



An Air Force Association Special Report

The Kosovo Campaign: Aerospace Power Made It Work

A US Air Force F-16 pilot from the 23rd Fighter Squadron, Spangdahlem AB, Germany, shows the flag just before a mission over Yugoslavia on May 3. The NATO airstrikes began March 24 and ended June 9.



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on the front cover: A B-2 Spirit bomber refuels from a KC-10 tanker after completing its 30-hour-plus round-trip mission from its home base at Whiteman AFB, Mo. **USAF photo by SSgt. Ken Bergmann.**

on the back cover: A loadmaster from the 15th Airlift Squadron, Charleston AFB, S.C., adjusts equipment prior to loading the next shipment aboard a C-17 airlifter bound for Tirana, Albania. **USAF photo by SSgt. Efrain Gonzalez.**

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Aerospace Power and the Kosovo Crisis

“NATO forces have initiated military action against the Federal Republic of Yugoslavia...the military objective of our action is to deter further action against the Kosovars and to diminish the ability of the Yugoslav army to continue those attacks, if necessary.”

—Secretary of Defense William Cohen, news briefing, March 24, 1999

DEALING with the breakup of Yugoslavia turned out to be the major test of NATO after the Cold War. It was also the biggest challenge for aerospace power since the Persian Gulf War of 1991.

Background to the Crisis

The fighting in Kosovo had been going on for a year when NATO began its air campaign in March 1999. To understand the broad reasons for the fighting, and for why NATO acted as it did, it is necessary to recall the early 1970s, when Josip Broz Tito still ruled a unified Yugoslavia.

Tito forged his control over Yugoslavia with a unique brand of communism that overrode the ethnic and political divisions that had dominated the region before Tito consolidated his power. He was known for tough crackdowns on dissenters, but, as he aged, he sought to give the ethnic minorities of Yugoslavia a greater voice. In 1974, Tito amended the Yugoslav constitution and granted autonomous status to Vojvodina and Kosovo as provinces. Kosovo was not a republic in the Yugoslav federation, like Serbia or Croatia, but it was recognized as a province within the sovereign structure. However, Tito was not able to make Yugoslavia's economy prosper. He died in 1980 and during the next decade, the economy of Yugoslavia plunged into crisis. The intricate political mechanisms that Tito left behind began to collapse.

Kosovo was one of the poorest regions of Yugoslavia. Soaring birthrates doubled the ethnic Albanian population between 1961 and 1981. The Serb population, which made up about 13% of the residents of Kosovo, grew increasingly alienated from the ethnic Albanian majority. A riot at Pristina University in 1981 was repressed by force and Yugoslav army troops killed 12 and injured 150 demonstrators. In April 1987, the head of the Serbian Communist Party, Slobodan Milosevic, traveled to Kosovo to hear the grievances of Serb residents. Milosevic delivered a television speech declaring to the Serbs, “You will never be beaten again.” The speech inflamed Serb nationalism and marked the beginning of his assault on what remained of Tito's Yugoslavia.

In November 1988, Kosovo's ethnic Albanian leadership was replaced. A general strike escalated in February 1989. Then on March 23, 1989, Yugoslav tanks ringed the Kosovo assembly building and forced the legislators to vote to revoke the province's autonomous status.¹

Milosevic kept a sizeable army and police presence in Kosovo and ethnic Serbs held key government jobs. Ethnic Albanians established a parallel system of busi-

nesses, clinics, schools and universities. The pacifist Ibrahim Rugova initially emerged as informal leader of the ethnic Albanians. However, by the mid-1990s, the Kosovo Liberation Army (KLA), built around a core of clan loyalties and former student dissidents, began to gain strength.

The end of war in Bosnia in late 1995 found the situation in Kosovo deteriorating. Unemployment among ethnic Albanians hovered near 70%. A number of ethnic Albanians who had joined the Muslim-Croat federation in its fight against the Bosnia Serbs during the Bosnian civil war returned to strengthen the KLA. The European Union formally recognized Milosevic's Yugoslavia. For Kosovo, this meant de facto international confirmation of Milosevic's authority over the province.

The Kosovo Liberation Army stepped up its struggle against Serb rule in early 1998. In late February, Serb forces wiped out leaders of the Jashari clan, a central element of the KLA. More than 50 people were killed. KLA forces retaliated with an ambush of a Yugoslav army convoy near Smolice on March 22, 1998. In response, Milosevic began a counterinsurgency campaign to drive ethnic Albanians from villages and towns bordering Serbia.²

By June 1998, paramilitary special police (the MUP) and regular Yugoslav army units (the VJ) were heavily engaged in fighting around key Kosovo Albanian towns. Several towns had been destroyed and as many as 300 people had died. Some 20,000 refugees had already taken flight. Yugoslav forces made the roads from Kosovo to neighboring Albania a free-fire zone in an effort to close off supply lines to the Kosovo rebels.

This time, the US and NATO allies got involved early. US special envoy Richard Holbrooke started intensive negotiations with Milosevic in May 1998. In early June, US State Department spokesman Jamie Rubin called the situation in Kosovo a threat to the security of Europe. “When you see a determined effort to focus a military campaign against one ethnic group, to move people out of villages, to use heavy firepower—that is ethnic cleansing in my book,” Rubin added.³

Through the summer and fall of 1998, the violence continued. American diplomats in Belgrade reported that the United Nations and several non-government organizations had estimated that Milosevic's forces had destroyed up to 30,000 homes since the summer. Estimates of “Internally Displaced Persons” (IDPs) ran as high as 300,000. As many as 100,000 were thought to be living in the open or residing

¹Christopher Bennett, *Yugoslavia's Bloody Collapse* (New York: New York University Press, 1995), p. 94, 100.

²Chris Hedges, “Future Looks Grim for Kosovo Rebels,” *New York Times*, June 9, 1998.

³Robert A. Rankin and Richard Parker, “US May Use Troops or Jets To Aid Kosovo,” *Philadelphia Inquirer*, June 9, 1998.

The Theater of Operations



The Kosovo Campaign: Airpower Made It Work

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Kosovo is part of southern Yugoslavia. Tito gave the province autonomous status in 1974, but Milosevic revoked it in 1989. Nearly 90% of Kosovo's population of 2 million is of ethnic Albanian origin. In June 1998, US State Department spokesman Jamie Rubin called instability in Kosovo a threat to the security of Europe.



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in livestock barns or abandoned buildings unfit for human habitation.⁴

October 1998 was a month of frenzied diplomatic activity. In late September, the UN Security Council passed Resolution 1199, demanding that hostilities in Kosovo cease and warning that “additional measures to maintain or restore peace and stability” could be taken. Holbrooke spent the first half of the month in Belgrade negotiating with Milosevic. As former US Ambassador to Yugoslavia Warren Zimmerman observed, “Bosnia was an adventure for Milosevic and the world recognized its independence.” On the other hand, “it’s much harder for Milosevic to make concessions in Kosovo, which is recognized as part of Yugoslavia.”⁵ NATO set Oct. 27, 1998, as a deadline for Milosevic to comply with cease-fire terms. US Army Gen. Wesley Clark, Supreme Allied Commander, Europe, twice went to Belgrade to urge compliance. Then on Oct. 27, hours before the deadline, Milosevic pulled 4,000 special police troops out of Pristina. In November the international Kosovo Verification Mission started operations.

Planning for A Military Response

Long before the Kosovo crisis peaked in March 1999, Clark had been planning for possible NATO airstrikes. Yet as violence continued in Kosovo, the military planning was caught in a dilemma. NATO was most likely to agree to short, sharp strikes to demonstrate resolve and push along the diplomacy. However, Milosevic’s troops held the advantage on

the ground in Kosovo. Any attempt to stop the Serbs from pushing out the ethnic Albanians might have to go through Milosevic’s military force in Kosovo.

The disconnect grew out of the complicated relationship between force and diplomacy in NATO’s response to Kosovo. Experience with Milosevic in Bosnia underlined that NATO might well have to be prepared to use military force to get Milosevic to comply with a peace settlement. In Bosnia, the air campaign had been indispensable, and Holbrooke, for one, thought it could work again. In an August 1998 interview, Holbrooke was asked whether he thought airpower would work against Milosevic in Kosovo. He quickly replied: “Of course. Doesn’t everyone?”⁶

At the same time, experience in Bosnia ruled out many options. The extensive commitment of ground forces as part of a UN protection force had not stopped the Bosnian Serbs from overrunning the UN-designated “safe area” of Srebrenica and massacring upwards of 7,000 civilians in the summer of 1995. In Kosovo, the situation could be worse. As Yugoslav forces pounded western Kosovo with mortar and artillery fire in June 1998, British officials said that London wanted Western governments “to consider a direct threat of air strikes against Serbia to force a settlement in Kosovo rather than getting bogged down in lengthy border deployments.”⁷ The position reflected apprehensions throughout the alliance.

Air planners began searching for appropriate targets for a Kosovo campaign. Throughout the sum-

⁴American Embassy, Belgrade, Cable, Oct. 21, 1998.

⁵Steven Erlanger, “Has the West Learned From Mistakes in Bosnia?” New York Times, June 10, 1998.

⁶Interview on Operation Deliberate Force with Rebecca Grant, USAF Television Studio, Aug. 5, 1998.

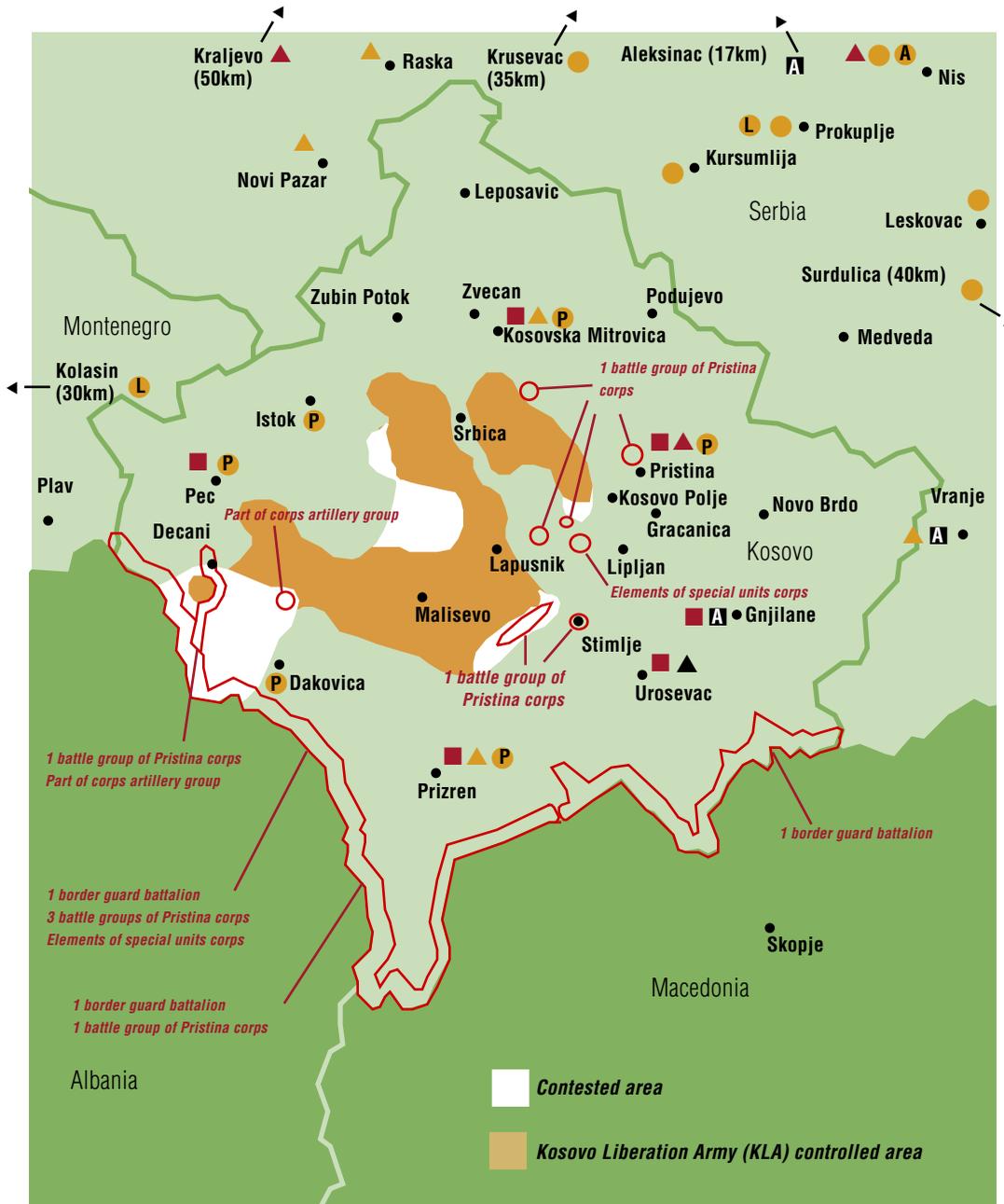
⁷Reuters News Service, June 9, 1998.

The war in Kosovo was the fourth instigated by Milosevic as the republics of Yugoslavia broke apart. Yugoslav forces fought Slovenia and Croatia in 1991 and assisted the Bosnian Serbs in the Bosnian civil war from 1992–95. This picture shows artillery damage to Sarajevo. Opponents like the Bosnian Muslims, and later, the Kosovo Albanians, were usually outmatched by heavy artillery and tanks under Serb control. Peace came to Bosnia only after NATO’s two-week Operation Deliberate Force air campaign of 1995.



DoD photo by Lt. Stacey Wyzkoski

Order of Battle in Kosovo, Late June 1998



Milosevic's estimated strength in Kosovo

Army (VJ)

12,000–13,000 troops
 194 armored personnel carriers/infantry fighting vehicles
 197 Tanks
 266 mortars/artillery pieces (larger than 100 millimeter)

Police (MUP)

10,000 troops
 60–70 armored personnel carriers/infantry fighting vehicles
 110 mortars (82 mm)

Milosevic had garrisoned Yugoslav army and paramilitary police forces in Kosovo for a decade. The map shows that in June 1998, paramilitary and regular Yugoslav army units were heavily engaged in fighting the Kosovo Liberation Army (KLA) around key Kosovo Albanian towns. Several towns had been destroyed and as many as 300 people had died.

Around 20,000 refugees had already taken flight. Well before Operation Allied Force began, Milosevic's forces held the tactical military initiative in Kosovo.

- Regional police headquarters
- Artillery brigade
- ▲ Armored brigade
- ▲ Mechanized infantry brigade
- ▲ Motorized brigade
- Infantry brigade
- Airborne brigade
- Special police detachment (battalion-size unit)
- Light infantry brigade

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By March 1999, the UN estimated there were 240,000 ethnic Albanian Internally Displaced Persons in Kosovo. Within weeks, the number of refugees swelled to 600,000 as families fled Milosevic's forces. These Kosovo boys were residents of Camp Hope, an American-run refugee camp in Albania.



USAF photo by SSgt. Angela Stafford

mer of 1998, SACEUR Clark oversaw development of as many as 40 different versions of contingency airstrike plans. NATO aircraft flew a massive demonstration flight over Macedonia to remind Milosevic of NATO's resolve.

Two different air options were widely briefed to officials in Washington in the fall of 1998. In one option, NATO forces would carry out a limited air operation against fixed military targets. Reportedly, the plans for the limited air response envisioned that Conventional Air Launched Cruise Missiles (CALCMs) and Tomahawk Land Attack Missiles (TLAMs) would be used on the first night. NATO aircraft would strike fixed military targets such as headquarters, communications relays, and ammunition dumps. Targets like these had dominated the target set for Operation Deliberate Force in Bosnia three years earlier.

NATO also had another option referred to as a phased air operation with two missions. First, phased air operations could support international efforts to stop the violence in Kosovo and create the conditions for negotiations. Second, air operations could try to halt or disrupt the capacity of Serbia to inflict violent repression against Kosovo. The Kosovo campaign would unfold in multiple phases, beginning with a no-fly zone and attainment of air superiority over Kosovo itself. Then NATO air could attack Yugoslav military forces in Kosovo and extend the campaign to military targets throughout Yugoslavia. The phases were key to the flexibility of the plan. If Milosevic pulled back forces and complied with serious negotiations, the campaign could stop. On the other hand, if Milosevic remained defiant, the campaign would go on to target the capacity of his forces to continue their violence in Kosovo.

The broad outline of air operations seemed to span

all possible options. The purpose would be to put an end to excessive police and military operations and bring about a negotiated cease-fire. In theory, NATO could show resolve with a short, sharp air operation or move to a phased, graduated campaign that could be regulated in intensity.

But there was a weak spot. Airmen could strike a batch of key targets quickly, but the plan to go after Yugoslav military forces would take much more effort and political resolve. By October 1998, in pure military terms, NATO's options were very constrained. If limited strikes did not work, it would take a sustained air campaign with 24-hour operations to halt or disrupt the Yugoslav army forces in Kosovo. Having an impact on special police units working in small groups would be extremely difficult. The more Milosevic pressed his tactical advantages with military and paramilitary forces in Kosovo, the harder it would be for NATO airpower to achieve fast results—unless just a show of force would do the job.

With hindsight, it is easy to see that by the fall of 1998, NATO military planning was drifting away from the reality on the ground in Kosovo. If NATO started a limited air operation, Milosevic would still have time to use his military forces to step up the violence. The limited air response was tailored only to be a diplomatic show of force, and the phased air campaign plans left Milosevic a gaping opportunity to seize the initiative before NATO built up its forces and political resolve to conduct a sustained air operation.

Why did the disconnect occur? Clark told reporter Michael Ignatieff that the NATO politicians "were never happy with a phased air operation, because they wanted something more limited, more diplomatique."⁸ Given the lessons of Bosnia, it may have seemed that

⁸US Army Gen. Wesley K. Clark, Supreme Allied Commander Europe, quoted by Michael Ignatieff, "The Virtual Commander: How NATO Invented a New Kind of War," *The New Yorker*, Aug. 2, 1999.

Milosevic would acquiesce once NATO stood united against him. NATO did cross a threshold on Jan. 30, 1999, by authorizing Secretary General Javier Solana to order airstrikes when necessary. Still, NATO seemed to be thinking about just a few days of strikes on fixed targets while Milosevic was getting ready to order the Yugoslav army to sweep through Kosovo. At any rate, the political will and the military strategy for a sustained air campaign never quite came together. The plans left a gap between the start of airstrikes and the point at which pressure from the air would isolate and pin down Milosevic's forces.

Rambouillet

Peace in Kosovo was only sporadic after the October 1998 cease-fire. Paramilitary forces killed 45 ethnic Albanians in Racak in mid-January. The slaying set in motion a diplomatic chain of events that led the six-nation contact group to give both Serbs and ethnic Albanian representatives an ultimatum to meet for talks at Rambouillet, France, in early February.

From Feb. 6 to Feb. 23, the two sides met at Rambouillet under the auspices of the US, the European Union, and the Russian Federation. The two sides adjourned and when the talks resumed, this time in Paris, on March 15, the ethnic Albanian delegation signed the agreement. However, Milosevic and the Serbs ultimately would not agree to the provisions of Rambouillet, specifically, the presence of NATO

ground forces to ensure compliance. By March 18, 1999, the United Nations High Commissioner on Refugees estimated that there were 240,000 displaced persons—internal refugees—within Kosovo, accounting for more than 10% of the population.⁹ Roughly one-third of the Yugoslav army's forces now massed on the border of Kosovo. Estimates placed the numbers at around 40,000 Yugoslav army (VJ) troops and about 300 tanks.

Holbrooke had said months earlier that the West had learned lessons from Bosnia. It remained to be seen what, if anything, Milosevic had learned.¹⁰

⁹Figure cited in R. Jeffrey Smith's, "Belgrade Rebuffs Final US Warning," *Washington Post*, March 23, 1999.

¹⁰Steven Erlanger, "Has the West Learned from Mistakes in Bosnia?" *New York Times*, June 10, 1998.

Operation Allied Force Begins

“Our strikes have three objectives: First, to demonstrate the seriousness of NATO’s opposition to aggression and its support for peace. Second, to deter President Milosevic from continuing and escalating his attacks on helpless civilians by imposing a price for those attacks. And, third, if necessary, to damage Serbia’s capacity to wage war against Kosovo in the future by seriously diminishing its military capability.”
—President Clinton, March 24, 1999

Operation Allied Force started as a short, sharp response to the final collapse of Rambouillet. When airstrikes began there were 112 US and 102 allied strike aircraft committed to the operation. Thirteen of NATO’s 19 nations sent aircraft to participate. NATO’s three new members, Poland, Hungary, and the Czech Republic did not join in. Greece, Iceland, and Luxembourg also abstained.

The initial plan envisioned a few days of air operations against a carefully chosen set of about 50 preapproved targets. Target categories included air defense sites, communications relays, and fixed military facilities, such as ammunition dumps. No targets in downtown Belgrade were on the list for the initial strikes. Air planners had data on far more than 50 targets, but the consensus in NATO was only strong enough to support limited action.

On its first night the campaign began with a formidable array of weapons. CALCMs and TLAMs targeted air defense sites and communications. Two B-2s flew from Whiteman AFB, Mo., marking the first use of the B-2 in combat. The B-2s flew more than 30 hours on a round-trip mission and launched the highly accurate Joint Direct Attack Munition (JDAM) against multiple targets. US and NATO fighters in theater maintained combat air patrols while others bombed targets.

No one knew exactly what it would take to make an impact on Milosevic. Two statements made at the start of the campaign bracketed the ways it might unfold. Pentagon spokesman Kenneth Bacon

explained on March 23, “We have plans for a swift and severe air campaign. This will be painful for the Serbs. We hope that, relatively quickly ... the Serbs will realize that they have made a mistake.”¹¹ Bacon’s comment echoed NATO’s collective hope that demonstrating resolve would get Milosevic to accept Rambouillet.

Clark spelled out the other alternative on March 25 when he said, “We’re going to systematically and progressively attack, disrupt, degrade, devastate, and ultimately—unless President Milosevic complies with the demand of the international community—we’re going to destroy these forces and their facilities and support.”¹² Clark’s statement described what NATO airpower could do, given time. But the air campaign had started from the premise that NATO wanted to try limited action to achieve its goals. Clark’s words hinted at a much bigger military task at hand.

Milosevic’s Gamble

Now the question was: How would Milosevic react? A White House “senior official” had already mulled over the possibilities: “As we contemplated the use of force over the past 14 months, we constructed four different models. One was that the whiff of gunpowder, just the threat of force, would make Milosevic back down. Another was that he needed to take some hit to justify acquiescence. Another was that he was a playground bully who would fight but back off after a punch in the nose. And the fourth was that he would react like Saddam Hussein. On any given

¹¹Pentagon spokesman Kenneth Bacon, Pentagon briefing, March 23, 1999.

¹²US Army Gen. Wesley Clark, SA-CEUR, NATO briefing, March 25, 1999.

The stealthy B-2, pictured on the front cover, was not the only US bomber in the action. B-1 Lancers and venerable B-52s, shown here on the ramp at RAF Fairford, UK, added heavy firepower to Operation Allied Force.



day, people would pick one or the other. We thought that the Saddam Hussein option was always the least likely, but we knew it was out there, and now we're looking at it."¹³

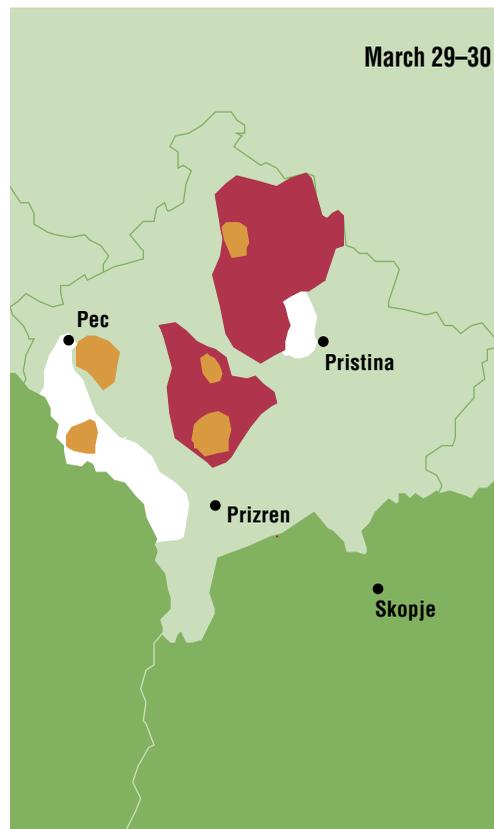
Milosevic ignored the NATO airstrikes, just as he had flouted NATO-backed diplomacy. CIA Director George J. Tenet had forecast for weeks that Yugoslav forces could respond to NATO military action by accelerating the ethnic cleansing.¹⁴ Now Milosevic gambled that his forces push ethnic Albanians and the KLA out of Kosovo before NATO could react.

By the time Milosevic backed away from Rambouillet, his forces had battlefield dominance in Kosovo. The Yugoslav army reportedly numbered about 90,000 men, equipped with 630 tanks, 634 armored personnel carriers, and more than 800 howitzers. The Yugoslav 3rd army was assigned to Kosovo operations, along with reinforcements from 1st and 2nd armies.¹⁵ About 40,000 troops and 300 tanks crossed into Kosovo, spreading out in burned out villages and buildings abandoned by the refugees. Paramilitary security forces from the Interior Ministry were engaged in multiple areas across Kosovo.

By early April, the KLA was bloodied and organized resistance in most of central Kosovo was diminishing. An American official said the government forces had carried out devastating attacks, and the prospects for the KLA were "dim." "They've been running out of ammo and supplies, they've been reduced to isolated pockets," summarized the official. KLA strongholds from Pec in western Kosovo to Prizren in the south contracted as the rebels fell back and consolidated positions west and north of Pristina.¹⁶ Bacon said that even the last KLA holdouts in the west nearer the Albanian border were under strain. "They are lightly armed and they don't really have the armaments they need to deal with a sustained armor attack, and that's what they're getting right now," he reported.¹⁷

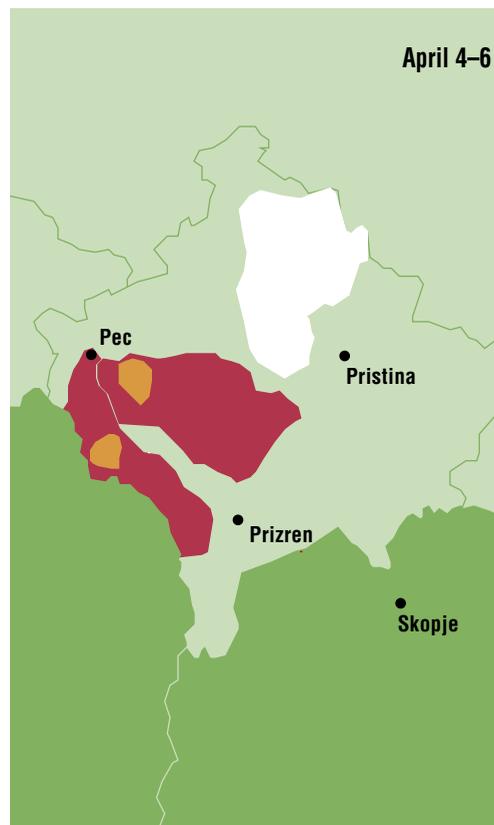
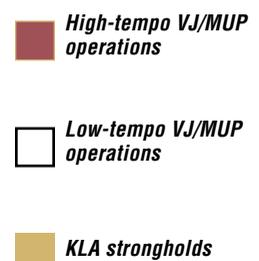
But Milosevic's gamble was also his major miscalculation. His push through Kosovo created a mass of refugees that ignited world opinion. Estimates of the number of displaced persons jumped from 240,000 in March to 600,000 by early April. Clark called it "a grim combination of terror and ethnic cleansing on a vast scale." Central Kosovo was largely emptied of its ethnic Albanian population. "Those of us who've grown up in liberal democracies have a hard time truly appreciating what's happening right now in Kosovo," Clark said.¹⁸

However, Milosevic's tactical gamble caught NATO at a vulnerable spot. NATO was committed to limited



CIA reports forecast Milosevic might try to wipe out the KLA resistance in Kosovo. In late March, Milosevic launched an all-out attack on KLA forces fighting in multiple locations. According to the Washington Post, KLA strongholds in the Drenica region of central Kosovo fell quickly.

By April 3, a Pentagon spokesman said of



Milosevic's gamble, "He's basically done." Three days later the KLA resistance was in tatters, and Milosevic declared a cease-fire. NATO had not planned to hit a major military force on the move or strike north of the 44th parallel when the offensive began.

¹³Thomas W. Lippman, "State Department Miscalculated on Kosovo," Washington Post, April 7, 1999.

¹⁴Howard Kurtz, "Media Notes: Airstrikes Followed by Retreat," Washington Post, April 5, 1999.

¹⁵Vernon Loeb, "Yugoslav Military is a Formidable Foe," Washington Post, April 3, 1999.

¹⁶Peter Finn, "Kosovo Guerilla Force Near Collapse," Washington Post, April 1, 1999.

¹⁷Bradley Graham, "Weather Clears, NATO Rains Bombs," Washington Post, April 6, 1999.

¹⁸Lippman, "US Captives to Face Serb Court," Washington Post, April 2, 1999.

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Two F-16s from the 555th Fighter Squadron at Aviano AB, Italy, prepare to launch on April 2, 1999. Crowded Aviano, home to the 31st Fighter Wing, was once again the hub of air operations for NATO. Fighters maintained combat air patrol, joined strike packages, and provided Suppression of Enemy Air Defenses. Some 103 F-16s participated in the Kosovo campaign.



USAF photo by SRA, Mitch Fuqua

airstrikes, with no firm plans beyond a few days or weeks. Since fixed targets were the focus of the plan NATO flew just a few packages each night. There was nothing that military force could do quickly against the fully developed offensive. As US Air Force Chief of Staff Gen. Michael E. Ryan commented, there was no way that airstrikes or anything short of tens of thousands of ground forces could stop a door-to-door pogrom that had been underway off and on for a year.¹⁹ On April 3, a Pentagon official said of Milosevic's campaign, "He's basically done."²⁰

The plight of the Kosovo refugees cemented NATO's resolve. "It's clear we will need to roll back the Serbian offensive by force in order to get the refugees back home," said a NATO official. "We can't leave them in Albania or Macedonia very long, or those states will collapse," he said. Now, NATO would have to win.

Changing Course

To deprive Milosevic of his gains in Kosovo, the alliance would have to use its air forces to meet goals that had just gotten much more difficult. The politics of the situation meant that NATO missed the chance to let its airmen do it "by the book" and halt or disrupt Milosevic's forces as they massed on the border and moved into Kosovo in March.

As US Secretary of State Madeleine Albright explained on March 28, the new goal was to force Milosevic to back off by "making sure that he pays a very heavy price."²¹

The first thing NATO needed was more airpower. Five B-1 bombers, five more EA-6B electronic warfare aircraft, and 10 tankers were already en route along with more allied aircraft. The aircraft carrier USS

Theodore Roosevelt, veteran of Bosnia operations four years earlier, was due to arrive with its battlegroup around April 4. Its air wing, CVW-8 brought F-14s equipped with infrared targeting pods, plus two squadrons of F/A-18Cs and other aircraft, including four more EA-6Bs. In the battlegroup, the TLAM shooters included the cruiser Vella Gulf, destroyer Ross, and submarine Albuquerque.

NATO also needed enough aircraft to sustain 24-hour operations over the dispersed Yugoslav forces in Kosovo. Plans were formulated for an augmented package of forces known as the "Papa Bear" option that would more than double strike aircraft in the theater.

Secretary of Defense William Cohen captured the mood after a meeting at Supreme Headquarters Allied Powers Europe on April 7. "We have always known that the campaign would be difficult and time consuming," Cohen remarked, "and I emerged from my meetings this morning and this afternoon convinced that NATO indeed intends to stay the course." However, as Cohen added, NATO would have to gear up for a new kind of effort. "Whatever General Clark feels he needs in order to carry out this campaign successfully, he will receive," Cohen pledged.²²

Now the joint and allied air forces faced the most difficult task. To make an impact, NATO air had to take on the military both directly, at the tactical level, and to take it on at the strategic level by hitting targets in Yugoslavia as well as in Kosovo. Airmen would have to expand the roster of strategic targets and seek out and destroy both fixed military targets and mobile military forces, including tanks, armored personnel carriers, and artillery pieces. Much of this would take

¹⁹John A. Tirpak, "Lessons Learned and Re-Learned," *Air Force Magazine*, August 1999.

²⁰Dana Priest and William Drozdiak, "Milosevic nears Goal of Driving Out Rebels," *Washington Post*, April 3, 1999.

²¹US Secretary of State Madeleine Albright on CBS "Face the Nation," March 28, 1999.

²²US Secretary of Defense William S. Cohen, remarks at Brussels, April 7, 1999.

place in close-battle conditions. Yugoslav forces were mixed in with civilians and refugees. Military vehicles and forces hid in and around buildings.

NATO expanded and clarified the air campaign plan in early April. The goal was to conduct simultaneous attacks against two target sets: fixed targets of unique strategic value and fielded military forces and their sustainment elements. Here was the heart of the air campaign as it would be carried out over the next two-and-a-half months.

Target-set 1 was termed fixed targets of unique strategic value. It included national command and control; military reserves; infrastructure such as bridges, Petroleums, Oils, and Lubricants (POL) production, and communications; and the military industrial base of weapons and ammunition factories and distribution systems. Serbia's electric power grid was soon added to the list. Target-set 2, and a high priority for Clark, was the fielded forces. Fielded forces included attacks on Yugoslav military forces, to hit their tactical assembly areas, command and control nodes, bridges in southern Serbia and Kosovo, supply areas, POL storage and pumping stations, choke points, and ammunition storage. Initial guidance focused on forces south of the 44th parallel, but soon, military targets north of the line also made the list.²³

As this guidance made clear, NATO was now pursuing a multipronged strategy with its air campaign. The goal was not just to demonstrate NATO resolve and hope to coerce Milosevic. It was to directly reduce and eliminate the ability of Yugoslav forces to carry on their campaign of destruction in Kosovo. Fortunately, NATO's air forces could make the transition. "NATO had one consensus, and that was for application of airpower," said Cohen.

²³Dana Priest and William Drodziak, "First Raids Targeted Defensive Facilities," Washington Post, March 25, 1999.



Locations of Strikers and Tankers

- Strikers
- Tankers

Left is an example of where strike aircraft and tankers were based during the Kosovo campaign. New NATO partners like Hungary permitted strike aircraft deployments for the first time. Many aircraft made long trips from bases in England. One major base not included on the map is Whiteman AFB, Mo., where B-2s began their 30-hour missions.

Operations in April: A Tough Job for Aerospace Pow-

American military experience and doctrine say that it is most efficient to hit enemy forces when they mass and maneuver at the beginning of operations. In early April, NATO did not have enough forces in theater to clamp down on VJ and MUP forces.

Impacting an army requires three things: 1) controlling its movement and maneuver, 2) isolating it by interdicting its supplies, and 3) reducing its effectiveness by attriting its forces in the field. US Army Gen. Henry H. Shelton, Chairman of the Joint Chiefs of Staff, summed up the strategy: to set the conditions, isolate, and then decimate Milosevic's military capability.²⁴ But the NATO air forces had been postured for combat air patrol and flexible strike packages against a limited set of targets, not for 24-hour operations over dispersed forces. In early April, it was possible to close one engagement zone over some of the ground forces for only a few hours a day. Under these conditions the Yugoslav forces could hide in buildings and move at night.

Poor weather also limited airstrikes. Brig. Gen. Leroy Barnidge, Commander of the 509th Bomb Wing, Whiteman AFB, Mo., told how one night, one of the wing's B-2s en route to the target was recalled because of weather. That night "the weather was so bad, the whole war was canceled," he remarked.²⁵ Throughout the operation, weather was favorable only about one-third of the time—with most good weather days coming late in the campaign.

Keeping the alliance together hinged on several fac-

tors that defied military logic but were imperatives to coalition warfare. First, success meant keeping casualties to a minimum. In particular, it was thought NATO could not afford to lose several aircraft each night. The Kosovo crisis was not like the major coalition effort of the Gulf War of 1991. Back then, clear military plans had been built over a period of months, greatly aided by a firm consensus that Iraq was the aggressor, and all measures necessary had to be taken to evict Iraqi forces from Kuwait. In Kosovo, the NATO partners brought contending opinions to the table. Commanders feared that losing aircraft could crumble NATO's will to continue the campaign.

Clark and the NATO member governments could approve or veto targets. In the US, sensitive targets were forwarded for White House approval, and similar processes took place in the capitals of Europe. "Each president of the NATO countries, at least the major players, are given an opportunity to at least express their judgment" on targets, explained Defense Secretary Cohen in April. Some targets of high military value were never "released" to be added to the list for airstrikes.

Gen. Richard Hawley, Commander of USAF's Air Combat Command, spoke for many airmen when he said, in late April, "Airpower works best when it is used decisively. Shock, mass are the way to achieve early results. Clearly, because of the constraints in this operation, we haven't seen that at this point."²⁶

But the tide was about to turn. On April 23,

²⁴US Army Gen. Henry H. Shelton, Chairman, Joint Chiefs of Staff, news briefing, June 10, 1999.

²⁵Brig. Gen. Leroy Barnidge, 509th Bomb Wing Commander, Aerospace Education Foundation Colloquium on NATO Air Operations in Kosovo, July 1, 1999.

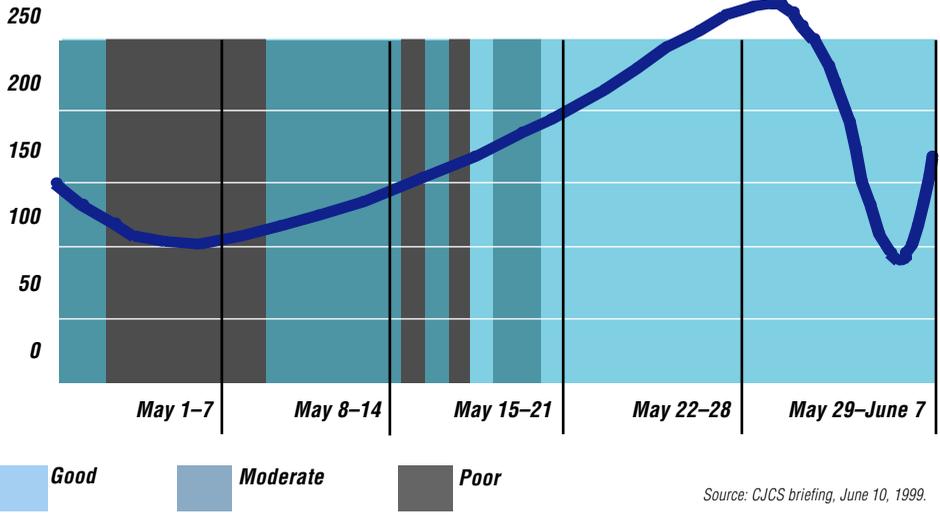
²⁶Gen. Richard Hawley, Commander, Air Combat Command, remarks to the Defense Writers Group, April 29, 1999.

A member of the 510th Fighter Squadron at Aviano AB, Italy, marshals an F-16 fighter toward a preflight check on April 4, during one of the first nights of the campaign. Most of the early operations took place at night.



USAF photo by SrA. Jeffrey Allen

Strike Sorties



Weather Impact on Sorties

This chart shows weather patterns during part of Operation Allied Force. Overall, weather was favorable only 28% of the time.

USAF photo by SrA. Jeffrey Allen



SrA. Aaron Fontagneres and SSgt. John Rodriguez of the 494th Fighter Squadron at RAF Lakenheath, UK, load a Mk 82 bomb onto an F-15E on April 7. Bad weather hampered operations and forced cancellation of many sorties.

the NATO allies gathered in Washington for the long-planned celebration of the 50th anniversary of NATO. At the summit, the allies reconfirmed their commitment to stick with the air war. Target approval procedures eased somewhat. The White House announced a major force augmentation, and now the campaign was on course to pursue its objectives.

Relief Operations

Combat deployments increasingly demanded more aircraft and supplies. In the midst of the surge, the air mobility forces of the US Air Force also began humanitarian relief operations. Albania's capital city, Tirana, opened up its airfield and quickly became the aerial port for relief supplies and for a heavy Army force of Apache helicopters.

"My first thought when I saw Tirana was that it was some kind of M*A*S*H unit out of Korea," said a captain with the C-17s flying into the airfield.²⁷ The ramp was soon handling more than four times the acceptable load.²⁸ USAF forces struggled in the heavy mud to set up tents and other infrastructure, but dispersal of humanitarian supplies came first. As TSgt. James Scott of the 437th Security Forces Squadron, Charleston AFB, S.C., said, "We know there are refugees right over the mountains here who are in worse conditions than we are. We don't mind suffering a little bit if it means they can get food and clothes sooner."²⁹ By the end of April, Operation Shining Hope delivered more than a million humanitarian daily rations to the Kosovars.

²⁷TSgt. Karen Pettitt, "Aircrews Maintain High Ops Tempo, Positive Attitudes," Air Mobility Command News Service, April 27, 1999. ²⁸Pettitt, "Troops Conquer Challenges in Tirana," AMC News Service, April 27, 1999. ²⁹Pettitt, "Troops Conquer Challenges in Tirana," April 27, 1999.

14 The Kosovo Campaign: Airpower Made It Work

A US Army Blackhawk helicopter takes off near a USAF C-17 at Rinas Airport, Tirana, Albania, on April 23, 1999. Twelve C-17s transported 5,000 soldiers, 24 Apache helicopters, and 18 multiple rocket launch systems to Tirana. More than 300 missions were needed to move 22,000 short tons. All told, C-17s flew more than 1,200 missions, ferrying humanitarian relief supplies as well as troops and equipment.



USAF photo by TSgt. Cesar Rodriguez

Ground Forces?

While the air campaign was gearing up in intensity, talk of a ground invasion began. However, it was clear from the beginning that NATO had to keep discussion of ground force options off the table. President Clinton said outright “I do not intend to put our troops in Kosovo to fight a war.” JCS Chairman Shelton pointed out the military reality that it would take anywhere from 20,000 to a couple hundred thousand ground troops³⁰ to carry out a NATO military action in Kosovo—numbers well beyond what NATO was willing to contemplate.

The options for using ground forces never materialized. Macedonia hosted NATO forces standing by to enter Kosovo as peacekeepers. However, Macedonian Defense Minister Nikola Klusev stated right away that “Macedonia will not be used in an attack against a neighbor.”³¹

Most likely, the experiences of Bosnia and the ambivalence about political elements of the Kosovo crisis meant that NATO would never agree as an alliance to fight Milosevic’s army and special police with ground forces. Also, the Russians made it plain from the start that they would not tolerate the use of ground forces. On April 9, Russian President Boris Yeltsin appeared on Russian television to warn against NATO bringing in ground troops. That same day, White House spokesman Joe Lockhart stated, “We’ve been officially reassured at a high level that Russia will not be drawn into the conflict in the Balkans.”³² The timing of the Yeltsin and the White House statements raised at least the possibility that the Russians had set “no use of ground forces” as their line in the sand.

Clark did move quickly to deploy Army attack helicopters to Tirana, Albania. Twenty-four Apache

helicopters plus 18 Multiple Launch Rocket Systems went into the busy airfield along with nearly 5,000 soldiers. Pentagon spokesman Bacon described the deployment as “an expansion of the air operation.”³³ With their formidable firepower, it was thought the Apaches could help in identifying and attacking Yugoslav military forces in Kosovo. A force of 12 USAF C-17s flew over 300 sorties, moving 22,000 short tons, to deploy the Apache force.

In the end, the Apaches were never used in combat. Two accidents in late April and early May tragically claimed the lives of two crewmen and destroyed two helicopters. However, the problems with employing the Apaches had been evident from the outset. To reach the key areas of fighting, the Apaches would have had to fly 100 miles and more at low altitude over terrain studded with Yugoslav military forces. Small-arms fire, anti-aircraft artillery, and shoulder-fired missiles from these troops would pose a constant threat to the helicopters. One report hinted that the Pentagon did not grant authorization to Clark to use the Apaches because of the high risk involved. Shelton seemed to corroborate this when he said that the Apaches would only be used if the risk was reduced “to the very minimum.”³⁴

The Operational Environment

To carry out a sustained air campaign, NATO tapped primarily the resources of the US Air Force. For the Air Force, the commitment to the Kosovo campaign quickly went from a contingency operation to a major theater war. The Air Force had downsized 40% since 1989. That meant that Kosovo strained the smaller force and tested its new concept for expeditionary operations. By percentage, the USAF deployed a higher share of its active and reserve force than at

³⁰US Army Gen. Henry H. Shelton, CJCS, ABC’s “This Week,” April 11, 1999.

³¹Macedonian Defense Minister Nikola Klusev, quoted by Daniel Williams, Washington Post, March 25, 1999.

³²White House spokesman Joe Lockhart, White House news briefing, April 9, 1999, quoted by Reuters News Service.

³³Kenneth Bacon, cited in House Armed Services Committee’s “Kosovo Update” June 16, 1999.

³⁴HASC’s “Kosovo Update” June 16, 1999.

any time in the last three decades. The commitment to Vietnam consumed about 15% of the US Air Force's assets. Desert Storm took about 30%. During Kosovo, almost half of the force was deployed to Kosovo and other operations. High-demand Command, Control, Communications, and Computers/Intelligence, Surveillance, and Reconnaissance (C⁴ISR) assets were deployed at a rate of about 45% of the total in the fleet. Approximately 22% of the bombers and 44% of the fighters were engaged. Critical assets like F-16CJ defense suppression fighters were almost totally dedicated to the theater. More than 40% of the Air Force's tankers were in use—and a staggering 80% of the tanker crews were called to action. President Clinton called up reserve component forces in late April to keep the air war going.

Just as the air war in Desert Storm marked a leap forward in capabilities in 1991, the Kosovo operation demonstrated that aerospace power had evolved above and beyond what it had been almost a decade earlier. Many aspects of the Kosovo campaign resembled other operations in the 1990s. But unique rules of engagement and the spectacular debut of new systems marked points of special interest in the campaign. All along, the overriding challenge was to summon expeditionary airpower, and unleash the aircrews to carry out the missions they had been trained to do.

Operations began with constant combat air patrols over Kosovo and Bosnia. Suppression of Enemy Air Defenses (SEAD) assets were also on call. Then, strike

packages, most with dedicated SEAD assets, would be assigned to specific missions. Operation Allied Force included combinations of NATO and US aircraft, and some US-only packages. NATO seized and held air dominance from the start of the operation. However, the operational environment for NATO airmen flying over Yugoslavia held many challenges.

Air defenses. Yugoslavia's air defenses could present a considerable challenge, as NATO airmen well knew. Just before the air war began, USAF head Ryan cautioned: "There's no assurances that we won't lose aircraft in trying to take on those air defenses."³⁵ The air defense system in Yugoslavia, especially around Belgrade, was dense, and mobile Surface-to-Air-Missiles (SAMs) added more complexity.

Targets in the integrated air defense system were included in the first night's strikes. However, even as NATO gained freedom to operate, the Yugoslav air defense strategy presented some unorthodox challenges. Reports suggested that spotters used cell phones and a chain of observers to monitor allied aircraft as they took off. Many times, the air defense system simply did not "come up" to challenge NATO strikes. "Their SAM operators were, in the end, afraid to bring the SAMs up and engage our fighters because of the lethality of our SEAD aircraft," Gen. John P. Jumper, Commander, US Air Forces in Europe, remarked.³⁶

That was a mixed blessing. The Yugoslavs could not prevent NATO from attacking key targets, but

³⁵USAF Gen. Michael E. Ryan, Chief of Staff, testimony to Senate Armed Services Committee, March 18, 1999.
³⁶Gen. John P. Jumper, Commander, US Air Forces in Europe, Eaker Institute program, "Operation Allied Force: Strategy, Execution, and Implications," Aug. 16, 1999.

USAF photo by SrA. Jeffrey Allen



F-16CJs deployed to Aviano AB, Italy, from Shaw AFB, S.C. The CJ's Suppression of Enemy Air Defenses was indispensable to the campaign. F-16CJs flew with strike packages and maintained patrols to hunt and pick off Yugoslav Surface-to-Air Missile batteries.

they could—and did—make it tough to completely decimate the air defense system. Yugoslav air defenses were not efficient, but they were not dead, either. Jumper characterized the anti-aircraft artillery and man-portable SAM threat as “very robust.” As a consequence, pilots often got warnings that SAMs were active while on their missions. An initial assessment from pilot reports and other sources tallied almost 700 missile shots: 266 from SA-6s, 174 from SA-3s, 106 from man-portable systems, and another 126 from unidentified systems. One informal estimate concluded a pilot was more than twice as likely to be shot at by SAMs over Kosovo than in Desert Storm. Individual anti-aircraft artillery pieces were very active and often became targets as the campaign progressed.

Crews in the B-1 bomber counted at least 30 SAM shots during the first 50 missions they flew from their in-theater base at RAF Fairford, in England. Fortunately the ALE-50 electronic countermeasures towed decoy pod—reeled out behind the aircraft—proved its value. Ten SAMs locked onto the B-1s and were diverted by the decoy pods.³⁷ An A-10 reportedly had to return to base after a SAM exploded nearby, causing a mechanical failure.

Overall, NATO did not destroy as many SAMs as air planners would have liked. Preliminary data from the Joint Staff estimated that two out of a total of three SA-2s were hit and 10 of 13 SA-3s were destroyed. However, early estimates cited kills of only three of about 22 SA-6s. “We learned from this war that it is a different ball game when SAMs don’t come up to

fight,” acknowledged Jumper. The concept of operations for lethal SEAD depended on targeting individual batteries as they begin to track and illuminate friendly aircraft. Jumper explained, “Everything that we do is predicated on the bad guy’s willingness to engage.” When the SAMs went into hiding, that gave NATO airmen access to the targets, but it also kept “that element of doubt out there,” Jumper said.³⁸ With the adversary keeping much of the system under wraps, it was hard to turn SEAD—the Suppression of Enemy Air Defenses—into DEAD—the Destruction of Enemy Air Defenses.

Offensive counterair actions scored many successes. The Yugoslav air force included front-line MiG-29s as well as older MiG-21s and other aircraft. American pilots shot down five aircraft in air-to-air engagements and a Dutch F-16 got a MiG-29 on the first night. Many more aircraft were destroyed on the ground. In one remarkable example, a TLAM targeted and destroyed a MiG-29 fighter on the ramp.

NATO also did well against Yugoslav airfields. “One of the myths that was dispelled in this conflict was that you can’t close an airfield,” commented Jumper. “As a matter of fact, we closed almost all the airfields,” he said.³⁹

Loss of the F-117. Despite this overall success story, the loss of the F-117, known by the call sign “Vega 21,” became one of the major media events of the war. On March 27, the stealth fighter went down over Serbia. Sources cited evidence suggesting the plane was hit by a Yugoslav SA-3 missile active in the area at the time.⁴⁰ Other reports hinted that the

³⁷David Hughes, “A Pilot’s Best Friend,” *Aviation Week*, p. 25, May 31, 1999.
³⁸Jumper, *Eaker Institute program*, Aug. 16, 1999.
³⁹Jumper, *Eaker Institute program*, Aug. 16, 1999.
⁴⁰Bradley Graham, “Bombing Spreads, Kosovo Exodus Grows” *Washington Post*, March 29, 1999.

The remains of a MiG-29, shot down on March 27, lie on a hillside near the town of Donja Krcina. NATO destroyed six Yugoslav fighters in the air and more on the ground.



DoD photo by US Army Spec. Tracy Trotter

USAF photo by S/A-Jeffrey Allen



A stealthy F-117 from the 49th Fighter Squadron, Holloman AFB, N.M., waits to take off from Aviano on March 24, the first night of the conflict. The F-117s carried out some of the most difficult and dangerous bombing runs of the war. One of them was shot down on March 27.

Serbs may also have tracked the fighter optically using an intricate network of ground observers.⁴¹ A daring rescue retrieved the pilot from Serb territory. Public interest spiked with dramatic television pictures of the wreckage clearly showing the aircraft's Holloman AFB, N.M., markings.

USAF officials stuck to a policy of revealing no details about the crash or the rescue. The loss of the F-117 did not shake the commitment to employing stealth as the 24 F-117s sent to the theater continued to perform tough missions. SEAD was used routinely for all strike packages, as had been the custom in the Balkans since the Scott O'Grady shootdown four years earlier.

In early July, Lt. Gen. Marvin R. Esmond, USAF's Deputy Chief of Staff for Air and Space Plans and Operations, described it this way, "The question I get frequently is, was ECM [Electronic Countermeasures] required for stealth assets. The answer is no, it is not required—depending on the risks you want to put the aircrews at. If you have the capability, then the prudent person would say, why not suppress the threat with electronic countermeasures as well as taking advantage of our stealth capability which all totaled up to survivability for the platform. That is simply what we did."

Jumper said much later that in Desert Storm and Allied Force, "we put our stealth assets into the most dangerous places night after night and after the hundreds of sorties that have been flown in most dangerous situations, the loss of one is certainly better than any of us expected."⁴²

Collateral Damage. At the operational level, concern over collateral damage had a profound impact on how NATO ran the air war. A key part of the air campaign strategy was to target Milosevic's

power base, shock the Serb leadership, and disrupt the functioning of the state—but it all had to be done without targeting the populace.

The rules of engagement for Operation Deliberate Force in Bosnia in 1995 indicated that collateral damage would always be a dominant factor in the execution of a NATO air campaign. Back then, NATO and the UN approved a category of targets prior to the operation. Lt. Gen. Michael E. Ryan—the future USAF Chief of Staff, then holding the position of Commander Allied Air Forces Southern Europe—personally approved every Designated Mean Point of Impact (DMPI) that was struck in the two-week campaign.

In the Kosovo operation, target approval and concerns for collateral damage became some of the stickiest challenges for the alliance. The vast displacement of refugees made the pilot's job infinitely harder. "There's little doubt in my mind that Milosevic had no compunction at all about putting IDPs inside of what we felt to be valid military targets," said Lt. Gen. Michael C. Short, NATO's Joint Force Air Component Commander. "And, in fact, a couple of times we struck those targets and then saw the results on CNN."⁴³

Despite remarkable caution, there was unintentional loss of life. NATO released 23,000 bombs and missiles, and, of those, there were 20 incidents where bombs went astray from their targets to cause collateral damage and casualties— all of it painful and regrettable.

By far the most serious geopolitical shock came from the accidental bombing of a Chinese Embassy building on May 7. Reports suggested that several JDAMs hit the building, crashing through several floors and killing three Chinese nationals. The US apologized and said that intelligence sources had been

⁴¹Aviation Week, April 5, 1999.

⁴²Jumper, Eaker Institute program, "Aug. 16, 1999.

⁴³John A. Tirpak, "Short's View of the Air Campaign," Air Force Magazine, September 1999.

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Airpower Made It Work**

SSgt. William Kowalski (left) and A1C Jesse Lawhorn of the 49th Maintenance Squadron, Holloman AFB, N.M., attack tail fins on a GBU-12 laser-guided bomb at Aviano. Demand for precision weapons for American units and Allies caused the theater to run through its stocks of munitions. Airlift brought more.



USAF photo by SRA Jeffrey Allen

using an outdated map of Belgrade that pinpointed the wrong location.

However, putting aside the Chinese Embassy bombing, the air campaign kept up high standards of accuracy. Defense Secretary Cohen said, "We achieved our goals with the most precise application of airpower in history."

Target Identification. Pilots operated under very strict rules of engagement. "These were the strictest rules of engagement I've seen in my 27 years," commented USAF Maj. Gen. Charles F. Wald, of the Joint Staff's Strategic Plans and Policy Division and key spokesman during the operation. NATO was able to impose and live with rules of engagement because aircrew training and the technical capacities of aerospace power permitted rapid conferences about whether to strike a target or not. Often, getting clearance to attack a target required a pilot to make a radio call back to the Combined Air Operations Center (CAOC) to obtain approval from the one-star general on duty.

Concern over the air defense threat led Short to place a 15,000-foot "floor" on air operations. Flying at that altitude reduced the effects of anti-aircraft fire and shoulder-fired SAMs. Aircraft could dip below the limit to identify targets. For the most part, precision attacks were carried out with laser-guided weapons that worked well from that altitude.

Changes came from the highest political authorities, too, even after aircraft had taken off. One B-2 strike had to turn back when a target was denied en route. In theater, Short recounted how at the last minute, one or two nations could veto a target, causing packages in the air to be recalled via Airborne Warning and Control System (AWACS) aircraft and tankers. This

played "havoc with a mission commander's plan, because now all of a sudden he's lost part of his train," he continued. "And you don't want to send those kids in there if they're not going to drop."⁴⁴

While the short leash was frustrating, it was also a sign of the incredible technological sophistication of the NATO air campaign. Controlling it all was the CAOC. According to Jumper, it is a weapon system in its own right. The CAOC connected pilots and controllers airborne over the battlespace to the nerve center of the operation. Since Bosnia, the CAOC at Fifth Allied Tactical Air Force in Vicenza, Italy, had grown from a hodge-podge of desks and unique systems to an integrated operation. Its staff swelled from 300 to more than 1,100 personnel during the Kosovo campaign.

At the CAOC, planners crafted the air tasking order on a 72-hour cycle to plan allocation of assets. But the strikes were executed on a much shorter cycle. Commanders were able to assign new targets to strike aircraft and change munitions on airplanes in a cycle as short as four to six hours.

Increasingly, the CAOC served as the pulse-point of aerospace integration: linking up many platforms in a short span of time. Multiple intelligence sources downlinked into the CAOC for analysis. Operators integrated target information and relayed it to strike aircraft. Pilots could radio back to the CAOC to report new targets and get approval to strike. Jumper recounted how in the CAOC, "We looked at U-2s that we would dynamically retask to take a picture of a reported SA-6, beam that picture back to Beale AFB [in California] for a coordinate assessment within minutes and have the results back to the F-15E as it turned in to shoot an AGM-130 [precision guided

⁴⁴Tirpak, "Short's View of the Air Campaign," *Air Force Magazine*, September 1999.

munition].⁴⁵ This real-time tasking was a leap ahead of Desert Storm operations. Over time, Predator UAVs were used in a similar way via the CAOC, and with a brand-new laser designator, could direct strike aircraft already flying in the engagement zone onto positively-identified targets like tanks and armored personnel carriers.

The B-2: Spirit of Success

The B-2 bomber made its operational combat debut flying on the first night of the war during the Kosovo crisis. “It flies like a Cadillac and bombs like a rifle,” said 509th BW Commander Barnidge. Short called the B-2 “the number one success story” of Operation Allied Force.⁴⁶

The B-2 flew 49 sorties, with a mix of two-ship and single-ship operations. All told the B-2 delivered 650 JDAMs with an excellent, all-weather accuracy rate.⁴⁷ The targeting system allowed the B-2 crew to select 16 individual Designated Mean Points of Impact, one for each JDAM carried. “As you are driving those 14 hours or more to the target environment, the jet is talking to the satellites and getting updates constantly on the location of the aircraft and that is being handed through the umbilical cords to each individualized weapon. Each weapon is individually independently targeted,” Barnidge explained.

The B-2 crews proved first of all that they could operate effectively on missions that took more than 30 hours to complete. A folding chaise lounge behind the pilots’ seats and stashes of hot food on board

helped the two-man crew manage fatigue. At the same time, the bomber proved itself combat-worthy. Using just six of the nine aircraft at Whiteman, the 509th made every take-off time and participated in 34 of the 53 air tasking orders generated for Operation Allied Force. Every B-2 was launched in “pristine” condition—meaning its radar and infrared signature met low observable specifications, with no rough patches to degrade survivability. The B-2 stood up to the demands of combat operations, sometimes taking as little as four hours to refuel, rearm, and turn the jet in preparation for another combat sortie. “It is an incredibly durable, incredibly robust airframe. You turn it on, and it just keeps running,” Barnidge reported.

Information Warfare. Part of the information warfare weapon involved attacks on more traditional targets: knocking out communications sites like cellular telephone microwave relays and TV broadcast towers. The secret new arts of disrupting enemy military capabilities through cyberspace attacks appeared to have been a big part of the campaign. Air Combat Command stood up an information warfare squadron in 1996 to handle both defensive protection of information and offensive information techniques at forward-deployed locations. According to one report, the unit had its “combat debut” during the Kosovo operation and the Serbs felt the impact. “They’re pulling their hair out at the computer terminals,” said one unnamed official. “We know that.” Jumper said there was “a great deal more to talk about with

“We are doing his killing machine more damage than he dares let the world see.”

—US Secretary of State Madeleine Albright and British Foreign Secretary Robin Cook, May 16, 1999.

⁴⁵Gen. John P. Jumper, USAF Commander, Eaker Institute program, “Operation Allied Force: Strategy, Execution, and Implications,” Aug. 16, 1999.

⁴⁶Tirpak, “Short’s View of the Air Campaign,” Air Force Magazine, September 1999.

⁴⁷Brig. Gen. Leroy Barnidge, 509th Bomb Wing Commander, Aerospace Education Foundation Colloquium on NATO Air Operations in Kosovo, July 1, 1999.

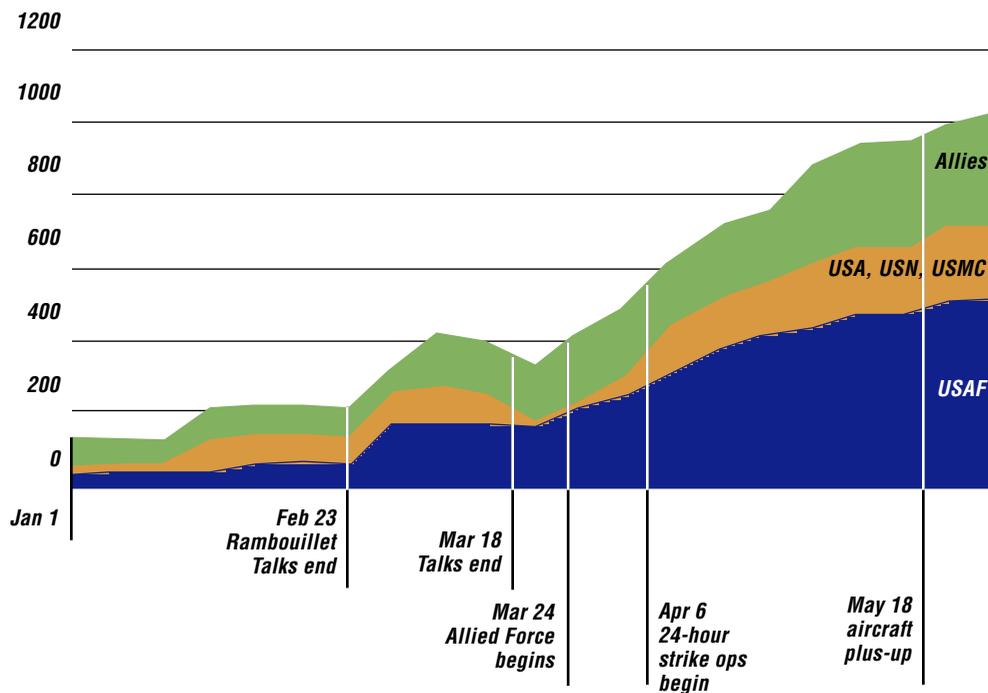
USAF photo by SrA. Jessica Kochman



A1C Jason Fifield of the 393rd Bomb Squadron, Whiteman AFB, Mo., examines a rack of Joint Direct Attack Munitions before they are loaded onto a B-2 bomber. The B-2s flew 49 missions launching more than 650 JDAMs with an exceptional all-weather accuracy rate. “It flies like a Cadillac and bombs like a rifle,” 509th Bomb Wing Commander Brig. Gen. Leroy Barnidge said of the B-2.

20 Aircraft Committed to the Effort

Deploying more aircraft to the theater was the key to making the campaign work. With new guidance in early April, NATO airmen had two target sets: targets of unique strategic value and Yugoslav army forces and their sustainment elements scattered across Kosovo. Isolating and pinning the fielded forces required 24-hour coverage of the Kosovo engagement zones to detect and prevent organized movement. All that demanded more aircraft, and USAF bore the brunt of the surge. "This is the equivalent of a major theater war," Secretary of Defense William Cohen said at a briefing in late May. "It's a major campaign on the part of the United States Air Force."



regard to information warfare that we were able to do for the first time in this campaign and points our way to the future."⁴⁸ One day, when the veil lifts, the conclusion may be that the Kosovo operation marked a new stage of evolution in the contribution of information warfare to aerospace power.

Turning the Corner

Every sortie flown and every target struck in the air campaign had just one purpose: to help push Milosevic toward acceptance of the conditions laid down by the international community. By May, the USAF had deployed another significant increment of forces. With 24-hour operations underway the air campaign was able to keep the pressure on military forces in a much wider area of Kosovo via the "Kosovo engagement zones," updated terminology for the "kill box" concept pioneered in the Kuwait theater of operations in Desert Storm.

By May, there were enough forces in the theater to cover the engagement zones for about 20 hours a day. Strike aircraft tripled so that a total of 323 American and 212 allied strike aircraft worked against the two major goals of hitting Serb military forces and striking targets of unique strategic value. Air forces now attacked from all sides. Marine F/A-18s flew missions from a base in Hungary. Strike packages from Italy could fly around Yugoslavia to ingress from the northeast, surprising air defenses around Belgrade. Initial prohibitions on flying through Bosnian airspace had eased.

"The mission is to pin them down, cut them off,

take them out," said NATO spokesman Maj. Gen. Walter Jertz. "We have pinned them down, we have pretty much cut them off, and are about to begin to take them out."⁴⁹ Under the relentless pressure of air attacks, Milosevic's forces in Kosovo were losing. Evidence of VJ and MUP defections was mounting. Their fuel supplies were limited, and their resupply lines had been cut, and Milosevic knew it would only get worse. More forces were slated to deploy and two months of good summer weather lay ahead. JCS spokesman Wald said, "This is a game with as many innings as we want, and I think Milosevic is running out of baseballs."

⁴⁸Jumper, Eaker Institute program, Aug. 16, 1999.

⁴⁹NATO spokesman Maj. Gen. Walter Jertz, news briefing, May 6, 1999.

The NATO Air Campaign Succeeds

Around May 22, the pressure increased again. Better weather and more forces allowed NATO airmen to ramp up the pressure on the Yugoslav army. In about ten days, Bomb Damage Assessment (BDA) confirmed that NATO airmen had doubled the number of tanks destroyed—hit three times the number of armored personnel carriers—and hit four times as many artillery and mortar pieces. “We’re driving him to a decision,” announced Clark at the end of May.

Also in late May the KLA began its first large-scale offensive in more than a year. About 4,000 troops pressed ahead from points along the Albanian border. The KLA’s “Operation Arrow” soon met heavy resistance from Yugoslav artillery and troops. In about two days, the rebels were pinned down along Mount Pastrok. Heavy mortar and artillery fire ensued and the KLA was “creamed” according to a senior US intelligence official.⁵⁰

The small-scale offensive reportedly helped NATO identify more Yugoslav military equipment in the immediate area. “As the Serbs fire their artillery, they’re detected, said Wald. “Then we go ahead and attack them and destroy them” with air.⁵¹ US Defense Secretary Cohen emphasized that NATO was not coordinating operations with the KLA. Indeed, by this time, NATO air attacks on Yugoslav military installations and forces were spread widely across

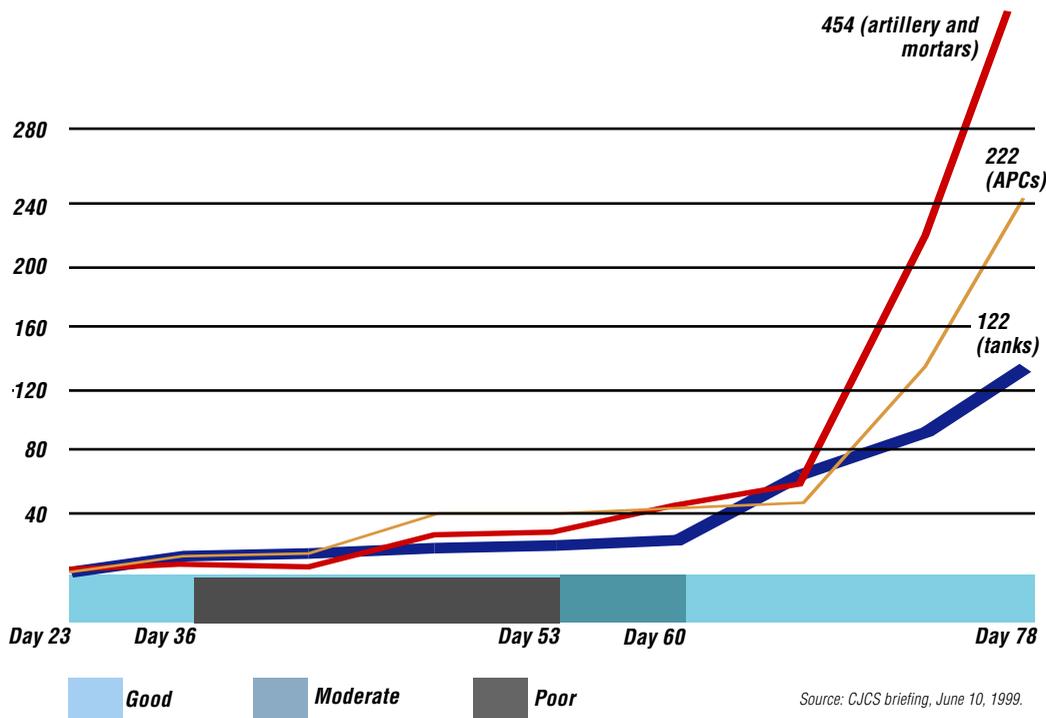
Kosovo and southern Serbia every day and night, well beyond the localized effects of the KLA actions.

By early June, military impact and a series of diplomatic events were coming together as powerful coercion. The diplomatic chain of events had started a few weeks earlier, with the G-8 meeting in Bonn on May 6. There, the major Western economic powers plus Russia agreed on a basic strategy to resolve the conflict. An international tribunal in The Hague indicted Milosevic as a war criminal—an indictment, as Cohen pointed out, with no statute of limitations. Also, the European Union appointed President of Finland Martti Ahtisaari as its special envoy for Kosovo. Under Ahtisaari’s auspices, the US, NATO, and Russia agreed to a NATO-drafted plan on May 27. Yugoslavia’s parliament voted to accept the plan on June 3.

The air campaign was also having a devastating effect. Roads, rail lines, and bridges across Yugoslavia had been knocked out, halting the normal flow of the civilian economy. Good weather and long summer days ahead meant that more of Milosevic’s country and his military forces would be exposed to devastation. In late May and early June, the impact on fielded forces spiked.

Destruction of armored personnel carriers, artillery, and tanks continued to rise “almost exponentially”

⁵⁰Dana Priest and Peter Finn, “NATO Gives Air Support to Kosovo Guerillas,” Washington Post, June 2, 1999.
⁵¹Jon R. Anderson, “Underdog KLA Works Its Way Up,” European Stars and Stripes, June 1, 1999.



The Cumulative Toll on Serb Mobile Targets

US Army Gen. Henry H. Shelton, Chairman of the Joint Chiefs of Staff, briefed the immediate count of the results of the campaign on June 10. Better weather and more forces exponentially increased the hits on tanks, armored personnel carriers, and heavy artillery. “I do not believe that Milosevic ever understood the level of damage that an expertly executed air campaign could achieve,” Shelton said.

22 Targeting Command, Control, and Communications

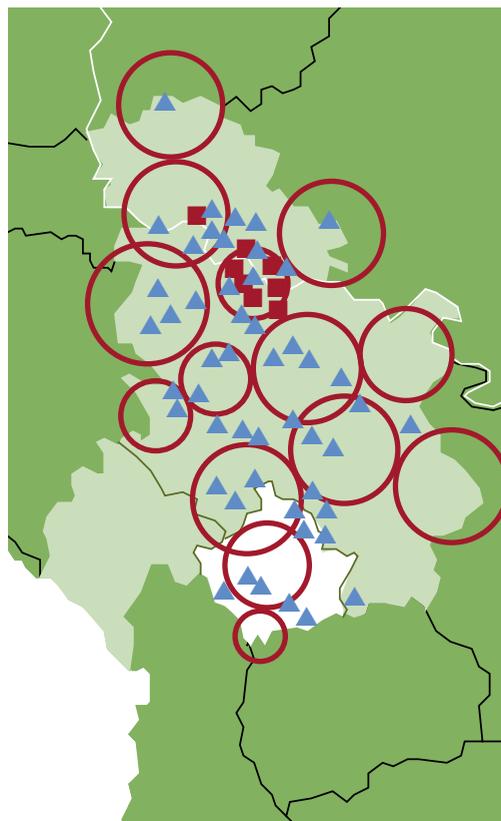
Paralyzing communications was a top priority. This chart details areas where air attacks knocked out and degraded radio and TV coverage. About 45% of the TV broadcast capability was degraded and a third of the military and civilian radio relay networks were damaged.

- Areas of radio and TV outage
- Command and control targets
- ▲ Communications

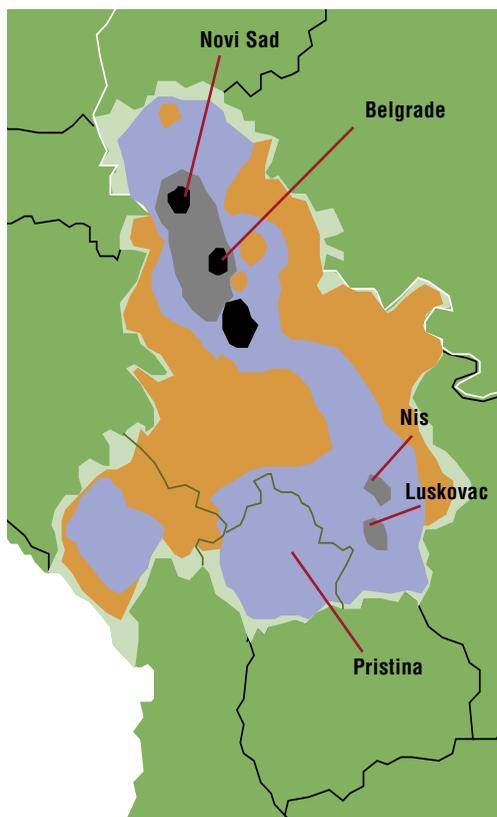
Disruptions to Electric Power

When airmen got permission to attack targets in Belgrade and across Yugoslavia, electric power became a major target. The chart shows that Belgrade had only limited power with frequent disruptions. More disruptions occurred across the country. Toward the end of the 78-day bombing campaign, Milosevic "hadn't had power in his capital for a number of days and wasn't going to have it for a number of days more," said USAF Lt. Gen. Michael Short, Joint Force Air Component Commander.

- Electricity likely restored: minimal disruptions
- Electricity restored with some disruptions
- Limited power available: frequent disruptions
- Extended power disruptions



Source: CJCS briefing, June 10.



⁵² US Army Gen. Henry H. Shelton, CJCS, June 10, 1999.

in the words of JCS Chairman Shelton. The Yugoslav army forces in Kosovo lost 450 or about 50% of their artillery pieces and mortars to air attack. About one-third of their armored vehicles were hit: a total of about 122 tanks and 220 armored personnel carriers. These heavy losses meant they could not effectively continue offensive operations.

At the same time, Yugoslav forces in Serbia were also feeling the pressure. First army, in the north, had 35% of its facilities destroyed or damaged while 2nd army, near the Kosovo border, had 20% of its facilities hit. Third army, assigned to operations in Kosovo, had 60% of its fixed facilities damaged or destroyed. The Joint Staff assessed that the air attacks had "significantly reduced 3rd army's ability to sustain operations."

Belgrade was largely without electric power and about 30% of the military and civilian radio relay networks were damaged. Across Yugoslavia, rail and road capacity was interdicted. Some 70% of road and 50% of rail bridges across the Danube were down. Critical industries were also hard hit, with petroleum refining facilities 100% destroyed, explosive production capacity 50% destroyed or damaged, ammunition production 65% destroyed or damaged, and aviation and armored vehicle repair at 70% and 40% destroyed or damaged, respectively.

Industrial targets and bridges would take a long time to repair. In many cases, electric power and communications could be restored more readily. However, the combined effect had brought the war home to Belgrade, and restricted Milosevic's ability to employ his fielded forces effectively. On June 10, after last-minute wrangling with Yugoslav military commanders, Milosevic accepted the NATO conditions.

What exactly had the air campaign achieved? As Shelton briefed on June 10, "The strategy that NATO adopted, which was a phased air campaign, increasing the frequency and the intensity of our air operations and our airstrikes to reduce the Serb forces' capabilities—was successful."⁵²

"I think it was the total weight of our effort that finally got to him," said Short, the allied air commander. The 78-day air campaign brought about an ending that seemed almost impossible back in March. Milosevic agreed to a ceasefire, the withdrawal of Serb forces from Kosovo, the entry of an international peacekeeping force, the return of refugees, and Kosovar autonomy within Yugoslavia. Kosovo would remain within the sovereignty of Yugoslavia. However, the international peacekeeping force would be armed and empowered.

Military historian John Keegan wrote with some awe, "Now, there is a new date to fix on the calendar:

June 3, 1999, when the capitulation of President Milosevic proved that a war can be won by airpower alone.”⁵³

Targets struck and effects imposed were important ingredients, but the overall impact registered as diplomatic success. On June 10, Secretary Cohen said, “When I announced the first NATO airstrikes against Yugoslavia, I stated a clear military goal: to degrade and diminish the Serb military. Over the past 11 weeks, NATO pursued that goal with patience, with persistence, and with great precision. As a result, Serb forces are leaving Kosovo, and NATO troops are poised to ensure peace and stability in Kosovo so that more than one million refugees and displaced persons can begin to return to safety and start rebuilding their lives.”⁵⁴

Second-guessing

Almost as soon as the Yugoslav forces started pulling out of Kosovo, they also sought to minimize the impact of the air campaign. A London Sunday Times article of June 20, cited Serb sources who claimed that NATO air attacks had destroyed only 13 tanks. Significantly, both the Pentagon and NATO stuck by the numbers briefed at the time hostilities ceased. USAFE began a major battlefield survey to glean whatever evidence was left after the Serb forces pulled out. In this war, however, the immediate Bomb Damage Assessment resources far surpassed what had been available in previous conflicts.

Press reports of decoy tanks and positions also attracted attention. Ground decoys, deception and camouflage have been a commonplace feature of air war since World War I. In the Kosovo crisis, NATO pilots did hit some decoys, but according to Short, the pilots “became pretty adept at figuring out what was a decoy and what wasn’t.” Jumper was blunt about putting the decoy issue in perspective as a minor aspect of the campaign. “We did hit decoys,” he said. “We had plenty of bombs and I was happy to have Serb manpower employed in the business of making decoys,” he added.

The correlation of battlefield surveys and BDA reconciliation may never pin down a number of ground mobile targets destroyed with 100% accuracy, and Milosevic will probably never tell what happened to his forces. But the consistent attitude of senior military officials makes it likely that the immediate after-action numbers stand a good chance of proving out to be fairly accurate. The main point is, however many vehicles were killed, it was enough to take away the initiative of the Yugoslav ground forces and contribute mightily to Milosevic’ decision to pull them out, lest they suffer more attrition at the hands of NATO airmen throughout the summer.

Conclusions

Debate raged over the value of airpower all during the 78 days of the air campaign. Detailed assessments of weapons systems performance, the impact on

⁵³ John Keegan, *London Daily Telegraph*, June 6, 1999.

⁵⁴ Secretary of Defense William S. Cohen, news briefing, June 10, 1999.

Deployed to Aviano, A1C Jerry Heron (driver), SrA. Jason Caffin (left) and SSgt. Mark Nogel, of the 81st Fighter Squadron, Spangdahlem AB, Germany, uncase an AGM-65 Maverick before it is loaded onto an A-10. A break in the weather meant the A-10s and other forces could resume the search for targets among the Yugoslav army forces dispersed throughout Kosovo. “Airpower alone is capable of rendering the Yugoslav military ineffective, and that’s what our charter is, that’s what our task is, and that’s what we’re going to do,” said Gen. John Jumper, Commander, USAFE.

USAF photo by SrA. Jeffrey Allen



24 **The Kosovo Campaign:
Airpower Made It Work**

A pilot from the 510th Fighter Squadron at Aviano, just returned from an Operation Allied Force bombing mission. The 510th carried out numerous strikes on targets across Yugoslavia.



USAF photo by S/A Jeffrey Allen

strategic targets, the effects on ground forces will come with the conclusion of internal study efforts by the Air Force and other Pentagon offices.

Still, the main outcome is already known. NATO's air campaign accomplished its objectives. There are no political officials or military commanders within NATO who would contend that the war was waged just the way it should have been. However, the major results are already in, and they speak volumes about what aerospace power accomplished and what the Kosovo crisis has taught airmen.

The main contribution of aerospace power in the Kosovo crisis was to give the NATO allies a strategy that fit their military objectives, and their political consensus—while denying Milosevic the ability to continue to employ the strategy of his choosing. Air Vice Marshal Tony Mason, RAF, put it this way: "Milosevic really wanted us to get into ravines and into gorges. He really wanted us to relive the Serbian situation in the 1940s."⁵⁵

However, the skillful and successful employment of NATO airpower meant that Milosevic did not stand a chance of luring the allies into a ground battle. As Mason summarized, NATO was able to use aerospace power "to shape an environment, to deny an opponent the strategy of his choice."⁵⁶ Aerospace power handed NATO a strategic success because it let NATO achieve its stated goals while employing its first-choice force: its airmen. There is perhaps no better measure of victory than the ability to win by sticking with the preferred strategy.

For all the ambiguity surrounding Kosovo and its future, there is no doubt that the air campaign has brightened the future for the beleaguered province. In the year before NATO took action, a quarter of a million Kosovars were made refugees in their own

homeland. When Rambouillet failed, Milosevic massed his forces, bet against NATO being able to act swiftly, and tried to steal Kosovo through the most massive and brutal wave of ethnic cleansing seen to date in the former Yugoslavia. Diplomacy failed to stop him. By using aerospace power, NATO was able to force Milosevic to agree to conditions that allowed the Kosovo refugees to go back home under international protection. The people of Kosovo now have at least a better chance to create peace.

Finally, there is no doubt that aerospace power was the right military tool for the crisis. It was a tough job, but with an overwhelming effort from the US Air Force, NATO airmen made the campaign work. The air campaign got off to a difficult start. Political constraints, weather, and the deteriorating situation on the ground in Kosovo came together to set up almost impossible conditions. In the words of USAFE head Jumper, "All of those things that remind us of Vietnam conspired to work against what I would call an efficient air campaign." However, NATO airmen were able to do the job, even if they had to do it the hard way. Even "without the efficiency I would have hoped for, we were able to do it anyway," Jumper concluded.⁵⁷

Sustained, persistent effort and the combination of targets made the air campaign effective. Within days of the start of the campaign, internal NATO guidance had refocused the effort on the two pillars of air strategy: strategic targets and fielded forces. Only the adversary knows what his center of gravity really is. But long experience has shown that when a leader, like Milosevic, is using ground forces to carry out his aims, the state of those ground forces is a crucial part of his power. At the same time, no modern state functions well when its electricity, petroleum

⁵⁵RAF Air Vice Marshal Tony Mason, Eaker Institute program, "Operation Allied Force: Strategy, Execution, and Implications," Aug. 16, 1999.

⁵⁶Mason, Eaker Institute program, Aug. 16, 1999.

⁵⁷Gen. John P. Jumper, Eaker Institute program, Aug. 16, 1999.

supplies, communications, and key transportation nodes are being destroyed. Somewhere in and amongst these target sets there is a combination of effects that can make it impossible for the adversary to keep up the fight. Prudent air planners go after all these little centers of gravity to foreclose options and accumulate impact.

In operational terms, the problems associated with attacking fixed, strategic targets and in going after ground forces presented two different kinds of challenges. In the Kosovo crisis, political restrictions kept NATO airmen away from many key strategic targets. As targets were released they could be struck with precision weapons, to great effect and with devastating efficiency. On the other hand, attacking fielded forces took time and a big share of the strike aircraft committed to Operation Allied Force. Because Milosevic's ground forces were engaged and dispersed, NATO airmen had to hunt, find, identify, and attack ground forces, keeping up the pressure with 24-hour air interdiction operations.

Airmen make a distinction between "strategic targets" and "fielded forces" when they plan and execute operations. The difference often applies as well in assessing the strike results. They know, however, that the goal is to produce synergistic effects and that is what the NATO air forces did.

To their credit, the alliance airmen delivered their victory with quiet determination. During the conflict most airmen kept a hopeful, but sober view of what aerospace power was being asked to do. "No airman ever claimed that airpower would be able to

stop genocide, especially genocide that was started long before the air campaign even started," Jumper emphasized.⁵⁸ USAF Chief of Staff Ryan wrote in early June that aerospace power was simply "the most available, effective, and rapid means to strike back against Milosevic's aggression."⁵⁹

"We airmen were wrong in one area," conceded Brig. Gen. Daniel P. Leaf, Commander of the 31st Fighter Wing at Aviano AB, Italy. "We never expected that we'd be able to conduct these extraordinarily complex missions around-the-clock against robust air defenses without a single combat fatality."⁶⁰

Still, it was "very easy to criticize airpower for what it did or didn't do," observed Air Vice Marshal Mason. This meant that the air campaign would take the heat of criticism and debate—debate that often sprang from much larger questions about the role of military force and the timeliness of NATO action. Yet the fact was "that politically, operationally, temporally, and for every other conceivable reason, it could only be airpower, whether airmen wished it to be airpower on its own or not," he stated. Airmen were caught between knowing that under ideal conditions they would have waged the campaign differently—and feeling a wholehearted commitment to make it work, no matter what it took.

"Had the United States been planning this operation, it would have been different," Defense Secretary Cohen acknowledged in late May. "There were a lot of difficulties as to how this was put together," he continued.⁶¹

The air campaign occurred after everything else

⁵⁸Jumper, Eaker Institute program, Aug. 16, 1999.

⁵⁹Gen. Michael E. Ryan, USAF Chief of Staff, "Air Power is Working in Kosovo," Washington Post, June 4, 1999.

⁶⁰Brig. Gen. Daniel Leaf, Commander, 31st Fighter Wing, Aviano AB, Italy, June 12, 1999.

⁶¹Richard Parker, "Cohen Admits Flaws in NATO Strategy," Milwaukee Journal-Sentinel, May 29, 1999.

USAF photo by SrA. Jeffrey Allen



The Air National Guard and Air Force Reserve were significantly engaged. Here, two Reserve F-16 pilots from Shaw AFB, S.C., prepare to fly Operation Allied Force combat missions from Aviano.

Operation Allied Force required 40% of the Air Force's tankers. An amazing 80% of the tanker crews were called to action. This KC-135 Stratotanker from the 117th Air Refueling Wing, Alabama Air National Guard, in Birmingham, has just arrived at RAF Brize Norton in the United Kingdom.



USAF photo by SSgt Randy Mallard

had failed. When the diplomats must have been discouraged at the intransigence of Milosevic, and then at his violence, the only hope for a shift in the situation lay with what NATO could do from the air. The quiet confidence of the US Air Force and its ability to deliver expeditionary aerospace power under tough conditions made a big difference at a time when the alliance itself seemed to ride on the spin of a roulette wheel.

Leaf offered a straightforward view of the Kosovo crisis, "The conflict will be described in complex and diverse terms, and each element subjected to a microscope. For those of us who fought here, however, it was really quite simple. This was an old-fashioned contest between good and evil. Good won."⁶²

Thoughts for the Future

The Kosovo crisis showed off the mature capabilities of aerospace power—and its backbone, the US Air Force—at its very best.

All the elements of aerospace power went through another cycle of close integration. The Combined Air Operations Center (CAOC) functioned like a weapon system in itself, as aerospace operators from many different specialties combined their talents to find targets and direct strikes to kill those targets. New systems, like the B-2 with JDAM, proved what precise, all-weather munitions could do. True to form, the airmen raced to modify systems like the Predator UAV to increase its combat capabilities while the war was underway. By the end of the campaign the warfighters in the CAOC were able to find new targets and strike them within hours, often under difficult weather conditions.

Most of all, Kosovo confirmed that expeditionary aerospace power is the name of the game. Having the

expeditionary aerospace force concept in place helped the Air Force to calibrate its deployments to Kosovo while meeting ongoing operations in Southwest Asia and elsewhere. According to Ryan, Operation Allied Force demonstrated again that "in almost every situation, you'll have to have airpower involved," whether for humanitarian relief, lifting forces or strike operations.⁶³ With its expeditionary posture, USAF was able to summon almost half its forces to the theater and take the lead in turning around an air war that had been given a shaky political start. "We were the ones that surged," Ryan pointed out.⁶⁴

For the future, though, Kosovo also held up many signs. The first was that air superiority remains a basic precondition for successful military operations, especially NATO operations. Dealing with air defenses will continue to be a No. 1 priority. "I can tell you that what Clark and I worried about every day was that somehow, Mr. Milosevic would find a way to float an SA-10 or SA-12 up the Danube River, put it together and bring it to bear," Jumper recalled. Modern SAMs and fighters, like the Su-35, "would have had a profound impact," Jumper warned.⁶⁵ Likewise, the F-16CJs proved indispensable to the operation but were heavily taxed, as were the EA-6Bs. Several USAF leaders have commented that the whole arena of electronic warfare and defense suppression will be re-examined. Other requirements, from air mobility to precision munitions inventories, will also get a hard look.

Beyond this, the Kosovo crisis illustrated again that the art of commanding aerospace power is at the heart of how America fights. The US Air Force has many new tools of air warfare, but its most important asset is the ability of its people to master the execution and the command of aerospace operations.

⁶²Leaf, June 12, 1999.

⁶³Ryan quoted by John A. Tirpak, "Lessons Learned and Re-Learned," *Air Force Magazine*, August 1999.

⁶⁴Tirpak, "Lessons Learned and Re-Learned," August 1999.

⁶⁵Jumper, *Eaker Institute program*, Aug. 16, 1999.

Participating Aircraft by Nationality

Country	Aircraft
US (Air Force)	A-10, AC-130, B-1B, B-2, B-52H, C-5, C-17, C-130, C-135, C-141, E-3B/C, E-8C, EC-130, F-15, F-15E, F-16, F-117, KC-10, KC-135, MC-130, MH-53J, MH-60G, Predator UAV, RC-135, U-2S
US (Other)	EA-6B (Navy), F-14 (Navy), F/A-18 (Navy and USMC), KC-130(USMC), P-3C(Navy), Hunter UAV
Belgium	F-16
Britain	E-3D, GR-7, GR1, L-1011K, Tristar, VC-10, aircraft on HMS Invincible
Canada	CF-18
Denmark	F-16A

Country	Aircraft
France	C-135F, C-160, E-3F, F1, Jaguar, Jag-A, Mirage 2000C/D, MIR-IVP, Puma SA-330, Horizon, UAV CL-289, UAV CR, aircraft on FS Foch
Germany	Tornado PA-200H/E, UAV CL289
Italy	AMX, Boeing 707T, F-104, PA2001, Tornado ADV, aircraft on ITS Garibaldi
Netherlands	F-16A, F-16AM, KDC-10
NATO Common	E-3A
Norway	F-16A
Portugal	F-16A
Spain	CASA, EF-18, KC-130,
Turkey	F-16, KC-135, TF-16C

Cultivating the art of the aerospace campaign among new generations of airmen and commanders is still the abiding challenge.

Finis

What about Kosovo itself? Toward the end of the air war, a NATO official said: "When we look back on this conflict, the air war may be considered the easy part. It is going to be much harder to get these people to forget the violence and live in peace."⁶⁶ What about

Milosevic? As President Clinton made clear, removing Milosevic from office was "not part of the terms that NATO set out at the beginning. That question is left open."⁶⁷ Whatever the course of events in Yugoslavia, NATO air achieved an impressive set of goals and turned around a crisis of epic proportions

What does this say about expeditionary aerospace power? **Was it dominant?** Yes. The results speak for themselves. Milosevic's forces suffered high levels of destruction and agreed to withdraw. In April, they

⁶⁶William Drozdiak and Anne Swanson, "Military, Diplomatic Offensives Produced Agreement," Washington Post, June 4, 1999.

⁶⁷President Clinton, ABC "Good Morning America."

USAF photo by S/A. Greg Davis



A Dutch F-16, like the one pictured here, shot down a Yugoslav MiG-29 at the beginning of Operation Allied Force. NATO turned to its airmen to accomplish objectives after diplomacy failed. Allied cohesion brought about the success in Kosovo. "NATO had one consensus and that was for airpower," said Defense Secretary Cohen.

28 **The Kosovo Campaign:
Airpower Made It Work**

B-52H Stratofortress crews from the 2nd Bomb Wing, Barksdale AFB, La., and the 5th Bomb Wing, Minot AFB, N.D., conduct a formation brief at their in-theater base, RAF Fairford, UK. The bombers launched cruise missiles at targets in Yugoslavia. B-52Hs kept up the pressure from the first night through the end of the campaign.



USAF photo by SSSgt. Efrain Gonzalez

had the KLA on the run, refugees streaming over the borders and Kosovo under their control. By June, after 11 weeks of air attacks, Milosevic had agreed to pull out his forces and admit NATO peacekeepers. Was it decisive? Yes. Airpower fulfilled NATO's clear military objectives of degrading and diminishing the Serb military.

The Kosovo crisis demonstrated that an air campaign works as the centerpiece of joint operations. For airmen, this is not a new lesson. It is a legacy of excellence that reaches back all through the 20th century. In World War II, in Korea, in Vietnam, in Desert Storm, airpower has performed its unique and special role in fighting and winning the nation's wars. The Kosovo crisis reconfirmed the central role of joint airpower in modern expeditionary operations.

Using air to attack the enemy's military forces and targets of unique strategic value is the aerospace warrior's essential first step to shape and control the battlespace. The job of airmen is to achieve as many objectives as possible. In Kosovo, despite many obstacles, aerospace power did this job well. With patience, persistence, and precision, NATO airpower helped force Milosevic to capitulate and to withdraw Yugoslav forces before NATO peacekeepers came in. That is what mature aerospace power can do. ■



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