The Maritime Perspective of Air Power

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Cdr Walker's article, *The Maritime Perspective of Air Power*, takes a conceptual look at air power and brings out the naval view of its use, utility and management. From the very earliest days of powered flight, air power as a capability has been incorporated and blended into maritime operations and this deep sense of integration shapes the maritime perspective of air power to this day. The air is a vital dimension of the maritime environment which helps explain the integral nature of the employment of air power in maritime solutions. The article develops several themes and uncovers the differences in approach that set maritime aviation apart from land-based air operations. Aspects such as support, logistics, technology, mobility, flexibility and air and sea-mindedness are investigated together with exposing the controversial issues of command, control and ownership. Aimed to promote debate, the article offers an alternative perspective of air power that is complementary to, but subtly different from, the views others involved in its execution might hold.

'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.'[1]

In maintaining a broadly balanced set of armed forces, able to operate in the land, maritime and air environments, the UK retains a number of options for the use of military force. Each has advantages and disadvantages which can be applied across the spectrum of military action and they are, quite understandably, viewed differently by those practitioners involved. The use of air power and its relationship to maritime power is an area which has stimulated debate for much of the last 100 years. These debates have exposed a number of areas in which the view of air power is different according to whether you observe it as a concept from a maritime background or an air-dominated education. It is these subtleties in perception when considering air power from the maritime world that the article will attempt to elucidate. This article does not seek to re-examine the entirety of air power as a concept, but it will investigate it as a maritime concept, what air power means, how it is employed and how it relates to maritime power. The major conclusion is that air power is an integral and vital part of maritime power and, from a maritime viewpoint, the two cannot be separated. The management of the integration then becomes an important issue, but what the article makes clear is that there needs to be a maritime lead to gain best utility of air power in the maritime environment.

It would be far too easy to use the article as a vehicle for a RN versus RAF think-piece, but this approach would be naively simplistic. Much more valuable, and ultimately more enlightening, is to remain at the conceptual level, allied to occasional strategic thinking and backing argument with operational example. Having looked at what air power actually is, where it operates and how it developed in the maritime environment, the essay will give a naval perspective of air power, which at times will be necessarily and rightly 'dark blue' in focus, and may challenge some 'light blue' thinking. This is done not to be purposely antagonistic, but rather to reveal the maritime approach to air power and to promote discussion and counter-argument.

"Strange as it may seem, the Air Force, except in the air, is the least mobile of all the services. A squadron can reach its destination in a few hours, but its establishments, depots, fuel, spare parts, and workshops take many weeks, and even months, to develop."[2]

Churchill's quote from the 1940s may be controversial but it is one which illustrates, directly and indirectly, some of the central themes upon which this article is founded. It is clear that mobility, for example, is at the centre of Churchill's thinking, and indeed is still at the fore of contemporary discussion on the expeditionary nature of the UK's armed forces[3] and the deployment options that decision makers, be they military or political, have at their disposal. But mobility is more than just physically 'moving about' and includes preparations, supporting infrastructures and indeed the distinction Churchill recognised well, namely mobility of an air platform in

the air ranged against mobility of the air assets as an entity. The support aspect will feature prominently, the discussion centring on the premise that maritime forces *maintain* support availability at all times rather than *initiate* support infrastructure at a moment of need. Of course, maritime logistics has constraints, too, and these will be exposed. Other themes that will be developed include the characteristic of impermanence, one of the limitations of air power acknowledged in AP 3000.[4] This characteristic leads to a maritime perspective in which air power is part of, and integral to, an overall solution, but not the solution in its own right. A justification for air power without recourse to other forms of power is hard to reconcile in naval doctrine. Technology is a key aspect of air power, particularly in the Unmanned Air Systems (UAS) and Space domains, and its effect on operations in the maritime environment will be examined.

Implicit within this is that 'Air Power' exists, but that its eventual effect is not necessarily shaped by its origin. A related theme, and one which has received significant debate elsewhere, is the 'seam' between the maritime and the air environments. This article will espouse the view that the maritime / air seam is not the natural boundary, as it implies two separate bodies being managed where they are forced to meet, with the attendant issues of environmental tension. The article will argue that a better solution to managing a seam is to integrate the air and maritime from the outset such that any seam dissolves to nothing more than a delineation between capabilities provided from the same environment. This has long been the view of many maritime commanders – that air power delivered at and from the sea should not be the preserve of an independent body of aviators under separate control, but has greater utility when conducted by those who are inculcated into maritime thinking and are able to bridge the maritime / air seam inherently rather than through compromise. Maritime experience is the critical path.

In discussing air power as a concept, the current definition given in AP 3000 is appropriate: *'The ability to project power from the air and space to influence the behaviour of people or the course of events.'*[5] The definition does not detail from where the air power originates or how it comes to be in the air environment. Air power cannot inhabit the air environment permanently. Whilst developments in UAS are increasing presence times dramatically, they still require a land or maritime base from which to operate and although satellites create a permanence, they are not able to be used to project power as yet. Air power must therefore originate in either the land or the maritime, and this helps explain the maritime perspective of power projected from the air. In essence, the maritime view is that air power cannot be segregated from maritime operations or the projection of maritime power any more than, say, missiles may be; air power is one component of maritime power and is considered integral to it. The converse, the view that air power is intricately linked with the maritime, is not in the minds of many air power proponents; AP 3000 makes scant reference to the operation of aircraft or air platforms from ships.

Through a study of history the present may be better contextualised and this is true of the maritime perspective of air power, which has its origins in the very earliest years of both lighter-than-air and heavier-than-air flight. Navies were quick to realise the benefits of using the air dimension to extend visual range.[6] The events are well documented in many books with far greater insight and academic analysis than can be presented here,[7] but an insight into the genesis of the maritime view of air power is useful as it helps explain the deep sense of integration with air power that pervades and shapes maritime thinking to the present day. As the United States Air Force School of Advanced Airpower Studies declares in its motto, *'From the past, the future.'*[8]

During the First World War, as pioneers of aviation were pushing boundaries in every respect, so the ability to use the air environment was brought into naval doctrine. Initially offering a simple spotter service, the use of air power expanded the naval horizon and gave valuable information on enemy position and disposition. This developed into the ability to deliver ordnance from the air, following the lead of the use of air in support of land campaigns towards the end of WWI. History illustrates the crucial point; air power was not conceived as a concept in its own right. Air power was an extension of maritime or land power by another means, enabled by the technology which allowed man to take to the air. The initial conceptual work did not foresee the air environment as being necessarily distinct from maritime or land, rather air power was a means through which land or maritime forces could project their power in a different way, assisted by advancing technology. This has had a profound effect on the maritime perspective of air power ever since, in that it has shaped a fundamental principle that air power is one part of the maritime environment, and should never be separated from it. *'Air power is integral to maritime power.'*[9]

Then as now, the use of the air environment was the cause of debate. The second Smuts report, in Aug 1917, concluded that an *'...air fleet can conduct extensive operations far from, and independent of, both armies and navies.'*[10] Passionate dissent followed, notably from the senior officers of both the Army and the Navy, probably because this concept of air independence had never been practiced. Air power had developed as means of projecting power in support of land and maritime aims. One of the reasons for suggesting air force independence, that air power had strategic effect, was not in doubt, but removing this effect from the two environments which were the users and beneficiaries of the effect was strongly opposed. By 1918, the maritime perspective called for embracing the air environment as a dimensional expansion of the seaborne environment. It did not countenance a separated force for delivering the air effect. Perhaps surprisingly, considering what it was ceding,[11] the Navy agreed to the formation of the Royal Air Force, amalgamating the Royal Flying Corps and the Royal Naval Air Service, on 1 April 1918.[12] Control of all matters aviation passed away from the navy and the army. The arguments between air and maritime began in earnest[13] and have continued, on and off, to the present.

As Dr. Jeremy Stocker notes in a previous article in The Air Power Review, *'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.'*[14] Quite so, but some further thought on 'dimension' and 'environment' is appropriate. The terms are not precisely interchangeable in the way Dr. Stocker infers. To explain, the term 'environment' is accepted as referring to maritime, land or air – the traditional military domains of operation which have demarcated the Services; dimension indicates the space of movement within each environment. The maritime perspective is that the air environment is not regarded as separate from the sea, in much the same way that the other less-obvious dimension of the maritime environment, the sub-surface, is considered as part of the overall maritime environment. Equally, the land environment, in the littoral especially, is a domain in which maritime operations occur and has been ever since soldiers were transported by ships for the purpose of waging war in foreign lands. Naval forces conduct their business in all three of the accepted military environments of maritime, land and air; naval forces have properties of cross-environmental operation *within* each environment rather than projecting effect into one from another. It is this that forms a baseline of maritime conceptual thinking. Air only operates in the air environment. It may have *effect* in the maritime and land environments, but they are not part of its own in the way air is part of the maritime. Land forces operate in land and air (through the Army Air Corps), and can also have effect in the maritime (shore-based artillery). Only the maritime is able to utilise all three environments inherently, through ships and submarines, aircraft and amphibious forces. Maritime power operates across the environments and this impacts the perspective a navy has on air power.

By combining the above arguments and extending the notion of 'dimension', an interesting observation is revealed. Traditionally, the air environment has been viewed as three dimensional, but this does not accord with the maritime view of dimensions. Air power exists within the air environment – it does not do its business when it is on the ground or on the surface of the sea as the definition given in AP 3000 acknowledges – air power is the projection of power *from* the air.[15] The platforms which deliver that power may move in three dimensions, but as a whole air power occupies a single environmental space, and whilst it has movement within that space it cannot cross into other environments. Maritime power does encompass the other environments, by using them to achieve effect, which reinforces the maritime perspective that air power is part of, and integral to, maritime power.

The four roles of air power are neatly and eloquently summarised in AP 3000 (Fourth Edition); Control of the Air and Space; Air Mobility; Intelligence and Situational Awareness; Attack.[16] Within these,

the aspects of air power are expanded and the full range of air power tasks is described. All are important, and can be critical, to the success of a campaign. But on their own, they serve little purpose. Controlling the air and space in itself does not offer advantage unless that control is used to enable the employment of other forces, be they military or civilian, or to provide security under which other elements of a joint force can operate. Similarly, there is scant reward in prosecuting a target unless the effect of so doing is melded into a wider strategy. Air Mobility has undoubted benefit in being able to reposition forces rapidly for influence or combat effect, to evacuate casualties, to support forces with tactical lift or to increase operational tempo, but all these attributes are only relevant if other forces are part of the equation. On its own, the ability to move rapidly is not decisive. It is only through the marriage of the characteristics of the air[17] and the requirements prevailing in other environments that the utility of air power is fully harnessed. From a maritime perspective, air power is seen as a function which allows an overall solution to be implemented in the most efficient way. Air power is in itself not the solution. In planning maritime campaigns, either as part of joint reaction or in isolation, several options may exist, from the pure naval response, through the use of air power at and from the sea, to the deployment of landing forces into a littoral, and eventually land, environment. The maritime effort will be a combination. An air solution is just that – an air solution. It cannot draw upon the other environment's characteristics, yet it needs either land or maritime bases to exist. Air power needs *permission*; it is unable to perform unless either the land or maritime component is aware of its existence and has factored its use into an integrated campaign plan. It is thus reasonable to expect that air power is viewed, from the maritime perspective, as contributing to the solution space rather than of being the solution space.

Extending this argument further, there is a rightful acceptance within naval doctrine that the maritime environment should not provide the sole means of deploying air power. By employing air power at and from the sea, however, the attributes that are applied to maritime forces, such as flexibility, reach, persistence,[18] are also lent to the air elements. This makes them particularly suited to certain operations, such as Theatre Entry and establishing initial control, especially where host nation support or access, basing and overflight are restricted. Maritime air power is, in maritime thinking, not a substitute for land-based air power, but it is a valid and useful complementary option to enable the clear benefit of air power to be brought to bear where land-basing is not possible or desirable. Moreover, maritime basing also offers utility even where land-basing is available, as the continuing presence of aircraft carriers in the Gulf and Arabian Sea have demonstrated. Political sensitivities and the wish to avoid long-term obligations may lead to a sea-based solution as well as a land-based option.

Technology plays a crucial role in determining the effectiveness of air power. An exceptionally detailed and informative account of technological advances and their integration into

all aspects of air power is given by Air Vice Marshall Mason in his article *'The Technology Interaction'*,[19] but this does not address the one area of interaction which is vital to gaining full advantage from such advanced air forces, namely the interaction with the other environments. Even in the section headed 'Maritime Operations',[20] AVM Mason does not articulate the integration of air power forces and technology across the air and maritime environments. Yet all principal naval platforms, and especially those whose purpose is to integrate air power into maritime operations, have technology specifically developed to support and employ air power. Technology provides an edge in combat, but that edge is soon blunted if the technology does not afford the ability to operate in an integrated fashion. The naval perspective is founded on the premise that maritime and air technology must develop in unison, nowhere more so than in the ISTAR arena, to enable air power to fulfil its potential. In air power thinking, technology serves to create an air edge; the difference in naval thinking is that technology creates an advantage that transcends the boundaries between maritime and air power and forms closer integration between the two. In an increasingly joint structure, this, aligned to technology, and not technology alone, will create the combat edge.

Returning to the theme of support, there is a fundamental difference in the process by which logistic networks are established in the maritime environment when compared to the mechanisms to employ and sustain expeditionary land-based air power. An air force, generically, will have the necessary functions to be able to collect, transport, deposit, establish and protect the combat elements of the air force to another airfield, assuming one is available and suitable. This has to occur on each occasion it is called for, and for each new base it is required in. Here is where maritime process differs, through necessity rather than anything else. A maritime force has to be able to routinely sustain itself wherever it goes. It takes its logistics with it such that, initially at least, no further support infrastructure needs to be established. Of course, this does not give an indefinite solution as eventually a naval task group, even one with several replenishment ships, will be depleted of food, fuel, ammunition or spares. But it can exist without external support for an extended duration. It is this mindset which colours the maritime concepts of air power, too, as it will necessarily be accounted for in the same way as any other aspect of naval power and therefore will be viewed as part of the combat power that needs support. Navies are set up to do this inherently and permanently.

The term flexibility is constantly applied to military forces, and this implies that several options for the use of their power exist. Their utility is in their employment as instruments of power, from 'soft' diplomacy to 'hard' warfighting. To be credible, even diplomacy needs the backing of being able to bring other means or power to bear should the political process fail. The ability to use force gives a position of strength from which a nation may conduct its affairs, but this use must be guaranteed to have any impact. There are numerous examples of the use of air power from

overseas bases; so too are there many examples of access being denied or constraints[21] being placed on the missions that may be flown from non-sovereign bases.[22] This challenges the characteristic of ubiquity[23] that is often applied to air power since it may be the case that the delivery of air power from a land base is simply not available, not allowed or not viable. Maritime platforms do not suffer the same limitations; they remain sovereign bases wherever they are and can, in the main, operate in international waters. Ships have an inherent mobility. The maritime view of air power is thus not binary and the way in which air power is integrated into maritime solutions re-instates its flexibility. To deny that air power from the sea has limitations would patently be injudicious, but the maritime environment does bring a measure of choice and flexibility that may not be present, or assured, in land basing options. Should conditions change at a land base such that support from a host nation in withdrawn, there is no alternative but to cease operations or move to another base. From a maritime base, air power is not affected thus, and the base can and does move to maximise advantage as a situation develops. The maritime perspective is that air power can become flexible, can be endowed with a high degree of ubiquity and can be integrated into an overall plan with some certainty that it will remain available. One of the most obvious manifestations of this is the ability for maritime elements to manoeuvre around weather and thus maximise flying opportunities. A land base, on the other hand, is immobile.

Revisiting history, following an enquiry into the control of Fleet Air Work in 1923, the Balfour Committee recommended all naval airborne observers were to be naval officers, with 70 per cent of carrier pilots being naval officers.[24] The figures may be debated, but the view that air power in the maritime environment is more efficiently conducted by those with a maritime understanding remains. The extent to which this understanding is provided is the subject of separate deliberations, but the maritime view is that it cannot be adequately given with minimal exposure to the maritime environment, any more than a true appreciation of Air Land Integration can be gleaned from a limited time spent studying army manoeuvre and air support requirements. What counts is experience, and this can only be gained through immersion in the maritime environment at regular intervals and for extensive periods. In 1664, King Charles II recognised the significance of sea-mindedness amongst soldiers when he gave Royal Consent to the formation of a maritime foot regiment.[25] Francis Grose records that soldiers not familiar with the maritime environment were *'..for some time, until they had been accustomed to the sea, in a great measure unserviceable...'*[26] and it was this that prompted the permanent assignment of soldiers to the maritime environment. The Royal Marines had been born. Move forward some 250 years, and the first aviators to fly from sea were naval and marine officers by background, and it soon became apparent that to fully bring the powerful effect of aircraft into warfighting required some degree of understanding of the maritime environment, air power

being an extension of maritime power as argued previously. The Royal Naval Air Service was formed. It was the same with land based squadrons, manned by army officers in the Royal Flying Corps. With the advent of the Royal Air Force, the maritime experience and expertise was lost after the First World War as air power concentrated its efforts into operations in support of land forces. Having suffered a general lack of resources and investment, the importance of sea-minded aviators was formally acknowledged in 1937 with the formation, under Admiralty control, of the Fleet Air Arm. The principle of sea-minded air power still applies today, and the maritime perspective, quite naturally, is that air power in the maritime environment requires a maritime understanding deeper than that gained by limited acquaintance.

Air power in the United States developed in a very similar fashion to the UK, and when faced with discussions pertaining to an independent air service, the US Navy fiercely resisted. Their resolve was stronger than the Royal Navy's, however, and in order to prevent the control of maritime aviation slipping from their grasp, the US Navy integrated air power into its doctrine and operations so tightly that it became ingrained.[27] US air power truly was part of US sea power. To this day, the US Navy has retained an air arm independent of US Air Force control, a position that is unlikely to be overturned any time soon. The contested issue of 'ownership' has appeared many times in the history of air power in the UK, and it is not for this article to ruminate further on the matter. It is sufficient to say that the maritime view is that those elements of air power which operate at and from the sea should ideally be under maritime command and control as an integrated element of the maritime force. The UK is unique in working under a system which sees some of the air assets which have a role in maritime aviation being wholly controlled by another service. Either the UK is exceptionally forward thinking and will eventually demonstrate the success of this approach to other navies, or it is alone in its appraisal of the maritime / air power seam.

Air-mindedness[28] is essential for maximising the effectiveness of air power. Similarly, so is sea-mindedness for maritime power. But where maritime and air power meet, which prevails? One argument is that maritime understanding should have primacy because as an environment it encompasses the air dimension. For maritime aviation, an air-minded mariner is required. This does not mean that air power from other forces cannot be integrated into the maritime when required, but this integration occurs with improved efficiency where it augments existing maritime air power rather than being an independent addition. The maritime perspective of air power is that, as an integral part of the maritime environment, understanding the maritime environment is key. This can only be achieved through experience and education, which means closer integration between maritime aviators and other airmen. In delivering air power at and from the sea, a balance is required. There will be occasions when air platforms from both the Army and the RAF, and indeed other

nations' forces, will operate from RN ships in order to achieve the required effect. But to offer the full utility of air power, there needs to be an indigenous maritime cadre to lead the way.

It is fair to conclude that the view of air power from the maritime perspective is one of integration. The air dimension is an inseparable part of the maritime environment and one which simultaneously expands the utility of maritime power, or at least of air power delivered at and from the sea, and forms a flexible and integral aspect of naval solutions and operations. From a maritime perspective, air power is part of maritime power. Air power in the maritime cannot provide the entire air solution, however, and therefore it is complementary to air power delivered from land bases, which is justifiably the main effort of an air force be it independent or otherwise. The key is integration, with a maritime lead when air power is operating in the maritime environment. Air power is not something which is attached to the maritime, it is an inherent part of maritime forces and needs to be managed accordingly. Accepting and understanding this would perhaps bring much-needed clarity to the future direction of air power within the UK's Armed Forces. As the motto of the UK's Centre for Air Power Studies, *'Concordia res parvae'*, suggests, air power practitioners of all backgrounds should *'Work together to accomplish more'*.

Notes

[1] Dr. Jeremy Stocker, 'There is no such thing as Air Power', *Air Power Review*, Spring 2005, 20.
[2] Winston Churchill, *The Second World War Vol. II: Their Finest Hour*, (London: Cassell, 1949), 384.
[3] Defence Strategic Guidance 08, Part 1, Section 2, (London, MoD, 2008),1-2-2 and MoD's Cm 7794, *Adaptability and Partnership: Issues for the Strategic Defence Review*, (London, HMSO, 2010), (The Defence Green Paper).
[4] AP 3000, *British Air and Space Power Doctrine*, Fourth Edition, (MoD, 2009), Chapter 1, p.17.
[5] AP 3000, Preface, p.5.
[6] David Wragg, *Wings Over the Sea: A History of Naval Aviation*, (Newton Abbot, David and Charles, 1979), 10.
[7] Bernard Ireland, *Naval Air Power: The Complete History From 1914 to the Present Day*, (London, Harper Collins 2003) and Donald MacIntyre, *Wings of Neptune: The Story of Naval Aviation*, (London, Peter Davies, 1963).
[8] Lt Col Mark Jelonek USAF, *Toward an Air and Space Force: Naval Aviation and the Implications for Space Power*, The CADRE Papers, (Maxwell Air Force Base, Alabama, Air University Press, 1999), 5.
[9] P. S. Das, 'A View From the Sea' in J. Singh (Ed.), *Air Power and Joint Operations*, (New Delhi, Knowledge World, 2003), 243.
[10] Michael Armitage, *The Royal Air Force*, (London, Cassell, 1999), 26-28.
[11] Christina J. M. Goulter, 'The Royal Air Force and the Future of Maritime Aviation', in Andrew Dorman, Mike Lawrence Smith and Matthew R. H. Uttley (Eds.), *The Changing Face of Maritime Power*, (Basingstoke, Macmillan press Ltd., 1999), 160.
[12] Armitage, *The Royal Air Force*, 27.
[13] Tim Benbow, 'Naval Aviation', in E. Grove and P. Hore (Eds.), *Dimensions of Sea Power: Strategic Choice in a Modern World*, (Hull, The University of Hull Press, 1998), 70.
[14] Stocker, 'There is no such thing as

Air Power', 11.
[15] AP 3000, Preface, p.5.
[16] AP 3000, Chapter 3, 37-60.
[17] AP 3000, Chapter 1, 16-19.
[18] BR1806, *British Maritime Doctrine*, Third Edition, (London, The Stationery Office, 2004), 28-34.
[19] AVM Tony Mason, 'The Technology Interaction', in S. Peach (Ed.), *Perspectives on Air Power: Air Power in its Wider Context*, (London, The Stationery Office, 1998), 131-166.
[20] Mason, 'The Technology Interaction', 162-165.
[21] Turkey offers a good example. Until the opening stages of the Gulf war, US forces based in Incirlik were only allowed to be employed on humanitarian missions or for limited logistical support. See Lawrence Freedman and Efraim Karsh, *The Gulf Conflict 1991: Diplomacy and War in the New World Order*, (London, Faber and Faber, 1993), 352-353.
[22] Arthur Williamson, 'Challenges Facing Military Power', in S. Peach (Ed.), *Perspectives on Air Power: Air Power in its Wider Context*, (London, The Stationery Office, 1998), 331-333.
[23] AP 3000, Chapter 1, 16-17.
[24] Brian Johnson, *Fly Navy: The History of Maritime Aviation*, (New York, William Morrow and Company, Inc, 1981), 110.
[25] L. Eyde, *History of the Royal Marines Forces, 1664-1701*, (London, Harrison and Sons, 1893), 1.
[26] Francis Grose, *Military Antiquities Respecting a History of the English Army from the Conquest to the Present Time*, Vol. I, (London, T. Egerton and G. Kearsley, 1801), 167. (For readability, the citation has been altered to replace the old English 'f' in the original text with the modern 's'.)
[27] Jelonek, *Toward an Air and Space Force*, 13.
[28] AP 3000, Chapter 1, 25-26.