

There is no such thing as Air Power

By Dr Jeremy Stocker

The concept of air power has been a controversial subject of strategic debate ever since mankind first learned to fly. The addition of a third dimension or environment to warfare, at the same time separate from, yet integral to, both the land and the sea has always engendered fierce controversies over military strategies, resource allocations, cultural differences and institutional interests. Many of these disputes, though now the subject of no more than historical enquiry, continue to generate intellectual and emotional heat in a way that few other military topics can do.¹ Furthermore, a series of western

military interventions around the world since the end of the Cold War has given air power a new political and public profile, though generally without it being specified just what is meant by air power.

As Colin Gray points out:

*"Notwithstanding ninety years of multinational experience. . .with heavier-than-air flight, disciplined discussion of air power. . .is harassed at every turn by unhelpful definitions, institutional vested interests...and plain incompetence in strategic reasoning."*²



US Global Hawk UAV (Unmanned Aerial Vehicle)

That today air power must be more than just aircraft is evident, but how much more, remains highly uncertain

This problem continues to worsen, not necessarily through the fault of air power theorists or practising airmen, but because technological and strategic change make discussion of air power ever-more confused and confusing. Indeed, "How useful is it today to focus on 'air power' as a distinct sub-category of military power as a whole?"³ Some commentators express little doubt about the continuing importance of air power as an idea: "... when members of the military profession talk about air power what they are really talking about is one theology with multiple perspectives ... air power, regardless of the services involved in its application, is still air power."⁴ Others take a very different line: "It could even be that the old concept of air power has become an outmoded construct that has outlived its usefulness."⁵

This paper argues that for the first 50 years or so of manned flight, the new medium was sufficiently distinct as to warrant a concept of air power. However, that is no longer the case, and there now can be no definable or useful concept of 'air power'. This is so because the air is at the same time both more and less than both classical air power theorists and contemporary air power doctrines would claim.

The argument presented here is about doctrine and concepts. Just as important, perhaps, is what it is *not* about. It is not about the utility of strategic bombing, or the institutional independence of Air Forces. It is not about operations or organizations, though may have some implications for both.

An examination of how ‘air power’ or ‘airpower’ (the two seem largely to be interchangeable) are defined immediately reveals the problem, notwithstanding a recent claim that “air power is, in fact, delightfully simple to understand.”⁶ Suggestions abound. General Billy Mitchell’s view that “Air power is the ability to do something in or through the air . . .”⁷ seems more valid than most, but herein lies a fatal flaw in the concept, to which we shall return. British doctrine defines it thus:

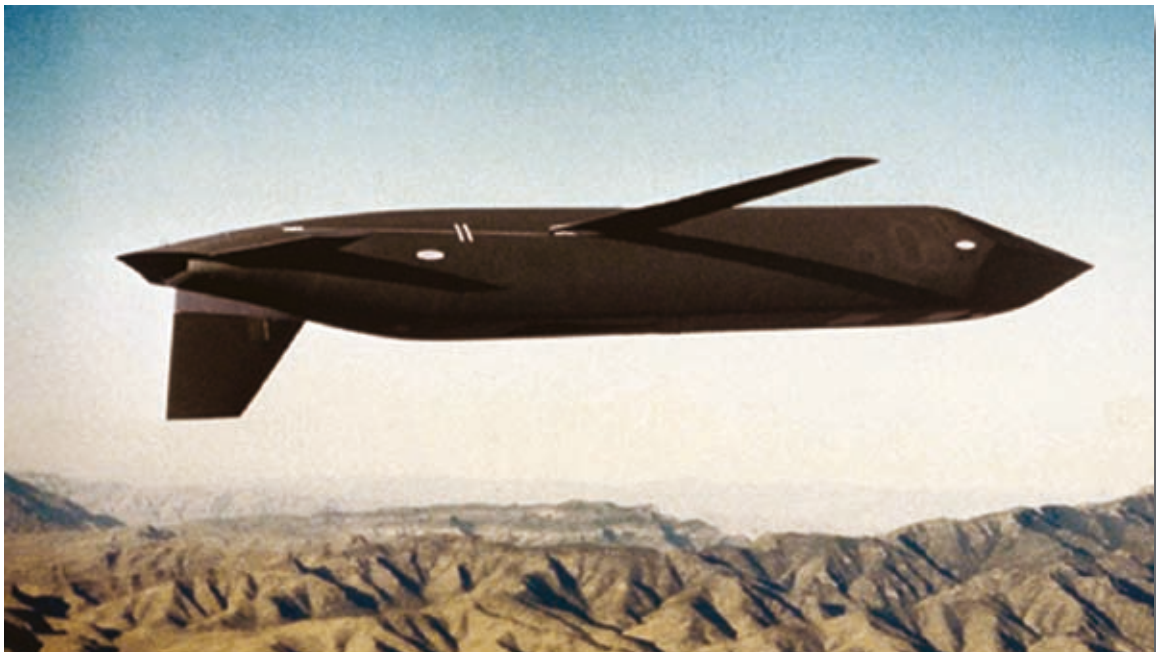
“The ability to project military force in air or space by or from a platform or missile operating above the surface of the earth. Air platforms are defined as any aircraft, helicopter or unmanned air vehicle.”⁸

The official American view is much the same, though significantly, with a much greater emphasis on aerospace — the air *and* space (another source of difficulty): “Th[e] third — vertical — dimension is the aerospace environment. The ability to operate in that environment is the source of aerospace power . . . Platforms used to exercise aerospace power include fixed- and rotary-wing aircraft, ballistic and cruise missiles, and satellites.”⁹ This apparent confusion of platforms and weapons is another source of concern about the validity of the whole concept of air (or aerospace) power.

That today air power must be more than just aircraft is evident,¹⁰ but how much more, remains

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AGM-129A advanced cruise missile



highly uncertain. Colin Gray again points us in the right direction: “When in doubt it is a good idea to resort to common sense and to remember that definitions are arbitrary and more or less useful. . . .”¹¹ The key question, therefore, is can we define a concept of ‘air power’ that is not so arbitrary as not to be useful?

Until at least the mid-1940s, man’s military exploitation of the air was sufficiently distinctive that one could readily and usefully talk of air power. The manned aircraft extended military operations not just up but also ‘out’, that is, beyond the immediate reach of surface forces, limited as they were by terrain or the horizon, and the range of surface artillery.¹² Aircraft became progressively more important to, and more integrated with, the surface land and sea battles, but remained a quite distinctive form of military capability. In purely technological terms there was a clear differentiation between bullets and shells passing briefly through the air, and manned aerial vehicles dispensing their own bullets, shells and bombs. Bombardment from the air took war beyond the immediate ‘battle space’ (to use modern terminology) and direct to targets of ‘strategic’ importance. The air was now an environment to be fought over for its own sake, much as the sea had been for centuries.¹³

The extent to which the early prophets of air power such as Douhet, Mitchell, Trenchard and Seversky over-stated their case in arguing for the single-handed war-winning potential of aircraft¹⁴ is, for our purposes here, not the issue. In this context, two particular ironies attend the history of air power. The first is that just as the Second World War seemed finally to have put paid to the more extreme claims of the bombing enthusiasts, so the invention of atomic weapons appeared to provide the means whereby such claims could in fact be validated.¹⁵ Yet no sooner had this occurred than the manned aircraft began to be superseded, at least in part, by new means of projecting military power over long distances through the air. As aircraft became ever more potent themselves, so other ways of exploiting the air environment arose to challenge their monopoly position. This process was begun by the German glider-bombs, V-1 cruise

missiles and V-2 ballistic missiles in 1943–45, and came to full fruition with Sputnik and ICBMs in the late-1950s. Determining just what does, and does not, constitute ‘air power’ has been a problem ever since, a problem progressively less susceptible to a solution as more and more ways of operating through the air are devised.

“If we lose the war in the air, we lose the war and we lose it quickly.”¹⁶ Montgomery’s oft-quoted remark applies even more today than when he made it. It speaks to the universality, or ‘ubiquity’¹⁷ of the air as an operating medium. Airmen are fond of pointing out that though water covers 70% of the earth’s surface, the air covers 100% of it. Almost every weapon used by armed forces flies, or is thrown, through the air. The only notable exceptions to this are mines and torpedoes, significant exceptions to be sure, but not so as to seriously challenge the essential universality of the air medium. This is not true, of course, of platforms. However, as two eminent Air Force officers have pointed out: “A change from the past emphasis on platform performance and on to weapon performance...seems not only inevitable but imperative.”¹⁸

To state, as Trenchard did, that “I do not for a moment wish to imply . . . that the Air by itself can finish the war”¹⁹ is in this context beside the point — *all* weapons are ‘air weapons’ and in that vital sense the air is indeed more than the most ardent proponent of ‘air power’ has ever argued. When it is asserted, quite correctly, that “Air power, strategic and tactical, simply cannot be isolated from other forms of military power for a comparative assessment of its contribution to the winning of the war”,²⁰ this goes only half-way in identifying the essential truth: Aircraft are intrinsic to almost every form of military operation, but more than that, the *Air is All*. It is *the* operating medium which ‘permeates everything’.²¹ Mitchell’s inclusive idea of air power was at the same time both correct and irrelevant.

This situation has come about because of technological innovation. The appearance of ballistic and cruise missiles, UAVs, rockets, guided shells and lasers has completely eroded



US Navy-launched Tomahawk

It has been suggested that air power includes missiles (from wherever they originate), but excludes shells and bullets. This would imply that a missile fired from a submarine is air power, but a bullet fired from an aircraft is not, which hardly helps

the previously sharp distinction between manned aircraft and surface-based artillery. For example, Fire Support now embraces all manner of means of delivering firepower in support of troops on the ground, and not just traditional Field Artillery.

A workable concept of air power must therefore determine just what is, and what is not, a component or an instrument of air power. If one adopts a weapons-based approach, it has been suggested that air power includes missiles (from

wherever they originate), but excludes shells and bullets.²² This would imply that a missile fired from a submarine is air power, but a bullet fired from an aircraft is not, which hardly helps. Alternatively, only missiles and shells fired from aircraft are expressions of air power, whereas those fired by a soldier on the ground are not, even though the target, and the effect on the target, may be the same. This seems no better. Another suggestion, that only weapons with a range of more than, say, 100 miles be included²³ gets us



A US F/A-18 Hornet patrolling the skies over Bosnia

The physics and logistics of flight . . . require that each individual aircraft [or other aerial vehicle] can be present . . . only relatively briefly . . . it is of the nature of air power to be present . . . only intermittently

no further. Why 100 miles? What if a weapon with a maximum range of 150 miles is launched at a target only 75 miles away? The situation will be further complicated in the next few years by the appearance of guns with extended range guided munitions able to hit targets up to 100 miles away,²⁴ with greater reach, and in some cases better accuracy, than many existing air- and surface-launched missiles. One's definition of air power therefore becomes either so broad as to be synonymous with *all* military power, and so quite unhelpful, or so arbitrarily restricted as to be equally useless.

If instead the platform, not the weapon, is the key determinant, we are back to the manned, and perhaps unmanned, aircraft. Some weapons find their own way to the target, others are carried part-way by an aircraft. So, for example, a cruise missile fired from an aircraft *is* air power in action, but an almost identical missile fired against the same target but from a submarine is *not*. Or is a submarine, of all things, to be an air power platform? Again, the ubiquity of the air medium mitigates against any worthwhile characterization of air power. Trenchard's idea of the 'indivisibility of the air' contains more truth than he imagined.

Discussion of platforms brings one neatly to the obverse of ubiquity, namely impermanence.²⁵ In essence, one can operate *through* the air, but not *from* the air. All aerial missions, whether manned or not, 'one-shot', 'one-way' weapons or reusable airborne platforms, originate on the land or at sea, or, conceptually at least, in space. "The physics and logistics of flight. . . require that each individual aircraft [or other aerial vehicle] can be present . . . only relatively briefly . . . it is of the nature of air power to be present . . . only intermittently."²⁶ A presence can be maintained in the air in a particular locality for some time by rotation of individual aircraft. However, this is an expensive way of operating,²⁷ and, more to the point, both individual aircraft missions and a cumulative 'air presence' originate on land or sea. "Air bases are the tactical framework within which air forces wage campaigns."²⁸

Of course it is true that a presence at sea or in space, ultimately, originates on land. It is also true that a presence on land 'in the field' originates somewhere else (at home), but these presences can be maintained for months, even years and are, for all practical purposes, 'permanent'. This cannot be said of an aerial presence measured in hours, or, in rotation, days and which is therefore 'essentially transitory'.²⁹ Thus the air is less, as well as more, than has been claimed for it.

This focus on the surface origin of all 'air power missions'³⁰ is not a thinly veiled argument for the abolition of separate air forces, despite a recurring, but quite unnecessary, Air Force sensitivity on the subject.³¹ The mastery of manned flight is a distinct and complex business undertaken by what Mitchell called the 'air-minded people'.³² 'Airmanship' is a collection of very practical skills somewhat analogous to 'seamanship'. However, given the arguments presented above, whether one can extrapolate from airmanship a worthwhile concept of 'air warfare' that is more than simply the technical operation of military aircraft is less sure. On land at least, the origins of most aircraft missions — airfields — are generally quite removed from other military assets. The institutional separation of air forces from armies is therefore not just desirable (given the special

nature of airmanship) but also physically possible. At sea this is obviously not the case and must result either in the division between two services of total aircraft strength, or the operation of one service's aircraft from another's seaborne platforms.

A popular, and somewhat natural, view is that there are three environments — land, sea and air — each addressed by a different Service — Army, Navy and Air Force — even if each does 'stray' into the others' realms to varying degrees.

Space is a unique environment in its own right . . . an environment characterised by the laws of orbital motion, high energy particles and fluctuating magnetic fields and temperatures . . . in other words, quite unlike the air

However, the discussion so far indicates that what we actually have, for perfectly good reasons, are two land-based services and one sea-based, for each of whom, in differing ways, the air is the (almost) universal operating medium.

Mention of space and aerospace has already been made. Space is relevant to this discussion for two reasons: First, the extension of air power doctrine into space, hence Aerospace:

"Of, or pertaining to, Earth's envelope of atmosphere and the space above it; two separate entities considered as a single realm for activity in launching, guidance, and control of vehicles that will travel in both entities."³³



HMS Lancaster of the UK Royal Navy

The land is quite clearly a two-dimensional 'surface' environment, so far as military operations are concerned. So also, surprisingly, are the sea and space

Second, because the nature of space and its relationship to the other environments tells us a lot about the special nature of the air. Ben Lambeth, a noted theorist of air power, has written of "the inexorable movement of air warfare into space. Viewing space from an operational rather than an organizational vantage point, it is nothing but an extension of the vertical dimension beyond the confines of the earth's atmosphere . . . exploiting space will be crucial to the continued maturation of air-power. Space is merely a

place, not an independent mission or function for air-power . . . There is every reason to expect the gradual withering-away of today's demarcations between 'air' and 'space' . . ."³⁴

This association of space with the air appears to rest on the basis that both are 'up there', while the land and the sea are 'down here'. Air power doctrines, quite validly, refer to the other environments as 'the surface'³⁵. However,

*"Aerospace is an unfortunate term because it denies the laws of physics . . . the space environment is geophysically and hence technologically, tactically and operationally as distinctive from the air as it is from the land and the sea."*³⁶

"Space is a unique environment in its own right . . ."³⁷ "an environment characterised by the laws of orbital motion, high energy particles and fluctuating magnetic fields and temperatures . . ."³⁸ in other words, quite unlike the air. As a military medium, it actually has more in common with 'the surface' than it has with the air. "Space is not just an extension of the air. Space is an ocean . . ."³⁹ Space is, like the land and the sea, a basing medium in a way that the air is not. Space is neither 'ubiquitous' nor 'impermanent'. We operate 'from' the land, the sea, and space, and 'through' the air, the medium that connects all the others. That " . . . space power [is] an essential enabler of air power . . ."⁴⁰ is not only true, it is also irrelevant. Land- and sea-power are also 'enablers of air power'. Whether Air Forces are best placed to exploit space, as indeed they may be, is another question altogether and one that should not depend upon a concept of aerospace.

The land is quite clearly a two-dimensional 'surface' environment, so far as military operations are concerned. So also, surprisingly, are the sea and space. The overwhelming bulk of shipping, civil and military, is surface-bound and that which is not, principally submarines, operate mainly close to the surface and with reference to it. The military exploitation of space is an orbital one. Though there is a range of orbital altitudes, this also is essentially a 'surface' operation, albeit one with, like the sea, some depth to it. Earth orbit is the 'surface' of outer space beyond, as viewed from this planet. The air, however, is three-dimensional, exploited throughout its vertical range and which connects the environments not just below but also above.

In this sense, it is space, not the air, which is the third dimension or environment. The air's true comparators as impermanent 'connectors' are the electro-magnetic spectrum (which itself uses the air) and, perhaps, 'cyber-space'.⁴¹

In response to all this one might quite reasonably ask 'So What?'. This argument is about more than just semantics but may well be little more than a matter of theology. But in an era when armed forces are doctrine-led, one surely ought to get one's doctrine right, or at least "prevent the doctrine being too badly wrong".⁴² In particular, the existence of an ill-defined but superficially attractive concept of air power may tempt political leaderships to opt for a use of force that holds a false promise of cost-free military effectiveness.

In today's 'joint' world, the operational organization of joint forces remains 'input-based',⁴³ that is, organized along 'environmental', (single-Service component) lines. If each Service did address its own environment, this might make sense. But a recognition of the existing confusion between basing and operating environments ought to negate this approach. Without a distinct operational concept of air power to match the institutional existence of an air force, operations might more readily be 'output-based', in other words organised according to missions rather than just who supplies the component forces. The UK in particular could make a better distinction between the supply of, and demand for, operational military capabilities.

One must also question the existence, and practical application, of single-Service Air Force air power doctrine, given first, that all the Services operate aircraft and other 'air systems', and second, that, as AP 3000 itself points out, ". . . air power is inherently joint . . ."⁴⁴

Next time we read of 'air power' being used somewhere, it would be as well to remember that what is actually being used is aircraft and missiles, not a doctrinal concept. Gray observes that ". . . the contribution of air power to military operations of all kinds has become so pervasive as to call into question traditionally distinctive notions of land power and sea power."⁴⁵ In fact, the reverse is true. The air is so pervasive that it is air power that has ceased to be definable or useable as a distinct concept.

It is a paradox of military exploitation of the air that while claims for specific uses of the air (particularly strategic bombing) may have been over-stated, the significance of the air itself has been under-played. Air Chief Marshal Sir Brian Burridge observed that “The challenge for air power is to maintain its relevance in a changing world.”⁴⁶ The air’s ubiquity is such that its importance cannot be in doubt. It is the *concept* of air power whose relevance we must question.

The air as a military operating environment is at the same time more ubiquitous and less permanent than a distinct and worthwhile concept of air power would require, and so there is indeed, No Such Thing.

Notes

- 1 For example, the continuing controversy about the military utility and moral righteousness of strategic bombing in the Second World War.
- 2 Colin S. Gray *Explorations in Strategy*, Westport CT: Praeger, 1996 p. 58
- 3 Philip Sabin *Air Power in Joint Warfare* in Stuart Peach (ed) *Perspectives on Air Power: Air Power In Its Wider Context*, London: The Stationary Office, 1998 p. 239
- 4 General Joseph W Ralston USAF *The Revolution in US Air Power* in *RUSI Journal* December 1999 p. 55
- 5 David MacIsaac *The Evolution of Air Power Since 1945: The American Experience* in R.A. Mason (ed) *War in the Third Dimension: Essays in Contemporary Air Power*, London: Brassey’s, 1986 p. 31
- 6 Air Marshal Sir John Walker *Air Power for Coercion* in *RUSI Journal* August 1999 p. 13
- 7 William Mitchell *Winged Defense: The Development and Possibilities of Modern Air Power — Economic and Military* cited in Gérard Chaliand (ed) *The Art of War in World History*, Berkeley CA: University of California Press, 1994 p. 898
- 8 AP 3000 *British Air Power Doctrine* (3rd edition) London: Ministry of Defence Directorate of Air Staff, 1999 p. 1.2.1
- 9 *Air Force Manual 1-1 Basic Aerospace Doctrine of the United States Air Force vol II* Washington DC: Department of the Air Force, 1992 pp. 71-2
- 10 Gray p. 128
- 11 Gray p. 63
- 12 Giulio Douhet *The Command of the Air* (trans. Dino Ferrari) New York: Coward-McCann, 1942 p. 9
- 13 Much of the early language of air power was borrowed, quite validly, from that of sea power.
- 14 Gray p. 58
- 15 Edward Luttwak *Strategy: The Logic of Peace and War*, Cambridge MA: Harvard University Press, 1987 p. 168
- 16 General Bernard Montgomery. Cited in JWP 0-10 United Kingdom Doctrine for Joint and Multinational Operations (UKOPSDOC) p. 2C-1
- 17 Philip Towle *The Distinctive Characteristics of Air Power* in Andrew Lambert & Arthur Williamson (eds) *The Dynamics of Air Power* Bracknell, RAF Staff College, 1996 p. 4
- 18 Air Marshal M.J. Armitage & Air Commodore R.A. Mason *Air Power in the Nuclear Age, 1945-82* London: Macmillan, 1983 p. 257
- 19 Marshal of the Royal Air Force Sir Hugh Trenchard, cited in Chaliand p. 908
- 20 Colin S. Gray *War, Peace and Victory: Strategy and Statecraft for the Next Century* New York: Simon and Schuster, 1990 p. 187
- 21 Chaliand p. 897
- 22 Towle p. 3
- 23 Sabin p.245
- 24 Captain Ray Pilcher *USN Influencing the 21st Century Battlespace in Surface Warfare* Jan / Feb 1999 p. 21
- 25 AP 3000 p. 1.2.5
- 26 Gray *Explorations in Strategy* pp. 75-6
- 27 AP 3000 p. 1.2.5
- 28 Williamson Murray *Some Thoughts on War and Geography* in Colin S. Gray & Geoffrey Sloan (eds) *Geopolitics: Geography and Strategy*, London: Frank Cass, 1999 p. 206
- 29 Towle p. 11
- 30 AP 3000 p. 2.9.2
- 31 Air Chief Marshal Sir Richard Johns, Chief of the Air Staff, Address to the Royal Aeronautical Society, 21 September 1999
- 32 Chaliand p. 899
- 33 US Joint Pub 3-01.1 *Aerospace Defense of North America*, Washington DC: Joint Chiefs of Staff, 1 November 1996, p. GL-2
- 34 Benjamin S. Lambeth *The technology Revolution in Air Warfare in Survival* Spring 1997 p. 80
- 35 AF Manual 1-1 vol II p. 65
- 36 Gray *Explorations in Strategy* pp. 64.5
- 37 John Sheldon *Space As The Fourth Environment* in *RUSI Journal* October 1999 p. 56
- 38 AP 3000 p. 2.4.8
- 39 Commander Sam J. Tangredi *USN Space is an Ocean* in *US Naval Institute Proceedings* January 1999 p. 53
- 40 Benjamin S. Lambeth *Air Power, Space Power and Geography* in Gray & Sloan *Geopolitics* pp. 64-5
- 41 See David Lonsdale *Information Power: Strategy, Geopolitics, and the Fifth Dimension* in Gray & Sloan *Geopolitics* pp. 137-157
- 42 Sir Michael Howard, cited in AP 3000 p. 3.11.1
- 43 Sabin p. 242
- 44 AP 3000 p. 1.2.2
- 45 Gray *Explorations in Strategy* p. 87
- 46 Brian Burridge *Strategic Guidance and the Context of Air Power* in *RUSI Journal* June 2004 p. 33

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