



# AIR POWER and JOINT DOCTRINE:

An RAF Perspective

**D**octrine inevitably means different things to different people. To some, the mere mention of the 'D – word' is an instant cure for insomnia. Yet for others, it represents the panacea for all matters of policy and practice.

This may be the means of defence against predatory treasury officials, or the ultimate authority for settling disputes. For some writers, doctrine is shorthand for accepted military thinking – for example, the official British Army doctrinal thinking on the early use of tanks was that they were only 'effective in masses'.<sup>1</sup> To others, doctrine represents the fundamental principles of military thinking that provide the foundations for generations of junior officers who, as they progress through their service careers, use the central tenets to influence their actions at every level of warfare from the tactical to the rarefied arena of force development, procurement and strategic policy making.

Doctrine can in no way, however, be taken as unchanging gospel; as Professor Richard Overy has written, 'military doctrine is neither ideal nor universal; it is historically specific and in flux, and the best doctrine reflects that reality'.<sup>2</sup> We must therefore ensure that our doctrine is not 'inscribed in stone' and that it is subject to constant and critical interrogation.<sup>3</sup> During the Cold War, NATO forces had the relative luxury of basing their planning on two manifestations of the threat: the Warsaw Pact forces would come over the horizon with little or no warning requiring instant force generation or there would be a gradual period of tension resulting in escalation to a war footing. In the 1973 Chesney Memorial Gold Medal Lecture given in the Royal United Services Institute, Professor Michael Howard stated that:

'I am tempted to declare dogmatically that whatever doctrine the Armed Forces are working on now, they have it wrong. I am also tempted to declare that it does not matter that they have got it wrong. What does matter is their capacity to get it right quickly when the moment arrives.'<sup>4</sup>





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only means of coercing Milosevic and his cronies at the start of both Deliberate Force and Allied Force. If air power is going to be expected repeatedly to take centre stage in modern conflict, it is vital not only that we get our air power doctrine right, but also that it is situated and understood within the joint arena. Should this task not be difficult enough in its own right, we must not neglect the importance of ensuring, as far as is possible, that our doctrine is consistent across the members of existing and potential alliances. As stated at the outset, doctrine means different things to different people.

This paper will therefore look at the nature of doctrine before going on to examine the methodology used in the United Kingdom to produce Joint Doctrine. The paper will then look at the unique features of air power in contemporary warfare before suggesting a more radical critique of how the doctrinal process may be seen to work.

## **THE NATURE OF DOCTRINE**

The North Atlantic Treaty Organisation (NATO) defines military doctrine as:

‘fundamental principles by which military forces guide their actions in support of objectives. It is authoritative, but requires judgement in application.’<sup>5</sup>

I would suggest that we no longer have this luxury. The multi-faceted nature of modern conflict, compared to the linear spectrum of an earlier age, is such that our doctrine needs to be up to date, relevant and understood by all of our people.

It is particularly important that we get our doctrine right in relation to air power. The end of the Cold War with its relatively bloodless victory has seen air power come of age, realising many of the aspirations of its early prophets. Air power could not have won the Gulf War on its own; but the 100-hour offensive could only have been made as effective as it was because of the aerial offensive that preceded it. Similarly, air power was the



This straightforward definition is cited, with approval, in the extant edition of British Defence Doctrine.<sup>6</sup> This pamphlet-sized document is at the head of the hierarchy of doctrine documents used by the British military. ‘Military’ is taken to encompass all armed forces.<sup>7</sup> British Defence Doctrine (BDD) does not purport to be a set of rules that could be applied without thought; instead it suggests that doctrine is a ‘framework for understanding the nature of armed conflict and the use of military force’. BDD goes on to explain the relationship between policy and doctrine:

‘Doctrine is the body of thought which underpins the development of defence policy; it is informative, whereas policy is essentially prescriptive. Doctrine has its foundation in history and derives its authority from being the distillation of much hard-won experience. Therefore it is enduring, but it is not unchanging. Doctrine evolves in response to changes in the political or strategic background, in the light of experience, or as a result of new technology. In turn, it influences the way in which policy and plans are developed, forces are organised and trained, and equipment is procured’.<sup>8</sup>

The careful wording of this bulleted paragraph highlights the underlying tension between policy and doctrine. Beneath this is the fundamental dilemma facing the armed forces in the post cold war era. With the demise of the Warsaw Pact, the services of virtually all NATO nations had to deliver early ‘peace dividends’ followed by annual defence of their budgets.<sup>9</sup> But at the same time, violent clashes in different parts of the world have tempted politicians to involve the armed services in a wide range of activities far beyond their cold war posture. Governments, with their policy advisors in close echelon, need the flexibility to respond to crises where national interests<sup>10</sup> are at stake or where humanitarian considerations demand. That this action may arise from the so-called CNN factor rather than from strictly altruistic logic matters little.<sup>11</sup> Doctrine can only be ‘informative’ in such circumstances. There is no scope for the military to challenge the wishes and desires of the government of the day by asserting that their putative actions are doctrinally unsound. And, on the face of it in a parliamentary democracy, nor should there be. The taxpayer is entitled to value for money, and where national survival is not at stake, defence expenditure is seen by many as an unnecessary luxury. That said, none of the services should be expected to deploy with either minimal training, or arguably worse still, having been trained for totally the wrong contingency. Military strategic level doctrine therefore acts as the source for a common approach through ‘training to consistent behaviour, mutual confidence and properly orchestrated collective action without constraining individual initiative’.<sup>12</sup> The final element of the paragraph highlights the desirability of the whole process being mutually reinforcing.

This theme was evident in the 1998 Strategic Defence Review<sup>13</sup> in which the foundations were laid for the formation of the Joint Defence Centre (this was later expanded to include Concepts of future warfare). In essence, the Centre would be responsible for the development of defence doctrine and was also to provide a joint framework for more specific single-Service doctrine.<sup>14</sup> An underlying assumption in the Defence Review was that the vast majority of future operations would be inherently joint and combined – a fact recognised in the first paragraph of AP 3000 British Air Power Doctrine.<sup>15</sup>

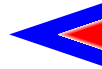


In Chapter 11 of AP 3000, the authorities obviously accept the place of single-Service doctrine in the hierarchy; the NATO definition is therefore accepted without qualification.<sup>16</sup> The introduction to this Chapter, however, starts with the definition of doctrine as being ‘what is taught; a body of instruction’.<sup>17</sup> This is followed with the warning that ‘doctrine’ is a loaded term that had developed differently among nations; as one could describe a British way in war, so there was a British way in air power doctrine.<sup>18</sup> This makes it clear that the United Kingdom’s air power thinking had been specifically thought through and was not merely an adaptation of United States Air Force doctrine. The principal author and editor of the document was the Director of Defence Studies (RAF) with considerable assistance from the Air Warfare Centre and selected staff from the Ministry of Defence<sup>19</sup>. The USAF equivalent is the College of Aerospace Doctrine, Research and Education (CADRE) located at Maxwell Air Force Base in Alabama; links between the two organisations are nevertheless close. Chapter 11 of AP 3000 goes on to stress that ‘knowledge and understanding of doctrine, and its application, help individuals to think more clearly in the chaos, fog and friction of crisis, conflict and war’.

It is axiomatic that doctrine must not be allowed to become dogma, however enduring we hope its central tenets will become. Some principles have become enshrined in air power thinking since its inception; in particular, the concept that air power is essentially an offensive weapon has withstood the test of time. Other influences include national interpretations of history, available resources and the incorporation of lessons learned from conflict or wars;<sup>20</sup> these factors will inevitably add to the national identity accorded to the body of doctrine. Set against this is the sharing of experiences in the conflicts that are undertaken as part of coalition. The majority of those responsible for the authorship of AP 3000 have taken part in operations alongside, inter alia, the USAF<sup>21</sup> and have access to the various publications emanating from Maxwell AFB.<sup>22</sup>

AP 3000 also states that air power doctrine should provide the intellectual framework within which the exploitation of air power and air warfare in general can be discussed, analysed and understood. That said, the issues below strategic level work are left to publications further down the hierarchy such as the RAF Air Operations Manual.<sup>23</sup>

British Maritime Doctrine<sup>24</sup> (BR1806) maintains inter-Service consistency by quoting, with approval, the BDD definition of doctrine.<sup>25</sup> BR1806 goes on to quote Admiral Sir Jock Slater who, as First Sea Lord, wrote in his introduction to the first edition that maritime forces ‘must be careful to avoid a dogmatic approach in thinking about the principles that govern maritime actions’; he goes on to say that ‘we must retain our reputation for innovation and for responding to political changes and technical opportunities’.<sup>26</sup> The authors of BR1806 insist that doctrine must be flexible in allowing commanders to challenge ‘received wisdom’ when appropriate and that it must be subject to ‘regular formal review to ensure that the accumulated wisdom being promulgated in the form of doctrine is as robust and relevant as possible’. Having warned against change for change’s sake, BR1806 contrasts doctrine at the strategic level with thinking at the tactical; at the former, doctrine will change only very rarely, whereas in the tactical arena it will be driven by equipment, threat and the environment.<sup>27</sup> BR1806 also fixes the



relationship between national doctrine and that agreed by NATO allies in that the UK prefers to influence NATO thinking and only elects not to ratify relevant issues in exceptional circumstances.

Although a systematic review of the doctrine of the world's air forces is outside the scope of this paper, it is instructive to look briefly at the nature of doctrine as envisaged by key allies. The United States Air Force (USAF), almost inevitably, takes the evolution of air power doctrine one stage further by including 'space' within its framing of the definition:

'Air and Space doctrine is an accumulation of knowledge gained primarily from the study and analysis of experience, which may include actual combat or contingency operations as well as equipment tests or exercises.'<sup>28</sup>

More loosely speaking, doctrine reflects what has usually worked best. Air Force Doctrine Document 1 (AFDD 1) describes its high level doctrine as being 'basic doctrine' which is defined as 'the most fundamental and enduring beliefs that describe and guide the proper use of air and space forces in military action'.<sup>29</sup> Operational and tactical levels of doctrine fall below this level and are guided by it. AFDD 1 goes on in addition to acknowledge joint and multinational doctrine as existing at each of these levels. Military doctrine, according to the USAF view, describes 'how a given task *should* be done to accomplish military goals; strategy defines how it *will* be done to accomplish national political objectives'.<sup>30</sup> Because war is an instrument of policy, military commanders must therefore 'ensure that policy governs the employment of military power and be prepared to adapt operations accordingly'.<sup>31</sup>

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From the Commonwealth perspective, the Canadian Forces neatly combine definitions from both sides of the Atlantic. They emphasise that military doctrine 'explains in broad terms how operations should be conducted so that operational objectives can be realised'.<sup>32</sup> Chapter 1 goes on to describe doctrine as that which is taught, prior to citing the formal NATO definition.<sup>33</sup>

In his Foreword to AAP 1000<sup>34</sup> the Chief of the Royal Australian Air Force describes the Air Power Manual as being the RAAF's strategic level doctrine – the expression of its 'fundamental beliefs and principles'. As an example of an enduring principle from which doctrine is derived, he states that the 'aircraft is an inherently offensive weapon'.<sup>35</sup> Equally, doctrine must recognize the importance of the air base, physical geography and pressures arising from social organization or technology. Beyond the Foreword, AAP 1000 suggests that doctrine is derived from three sources:

- The lessons of the history of war
- Theory – the outcome of strategic thought
- Demonstrated or desired technological developments.<sup>36</sup>

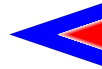


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AAP 1000 defines Basic Air Power Doctrine as being, inter alia, a set of endorsed principles for the guidance of commanders; the essence of current strategic thought; and an authoritative source from which both joint doctrine and procedures can be drawn. This is the fundamental philosophy for the employment of air power.<sup>37</sup> The manual also emphasises that basic military doctrine’s ‘prime purpose is to educate – to provide the foundation of professional mastery’ (emphasis in the original).<sup>38</sup> AAP 1000 specifically ascribes personal responsibility to all members of the RAAF for understanding air power<sup>39</sup> – every individual is ‘encouraged to learn more about air power – through reading and discussion and, if possible, writing. The practice of professional mastery, complemented by one’s own set of key skills will enable unique insights to be drawn as to how air power could be delivered better... all individuals have an equal responsibility – regardless of rank, category, mustering, appointment or location – to do their very best.’<sup>40</sup>

## ***JOINT DOCTRINE IN THE UNITED KINGDOM***

Mention has already been made of the Joint Doctrine and Concepts Centre. Its Director General and his staff took formal responsibility for Joint Doctrine from the Chief of Joint Operations in the Permanent Joint Headquarters on 1 Oct 99. As part of the process, the single-Service Heads of Defence Studies were due to collocate in the JDCC to act, inter alia, as a conduit between their own services and the Centre on all strategic doctrinal matters. The premise upon which the JDCC is working is that all doctrine at the operational level and above is, by definition, joint and is therefore the responsibility of the Director General. The editor of the latest edition of BR 1806 makes it clear in his introduction that future editions of that work would be written and published by the JDCC. The same is true for Air Power Doctrine and British Military Doctrine. The JDCC is also responsible for tactical level doctrine that is inherently joint in nature. The rest remains the responsibility of the single-Service warfare centres, albeit with JDCC oversight and co-ordination.



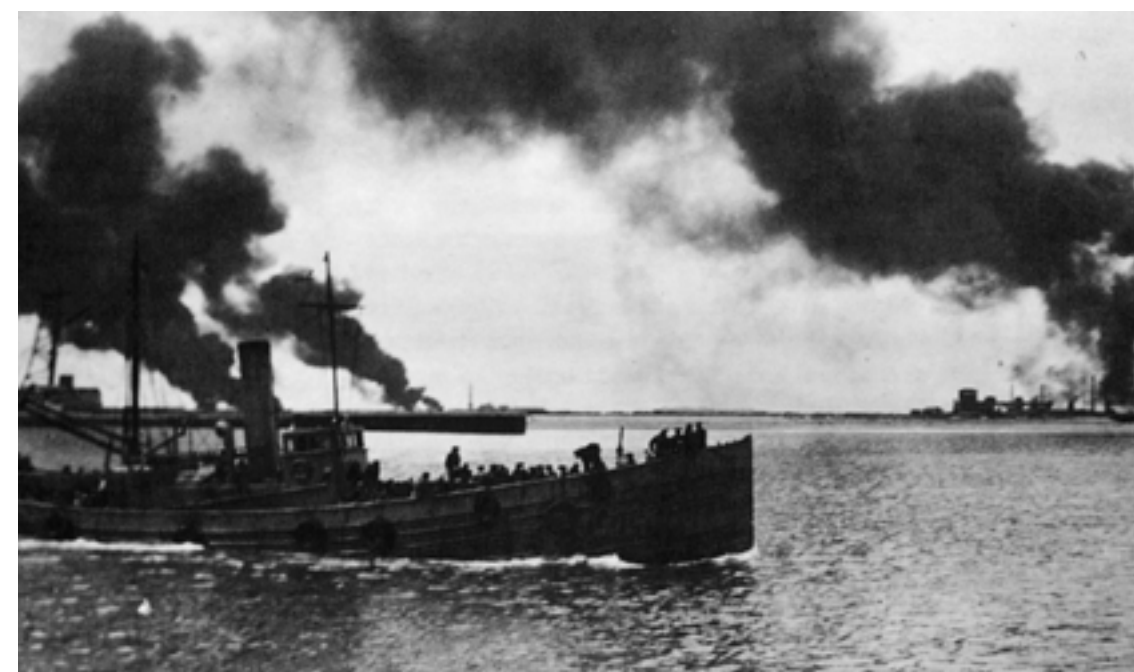
British Defence Doctrine is in the process of being produced by the JDCC under the direction of VCDS and will be issued under Defence Council authority. Subsequent iterations of BMD, BR1806 and AP 3000 will be compiled in the same way albeit with single-Service Board approval. In a recent interview, the DG JDCC confirmed the pragmatic approach between single-Service concerns and joint oversight.<sup>41</sup> The recent editions of the last two documents stress the joint nature of warfare and rigorously avoid dogmatic debate over ownership of platforms.

## **AIR POWER AND JOINT DOCTRINE**

At the outset of this section it is worth reiterating that the vast bulk of air power doctrine is consistent with wider military thinking on the joint and combined levels. Nowhere is this more evident than in the convergence of our views on manoeuvre warfare.<sup>42</sup> There will inevitably be areas of difference, however, and it is equally inevitable that I will spend more time discussing these than on topics of congruence.

A central tenet of British military training is that our officers and men (and women) are inculcated with their single-Service ethos long before we attempt to turn them into 'purple' beings. This ensures that the individual has a thorough grounding in his or her specialist field and will therefore in the future be able to contribute more effectively to their own Service and later in the joint arena. The obverse side of this particular coin is that they will bring their own baggage to the table whether this be differing interpretations of history or unhealthy doses of dogma. A fair example of the former could be the evacuation of Dunkirk in 1940. Many army officers and men still consider that the RAF had let them down over the beaches. This dogmatic assertion does not take into account the very real practical difficulties of co-ordinating close air support in such a fluid situation. Nor does it allow for the much more efficient use of air power in interdicting enemy supply routes and achieving vital air parity. The lack of radar cover over France and the sheer numbers involved prevented the RAF from establishing air superiority, but the evacuation would have been doomed had not the fighters kept the Luftwaffe at bay albeit unseen by the beleaguered soldiery. The reality was that all but ten of Fighter Command's Squadrons took part, flying over 2,700

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sorties; according to the Official History, the Luftwaffe were only able to interfere seriously with the evacuation on 2 out of the 9 days.<sup>43</sup> The dangers of dogma were apparent in 1940 in the debate over the use of bombers against German invasion barges and ports rather than against strategic targets in the homeland.<sup>44</sup>

To many soldiers, 'Command' implies direct responsibility for and control over those that have been put in his charge. To an airman, command of air power should be exercised at the highest level, but execution of the military tasks should be decentralised. Modern air power doctrine requires the allocation of all assets to the Joint Task Force Commander. It may well be that in a given situation, the vast majority of the air assets are allocated to the Land or Maritime Component Commanders rather than to the Air. This is centralised command and control.<sup>45</sup> Decentralised execution avoids over-prescriptive tasking and allows subordinate commanders the scope to interpret their commander's intentions, making the most of the assets available to them. What must be avoided is an unseemly spat over ownership of assets or, even worse, the dispersal of air assets into penny packets. As Tedder remarked after his experiences in the North African Desert campaign:

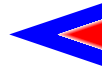
'Air Warfare cannot be separated into little packets; it knows no boundaries on land and sea other than those imposed by the radius of action of the aircraft; it is a unity and demands a unity of command.'<sup>46</sup>

This does not necessarily mean that only airmen can make the best use of air power or the Joint Force Commander must be 'light blue'. The circumstances of a particular conflict may make it more appropriate to have a soldier or a sailor as JFACC. What is important is that they understand air power doctrine and how to gain best advantage from the assets available. The welcome attendance of members of the other Services on the Air Warfare Centre JFACC course is testament both to openness and jointery at work.

The use of air power to achieve strategic effect has been dear to the hearts of air power theorists for over a century. A full analysis of their thinking is outside the scope of this paper,<sup>47</sup> but suffice it to say that the premise that air power may succeed in isolation from the efforts of sister Services is not conducive to the joint approach. No serious air power advocate would contend that prosecution of the enemy by air alone would guarantee success on every occasion. But all potential commanders of whatever cloth should be aware of the ability of air power to attack a target set, successful prosecution of which could have a genuinely strategic effect on the enemy.<sup>48</sup> The important aspect to be considered is that the commander's



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staff must identify the enemy strategic centre of gravity from the enemy's perspective – not through western-centric eyes. This is, or should be, an inherently joint activity with benefits beyond the utilisation of air power.

If the use of air power for strategic effect is close to the hearts of air power advocates, the matter of control of the air should be coursing through the veins of every military planner. Montgomery's assertion that loss of control of the air leads to a rapid loss of the war is as relevant today as it was in the Desert and in Normandy. There may be a popular misconception in some circles that control of the air will be ceded in the face of overwhelming US fighter cover. The reality is that it has to be fought for, established and then maintained. This is the ultimate service that air power can provide to any commander short of instant success in winning the war outright.



The exploitation of information superiority is absolutely vital if manoeuvre warfare is to be conducted. Only by getting inside the enemy OODA-loop is it possible to avoid a costly descent into attritional warfare. This process must be joint and must make full use of all collection methods with shared analysis of the final product. Again, debate over ownership of assets is anathema to efficiency.

As intimated above in the discussion on Dunkirk, the use of air power in Direct and Indirect air operations must be fully understood by commanders at all levels. It is highly improbable that the Joint Commander will have a surfeit of air assets. The reality is that he will have to prioritise his tasking and his weapons expenditure. He will not be able to afford the luxury of, to paraphrase General Colin Powell, 'doing bridges and power stations because we do bridges and power stations'. Nor will we necessarily be able to engage in 'tank-plinking' to produce media friendly statistics or video footage. The commander must ensure that the targets chosen will have a vital and deleterious effect on the enemy. Again there is emphasis on the word 'effect'. That said, air power must always be sufficiently flexible and responsive to be able to support ground troops in their hour of critical need – provided the commander has weighed fully the costs and benefits against the risks (not least of blue-on-blue incidents, of which examples abound from Normandy to the Gulf). To do this efficiently, a thorough understanding of joint and single-Service doctrine is essential.

The risks to friendly forces, whether they are deployed or operating from home base, from special forces or terrorists is of sufficient importance that it cannot always be left to self-help. Peace dividends and

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contractorisation have so depleted uniformed manpower levels that adequate self-protection may no longer be possible without considerable detriment to operational tempo.

The final area of Joint Force Employment comes into the category of 'last but by no means least'. After the Kosovo air operations, General John Jumper (Commander USAFE) wrote in the RAF Air Power Review a warning against learning generic lessons from such an idiosyncratic campaign.<sup>49</sup> One general lesson that is worth drawing from this conflict, however, is that we ignore or under-resource Combat Support Air Operations and Sustainability at our peril. The less glamorous roles such as air-to-air refuelling, air transport, suppression of enemy air defences and combat SAR are as vital to mission success as precision weaponry. It is vital in the formulation of joint doctrine, in considering single-Service doctrine and in establishing the extent and content of equipment capabilities that we are all aware of the needs of and requirements of our joint war-fighting partners. At the heart of this understanding is an awareness and appreciation of each other's doctrine. This can only be achieved through education – the most basic definition of doctrine – that which is taught.

## **EDUCATION AND PROCESS**

The emphasis on the role of education in the formulation and dissemination of doctrine is important to the maintenance of dogma-free thinking. Likewise the reliance on personal responsibility is vital. Beyond requests for formal feedback,<sup>50</sup> or the invaluable discussion periods at the end of presentations, the process of maintaining an active debate on air power depends on enthusiastic participation from as broad a cross-section of the Kirk as is possible. At the formal end of the spectrum, air power doctrine is taught at each level of command and staff training within the RAF, and likewise in all other professional services. Syndicate exercises, war games and study periods are all used to encourage both the learning process and to stimulate debate.<sup>51</sup> Given that all of this training is conducted under the auspices of the Joint Services Command and Staff College, it should be inherently joint and consistent.

Debate is also encouraged by the publication of formal journals. For many years, the RAF published current thinking on air power topics as the leading article in its monthly magazine, *Air Clues*. In 1998, the RAF Magazine was terminated, and followed by a new magazine *Airclues* which focused on flight safety matters. A quarterly journal – *The RAF Air Power Review* – was instigated in place of the monthly article and rapidly achieved a worldwide readership.<sup>52</sup> Articles are selected from work produced on the staff college courses thereby extending the product of the debate in those places of learning far beyond their hallowed portals. Other works are submitted by leading academics, servicemen on the frontline, Service chiefs<sup>53</sup> or by air power thinkers from other overseas forces.

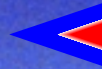
Real doctrine can therefore be considered to exist at three levels. The formal level is where conceptual thinking and fundamental principles have been distilled and transformed into the written word. But this is not set in stone and must be subject to Overy's constant and critical interrogation. Even in the depths of the inter-war years, strategic bombing 'doctrine' did not totally stifle original thought. Work continued into thinking on Home Defence with concomitant work on fighter development – even though this was supposedly heretical. This second level of fluid, innovative and active thinking should then mature into the third level of doctrine – emerging doctrine that takes its place in the in-trays of those charged with re-writing the next editions of the formal documents. Joint establishments, in which the active exchange of ideas is encouraged, facilitate the abolition of single-Service shibboleths and the production of real joint doctrine without diluting the key attributes of each environment.

It is important in any discussion on doctrine to ensure that the relationship between doctrine and policy is defined clearly. There will inevitably be a policy baseline for defence such as that iterated in the Strategic Defence Review. There will also be strategic and/or policy guidance particular to a given conflict or set of circumstances. But policy does not drive doctrine. Even if a specific crisis highlights a lack of 'fundamental principles' to guide our actions, doctrine cannot be formulated in such circumstances. Rather, it is the product of regular and careful reflection by the advocates of a particular medium which is then enunciated within the joint and combined arena.

## NOTES

- 1 John Terraine, *To Win a War, 1918 The Year of Victory*, Cassell, London, 2000, page 39.
- 2 Richard Overy, 'Doctrine Not Dogma; Lessons from the Past', *Royal Air Force Air Power Review*, Vol 3, No 1, Spring 2000, page 46.
- 3 Overy, *ibid*, page 44.
- 4 Michael Howard, 'Military Science in an Age of Peace', Chesney Memorial Gold Medal Lecture given on 3 Oct 73 and published in *JRUSI*, Vol 119, No 1, page 7.
- 5 AAP-6 NATO Glossary.
- 6 Joint Warfare Publication (JWP) 0-01, *British Defence Doctrine*, (hereinafter cited as BDD) HMSO, 1997, page 1.2. At the time of writing, this document was being re-written, but no change in definition was envisaged at the first working group (which the author attended).
- 7 BDD, *ibid*, page 1.2.
- 8 BDD, *ibid*, page 1.2.
- 9 Whole rain forests have been decimated on this subject. For a brief review of the challenges see 'Perspectives' *International Institute for Strategic Studies, Strategic Survey 1991 –1992*, Brassey's, London, 1992, pages 5 –14.
- 10 National interests have always been difficult to define. For a particularly thought provoking essay on the US view see Joseph S Nye Jnr, 'Redefining the National Interest', *Foreign Affairs*, Number 4, Volume 78, July/August 1999, pages 22 – 35. That this is based on the US national interest does not make it any the less pertinent as the relationship between the UK and the US is close enough for their concerns to be directly relevant.
- 11 See, for example, Michael Ignatieff's essay in Jonathan Moore (Ed), *Hard Choices: Moral Dilemmas in Humanitarian Intervention*, Lanham, Rowman and Littlefield, 1999.
- 12 BDD, *ibid*, page 1.3.
- 13 *The Strategic Defence Review*, Cm3999, London, 1998, Chapter 3. (Henceforth cited as 'SDR').
- 14 SDR Chapter 9, page 45. The Joint Doctrine and Concepts Centre came into being on 1 September 1999, albeit in an interim format. Full status was expected by 1 April 2000.
- 15 See the Introduction to *AP 3000 British Air Power Doctrine*, Third Edition, HMSO, London, 1999. (Henceforth cited as AP 3000).
- 16 AP 3000, Chapter 11, page 3.11.1.
- 17 AP 3000, Chapter 11, page 3.11.1.

- 18 The British way in war is taken from Basil Liddell Hart, *The British Way in Warfare*, Penguin, London, 1942. This is relevant to the doctrinal debate in that Liddell Hart suggested that the British military had operated according to a series of assumptions and general ideas concerning the nature and conduct of war, rather than emphasising formal doctrine. See also Colin McInnes and John Stone, 'The British Army and Military Doctrine' in *Doctrine and Military Effectiveness – Proceedings of the Conference held at The Britannia Royal Naval College 16 – 17 January 1997*, edited by Michael Duffy, Theo Farrell and Geoffrey Sloan, University of Exeter.
- 19 The author assumed this post on the working day after the third edition of AP 3000 was launched. The acknowledgements in AP 3000 fully reflect the credit to those that contributed to the process.
- 20 AP 3000, Chapter 11, page 3.11.2.
- 21 In the biographical notes supplied to the Joint Services Command and Staff College, Department of War Studies, RMA Sandhurst, and Strategic & Combat Studies Institute Joint Seminar on 28 October 1998, Group Captain Stu Peach, (Director of Defence Studies (RAF)) stated that he had 'commanded squadron size deployments to 15 countries in three continents and completed three operational tours in the Middle East'. Some degree of cross-fertilisation of ideas is inevitable with such experience.
- 22 The majority of these are available on the Internet via <http://www.usafdoctrine.maxwell.af.mil/library/Hierarchy.asp>.
- 23 *The RAF Air Operations Manual*.
- 24 *British Maritime Doctrine, BR 1806*, Second Edition, HMSO, London 1999. (Henceforth cited as BR1806).
- 25 BR1806, *ibid*, page 5.
- 26 *British Maritime Doctrine BR1806*, First Edition, HMSO, London, 1995, Foreword; also cited in the second edition pages 5 & 6.
- 27 BR1806, Second Edition, page 6.
- 28 *Air Force Doctrine Document 1*. Published by Order of the Secretary of the Air Force, September 1997, page 1. (Henceforth cited as AFDD 1).
- 29 AFDD 1, *ibid*, page 2.
- 30 AFDD 1, *ibid*, page 4; emphasis as in the original.
- 31 AFDD 1, *ibid*, page 4.
- 32 *Out of the Sun: Aerospace Doctrine for the Canadian Forces*, Craig Kelman, Winnipeg, para 101.1, page 1.
- 33 *Out of the Sun*, *ibid*, para 101.2.
- 34 *Royal Australian Air Force, The Air Power Manual, AAP 1000*, Third edition, Air Power Studies Centre, 1998, (henceforth cited as AAP 1000), page v.
- 35 AAP 1000, *ibid*, page v.
- 36 AAP 1000, *ibid*, page 2.
- 37 AAP 1000, *ibid*, para 1.13, page 4.
- 38 AAP 1000, *ibid*, para 1.5, page 2.
- 39 AAP 1000, *ibid*, paras 1.19, 1.23 and 1.28.
- 40 AAP 1000, *ibid*, para 1.33.
- 41 Major General Tony Milton, 'My Job: Director General Joint Doctrine and Concepts', *JRUSI*, Vol 145, No 2, April 2000, page 17.
- 42 See Group Captain Peter W Gray, 'The Contribution of Air Power to Manoeuvre Warfare', *JRUSI*, Vol 145, No 3, Summer 2000, page 60 et seq.
- 43 Sir Maurice Dean, *The Royal Air Force and Two World Wars*, Cassell. London, 1979, page 134.
- 44 See Neil Young, 'The Role of Bomber Command during the Battle of Britain', *Imperial War Museum Review*, No 6, 1991, page 79.
- 45 For a full description of this see Wing Commander Tom McWilliams, 'Centralised Command and Control, Decentralised Execution; What does this mean?' *RAF Air Power Review*, Vol 1, No 2, Autumn 1998, page 87.
- 46 Cited in AP 3000, page 1.3.1.
- 47 The best and most recent summary is given by Philip S Meilinger in 'The Historiography of Airpower: Theory and Doctrine', *The Journal of Military History*, 64, April 2000, pages 467 – 502.
- 48 See Group Captain Peter W Gray, 'Air Operations for Strategic Effect – Theory and Practice in Kosovo', *RAF Air Power Review*, Vol 3, No 1, Spring 2000, pages 16 – 32.
- 49 General John Jumper, 'Kosovo Victory – a Commander's Perspective', *RAF Air Power Review*, Vol 2, No 4, Winter 1999, page 2.
- 50 AP 3000, introduction specifically requests such feedback from its readership.
- 51 Beyond the lectures described in the footnote to the introduction, the author also took part in syndicate and panel discussions on such topics as the role of air power in the air operations of the Kosovo campaign.
- 52 As Director of Defence Studies (RAF), the author is chairman of the Air Power Review Management Board responsible for the selection and publication of suitable articles.
- 53 See almost any copy of the *RAF Air Power Review* for examples; specifics include the speech from Air Chief Marshal Sir Richard Johns reprinted in Volume 3, No 1, Spring 2000 or that written by General John Jumper, Commander of the USAF in Europe in Volume 2 No 4, Winter 1999.



**Welcome to NATO.  
Royal Air Force Jaguar with Polish  
Air Force Sukhoi 22 on visit to UK.**

**Photo by SAC Steve Follows**



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