

Article

Air Power – Past, Present and Future

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Biography: Air Commodore Andrew Lambert is a military historian, who has published numerous works on defence issues since earning his MPhil from the University of Cambridge. Air Commodore Lambert's extensive military career included flying Phantoms, running the Phantom Force's QWI school, acting as a planner in Gulf War I, then as Director of Defence Studies, and commanding in the Falkland Islands, Norway, Bosnia and over Iraq.

Introduction

Air is a curious medium; some Ancient Greek philosophers wondered if it had any substance at all. A hand moved through the air encounters little resistance yet as one accelerates the air becomes increasingly viscous, with some aircraft designers describing high speed flight as forcing a path through soggy concrete. Even so, and even at their slowest speeds, aircraft still travel faster than the fastest of ordinary vehicles or ships.

70% of our planet is covered by water and 30% by land, but all of it is covered by air. On the surface of this planet everywhere is accessible from the air, and those who seek to hide must either go below the surface, hide in the undergrowth or conceal themselves amongst other things such as hospitals, mosques or crowds.

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Use of the air medium to provide stand-off range was well appreciated by the Pharaohs. The ability to move across the battlefield at 30mph firing scores of flighted arrows at infantry who had no means of reply was a war-winner, recorded on several Ancient Egyptian murals. How Pharaohs must have wished that they themselves had wings.



Despite man's clear yearnings to fly, it is curious that when powered flight did finally occur and began to be used, the Establishment, and particularly the existing military Services, tended to regard it as a parvenu, a thing of little substance, interesting maybe, but of little use and certainly no substitute for the 'real' forms of war on the battlefield or high seas. According to these 'experts' warfare from the skies was variously 'immoral', 'ineffective' or 'needed to be controlled by the older Services' where it could be given its proper (rather lower) priority. That air power confounded the sceptics is a remarkable story, and one worth repeating. Probably such arguments will be incomprehensible to future generations who will think them quaint, being unable to recall a time before i-Pads, computer viruses and cyber warfare, before space stations and instant communications, before global air travel, before missiles, and before bombs precisely hit their designated targets. For these generations such technology will be 'old hat'; of more interest will be cybernetics, Artificial Intelligence and the how and why of culture, competition and conflict.

But the story of the air weapon through the 20th and early 21st Centuries is fascinating, especially seen in the context of the evolution of warfare as a whole. As the great land armies of Ancient Persia, Rome, Mongolia and even Napoleonic France, were slowly outflanked by

the maritime power of the Ottomans, Spain, Britain and eventually the USA, so in their turn these older forms of warfare were and are being materially changed if not supplanted by the new warfare, that from the skies. And those nations that fully exploit this medium, the new 'Airpowers', now rely on the air and space for the success of their economies; rely for their influence on rapid and frequent global travel, and in place of 19th Century 'gunboat' diplomacy now lead with 'air diplomacy'. That certain air operations have gone very well, while others have faltered, is the theme of this paper, and in doing so it offers thoughts for those who might use it in the future.

First Flight

Perhaps man's first *faithful* attempt to fly was Brother Eilmer who, just before the Norman conquest, and perhaps hoping to imitate the mythical Daedalus, draped himself with a cloak wrapped around a wing-like frame, and then launched himself off the tower at Malmesbury Abbey. In what was probably a series of uncontrolled stalls and recoveries, he managed, so the story has it, to fly over the city wall, over the nearby river, and on to the marshy ground over a furlong beyond. That he suffered two broken legs on landing perhaps gave rise to the maxim that 'a good landing is one you can walk away from'!



Of course the accolade for the first successful controlled flight goes to the Wright brothers who, as bicycle manufacturers, understood that banking an aircraft was not something to be avoided, it was actually the means by which an aircraft is turned. In 1903, after an exhaustive series of experiments, they achieved controlled flight for the first time.

What is truly remarkable is that from that point the very nature of civilised life changed. Within eight years man was using the aircraft for warfare - Libya in 1911. By 1914 airborne 'spotters' had enabled artillery to fire at targets the gunners could not see; by 1915 the first strategic air attacks had occurred, and by 1918 the world's first independent air force had formed. In the autumn of that same year aircraft had, almost by themselves, caused the rout of two separate Turkish corps, the VII and VIIIth, at Wadi Ziemer and Wadi el Fara.

Within 20 years of that 1903 flight, Brigadier General Billy Mitchell had destroyed the German heavy cruiser *Ostfriesland* from the air, thereby heralding the fate of the battleship. Within 35 years, scheduled air services began operating across the Atlantic, and to South Africa or Australia. Trips that would have taken months by sea were now taking just a few days, if not hours.



World War II

The offensives of WWII began with that devastating onslaught of the combined thrust of tanks and aircraft in what became known as the Blitzkrieg. Against such concentrated might the Allies had no effective defence. In 1940 the Battle of Britain, fought entirely in the air, inflicted the first defeat on the Nazis. In 1945 the first atomic bombs were delivered from the air bringing the war to a peremptory close, thereby almost certainly saving the lives of at least a million allied soldiers. At the same time the technology of flight was being put to new uses with Germany developing a range of 'Vergeltungswaffen', Reprisal or V-Weapons. These rockets, of increasing complexity, enabled a man in 1969 to step foot on another body of the solar system, just 66 years after the Wright Brothers' first hesitant hops at Kittyhawk.

But progress in the air was not unalloyed success. German attempts to destroy the morale of the British civilian population failed to persuade sufficient that surrender was better than fighting on. In turn, the Allied Strategic Bomber offensive was so inaccurate that, as one analyst calculated, to guarantee one hit on an area the size of a football pitch would require no less than 3,000 bombers. Moreover, the scale of civilian casualties from each of the bombing campaigns was later considered immoral, and disproportionate to the gains made.

That said, against the Wehrmacht in the field the weight of air attacks proved devastating. On D-Day alone the Allies flew almost 14,000 attack missions across the beachheads, while the Luftwaffe flew just 750 across the whole of Europe, and most of those German flights were dedicated to defending the homeland. Although German soldiers continued to fight hard the incessant call was 'Wo ist die Luftwaffe?'; and even Field Marshal Erwin Rommel, with personal experience of the power of enemy air in the Desert War, made the point agreed by most German generals that '... anyone who has to fight, even with the most modern weapons, against an enemy in complete control of the air, fights like a savage against modern European troops, under the same handicap, and with the same chance of success'. And this has the ring of truth to it; Rommel even wrote to his wife, 'The enemy's air superiority has a very grave effect on our movements. There's simply no answer to it'. It is ironic that he himself was badly wounded soon after when his staff car was strafed by Canadian fighter aircraft.



'Oh, Mr Butterfield, Mr Fitzsimmonds would like to see you in his office at once'
David Langdon, *Punch*, 12 February 1941

'... The enemy's air superiority has a very grave effect on our movements. There's simply no answer to it'. – Rommel

But if the Allied Strategic Bombing campaign failed to destroy the morale of the German people, it certainly did much to destroy the German war economy. As Hitler's armaments minister, Albert Speer, said after the devastating fire storm inflicted on Hamburg, 'Four more Hamburgs and Germany will be out of the war...'.¹ I reported for the first time orally to the Fuehrer that if these aerial attacks continued, a rapid end of the war might be the consequence.¹ Without doubt, as the United States Strategic Bombing survey revealed, Allied bombing crippled German munitions production, effectively bringing it to a standstill from January 1945, some five months before the surrender. From that moment on, it was only a question of time.

The Cold War Era

'From Stettin in the Baltic to Trieste in the Adriatic an 'Iron Curtain' has descended across the continent.'

Facing each other across Churchill's 'Iron Curtain', the victorious WWII allies soon found themselves at odds. In September 1947 the USAF was formed, recognising the successes of the Allied Air offensive in WWII, the need to deter the Soviets from aggression, and the potency of the strategic air force now rapidly equipping with intercontinental bombers and strategic nuclear weapons.

In 1948 the Soviets attempted to blockade Berlin by cutting off all road and rail links to the beleaguered city. In a feat of resolve that can only be marvelled at today, the Western Allies committed themselves to supplying Berlin entirely from the air. The 2½ million West Berliners received 277,000 flights during the year, delivering some 2.3 million tons at an average of 5,000 tons/day. Allied transport aircraft, protected by waves of fighters, were landing in Berlin every three minutes. Distribution of all the stores in the city was a civilian responsibility to which Berliners became fully committed; the record for the offloading of ten tons of coal, for example, was just ten minutes. The Soviets finally called a halt to the siege when they realised that air deliveries actually exceeded pre-airlift rail deliveries, and that further blockade was therefore pointless. Such Allied commitment gave heart to the defeated Germans, drew the Allies ever closer together, and directly facilitated the formation of NATO, the bedrock of Western Defence Policy ever since.

In the two principal wars that followed, Korea and Vietnam, the potency of air power seemed less assured. In both theatres the strategic unassailability of China, and the desire to keep the fight sub-nuclear, meant that neither campaign could interdict the Communist factories or Lines of Communication (LOCs) in or from China's heartland, so that all operations were limited to local, tactical events. Nevertheless, in Korea Air Forces substituted for ground forces to a considerable extent with the UN armies outnumbered almost 2:1. Helicopters were used in large numbers for the first time, providing considerable tactical mobility, and with UN fixed wing aircraft scoring kill rates of 10:1, allied air superiority effectively prevented the Communists from deploying military forces except at night.

Sadly, the successes of WWII and even Korea were not repeated in Vietnam. Equipped with modern fast jets with impressive bomb loads, it seemed as if the Western air forces would be easy victors. However, over emphasis on nuclear operations, over assessment

of the potency of aircraft armed with conventional unguided bombs, the multiplicity of differing Command and Control centres, the veto on striking strategic centres in China, the invulnerability of LOCs reliant only on muddy paths through the jungles, the potency of Soviet air defences, and intense political interference, all conspired to reduce air power's anticipated impact. President Lyndon B Johnson (LBJ), applying his own moral compass and logical reasoning to his enemy, imposed frequent bombing pauses in the mistaken belief that he was signalling to Hanoi. In the event, all he signalled was his own hesitancy, indecisiveness and lack of moral resolve. Hanoi regarded his bombing pauses as signs of weakness, all the while portraying the US as bloodthirsty imperialists.

However, in March 1972, the nature of the war changed when some 30,000 North Vietnamese troops crossed the De-Militarized Zone (DMZ) in the Easter Offensive. Under the Nixon Administration the gloves were now off, especially as the North Vietnamese regular army would need a far larger resupply train than Vietcong irregulars. Operation Linebacker I was ordered. Virtually all military targets north of the DMZ were attacked, and the mining of Haiphong harbour was authorised. The first use of Laser Guided Bombs (LGBs) achieved spectacular results with bridges that had been all but impossible to destroy using unguided bombs, now falling at the first stroke. As a direct result, Hanoi became far more reasonable in the Peace Talks. However, as soon as *Linebacker* ceased, Hanoi began stalling again. In December the same year the talks collapsed entirely when Hanoi withdrew. *Linebacker II* was ordered, targeted against the regime and its people, with a succession of 100-aircraft B-52 raids at targets in and around Hanoi and Haiphong. The aim was to cause maximum distress but few casualties.

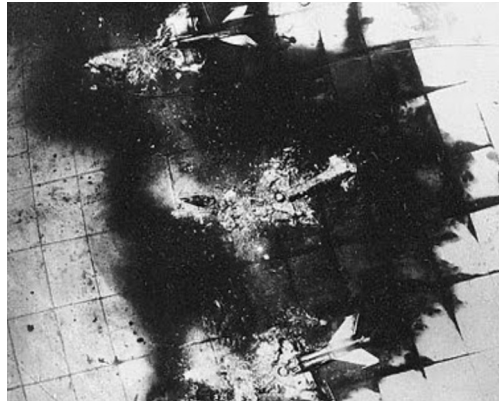
'No one bombs an outhouse [in Vietnam] without my approval' – Lyndon B Johnson

Civilian and military leaders cannot resist micromanaging Airpower, precisely because it is so Flexible. – Col. Phillip Meilinger



After 10 days, North Vietnam had no Surface to Air Missiles (SAMs) left, no MiGs rose to meet the bombers, and there was virtually no Anti-Aircraft Artillery (AAA). B-52 losses had been sizeable, approx. 3-5%, but within the month (Jan 1973) Hanoi signed the peace accord.

Meanwhile, during the same era, the Israelis had scored some notable air successes as well. In the 1967 'Six-Day War', the Israeli Air Force achieved total air superiority from day one by means of a pre-emptive air attack on Arab air forces, carried out whilst Arab pilots were having their breakfast! The destruction of virtually all their aircraft on the ground meant that the Arabs were powerless to stop Israeli jets from ranging across the battlefield with impunity. Under constant air support the Israeli army achieved something of a blitzkrieg success, with large slices of Palestine and Sinai falling rapidly.



Sadly, for Israel, this success was not repeated in 1973 when a surprise pan-Arab offensive was planned for the start of Yom Kippur, a period when most Israelis were traditionally on holiday. Now the boot was on the other foot, and the Israeli Air Force found themselves having to dogfight to achieve any measure of air control; worse, the retreating Israeli ground forces demanded considerable air cover to protect them against the onslaught. Although the Israelis still retained the edge in air combat, the presence of considerable Soviet air defences, especially the new SA-6 SAM, caused severe and unsustainable Israeli air losses. A significant American resupply was ordered, with 56 F-4 Phantom jets deploying directly from Continental USA, already in their war fit. On landing in Israel these aircraft were refuelled and ordered straight into the fight. The tide slowly turned and over the next few days Israel took the fight to the enemy, eventually crossing the Suez Canal into Egypt. The conflict had lasted just 19 days, and although only 26% of the US aid was sent by air, none of the 74% sent by sea arrived before the fighting had stopped. And without that airlift of more than 27,000 tons of tanks, artillery and ammunition, not to mention the 56 ready-to-fight combat aircraft, Israel could well have succumbed.

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Of interest, particularly to British readers, are the air aspects of the Falklands conflict of 1982. The Black Buck bombing missions over 6,800nm were the longest then seen, and involved two Vulcan bombers (a primary and a spare) and eleven Victor Tankers. Whilst damage to the airfield at Stanley was relatively light, the attacks persuaded the Junta to retain 2 Mirage squadrons for the defence of Buenos Aires and gave notice that forward deployment of

fast-jets to Stanley airfield would not be practicable. Even so, and despite the distance from Argentina, air power powerfully demonstrated its effectiveness against surface warships in Falkland Sound. Just ninety relatively unsophisticated Argentine attack aircraft damaged or sank seven major modern NATO warships; hit and damaged nine others, leaving just seven undamaged. According to Argentina, a further ten bombs hit their ship targets but failed to explode. Had these fused, the effect could have been devastating. Although Sea Harriers on visual combat air patrols managed to shoot down some 19 Argentine aircraft, the lack of any effective Airborne Early Warning (AEW) was almost catastrophic for the Task Force. The lesson was clear – naval forces without effective air cover would be sitting ducks.

Gulf War Era

Gulf War I

The first Gulf War, beginning with Saddam's invasion and occupation of Kuwait in 1990, has been described as the 'apotheosis' of air power. Bringing together NATO forces trained during the height of the Cold War, with 4th generation aircraft armed with precision ordinance, new stealthy aircraft such as the F-117A, and all orchestrated in a highly demoralising psychological campaign, the Coalition was able to inflict a decisive defeat on Iraq, the World's 4th largest army and 6th largest air force. During the six weeks' precursor air campaign, the Coalition completely devastated Iraq's combat capability. It destroyed Iraq's Command and Control, with the result that Saddam lost almost all contact with his forces in Kuwait - and was forced to exercise his command for at least part of the time from a Winnebago SUV! Within a few days the Coalition had achieved such Air Supremacy that F-15s patrolled the skies over Baghdad at will, and shot down any Iraqi aircraft that attempted to take off.

By then most had already fled to their erstwhile enemy, Iran! The precursor air campaign destroyed 35% of Saddam's tanks, 31% of his other armour, and 44% of his artillery. All front line forces were by then at or below 50% of their fighting strength.² In a period when the computer game *Space Invaders* had just come out, F-111s carried out nightly attacks on individual tanks using laser guided weapons, an activity that became known euphemistically as 'tank plinking' - Iraqis found that their tanks seemed to



'We have already informed you of our promise to bomb the 16th Infantry Division. We kept our promise and bombed them yesterday. Beware. We will repeat this bombing tomorrow. . . . Now the choice is yours. Either stay and face death or accept the invitation of the Joint Forces to protect your lives.'

just blow up in the middle of the night. As one prisoner said ruefully, 'In the Iran/Iraq war the tank was my friend; in the Gulf war it was my enemy!'³

In addition, Iraqi forces were subjected to a radio, loudspeaker and leaflet campaign that told them when to expect air attack, with the result that, though fewer than 10,000 out of the 545,000 Iraqi soldiers in theatre were killed, some 87,000 surrendered at the first opportunity and as many as 150,000 left their posts and deserted, just to escape the bombing. Many Iraqi prisoners reported considering suicide rather than face another air attack.

Modern Western air power had unarguably established its credibility as a powerful, if not invincible, weapon of war. Two aspects did, however, give cause for future concern. The first was Iraq's indiscriminate use of SCUD surface-to-surface missiles in attacks designed specifically to kill civilians, especially in Israel. The second was the increasing Western political sensitivity to civilian casualties. This stemmed largely from an air attack on the Al Firdos military bunker which, unbeknown to the allies, was also being used as a shelter for politicians' and military families. Civilian casualties were now firmly an asymmetric factor in war: easy and increasingly lucrative targets for extremists, but as unqualified constraints for future Western military operations.

With the fall of the Berlin Wall in 1989, the collapse of the Soviet Union, and the demonstration of Allied (mostly US) might in the Gulf, many believed a period of international stability would prevail. However, without the dead hand of the USSR, nationalism and religious fundamentalism were soon on the rise and divisions that had been dormant for decades re-emerged. Iran and several Arab nations flexed their muscles, the Balkans regressed to petty squabbles, and China began to assert herself. In such localised disputes one might have thought the emphasis would be on land operations, with air in supporting roles only. In fact, sensitivity over casualties, a reluctance to commit 'boots on the ground' and a desire to reduce costs meant air power found itself very much centre stage.

Balkans

In Bosnia, in answer to the ethnic cleansing being carried out by all sides, the UN established a No-Fly Zone (NFZ), with NATO as the provider of assets. Lack of political consensus rendered this NFZ entirely ineffectual: apart from reading a litany of warnings to errant troop-carrying helicopters, patrolling fighters had no authorisation to use any force. The result was that NATO aircraft flew idly overhead not only when Dutch troops were threatened, but also when massacres of thousands of civilians took place at Srebrenica, Zepa and Gorazde. Serbia just ignored the mighty air presence and concentrated on attacking defenceless civilians, terrorising the rest and exploiting media-inspired Western sensitivities. The situation was eventually brought to a close in 1995 when the US (and other allies), carried out Operation Deliberate Force. This, an intense air offensive targeted against Serbian forces, brought President Milosevic to the negotiating table and compelled him to sign the Dayton Accords. With the Accord signed, there was 'some hope' that peace would take hold!

Since the 1389 'Battle of the Blackbirds' Kosovo has held a special significance for Serbia where it ruled its largely Albanian population with a rod of iron. Confronted with a growing insurgency by the Kosovo Liberation Army (KLA), Milosevic grasped the opportunity to expel native Kosovars. Four years after Dayton, and still doubting Western resolve, he began a vicious campaign against the KLA in the belief that Russia would intervene on his side. Some 230,000 Kosovars were evicted from their homes and the outrages that followed appeared nightly on Western TVs, demanding a Western response. Although Madeleine Albright, the US Secretary of State, thought that a swift air shock would return Milosevic to the negotiating table, the air campaign dragged on for some three months, involved 1,000 aircraft, and required some 38,000 combat missions to convince Serbia that such outrages could not continue. The lesson was clear: against those fully committed to their cause, an air coercion campaign cannot be done on the cheap, and is unlikely to be accomplished by a short sharp shock.

But the Kosovo air war also highlighted a number of other features, principally over the politics of war. In the first instance, wishful thinking that Milosevic would fold after just 48 hours revealed the lack of international consensus over what to do next. As NATO had to go back to the drawing board a number of questions arose. At the military level, was air power to destroy the Serbian forces in the field thereby preventing further ethnic cleansing, or was the aim to coerce Milosevic directly by inflicting costs, specifically through the destruction of key infrastructure targets inside Serbia - especially those owned by his friends? And at the political level, could air power be used decisively, or could political consensus only be maintained by a more gradualist approach? Would targets be selected and prioritised for their military or coercive effect, or would they be selected only if all agreed - 'the horse designed by committee' approach? And, finally, would the West countenance land force operations or would a possible long-term commitment and the concomitant risk of casualties rule this out? Given air power's obvious military effectiveness, these politico-military issues now came to the fore.

However, with President Clinton's stated reluctance to commit ground troops, the likelihood of invasion was very low, and this presented Milosevic with an easy option. Ride out the storm, accept the costs and, as civilian casualties mounted and little seemed to be achieved, just wait for NATO to collapse in squabbles and infighting. On the ground, a parallel option was available to the Serbian army: come out and fight - making them a lucrative air target, but only required if NATO invaded, - or hide and endure, in which case, amongst the mountains and forests, NATO would have to spend days and many missions searching, perhaps with few successful attacks.

In parallel, this campaign demonstrated the bizarre impact of disparate pressure groups on a modern military campaign. The entire conflict was carried out in the full glare of the Media spotlight, with TV reporters seemingly everywhere, and with the new phenomenon

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of social media such as smart phones, tweets and instant communications from theatre. 'Battle Damage Reports' were offered to the general public and politicians even before they became available to military analysts. National politicians were thereby under continuous scrutiny, often invited by public and media alike to adopt positions they might afterwards regret, and all this was reflected in the disparate attitudes to targeting. As one analyst reported '... zero non-combatant casualties became not only the goal of strategy but also the international expectation', as well.⁴

At the end of the first month, after a period of considerable incoherence in the overall campaign, Milosevic must have been convinced that he could ride out the NATO attacks as the campaign seemed to be heading for a repeat of Operation Rolling Thunder, the air campaign over Vietnam. If LBJ's bomb-pause-bomb strategy was taken as a sign of weakness by Hanoi, the sheer cacophony of the NATO nations must have seemed a sure pointer that the campaign would soon collapse.

Fortunately, nations finally realised that what was at stake was not merely the fate of Kosovars, but actually that of NATO itself, and they began to co-operate, with a number of parallel coercive pressures being brought to bear. First was the realisation, spelled out to Milosevic by Martti Ahtisaari and Viktor Chernomyrdin, that Russia would not (and could not) intervene and that he and Serbia were alone; second was his indictment by the Yugoslav War Crimes Tribunal in the Hague for alleged war crimes; third was the possibility, increasingly advanced by a number of European nations, that NATO would be forced to invade; and finally, and probably the most persuasive, was the realisation that there was no chance that NATO would collapse in squabbles, and that the costly bombing campaign would continue until the battle was finally won.

Despite the fractious nature of the Alliance, the military frustration with political whimsy and interference, and the lack of any clear direction, it is remarkable that air power still managed to play such a decisive role in persuading Serbia to capitulate. Of course, there had been errors, such as the bombing of the Chinese Embassy because of incorrect intelligence, and the unintended destruction of a train which appeared unexpectedly on the Grdelica bridge just 1 sec before missile

impact, but according to Lieutenant General Michael Short, 'collateral damage drove us to an extraordinary degree...[and] committed hours of [my] day dealing with the allies on issues of collateral damage.'⁵ These and other errors underscored the vital role of accurate intelligence in a modern air campaign, and all driven home and accentuated by the West's extreme sensitivity to civilian casualties.

'... collateral damage drove us to an extraordinary degree... [and] committed hours of [my] day dealing with the allies on issues of collateral damage.'

Lt Gen Mike Short

The lessons which analysts have drawn include: the need for agreement, if not consensus, amongst a coalition; the need for clear political direction specifying the effects desired; and a need for a clear military focus, be it the destruction of the military or the coercion of a leadership. Of course, the military is the servant of politics, and it is well said that ‘War is politics by other means’, but bad politics make bad war, and directionless politics likely spell defeat.

Modern Era

9/11 and the Aftermath

The Strategic impact of air attack is nowhere more vividly illustrated than by the iconic pictures of 9/11. For the first time the potency of air attack had been exploited by an elusive group of unsophisticated extremists, intent on changing the global landscape through the discomfiture of the most powerful nation on earth. Al Qaeda clearly had little argument with the individuals who died in the World Trade Center; Osama bin Laden’s real (psycho-political) target was the people of the USA, and their President. It was a coercive strategy writ large and although the stated aim of this coercion (the removal of infidels from the Holy Places) has yet to be achieved, the attack achieved international notoriety and sparked a whole spate of subsequent intervention operations. These, Osama no doubt hoped, would cripple Arab-American relations, with the ultimate intention of achieving a pan-Islamic Ummah, a world of Islam.



Although nations have adopted stringent security policies for preventing further similar outrages, terrorists clearly realised the potential for mischief from using an air weapon so symbolically.

Afghanistan

The immediate reaction to 9/11 was to demand the handover of Osama bin Laden and when that was refused to attack Al Qaeda in its heartland, Afghanistan. This attack, combined with the subsequent invasion suggested a number of new options for air power in the modern era.

First was the use of air power as the striking force for local militia. Special Forces (SF) and Air Force Combat Control Teams, integrated fully with the Northern Alliance, directed precision air attacks from aircraft circling overhead. The Taliban had no counter to such attacks and for the

most part retreated or just melted away. Cities were abandoned; the Taleban government retreated to the mountains of Bora Bora, and it seemed the conflict was over.

However, in an effort to ‘win hearts and minds’ and to train a new Afghan National Army, considerable Western ground forces were deployed into theatre. With aircraft numbers reduced for the impending invasion of Iraq, aircraft could only be used in localised support, defending small remote garrisons and in providing tactical Air Transport (AT) and Casualty Evacuation (CASEVAC). Though individually effective, air operations lacked the pervasiveness necessary to convince insurgents that there really was nowhere to hide. –For a period, just the presence of western fighters deterred attacks, but force reductions and toothless air demonstrations meant that many beleaguered garrisons soon found themselves under attack and had to fight it out.

The psychological dominance achieved during the invasion slowly dissipated and the Taleban were able to characterise air strikes as attacks on the people and, more perniciously, as attacks on Islam. Unfortunate collateral damage events such as an attack on a wedding party and more recently against a hospital caught the attention of the world’s press and undermined the legitimacy of the operation.

Gulf War II

To preserve the element of surprise and deny Saddam the opportunity to take pre-emptive action such as the burning of oil wells, in the 2003 invasion of Iraq, there was no precursor air campaign. Gen Franks intended ‘Shock and Awe’, using high technology air and ground assets, would rapidly overwhelm Iraqi forces and persuade them to give up. Air power was therefore largely limited to the role of supporting land forces.

However, after a reasonably successful first week with a number of intense battles, Iraq was blanketed by huge sandstorms. In this period, known as ‘wobble weekend’ the land



MSgt Bart Decker from the 23rd STS, on horseback in the Balkh valley, during the initial days of the U.S. invasion of Afghanistan in 2001.



offensive slowed to a halt while the Iraqis took shelter where they could, including under bridges. Despite these sandstorms, aircraft using precision, satellite-guided munitions of the JDAM type, targeted armour and infantry in known locations, including under the bridges. As COMCENTCOM himself recorded, ‘When individual tanks and artillery pieces suffered direct hits from JDAMs during the height of the three-day sandstorm, Iraqi morale plummeted.’⁶ There seemed no place to hide and this affected the will of soldiers and officers alike. Most Iraqis, quickly appreciating that the overthrow of Saddam was a foregone conclusion, just deserted. ‘I asked Petraeus about enemy prisoners of war. ‘We don’t have a whole lot, Sir. Most of them took off their uniforms and just walked home.’⁷

Of course, there were ground battles, and some were severe, but for many progress was uninterrupted except by localized skirmishes. Typical was the comment by a US Marine. After leaving Kuwait, Lance Corporal Edward Shirley’s M1A1 Abrams tank... travelled through Basra, up the Euphrates and Tigris rivers, and into Baghdad. ‘At some point we expected there to be an armored battle but it never happened... the air force had taken out most of their tanks and others were abandoned. We saw a lot of burned-out Iraqi armor...’

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At war’s end Iraqi political power had been passed from Sunni Ba’ath party activists to Shia irregulars, and the newly unemployed veterans, most of whom were Sunni, became resentful. The ensuing demonstrations, increasing anarchy and growing insurgency required air power to be used in a similar *modus operandi* to Afghanistan, but again without sufficient ground or air forces to dominate the ground. General Eric Shinseki, U.S. Army Chief of Staff, had recommended ‘several hundred thousand’ troops be used to maintain post-war order, but then Secretary of Defense Donald Rumsfeld—and especially his deputy, civilian Paul Wolfowitz—strongly disagreed.

An increasingly useful asset in both Afghanistan and Iraq was, and is, the Unmanned Air Vehicle (UAV)/Remotely Piloted Aircraft (RPA). Initially used solely for localized visual reconnaissance, RPAs slowly began to use a wider range of sensors and to be equipped with short range missiles. Such systems remove the risk of pilot capture, have relatively low detectability, long persistence, and in clear weather the ability to monitor ground activity with great discrimination. When armed with weapons such as Hellfire they reduce the detection to shooter time to a matter of seconds, but with the decision to use a weapon often dependent on robust Rules of Engagement or a high-level political decision.⁸

Libya

In February 2011, civilian unrest and protests against Colonel Gaddafi's regime began, and it soon became clear that a massacre of rebels and their families would be likely in and around Benghazi. Gaddafi's forces had been detected marching on the city with armour, while the Rebels were armed with small arms and truck-mounted guns only. Over 800 British and 1,000 others were quickly evacuated. *HMS Cumberland/HMS York* rescued 468 from Benghazi, while RAF C-130 aircraft with the SAS rescued 429, most from hostile sites deep inside Libya.⁹

The West's involvement in Libya followed a similar tactical approach to that used in the Afghanistan invasion, except that no Western ground forces were deployed. In many respects it is a model politicians would choose for the future.

On 17 March, the United Nations Security Council adopted Resolution 1973 which reinforced and tightened the arms embargo against Gaddafi, established a no-fly zone in Libyan airspace and authorised 'all necessary measures ... to protect civilians and civilian populated areas under threat of attack... while excluding a foreign occupation force of any form on any part of Libyan territory'.¹⁰

The West responded quickly using the inherent flexibility of their air forces. On 19-20 March US, UK and France established a NFZ over Libya, and this was followed by sizeable air attack against C2, AD and support forces. One hundred and twelve Tomahawk missiles were launched from US/UK ships, and UK-based Tornados, supported by AAR, attacked military bunkers with Storm Shadow missiles. On the second night B-2s and Tomahawks destroyed 45 Hardened Aircraft Shelters (HAS) at the main airbase near Sirte. By Day 3, all Libyan air defences had effectively been neutralized.

Once air superiority had been achieved, aircraft attacked Libyan armour outside Benghazi. The rebels were thus empowered not only to protect themselves but then take the fight on to Tripoli.

Operations concluded after the occupation of Tripoli and the capture and death of Col Gaddafi on 20 October. Gaddafi's attempt to escape had been detected by intelligence, surveillance, target acquisition, and reconnaissance (ISTAR), with information passed to rebels to enable them to intercept his convoy.

Despite the initial US reluctance to become involved, NATO had been heavily reliant on US assets. Although Europe provided most of the air firepower, over 70% of all support sorties were provided by the USA. This underscores not only the scale and complexity of a successful air operation, but also the gaps in European nations' air forces.

The ending of the conflict was greeted as a new dawn for Libya. However, just as in Afghanistan and Iraq, the political situation rapidly deteriorated with no central authority and

with powerful warring militias holding the balance of power. An inescapable lesson from all conflicts is the need for effective post-conflict planning and pacification, especially without a Western ground force presence. This issue is probably as complex and onerous as winning the conflict in the first place.

Islamic State (IS)

Creating a political vacuum is always an invitation for exploitation, and nowhere was this more evident than in Western Iraq, and across into Syria as it collapsed into civil war. After the West had declined to become involved in Syria, a sect of Al Qaeda established there a regime based on terror. The group began referring to itself as the 'Islamic State' (IS) in June 2014, when it proclaimed itself a worldwide caliphate,



and named Abu Bakr al-Baghdadi as its caliph, a man who had been a colonel in the Iraqi army. As a caliphate, it claimed religious, political and military authority over all Muslims worldwide. Using the internet and Media, IS immediately began recruiting disaffected youths from across the world, including from the Islamic diasporas in Europe. Most were attracted by adventure, peer group pressure and the romanticism of Jihad. Both to intimidate neighbours, as well as encourage supporters, IS began a campaign of rape and pillage across the areas shown. Inhabitants were terrorized, forced into sexual slavery, and opponents such as Yazidis, Christians and Kurds, exterminated in the most brutal ways, all designed to capture the world's attention.

Funded by taxation from conquered areas, the sale of plundered antiquities, by naïve Sunni millionaires and oil wealth from captured oil refineries, IS soon had a sizeable war chest, and procured or captured modern weapons including tanks and missiles. Before long IS sychophants were also conducting terrorist attacks more widely, in Europe, Turkey and the Mahgreb, and had spread its tentacles to Nigeria (Boko Haram), Libya, Tunisia, Aden, Egypt and Beirut to name but a few.



Without wishing to be drawn into the Syrian civil war and fearing greater involvement in Iraq, a US-led coalition¹¹ began an air intervention to support the Kurds and the Free Syrian Army in their fight against IS and Bashir al Assad respectively. In the confused situation, with great powers supporting opposing sides in the civil war, Turkey, on 24 Nov 15, shot down a Russian

Su-24 that it claimed had infringed Turkish air space. That this alone could have been a *casus belli* is clear. 'This goes beyond the normal struggle against terrorism. This was a stab in the back by the accomplices of terrorists,' Mr. Putin stated, an apparent reference to Turkey's support for Syrian rebel groups.¹²

Western commitment seemed half-hearted; actions seemed to reflect the precept 'something must be done; do something'. Although the number of flights looked impressive, the coalition was constrained by tight Rules of Engagement (ROE). Reportedly for the first year, attacks on enemy oil tankers, on which IS financially depended, were withheld as the allegiance of the drivers could not be ascertained. British air attacks were initially confined to reconnaissance, then to air attack inside Iraq only. Reaper RPA were then deployed, and then an additional two Tornado bombers (bringing the total to just eight). Finally, and following the November 2015 IS Paris attacks and a vote in the House of Commons, British forces were allowed to attack IS targets in Syria. Hardly a well-planned decisive operation!



In contrast, when Russia decided to support Assad's forces, it did so with determination. According to one early report, 'Moscow's warplanes have carried out a staggering 394 sorties in just the last three days, hitting 731 rebel targets across Syria.'¹³ This size of air attack, coupled with far less sensitivity to collateral damage and civilian casualties, not only destroyed many targets but more importantly it re-invigorated the Syrian army and encouraged it to resume its offensive against both the US-supported rebels, and IS.

In November 2015, with little Western progress and with IS still in possession of considerable territory from Raqqa in Syria to Mosul in Iraq, Western commanders began to increase the tempo and systematically to attack IS's sinews of war.¹⁴ Oil tankers, oil collection points, pump stations and wellheads, as well as the cash hoards upon which IS depends were finally all targeted. The new resolve will hopefully encourage and facilitate effective offensive actions by both the Kurdish Peshmerga and the Iraqi army and should begin to reverse IS's fortunes. However, doubts remain, 'The gradualistic, painfully slow, incremental efforts of the current administration undercut the principles of modern warfare, and harken back to the approach followed by the Johnson administration.'¹⁵

There is clearly much still to play for, but at the time of writing it is difficult to see how the confused Middle Eastern situation can be resolved. For example, Turkey's main enemy are the Kurds, the very allies on whom the Coalition relies on to engage IS.

With Russia now more than ever involved in the region, we can expect to see air power used not just as a military weapon but increasingly as a political signal as well, witness recent Russian air attacks (17 and 18 August) from Iran and the provision of an S-300 SAM to that state, no doubt to signal a rebalancing of US power in the region.

Air Power – the Future

The only thing that we can forecast with any certainty is that the future will surprise us. Nevertheless, because we will be surprised, it is highly likely that we will have to respond quickly and with our most flexible capabilities. In that case, air power will remain a vital element in the National Security locker. Its very potency makes it attractive, militarily and politically, but we need to comprehend the full range of intended and unintended consequences: physical, psychological and populist.

Air power is clearly no panacea; and, as we are seeing on a daily basis in Syria, without credible and coordinated ground force, air power cannot deliver sound permanent prospects for peace alone. Serious thinking is required as to how we maximize air power's results in joint or coalition operations, against threats which will likely continue to bedevil humanity this century.

Of course, given the superb capability of Western aircraft, the West's air forces are known to be able to range across a battlefield with impunity, attacking whatever target we desire with great accuracy. That it seems so easy belies the huge investment of time, resources and energy that goes into making a precision attack seem so effortless and, at the same time, invulnerable. However, if the 1973 Yom Kippur war teaches anything, that luxury may not always be guaranteed, as the balance between offence and defence is never-ending. The effectiveness of newer Russian SAMs and radars mean that even today's stealthy aircraft may one day become detectable and vulnerable. In particular, the RPA so utterly dependent on electronic links, and upon which we now place such reliance may, as one USAF General noted, in war 'fall from the skies like rain'.¹⁶

'Our problem was we always made it look too easy.' –
Gen Carl Spaatz, USAF

If this were not bad enough, military forces and civilian industries remain totally reliant on high speed computers and reliable high-bandwidth communications which need considerable protection both against cyber-attack and to prevent them from being destroyed or hijacked. Militarily, there are also too few assets, be they aircraft or RPAs, to meet the growing scale of threats. And in this sensitive world, although we gain access to high quality imagery, its coverage is patchy, and so often in sorting out the intelligence wheat from the imagery chaff we fall down. Effective targeting relies on accurate intelligence, now more than ever important with omni-present Media and the new social instruments, such as Twitter and WhatsApp in everyone's pocket.

While this level of complexity is relevant in the more traditional force-on-force interstate warfare, it is still very much a problem even in the limited operations such as Syria today. Hybrid or ambiguous warfare is designed to confuse, and Crimea has already shown the complexities of establishing exactly what is happening and who is involved.

A stark lesson from both Vietnam and Kosovo is the deleterious effect of uninformed political involvement. Politicians have been given an awesome weapon; it is a shame they virtually never participate in exercises and learn how to use it. They must appreciate that naïve interventions or cacophonous direction

A good politician, like a good general needs to say what he wants to be achieved, not how to do it.

makes an operation less than decisive, likely extends the conflict, increases costs and casualties, and often achieves the very result they sought to avoid. A good politician, like a good general, needs to say what he wants to be achieved, not how to do it.

For the foreseeable future, and because of its strengths, air power will however, remain a favoured political weapon. Unlike a ground force which, once committed remains in the firing line, air power can be scaled up or down at will. But by being so responsive, it can encourage political vacillation and indecisiveness, and offers the luxury of waiting for consensus before acting with resolve. This offers an enemy the prospect of targeting the commitment of weaker members. If future air power is to be used effectively, and not just used for political symbolism, then firm international political leadership will be required - and for the future this may be a problem.

A final thought, from the other side of the coin - now that high technology, such as mobile phones, computers, and even drones are available across the entire world - by how much have we unwittingly empowered the underdog? On 9/11 we saw the effectiveness of turning the West's high technology against us. What will they think of next?

Notes

¹ Speer to USSBS Survey Interrogators on the Hamburg attacks. (USSBS Summary Report). <http://www.anesi.com/ussbs02.htm>

² General Norman Schwarzkopf, *It Doesn't Take a Hero*, Bantam Press 1992, p. 439.

³ Reported in *Ibid*.

⁴ Benjamin J Lambeth, *NATO's Air War for Kosovo*, Rand Corp, 2002, p. xvii.

⁵ <https://www.hrw.org/reports/2000/nato/Natbm200-01.htm>

⁶ General Tommy Franks, *American Soldier*, Regan Books 1st Ed, 2004, p. 559.

⁷ General Tommy Franks, *American Soldier*, Regan Books 1st Ed, 2004, p. 522.

⁸ As was so well-illustrated in the 2016 film 'Eye in the Sky'.

⁹ <http://www.raf.mod.uk/news/archive.cfm?storyid=A4A68A2F-5056-A318-A8DEE3EE8FDF6F11>

¹⁰ HCDC Report – *Operations in Libya*, p. 13.

¹¹ In September 2014 U.S. Secretary of State invited Ministers of the United Kingdom, France, Germany, Canada, Australia, Turkey, Denmark and Italy, to support the fight against ISIL militarily and financially.

¹² <http://www.bbc.co.uk/news/world-middle-east-34907983>

¹³ <http://www.express.co.uk/news/world/620958/Russian-airstrikes-Syria-kill-600-Moscow-doubles-jets>

¹⁴ <http://www.usatoday.com/story/news/politics/2016/04/19/new-rules-allow-more-civilian-casualties-air-war-against-isil/83190812/>

¹⁵ Lt Gen Dave Deptula, <http://www.usatoday.com/story/news/politics/2016/04/19/new-rules-allow-more-civilian-casualties-air-war-against-isil/83190812/>

¹⁶ Lt. Gen Dave Deptula, conversation with author.

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