was, they said, the clear and open desert environment, or the unusual vulnerability of Iraq's armored formations to precision attack from the air, or any number of other unique circumstances that somehow made the first Gulf War an exception to the general rule that it takes "boots on the ground" in large numbers, and ultimately in head-to-head combat, to defeat well-endowed enemies in high-intensity warfare.

Even to observers with no particular stake in the perennial interservice battles over roles and resources, that viewpoint seemed reasonable enough at a time when air power's all but single-handed achievement in Desert Storm was a truly first-of-its-kind /experience—one that struck many as "the first time in history that a field army was defeated by air power," as the campaign was described shortly afterwards by the Air Force Chief of Staff at the time, Gen. Merrill A. "Tony" McPeak.[2] Yet in the twelve years that followed Desert Storm, the world saw air power prevail time and time again in a succession of four otherwise completely different circumstances of combat, starting with NATO's two major air wars in the Balkans in 1995 and 1999 and followed, in turn, by the major combat phases of Operations Enduring Freedom and Iraqi Freedom in 2001 and 2003.

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The B–2 stealth bomber. Used for the first time in combat during Allied Force after having been in line service since 1993, a USAF B–2 prepares to take on fuel midway across the Atlantic Ocean during one of two preplanned tanker hookups en route to target. The low-observable bomber, operating nonstop from its home base in the United States, was the first allied aircraft to penetrate Serb defenses on opening night.

True enough, in none of those five cases did the air contribution produce the successful outcome all by itself, even though in the two Balkan wars it came very close, in that air power in both instances was the only force element that figured directly in determining the campaign's result. One can definitely say, however, that in each of those five examples, air power was the principal enabler of all else that followed by way of a successful outcome at such a low cost in friendly lives lost on the ground. To put it differently, one can now safely say that air power's unbroken record of achievement between 1991 and 2003, when the three-week major combat phase of Iraqi Freedom finally toppled Saddam Hussein's regime, was *not* a succession of atypical anomalies, but rather the bow wave of a fundamentally new American approach to force employment.

AIR POWER'S UNBROKEN RECORD OF ACHIEVEMENT BETWEEN 1991 AND 2003, … [WAS] THE BOW WAVE OF A FUNDAMENTALLY NEW AMERICAN APPROACH TO FORCE EMPLOYMENT

Indeed, that pattern had become so established by the time the major combat phase of Iraqi Freedom ended in April 2003, as to suggest that air power had finally become the tool of first choice by combatant commanders, at least with respect to defeating massed enemy ground forces in high-intensity warfare. Even before the terrorist attacks of September 11, 2001, defense analyst Loren Thompson went so far as to conclude that by the time the administration of President George W. Bush took office in January 2001, "not only did it look like air power could win wars, but there was a new crop of policymakers ready to embrace that message."[3]

Unfortunately for that gathering view, the end of the three-week major combat phase of Iraqi Freedom ushered in a new era of warfare for the United States in not just one way but *two*. At the same time it confirmed the nation's final mastery of high-intensity conventional warfare, it also brought us face to face, for the first time since Vietnam, with a resurgent mode of asymmetric warfare that now seems likely to be the defining feature of global conflict for at least the next decade of the twenty-first century. In that new mode of conflict, air power—or at least precision kinetic air power—has proven less obviously relevant and consistently decisive as it was during the five wars that preceded it, starting with Desert Storm. One might add here that the Israelis were likewise driven to this same conclusion by their more recent exposure to this new form of hybrid warfare by stateless movements like Hezbollah and Hamas in their operations in Lebanon in July and August 2006 and, more recently, in the Gaza Strip in December 2008 and January 2009. Both operations saw the effective use of Israel's air power, but they also resulted in inconclusive outcomes for Israel because of the resilient and elusive nature of the opposition in each case.

Still in all, looking back over the three Balkan air wars of the 1990s, if we include Operation Deny Flight mainly as a reminder of how *not* to do it, and assessing those wars in light of all that has occurred since by way of American air power use offers us a timely opportunity to extract some of the key unifying themes from those wars that have since become recurrent considerations affecting the nation's employment of air power, at least for the near-term future—considerations having to do with such matters as gradualism, proportionality, noncombatant immunity, collateral-damage avoidance, the need for legitimacy, and what has been called the "CNN [Cable News Network] factor" and the battle of narratives in determining who wins and who loses in the end. That being so, there is value to be had from reviewing those aspects of Deny Flight, Deliberate Force, and Allied Force that warrant our remembering most as milestones for understanding how the use of transformed American air power evolved throughout the first decade of the twenty-first century.

The Misstep of Deny Flight

To begin with Deny Flight, this was when the nation learned, for the first time, what it truly meant to try to conduct an air operation by committee with eighteen other allies and with the United Nations (UN) setting all the rules. After the outstanding performance by CENTCOM's air component in Desert Storm in 1991—a performance that, for the first time, set the example for what air power can contribute to a joint campaign when used to the limit of its potential by commanders who know what they are doing—Deny Flight will forever stand out as a prototypical retrograde experience. Viewed in hindsight, it was an almost disastrous flirtation with failure over a course of two years of ineffectuality that was reminiscent of every bad strategy choice the United States government ever made in Vietnam. It also offered an effective reminder that however capable American air power may have become in principle since Desert Storm, there is nothing preordained about its ability to produce winning results.

That operation, which began in April 1993, entailed around-the-clock fighter patrols to enforce a no-fly zone over Bosnia, to maintain an air "presence" in the region, and to provide on-call support in response to the killing of innocents that the Balkan civil war had come to represent ever since it was

Heavy players. A venerable USAF B–52H bomber stands parked on the ramp at RAF Fairford, England, as a successor-generation B–1B takes off on a mission to deliver as many as 80 500-lb Mk 82 bombs or 30 CBU-87 cluster bomb units against enemy barracks and other area targets. An AGM–86C CALCM fired from standoff range by a B–52 was the first allied weapon to be launched in the war.

THE AMERICANS HAD FORGOTTEN NOT ONLY THEIR MOST CARDINAL ERRORS MADE IN VIETNAM, BUT ALSO THE AIR POWER SUCCESSES THAT THEY HAD RACKED UP LATER IN DESERT STORM

first rekindled in 1991 after more than three generations of having been suppressed under the thumb of Tito's iron rule. Those half-hearted sorties, with pilots mainly spending hours boring holes in the sky to no effect, were a complete waste of effort with regard to any tangible gain they produced on the ground.

To provide just two examples, throughout the two years in which those many sorties were conducted, out of more than a hundred requests for close air support (CAS) "presence" that were received and forwarded up the line by AFSOUTH's Combined Air Operations Center (CAOC) in Vicenza, Italy, only *four* CAS attacks were ultimately approved by the UN and carried out. There also were a grand total of just *five* precision air strikes, one of which caused only a temporary shutdown of a runway at the Udbina airfield in late 1994, in response to a launching of Serb fighters from that base against Croatians living in a designated UN safe area. Apart from those events, as far as any practical effect the operation had on Serbian conduct was concerned, Deny Flight was nothing but a costly exercise in converting jet fuel into noise.

At the time, General Ryan, the air commander for AFSOUTH, would only say politely that Deny Flight represented "a use of air power in a way we don't normally use air power," which offered an unmistakable tacit feel for what he *really* thought about it.[4] As just one more example, there was a UN ban against NATO attacks on any Serbian aircraft or air defenses located at Udbina. Moreover, the UN would only allow NATO fighters to attack Serbian surface-to-air missile (SAM) and antiaircraft artillery (AAA) sites that had actually fired on NATO aircraft. As a result of such constraints, a British Sea Harrier got shot down within the first week of Deny Flight by an enemy SA-7 infrared-guided SAM during the jet's *third* pass in a vain attempt to disable the *one* offending Serbian tank that UN authorities had approved for attack. Because of that restriction, the jet's mission was ineffective, its tactics were predictable, and the manner in which it was used cut against the grain of every common-sense rule of force employment that was consistently honored throughout Desert Storm.

The next year, in a similar situation, a U.S. Air Force F–16 flown by Captain Scott O'Grady got shot down by a Serbian SA-6 radar-guided SAM while orbiting in a totally predictable racetrack pattern southwest of Banja Luka. (Fortunately, the pilot ejected safely, evaded his Serbian pursuers, and was recovered six days later by a heroic combat search and rescue effort.) An RC-135 Rivet Joint electronic intelligence aircraft that was operating nearby picked up real-time indications of an active SA-6 radar within range of the targeted aircraft, but it was unable to communicate that awareness in adequate time to prevent the shootdown

From that point onward, in a classic case of shutting the barn door after the horse was gone, all Deny Flight missions were accompanied by defense-suppression escort aircraft. That did not alter the fact, however, that the O'Grady shootdown was a major embarrassment for the United States, as well as a significant setback for air power's reputation for effectiveness that had been so rightfully earned in Desert Storm. For the remainder of that operation, the pattern was consistently one of NATO's leaders pounding the table, waggling their fingers, and sternly threatening "NATO air strikes for sure the next time" in response to any future act of Serbian aggression, only to be followed in each case of Serbian aggression in total defiance by backpedalling and inaction by the UN. That pattern of conduct telegraphed a message to both the Serbs and all others watching that basically said that the Americans had forgotten not only their most cardinal errors made in Vietnam, but also the air power successes that they had racked up later in Desert Storm.

Getting it Right in Deliberate Force

In sharp contrast, Deliberate Force in 1995 was a different story in every respect.[5] For that reason, it can be remembered as the first successful Balkan air campaign. What prompted that operation was a shelling attack against Sarajevo on August 28 that resulted in thirty-eight civilians being killed. Once Bosnian Serb complicity was established without question, the operation kicked off two days later and continued for eleven days against Serbian targets in Bosnia-Herzegovina. Its intent was to deter any further Serbian attacks against UN safe areas and to retaliate as necessary for any attacks until they stopped.

This was the first serious test for American air power since the Cold War ended. It began at 0200 on the morning of August 30, 1995, with forty-three NATO strike aircraft attacking Serbian command and control nodes, SAM and AAA sites, and their supporting radars. The strike force consisted mostly of Air Force fighters operating out of Aviano Air Base, Italy, with some additional Navy and Marine Corps strikers from the aircraft carrier USS *Theodore Roosevelt* that was operating on station in the Adriatic Sea. Their assigned mission was to take down the Bosnian Serb integrated air defense system (IADS) completely.

Safe recovery. An F–117 stealth attack aircraft lands at Aviano Air Base, Italy, just after sunrise following a night mission into the most heavily defended portions of Serbia. During the air war's fourth night, an F–117 was downed just northwest of Belgrade, most likely by a lucky SA–3 shot, in the first-ever loss of a stealth aircraft in combat. (The pilot was promptly retrieved by CSAR forces.)

THIS WAS THE FIRST WAR EVER IN WHICH COLLATERAL DAMAGE AVOIDANCE WAS THE MOST OVERRIDING LEADERSHIP CONCERN

That IADS, it bears noting, was not a rag-tag threat by any means. On the contrary, it was a full-up Soviet-style echeloned air defense consisting of concentrated and internetted AAA and radar-guided SA-2s and SA-6s run by totally professional air defenders. It was deemed sufficiently threatening, in fact, that the CAOC had wanted at first to use F–117 stealth attack aircraft out of Aviano against the most demanding targets, a request that the Italian government disapproved at the last minute out of understandable pique over having been excluded from the so-called NATO Contact Group, despite all that Italy had done to make its bases available to NATO.

This was the first war ever in which collateral-damage avoidance was the most overriding leadership concern, since even one errant bomb that landed on a private residence or schoolhouse and caused civilian casualties would have put an immediate end to the UN's confidence in NATO. For that reason, each and every weapon aimpoint was vetted personally by General Ryan in the CAOC, and uncommonly close attention was paid during each approved target attack to such matters as run-in heading, time of day or night, aircraft system limitations, and possible secondary effects.

EVEN ONE ERRANT BOMB … WOULD HAVE PUT AN IMMEDIATE END TO THE UN's CONFIDENCE IN NATO

In the end, this unprecedented attention to tactical detail paid off. There were no complaints raised about civilian fatalities, and no collateral damage to speak of was inflicted. The only NATO aircraft lost during the operation was a French Mirage 2000 fighter that got shot down by an SA-7 while the aircraft was operating at low altitude on the first day. Looking back in hindsight, one can fairly characterize Deliberate Force as a success by just about any measure one can think of. After four years of horrific killing in the Yugoslav civil war, it paved the way for the Dayton Accords and produced a truce in Bosnia that has persisted ever since. True enough, it was not just air power, but a number of other factors as well, that ultimately drove the Bosnian Serbs to the negotiating table in Dayton. Those factors included, most notably, the threat of an eventual Croatian ground attack and mounting diplomatic sanctions. Still in all, then-Assistant Secretary of State Richard Holbrooke, who engineered the Dayton Accords, later wrote in his memoirs that the air campaign had made a "huge difference" in helping to bring about the eventual outcome.[6]

Allied Force as a Near Miss

Fast forwarding to four years later, the third Balkan air war (if one includes Deny Flight as the first) lasted seventy-eight days in the form of Operation Allied Force for Kosovo. As noted above, this one, at least for a time, appeared as though it might end up being another debacle along the lines of Deny Flight, only on a grander scale. In the end, fortunately, that campaign made for the third time in a row after Desert Storm and Deliberate Force when air power proved pivotal, if not decisive, in determining a regional combat outcome during the 1990s. Yet what began as a hopeful effort to get Milosevic to stop his human rights abuses against the Kosovar Albanians ended up, for a depressingly long time, looking like yet another exercise in futility suggesting that those principals most responsible for the operation, both in NATO and in the administration of President Bill Clinton, had forgotten all that they had learned—or should have learned—not only from Desert Storm and Deliberate Force, but also from Vietnam. It was definitely a step backwards in combat efficiency when compared to Desert Storm.

As for the way in which the campaign unfolded, after repeatedly unsuccessful diplomatic efforts by NATO to get Milosevic to desist from his human-rights abuses, the United States presented NATO with a three-phase bombing plan that expressly ruled out any commitment of ground troops. The idea was to start out with a counter-IADS offensive against Serbia's air defenses. If that failed to produce the desired result, a second phase would entail expanded bombing of other military targets, but only below the 44th parallel that lay well to the

Burner takeoff. An F–15E from the 494th Fighter Squadron home-based at RAF Lakenheath, England, clears the runway at Aviano in full afterburner, with CBU-87 cluster munitions shown mounted on its aftmost semiconformal fuselage weapons stations. Eventually, some F–15E strike sorties into Serbia and Kosovo were flown nonstop to target and back directly from Lakenheath.

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south of Belgrade. Only in the third and last phase would the bombing, if still unproductive, go after military targets north of the 44th parallel and against infrastructure targets in Belgrade. There was no fourth phase in the plan that NATO considered.

The American plan offered to NATO assumed from the start that the air campaign would be a symbolic operation only. Furthermore, General Clark and NATO's leaders genuinely expected that Milosevic would settle quickly. They proved to be completely wrong in that judgment. After a week of desultory bombing that was showing no sign whatever of having any effect on Serbian behavior, there began to be the first rumblings heard from some Americans that the U.S. government's having ruled out a ground option from the very start may not have been such a bright idea after all.

At that point, against a still-totally unsupportive Clinton administration on the home front, Clark began pressing his desire to generate a serious allied ground threat, making the point that even his own CAOC principals believed it unnatural for airmen to fight a ground war without a ground component. Finally, after the fourth week got under way, NATO's targeting began focusing not only on Serbian troops operating in Kosovo, but also on what NATO had come to portray as the four pillars of Milosevic's power—the political machine, the media, the security forces, and the economic system.

During the campaign's last two weeks, the bombing also, for the first time, went after Serbia's electrical power, a target set that CENTCOM had attacked in Baghdad from the first days of Desert Storm onward. In the end, Milosevic agreed to allow a presence of 50,000 international peacekeepers with sweeping occupation powers on the ground in Kosovo in return for an end to NATO's bombing of his most valued assets in Belgrade. He also agreed to withdraw his occupation forces from Kosovo.

Numerous efforts were made by Western analysts in the immediate aftermath to determine why Milosevic relented in the end.[7] The Kosovo experience also provided ample grist afterwards for the "air power vs. boots on the ground" mill, with airmen insisting that it had been an air-only war from start to finish (which remains true, strictly speaking), and with land-warfare advocates countering that it was really the implied threat of an eventual NATO ground invasion (something that no one can prove one way or the other) that finally got Milosevic to accede to NATO's demands.

After all is said and done, we will most likely *never* know for sure what dynamic finally caused Milosevic to throw in the towel, least of all because he is no longer alive to tell us were he to be so inclined. As a first approximation, however, one can safely say that he probably opted, in the end, to accept NATO's conditions for ending the bombing, whatever his other possible reasons for conceding may have been, simply out of a rational determination that he had nothing to gain by holding out any longer. Even in the continued absence of a NATO ground invasion, he knew for certain that the air war could have continued for many more weeks, and perhaps even indefinitely. On the other hand, giving in to NATO's demands while there was still time allowed him to exploit the face-saving opportunity to claim that his government would retain formal sovereignty over Kosovo, irrespective of whatever de facto autonomy might be granted to its Albanian majority. To that extent, two conclusions can be drawn from Operation Allied Force with absolute confidence. First, allied air power was the only force element maintained by NATO that actually figured in the campaign from start to finish, making for a legitimate first in the annals of air warfare. Second, and equally important, the coercive use of air power by NATO did work in the end, even though we may never be able to say for sure exactly *how* it worked.

Achievements and Problems in the Kosovo Campaign

There were other takeaways worth remember-

Final checks. Two Block 40 F–16CGs from the 555th Fighter Squadron at Aviano taxi into the arming area just short of the runway for one last look by maintenance technicians before taking off on a day mission to drop 500-lb GBU-12 laser-guided bombs on "flex" targets of opportunity in Serbia or Kosovo, as directed by airborne FACs and as approved, in some cases, by the CAOC.

ing as well when it comes to understanding the significance of Operation Allied Force in the history of air warfare. To begin with, it was the first war in which all three currently-deployed American heavy bomber types saw use in combat. On top of that, the campaign's first night saw the long-awaited combat debut of the B–2 stealth bomber, which flew nonstop to its targets in Serbia directly from Whiteman AFB, Missouri on thirty-hour round-trip missions, with each sortie delivering up to sixteen 2,000-pound satellite-aided GBU-31 Joint Direct Attack Munitions (JDAMs) in *their* first combat use. To the surprise of many, the B–2 turned out to have been the most consistently effective performer throughout the entire campaign. In only fifty missions all told, it flew fewer than one percent of the total number of combat sorties. Yet it dropped a full third of all the precision munitions that were expended over the course of the seventy-eight days of bombing. Also, more than in any previous American operation, remotely-piloted aircraft were used extensively for intelligence, surveillance and reconnaissance in Allied Force, with the Air Force's then still brand-new RQ-1 Predators operating sometimes as low as 1,000 feet above ground level to seek out mobile SAMs and to designate any observed enemy troop concentrations for prompt attack by A–10s and F–16s.

AS BEFORE IN DELIBERATE FORCE, THERE ALSO WAS A REQUIREMENT TO AVOID NONCOMBATANT FATALITIES THAT WAS MORE DEMANDING

There were also, of course, numerous problems associated with the conduct of Allied Force, as one would naturally expect in any such unnatural campaign by committee. For example, because of the absence of a NATO ground threat, NATO analysts were unable, by the end of the campaign's second week, to confirm the destruction of even a single Serbian tank, due to the success of the Serbian Army in dispersing and concealing its armor. That fact plainly underscored the limits of conducting an air war from above 15,000 feet to avoid losing a fighter and possibly its crew to infrared SAMs and AAA and with no allied ground presence to force Serbian commanders to concentrate their troops in self-defense, thereby making them more easily targetable by NATO air power. Instead, the Serbian Army was at complete liberty to hide its tanks and armored personnel carriers and to go about terrorizing the Kosovar Albanians with trucks full of soldiers working their way through villages in just ones and twos.

Moreover, the counter-IADS campaign did not go as nearly well as expected, and certainly in no way like the remarkably effective air offensive against the Iraqi IADS in Desert Storm, because the more disciplined Serb air defenders kept their mobile SAMs concealed with their radars not emitting, thus making NATO's effort to beat them down a continuing cat-and-mouse game to the very end. The persistence of a credible SAM threat throughout Allied Force meant that NATO had to devote a larger than usual number of strike sorties (around thirty-five percent, all told) to the defense-suppression mission to ensure their ability to operate in hostile airspace.

In addition, Allied Force became the first (and fortunately only) instance thus far of an American stealth platform's having been lost to hostile fire when an F–117 was downed on the fourth night for a multitude of possible reasons, none ever publicly confirmed by the Air Force, that had required its pilot to operate in compact airspace in ways that may have compromised his aircraft's stealth characteristics. Most notable about that incident was the cost that it exacted with regard to losing not just a valuable aircraft, but a combat asset that, up to that point, had been thought to be untouchable, offering it a quality of presumed invincibility that gave American air power a psychological edge that has since been lost forever. It also offered a sobering reminder, which the Air Force's B–2 and F–22 communities have not forgotten since, that stealth equals low observability *plus tactics*. (Fortunately, the pilot ejected safely and was recovered within hours.)

As before in Deliberate Force, there also was a requirement to avoid noncombatant fatalities that was more demanding during NATO's air war for Kosovo than in any previous campaign involving U.S. forces. That requirement truly showed how far air power had come since World War II, when producing civilian casualties in the largest possible number was the overarching *goal* of American and British bombing strategy. Today, now that air power has become so consistently precise and discriminating, airmen can routinely expect to be held accountable in ways that were never so binding on them before. The fact that this rule has now come to be so prepossessing for Western (and also Israeli) airmen is a resounding testament to the extent to which modern air power has become a victim of its own success.

During Desert Storm, for those whose predominant mental image of air power's target-attack capability was rooted in their recollections of the Vietnam experience, the video clips shown on television every night of allied fighter cockpit displays portraying laser-guided bombs homing unerringly down the air shafts of hardened enemy bunkers had people saying: "Air power can now do *that*?" Today, almost two decades later, and precisely *because* of that unerring accuracy, such exacting performance

On the cat. A U.S. Navy F/A–18C assigned to Fighter/Attack Squadron 15 is readied for a catapult launch for an Allied Force day combat mission from the aircraft carrier USS *Theodore Roosevelt* cruising on station in the Adriatic Sea. On April 15, carrier-based F/A–18s figured prominently in a major CAOC-directed air strike on the Serb air base at Podgorica, Montenegro.

has become the norm to be *expected*—and not just as a desirable goal to be striven for, but as an ironclad criterion for almost *any* weapon release.

The downside of this development is that once zero collateral damage becomes accepted as a precondition of strategy, air power gets set up to be judged by all but impossibly high standards. When that happens, which is where the United States has been for at least the past decade, *any* collateral damage incurred during the course of an air offensive, as has been the case all too often in Afghanistan since 2008, when allied air attacks ramped up dramatically in response to escalated Taliban aggressiveness, becomes grist for domestic critics and for the enemy's propaganda mill. Even *one* civilian now inadvertently killed in an allied engagement with enemy forces typically becomes front-page news above the fold line. Worse yet, it also prompts ever more outraged complaints against the alleged excesses of "undiscriminating air power"—even though the vast majority of those civilian casualties are actually caused by errant friendly *ground* fire, as well as by sometimes not errant but intentional *enemy* ground fire.

IF ALL ONE WISHES TO DO IS TO "SEND A MESSAGE," CALL WESTERN UNION

After the Kosovo campaign of 1999, defense analyst Anthony Cordesman rightly noted how the characterization of precision bombing as "surgical" overlooks the fact that patients still die on the operating table from time to time.[8] All the same, there were numerous occasions during the Kosovo campaign when allied sorties were cancelled outright and when planned attacks were aborted at the last minute because targets could not be positively identified or because the assessed danger of collateral damage was too high. The unintended bombing of the Chinese embassy in Belgrade was only the most flagrant example of how just a single instance of that sort can backfire completely on the most disciplined use of force and undo, in one stroke, all of its many positive achievements. That incident was reminiscent of the earlier bombing of the Al Firdos bunker by an F–117 during Desert Storm, which inadvertently killed more than a hundred Iraqi women and children who, also unbeknown to U.S. intelligence, had been sleeping inside in the false belief that it offered them shelter. Both cases caused a huge uproar and dramatized all too well how such intelligence errors can produce often show-stopping results.

Finally with regard to Allied Force, there were the overwhelming deficiencies in NATO's strategy choice that accounted for the bombing's desultory start and its later slowness to register combat effects that made a difference. Those deficiencies made for a resounding regression in the use of air power by the United States and NATO after its all but flawless performance in Desert Storm.

With the singular exception of Deliberate Force in 1995, a trend toward what had come to be called "cruise missile diplomacy" had taken root during the Clinton administration's tenure in office, thanks to the ability of unmanned cruise missiles to conduct target attacks without risking the lives of American aircrews. That trend made for a situation that inspired Eliot Cohen, who had previously led the U.S. Air Force's Gulf War Air Power Survey, to equate the seductiveness of that easy approach with teenage romance in its propensity to give political leaders a sense of "gratification without commitment."[9] It also prompted skeptics to counter, sensibly enough, that if all one wishes to do is to "send a message," call Western Union.

Before long, the maddening tentativeness of the campaign's initial weeks led senior airmen to complain openly about what they saw as the embarrassingly slow pace of the bombing. One Air Force general frankly called it a "disgrace," adding that "the tempo [was] so disgustingly slow as to make us look inept."[10] Another, harking back to the concept of operations developed for Desert Storm by Col. John Warden, said: "This isn't Instant Thunder; it's more like Constant Drizzle."[11] Still another faulted the war by committee that NATO was conducting by declaring that "the hammer is working just fine. But when the blueprints have to undergo revision each day by nineteen separate architects before it's determined where to drive the nail, one has to wonder what the final product is going to look like."[12]

It was not, moreover, just a matter of maintaining unity of effort in an offensive being conducted by a nineteen-member alliance. As the campaign unfolded, it became apparent that even the American command structure was deeply divided over the most appropriate targeting strategy. General Clark had assumed at first that Milosevic would surrender within three days after the bombing began. Once that proved erroneous, NATO then scrambled for an alternative strategy in a way that soon pitted Clark against his air component commander, U.S. Air Force Lt. Gen. Michael Short, over where the main focus of the air attacks should be directed. Clark, a ground commander, naturally wanted to go after fielded Serbian forces, even though they were largely untargetable because of their dispersion and concealment in small groups. Short, for his part, believed that going after the Third Army in Kosovo entailed a waste of effort because Serbia's fielded forces were not a center of gravity for Milosevic. He argued for ignoring those forces and for concentrating instead on "strategic" targets in downtown Belgrade.

SAM hunter. This Block 50 F–16CJ in the arming area at Aviano shows an AGM-88 high-speed antiradiation missile (HARM) mounted on the left intermediate wing weapons station, with an AIM-9M air-to-air missile on the outboard station and an AIM-120 AMRAAM on the wingtip missile rail. The USAF's F–16CJ inventory was stressed to the limit to meet the SEAD demand of Allied Force.

GEN. JOHN JUMPER … SPOKE OUT OPENLY AGAINST …"CAMPAIGNING BY TARGET-LIST MANAGEMENT," IN WHICH CAOC PLANNERS SIMPLY TOOK A LIST OF APPROVED TARGETS AND ENSURED THAT THEY WERE DULY SERVICED FROM ONE DAY TO THE NEXT

Naturally, because he wielded the greater leverage as SACEUR, Clark's view prevailed throughout most of the campaign, giving rise to what critics later called "ad hoc targeting." Most of the attack planning was not effects-based, but rather involved simply parceling out sorties by target category, without much thought given to how attacking a particular target might contribute toward achieving the campaign's larger goals. Gen. John Jumper, the commander of U.S. Air Forces in Europe at the time, spoke out openly against this practice that he called "campaigning by target-list management," in which CAOC planners simply took a list of approved targets and ensured that they were duly serviced from one day to the next.

The Determining Impact of Personality

Especially when contrasted to the earlier experience of Desert Storm, NATO's air war for Kosovo really drove home, for the first time, the overwhelming impact of senior leadership personalities in determining the course and outcome of a campaign. If one looks at the wiring diagram for each of the five major wars that the United States has fought from Desert Storm to Iraqi Freedom, one will note that the boxes and lines were exactly the same in each case. In each, there was a president, a secretary of defense, a secretary of state, a chairman of the Joint Chiefs of Staff (JCS), a regional combatant commander, and the latter's subordinate component commanders for land, sea, and air. Yet also in each case (with the conspicuous exception of Operations Enduring Freedom and Iraqi Freedom, which occurred just a year apart and which accordingly saw mostly the same players in both), there were different names in those boxes. And the unique chemistry that ensued from that unique set of personal interactions had a uniquely determining influence on the way that events played out in each campaign's execution.

For example, in the case of Desert Storm, there was, arguably, a strong Washington team consisting principally of President George H. W. Bush, Secretary of Defense Dick Cheney, and JCS chairman Gen. Colin Powell. In the war zone, there also was a joint force commander, Gen. H. Norman Schwarzkopf, who well understood at some level that he was going to be judged sternly by history and that he would accordingly need to do his best to rise above his parochial instincts as a ground-forces general and do whatever might be most appropriate toward ensuring the best possible outcome. By the same token, there was a seasoned air component commander, Air Force then-Lt. Gen. Charles Horner, who could explain convincingly to a theater commander reared in a two-dimensional operational world all his life what his air assets could do to help win the war most quickly and efficiently if used to their fullest potential. Moreover, he was able to explain that point of view in a way in which Schwarzkopf could be persuaded, in the end, to accept not only as intuitively reasonable, but also as his own chosen approach.

In total contrast, one arguably had in the case of Allied Force a weaker Washington team whose principals in the White House and Pentagon wanted as little as possible to do with the impending campaign. One also had had a theater commander who was of a completely different mindset than his superiors in Washington with respect to preferred strategy and who was physically separated by 600 miles from his subordinate air component commander, the latter of whom held both Clark and his views in open disdain. As a result, the de facto air component commander through the back channel, to all intents and purposes, often ended up being General Jumper because he was a fellow four-star in Clark's area of responsibility who presumably could be implored to lean on the three-star air commander in Vicenza and persuade him to do Clark's bidding. It should hardly be surprising, in light of these contrasts, that Desert Storm and Allied Force should sit at such opposite ends of the

Combat support. U.S. Navy and Marine Corps EA–6B Prowler electronic warfare aircraft, like this one shown taxiing for takeoff at Aviano, provided extensive and indispensable standoff jamming of enemy early warning and IADS fire-control radars to help ensure unmolested allied strike operations, including B–2 and F–117 stealth operations, against the most heavily defended enemy targets in Serbia.

GENERAL SHORT, FOR HIS PART, WAS ADAMANT IN SAYING AFTERWARDS THAT "AS AN AIRMAN, I'D HAVE DONE THIS A WHOLE LOT DIFFERENTLY THAN I WAS ALLOWED TO DO IT. WE COULD HAVE DONE THIS DIFFERENTLY. WE SHOULD HAVE DONE THIS DIFFERENTLY"

spectrum as case studies in joint warfare and the use of air power in it.

Allied Force as it Really Was

As for the most important "bottom lines" to be remembered from the Kosovo campaign, it is essential, first of all, to understand that campaign for what it actually entailed. Immediately after Milosevic caved in to NATO's demands on Day 78, the first response on the part of many was to portray Allied Force as a watershed achievement for air power. Those so responding included many of the same reporters who, for the preceding eleven weeks, had doubted in print whether NATO would *ever* prevail without a ground invasion. It was not, moreover, just reporters who were so quick to offer that assessment. Not long after the ceasefire went into effect, President Clinton himself said that the outcome "proved that a sustained air campaign, under the right conditions, can stop an army on the ground."[13] He put forward that assessment, moreover, with regard to a situation that had looked only days before as though it was headed nowhere but to a deadlock or to an allied ground involvement of some sort if NATO was really intent on winning. Even General Short, the air component commander, was convinced until the campaign's final days that at its then-existing level of effort, NATO was never going to break Milosevic's will.

Viewed with the benefit of hindsight, it is hard to accept the rosy view laid out above as the right way to remember Allied Force. To begin with, it is not the assessment that was aired afterwards by the most credible professionals who knew best what they were talking about. To offer just a few examples, after the campaign was over, the former AFSOUTH commander during Deliberate Force, U.S. Navy Adm. Leighton Smith, said outright that the Kosovo experience should be remembered as "possibly the worst way we employed our military forces in history."[14] Former Air Force Chief of Staff Gen. Ronald Fogleman likewise said that "just because it comes out reasonably well, at least in the eyes of the administration, doesn't mean it was conducted properly. The application of air power was flawed."[15] General Short, for his part, was adamant in saying afterwards that "as an airman, I'd have done this a whole lot differently than I was allowed to do it. We could have done this differently. We *should* have done this differently."[16]

At bottom, for all the professionalism of NATO's aircrews and their performance throughout the 78 days of fighting, Allied Force should *not* be remembered as a stellar example of air power's having been put to its best use. For openers, the campaign could have failed miserably in the pursuit of its declared goals. NATO's incremental attack plan, until the very end, risked squandering nearly all of the capital that had steadily accrued in air power's bank account ever since the air component's banner performance in Desert Storm eight years before. That near-fatal flaw in the campaign's starting strategy was captured perfectly in General Clark's early comment that NATO would "grind away" at Milosevic rather than hammer him hard and with determination from the very outset.[17] By being so hesitant in the campaign's opening moves, NATO's leaders overlooked the fact that air power's strengths can also become weaknesses if it is used in a manner that undermines its credibility.

More to the point, the opportunity cost of starting the campaign so anemically and without any accompanying ground threat made for a failure by NATO to exploit air power's shock potential to its fullest extent. It also encouraged Serbian ground forces to disperse and hide while they had time. Perhaps most important, until Milosevic made what turned out to have been the colossal error in judgment on his part in accelerating his ethnic cleansing campaign and forcing NATO to raise the ante in order to retain its own credibility, the underachievement of the bombing effort until its last week *almost* convinced him that he could hunker down and ride out the campaign. On this point, Adm. James Ellis, the AFSOUTH commander headquar-

(Top) Task Force Hawk. A U.S. Army AH–64 Apache attack helicopter flares for landing at the Rinas airport near Tirana, Albania, following a ferry flight from its home base at Illesheim, Germany. In all, 24 Apaches were dispatched to Albania with the intent to be used in Operation Allied Force, but none saw combat in the end because of concerns for the aircraft's prospects for survival in hostile airspace.

(Above) Cramped spaces. This USAF C–17 parked on the narrow ramp at Rinas airport, incapable of accommodating the larger C–5, was one of many such aircraft which provided dedicated mobility service to TF Hawk. In more than 500 direct-delivery lift sorties altogether, C–17s moved 200,000-plus short tons of equipment and supplies to support the Army's deployment within the span of just a month.

tered in Naples, Italy, who oversaw the U.S. portion of the campaign, was uncompromising when he declared afterwards that luck had been the main factor in accounting for the campaign's success. In his words, NATO's leaders "called this one absolutely wrong" through their failure to anticipate and hedge against what might occur once their strategy of hope drew a blank.[18]

As for the matter of the missing ground threat, there is a plausible case to be made that there would never have been any need for NATO actually to *commit* troops to combat. A serious forward deployment of troops along the Albanian and Macedonian borders on the scale of Operation Desert Shield in the Persian Gulf in 1990, however, would definitely have forced a reaction on the part of the Serbian Third Army and made it more easily targetable from the air. It also might have deterred, or at least lessened, the extent of their atrocities against the Kosovar Albanians by giving them something more ominous to worry about. Either way, it could have helped bring about a quicker end to the campaign.

To the extent that this may be true, it suggests an important corrective to the endless argument over the relative merits of air power vs. "boots on the ground." Even though the campaign reconfirmed that friendly ground troops no longer necessarily need to be committed to early combat in wars against organized and mechanized opponents, it also reconfirmed that air power, in many cases, cannot perform to its fullest potential without the presence of a credible ground component to any campaign strategy. General McPeak keyed on this important point when he wrote afterwards that the *a priori* rejection of any ground commitment by NATO from the campaign's very start had been "a major blunder." He said: "I know of no airman—not a single one—who welcomed this development. Nobody said, 'Hey, finally, our own private war. Just what we've always wanted!'.... Signaling to Belgrade our unwillingness to fight on the ground made it less likely that the bombing would succeed," thereby forcing NATO to explore the limits of air power's coercive potential when working all alone.[19]

The Balkan Campaigns as a Crucible for the Future

It remains now to consider how the Balkan air campaigns of the 1990s relate to the nation's subsequent air warfare experiences since the start of the twenty-first century. First and foremost, one can fairly suggest that the manner in which the major combat phase of Iraqi Freedom was planned by the second Bush administration without a sufficient prior investment of resources to hedge against the "hereafter" that the United States inherited once Saddam Hussein's regime was toppled bore out, yet again, a major teaching of NATO's air war for Kosovo two years earlier. That teaching, simply put, is that however capable the nation's air weapon may have become in principle since Desert Storm, it can never be more effective than the strategy it is intended to support. That may not be a particularly profound observation, but it offers an important reminder that Americans should never lose sight of.

Other themes also emanated from our Balkan experiences in the 1990s that have since become almost mandatory checklist items for all American campaign planning that has occurred ever since. The first of these themes is that the United States will henceforth always, as a rule, conduct combat operations in a coalition context for the "safety in numbers" that having legitimizing allies naturally allows for. Another, which one might call "the dark side of technology," has emanated from the American defense establishment's ever-more-fused command-and-control network from top to bottom and from the increasing availability, as a natural result, of a common operating picture for all, from the highest leaders to those in direct contact with the enemy at the tactical level.

In this latter respect, as in the case of Kosovo, Operation Enduring Freedom entailed command elements that were widely dispersed geographically. In the case of the Afghan war of late 2001 and early 2002, however, the situation was further aggravated by the fact that the geographic separation this time spanned eight time zones. The six months of major combat in Operation Enduring Freedom saw not only centralized planning, but also a degree of cen-

Night refueling. A USAF F–15C air combat fighter, shown here through a night-vision lens, moves into the precontact position to take on fuel from a KC–135 tanker before resuming its station to provide offensive counterair protection for attacking NATO strikers. With a loss of six MiGs in aerial combat encounters the first week, Serb fighters rarely rose thereafter to challenge NATO's control of the air.

tralized execution that was a first in American experience. Greatly-expanded communications connectivity allowed unprecedented real-time situation awareness at all levels. It also allowed sensor-to-shooter links to be shortened, in some cases, from hours to single-digit minutes.

At the same time, however, it resulted in an oversubscribed target-approval process that lengthened rather than compressed the kill chain. As a result, the human factor became the main impediment to more effective time-critical targeting. With respect to this trend, while he was still the commander of Sixteenth Air Force in 2002, then-Lt. Gen. Ronald Keys frankly described the rear-area monitoring of live Predator video feed from Afghanistan by senior leaders sitting back in Tampa and Washington as "cyber-rubbernecking."[20] General Keys agreed that improved communications lashups have indeed now allowed senior leaders to ask important questions more easily and more quickly. He countered, however, with the important reminder that providing good answers still takes time.

(Below) Help from an ally. One of 18 CF–18 Hornet multirole fighters deployed in support of Allied Force from Canadian Forces Base Cold Lake, Alberta, Canada, is parked in front of a hardened aircraft shelter at Aviano. The aircraft mounts two 500-lb GBU–12 laser-guided bombs on the outboard wing pylons and two AIM–9M air-to-air missiles on the wingtip rails.

On careful reflection, one can make a cogent case that this kind of hands-on involvement by senior leaders at the tactical level is entirely appropriate up to a point. After all, as in the case of Operation Allied Force, the goals of Enduring Freedom demanded close top-down supervision and control at all levels if the perceived legitimacy of the operation was to be preserved. Otherwise, just a single untoward instance of collateral damage to noncombatant life and property could have caused the campaign effort to fail disastrously.

The ever-closer communications connectivity that allowed that hands-on involvement, however, cut in two directions. Although it was helpful—and even indispensable—up to a point, it also produced gridlock at times, by encouraging senior leaders and their staffs to try to micromanage the fighting. Those leaders often intervened at the tactical level not because circumstances required it, but simply because they *could*. As a result, some important fleeting targets were allowed to get away.

It is often said that an abiding hallmark of American air power's effectiveness is the overarching credo of centralized control and decentralized execution. However, should an American pilot find himself five seconds before his planned weapon release with his joint force commander or, worse yet, the Secretary of Defense figuratively sitting in his back seat and second-guessing his every move, that is *not* decentralized execution. Similarly, should that same pilot find himself five seconds before weapon release with the uppermost concern in his mind being what his lawyer's telephone number is back at home in case his bomb lands short, that is not a comforting place for him to be either. Both hypothetical examples dramatize the extent to which the growing criticality of collateral-damage avoidance at every cost and then some has come to affect the way in which the United States will conduct air campaigns in the future.

Some airmen argued afterwards that the collateral-damage constraints in Operation Enduring Freedom, as in Operation Allied Force two years before, severely hampered the effectiveness of combat operations. For example, on the first night of the Afghan war in October 2001, those constraints may—just may—have helped enable the escape of Taliban leader Mullah Omar while senior leaders at CENTCOM debated whether or not the CAOC's requested attack lay within the accepted bounds of the laws of armed conflict.

On the other hand, there was abundant good reason for the Bush administration's aversion to collateral damage in principle. In its campaign against the Taliban and against al Qaeda elements in Afghanistan, the administration's determination to avoid collateral damage indeed became, at times, more important than mission success. But then again, mission success depended in considerable part on avoiding collateral damage. In sum, the issues of centralized execution and collateral-damage avoidance, both of which the United States really encountered for the first time during the Balkan air wars of the 1990s, remain prepossessing

Splash one Fulcrum. A team of U.S. military personnel examines the remains of an enemy MiG–29 fighter (NATO code name Fulcrum) which was shot down in Bosnian airspace by a USAF F–15C on the afternoon of March 26, 1999. The downed aircraft, which appeared to have strayed from its planned course due to a loss of situation awareness by its pilot, brought to five the number of MiG–29s destroyed in early Allied Force air encounters.

challenges for American warfighters. Those challenges will not be going away any time soon.

To conclude, it is worth noting that the many instructive lessons that emanated from the Balkan air wars of the 1990s may not necessarily apply to all players in all circumstances. To cite just one example, the Israel Defense Forces (IDF) "went to school" on the Kosovo air war in a major way in that campaign's early aftermath, and that case study has figured prominently in their professional military education curriculum ever since. It also has been said that the IDF's Chief of Staff during Israel's war against Hezbollah in 2006, Lt. Gen. Dan Halutz, who also, by the way, was the first air force general ever to command the Israeli armed forces, was consciously guided by the Kosovo precedent as he sought to apply a concept of operations that would somehow leverage precision standoff firepower, rather than ground maneuver, as the centerpiece of his strategy so as to avoid incurring intolerable friendly losses by committing to a major push into Lebanon on the ground.

Yet, insofar as they internalized lessons drawn from the precedent of Kosovo, the IDF may have overlooked or excessively downplayed the possibility that those lessons may not necessarily have been directly transferable to Israel. After all, Allied Force was a campaign conducted by a superpower half a globe away that was not subject to the same time and financial constraints as was Israel and, more important, whose civilians' lives were not disrupted on a daily basis by relentless rocket fire into a home front that was coextensive with the war front while the military was attacking the enemy from the air over a course of many weeks. That point of contrast should serve as a useful reminder that although the many precedents established in the two successful Balkan air campaigns of the 1990s marked the way ahead for American air warfare during the first decade of the twenty-first century, they may, in the end, not always apply to our friends and allies around the world who face different challenges emanating from their unique security circumstances. ■

NOTES

1. This article is a development of remarks prepared for delivery as the morning keynote address to a symposium on "The Balkans Air Campaigns in the 1990s and Their Influence since 2001" sponsored by the Air Force Historical Foundation, Arlington, Virginia, Oct. 8, 2009. Any views expressed in it are solely those of the author and do not necessarily reflect the views of the RAND Corporation or of any of its U.S. governmental or private research sponsors.
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