

Strategic Air Power Theory in the 21st Century

By Group Captain Neville Parton

“Air power is the most difficult of military force to measure or even to express in precise terms. The problem is compounded by the fact that aviation tends to attract adventurous souls, physically adept, mentally alert and pragmatically rather than philosophically inclined.”
(Winston Churchill)

This article seeks to examine whether current strategic air power doctrine has an adequate theoretical base, and if not, what implications this might have for air power in the future. The idea for the subject arose from a long-standing interest in the theory underpinning air power doctrine in order to understand the mechanisms that determine how effective air power actually is at the strategic

level. This line of attack has a parallel in the approach of the social sciences towards international relations. An ongoing debate exists between those who see social science as a genuine science with regularity in behaviour allowing laws to be developed that can be applied to predict actions, and the more traditional view of trying to understand why particular actions occurred.



A B-52 unloads its deadly cargo over Afghanistan

The 1990-1991 Gulf War . . . the Bosnia and Kosovo campaigns . . . the anti-Taliban war in Afghanistan and the recent war in Iraq, have all demonstrated that air power creates the battle-space within which the other arms operate

As Waltz cogently pointed out, a purely pragmatic approach “suggests that the hope for improvement lies in policy divorced from analysis, in action removed from thought. Yet each attempt to alleviate a condition implies some idea of its causes”.¹ Therefore, whether acknowledged or not, some assumed model of behaviour will be behind the most pragmatic of approaches, so even if such an approach is proclaimed, analysis to determine the assumptions that were made will be worthwhile.

The international security situation has become far more complex over the last decade as unwieldy coalitions attempt to coerce rogue states or sub-state actors by force, with the minimum possible body count, and under the constant scrutiny of the world’s media. Such a situation represents the most likely reality for the use of armed force over the forthcoming decades, and it could therefore be argued that the key role for armed forces in the near future will be to act as coercive agents in a strategic environment that will be both complex and ‘messy’. However even as the security environment has become more complicated, it seems that the promise of air power is perhaps closer to being realised than at any time since its inception. The 1990-1991 Gulf War, the Bosnia and Kosovo campaigns, the anti-Taliban war in Afghanistan and the recent war in

Iraq, have all demonstrated that air power creates the battle-space within which the other arms operate. Furthermore, the ubiquitous aspects of air power, generally accepted as height, speed, and reach, translate into the ability to react rapidly and flexibly in changing situations, frequently making air power the first weapon of choice for politicians worldwide.

How do theoreticians see that air power should be used, as this forms the basis of the doctrine that is used to generate the actual war-fighting plans in any campaign? The last 15 years has seen a resurgence of interest in the development and use of air power doctrine, which therefore makes this an apposite time to review where we are. The question of whether incorrect or poor doctrine has any impact on an air force is a legitimate one, and certainly during the 1970s and 1980s, which for the RAF at least was a period of general doctrinal sterility, it would have been difficult to answer. Looking back further to the 1920s and 1930s perhaps, provides a more concrete example of a situation in which doctrine significantly adversely affected the development of air power due to an emphasis on the invulnerability of the bomber and the effect that such aircraft would have on civilian morale. There was certainly no lack of doctrine in



Tornado GR4A

The last 15 years of air power doctrine have . . . shown a return to 'classical' theories regarding the strategic use of air power, or 'air power for strategic effect' as it is now termed

this case, but the doctrine was poorly conceived. There is a danger that our current doctrine may be similarly poorly conceived when it comes to the strategic use of air power.

Why is air power theory important?

To summarise the historical sweep of air power doctrine and its underlying theory is not straightforward. What is certain is that much doctrine has been based upon on theory that is, to say the least, built on shallow foundations. Mueller summed this up neatly:

*"From Giulio Douhet to John Warden and beyond, the evolutionary history of air power theory is littered with strategies built on fatally flawed, or just severely underdeveloped, coercive mechanisms."*²

The RAF's experience between the two World Wars clearly demonstrates the perils of having incorrect doctrine, and its experiences during World War 2 showed the effect of not only poor underlying theory, but also of not having translated doctrine into a technological reality in which it was not alone. Following the doctrinal sterility of the Cold War period, or perhaps more accurately a period where tactical doctrine received most of the attention of both theorists and practitioners, the last 15 years of air power doctrine have shown a return to 'classical' theories regarding the strategic use of air power, or

"air power for strategic effect' as it is now termed: all are generally coercive in nature. What is also clear is that the doctrine and hardware need to be compatible, and that the doctrine must have more than simply wish-fulfilment behind it if it is to be of any value: '... the trick is to get a better 'fit' than the opponent between hardware, doctrine and operational concepts and, to make things work in the real world, appropriate organisational adaptations."³

"Although the post-war years have again reiterated the point that air power cannot act alone and nor can it be the sole determining factor in the development of strategies, it has become abundantly clear that operations must be supported by effective and efficient air power."
(John Buckley)

Examination of recent conflicts, together with a historical analysis of World War 2 bombing campaigns, points inevitably toward the concept of the 'exchange mechanism' as being at the very heart of strategic air power theory. In other words, how is the damage caused by high explosive and metal, or even concrete and metal in these collateral-damage sensitive days, translated into the strategic effect that is required?⁴ Consideration should be given to the overall models for strategic air power that have become obvious so far.



Members of the Republican Guard surrender in Iraq

Bombing needs to be combined with psychological warfare to heighten fears and sense of futility . . . as we have seen in the Gulf War campaign against Iraqi forces in Kuwait and Republican Guard in Iraq

The first model can conveniently be thought of as the Morale Model and is represented by the thoughts of such pioneers as Trenchard and Douhet. This was originally predicated upon the reactions of civilian populations to attack from the air, considered 'proven' by the response of the British populace to German attacks in 1915 and 1917, albeit the French response in Paris appeared to be significantly different.⁵ Although further experiences between the wars saw this theory strengthened within the RAF, the case remained effectively unproven in World War II, although the morale effect was noted as significant in bombing surveys.⁶ The exchange mechanism for this model has been identified as 'Combat Stress Reaction' (CSR), with both positive and negative consequences for the theory: bombing needs to be heavy enough to affect significant proportion of the population, and frequent enough for the cumulative effects to build up. Ideally, such bombing needs to be combined with psychological warfare to heighten fears and sense of futility. This can be extremely effective, as we have seen in the Gulf War campaign against Iraqi forces in Kuwait and Republican Guard in Iraq, but it is unlikely to be acceptable for use against civilian populations due to legal, moral and public opinion restraints. However in a truly dire situation in which survival of the nation is at stake it might, be acceptable. If the alternative is long-term use of sanctions, a case might also be made that a short morale bombing campaign could be ultimately less costly in terms of lives than a long period of sanctions.

The Economic model that was most cogently expressed by the American Army's Air Corps Tactical School was based on the 'economic web' theory: within any advanced economy there will be

node points that are so critical that, if taken out, the entire economy will collapse. The exchange mechanism here then is incremental degradation of the enemy's material ability to fight. This certainly drove the American bombing campaign during World War II, as well as influencing the RAF campaign, when it had reached the point where targets of less than city size could be effectively targeted. Both British and American reports on strategic bombing concentrate on the efficacy of the campaigns against particular target groups such as the armament industry, energy or the transportation systems. While these attacks clearly had an impact, in almost all cases this was far less than that desired or estimated, due to the degree of substitution and resilience displayed in the target systems. Furthermore, although attacks on the transportation systems towards the end of the war are credited with having appreciably affected the ability of Germany to fight on, it could be argued that this only had strategic effect due to the land wars that Germany was being forced to fight. Certainly experience in the both the case studies appears to indicate that this is not a method that will easily or rapidly lead to strategic effect.

Finally, the Leadership Model, based upon theorists such as Warden and Boyd, looks at either removing or reducing the ability of the enemy's leadership to carry out the classic leadership roles of planning, directing, commanding and controlling. In both the case studies again this turned out to be a far harder concept to bring to fruition than originally anticipated. While the recent Iraq War may have seen the ultimate application of this theory, in terms of the possible assassination of Saddam Hussein, even here it does not appear to have led to an immediate impact on the ability to fight of those left behind.⁸ Furthermore, as Meilinger pointed out

The repeated use of area bombing provided both the concussive assault and the images of brutally killed and injured comrades. This was particularly successful in terms of producing a state of mind in which fighting efficiency had virtually disappeared; the only thoughts in most individuals' minds was how to survive

while Professor of Strategy at the US Naval War College, air strategists have a difficult enough time producing strategy to deal with a 'similar enemy' where effects and reactions can reasonably be guessed at. If the complications of a dissimilar enemy with very different motivations and state structures are introduced the problem is magnified considerably.

When a bomb explodes on a target two very different areas are affected: the first being the physical realm and the second being the social realm.¹⁰ The former is the one which practitioners of air power concentrate on. It is possible through calculation, trials, careful analysis and target matching to be highly confident regarding the degree of damage that will be inflicted on a particular target. This can be seen in the language used by such practitioners. Probability of kill [p(K)], probability of serious damage [p(SD)], CEP — terms used by those who take a scientific approach to weapons effects. This approach has been read across into the targeting world with the concept of 'effects based warfare' in which a commander will now be asked not just what sort of targets he wants to hit, but what sort of damage is required.

The classic example is that of the power plant where differing levels of damage can be inflicted that will remove it from use for a week, a month or a year — and there can be no doubt that this approach has its utility. At the tactical or operational level, the ability to inflict a certain level of physical damage in order to produce a particular tactical or operational effect, is absolutely critical. At the same time it is also far easier to work out the equation. If all the enemies' second echelon forces are on the far side of a bridge and he has no bridging equipment, destroying the bridge will remove his capability to reinforce or counter-attack. However, at the strategic level this type of cause and effect is generally not what is being sought.

The aim of strategic air power is to be able to reach over fielded forces and directly attack the heart of the nation in the form of the general populace and the opposition's leadership. However, in this case, the second area is being targeted — the social realm. Here the damage mechanism is far less well

understood, perhaps because it does not lend itself to analysis in the same scientific manner as physical damage, or because it deals with the effects of high explosive on flesh, blood and spirit: this is not considered to be a suitable area for study. Indeed this may be a reflection of the general distancing effect that air power has in terms of separating those who deal out destruction from those who experience it. Irrespective of the cause it is this area upon which theories of strategic air power are balanced, whether they include it or not. Both World War II bombing studies, as well as GWAPS, included a significant element of data-gathering and analysis on the subject of the morale of those subject to strategic bombing. However the intervening years have seen little work in this area, or at least not by air forces. Significant work has been carried out by the armies of a number of nations in this area. Only here it is not normally considered as the effect of bombing on morale, but of combat on the ability of the individual to function, or CSR as it is more commonly known. Examination of the reports of the USSBS in particular, together with the work done under RAND's auspices on air war and emotional stress with particular reference to civil defence when compared with the GWAPS findings, clearly shows that CSR is the missing link in the exchange mechanism.

If CSR is the vehicle that turns explosive power into action in the social sphere, just what relevance does this have for air power theory? The answer comes from work carried out during the Blitz. This was also backed up by the USSBS reports in that two different experiences can arise from the experience of being bombed. In the first case, where individuals have gone through the emotional turmoil of sitting and listening while an attack takes place, but then finds themselves to be unharmed, there is an emotional release resulting in a feeling of invulnerability. Amongst those who have had this experience, morale is generally higher after an attack than before: the worst case scenarios that had played on their minds before have not been realised. In the second case, those who have suffered near-death or injury during a raid, or have had to deal with the immediate aftermath, there are a number of severe, albeit generally short-lived, psychological effects ranging

from persistent irritability to a much reduced capacity for work.¹¹

In the case of the Gulf War, the bombing campaign against the Iraqi troops in the Kuwaiti desert was specifically designed to heighten the latter effects: leaflet drops gave the time of the next attack and repeated use of area bombing provided both the concussive assault and the images of brutally killed and injured comrades. As the interviews with Iraqi prisoners referred to previously attests, this was particularly successful in terms of producing a state of mind in which fighting efficiency had virtually disappeared; the only thoughts in most individuals' minds was how to survive. However, the experience in major cities in Iraq, as in Belgrade during the Kosovo crisis, was completely different. Here the use of PGMs for precision bombing allowed the vast majority of the population to go about their business unharmed, and, to a significant degree, unaffected by the war. Therefore, most individuals' experience would be

in line with the first case, where their worst fears would prove to be groundless, and as a result morale would be likely to improve. This certainly seems to be in line with what actually happened, as in neither case was there any sign of lowering morale or a popular uprising. Furthermore, the most recent action in Iraq which commenced with the 'shock and awe' air campaign appears to have been equally ineffective in terms of producing any discernible adverse results, other than damaging infrastructure and proving that a city could be heavily bombed every night with almost no civilian casualties.

Therefore, the crux of the matter is that an 'exchange mechanism' for the Morale Model of strategic bombing does exist, but it is not as simple as proponents of 'classical' strategic air power seem to believe. It can be extremely effective in destroying morale and bringing about a state of mind where survival of the individual is the prime concern of all, but only if used in the correct

Strategic air power may well prove to be extremely humane in terms of minimizing collateral damage, but completely ineffective in producing any effect in the populace supposedly targeted by such a campaign



A Iraqi missile factory destroyed in the recent conflict

Looking at the recent conflict in Iraq . . . If the aim was to force a regime change without military intervention on the ground, it seems to have failed, even in those areas that had previously shown themselves to be least-loyal to the Iraqi leadership

manner. Yet this would require a strategy that is not only contrary to common humanity but also to the rules of war. If it is not used in this way, strategic air power may well prove to be extremely humane in terms of minimizing collateral damage, but completely ineffective in producing any effect in the populace supposedly targeted by such a campaign.

Of course strategic air power could be used to target the enemy leadership directly, again as appears to have been the case in the recent war in Iraq in which case a different mechanism comes into play, namely decapitation. However, while one might presume that such an approach is on questionable legal grounds, as attacks specifically on civilian leaders are forbidden under the laws of war, there appears to have been a shift in some legal areas to consider attacks on specific enemy leaders as being allowable.¹² On a more practical level as seen in Iraq, it is difficult to be certain regarding the death of a specific individual in an air raid, and the rumoured death of Saddam Hussein certainly did not seem to lead to any break down in law and order or any other form of general revolt although it may have affected the cohesion of actions aimed at resisting the invading forces.

Where does this leave the use of strategic air power? The obvious answer is that it is likely to be effective only in particular situations. The target and terrain allow a campaign to be designed to induce CSR in the majority of the enemy's forces, and where the loss of fighting ability amongst the fielded forces is likely to be a significant cause for concern amongst the enemy leadership. This of course agrees with Pape's views on the most effective use of strategic air power, albeit from a different perspective. Even here, such an approach is unlikely to always be acceptable to public audiences who appear to be coming ever more intolerant of high levels of casualties on either side. In terms of affecting a civil population directly, the use of strategic air power is likely to have the opposite effect to that intended. Morale will remain high or even increase while a sense of hatred for those imposing the punishment is also likely to increase. The most important factor is that doctrine should reflect these more complex realities in order to ensure that the strategies devised stand a reasonable chance of working.

The latest edition of AP3000 does contain some cautionary notes regarding the use of PGMs:

"If the fear of air power and the uncertainty created by the unexpected can enhance the ability of air power to be exploited for strategic effect, the very accuracy of PGMs may work against military utility. The fact that Western nations are sensitive to loss of life on both sides of a conflict and that forces will be required to limit collateral damage, could reduce the coercive nature of PGMs."¹³

The production of a revised theory of strategic air power therefore needs to be considered. Group Captain Lambert, in particular has not only identified the psychological element in the coercive use of strategic air power but has also considered some of the effects on coercive theory ending up with a list of 10 key points.¹⁴ Looking at the recent conflict in Iraq, many of these points appear to have been fulfilled in the air campaign. If the aim was to force a regime change without military intervention on the ground, it seems to have failed, even in those areas that had previously shown themselves to be least-loyal to the Iraqi leadership.

It is difficult to conclude that strategic air power, disregarding its use in the nuclear deterrence role, is anything other than a poor instrument for coercion due to the limitations placed upon it. From a political view it provides many useful attributes such as allowing highly visible signalling of intentions, a rapid response to events and the ability to be seen to be doing something without long-term commitment of forces; it is unrealistic to expect it to achieve significant coercive effect. However, the recent Iraq conflict has perhaps shown a new approach which is to utilise the deterrent effect of strategic conventional air power. While the air campaign within cities clearly did not incite the type of social unrest that was perhaps sought in Kosovo, it could be seen as providing a clear signal to members of the Iraqi armed forces regarding their best hope of survival. The 'shock and awe' campaign appears to have been deliberately targeted at highly visible symbols of the Iraqi regime, not to try and coerce the population into rising against it, but to clearly demonstrate the overwhelming precision, lethality, and freedom of operation of coalition air force.¹⁵



A reusable hypersonic cruise vehicle (HCV) would be capable of taking off from a conventional runway and striking a target 9,000 miles away in less than two hours, using a 12,000 lb payload

The FALCON (Force Application and Launch from CONUS) programme is to design, build, and demonstrate a FALCON system that can effectively and affordably conduct responsive and flexible global strike missions. In practical terms this is envisaged as a reusable hypersonic cruise vehicle (HCV)

However, it should be noted that such an approach is not of course strategic air power in the classical sense, as it is only effective as a prelude to a ground-based invasion where persuading a large proportion of the defending armed forces to either desert or simply not fight is in their best interests. If this was the aim, it certainly appears to indicate that the air campaign had never been intended to operate in a strategic manner, but simply as a means of shaping the battle-space for the ground forces. Of course this is in effect a repetition of what happened during the Gulf War of 1990-91, but then Warden's plan was based around forcing the Iraqis to comply with the relevant UNSCRs without committing any ground troops, although other considerations led to the perceived need to extend the mandate beyond simply the liberation of Kuwait and restoration of peace and security in the region.

Where does this then leave current and future strategic air power theory? Perhaps the first step is to produce a far more concise definition of what strategic air power actually is. Much of the ongoing debate has to do with what actually constitutes strategic air power and confusing the issue with such terms as 'air power for strategic effect' is unhelpful. A definition that provides a useful starting point is that *strategic air power represents the use of air power alone for coercive effect*. This has the benefit of making the strategic use of air power instantly identifiable, and Operation Eldorado Canyon instantly springs to mind as an example. As this idealised situation is unlikely to exist often

in the real world, a more realistic definition perhaps is that *strategic air power represents the use of air power as the primary armed force in a theatre campaign with coercive intent, or, alternatively, the strategic use of air power is reflected in a coercive theatre campaign where air power is the supported arm*.¹⁶ This removes the problem of defining what type of air power is to be used, although as the effect that is sought is coercive in nature this is likely to require the application of force, hence 'aggression' in a general manner is contained within the definition. It also covers both compellent and deterrent activities, and the fact that it is being used as the primary mechanism is what differs this use of air power from all other forms.

What sort of theoretical base needs to be associated with such a definition, as this will provide the guidance that is required for application? From the history of air power in general and the case studies in particular, it is possible to derive a number of propositions regarding the use of strategic air power: firstly, deterrence is much easier to achieve than compellence; secondly, genuine coercion cannot be achieved in a bloodless manner; thirdly, attacks on economic infrastructure are unlikely to significantly affect an enemy's will to resist; fourthly, attacks on transportation and communication systems are unlikely to be effective unless combined with other action that requires close coordination and movement of enemy forces; and finally, it is extremely difficult to plan and carry out a genuinely strategic air power campaign.

Strategic air power in the proposed new definition is air power that is being used alone, that is, without any associated land or sea operations . . . It is also being used solely for coercive effect in order to either compel any enemy towards or deter an enemy from a particular course of action

RAF Tornado GR1 aircraft equipped with laser guided bombs



Taking these elements to a logical conclusion, if the definition of air power operating alone is accepted, given the limitations associated with each of the models of strategic air power already discussed, strategic air power has little or no relevance to future conflicts. The very damage mechanisms that make it effective also makes it unusable in most scenarios.¹⁷ However, those same mechanisms, as have been clearly demonstrated in recent conflicts, can be devastatingly effective when used as part of a co-ordinated, joint, theatre campaign: this is where air power's emphasis should now lie. Effective, strategic air power is dead, but as a battlespace shaping force, strategic air power theory — if correctly utilised — has the potential to afford such superiority that battle-winning performance will be a natural consequence. Or, as a recent Chief of the Defence Staff stated, "Integrated joint operations are our asymmetric advantage".¹⁸

Such a view is clearly not universally accepted, particularly on the other side of the Atlantic. The US DoD has recently placed a programme solicitation in the public domain for FALCON (Force Application and Launch from CONUS). The aim of the programme is 'to design, build, and demonstrate a FALCON system that can effectively and affordably conduct responsive and flexible global strike missions'. In practical terms, this is envisaged as a reusable hypersonic cruise vehicle (HCV) capable of taking off from a conventional runway and striking a target 9,000 miles away in less than two hours using a 12,000 lb payload of common

aero vehicles (CAVs), cruise missiles and smart bombs.¹⁹ The rationale for such a system is that:

*'The US Strategic Command has a critical need for responsive, effective and affordable conventional strikes to provide deterrence, power projection and coercion, delivering munitions in minutes to hours globally from CONUS . . . the intent is to hold adversary vital interests at risk at all times . . . a system capable of responsively and effectively performing these objectives would provide a 'no win' tactical deterrence against which an enemy's defenses would be ineffective.'*²⁰

As can be seen from even this brief description, the theoretical basis underlying the doctrine that has called for this technology is an understanding that the delivery of conventional munitions from the air with pinpoint accuracy will in some way provide both deterrent and coercive effect. And yet such a system, even if capable of responding within a timescale of two hours, and with accuracy similar to that of current cruise missiles, will still face the same problem of turning explosive power into a required effect. Reading between the lines, it would appear that the 'leadership' model is at the heart of this proposal, with the ability to effectively threaten any enemy's leadership anywhere in the world. The question is how morally and legally acceptable such an approach is, which certainly seems to be almost an assassin-like threat aimed at any would-be enemy's leaders. As recent experience appears to have shown, even with real-time targeting the

one of the most central, although generally unstated, reasons for strategic air power theory and doctrine has been to justify the need for independent air forces as opposed to aviation arms of the land and sea forces

elimination of an individual can rarely be absolutely certain, and therefore the viability of such a system against rogue actors must be suspect. The solicitation may have more to tell the world about the collective American psyche regarding defence in the new millennium than it actually offers in terms of coercive or deterrent power. However it does offer a further vivid illustration of the close linkage between theory, doctrine and technology.

“Air power means the use of the air to enforce the national will . . . the primary agent of air power is a weapon system capable of delivering enormous fire power over long distances.”
(AP 1300 Operations)

Conclusion

The bottom line is that over the last hundred years of air power thinking, there has been a gap in the main theories underlying strategic air power doctrine: there has been little or no analysis of the exchange mechanisms that were required to turn explosive power into the desired strategic effect. Three models of strategic bombing theory have been identified: morale, economic and leadership, each of which is dependent upon a different theory, and therefore uses a different exchange mechanism. In the case of ‘leadership’ — perhaps the most recent model — the mechanism is straightforward. If a leader can be removed or sufficiently isolated from his forces, particularly in non-democratic societies, then there is a strong likelihood of confusion that can be exploited. However, unless an opposition group is immediately ready to take over the reigns of power, such an approach will require some form of surface action to utilize the subsequent opportunity; in this case it does not fulfil our criteria for strategic air power. Furthermore the status of such an approach under international law is still potentially problematic, and as the results obtained thus far with this approach have been largely negative, it is unlikely to succeed.

On the economic front, the mechanism is based upon an understanding of the highly interdependent nature of modern societies, whereby identification of key or nodal points will allow either the reduction of essential supplies to an enemy’s armed forces such that they are unable to fight, or will produce such dire conditions amongst the civil population that

they will rise up against their leaders. However experience has shown that even modern societies are quite resilient to the effects of air attack and while the former is easier to achieve than the latter, again it only works if surface forces are putting the enemy’s forces in a position where they have to fight, and therefore cannot be considered as truly strategic air power.

This leaves the morale model. Analysis of studies that have closely examined the actual effects of strategic bombing provides a strong clue to the area of this closely studied and understood mechanism. Although similar in many respects, it stands some distance from that of air power. The mechanism relates to the psychological/social/personal effects of bombardment rather than the physical, which of course makes it a great deal more difficult to analyse as these effects are not quantifiable in the same way as material damage.

When used correctly, as in the campaign against Iraq’s fielded forces in Kuwait and the Republican Guard units on the Kuwait/Iraq border, it is an extremely effective method of warfare. However, constraints placed by legal and moral considerations make it unlikely to be acceptable for anything other than attacking an enemy’s fielded forces. Again, such an approach is not really strategic air power, although it could be argued that it is using air power for strategic effect.²¹ Understanding that this is the mechanism of exchange in strategic bombing allows a much better analysis of the effectiveness, or otherwise, of recent strategic bombing campaigns in the post-Cold War era. The predictions that a revised theory of strategic air power make appear to stand up well, but have severe implications for the utility of strategic air power in the future.

Strategic air power in the proposed new definition is air power that is being used alone, that is, without any associated land or sea operations, except as may be necessary to create the conditions for the air campaign to proceed. It is also being used solely for coercive effect in order to either compel any enemy towards, or deter an enemy from, a particular course of action. It is not strategic air power if the purpose of the campaign is to shape the battle-space for exploitation by surface forces at a later date. Examination of the three models of strategic air power show that it can be extremely effective when used against tangible COGs, where generally a

clearly determined link between cause and effect can be drawn but is far less effective when used against intangible COGs. The latter case is strengthened by the fact that the exchange mechanism at the heart of attacking intangible COGs lies in directly threatening the audience from whom a reaction is sought, and yet political, moral and legal constraints make this mechanism unlikely to be acceptable.

Taking all of these points together, and applying them to the case studies examined as well as both historic and even more recent campaigns seems to clearly imply that the idea of strategic conventional air power is dead. The Elysium of making war which utilised an approach that bypassed an enemy's fielded forces and took the conflict to the heart of the enemy's nations has never worked, and is increasingly less likely to do so in the face of messy conflicts involving rogue states and sub-state actors. However, this should not be seen as an attack on the value of air power overall. While it is contended that strategic air power has no future, the use of air power to create the battle space within which surface forces operate has, arguably, become the prime role for air forces. No surface force in recent years has triumphed in a conflict unless it has had air supremacy, and in two notable cases the battle space was so shaped by air power that land forces in particular enjoyed casualty ratios that would have been undreamt of only a few decades ago. Furthermore, the synergistic use of air power, with parallel campaign lines and an integrated theatre plan, clearly provides results that no single force could produce by themselves. The greatest success requires a clear understanding of the applicability of the theories and exchange mechanisms behind of all three models of strategic air power.

Of course one of the most central, although generally unstated, reasons for strategic air power theory and doctrine has been to justify the need for independent air forces as opposed to aviation arms of the land and sea forces. This has been true from the painful birth and early gestation of the RAF in the 1920s through the formation of the USAF in the late 1940s, and has even risen in the wake of the Iraq war where calls have again been heard for the reintegration of the RAF into the British Army to allow for better close air support. While the lessons of history with regard to strategic air power are

clear, they are equally clear with regard to the value of the independent air arm. The Luftwaffe at the beginning of World War II plainly represented the evolution of an air arm that was subordinated to the land and left itself unable to conceive of control of the air as being the most important requirement for any air force — and eventually paid the price for such a mistake.

The death of 'true' or 'classical' strategic air power should therefore not be seen as a threat to the need for independent air forces. Rather, it should be seen as a springboard for air power theory and doctrine to concentrate on more productive areas such as how best to shape the battle space within which surface forces will have to operate, in which much of what lay at the heart of strategic air power theory has a great deal to offer. As Williams stated in his thoughts on NATO in the 21st century,

“Air power acting as a single component of military power by itself is almost certainly unlikely to repel or defeat a ground invasion launched by sophisticated high intensity forces. But the use of air power can erode the material strength and will of forces on the ground to an extent unimaginable in the Second World War, for example.”²²

This reality needs to be applied to our current doctrine of strategic air power that simply does not reflect the true strategic situation and could be considered as simply a repository for airborne tasks that do not fit into any other categories. Bearing in mind that the same theories that are discredited as far as strategic air power is concerned could and should represent a vital element of campaign planning against an enemy's armed forces, it could be argued that all the discussion of strategic air power is simply a matter of semantics, but this would be a gross oversimplification. The doctrine possessed by the RAF, whether formal or informal, will drive the use of air power in the next conflict. If at the heart of that doctrine is a belief that a conflict can be won by the use of air power alone, this is likely to result in a considerable wasting of scarce resources which can be ill afforded. Alternatively, if the doctrine contains a clear exposition of the ways that air power can operate with surface and sub-surface force to greater synergistic effect, it is likely to increase the chances of success and decrease the overall costs.

Notes

¹ Waltz, *man the state and war*, p2.

² Mueller, 'The Essence of Coercive Air Power: A Primer for Military Strategists', p53.

³ Watts, 'Doctrine, Technology and Air Warfare', p34.

⁴ In order to minimise collateral damage in Iraq, in some cases LGBs were used that had a concrete (i.e. non-explosive) centre, relying on kinetic energy only for destructive effect.

Unattributable interview at RAF Wyton 2 May 03.

⁵ Perhaps because the population in Paris had already experienced artillery bombardment, and hence the same initial shock was not so evident.

⁶ The official Report of the British Bombing Survey unit quotes Speer, the German Armament Minister, as saying that "the outlook of the people was often poor, but their behaviour was always excellent." ('The Strategic Air War Against Germany 1939-1945: Report of the British Bombing Survey Unit', p77.)

⁷ This term is arguably the most recent to be used to describe the psychological as opposed to physical effects of war; previous terminology has included shell-shock, battle fatigue, and Lack of Moral Fibre (LMF).

⁸ Although the implied change in the American view on assassination (see previous chapter) is noteworthy.

⁹ Meilinger, 'Air Targeting Strategies: An Overview' p65.

¹⁰ Or alternatively, the physical (kinetic) effects, targeted against capability, and the cognitive effects, targeted against will.

McNicoll, 'Effects Based Air Operations: Air Command and Control and the Nature of the Emerging Battle-space', p39.

¹¹ Janis, *Air War and Emotional Stress*, p83.

¹² In cases where an enemy leader is also the *effective* head of the armed forces, they are considered to be a legitimate target for attack.

¹³ Air Publication 3000 (3rd Edition), p2.6.11.

¹⁴ Lambert, 'Coercion and Air power', p292.

¹⁵ Codner, 'An Initial Assessment of the Combat Phase', p10.

¹⁶ Correspondence from D Def S dated 10 June 2003.

¹⁷ Although in a situation of dire extremity, such as a war of national survival, such limitations might not have such force. The current RAF force structure is unlikely to allow such application of conventional force however, which would only leave the coercive effect of the Royal Navy's SLBMs.

¹⁸ Boyce, 'Achieving Effect; Annual Chief of Defence Staff Lecture', p34.

¹⁹ DARPA Solicitation 03-XX, p1.

²⁰ *Ibid*, p3.

²¹ And notwithstanding the argument that a short brutal war may in the long run be more humane than a drawn-out set of economic sanctions.

²² Williams, 'NATO and the Transatlantic Alliance in the 21st Century', p203.



This article has been republished online with Open Access.

Ministry of Defence © Crown Copyright 2023. The full printed text of this article is licensed under the Open Government Licence v3.0. To view this licence, visit <https://www.nationalarchives.gov.uk/doc/open-government-licence/>. Where we have identified any third-party copyright information or otherwise reserved rights, you will need to obtain permission from the copyright holders concerned. For all other imagery and graphics in this article, or for any other enquires regarding this publication, please contact: Director of Defence Studies (RAF), Cormorant Building (Room 119), Shrivenham, Swindon, Wiltshire SN6 8LA.

 **ROYAL
AIR FORCE**
**Centre for Air and
Space Power Studies**

OGL