Air Control: Past, Present, Future?

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'It is less than 13 years since we triumphantly entered Baghdad. Since then we have expended much effort and money in an attempt to set up the state of Iraq . . . few will be so optimistic to say that our relations with Iraq have been a success . . . there need be few qualms in a drastic reduction of army units . . . our Air Force units should continue in the country'

Lieutenant Colonel Henderson, 1929

The invasion of Iraq in 2003 and its subsequent administration have been achieved at considerable and ongoing human and financial cost. Criticizing the United Kingdom's decision in 2004 to modernize the structure of the Armed Forces and field advanced technology at the expense of force size, the UK Conservative Party's Shadow Secretary of State for Defence, Nicholas Soames, said that 'What

matters at the end of the day is the boots on the ground'.[1] But is this an axiom, or just a political sound bite from a former officer of the 11th Hussars? His grandfather is unlikely to have agreed with him; under Winston Churchill's authority, Britain successfully policed Iraq between 1922 and 1932 at minimal cost using a technique known as 'air control', where responsibility for internal security was vested with the Royal Air Force (RAF) under an Air Officer Commanding (AOC) and aircraft were used as the predominant means of control.

Air power's utility in major, state-on-state warfare is well documented. However, what role can air power play following the cessation of major combat operations but before the disputes that led to armed conflict have been finally resolved (in other words, between 'conflict termination' and 'conflict resolution')? The end of state-on-state conflict in Iraq, signaled by President Bush from the deck of the USS Abraham Lincoln on 1 May 2003,[2] has merely revealed further layers of conflict. The vacuum left by the dissolution of Iraqi governance at all levels (including the police and armed forces) while there were insufficient Coalition troops to maintain civil control has led to continued conflict from several sources. These include the historical ethnic struggle between Sunnis, Shia and Kurds; foreign Islamic fundamentalists; former Ba'athists who have been denied hope of a future position in Iraqi society; Iraqi nationals fighting what they perceive to be foreign invaders; and criminal elements whose future prosperity is threatened by the imposition of law and order. Iraq illustrates that there is still a conceptual and practical discord between current military strategy and the fulfillment of political aims. In other words, does our current use of military power support our political aims as much as it could? There has been an understandable tendency to reduce the resolution of conflict into separate bite-size political, military, economic, humanitarian and other elements, rather than develop a holistic strategy, of which the military is just one element. One critic has gone as far as to state that the latest Iraq Conflict highlighted that '*the US remains politically resistant, and the US Army doctrinally resistant, to the complexities and commitments required for managing all parts of the security cycle*'.[3]

What is the best use of air power in these 'small wars', where the stronger side is constrained from applying the full weight of its combat power due to self-imposed constraints? This issue will be addressed by giving a brief historical description of inter-war air control, examining its tenets and lessons, analyzing the contemporary use of air policing and discussing future possibilities. This will reveal that many of the tenets of inter-war air control have enduring relevance; technology is evolving and can address some of the problems encountered during the inter-war years, allowing air control to fulfill its full potential. If applied appropriately, air power could have a significant role in bridging the gap between conflict termination and conflict resolution.

AIR CONTROL BETWEEN THE WORLD WARS

A brief review of the history of inter-war air control sets the doctrine in context and highlights striking parallels with the present day. Britain emerged from World War I in an economic crisis and burdened with responsibilities for administering several ex-Ottoman regions. Although the RAF had recently been formed as an independent air service, both the Royal Navy and British Army were keen to disband it in order to increase their proportions of the shrinking defence budget. The continued existence of the RAF therefore depended on it finding an irreplaceable peacetime role.

The Early Days — air control's conception

In June 2004, Pakistan security forces, backed by jet fighters and helicopters, launched an offensive to clear the mountainous Waziristan border province of Afghan and Islamist insurgents. This is just the latest chapter in the history of the North West Frontier. The air control concept was conceived there 85 years ago, when the RAF supported the 'Waziristan Force' against Afghan-inspired local tribes. On Empire Day, 1919, the RAF undertook independent action when the world's largest aircraft, a Handley Page V.1500, flew over the Hindu Kush from Peshawar to bomb the Afghan capital, Kabul.[4] This resulted in the evacuation of half the city's population and reinforced the view of the RAF Chief of Air Staff, Lord Trenchard, that '*operations against Afghanistan can be carried out by*

A de Havilland DH9a of No 30 Squadron over Iraq

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air power as the primary arm'.[5] However, it was the use of air power in British Somaliland that proved pivotal to the future of air control. By 1920 four army expeditions had failed to decisively defeat the rebellious 'Mad Mullah' and the Colonial Office was reticent to fund further campaigns.[6] The Secretary of State for Air and the Colonies, Winston Churchill, in consultation with Trenchard and T E Lawrence (of Arabia),[7] deployed eight aircraft of 'Z Unit' to British Somaliland. Aircraft dropped a mixture of bombs and leaflet drops to winkle the Dervishes out of their fortresses and help chase them into the hinterland.[8] The operation cost just £80,000,[9] reinforcing the contemporary view that air power could control tribesmen more economically than land forces. Air control suited the purposes of both Churchill (who was keen to reduce the cost of policing the newly acquired mandated territories) and Trenchard (who was enthusiastic to find a peacetime role for the young RAF). As a result, in 1922 air control was imposed almost simultaneously in Mesopotamia, Transjordan and Palestine.

Mesopotamia

Following World War I, a British garrison of 102,000 imperial troops was stationed in Mesopotamia at an untenable annual cost of £30 million.[10] The situation showed many parallels with present day Iraq, although we seem to have forgotten many of the hard-won lessons . . . During a general uprising in 1920 (which was led by former Ottoman civil servants and military officers who had been made redundant by the British . . .), six towns, including Kufa[11] and Samawa, along with the entire Mosul 'Vilayet', were cut off.[12] Their extraction required large numbers of relief troops from India and cost many lives.[13] The British press were hostile to the continued occupation of Iraq; despite fears of a Turkish invasion, plans were drawn up to withdraw to Basra, leaving a single division to protect the southern Iraqi oilfields, at an annual cost of £8 million.[14] As an alternative, air control was imposed in October 1922, when eight squadrons of aircraft, four battalions of imperial

troops, four armoured car companies and 15,000 local irregulars replaced the British garrison at an annual cost of £3-4 million.[15] In 1923, the Kurdish Sheikh Mahmud encouraged Turkish troops to bolster an anti-British uprising.[16] Aircraft bombed Mahmud's headquarters, causing him to flee to Persia. The Turks withdrew without fighting.[17] The British High Commissioner noted that '*air control has been . . . magnificently successful*'.[18] Although air control officially ended when Britain's mandate expired in 1932,[19] the RAF maintained airfields at Shaibah and Habbinayah until 1956.[20] Without air control, it is likely that the British would have withdrawn to Basra, the Turks would have filled the political void and the state of Iraq would not exist, as we now know it.

Transjordan

Following World War I, the League of Nations ceded Transjordan to Britain as part of the Palestine mandate.[21] From the imposition of air control in 1922, a combination of aircraft and armoured cars successfully subdued both inter-tribal lawlessness and Wahhabi raiders from Saudi Arabia.[22] In 1928 it was assessed that Transjordan's government would fall within a fortnight without air control, despite the creation of a local army, the Arab Legion.[23] From 1930 onwards, Transjordan was sufficiently stable for control to be gradually passed to the increasingly effective Arab Legion.[24]

Palestine

Palestine demonstrated the limitations of air control. After World War I, Britain maintained a garrison of 7,670 imperial troops at an annual cost of £3.5 million.[25] When air control was imposed in 1922, the garrison reduced to one squadron of aircraft, one armoured car company and a local police force. Expenditure dropped by more than 50%.[26] It is a common misperception that Trenchard was keen to impose Air Control wherever he could. However, it appears that the main proponent of air control was Churchill, whereas Trenchard was more circumspect about its blanket imposition. Although Churchill's Colonial Office was '*very much in favour of the air taking control*' in Palestine,[27] the Air Staff opined that '*air action was not suitable to the particular problems of public security in a more-or-less civilized country like Palestine where the principal centres of trouble are the towns*'.[28] Trenchard noted that aerial bombing '*lacked sufficient accuracy to clear crowds in built-up areas without causing indiscriminate casualties*'.[29] In the summer of 1929, it proved necessary to deploy three infantry battalions to subdue an Arab uprising against Jewish settlers.[30] Another major anti-Jewish uprising occurred in 1936. Plans to bomb urban areas, including the Arab headquarters at Nablus, were vetoed by the Cabinet.[31] Instead, thousands of troops were deployed and air control was revoked.[32] Nevertheless, the RAF supported the army in monitoring Jewish settlements, attacking looters and patrolling the frontiers[33] until the end of Britain's mandate in 1948.[34]

Aden

In January 1928, air control was chosen as the tool for suppressing the troublesome tribes in the north of the British Protectorate of Aden in preference to a £6 to 10 million alternative plan to deploy a division of troops. One squadron of aircraft, three armoured cars and a few hundred local irregular soldiers gradually replaced the existing 2-battalion garrison.[35] Following a series of raids and hostage takings by the Imam of Yemen in April 1928, the RAF undertook offensive action. Trade in the Imam's capital, Sana, came to a standstill and two-thirds of the population fled.[36] The Imam withdrew and sued for peace.[37] One of the last uses of offensive air power under air control occurred in 1961 against a rebellious local sultan. However, when a similar situation occurred with another tribe in 1964, air action was vetoed over concerns about evoking the United Nation's (UN's) disapproval over bombing *'innocent tribesmen'*. Instead, a land operation was mounted, according to the Ground Commander, '*at great cost in blood . . . You could hear Trenchard's voice booming round the crags 'I told you so, I told you so!'*'.[38]

INTER-WAR PRACTICE AND DOCTRINE

The doctrine of air control evolved rapidly in the very early 1920s. Following the imposition of air control in Mesopotamia, Transjordan and Palestine in 1922, the doctrine became based on pragmatic experience. There was a gradual trend

from purely punitive strikes to more refined psychological coercion using minimum force. Thus in 1921, Wing Commander Chamier wrote that air power should administer punishment '*with all its might. The attack with bombs and machine guns must be relentless and unremitting and carried on continuously by day and night, on houses, inhabitants, crops and cattle*',[39] but by 1926, a political officer in Southern Iraq wrote that '*the infliction of human casualties* [which tends] *to embitter the people against Government, is not only unnecessary but undesirable*'.[40]

The height of refinement of inter-war air control was articulated by Aden's AOC, Portal, in 1937.[41] He differentiated between two categories of policing. The first was '*fully administered territory where communal or other trouble has got beyond control of the civil power*'. In this situation, air power should support the army, because the guilty and innocent live in close proximity, often in urban areas, and cannot be easily differentiated from the air. The second category was '*unadministered or loosely administered territory where the agents of civil control . . . are too few to cope with any but isolated acts of lawlessness*'. Here, air control was more effective and economical, although it was most successful where the weather was reliable and the people had economic ties to the land.[42]

Portal described how an 'inverted blockade' was used to coerce transgressing tribes.[43] The guilty party would be identified beyond doubt and the leader summoned to a landing ground in nearby neutral territory, preferably the day after the offending event. A political officer would fly in and deliver the Government's final, irrevocable, but reasonable demands in clear terms. The ultimatum would warn the tribesmen that, if they did not comply within 10 days, they must leave their village, taking all their possessions and animals with them, and should not return or touch any unexploded bombs. Leaflet drops would ensure all members of the tribe understood the ultimatum. If the ultimatum expired, bombing would commence, concentrating on the leader's house. Propaganda would be aimed at the displaced villagers, who generally started off defiant. However, over time, they would begin to squabble amongst themselves, and finally slip into a state of boredom and helplessness. Once they conceded, the political officer would fly in, urging the tribe to resume its peaceful coexistence with the Government. Subsequently, medical parties would fly in and unexploded ordnance would be defused. Portal described a two-month inverted blockade in Aden, which incurred no friendly casualties; only three tribesmen, who had tried to dismantle an unexploded bomb, were killed.

Apart from the inverted blockade, air power had other uses, such as enabling rapid personal contact between '*white officials and the natives*',[44] which helped to avoid the spread of false information and misinterpretation of the political authority's intentions. For example, within 48 hours of the fall of the Mad Mullah's stronghold, the Governor of Somaliland had visited the local chiefs. Other uses included providing medical care and locating grazing areas for friendly tribes. Although the main use for troops under air control was guarding the airfields,[45] they could be employed in punitive expeditions if required. Air power would support them and the armoured cars in several ways, including: harassing the enemy and preventing them from preparing defensive positions while the column approached; flying route reconnaissance; providing offensive air support; and providing rapid communications.[46] Aircraft could also drop supplies and deal with snipers. During one expedition in Iraq in 1923, aircraft evacuated 200 dysentery and diarrhoea casualties, thereby avoiding a six-day donkey journey[47] that was, no doubt, a welcome reprieve for both soldier and donkey alike.

THE TENETS OF INTER-WAR AIR CONTROL

Having briefly set air control into its historical context, the question arises as to its tenets and lessons. Air control was considerably cheaper in economic terms than garrisoning troops, which is probably why Churchill was such a keen proponent. It also exposed far fewer personnel to enemy fire and offered healthier, safer conditions for the occupying force.[48] However, there were many more benefits from air control than cost and safety . . .

By the late 1930s, air control had matured into a refined and sophisticated doctrine. Even a

cursory examination of the documentation from that era dispels the oft-quoted statement that air control doctrine was based on bombing innocent villagers. In fact, air control was relatively humane. A 1926 presentation on air control noted that 'a*ircraft do not, as a rule, inflict very heavy casualties*'.[49] Only sufficient buildings were targeted within evacuated villages to prevent the population from returning, in contrast to the army's tactic of '*the burning of entire villages, wholesale destruction and confiscation of livestock*'.[50] Air control was based on coercion, not wanton destruction. Air power's psychological effect was '*largely due to the demoralization engendered in the tribesman by his feeling of helplessness and his inability to reply effectively to the attack*'.[51] Portal wrote in 1937 that '*we want a change of heart, and we want to get it by the use of the minimum amount of force*',[52] while the RAF's official doctrine stated that '*once you have destroyed a village you have lost your power*'.[53] It was recognized that the innocent must never be harmed; '*bombing the wrong people, even once, would ruin the Government's reputation, and would take years to live down*.[54] The key to employing a relatively small number of aircraft effectively while avoiding unnecessary, counter-productive casualties was intelligence. A highly sophisticated civil/military intelligence service evolved which formed '*the foundation on which successful air control is based*'.[55] An understanding of the country, the people, their resources, their methods of living and even their mental processes was vital to the successful application of air control.[56] Accurate maps were '*of the very first importance*' in ensuring that the correct village was targeted.[57] As the doctrine became more refined, the use of precision bombing increased to avoid unnecessary casualties.

Another tenet of air control was that the population must perceive that they were being treated justly and fairly. '*Control without occupation*', as air control was often termed, avoided the obtrusive and sometimes antagonistic nature of foreign occupation.[58] Any British demands had to be unequivocally clear, reasonable and achievable. Following a transgression, an ultimatum had to be made quickly and any deadlines adhered to.[59] The required standards of behaviour had to be made clear to the whole population, not just the leadership.[60] Cooperation with the British authorities was encouraged and good behaviour rewarded.[61] The population was encouraged to consider airfields as points of contact with civilization, from where modern benefits such as medical care and information could be obtained.[62] To quote the RAF's official doctrine, '*air action leaves no special legacy of hate, and causes no personal rancour or retaliation*',[63] which allowed governance to be rapidly re-established after a dispute. Importantly, a display of magnanimity (such as the rapid provision of medical care and the defusing of unexploded ordnance immediately after a transgressing tribe acquiesced to British demands) was recognized as reaping significant long-term rewards. Generally, there was little ill will displayed by the population as a result of air control, because there was no sense of injustice.[64]

It was acknowledged that an '*intimate*' relationship between the air commander and the political authority was vital to ensure the coordination of political and military aims.[65] However, in an interesting parallel with today's concerns about datalinks allowing politicians to meddle in operational matters (sometimes termed 'reach-down'), the RAF's 1933 doctrine stated that the advent of the wireless had shifted responsibility back to the '*Home Government*', hindering quick decision-making; a politician would '*put off the decision to use force as long as he can*'.[66] The doctrine emphasized that decisions had to be made at the lowest possible command level.

Propaganda (or 'Information Operations' as it would now be termed) was recognized as a vital element of the doctrine. '*Tribesmen are very susceptible to propaganda from their own chiefs and holy men* [who will] *spread counter-propaganda misrepresenting the intentions of the Government*'.[67] To rebut this, a very robust counter-propaganda campaign was employed;[68] leaflet drops were used not just for communicating with offending tribes, but also to warn neighbouring villages not to harbour offending tribesmen, thereby engendering a sense of communal responsibility.[69]

During the transition from 'military' occupation to air control, it was necessary to carefully manage the perceptions of the local population, as the disappearance of British troops on the ground could be interpreted as a withdrawal and lack of commitment. To avoid this misconception, '*sheikhs and headmen*' were educated that British protection was still being exercised '*by the more powerful and up-to-date means of the aeroplane and the armoured car*' and that punitive action would be exercised against aggressors.[70] Air power's reach, ubiquity and lack of dependence on lines of communication allowed it to fly the flag over vast areas within which, as Chamier wrote in 1921, '*the native, in his ignorance . . . thinks that he alone is being observed*'.[71] This was a powerful deterrent: in 1926 it was proposed that '*90% of the effect of air power regarding small wars is that it prevents these wars*'.[72]

Air control was not a panacea, as Palestine demonstrated. Air control was only effective if the region was free from organized rebellion, such as a general uprising and if there was no threat of an imminent external attack by another country.[73] Nor was it suited to urban regions due to the close proximity of the guilty and the innocent.[74] Similarly, in the case of religious fanatics, 'it may be impossible to obtain a decision by aircraft alone'.[75] Nicholas Soames would, no doubt, agree with the 1926 statement that 'against a determined and well disciplined enemy, the rifle and bayonet are, at present, the only decisive weapons'.[76] Geography was also acknowledged as a factor; mountainous or wooded regions were deemed unsuitable for air control because of the concealment they offered.[77]

The present

Despite the demise of air control, there have been several contemporary uses of 'air policing' that are relevant to potential future operations. In Northern Ireland, aircraft have been used for terrorist surveillance, while their mere presence is thought to dissuade terrorist activity.[78] In the aftermath of the 1995 Bosnian conflict, low-level 'air presence' demonstrations by NATO fighter aircraft were used to intimidate non-compliant Bosnian Serb Army units and force compliance with NATO demands.[79]

The Israelis have consistently employed air power in a coercive air-policing role to assassinate 'terrorist' leaders in the Palestinian-administrated Gaza Strip. In July 2002, a 1000-kilogram bomb was dropped by an F16 aircraft onto the apartment block of the Hamas military commander, killing him and 14 others, while injuring 140 Palestinians.[80] Following these casualties, Israel switched to helicopter and unmanned aircraft[81] attacks using small missiles, assassinating a senior member of Hamas and his bodyguards in their car in August 2003[82] and Hamas' leader in March 2004;[83] his successor was assassinated the next month in another helicopter missile attack in which 20 people were wounded.[84] Following these attacks, Hamas kept the identity of its next leader secret for some time. In October 2004, two Israeli air-launched rockets slammed into the car of Hamas' rocket mastermind, killing him and an aid as they left a mosque. The rocket maker had been on Israel's 'most wanted' list for 15 years and was known as 'the father of the Qassam rocket', a weapon that had been used to bombard Israel during the previous few months.[85] Another Israeli air raid a few days later targeted a group of Islamic Jihad militants gathering outside a house as they prepared to attack a nearby Jewish settlement, killing two of them, critically injuring a third, while wounding four civilians.[86] Nonetheless, there remains considerable debate as to whether these tactical successes are helping or hindering the Middle East peace process.

Other examples of air policing over unoccupied territory were the 'No-Fly Zones' (NFZs) imposed over Northern and Southern Iraq between the 1991 and 2003 Gulf Wars by the United States (US), Britain and, initially, France in response to the UN's call to provide humanitarian relief for Kurdish and Shia refugees being repressed by Saddam Hussein's regime.[87] For 12 years, these NFZs helped maintain the regional status quo and 'contained' Iraq, ensuring that Saddam was unable to project military might outside Iraq's borders. Britain's contribution to the international operation in 2002 was 18 fast jets, three tanker aircraft and about 1,000 airmen,[88] but without any army units.

British Army Challenger 2 tank in Iraq, 2003

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In stark contrast to policing the NFZs, the operation to occupy Iraq in 2003 required 113 British aircraft, including 66 fast jets[89], and 46,150 British personnel, including 8,100 airmen.[90] Even following the cessation of major combat operations, the 160,000-man policing Coalition requires 9,000 British troops[91] and 1,700 airmen.[92] Analysis of the human cost reveals more contrasts. Over the 12-year period of the NFZ, there were no Coalition combat losses.[93] However, as of the middle of November 2005, 2,086 Coalition personnel (including 97 British) have been killed in action, of which 1,946 (including 64 British) died following the suspension of major combat operations.[94] The British Foreign Office estimates that there have been up to 10,000 Iraqi fatalities since the invasion of Iraq.[95] The economic cost to Britain of equipping and deploying the UK invasion force was about £700 million.[96] The ongoing costs of the operation for the financial year 2003/2004 were about £1,837 million.[97] Although the cost of enforcing the NFZs has not been published, some idea can be gleaned by a comparison of the relative sizes of the deployed forces before and during the invasion. The human, economic and political costs of invading Iraq make air control or 'aerial containment' attractive alternatives.

Unlike the 1991 Gulf War, air power played the role of supporting the land forces during the 2003 Gulf War. Nonetheless, air power has made a significant contribution to post-war Iraq.

RAF and US aircraft are currently policing Iraq's borders against smugglers, escorting convoys, patrolling electrical power stations, power lines and oil pipelines to deter sabotage. Collecting intelligence has been made easier by the lack of threat to aircraft operating at medium level. Relatively low performance platforms can be employed; the fielding of the Nimrod MR2's new Westcam electro-optical capability, for example, has been 'particularly successful'.[98] These roles, and the use of low performance aircraft, would be familiar to many inter-war aircrews. This 'nation building from the skies' has resulted in a 'significant drop in sabotage attempts',[99] thereby increasing the availability of public utilities to the Iraqi population. Air refuelling over Iraq is now an every day event, increasing the endurance of fighter patrols to many hours, despite most of them being based outside Iraq. In resonance with inter-war air control, air power has been used to great effect on 'innumerable occasions'[100] when Coalition troops have been in contact with anti-Iraqi forces; 'shows of force' (low-level, high speed fly-pasts) by fighter aircraft reinforce the perception of omniscient, omnipotent combat power and have normally diffused the situation. In June 2004, 26 insurgents involved in a fire fight with Coalition troops surrendered 'as soon as they heard fixed-wing noise overhead . . . When the bad guys heard the F16s overhead they just gave up'.[101] Similarly, in November 2004, a hostile crowd of over 1000 disaffected Iraqis, who were about to overwhelm a Coalition ground patrol, dispersed when Coalition fast jets made high-speed, low-level runs over them. This avoided a potentially bloody situation, all without a shot being fired or suffering a single casualty on either side.[102] These examples demonstrate that the tenet identified by Chamier back in 1921, concerning the psychological effect of air power, is an enduring one. On the relatively rare occasions when 'shows of force' have proven insufficient to tip the initiative in the Coalition's favour, aircraft have 'upped the ante' and delivered precision-guided weapons or completed strafe runs under the control of air or ground-based Forward Air Controllers or 'Joint Terminal Attack Controllers'.[103]

Air power was also helped to re-impose law and order in Iraqi cities that have been taken over by anti-government forces, be they disaffected, unemployed Iraqis, ex-members of Saddam's armed forces denied hope for the future by the dissolution of the Iraqi military, criminal cartels, or foreign Islamist Mujahadeen. In the run-up to Operation Phantom Fury (the ground offensive to re-take Fallujah in November 2004) aircraft dropped leaflets and carried out precision air strikes against 'safe houses' and weapon caches of insurgent groups such as Abu Musab al-Zaqawi's Tawid and Jihad group. One result of this campaign was that Fallujah's population dropped from 300,000 to an estimated 50,000,[104] thereby greatly reducing the civilian casualties when the ground offensive to re-take the city began. To quote a refugee from Fallujah, '[we] had to run away when the . . . raids on the city intensified. We took off as soon as the government asked us to leave'.[105] Again, there are distinct, if superficial, parallels between this situation and the 'inverted blockade'; while inter-war air control attempted to directly target the morale of the local population in a coercive manner, air power was used in the pre-Phantom Fury 'shaping' operation to physically eliminate terrorists, while the depopulation was a secondary, if welcome, effect.

Legality . . .

Given the costs of occupying a foreign country, does air control offer a workable alternative for the future? Air control was abandoned in the 1960s because of the fear of attracting the UN's disapproval. The pervasiveness of the Western media is a compelling reason for Western nations to comply with international law. 'Protocol 1 Additional' to the Geneva Conventions states that 'civilian objects shall not be the object of attack'[106] and prohibits attempts to 'attack, destroy, remove or render useless objects indispensable to the survival of the civilian population, such as foodstuffs . . . crops, livestock . . . whether in order to starve out civilians, to cause them to move away, or for any other motive'.[107] Therefore, although the use of 'minimum force' became a tenet of inter-war air control, the inverted blockade, per se, would seem to be illegal. Nonetheless, there are other tenets of air control doctrine that are relevant to the enforcement of internal security, as described later.

PROBLEMS WITH BOOTS . . .

Before addressing how air power may now be able to overcome some of the inter-war problems associated with air control, it is important to understand some of the issues associated with Nicholas Soames' 'boots on the ground' approach. History is littered with cases where 'liberating' troops have quickly come to be viewed as occupiers by the local population. The rhetoric associated with an 'occupying power' is strong; the presence of foreign troops gives insurgents a ready source of resentment to tap, and the battle for public support can be a difficult one. Indeed, a survey by Iraq's Coalition Provisional Authority found that the population's confidence in Coalition forces dwindled markedly over the Summer of 2004; 80% said they had no confidence in the Coalition forces, 55% said they would feel safer if they left Iraq immediately, while only 1% said the Coalition force provided a sense of security.[108] Replacing the majority of 'foreign' troops as soon as possible with locally raised police and military forces, which would be perceived as having greater legitimacy, would reduce the population's sense of resentment. An indigenous police force that enjoys the support of, and is accountable to, the local population may be an essential precondition of conflict resolution. Iraq's interim President, Ghazi al-Yawar, said in December 2004 that 'in hindsight, it was a mistake to disband the Iraqi military'.[109] When asked how quickly American troops could be withdrawn, he replied 'Well, months . . . I don't know, six or eight months or a year. But I don't think it will take years. Definitely not'.[110] Whether this optimistic forecast was meant to reassure his countrymen or the American public, it is clear that he wished foreign troops to be withdrawn as soon as they could be replaced by Iraqi forces. It is foreseeable that, as the Iraq police force reconstitutes itself and develops its sense of internal loyalty and esprit de corps (while the tribal loyalties of its members correspondingly decreases), Coalition ground troops could gradually be withdrawn.

Overcoming the Problems . . .

Can modern technology overcome some of the problems concerning inter-war air control? It is still asking too much of air power to maintain law and order during a general, popular uprising. Similarly, ground troops continue to form a vital element in defending a country against external invasion. As described earlier, inter-war air control, and the Waziristan campaign in particular, demonstrated that mountainous terrain offers cover from which insurgents can hide from aircraft. However, history shows that in such terrain, ground troops are highly vulnerable to ambush, be it the British retreat through the Khyber Pass in 1842 (when 4,550 fighting men and 12,000 followers perished),[111] or the Soviet Union's more recent experience in Afghanistan. Coalition aircraft are currently being used in Afghanistan to protect ground convoys through the mountainous passes.[112] Therefore, mountainous terrain is difficult to police, no matter which method is employed.

The inter-war tenet that air control cannot contain religious fanatics needs to be examined closer. Religious fanatics are unlikely to be deterred by air power. However, as seen in the current Iraq conflict, these extremists rely on the local population being sympathetic towards them, or at least maintaining a 'benevolent neutrality', as they swim in a sea of tacit popular support or resentful acquiescence. To operate effectively, the local population has to provide the fanatics with shelter and protection, be it directly or indirectly, while allowing the extremists to camouflage themselves within the general mêlée. The removal of what may be perceived to be an intrusive, antagonistic 'occupation' force and its replacement by locally-raised troops and police backed by the occupying power's air power may also help the local population develop a sense of self-determination and hope for their future, while the regular presence of aircraft overhead would reassure the masses that powerful military force can quickly be bought to bear against insurgents. Both these factors should make the population less eager to harbour fanatical terrorists, especially if the insurgents are using fear or intimidation against them and disrupting their day-to-day life. Aircraft were used to patrol over polling stations during both the 2004 Afghan Presidential elections and the 2005 Iraqi elections to simultaneously reassure

A Boeing B-52H of the Air Force Flight Test Center, Edwards AFB, releasing a Joint Direct Attack Munition (JDAM) during trials

The increasing precision of modern weapons allows smaller warheads to be employed, reducing collateral damage and increasing the opportunities to project air-delivered lethal effects into urban areas

voters and dissuade insurgents from disrupting the election process.[113] In Iraq, the presence of aircraft was deemed to 'reassure the Iraqi National Guard troops and encourage them to protect the polling stations',[114] while in Afghanistan, the overt presence of aircraft over the cities and villages reportedly brought a feeling of safety.[115] US ground observers that the 'freedom of movement for locals to carry out their daily activities without the threat of attack was a great burden lifted from their shoulders'.[116]

In the urban areas that proved to be the demise of air control in Palestine, can modern technology address the problems associated with the close proximity of the guilty and innocent? Insurgents have long used safe houses within urban areas to deter the authorities from targeting them by air due to the risk of harming innocent residents living nearby. However, as previously described, the Israelis seem to be able to accurately identify 'terrorists' in urban Palestinian territory, presumably fusing a mixture of Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) technology and human intelligence (HUMINT). Similarly, Iraqi insurgent safe houses were effectively targeted with precision-guided weapons during Operation Phantom Fury in Fallujah. Therefore, it would not seem impossible for a well-honed system to correctly identify the guilty in urban environments. However, accurate intelligence is critical; any miss-targeting or significant 'collateral damage' will alienate the local population and may

ultimately compromise an occupying coalition's will to continue, not to mention the human tragedy itself. During Operation Enduring Freedom in Afghanistan in 2001, there were several incidents of the US targeting innocent parties due to deliberate misinformation generated by inter-tribal rivalries. The Afghan President publicly requested the US not to rely solely on local informants.[117] The next issue in urban areas is the avoidance of 'collateral damage'. Historically, one of air power's major attributes has been the ability to bring overwhelming firepower to bear. However, in small wars and counter-insurgency operations, where gaining the support of the local population is vital, the application of indiscriminate, overwhelming firepower is a disadvantage. The population's private property and dignity needs to be respected whenever possible. Therefore, kinetic targeting must become both focused and precise to avoid it being counterproductive. Rather than measuring air control's success by the number of air strikes required to maintain law and order, it should be measured by the lack of them. As previously described, the Israeli use of helicopter missile attacks has resulted in relatively few unintentional casualties. During the 2003 Iraq War, the US and Britain conducted close air support (CAS) missions in urban areas with considerable success. Attacks against buildings were managed so the bomb detonated in the basement, causing them to collapse in on themselves and minimizing damage to surrounding buildings. A post-conflict ground assessment noted that collateral damage was often significantly less than predicted.[118] Some non-explosive bombs were also dropped, but these resulted in insufficient damage to the intended target and the possibility of collateral damage as they ricocheted into surrounding populated areas.[119] The increasing precision of modern weapons allows smaller warheads to be employed, reducing collateral damage and increasing the opportunities to project air-delivered lethal effects into urban areas. The US Small Diameter Bomb is an affordable, satellite-guided weapon that contains only 50 lb of explosives, [120] compared with 192 lb in a Mk 82 500-lb bomb,[121] and 945 lb in a Mk 84 2000-lb bomb.[122] Its small size would allow a B2 bomber to carry up to 216 of them,[123] although the USAF currently has no funded plans to do so.[124] Nonetheless, if so equipped, a single B2 could patrol a large area, although multiple aircraft would be needed to provide simultaneous effects. However, since one of the main benefits of air control is its low cost, less expensive and maintenance intensive airframes such as the B2 or the B52 are more appropriate; stealth would probably not be required, since there is unlikely to be an air-to-air or surface-to-air threat to aircraft operating at medium level. The affordable, yet focused precision of satellite and laser-guided weapons should suffice for most eventualities. These technologies have allowed air power to contribute a variety of effects to the policing of Iraq following the 2003 Gulf War. For example, ISTAR assets can support ground forces in arresting insurgents if the aim is to exploit the terrorists for subsequent interrogation. Conversely, ISTAR-cued kinetic air strikes can eliminate insurgents if the aim is to send a message to their colleagues and supporters that they are not immune to attack even when sheltering in urban safe houses.[125] Accurate maps are even more vital than in the inter-war years due to the reliance of modern satellite-guided weapons on accurate target coordinates, while the decreased vulnerability of stealthy aircraft may make the risk-averse West more willing to participate in operations.

Air control fell out of vogue in the early 1960s due to concern about attracting adverse publicity by bombing villages. However, the ability of the Western press to undermine a coalition's political will should not be overstated. With the advent of small, digital camcorders and the Internet, modern terrorists no longer rely on the Western press to broadcast their message. Terrorist web sites packed with video and propaganda abound. Western journalists are finding themselves to be the target of terrorism, having lost the utility that had previously put them on the terrorists' 'no hit' list. It was noticeable during the multitude of precision air strikes against terrorist safe houses in the run-up to Operation Phantom Fury in the summer of 2004 that Fallujah was denuded of Western journalists. Domestic television and newspapers were not flooded with uncorroborated images of bombed domestic housing and women and children being treated in hospital. For the

most part, Western news agencies had to rely on reporting by indigenous reporters, whose neutrality was questionable; there was very little public outcry in the West. It appears that, when the cause is interpreted as being just, the Western domestic population is willing to accept the small amount of collateral damage caused by the application of modern precision air power in urban areas.

However, a word of warning is necessary to avoid viewing air control through rose tinted glasses. In 1925, Salmond commented that air control was only suited to regions free from organized rebellion, such as general uprisings. This would appear to be an enduring tenet. Air power's limited footprint, which is so advantageous in avoiding a provocative, antagonistic and intrusive occupation by foreign troops, becomes a major disadvantage in these circumstances. Air power's lack of persistence denies it the ability to quell general uprisings. For air control to be effective, the general community must want law and order and, by and large, be willing to be policed. Air power could not be expected to be effective at quelling a civil war between Iraq's Sunnis, Shias and Kurds, for example. This remains, perhaps, one of the biggest practical obstacles to air control's re-imposition.

The future?

Future situations may well fall into the two categories defined by Portal in 1937, namely: 'fully administered territory', where a security force is required to control urban areas; and 'unadministered or loosely administered territory' where a large ground presence may be undesirable. This desire could be driven by a lack of public support at home, the disinclination to risk a potentially vulnerable (and expensive) ground force, or to avoid 'cultural contamination'. Possible examples of the latter situation could include Afghanistan or, perhaps, Somalia — 'one of the most dangerous places in the world'.[126]

Failed states falling into Portal's 'unadministered' category are likely regions for UN peacemaking operations. However, the US has shown a disinclination towards committing ground troops to UN operations due to a culture of 'casualty aversion', making air power a tempting alternative. Air control's tenet that it deterred 90% of small wars seems particularly germane in the future; intelligence could be collected by manned or unmanned airborne ISTAR aircraft and their data rapidly disseminated by networked datalinks, allowing fleeting targets to be engaged before they commit hostile acts. HUMINT would play a vital part in providing the quality of intelligence required for successful air control. HUMINT collection could be enhanced by face-to-face contact enabled by helicopters, which could also help to avoid any misinterpretations of intent. Such contact could be supported by combat air vehicles overtly loitering overhead in potentially volatile situations. Information Operations in the widest sense (be they leaflet drops, food drops or propaganda broadcasts, to name but a few) would be particularly useful in defusing volatile situations and avoiding conflict. Information operations should communicate the purpose of air presence missions to the various factions, such as: protecting the innocent; dissuading terrorist sympathizers and targeting the insurgents. Modern technology now permits greater exploitation of night and bad weather, which can be used to reduce the 'occupying' force's vulnerability, while the increased range of fixed wing aircraft since the inter-war years, augmented by aerial refuelling if necessary, allows air and ground personnel to live in a safe, healthy environment. The use of unmanned aircraft, possibly piloted from the homeland, would make a casualty-averse nation more willing to participate in these operations. Helicopters could allow any necessary ground troops to live in relatively secure in-country accommodation ready to be rapidly deployed when necessary. As with inter-war air control, it will be vital to avoid significant losses to friendly aircraft in order to induce a sense of helplessness in the indigenous population. Operating above the height of small arms fire and, if necessary, the use of stealthy aircraft will help achieve this. The proliferation of early generation shoulder-launched surface-to-air missiles and their availability on the grey and black markets means that aircraft forced to operate within their engagement envelopes must be fitted with effective countermeasures.

A Grumman F-14 Tomcat of the Naval Air Warfare Center releasing a laser-guided bomb

Despite the increased precision and more focused weapon effects enabled by modern technology, there will still be a threshold below which it is not acceptable to employ offensive air power

In 'fully administered territory', the inter-war issues concerning the proximity of the guilty and innocent, identifying the guilty, and avoiding harming the innocent seem to be at the very least partially mitigated by modern technology. Air power can now encroach into residential areas; urban CAS has been proven to be an effective tool; air power demonstrated its ability to surgically target insurgents in an urban environment in Fallujah in the late summer of 2004 as well as, later, supporting ground troops in re-taking the city. Although ground forces will always be needed to police urban areas at the lower end of the spectrum of civil unrest, friendly troops could be replaced by locally raised police or troops, akin to the inter-war locally raised 'levies'. Therefore, the argument that air control (in its purest sense) is unsuited to 'fully administered territory' appears less convincing than in the inter-war years.

Ongoing events in Iraq have shown that the Western public is concerned over the ever increasing body count despite the 'cessation of major combat operations', while it has not unduly criticized the use of modern, precision air power in urban areas of Fallujah. It may be that the tide of perception has turned and that a modern version of air control is politically acceptable. With the exception of major operations to re-occupy cities such as Najaf, Samawah and Fallujah, the Coalition ground forces in Iraq have predominantly been used in a civil policing role to maintain law and order, filling the vacuum caused by the unfortunate disbandment of the Iraqi police force. In an echo of this article's opening quote from 1926, it is easy to conceive air assets remaining in theatre, working very closely with intelligence agencies and Special Forces to target a relatively small number of insurgents, while patrolling borders, pipelines, power stations and other essential infrastructure to remind the population of the Coalition's continued presence.

In sum . . .

Pulling the threads together, it can be seen that, despite the increased precision and more focused weapon effects enabled by modern technology, there will still be a threshold below which it is not acceptable to employ offensive air power. Trenchard did not consider air control to be an

appropriate tool for every occasion and this remains true today; it is improbable that the Northern Ireland peace process would be at its current stage if the Royal Air Force had targeted suspected terrorist houses with Laser-guided Bombs! The threshold for the imposition of air control may vary from nation to nation, depending on the dynamic balance of three factors: the country's commitment to the cause; its aversion to casualties and cost; and its sense of humanity, as shown in *figure 1*. Thus, concerns about the cost of deploying ground forces, tempered by the degree of commitment, may make air control or 'aerial containment' attractive despite potential, if unfounded, criticism about the use of air power.

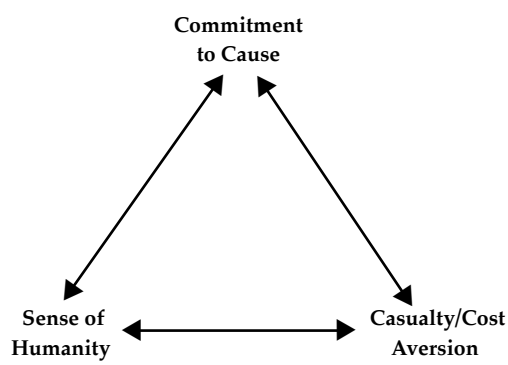

Figure 1.
Dynamic balance of factors in imposing air control

In sum, inter-war air control was supported by a highly refined doctrine. Contrary to folklore, the doctrine advocated minimizing casualties and was considered to be more humane than the use of punitive ground expeditions. Air power's reach allowed aircrew and groundcrew to live in relatively hygienic conditions and exposed fewer personnel to hostile fire, thereby minimizing friendly casualties. Additionally, air control was considerably less expensive than garrisoning a region with thousands of troops. Nonetheless, air control became unacceptable because the West's sense of humanity evolved faster than technology's ability to reduce collateral damage. The Government's sensitivity over international accusations of inhumane treatment eventually outweighed the economic benefits. Nevertheless, many of air control's tenets are enduring and modern technology may enable it to reach its promised potential in certain circumstances. Inter-war air control proved to be an inappropriate tool in urban areas because of the inaccuracy of the weapons and the resulting collateral damage. However, technology is now on the brink of being able to accurately locate, identify and track culprits and then precisely target them, if necessary, with small, highly accurate weapons which cause very little collateral damage. As a result, a modern form of air control, taking advantage of the ongoing evolution of ISTAR sensors and precise, focussed precision weapons, may be effective in urban regions if supported by a reliable local police force with a general population that desires law and order and is willing to be policed. Air control remains unsuitable to quell large-scale uprisings, such as an Iraqi civil war between Sunnis, Shia and Kurds. However, at the lower end of military conflict, be it a small war or the aftermath of a medium-scale conflict, air power can offer more than it is currently being asked to deliver. A locally raised, indigenous security force, backed by expeditionary air power, could gradually replace occupying troops. The drawing down of occupying troops numbers would help to avoid the political quagmire of 'mission creep' and offer a graceful exit strategy. The indigenous population may welcome air power's relatively small cultural footprint in preference to being occupied by intrusive foreign 'storm troopers'. In other words, air control offers influence and reassurance without presence. Thus, air power could play a decisive role in bridging the gap between conflict termination and conflict resolution. Although air power is generally considered to be relatively expensive, it offers, potentially, a cost-effective alternative to garrisoning a region with large numbers of western troops, not just financially but also in terms of lives. However, the decision to impose a modern form of air control will depend on a dynamic balance between a nation's commitment to the cause, its casualty and cost aversion, and its sense of humanity.

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