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Andrew Brookes

Hard European Lesson from the Kosovo air campaign

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Note on the author

Wing Commander Andrew Brookes is a former RAF bomber and reconnaissance pilot. He writes widely on aviation matters and he is currently the air analyst at the International Institute for Strategic Studies in London.

Introduction

Just before midday on 24 March 1999, six cruise missile-armed B-52s lifted off very publicly from Fairford in Gloucestershire. The first of 27 cruise missiles was not launched until late afternoon, allowing President Milosevic one last chance to cease his offensive against Kosovan Albanians. He did not take it, and during the subsequent 78-day Operation *Allied Force*, 38,004 NATO sorties were flown. Apart from covert action by a limited number of Special Forces, no NATO ground troops took part in any combat action. *Allied Force* was to rely on air power.

One year later and what major lessons should Europe learn from the air campaign? The first is not to oversell air power. When NATO went into battle on 24 March, the objective was 'to prevent more repression and violence against the civilian population of Kosovo.' Fewer than 3,000 people had died in Kosovo before the bombing began. Thereafter, ethnic cleansing escalated to the extent that an estimated 10,000 were killed and 750,000 Kosovar Albanians deported.

Post-conflict analysis confirmed about 60% of the target-hit claims made during *Allied Force*. Furthermore, air strikes seriously affected the lifelines that lubricated and sustained the Serbian war machine. Serbian forces proved adept, however, at hiding their MiG-21s, their vehicles, their armour, their artillery and their logistics under runways, next to civilian buildings, churches, mosques, in caves and woods. It was not until *Allied Force* was synchronised with effective Kosovo Liberation Army (KLA) ground action and international political resolve that it broke President Milosevic's will to continue the struggle, and made him sue for peace on NATO's terms.

Air power can have a major impact against a modern industrial state in the right circumstances. However, although the air campaign ended with Milosevic surrendering Serb military occupancy of Kosovo, Supreme Allied Commander General Wesley Clark admitted that, 'you cannot stop paramilitary murder with airplanes.' Politicians should never prefer the speed and simplicity of air attack to the more time-consuming and painstaking investigation of grievances and disputes. Bombing is often easier than tackling powerful interest groups at home and abroad.

Political realities

The great American airman Curtis LeMay advised back in 1972 that

> *Once you make a decision to use military force to solve your problem, then you ought to use overwhelming force. You save resources, you save lives - your own and your enemy's - the recovery is quicker and everybody's back to peaceful existence in a shorter period of time.*

NATO leaders did nothing like that last March. Whereas 2,614 Coalition aircraft were in place on the eve of Operation *Desert Storm* in 1991, less than 350 were available to air commander, Lieutenant General Mike Short, on 24 March 1999 despite the fact that Milosevic's plans for ethnic cleansing had been known for six months.

Given that air power appeared to have driven Milosevic to accept the Dayton agreement over Bosnia, NATO leaders saw a 'drive-by' shooting of a few cruise missiles over 2-3 days as sufficient to bring him to accept the Rambouillet peace plan for Kosovo. It was indicative of the 'short-termist' approach that there were just 51 approved targets on 24 March. By Day 3 this had risen to 91, but even then Mike Short had to cancel his second F-117 wave because they were out of targets. The fact that NATO bombers kept using the Ministry of Interior Police Headquarters at Pristina to jettison unused ordnance should not mask the fact that Allied strike aircraft often rearranged the rubble in the same shattered government buildings for lack of any alternative.

Strikes against strategic fuel supplies and bridges did not start until two weeks into the

campaign, while Serbian power stations were not visited until 3 May. Towards the end of the 11-week campaign, the Alliance was flying 300-strike missions/day as against a paltry 30 on some nights in March. Fourteen nations eventually contributed 1,090 aircraft to *Allied Force*, by which time the quick slap on the wrist had escalated to the point where Allied air had closed down all Yugoslavia's oil refining capacity, 14 power stations, struck 63 bridges including seven across the Danube, half its military reserves and one quarter of its industrial stocks.

It would have been better if President Clinton had been more opaque about the possible use of ground troops on Day 1 because from then on, Milosevic believed that he had only to face down rather limited air power and watch NATO's political cohesion unravel. But does anyone seriously believe that 19 NATO governments would have authorised the use of force in March if they had been asked to authorise the first major bombing campaign in Europe since Dresden? The incremental nature of the *Allied Force* air campaign will be the template for future coalition operations.

Precision Bombing

Back in 1944, it took 9,070 2,000lb 'dumb' bombs dropped from 3,024 aircraft to guarantee the destruction of a specific house. That house can now be destroyed by a single F-117 carrying two laser-guided 1-ton bombs. Twenty-three stealthy F-117s were deployed against Yugoslav targets, while the USAF's most advanced bomber, the bat-winged B-2 Spirit, bestrode the globe from Missouri to drop eight tons of GPS-guided Joint Direct Attack Munitions (JDAM) at a time, each with a 10m terminal accuracy.

During the 78-day air campaign, NATO aircraft delivered 23,614 munitions against 421 static targets, and over 520 tactical targets in Kosovo, with 99.6% accuracy. Only 30 of these caused collateral damage, but their political impact was nonetheless massive. One air-launched missile took it into its head to go for the capital of neighbouring Bulgaria, while mistaken targeting information led to a B-2 bomber dropping a 2,000lb JDAM on the Chinese Embassy in Belgrade.

34% of weapons dropped during *Allied Force* – and that 34% refers to actual weapons rather than sorties – were precision guided. Most precision-guided weapons at the start of *Allied Force* required eye contact with the ground to zero-in on targets using lasers, television or infra-red. It was calculated that 41% of possible flying time was lost due to weather, and in the prevailing conditions of low cloud cover and thick mist, many aircraft were either unable to fire their weapons because their targets were obscured, or the 'lock' got broken as the weapon went down, causing it to 'go rogue' and veer away.

In response, Raytheon produced an all-weather modification for Paveway within 46 days. Boeing has raised its JDAM output from 130/month at the height of *Allied Force* to 700/month today, and the US has indicated that it intends to buy 87,496 JDAM kits by 2015. In contrast, the RAF is still seeking approval for its 'interim' solution – the same Raytheon GPS-based conversion for its Paveway II LGBs – even though it costs just $19,000 to convert a standard 'dumb' bomb into a JDAM.

Kosovo taught that there are a large variety of targets out there which demand very different approaches in terms of launch ranges, warheads or aiming technology if they are to be 'taken out' in optimum fashion. Credible air forces will need a mix of precision delivery systems, for which the French confirmed the validity of two-crew operations, especially at night.

Cruise missiles also allowed the Alliance to maintain its tempo of operations when the weather conspired against manned target identification. It is not surprising that the US is investing in more and better cruise missiles, together with discriminatory warheads and those that can be reprogrammed in flight.

NATO was operating around 260 offensive aircraft by the end of the campaign. Numbers are debatable because swing-role aircraft muddy

the waters, but there is no denying that credible offensive aircraft were in relatively short supply. Furthermore, of 8,160 precision weapons dropped in all (excluding SEAD), France accounted for 7% (582) Canada 4% (360), Netherlands 3% (280), UK 3% (242), and Spain a little under 2% (149).

Of 14 air forces involved in *Allied Force*, fewer than half started the conflict equipped for precision delivery. In all, around 80 aircraft allocated to *Allied Force* were almost entirely confined to air defence patrols. Too many NATO air forces contributed to the air campaign while avoiding any media flak when bombs went astray.

Two conclusions spring to mind when evaluating the precision strike experience. First, comparison of US and European post-Kosovo air weapons shopping lists shows that even modernising European air forces risk staying a generation behind. Second, the Yugoslav experience should make those investing in new air defence fighters at the expense of new ground attack systems re-think their procurement strategy. At a time when NATO is very short of modern, all weather strike aircraft, and the average NATO aircraft over Kosovo was 26-years old, can the UK's top priority still be 232 single-seat air defence-optimised Eurofighters?

Minimising Friendly and Enemy Casualties

The US lost 18,369 aircraft from 1,746,568 combat sorties in World War 2, and 1,606 from 1,992,000 in Vietnam. Against Yugoslavia, arguably the first war waged solely for humanitarian and civil ideals, not one American life was lost in combat (though two died in a helicopter accident).

Not many Europeans have taken on board how high a price the US is now willing to pay to avoid the loss of military life. What this means for the future of huge armies I leave to others. But in air power terms, the pressure will be on to ensure that all aircrew will come back the next time.

80% of the Allied air effort on 24 March went against the Serbian air defence network, but although by June NATO had shot down 6 Yugoslav aircraft, destroyed another 100 on the ground and significantly damaged 10 airfields, the Serbian low level air defence system remained disturbingly intact.

Constant defence suppression effort forced the Yugoslav SAM defences to hide or operate without radar guidance, which severely limited their effectiveness. But over 700 Serb SAM launches were observed during *Allied Force*, which was more than three times as severe as the number faced during *Desert Storm*.

Much was made of Yugoslav success in shooting down an F-117. In simple terms, Yugoslav use of the old Soviet Spoonrest early warning radar operating down to 80 MHzs, combined with US employment of the same flight path several days running and too widely spread Prowler jamming support, left the F-117 badly exposed. But it is an old EW truism that you only have a capability if you can repeat it. As the Yugoslavs never repeated the trick, they did not have a capability.

But they did exploit NATO's weaknesses. Back in April 1994 a RN Sea Harrier pilot was shot down over Gorazde because his Radar Warning System was incapable of detecting the approach of a passively guided SA-16. In March 1999, most NATO aircraft still lacked Missile Approach Warners. Given the hundreds of man-portable Yugoslav SA-7, SA-16 and SA-18s that remained in Kosovo to the end, the only practicable answer was to stay above 15,000ft.

Although much Yugoslav air defence kit was long in the tooth, the Serbs proved that low cunning can often thwart high fliers. For example, they used early warning radar – which Allied aircraft were banned from striking to avoid affecting civil air traffic – to predict when an Allied package would be three minutes out. When that three minutes were up, they would fire SAMs blind. Another ploy was to position two fire control radars, one to the left and one to the right of predicted Allied track. One would be turned on, SEAD would concentrate on it,

and then the silent control radar would fire up on the other beam. One French pilot saw three missiles on one occasion, which meant that the Serbs got close.

Kosovo reinforced the importance of electronic warfare. Although the US provided 40 EA-6B *Prowlers* out of a worldwide total of 95, its resources were stretched - during one 24-hour period - every available *Prowler* was deployed. By mid-2001, the USN and USMC hope to have 123 Prowlers, with 104 available at any one time, which is just as well because NATO could be up against a more modern SAM inventory than the Yugoslav the next time around.

Europe depended in the US for EW expertise and for most suppression of Serb air defences. European air forces need to acquire a credible number of jamming aircraft, and procure far more HARM/ALARM shooters, if they are not to be seen as hangers-on.

The Americans were justifiably proud of rescuing their downed F-117 and F-16 aircrew, and the US could do this because it had an excellent Combat Search and Rescue capability. Never forget that 500 missions were flown in 5 days to bring out US pilot, Captain Scott O'Grady, after his F-16 was brought down over Bosnia in 1995. That was roughly one-third of the British sorties flown during the entire Kosovo conflict. How long will Europe continue to rely on the Americans to pluck its downed aircrew out of the fire?

Then there is guaranteed availability of the main bases themselves. Italian airfields were so chock-a-block with Alliance aircraft that when the RAF brought its Bruggen Tornados forward, they had to be based in Corsica. Aviano near Venice played host to no fewer than 173 aircraft - what a target for even a relatively unsophisticated Scud-type ballistic missile! Given that 25 countries now have ballistic missiles, Europe should be thinking far more seriously about theatre missile defence. There is also a need for a long-term strategy for maintaining contingency airfields. Too many hardened aircraft shelters at former Cold War airfields now sit all forlorn around where quality runways used to be before they were ripped up for motorway infill.

Unmaned aerial vehicles (UAVs)

UAVs were another *Allied Force* success story, with the US and European UAVs conducting important reconnaissance operations and battle damage assessments, and the Predator becoming the first US UAV to designate a target for an A-10-launched laser-guided bomb. NATO lost around 20 UAVs during *Allied Force*, but that put 20-plus fewer lives at risk. Defence suppression and target designation UAVs, flying at the outskirts of a manned strike passage, offer an appealing way forward.

The destruction of a rail bridge just as a passenger train was about to cross it, and the inability to differentiate between a convoy of refugee tractors and army lorries, were two examples of the lack of real-time intelligence in the beginning. According to a RAF study, location data and images of Serb mobile targets took up to 72 hours to reach squadrons, making attacks impossible before they moved.

UAVs certainly made a difference - on 12 June, staff in the CAOC (Combined Air Operations Centre) at Vicenza could see Serb MiG-21s, hitherto hidden under the runway, taking off from Pristina airfield before the Russians arrived. Henceforward, UAVs plus real-time data links will be able to tell a CAOC that an objective has been damaged, allowing targets to be changed in mid-air. That said, UAVs were found to be slow and vulnerable to ground fire. They could not be used in winter over Kosovo because their wings ice up. UAVs are best used in clear, night conditions, when they are ideal to feeding pictures via data link to the CAOC or an attack aircraft up at 20,000ft.

Joined-up air power

For all the hype about stalking the globe like an invisible caped crusader, each B-2 strike required a minimum of 14 CAP/Escort, ECM and

SEAD support aircraft and 85 aircrew. And that didn't include the tankers, RC-135 *Rivet Joint* and AWACs that were also vital to the success of the operation.

Such figures explain why by 10 June, although NATO had flown 10,484 dedicated strike missions, a further 27,520 had to flown by 'enablers' – air defenders, defence suppressers, in-flight refuellers, command and control assets, and surveillance and reconnaissance platforms. And while Europeans conducted 47% of the strike sorties, they flew only 29% of support ones. Every European strike mission required an average of 3 US support aircraft to suppress enemy air defences, refuel and direct the battle. Where France contributed ten tankers, the RAF nine and Germany none, the US committed around 150.

The US provided 60% of the air power at the start of *Allied Force,* which grew to nearly 80% by the end. The US also met approximately 95% of NATO's intelligence requirements in Allied Force. Interoperability between this lot and the rest of NATO is essential, though the French decision to make the Mirage 2000D capable of dropping any US bomb shows that much has already been done to date. But while US AWACs aircraft, command and control platforms and Air Force aircraft over Kosovo had secure radios; many of the rest did not. At a time when the Serbs were making good use of mobile phones and COMINT to maximise the threat to NATO aircrew lives, Alliance partners appeared to lack the will even to put secure radios into their aircraft.

The simplest improvements are often the most difficult. Much was expected of US Army Apache gunships, which never saw action in the air campaign. Glaring shortcomings were subsequently found in aircrew proficiency, the Apaches' long-range communications equipment, electronic countermeasures and fuel system. All the years of underfunding on training and equipment had come home to roost.

Cost

While Air Power can be cost free in friendly casualties, it is anything but in financial terms.

The US plans to increase defence spending by $112 billion over the next 5 years, including an increased $.92 billion post-Kosovo, mainly for JDAM, Sensor Fuzed Weapons and Wind Corrected Munitions Dispensers. On the other hand, France and the UK anticipate no significant increases and Germany plans to *reduce* expenditure by at least $10 billion over the same period. For my money, the UK should sacrifice a few Air Defence Eurofighters to cut down on overstretch, and to pay for a bucketful of JDAM and Tactical Tomahawk ($600,000 each) because these will be the weapons of choice in any upcoming conflict.

If air power is to be the clinical and risk-free alternative to ground operations, then many procurement cows will need to be sacrificed to pay for the UAVs, heavy lift, C4I *et al* to make it all work. None of this will come cheap. Much more than tinkering with the British Strategic Defence Review will have to be done if the wonderful declarations on European Defence and Security Identity are not to ring hollow.

Coping with uncertainty

It is an old adage that you should train in peace, as you would go to war. Over the past few years, NATO had built up a deployable computerised CAOC at Ramstein to be THE organisation that would spring into action to control an air operation such as *Allied Force*. Come 24 March and all the hitherto hard-won expertise went out of the window. As the Americans were leading the show, they flew in a whole new bunch of folk from the US to start from scratch. General Short admitted, 'NATO did not fight the way it trained. The [US joint task force] took over everything and left other nations watching from the sidelines.' This was a major source of friction throughout the air campaign.

In the beginning, all operations north of 44

degrees North were allocated to high value US assets such as the B-2. Far from being on the NATO Air Tasking Order – the White ATO – operations against Belgrade or Novi Sad were for US eyes-only – the Black ATO. The Black ATO kept secrets secret from the Serbs listening into insecure radios, but it is a fact of air power life that Europe will have to stay ready to respond to the US tune for as long as it acts the dependent relation.

NATO will also have to stay flexible enough to cope with imperatives that make more political sense than military. In General Mike Short's candid opinion, 'the impact of bombing on ethnic cleansing was zero'. NATO strike aircraft were only sent against individual tanks in Kosovo for the same reason that General Schwarzkopf had to divert fully one-third of his Desert Storm strategic air missions to futile Scud-hunting over the Iraqi desert back in 1991 – because of the political imperative was to be seen 'to be doing something'. That sort of diversion of effort is not going to go away.

In both *Desert Storm* and *Allied Force*, European strike forces went into action intending to fly low-level. They were often well placed for this – the 15 French Mirage 2000Ds involved over Kosovo were designed to deliver weapons accurately in all weather at 600kts and down at 70m. But for a package to operate at low-level, *all* aircraft have to be low-level capable. US F-15 crews, who were not trained in low-level IMC operations, were just one reason why the Mirages and Tornados were forced up.

Whatever the peacetime game plan, it is unlikely to survive beyond the first few days of the next allied air operation. Therefore, air forces must be able to cope and adapt flexibly to whatever is asked of them, which relies on the right training and ethos. It cannot be right to cancel air exercises and training to pay for the Kosovo overspend.

Conclusion

The sight of US F-15Cs, F-16CJ and European Tornado ECR defending and clearing the way for a strike package of US F-15s, French Mirage 2000Ds and Canadian F-18s was very heartening for those who see NATO cohesion as the major international achievement of the past 50 years. But with its 'stealth' bombers, satellite-guided munitions and unmanned surveillance assets, the USAF not only used air power to hit more targets more precisely and with fewer aircraft than ever before but it was also way ahead over Kosovo. And that lead could disappear further and further into the distance unless 'smart' European interoperability and procurement starts to make itself felt very soon. My fear is that, henceforward, there will be a growing gulf between NATO air forces that invest in precise strike, intelligence and communications, and those that are makeweights.