

## Viewpoint

# Thinking Through the Central Blue<sup>1</sup> - Personal Reflections of the Air Power Thought

By Air Commodore (Retd) Professor Peter W Gray

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**Biography:** Peter Gray holds an Honorary Chair in Air Power Studies at the University of Wolverhampton where he is a Principal Lecturer on the MA in Air, Space and Cyber Power Studies. He was Director of Defence Studies (RAF) from 1999 to 2002 and has been both a Portal and Tedder Fellow. He has published and lectured internationally on air power and strategic leadership over the last 25 years.

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**Abstract:** This article examines a number of cyclical arguments or paradoxes that have existed in air power thinking over the decades. They include the balance between training and education; the balance between technology and humanities and the role of history.

## Introduction

The discourse on air (and space) power thinking over the last dozen decades, or more if we encompass the whole period since Tennyson's *Locksley Hall*, has been riddled with paradoxes.<sup>2</sup> Some of these have been fleeting, but many have been recycled with changes in strategy, differing views among senior commanders, emergence of new technologies, budgetary demands and tactical or operational dilemmas. For example, the debates over the primacy of air power versus military forces physically holding ground seem endless. Some major lines of thinking have evolved such as the Douhetian principle of the 'knockout blow' which moved through a phase of attacking vital centres and on to concentric circles of centres of gravity.<sup>3</sup> On the other hand, central tenets such as reconnaissance, in all its forms, and control of the air have remained enduring.

This article will reflect on some of the enduring paradoxes and will look at possible explanations as to why the viewpoints remain unresolved. It must be stressed that, as covered in the subtitle, these are personal reflections based in part on observations made over at least the last 25 years of direct involvement in the teaching, writing and lecturing on air, space and cyber power history theory and practice. It would be possible to attack this issue systematically from the earliest days leading up to the First World War and follow through identifying major milestones over the intervening period.<sup>4</sup> Each event could be examined in the light of changes in policy or high-level strategic thinking, innovations in technology and radical changes in the operational arena necessitating debate. Such an approach, however desirable, is far outside the scope of a short article. Similarly, it would be possible to limit such discussion to the last 25 years to coincide with the anniversary of the first edition of the *Air and Space Power Review (ASPR)*. But arguably, this would cause the omission of much rich material. Instead, a more thematic approach will be adopted covering the major areas where significant divergences of approach have been identified and, importantly, are likely to endure into the future as it becomes more technologically challenging.

## A Technical Service: Education and Training

One of the most enduring debates in all air forces encompasses discussion over the balance between education and training. A sub-set of this includes the most desirable ratio between the two. Many policy makers, military and civilian, have consistently argued that as an essentially technical service training in the fundamental aspects of aircraft technology is an essential precursor to the detailed areas of tactics, techniques and procedures. This viewpoint holds that educating personnel is an unnecessary distraction, especially in their formative years. This is a rather simplistic depiction, but as many former Directors of Defence Studies (RAF) have experienced it is one that has raised its head with varying degrees of stridency over the last half-century. As already suggested above, as armed forces move into an era of ever more complex technology, including cyber and artificial intelligence, this trend has not, and will not, go away.

It is improbable that any air power advocate, theoretician or practitioner would advocate the opposite end of the spectrum and suggest that education alone would suffice. Rather the real

debate is more on the ratio of air power education to training and at what stage in people's careers should it occur. There is a detailed specialist literature on the role of educating military personnel.<sup>5</sup> In addition, there is a wide range of studies, mostly from business schools, on learning organisations and the role of education therein.<sup>6</sup> The lamentable reality, however, is that for the nay-sayers, the vast bulk of this learned material remains unread. Whether this is from laziness, anti-intellectualism, prejudice or just a simple desire for the whole to become a self-fulfilling prophecy is hard to discern; arguably it is a combination.

Those that would argue in favour of some balance would opine that it is essential that personnel – of any rank, trade or specialisation – should receive some education in which there is a degree of academic rigour to differentiate it from straightforward training. Beldon and Gray have argued that this transforms a mere trade into a profession.<sup>7</sup> It is, however, important to ensure that the education element being proposed is a true intellectual pursuit. For many years the various air force staff colleges have effectively substituted staff training for genuine education; learning to write staff papers rather than studying the underlying conceptual material was little more than a masquerade. The advent of Masters degree level material and assessment on staff college courses has changed this picture considerably and it is to the credit of various commandants and their masters, along with academic partners that this has produced better educated folk. But it should be noted that this is only 10% (or so) of the officer cadre. Again, in the UK, the Chief of the Air Staff's Fellowship scheme has addressed the broader appetite for real education across all ranks and specialisations.<sup>8</sup> For the air power practitioner (and air traffic controllers), the Open University in conjunction with the United Kingdom Armed Forces Military Aviation Academy has introduced a series of foundation degrees in order to accredit professional training. Additional modules can be taken to reach BSc honours level.<sup>9</sup>

A subset of this paradox is whether new recruits (officer aircrew in particular) should join the services straight from school or have attended university first. The OU scheme described above partly offsets this by allowing later degree accreditation. Ironically in the UK the lengthy periods of backlog in the training system have allowed trainees to catch up on educational tasks, but this is cyclical.<sup>10</sup>

At face value, the debate between education and training may seem somewhat arcane. But there is little doubt of the appetite among serving personnel to better themselves. Furthermore, if one takes career trajectories into account, those destined for the higher echelons of defence, or wider government service, need to be suitably educated to keep pace with their civil service counterparts and the legions of special advisers populating the corridors of power. The quality and the content of the argument rapidly becomes more important than the font and format.

### **A Technical Service: STEM and Humanities**

Taking recent Masters' degree level courses as a guide (so beyond the OU Aviation Systems courses at foundation level), it is clear that the subject matter goes rapidly from the trade or

technical to embrace, for example, Air Power History, Theory and Practice and Air Space and Cyber Power Studies.<sup>11</sup> Other variations include the Defence Studies MA run by King's College London with the Defence Academy. The education offerings are even broader when the wide gamut of Defence Academy work is considered (again with Academic partners such as Cranfield).<sup>12</sup> Many nations have similar academic offerings. But budgets in all areas are limited and prospective students often cannot have a free choice. To varying extents, the subject matter of courses and research, has varied over the decades from purely altruistic subjects, through highly topical subjects through to outputs that meet specific defence requirements.<sup>13</sup>

At face value, there is a very strong logic in this approach, not least because it is taxpayers' money being spent. There are, however, some difficulties. The first of these, from a purist's point of view, is that there is a difference between genuine academic research properly supervised and examined, and what could degenerate into bargain basement consultancy. These are not incompatible but need to be properly managed. This leads directly into a second potential problem area and that is the setting of the research need. Not all senior commanders have the academic background, or skill, to know what has been done and is sitting in the literature and then to pose a suitable research question. The whole is then compounded by the gestation period, especially for doctoral length works which could take four years plus from inception to publication.

From the point of view of air forces generally, and indeed wider society, the days of the genuine polymath ended with Leonardo da Vinci! The vast majority of us mere mortals have, therefore, had to specialize to a greater or lesser extent. That said a certain nameless Director of Defence Studies stated that he may not be the best educated officer in the Service but may have been the most educated! In no way, though, did he claim to be a polymath. To some extent, the subject matter to be studied or researched may boil down to individual preference covering ground from the classics through history to the frontiers of artificial intelligence. The need for the latter, along with expertise in cyber warfare, may be met from individual endeavour or from a range of agencies such as think tanks, academic consultancy or international collaboration. These entities are usually good at costing their time and resources. As always, producing a timely piece of work can be challenging. It has often been the case in the past that an academic product is delivered and is either out of date or the Service need has moved on. The other side of the coin is more problematic and that is the intangible benefits to the Service of a fulfilled and satisfied individual who has solved to their satisfaction a piece of historical or theoretical research.<sup>14</sup>

### **A Fighting Service: Strategic Thinking**

The debates over the role of strategic thinking, air power theory and the lessons from history have followed the same cyclical path as those already discussed. The hard-line viewpoint states bluntly that air forces have no need of strategic thinking or theory: they are there to fight and that performance on operations is all subsuming. The short version of this is that 'we do air power – not pontificate about it!' This may be a feasible stance to defend if the operational

theatre was static and existed in a vacuum. The reality is that air operations are always part of a wider military campaign which in turn is nested in a greater geo-political situation. The extent to which individuals need to be aware of the wider complexities will vary with interest and curiosity (to some extent), but more likely with seniority. The more involved an individual becomes with decision making, the more it is for them to understand the bigger picture. Eventually, their seniority may be such that understanding morphs into influencing the process or indeed actually commanding it.

This may sound somewhat obvious. But in the heat of the moment when courses of action must be debated and decisions taken is not the time to be inventing a new vocabulary, evolving theories, or debating historical precedents. This is particularly the case when the air commander is working alongside other component commanders who are not only skilled in such arts but are able to deploy a common understanding and professional language. To some extent, joint doctrine will help to provide the lubrication necessary. But the doctrinal process does not exist in a bubble. Nor is it handed down from on high in a ready to use package. It must be formulated in the light of current and future trends and consistent with the aims and objectives of government policy – which may be harder to discern than it sounds. This is especially difficult in periods where doctrine formulation is closely aligned with departmental policy.

The school of thought that believes that air forces only exist to fight has therefore to be expanded to embrace the need to be able to think at higher levels in the fields of strategy, ethics, policy (domestic and foreign) and international relations.<sup>15</sup> As discussed in *Educating Air Forces*, this function is embraced in many staff college courses around the world.<sup>16</sup> In most of these institutions, the academic rigour can usually only be provided by employing academic partners. The alternative is to educate existing personnel to tertiary level (doctoral) and allow them to rotate through existing colleges and universities to gain the necessary experience. Both approaches work and have been used to varying extents. The problem, however, is that they require a considerable lead time to identify suitable people and institutions, train them and build the body of experience. This is not a line of development that can be turned off and on at the whim of a senior commander trying to make an impact in a brief tenure in office.

### **A Modern and Forward-Looking Service: No Place for History**

A senior administrator in an academic institution once remarked that military history was merely nearly dead generals pontificating about their long-dead predecessors. The direct implication was that it was an unnecessary indulgence, notwithstanding the fact that it was a revenue stream for the university. A more serious, but equally hardline view, is that the pace and rate of change in developments in modern warfare render an historical view barely worth the effort. Some have suggested limiting the possible reach back to a particular time period or campaign. Others have sought to identify watersheds in history. The irony in the latter approach requires a pretty detailed knowledge of the history of the forces concerned (or the acquisition of professional advice)! It could be argued that the first Gulf War of 1990-91,

coupled with the end of the Cold War, fulfilled all these criteria. While this may seem reasonable to the people in many air forces, it would be interpreted as parochial and myopic by other military (and naval) folk who regard with some disdain the recent nature of air power.

It could be argued that all that is required from history is the accumulation of the recent experiences of the latest operations, detachments, and trials. The reality, however, is that this distillation of *'what has worked best'* is the seed corn of tactical level doctrine.<sup>17</sup> The same academic approach produces operational doctrine and so on. By stealth, therefore, history, albeit recent history, is an indispensable part of everyday military business – even if many would deny their link with either doctrine or study of the past! With the rate of change of technology so marked in all areas of warfare from artificial intelligence through network enabled operations to fifth generation air power, it is particularly important that we develop the analytical skills necessary to sort wheat from chaff.

As with the other paradoxes in this article, an inwards looking viewpoint is fine if the air arm in question is viewed, and views itself, in isolation. It becomes harder to sustain when historical debate, or a quest for precedent, is employed in a broader context. Some forces (of any arm) tend to view their history as a continuum and not amenable to artificial stratagems of division. Others would prefer to follow particular themes or roles of warfare which again requires a longer-term view. For example, an examination of control of the air would be incomplete without going back at least as far as the Battle of Britain or even the First World War. In both the joint and combined areas, a longer-term view is essential. Air-land co-operation would naturally include the Second World War as would the development of Combined Bomber Offensive with the USAAF. If one takes the debate beyond the military or operational arenas and encompasses the background to campaigns, an understanding of the labyrinthine history of the Balkans would be necessary to understand the conflict over Kosovo and Serbia. Similarly, the same could be said over the history of Iraq. The cynic could argue that such history is not the province of the more junior members of the air arms. But many are genuinely curious for the sake of knowledge itself or for the ethical grounding of actions proposed.

A further area in which history has utility is in the formation and maintenance of ethos. This has been the subject of many studies with the RAF and by its CAS Fellows.<sup>18</sup> Every fighting force values its ethos to a greater or lesser extent and air forces are no exception. For many the ethos of the Service will have been imbued as teenagers in cadet forces and reinforced through the selection and training process. One has only to witness the reverence with which Squadron (and other formation) Standards are held to appreciate the integral role that ethos plays in the existence of the component parts of the Service. The formation's history is an integral part of this including the aircraft flown and the battle honours acquired, often at huge cost and sacrifice.<sup>19</sup> History and heritage form important, arguably vital, aspects in establishing the identity of the Service and its people, both internally, nationally, and internationally. The Battle of Britain Memorial Flight and the RAF Aerobatic Display Team are classic examples of heritage and identity.<sup>20</sup> A detailed study of the air pageants at Hendon in the interwar years may not be

necessary to appreciate the long tradition of formation displays, but it is very much part of the Service ethos. If some interest within the Service is not maintained, it would end up delegated by default to enthusiasts' magazines!

### Concluding Comments

In many ways, this section title is a misnomer. The article has argued that, despite the potential for hardline viewpoints, the paradoxes discussed have been cyclical and therefore defying a specific answer or conclusion. The first, and arguably the most important point is the acceptance that they are indeed cycles. The wheel is reinvented, the moon waxes and wanes and whatever other simile one desires. Whether it be a Chief of Defence Staff, a Chief of the Air Staff or a Director of Defence Studies, each will occupy her or his own position on the cycle and direct accordingly. Some will have a passion for history, others for technology and innovation. That said, it is possible to identify a number of trends in air and space power thinking. The first of these is growing official acknowledgement of the genuine quest for real education at all levels and all ranks. The author has seen this first hand in the degree programmes and doctoral supervisions and examinations in which he has been involved. It could well be argued that the hunger has always been there, but the funding has been slow to follow. The appetite for learning is broad and the potential subject matter is vast and growing all the time. This presents a real challenge in choosing priorities. Cynics might argue that with whole life careers in decline, some potential students are merely seeking CV line entries. This may be so, but to deny them the opportunity would only serve to deter potential entrants or encourage early exit.

Another inescapable trend is the increasing complexity of the international arena, communications within it and the rising potential for conflict. Whatever the future holds, air and space power will have a major role to play and it is vital that the best is made of the available talents and assets. This will require personnel at all levels to have the intellect necessary to cope with uncertainty, stress, doubt and lack of immediate closure. Training is essential to operate the systems provided, but the higher-level skills are only acquired through education. The more senior people become, the greater the scope for complexity and the accompanying skill sets become more demanding. In the exercise of these skills, air and space power thinking needs to have been imbued and reinforced constantly so that it is part of their psyche and not made up on the hoof!

### Notes

<sup>1</sup> For air minded folk, the Central Blue is best associated with Marshal of the Royal Air Force Sir John Slessor's autobiography *The Central Blue: Recollections and Reflections* (London: Cassell, 1956). The title was taken from Alfred Lord Tennyson's poem *Locksley Hall* in which 'airy navies' grappled in the Central Blue. It was also used by David MacIsaac in his chapter 'Voices from the Central Blue: The Air Power Theorists' in Peter Paret (ed.), *Makers of Modern Strategy from Machiavelli to Hitler* (Princeton: Princeton University Press, 1943), pp. 624-47.

<sup>2</sup> Ibid.

<sup>3</sup> For a summary of Air Power Thinking and Theory see Peter Gray, *Air Warfare, History, Theory and Practice* (London: Bloomsbury 2016), chapter 4.

<sup>4</sup> For a detailed examination of the development of air warfare thinking in the pre-First World War period see James Pugh *The Royal Flying Corps, the Western Front and Control of the Air 1914-1918* (London: Routledge, 2016).

<sup>5</sup> The literature ranges from works such as General Sir John Hackett, *The Profession of Arms* (London: Sidgwick and Holden, 1983) and Samuel Huntington, *The Soldier and the State* (Cambridge MA: Belknap, 1955) through to Jay Luvass, *The Education of an Army: British Military Thought, 1815-1940* (London: Cassell, 1965). For an excellent recent work see Randall Wakelam, David Varey and Emanuelle Sica (eds.) *Educating Air Forces: Global Perspectives on Air Power Learning* (Kentucky: University of Kentucky Press, 2020).

<sup>6</sup> See, for example, Peter Senge, *The Fifth Discipline: The Art and Practice of the Learning Organization* (New York: Random House, 1993).

<sup>7</sup> James Beldon and Peter W. Gray, 'The Education of an Air Force – a Royal Air Force Perspective' in Wakelam et al, *Educating Air Forces*, p. 232.

<sup>8</sup> Ibid, p. 235.

<sup>9</sup> <https://www5.open.ac.uk/forces/supporting-forces/validation> accessed 3 Oct 23.

The author is an External Examiner for part of this programme.

<sup>10</sup> <https://www.defense-aerospace.com/flying-desks-not-planes-backlog-in-royal-air-force-fast-jet-pilot-training/> accessed 3 Oct 23.

<sup>11</sup> The author ran the former at the University of Birmingham and is deeply involved in the latter, mainly with RAF Dowding Fellows, at Wolverhampton.

<sup>12</sup> <https://www.da.mod.uk/study-with-us/colleges-and-schools> accessed 3 Oct 23.

<sup>13</sup> As required, for example, on the CDS M Res Fellowships as per Beldon and Gray, 'The Education of an Air Force – a Royal Air Force Perspective' in Wakelam et al, *Educating Air Forces*, p. 235.

<sup>14</sup> See Peter W Gray, 'Why Study Military History?' in Gary Sheffield (ed.) *War Studies Reader: From the Seventeenth Century to the Present Day and Beyond* (London: Continuum, 2010) pp. 17-34.

<sup>15</sup> For a discussion on ethics see Gray, *Air Warfare*, ch. 7.

<sup>16</sup> Wakelam et al, *Educating Air Forces*.

<sup>17</sup> For a more detailed review of The Nature of Doctrine see Peter W Gray, 'Air Power and Joint Doctrine, An RAF Perspective' in *The Royal Air Force Air Power Review*, Volume 3 Number 4, page 5.

<sup>18</sup> See for example Fin Monaghan's unpublished PhD thesis from the University of Birmingham, 'The Origins of the Organisational Culture of the Royal Air Force', 2018.

<sup>19</sup> As an example, see the RAF website and the brief Squadron histories: <https://www.raf.mod.uk/our-organisation/squadrons/101-squadron/> accessed 4 Oct 23.

<sup>20</sup> <https://www.raf.mod.uk/display-teams/battle-of-britain-memorial-flight/> accessed 4 Oct 23.



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