'Air Rollback': Tactical Targets... Independent Air Power?

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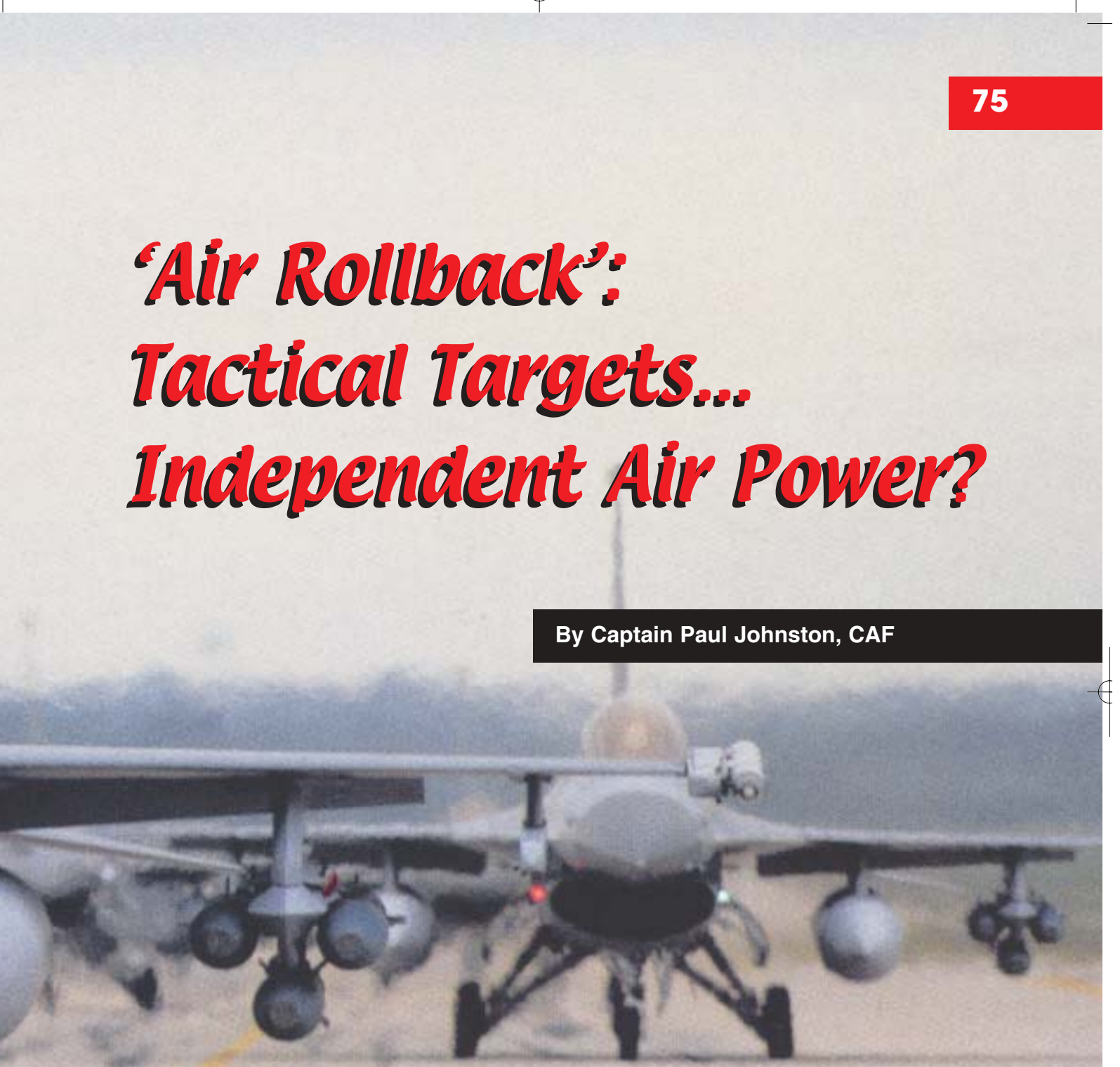

Imagine a situation in which an aggressor invades a small province that borders no friendly or allied state. Western statesmen decide that they want to see the aggression reversed, but not only are they loath to commit ground forces, for political reasons they are also unwilling to sanction a strategic air campaign against the aggressor's homeland. Instead, they call for an air campaign to evict the aggressor, but one that is directed only against purely military targets within the disputed territory itself. Such a combination of no ground component and no strategic air offensive may represent a military worst case, but this is precisely the possibility suggested by recent events, beginning with the 1991 Gulf War, but seen more particularly in Operation ALLIED FORCE[1], and to a lesser extent in the more recent Operation ENDURING FREEDOM[2]. Indeed, we now see the argument being made that using air power

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in this way – neither 'strategically' in the classic sense nor 'tactically' in the supporting sense, but rather as the sole means of attack against an enemy army in the field – is a new form of 'asymmetric attack.'[3] Why might this idea be gaining momentum? Is it viable?

For good or ill, three trends – many of which first appeared in the 1991 Gulf war, and all of which were far more pronounced in ALLIED FORCE and ENDURING FREEDOM – are driving events towards such a role for air power. First of all, there is a trend towards avoiding ground commitments and instead preferring action by air power alone.4 This is clear and widely remarked upon. However, there is a related trend of direct relevance to air power that has received less attention, and that is the prospect of a growing Western aversion to strategic air attack, in particular attack upon targets not perceived as purely military. Finally, this comes at a time when various technologies are finally giving air forces the ability to contemplate focusing their targeting upon very discrete targets deep in hostile territory.

Together these three trends suggest the possibility of a new approach for air power. For generations theorists have dreamt of an independent war-winning role for air power's very own, but this 'independent' role has always been associated with 'strategic' attack. Now, in light of the three trends identified above, and the recent experience of air campaigns such as ALLIED FORCE and ENDURING FREEDOM, we may have stumbled into another model for air power — a model that is 'independent' from ground power, but focused on 'tactical' rather than 'strategic' targets. Indeed, this is positively the modern trend, at least for minor wars.

However, any such independent-but-tactical model for air power seems to leave the vested interests in both the ground or air power communities uneasy. It is an idea that may well remain an unwanted orphan – at least until the next time the politicians call for an air campaign within a limited war. Perhaps the air power community should begin thinking about this possibility before it is once again suddenly demanded of us by our political masters.

Air power rather than ground or naval power is the most useful instrument of coercion in the new post-Cold War era

FIRST NEW TREND: AIR POWER ALONE

The growing preference, amongst Western governments at least, for action by air power alone is clear and widely remarked upon. Air power is perceived as a quick, easy and clean way to take direct action against hostile states. The noted US strategic theorist Edward Luttwak even went so far as to write (before ALLIED FORCE no less) that, 'political constraints make ground forces effectively unavailable.'[5] Not only was ALLIED FORCE an operation by air power alone, but it featured very public declarations from the highest levels expressly ruling out any ground component.[6] Indeed, many enthusiasts of air power make this a central point of their theories, arguing that air power rather than ground or naval power is the most useful instrument of coercion in the new post-Cold War era.[7] Recent events in Afghanistan further underscore this – the nasty ground fighting there was left to the native levees of the Northern Alliance.

SECOND NEW TREND: GROWING AVERSION TO STRATEGIC ATTACK?

As yet, the evidence for a trend away from strategic attack is less clear than that away from ground action, but there are signs. As many as ten years ago, in the aftermath of DESERT STORM, the respected theorist of strategic attack Lawrence Freedman noted that the strategic air campaign against Iraq – successful as it was – elicited enough unease in the West over Iraqi (not Coalition) suffering that decision-making at the highest levels may have been affected.[8] One of the clearest examples of this was the al-Firdos bunker incident – in which several dozen civilians who happened to be sheltering in a command bunker were killed in an air strike upon that facility.[9] As a direct result of that incident, strategic attacks on Baghdad proper were halted.[10] More recently, the legality (not to say morality) of

The Japanese port of Hiroshima after a single atomic bomb was dropped from a B-29 on 6 August 1945

Clearly, what the international community is prepared to consider an acceptable target for strategic air attack has evolved since the days of Dresden and Tokyo

the strategic campaign against the FRY has set off considerable controversy, including some legal actions.

The first of these was made by the Yugoslav government itself. On 29 April 1999, even while the air campaign was still underway, Slobodan Milosevic's lawyers filed a request with the International Court of Justice (ICJ) at the Hague for emergency court orders against ten NATO countries to stop the bombing. The ICJ declined to attempt an injunction, on the convenient grounds that they lacked the jurisdiction to do so, but did express 'profound concern about the use of force,' which 'under the present circumstances ... raises very serious issues of international law.'[11] They also reserved the right to consider further the question of whether international law had been violated.

Such a suit from the FRY government is only to be expected, but they have not been the only ones. At least three suits have been brought against NATO, with both the ICJ and the International Criminal Tribunal for the former Yugoslavia.[12] All of these suits have fizzled out. Indeed, neither the FRY's interlocutors nor self-appointed gadflies of international law are likely to make any headway with their various suits. But the issue is not limited to such partisans. There is unease with the legality of the offensive within the mainstream as well.[13]

Even amongst those prepared to countenance an air campaign of some description, there is unease with certain aspects of the strategic attacks. For instance, NATO attacked not only purely military targets, but also such things as power lines that also served hospitals. Serious commentators have wondered aloud whether or not at least some of these attacks did not violate Article 14 of the 1977 Protocol to the 1949 Geneva Convention, which bars attacks on 'objects indispensable to the survival of the civilian population.'[14] All in all, the inevitable effect of strategic air campaigns upon the civil populace is attracting growing attention and concern, as do newer concerns about environmental effects.[15]

American F-15 Eagles and inset an AGM-130 missile

Advanced sensors in platforms such as the PREDATOR Unmanned Aerial Vehicle (UAV) were able to combine with PGMs such as the AGM-130 on F-15Es to put weapons onto targets such as Serb military vehicles hidden in the forested hills of central Kosovo

These may only be specific questions about the specific circumstances of ALLIED FORCE, but one cannot help but wonder if a larger trend is not at work. Buster C. Glosson, a retired US Air Force (USAF) General who played a key planning role in DESERT STORM, once noted that the US 'has developed a keen intolerance for casualties – even enemy casualties.'[16]

Clearly, what the international community is prepared to consider an acceptable target for strategic air attack has evolved since the days of Dresden and Tokyo. Indeed, NATO's air forces realized this even before they launched their campaign over Yugoslavia. ALLIED FORCE included some of the most tightly vetted targeting of any air campaign. Lawyers, for instance, were an integral part of the targeting process.[17]

All of this suggests that in future there may well be a greater reluctance by Western governments to allow a wide ranging strategic air campaign that targets civilians, or even air attacks that although not specifically meant to target civilians, nevertheless result in their suffering. But quite aside from all of that, there is the historical precedent of the Korean war, when strategic air attacks on China were ruled out for geo-political reasons. Who can say with assurance that whenever an air campaign is being mounted, the politicians will allow strategic attack upon the enemy homeland?

THIRD NEW TREND: TECHNOLOGY

Effectively hitting the tactical elements of enemy ground forces dispersed in their rear has always been air power's most difficult potential task. This is so for various reasons. The targets – individual vehicles and their crews, or individual emplacements – are small, dispersed, and camouflaged. They are hard to find, except when moving in mass, and even if found their pinpoint size makes them hard to hit. For these reasons, air power has always experienced its least success at this sort of thing,[18] and air doctrine has always emphasized that this role is the least effective way to employ limited air resources and should not be made the priority mission.[19]

However, the new capabilities introduced by Precision Guided Munitions (PGMs) and modern sensor technology are widely heralded as beginning to change those traditional limitations. Indeed, many argue that 'precision strike' – the combination of sophisticated sensors and targeting with PGMs – fundamentally alters the capabilities of air power. The first real example of this came in DESERT STORM, when the USAF discovered that although designed for operational or strategic targets, F-111s could readily use their swivel-mounted forward-looking infrared (FLIR) cameras to pick out individual Iraqi armoured vehicles and then hit them with PGMs such as the GBU-12 laser-guided bomb.[20] Continuing developments have furthered this trend. In ALLIED FORCE, advanced sensors in platforms such as the PREDATOR Unmanned Aerial Vehicle (UAV) were able to combine with PGMs such as the AGM-130 on F-15Es to put weapons onto targets such as Serb military vehicles hidden in the forested hills of central Kosovo.[21]

Thus, for the first time, these new technological capabilities give air power the capability to concentrate upon the pinpoint destruction of very discrete targets deep in hostile territory. Or at least, they put such a capability into prospect. As we shall see below, there are some fierce disputes about the effectiveness of such systems in attacking tactical targets. Nevertheless, the trend is clearly towards an increasing capability to do such things and further improvements are on the way.[22]

Despite repeated attempts at 'strategic' applications of air power, the efficacy of such efforts has remained hotly contested

THE HISTORY OF INDEPENDENT AIR POWER: DOUHET'S HOLY GRAIL?

So, where might the combination of these three trends be pointing air power theory? As we said, traditionally, air power theorists have equated 'independent' air power with attack on 'strategic' targets. This has a long history that stretches from the First World War down to modern theorists such as John Warden. Nowadays, intellectual credit for this argument is usually accorded to the Italian soldier/pilot and fervent air power propagandist, Guilo Douhet.[23] His vision, famously, was to use air power not on the battlefield, but rather to strike directly at the enemy homeland, in particular the enemy capital.[24] This, Douhet believed, would result in damage no nation could sustain, forcing it to sue for peace.

More recently, a somewhat updated version of this argument has been made by the retired USAF Colonel John Warden.[25] Warden's theory is that any enemy state can be conceptually divided into five concentric 'rings.' The outermost of these rings is the military forces of the target state, the innermost the national leadership itself. The decisive ring, in Warden's view, is this inner leadership ring. In the past – i.e. before air power – ground and naval forces could only reach this ring by fighting their way through the four outer rings. Warden's main point, of course, is that air power is able to leap over those four outer rings and attack the innermost ring directly.[26] In other words, Warden is in favour of using air power against strategic rather than tactical targets.

Despite repeated attempts at 'strategic' applications of air power in this way, the efficacy of such efforts has remained hotly contested.[27] The Germans tried it in the Battle of Britain and were forced to abandon the effort. The Allies tried it in reverse from 1943 on, but a costly land invasion of the continent still proved necessary. Similarly, down to the Gulf War of 1990-91, a ground operation always seemed to play the conclusive, or at least concluding, part. As we shall see, even in Operation ALLIED FORCE, a case in which it was air power alone that brought the enemy state to concede, there has been disagreement about the results. On this basis, ground power advocates have long argued that air power is unable to win wars independently, and army generals in campaigns have long argued for claim to a greater apportionment of the available air power for their direct support.

BIFURCATED AIR CAMPAIGNS

This traditional dispute between air and ground commanders has resulted in bifurcated air campaigns, a pattern in evidence at least since World War II. In that war, British and later American air forces argued that direct bombing of the German homeland could win the war alone and consequently they adamantly opposed any 'diversion' of air power away from this 'decisive strategic effort'.[28] Nevertheless, in the end, they were forced to dedicate considerable resources to supporting ground campaigns. The result was two air efforts – a strategic bombing campaign over the Third Reich and a tactical campaign associated with the invasion. The commanders of the heavy bomber force famously resisted diversion from the former to the latter, and even when placed under General Eisenhower's command specifically to ensure that they would furnish such support, they persisted in maintaining a separate strategic effort.[29]

This pattern – concurrent strategic and tactical air campaigns – has repeated itself since World War II, reappearing in both Korea and Vietnam, and even more strongly in DESERT STORM. In that conflict John Warden himself was sent to the planning staff in Riyadh, where he quickly produced a plan known as INSTANT THUNDER which proposed a strategic bombing campaign specifically focused against the Iraqi leadership, while almost completely ignoring the large Iraqi ground force in Kuwait itself.[30] This was not entirely well received, either by the Army which wanted more focus on tactical targets to their immediate front, or even by the Commander of the Ninth Air Force, Lieutenant General Chuck Horner, who apparently resented what he saw as meddling from Washington. He also had reservations about the wisdom of focusing solely on the supposedly decisive 'inner ring' of the Iraqi leadership.[31] Even more pointedly, General Schwartzkopf directed that emphasis would have to be given to Iraqi army targets in Kuwait. The end result was two almost entirely unrelated air campaigns – one against strategic targets in Iraq and one against tactical targets in Kuwait.[32]

This phenomenon of bifurcated air campaigns was even more pronounced in ALLIED FORCE, which actually consisted of two quite separate air campaigns: a strategic one against all of Yugoslavia and a tactical one within Kosovo itself. Indeed, air planners formally distinguished between two categories of targets: strategic ones in Serbia proper and tactical ones in Kosovo itself – in particular those Yugoslav forces conducting the ethnic cleansing which had suddenly produced a massive wave of refugees.[33]

The strategic campaign was relatively orthodox (albeit spasmodic). Clearly the aim was to strike classically 'strategic' targets in order to hurt the Milosevic regime until they would concede – classic air coercion theory

The first target set was termed 'fixed targets of unique strategic value.' This included all of the classically Douhetian sorts of targets of which John Warden might approve: national command and control; military headquarters; and infrastructure such as bridges and the electric power grid. The second target set included the Yugoslav 'fielded forces' in Kosovo, such as the actual Yugoslav army elements deployed there, their command and control machinery, and their supplies and concentration areas.

The strategic campaign was relatively orthodox (albeit spasmodic). Clearly the aim was to strike classically 'strategic' targets in order to hurt the Milosevic regime until they would concede – classic air coercion theory.[34] The tactical effort inside Kosovo itself was more unusual. Here was an attempt to use air power alone, without any associated ground forces, to stop enemy ground operations (i.e. Yugoslav ethnic cleansing), or at least to destroy enemy ground forces. This last effort was intended

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The B-2A Spirit first saw operational service during operation ALLIED FORCE

not to soften the enemy up for a subsequent ground offensive, but to convince him to retire even without a ground offensive.

Now that is novel, perhaps unprecedented. It should also be noted that most of the disputes about air power in ALLIED FORCE centre around this effort against tactical forces in Kosovo – how many armoured vehicles and guns the NATO air offensive actually destroyed there. Initially, NATO claimed to have degraded thirty percent of Serb heavy weapons in Kosovo.[35] The well-respected Jane's magazine summarized the widely circulated claims that by the end of the war the Alliance had struck some 270 armoured personnel carriers and approximately 150 tanks.[36] It now appears, however, that the Serbs made widespread use of deception efforts, including impressive numbers of dummy artillery pieces and armored vehicles.[37] Other criticisms have claimed that only 12 destroyed armoured personnel carriers have been found in Kosovo.[38] Press accounts of the Royal Air Force initial after-action report for ALLIED FORCE have even gone so far as to claim that there is 'clear evidence that the 11-week NATO bombing campaign did almost no damage to Serb fielded forces in Kosovo.'[39] NATO – and air power enthusiasts – have disputed these claims, arguing that the destruction or damage in Kosovo of at least 93 tanks and 153 armoured personnel carriers can be confirmed.[40] How many tanks did NATO really destroy?[41]

The Douhetian reply to all of this talk is to argue that it is irrelevant, because the decisive issue was the strategic campaign against Serbia proper. Indeed, Jane's quotes senior Royal Air Force sources as opining that Yugoslav Army losses in Kosovo were 'largely academic.' 'The decisive factor that forced Milosevic's hand was the rapidly mounting material and political damage being inflicted on his regime by the NATO air campaign.'[42] This was certainly the view of the air campaign's operational commander, USAF Lieutenant General Michael Short, who publicly denigrated what he called 'tank plinking' in Kosovo.[43]

Spoken like a true Douhetist; doubtless John Warden would agree. In fact, throughout the conflict there was a now well-known tension between NATO's Supreme Allied Commander Europe, General Wesley Clark – an Army officer – and the Air Component Commander Lieutenant General Short. Clark wanted less strategic bombing and more emphasis on tactical operations in Kosovo. Short, on classic Douhetian grounds, considered the effort inside Kosovo at best subsidiary and at worst a dangerous diversion from a 'decisive' strategic campaign.[44] Indeed, so frustrated was Short with the limitations on strategic targeting and the pressure to concentrate on tactical targets in Kosovo that he has suggested that rather than a campaign, ALLIED FORCE should be considered a 'random bombing of military targets'.[45]

TACTICAL TARGETING

The simple truth is that no one in any Western military planned to be conducting an air campaign as we found ourselves doing in ALLIED FORCE, whatever colour uniform they wore. For years Western military doctrine has stressed jointness, synchronicity and top-down campaign planning. Air attacks meant to kill individual tanks – field deployed deep in enemy territory – were never envisioned being mounted alone, completely separate from an integrated ground campaign.[46] Yet this is exactly what Western militaries wound up attempting over Kosovo. Few of the classic military schools of thought appear to have been happy with this state of affairs. The neo-Douhetists, such as General Short, fumed that operations against tactical targets in Kosovo were a diversion from the decisive strategic ones. The more mainstream believers in jointness, such as General Clark, suggested that foregoing fully joint operations that included a ground component was folly, contrary to venerable principles of war. Either or both of those schools of thought may be right, but what they both miss is that a limited air-only

campaign may be exactly what the politicians will ask Western air forces to do again, even if it is recognized that doing so is not militarily optimal (from either a ground or air power perspective).

HALT OR AIR ROLLBACK: INDEPENDENT AIR POWER AT THE TACTICAL LEVEL?

This returns us to the imaginary scenario of the introduction. Can strategic aims be achieved by attacking what would classically be considered 'tactical' targets? A relatively new idea that to a certain extent bridges the gap between strategic and tactical targets is the concept of 'decisive halt', 'rapid halt' or simply 'halt phase' operations.[47] The 'halt' idea is the argument that modern capabilities – in particular PGMs – can allow air power alone to halt an invading aggressor, especially a mechanised one. This, the argument goes, can stop the aggressor's offensive in its tracks and buy time for friendly forces to be assembled. This is a new idea because it obviates the need for ground forces in theatre (at least initially), and given the strategic mobility of air power could allow intervention against an aggression anywhere in the world on extremely short notice.

The independent application of air power against tactical targets on a battlefield is probably not something that Douhet would have approved of and, as we have noted, in so far as Western air doctrines have considered the independent use of air power, it has generally been envisioned as strategic attack. Halt theory is thus innovative in its vision of air power being applied independently of friendly ground forces, but against tactical targets rather than strategic ones. Nevertheless, as the very word 'halt' implies, implicit in most of this talk is the idea that these operations would only halt the aggressor, to buy time for friendly ground forces to assemble. An eventual friendly ground offensive, it appears, is still required by halt theory. This seems even more true of the term 'halt phase', which surely implies that there would be further succeeding phases, presumably ones in which the aggressor is forced back by ground action.

In other words, there has been no real theoretical consideration of the independent use of air power against tactical level enemy ground forces, except as just one part of a strategic campaign, or as a preparatory phase to a ground campaign. However, if recent experience suggests the possibility of independent but tactical air operations then this raises the prospect of going halt theory one better, and using air power alone not just to halt the aggressor's offensive, but to force him to withdraw. Call it 'air rollback' operations. What might such operations look like, and what considerations might they involve?

AIR ROLLBACK

The *sine qua non* of air rollback operations would be a political decision to forego at the outset any prospect of either friendly ground operations or strategic attack on the enemy homeland, presumably due to political considerations. The politically mandated aim would then be to destroy the enemy's military forces in the target area, both to punish the enemy and to thereby force him to withdraw.

This possibility suggests that Western air forces need to broaden their skill sets a bit. To be sure, the sort of independent yet tactical air campaign we are speaking of here is only applicable in strictly limited wars. But quite frankly, a major high intensity war of the sort for which Western joint warfighting doctrine was designed is unlikely in the foreseeable future. While that may not herald the end of warfare as we have known it, it is true that over the next decade or two Western militaries are more

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likely to be asked to do something like ALLIED FORCE (complete with all its political constraints) than to fight a major conventional war.[48] This will be true especially as our politicians appear to have concluded that recent air campaigns have worked, and got them what they wanted.

THE LIMITATIONS OF ORTHODOX DOCTRINE?

Currently, doctrine stresses either jointness or independent strategic attack. But what if it is to be neither of those? What if we are ordered to destroy individual armoured vehicles in a remote and inaccessible region by air power alone in an operation that has no ground component and no strategic attack? What indeed? As we saw in Kosovo, doing so is a very difficult proposition.[49] In particular, targeting is a central problem – air force targeting and intelligence tend to be focused upon traditionally 'strategic' or 'interdiction' type static facilities. As Lieutenant Colonel Haun of the USAF astutely pointed out in a recent article in this very journal 'intelligence expertise against enemy armies resides within … [armies].'[50]

The question will not be what – in the abstract – is the most ideal way in which we could apply air power? It will be, what – within our political constraints – is the optimal way that we can apply air power?

But even as these (formidable) problems are solved with new tools such as 'flex targeting' and precision strike, there are still many questions. We will need doctrine for the best way to utilize these tools. What sorts of targets should be struck first? Are tanks or artillery more important? How about bridges or other such choke points? And perhaps most importantly, how should air forces be organized to conduct this sort of a campaign? These are the sorts of questions that need hard answers. Without such answers, do we have doctrine for the mounting of an air campaign designed – in complete isolation from any theatre campaign with a ground component – to destroy discrete, tactical level, ground forces dispersed in the field? Do we, in short, have doctrine for an air rollback operation?

Could air forces meet the challenge posed in the introduction's imaginary scenario? Regardless of the answer to that question, it will be difficult for 'air rollback' – or something like it – to attract supporters in any of the established military communities. Ground power enthusiasts can scarcely be expected to endorse an independent role for air power specifically meant to exclude their participation.[51] But neither are the traditional air power constituencies necessarily keen to take up this particular torch. As can be seen in General Short's fulminations,[52] air power enthusiasts remain critical of any effort to divert air power from strategic to tactical targets. And to be sure, as Lieutenant Colonel Haun's arguments show, efforts to make air forces more effective in this sort of independent tactical role would require reorganization of traditional air force forms – always something likely to generate resistance from established interests.

Within the air power community, those established interests are likely to argue that unbridled strategic attack is the most effective form of air power, and that any reorganization to permit more effective tactical targeting is a mistake. The argument of this paper is not that air rollback would be more militarily effective than strategic attack. Indeed, it is almost certain to be markedly less so. But one of the clearest lessons from the application of air power in the modern era – since Vietnam at the very least – is that there will be political constraints. Railing against this while pining for some sort of neo-Douhetian ideal is moot. Especially when limited wars are Western air forces' assigned task, the question will not be what – in the abstract – is the most ideal way in which we could apply air power? It will be, what – within our political constraints – is the optimal way that we can apply air power?

Given all of the inevitable political considerations, who can say with assurance that Western air forces will never be asked to mount an air campaign with no element of strategic attack, even if such an option is recognized as being less than the military ideal? If one accepts the proposition that Western politicians are, in fact, likely to try the application of force at a distance by air power alone again, then surely we ought to think about how best to do that, a certain professional distaste for the diversion of air power to tactical targets notwithstanding. In those circumstances – and it is this article's contention that trends point towards such circumstances – then something like air rollback could be another tool in the box, for use when other options are hamstrung politically. This need not displace the current – absolutely sound – emphasis on jointness. Nor need it be a repudiation of the advantages of true strategic attack. The politicians are likely to ask for something like ALLIED FORCE again, and next time they may not want to allow a wider strategic air campaign. What then? Perhaps we should be thinking about this – about ways to independently hit a conventional army in the field.

Notes

1. This was NATO's 1999 air war over the Federal Republic of Yugoslavia (FRY). Properly speaking, the FRY includes only two constituent 'republics': Serbia and Macedonia. (Kosovo is a region within Serbia itself.) Because the Serbs dominated Yugoslavia in general and President Milosevic regime's in particular, this paper will use 'Yugoslav' and 'Serb' interchangeably.
2. The US led war against the Taliban regime in Afghanistan.
3. See for instance Lieutenant Colonel 'Goldie' Haun, USAF, 'Air Power Versus a Fielded Army: A Construct for Air Operations in the 21st Century' (RAF: Air Power Review, pp 64-91).

4. Some commentators have suggested that in ALLIED FORCE the Kosovo Liberation Army constituted a de facto ground component on the Allied side, but this appears to be a stretch. Afghanistan is a clearer example of the same point though; the Northern Alliance certainly constituted an allied ground component there.
5. Edward N. Luttwak 'A Post-Heroic Military Policy' Foreign Affairs Vol. 75, No. 4, (July/August 1996), pp 33-44.
6. The wisdom of this is heatedly debated. See for instance Earl H. Tilford, jr, 'Operation Allied Force and the Role of Air power' Parameters, (Winter 1999-2000) pp. 24-38.
7. For example, John Warden 'Employing Air power in the Twenty-first Century' in The Future of Air power in the Aftermath of the Gulf War (Air University Press, 1992) pp 57-82, or the USAF position on air power's possibilities as expressed in 'Global Reach, Global Power'.
8. Lawrence Freedman and Efraim Karsh, 'How Kuwait Was Won: Strategy in the Gulf War,' International Security 16, no. 2 (Fall 1991): 5-41. 'The only factor that began to create pressure to get the land campaign underway was unease in the West over the judgment, implicit in the massive air campaign, that any number of Iraqi deaths was worth the reduction of risk to coalition forces' (p 31).
9. Williamson Murray, 'The Air War in the Gulf: The Limits of Air power' Strategic Review Vol. XIV, No. 1, (Winter 1998) pp 28-38, p 34.
10. Ibid.
11. International Court of Justice - Press Communiqué 99/23, 2 June 1999.
12. The 'Movement for the Advancement of International Criminal Law' (MAICL), has compiled a submission for the International Criminal Tribunal for the former Yugoslavia, requesting the indictment of British Prime Minister Tony Blair and Foreign Secretary Robin Cook and Defence Secretary George Robertson. MAICL is a group set up in 1998 by international lawyers in Cambridge, UK, 'to work to bring state leaders and officials who have committed unlawful acts of violence against the human person to justice in a court of law.' They have a website at http://ban.joh.cam.ac.uk/~maicl/ Professor Michael Mandel, of the Osgoode Hall Law School, York University, Canada and The American Association of Jurists, in cooperation with others, have brought a similar suit citing all of the NATO leaders. Finally, a similar Scandinavian group has also brought forth a suit.
13. For instance The Economist magazine, hardly a bastion of anti-establishment criticism, wrote that 'the unpalatable truth is that, though [the Yugoslav] government is in gross breach of international law, so, as the law stands, is NATO. The alliance's bombing campaign may have been undertaken to protect a nine-tenths majority of Kosovo's population, but without a Security Council mandate it breaches the UN charter, the most important agreement in international law. This is no mere technicality. Even legal experts who want to see humanitarian law more widely enforced are queasy.' The Economist, 13 May 1999 'Gowned Warriors'
14. Michael Mandelbaum 'A Perfect Failure' Foreign Affairs, (September/October 1999).
15. Air attack upon industrial targets that results in the release of pollutants could constitute a violation of international environmental law.
16. 'Impact of Precision Weapons on Air Combat Operations' Air power Journal Vol. 7 No. 2 (Summer 1993) pp 4-10.
17. For a lucid and compelling explanation of how lawyers are integrated into air planning – which interestingly enough came out just before ALLIED FORCE – see Lt Col Terrie M. Gent, USAF, 'The Role of Judge Advocates in a Joint Air Operations Center: A Counterpoint of Doctrine, Strategy, and Law' Aerospace Power Journal (Spring 1999) pp 40-55.
18. On the effectiveness of Allied air attack on individual German armoured vehicles in Normandy, 1944, see for instance Ian Gooderson Air power at the Battlefront: Allied Close Air Support in Europe 1943-45 (London: Frank Cass, 1998) pp 75-76 and Chapter 5 'Allied Fighter-Bombers vs German Armoured Forces: Myths and Realities' pp 103-124.
19. This has often led to disputes with ground commanders.
20. See for instance Richard Hallion's description of this in Storm Over Iraq (Washington: Smithsonian, 1992).
21. James Kitfield 'Another Look at the Air War That Was' Air Force Magazine Vol. 82 No. 10 (October 1999).
22. See for instance John Tirpak 'The State of Precision Engagement' Air Force Magazine Vol. 83 No. 3 (March 2000).
23. Almost certainly, the RAF did not in fact derive its doctrine from Douhet, but rather independently developed what were essentially the same ideas. This issue was perhaps first broached by Robin Higham, The Military Intellectuals in Britain: 1918-1939 (New Brunswick NJ: Rutgers University Press, 1966) pp 257-259. The United States Army Air Forces, on the other hand, appear to have been more directly influenced by early translations of Douhet in use at the Air Corps Tactical School; see for instance Michael S. Sherry The Rise of American Air power: The Creation of Armageddon (New Haven: Yale University Press, 1987).
24. Giulio Douhet, The Command of the Air, translated by Dino Ferrari, (New York: Coward-McCann, 1942), in particular Chapter 1 of Book I, pp 3-33, and Chapter IV of Book II, pp 187-207.
25. In 1988 as a student at the US National Defence University, Colonel John A. Warden III produced a thesis, subsequently published as a book, The Air Campaign (Pergamon-Brassey's, 1989), arguing for strategic air power (amongst other things). This heralded something of a renaissance in USAF thinking about conventional strategic attack. Just before the Gulf War, Warden was chosen to head the strategic analysis section of the Air Staff, and he was subsequently sent to Riyadh as head of the planning team known as 'Checkmate.' After the war, he became Commandant of the Air Command and Staff College, where he preached his theories to a whole generation of officers.
26. Warden's clearest exposition of these theories is probably found in his short paper 'Employing Air power in the Twenty-first Century' (see note 7 above).
27. See in particular the recent book by Robert A. Pape Bombing to Win: Air power and Coercion in War (Ithaca: Cornell University Press, 1996) which examines WW II, Korea, Vietnam and Iraq and concludes flatly that 'strategic bombing does not work.' (p 314). An opposing view is given by John Warden (see note 25 above) in Security Studies issue 7.2 'Success in Modern War: A Response to Robert Pape's Bombing to Win'.
28. The RAF for instance, went so far as to argue in 1941 that 'the Army has no primary offensive role … We aim to win the war in the air, not on land.' Memo from RAF Chief of the Air Staff Portal to the Combined Chiefs 'The Air Programme' 21 May 1941,

quoted in W.A. Jacobs 'Air Support for the British Army, 1939-1943' Military Affairs, Vol. XLVI No. 4, (December 1982, pp 197-198) p 175.

29. See for instance John Terraine The Right of the Line: The Royal Air Force in the European War 1939-1945 (London: Hodder & Stoughton, 1985) pp 608-609.
30. For a readable and illuminating account of air campaign planning in Desert Storm, see Col Richard T. Reynolds, Heart of the Storm: The Genesis of the Air Campaign against Iraq (Maxwell AFB, Ala.: Air University Press, 1995).
31. Williamson Murray 'Air War in the Gulf: The Limits of Air power' Strategic Review (Vol. XXVI, No. 1, Winter 1998, pp 28-38), p 32.
32. The tactical air campaign in Kuwait was, in Murray's words 'almost entirely separate' from the strategic campaign against Iraq itself. Ibid, p 32.
33. Actually, to be more precise, NATO appears to have begun the war in the hope that a demonstration alone would suffice. The first air strikes were made on the night of 24 March 1999 against fifty carefully screened and agreed targets, mostly components of the Yugoslav integrated air defence system. While this was an essential first step to breaking into Yugoslav airspace for any sort of air campaign, the initial intent appears to have been less preparation for a long campaign than an attempt to deliver a short sharp response to the collapse of talks at Rambouillet. Only 214 aircraft were committed, and the prevailing belief in NATO apparently was that a night or two of strikes would convince President Milosevic to concede (see for instance [US] Air Force Association, The Kosovo Campaign: Aerospace Power Made it Work 'Operation Allied Force Begins' (The Air Force Association, 1999) p 1). This initial gamble having failed, more aircraft were committed to the operation, and the target set was broadened. On 28 March, US Secretary of State Madeleine Albright publicly announced the new approach towards Milosevic — he would be made to pay 'a very heavy price.' A renewed air plan was drawn up (or perhaps more accurately, an actual campaign plan was finally drawn up for the first time), and it was at that point that the bifurcated nature of the campaign became prominent.
34. For an excellent (albeit contentious) scholarly overview of air coercion theory, see Pape's Bombing to Win.
35. Nick Cook, 'Special Report: War of Extremes' Jane's Defence Weekly (7 July 1999, pp 20-23), p 21.
36. Ibid.
37. Ibid.
38. Richard J. Newman 'The Bombs that Failed in Kosovo' U.S. News and World Report (20 September 1999), 29.
39. The Sunday Telegraph, 25 July 1999.
40. William Drozdiak 'Kosovo Success Confirmed, NATO Chief Says' The Washington Post (17 September 1999) p 22.
41. Anthony H. Cordesman, The Lessons and Non-Lessons of the Air and Missile War in Kosovo (Washington: Center for Strategic and International Studies, 1999) contains some interesting food for thought, arguing that NATO's claims are largely unsupported.
42. Nick Cook, 'Special Report: War of Extremes' Jane's Defence Weekly (7 July 1999 pp 20-23), p 23.
43. See his comments in a speech published in Air Force Magazine (September 1999), p 43.
44. Dana Priest 'The Battle Inside Headquarters: Tension Grew with Divide Over Strategy' Washington Post (21 September 1999) p A01. This debate is rather reminiscent of the Second World arguments about diverting the strategic bombers to support for OVERLORD. (See notes 25 & 26 above.)
45. Lieutenant General (retired) Michael Short, interview on the PBS show Frontline, 22 February 2000. Transcript available online at http://www.pbs.org/wgbh/frontline/shows/kosovo/interviews/short.html
46. For more on this see Peter F. Herrly's thoughtful article 'The Plight of Joint Doctrine After Kosovo' Joint Forces Quarterly (Summer 1999).
47. The concept of the decisive halt is described in AFDD1, pp 42-43, but goes back at least as far as a USAF sponsored RAND study The New Calculus: Analyzing Air power's Changing Role in Joint Theater Campaigns (Santa Monica: RAND, 1993). For a recent sample of some optimistic discussion of decisive halt's possibilities, see D.A. Ochmanek, E.R. Harshberger, D.E. Thaler & G.A. Kent 'Find, Hit, Win' Air Force Magazine April 1999, pp 50-59. The official status of 'halt phase' operations has recently become highly controversial at the Joint Chiefs level, where the older services have been successfully lobbying to expunge the term from official US joint doctrine. See Elaine M. Grossman 'The Halt Phase Hits a Bump' Air Force Magazine Vol. 84 No. 4 (April 2001) pp 34-36.
48. The Korean peninsula being perhaps an exception.
49. Recall that most of the controversy about damage claims centres around the tactical targets in Kosovo.
50. Haun, 'Air Power Versus a Fielded Army' p 81.51. See for instance the recent article in the US Army journal Parameters 'What Not to Learn from Afghanistan' William R. Hawkins (Summer 2002, pp. 24-32). Hawkins argues that the real lesson 'is the need to operate in combined arms teams to win decisive victories that yield beneficial political change' and goes on to say that 'there are no `silver bullets' that can win wars by themselves, even if fitted with satellite guidance.'
52. See note 45 above.