

Airplanes played no role in combat until the 20th century. By the middle of the century, they demonstrated that wars could not be fought successfully without them. By the end of the century, airplanes could win wars without ground forces.

In this regard, the air war over Serbia, in 1999, was revolutionary. The last war of the 20th century was also the last war in which there was aerial combat, with manned aircraft shooting down other manned aircraft, and victory was achieved without ground operations.

During the decade of the 1990s, Yugoslavia broke up into several independent countries. Some of them seceded peacefully from the federation, which had been dominated by Serbia, but war resulted when Bosnia-Herzegovina, which retained a large Serbian population, attempted to break away. In 1995, NATO air strikes, most flown by USAF aircraft, enforced United Nations resolutions that restored peace and secured Bosnian independence. The operation was called Deliberate Force.

By the end of the decade, all that was left of Yugoslavia was Serbia and Montenegro. Yugoslavia's Serb President,

Slobodan Milosevic, was determined to prevent a new secession threat in the Serbian province of Kosovo, where there was an Albanian ethnic majority.

In September 1998, Serbian forces launched offensives in Kosovo, and tens of thousands of ethnic Albanians fled their homes. Observers feared the Serbs were launching an "ethnic cleansing" campaign to remove non-Serbs from areas they wished to dominate. A UN resolution called for Yugoslavia to stop offensives against civilians, withdraw security units, admit international monitors, and facilitate the return of ethnic Albanian refugees. In October, NATO backed up the UN resolution and prepared for the same kind of air strikes that had been so successful in the Bosnian crisis a few years earlier.

BAIT AND SWITCH

That month, Milosevic agreed to remove thousands of his troops from Kosovo and allow NATO aircraft to fly reconnaissance missions to verify their withdrawal, but his compliance was illusory: At the end of the year, he forbade UN war crimes investigators from entering Kosovo.

The crisis in Kosovo continued to intensify in early 1999, as Serb tanks fired into houses near Malopoljce and Petrova. At least 45 ethnic Albanians were reported as killed in Racak, where houses were set on fire. Milosevic refused to allow a UN war crimes prosecutor to investigate the Racak killings, and he demanded the head of the Kosovo Verification Mission leave the country.

On Jan. 19, NATO Supreme Allied Commander, Europe, Army Gen. Wesley K. Clark met with Milosevic in Belgrade and demanded that Yugoslav forces pull out of Kosovo.

Milosevic agreed to peace talks at Rambouillet and later at Paris in February and March, but they produced no agreement and he continued to reject the entry of foreign troops into Kosovo. Meanwhile, a Finnish forensic investigation revealed that Serbs had killed more than 40 unarmed civilians in Racak.

On March 20, the Serbs launched a new offensive, forcing thousands of ethnic Albanians from their homes northwest of Pristina, Kosovo's capital. Yugoslav forces began killing ethnic Albanians and shelling their villages.

And so, on March 24, NATO launched Operation Allied Force, the first time



Watershed Air War

By Daniel L. Haulman

Enemy air forces haven't challenged the US since Operation Allied Force in 1999.

NATO had gone to war against a sovereign country in the Alliance's 50-year history.

Exclusively an air campaign, Allied Force involved the forces of many NATO countries, but the United States provided the leadership and the bulk of the resources. USAF Lt. Gen. Michael C. Short, commander of 16th Air Force, was air component commander and directed the air campaign from a combined air operations center at Vicenza, Italy.

NATO faced a Yugoslav air force that included 16 MiG-29 and 80 MiG-21 fighters plus 28 J-22 and 70 G-4M attack airplanes. Serbian air defenses included more than 800 man-portable SA-7, SA-14, and SA-16 surface-to-air missiles and 130 other low-altitude anti-aircraft missiles. Other larger and longer range missiles included four SA-2s, 16 SA-3s, and more than 80 SA-6s.

NATO intelligence estimated the Serbs had more than 400 pieces of anti-aircraft artillery, and other enemy forces included 200,000 ground troops—some 120,000 in the Yugoslav army and the rest in paramilitary forces. These troops possessed about 540 tanks, 630 other armored vehicles, and almost 200 pieces of field artillery. Eventually Milosevic

deployed some 40,000 troops and heavy equipment to the disputed province.

Short favored an immediate application of overwhelming airpower against Belgrade, the Yugoslav capital, and Serbia's command and control structures, but NATO had already prepared a five-phase campaign by which the Alliance would gradually increase the pressure on Milosevic to change his course. Under the rules agreed to by the Alliance—barely unified in supporting the operation—NATO member countries could veto certain targets or refuse to allow aircraft to take off from their soil if headed to certain targets.

In the first phases of the air campaign, Belgrade was largely a sanctuary, except for certain air defense targets. Clark favored targeting Serbian ground forces within Kosovo, despite the difficulty of hitting tanks, armored vehicles, and artillery pieces from high altitude, and there was no ground campaign to force the Serb troops to concentrate and thus become more vulnerable to air strikes.

On the opening night of the campaign, March 24, the NATO CAOC managed 214 strike aircraft, with more than half from the United States. They struck from

Italy, Germany, the United Kingdom, and the US.

Venerable B-52 bombers based at RAF Fairford in the UK launched precision cruise missiles against Yugoslavia at the opening of the campaign.

B-2 bombers entered combat for the first time, flying round-trip from Whiteman Air Force Base in Missouri to Yugoslavia and back—a 29-hour round-trip requiring numerous aerial refuelings.

The Air Force employed all three of its strategic bomber types during the course of the campaign, including its supersonic B-1s.

The Navy also took part in the initial air strikes, using Tomahawk Land Attack Missiles (TLAMs) to hit elements of Yugoslavia's integrated air defense system and key command and control sites.

NATO relied heavily on the United States for night operations, precision guided munitions, identifying aircraft beyond visual range, providing airborne command and control, and furnishing intelligence, surveillance, and reconnaissance.

USAF fighters also assumed prominent roles in the conflict. On the first

USAF photo by SrA. Mitch Fuqua



An F-15E takes off from Aviano AB, Italy, for a strike mission over Yugoslavia in Operation Allied Force in March 1999.

Heavy Duty

Operation Allied Force involved some 38,000 NATO sorties—most flown by USAF aircraft. By the end of the war, 13,850 USAF airmen were deployed to or worked from 24 stations.

What started out as a contingency operation became a major theater war, with more than a third of the Air Force's front-line fighters involved. USAF furnished some 30,000 of the 38,004 NATO sorties: 8,889 by fighters, 322 by bombers, 6,959 by tankers, 1,038 by ISR aircraft, 834 by special operations aircraft, 11,480 by transports, and 496 by RPAs.

Of 829 NATO aircraft involved, some 530 belonged to USAF, including 214 fighters, 18 bombers, 175 tankers, and 43 transports.

Air Mobility Command aircraft flew 2,130 airlift missions that transported 32,111 passengers and 52,645 short tons of cargo. By the end of Operation Allied Force, NATO had 175 tankers based at 12 operating locations. USAF KC-135 and KC-10 tankers flew some 9,000 missions and transferred more than 348 million pounds of fuel while airborne.

Other USAF aircraft included E-3 AWACS, E-8 JSTARS, RC-135s, RQ-1 Predators, and U-2s.

Among the special operations and rescue aircraft and crews taking part were AC-130, EC-130, HC-130, and MC-130 aircraft, as well as HH-60, MH-53, and MH-60 helicopters.

Of the 28,018 munitions expended by NATO, USAF delivered 21,120. The Air Force dropped more than 650 of the new satellite guided JDAMs. In foggy or cloudy weather, of which Yugoslavia had plenty, the JDAMs were even more accurate than laser guided or television guided bombs. The Air Force expended 8,618 tons of munitions.

NATO depended almost entirely on the United States for intelligence during the campaign. Ninety-nine percent of target nominations came from US intelligence sources. NATO's inability to link intelligence sources with operations, except through the United States, is one reason the US dominated planning for the air operation.

day, Serbia launched at least a dozen MiG-29s to intercept the first NATO air strikes. Two USAF F-15C pilots, Lt. Col. Cesar A. Rodriguez Jr. and Capt. Michael K. Shower, each shot down a MiG-29 using AIM-120 missiles.

A Dutch F-16 pilot also shot down a MiG-29 that day.

Two days later, USAF F-15C pilot Capt. Jeffery G. J. Hwang shot down two more MiG-29s.

NATO had shot down five of the best Yugoslavian fighters in the first three

days of the conflict, with no friendly aircraft losses.

Despite heavy air attacks the first three nights, Milosevic did not give in. Despite the temptation to use radar to guide their extensive air defense network's formidable arsenal of surface-to-air missiles, the Serbs largely left the radar off, knowing that NATO fighters with High-speed Anti-radiation Missiles (HARMs) could zero in on them. As a result, throughout the conflict, the SAMs remained a threat, forcing NATO aircraft

to fly at altitudes of 15,000 feet or more. The high-altitude missions degraded the accuracy of strikes on fielded forces hiding in the forests of Kosovo.

Short assigned much of the ground attack job to F-16 pilots out of Aviano. EC-130s served as Airborne Battlefield Command and Control Center (ABCCC) aircraft. Unmanned and unarmed RQ-1 Predator reconnaissance and surveillance aircraft, based at Tazsar, Hungary, provided guidance on where the enemy was hiding.

A weapons specialist and a crew chief run a final check on an F-16 at Aviano before it takes off on a mission for Allied Force in May 1999.



USAF photo by SSgt. Randy Mallard



USAF photo by SrA. Delia A. Castillo



A USAF B-52H taxis on the flight line at RAF Fairford, UK, while another Stratofortress (at left) awaits a mission. B-52s based at Fairford launched cruise missiles during the opening phase of Allied Force.

Then, on March 27, something nearly unthinkable happened: A Serbian surface-to-air missile shot down a stealthy F-117 Nighthawk, piloted by Maj. Darrell P. Zelko. He went down near Budanovici, some 28 miles northwest of Belgrade. Analysts later speculated that the Serbs were able to down the airplane partly because it was flying a predictable path, and the F-117 may have been detected when it became more visible on radar as it opened its weapons bay doors. It also might have been observed on radar when it banked, increasing its radar cross section momentarily.

The news that day was not all bad, however. Capt. John A. Cherrey, an A-10 pilot, located the downed pilot and vectored a helicopter rescue team to save him. The effort involved the cooperative efforts of A-10, F-16, C-130, KC-135, and MH-53 pilots and crews. Cherrey earned a Silver Star for his role in the rescue, and the incident demonstrated the progress made since the 1995 downing of Capt. Scott F. O'Grady—who had to evade enemy forces for six days before he was rescued.

By the end of March, Milosevic intensified his ground campaign in Kosovo, forcing ever increasing numbers of refugees to flee to neighboring states. Between March 24 and 31, more than 100,000 people fled Kosovo to Albania, Macedonia, and Montenegro. As

a result, NATO members expanded the target list to include sites in downtown Belgrade, and on March 31, NATO aircraft struck the headquarters of the Yugoslavian army's Special Unit Corps in downtown Belgrade.

SUSTAIN HOPE

On March 30, the combined air interdiction of fielded forces began. It was initially limited to a 10-mile penetration of Kosovo. NATO continued to press the air campaign in a gradual escalation. Clouds and bad weather delayed successful early attacks against the Serbian Army in Kosovo. A-10s conducted their first successful attack on April 6, destroying a Serbian truck park.

Short's son flew one of the A-10s in combat over Kosovo, and on one occasion, his aircraft was hit by a SAM that failed to explode. He returned safely.

Since March 1998, more than a half-million people had been displaced from their homes in Kosovo, a fifth of them in the last week of March 1999. Without reducing the Allied Force air campaign, NATO and the United States inaugurated an additional operation called Sustain Hope, to airlift humanitarian supplies to the refugees in Albania. The United States utilized new C-17 transports.

NATO air strikes on Belgrade were not limited to aircraft. On April 3, NATO missiles struck central Belgrade for the

first time, destroying the Yugoslavian and Serbian interior ministries. Some of these missiles were TLAMs, launched from Navy ships in the Adriatic. B-1s deployed from the United States to RAF Fairford, where they were equipped with conventional air-launched cruise missiles for additional attacks on Belgrade. In Pristina, a NATO cruise missile on April 8 destroyed the main telecommunications building. It had been used to help coordinate Serbian ground operations in the province.

Clark and Short did not agree on the operation's most important target set. Clark insisted that the air strikes concentrate on Yugoslavia's 3rd Army in Kosovo, but Short would have preferred to hit enemy headquarters in Belgrade. It would have been much easier to hit large fixed visible targets that were hubs in the enemy network than small tanks and armored vehicles hidden in the forests of Kosovo—especially since NATO aircraft flew at high altitudes to avoid ground fire.

Clark was not able to fight the war entirely his way, however. He would have preferred to include a NATO ground offensive that would force the Kosovo army to mass and become more vulnerable to air strikes, but NATO leaders refused to allow such a ground offensive.

Three weeks into the Allied Force air campaign, Serbian troops were still well



SAC photo by SVA Staff Parker

Amn. McKinte Young (right) positions a bomb load truck as two weapons load crew members ready an AGM-65 missile for placement on an A-10.



DDO photo by Helene C. Shikkel

Army Gen. Wesley Clark (l), Supreme Allied Commander, Europe, meets with Secretary of Defense William Cohen in Mons, Belgium, during Allied Force.

entrenched within Kosovo. Clark marshalled increasing numbers of aircraft for the operation. The number went up from 430 on March 24 to almost 1,000 a month later. During April, air raids intensified. By April 15, there were eight USAF air expeditionary wings involved in the operation. By May 22, there were 10.

While largely ineffective air raids on fielded Serbian forces in Kosovo continued, Clark eventually directed more

air strikes against the enemy capital. On April 21, cruise missiles struck radio and television stations in Belgrade and the political offices of Milosevic. NATO later used 4,700-pound “bunker busting” bombs against Milosevic’s national command center, buried 100 feet below the ground.

Pressure increased on Milosevic’s capital. Turkey and Hungary approved strike operations from their territories, so NATO raids could proceed around

the clock. Eventually NATO aircraft flew combat missions from bases in 15 different countries. Clark and Short could generate some 1,000 strike sorties a day by early May and could destroy targets in rapid order. What delayed them was NATO political approval of certain targets. It sometimes took as long as two weeks.

On May 2, 1999, Serbian forces shot down an F-16CJ, the second NATO aircraft destroyed by an SA-3 over Yugoslavia. The pilot, Lt. Col. David L. Goldfein, was quickly rescued by an MH-60 helicopter crew escorted by four A-10s.

The Serbs had little time to celebrate. The next day, F-117s dropped CBU-94 munitions on five transformer yards of the electrical power grid of Belgrade, cutting off electricity to 70 percent of Yugoslavia and degrading communications with the Yugoslav 3rd Army in Kosovo. Air strikes also destroyed a huge vehicle and munitions factory in the enemy capital, vastly reducing Serbia’s industrial production and depriving thousands of workers of their jobs.

Serbian aircraft failed to down a single NATO aircraft during the campaign, but on May 4, F-16CJ pilot Lt. Col. Michael H. Geczy shot down another MiG-29 over Kosovo, the fifth and final



A US Army documentation team examines the wreckage of a Yugoslavian MiG-29 in March 1999. NATO forces shot the jet aircraft down inside Bosnia and Herzegovina.

DOD photo by Spc. Tracy Trotter

the first major USAF air campaign with no friendly air crews killed or taken prisoner. In fact, there were no NATO fatalities. Only two of the many USAF A-10s involved received any battle damage.

C-17s, the Air Force's latest transport aircraft type, flew for the first time in a combat theater. For the first time, USAF Predator unmanned aerial vehicles helped locate enemy targets for destruction. For the first time, USAF used JDAMs, more than 80 percent of them hitting their targets.

Immediately after the war, a short-lived controversy erupted when airpower critics attempted to paint the campaign as ineffective for destroying a small number of enemy tanks and armored vehicles.

John Keegan, the famous military historian, noted that the campaign "proved that a war can be won by airpower alone."

Clark addressed the claim in his book *Waging Modern War*, admitting that his own efforts to organize a NATO ground campaign came to nothing. Clark himself was amazed that there was not a single Allied combat casualty in what proved to be a victorious war.

The repercussions of the successful air campaign continued into the beginning of the 21st century. Hundreds of thousands of ethnic Albanian Kosovars were able to return to their homes within Serbia, guarded by international peacekeepers from the threat of Serbian military and paramilitary forces.

On Oct. 6, 2000, Milosevic lost reelection in Serbia, and on June 29, 2001, he was sent to The Hague in the Netherlands for trial by the United Nations War Crimes Tribunal on charges that included genocide. On Feb. 12, 2002, Milosevic's trial began. Never before had a head of state faced trial for war crimes in an international court. He died in captivity on March 11, 2006, with his trial still in progress.

Allied Force proved that nations determined to use airpower effectively in the name of humanity could stop genocide. The operation allowed the people of Kosovo to regain peace and security at home and contributed to Kosovo's later independence from Serbia. ✪

USAF aerial victory of Allied Force and the sixth such victory by NATO pilots. The previous four American victories had been achieved by F-15C pilots. All used AIM-120 air-to-air missiles. All the enemy aircraft kills were of MiG-29s.

On May 7, a B-2 dropped a Joint Direct Attack Munition on a building in Belgrade that turned out to be the Chinese Embassy, killing three and wounding 20. President Clinton called the attack a "tragic mistake," and air campaign planners blamed faulty maps that identified the building as the Federal Directorate for Supply and Procurement.

The resultant political furor forced Clark to draw a five-mile-radius circle around central Belgrade. NATO airplanes did not strike within it for almost two weeks.

On May 24, NATO air strikes hit the Yugoslavian electricity grid again, depriving much of the country of power, crippling communications with armies in the field in Kosovo, depriving Milosevic of much of his broadcasting ability, and threatening the country's banking operations. At around the same time, the UN International Criminal Tribunal for the former Yugoslavia indicted the Yugoslavian leader for crimes against humanity.

Milosevic finally agreed to talks on June 5, but even as they commenced, NATO air strikes continued to apply pressure, targeting airfields and oil refineries. On June 7, two B-52s and a B-1 dropped 86 Mk 82 munitions and cluster bombs on Serbian troops in Kosovo, effectively ending a Serbian offensive against the Kosovo Liberation Army.

On June 9, Milosevic agreed to all NATO terms: immediate withdrawal of Serbian forces from Kosovo, the entry of multinational peacekeeping forces into the province, and the return of refugees to their homes. His only consolation was that Kosovo would remain part of Serbia, at least for the near future, and that some of the entering peacekeepers would be from Russia, an old-time Serbian ally. On June 10, 1999, after 78 days of bombing, NATO suspended air strikes.

AIR WAR AFTERMATH

The air war over Serbia was historic for many reasons. In addition to the many firsts already mentioned, it was

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