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# Redefining “Strategic Effect” in British Air Power Doctrine

By Dr Richard Lock-Pullan

In the last decade there has been an enormous growth in British military doctrine, a movement symbolised by the new building of the Joint Doctrine and Concepts Centre. When the first British Defence Doctrine was released it defined doctrine as “that which is taught”.<sup>3</sup> However, doctrine is more about explaining the goals, identifying the tasks and shaping the tools of the organization that publishes it.<sup>4</sup> One of the seminal doctrinal statements to develop this remit for the RAF is AP3000 British Air Power Doctrine.<sup>5</sup>

As part of the broad and ongoing doctrinal development, this article examines the current air power doctrine of strategic effect, and argues that it needs reform and clarification. The motive for this task is a concern that the current definition of strategic effect, and its cousin, centre of gravity, is too vague and requires redefining. This is needed to move the current understanding away from the traditional RAF concerns with ‘bombing’, towards a broader and more strategic understanding of itself as a tool of government in the current complex environment. To do this, this article argues that by teasing out the meanings held within ‘centre of gravity’ the understanding of ‘strategic effect’ can be made truly strategic. This in turn will help refine British military doctrine and the role of air power within it.



*...there is a need for a title for the present post-Cold War role and capability that is located outside the joint commander's supporting role*



**Typhoon: the RAF's latest fighter due to enter service in 2003.**

## STRATEGIC EFFECT

Strategy has been defined by Basil Liddell Hart's "art of distributing and applying military means to fulfil ends of policy".<sup>6</sup> However, the RAF understanding and use of the term 'strategic' is reminiscent of its use during the nuclear debates of the Cold War. The term strategy in 'nuclear strategy' was actually different from Liddell Hart's, as Lawrence Freedman made very clear in his major study.<sup>7</sup> With the use of phrases such as Strategic Air Command, the "use of the adjective 'strategic' has very little to do with the noun 'strategy'." Strategic was used to refer to the range from the homeland, rather than its link to government policy. Furthermore, during the Cold War 'strategic effect' for the RAF was the nuclear role of the V-force and the like, and the current term is a hangover from that period where 'deep strike' and 'strategic' were used interchangeably. Basically, there is a need for a title for the present post-Cold War role and capability that is located outside the joint commander's supporting role.<sup>8</sup> Of course this is an inter-service rivalry issue. In other words, the RAF had a distinctive capability which had to be named.

In the same way as 'nuclear strategy' corrupts the understanding of strategy, British air power doctrine defines the distinctive character of 'strategic' as being an independent or distant use of force.

*The essential feature of air operations for strategic effect is that the activity . . . although aimed at the strategic centre of gravity in support of the overall aim, may be mounted distinct from the joint campaign or from outside the theatre boundary.*

It is this distinction which sets air operations for strategic effect apart from other roles and missions.<sup>9</sup> This provides a clear definition, but one that is understood in command and control terms and has little to do with strategy. Not only is this an unusual definition, but it rather muddies the water when one considers a contrasting definition that AP3000 uses just before this. AP3000 refers to targeting strategic centres of gravity "which should be key to achieving the strategic aim or end-state." Clearly in this case strategy is being used in its conventional form to refer to political policy and military means.

*The effect of the Linebacker II campaign in 1972 during the closing years of the Vietnam War is an example of humble political aims being achieved by bombing*



**Boeing B-52 Stratofortress delivers its payload of bombs over Vietnam.**

However, AP3000 uses 'strategic' in a third way, when explaining its organizational preferences. "The notion that the strategic employment of air power is inextricably linked to bombing and bombardment is derived from historical experience."<sup>10</sup> As Peter Gray has rightly pointed out, the RAF has an organizational inheritance issue of stressing bombing, as strategic bombing gave it an independent role from the other services and was a source of funding. Here 'strategic' (as in strategic employment), is a half-way house between the traditional political policy understanding and long range or independent missions. What this also shows, beyond pure pedantry, is that strategic effect is used in a particular and rather peculiar manner, revealing the RAF's heritage of equating strategic effect with strategic bombing. This is wrong.

The inheritance of strategic bombardment as the crucial strategic role of the RAF distorts the understanding of what the RAF is and what it can do. This is not to underestimate the actual use of bombing for strategic effect. For example, the effect of the Linebacker II campaign in 1972 during the closing years of the Vietnam War is an example of humble political aims being achieved by bombing. The strategic aim for the US was to be able to withdraw from the theatre of war, and the bombing enabled the Americans to bring the Vietnamese government to the negotiating table to allow this to happen. For the previous years of the war bombing had proved far less effective, as the strategic aims had been far more ambitious, aiming as it did to reverse the North's advances rather than simply hold them in place as in the Linebacker II period.<sup>12</sup> However, the exclusive concern with strategic effect being understood as independent bombing capability actually does disservice to one of the RAF's finest achievements, one which highlights the limitations of current understanding.

During the Cold War much was made of Britain and NATO's strategic bombing capabilities, but in terms of actual use, the largest strategic effect could arguably have been Transport Command during the Berlin Blockade. The first major crisis of the Cold War, the Soviet decision to put a surface blockade round the city of Berlin proved to be a huge test of will for the Allied countries. From 24th June 1948 for the following twelve months 2,325,000 tons of food, coal and other supplies were airlifted into the city. This was not done in a simple passive environment, as RAF and USAF fighters patrolled and B-29 bombers were moved into position. However, in the battle of wills the West were able to achieve clear strategic effect by flying supplies into the city, in opposition to Stalin's will. It was the use of the transport aircraft which created the effect, as the presence of the B29s prior to the blockade had not stopped Stalin.<sup>13</sup>

Additionally, it was a broad role using airpower, rather than simply the RAF because civilian aircraft were used to compensate for the lack of RAF aircraft and aircrew.<sup>14</sup> In other words, the Berlin airlift was an air operation for strategic effect, which did not bomb and did not simply rely on military aircraft. The later narrower understanding of strategic effect, as the direct military purpose of forces, was one result of the 'militarization' of Cold War containment policy, with the establishment of NATO and the outbreak of the Korean War.<sup>15</sup>

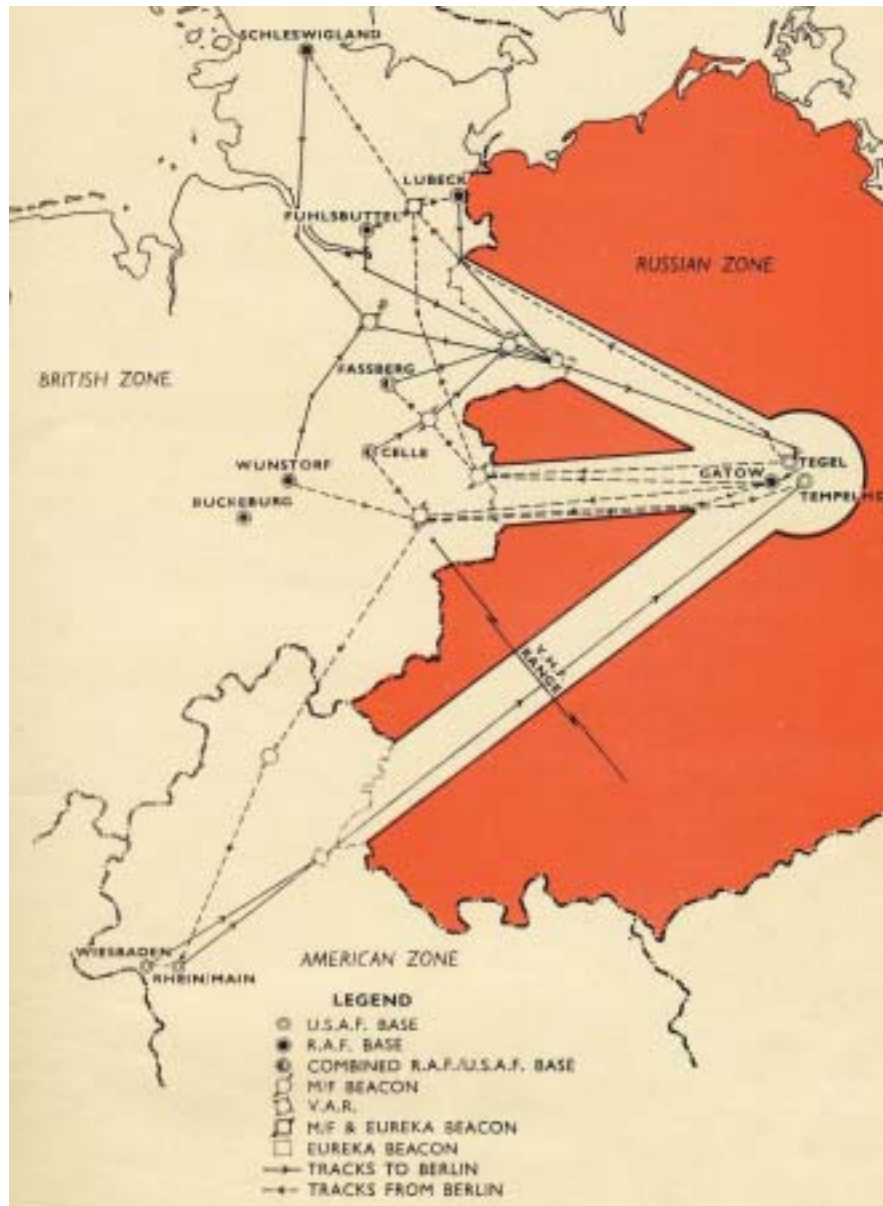
The Berlin Blockade shows that the understanding of strategic effect can be strategic, in the traditional sense. The very confusion in the definite use of the term strategic effect requires clarification, as the heritage seems to be getting in the way of developing clear concepts. AP3000 is conscious of the potential breadth of air assets that can be used for strategic effect. As it says:

*Air operations for strategic effect are not limited to bombing or solely the domain of attack aircraft. All combat aircraft and associated weapons systems are capable of action for strategic effect.*<sup>16</sup>

However, for all this formal recognition, the chapter on strategic effect leaves out these broader tasks. In fact, they are relegated to later chapters and are understood under the headings of operations, direct or indirect, close combat or force protection.

AP3000 makes it very clear that the modern air power "now seek[s] to achieve strategic effect on target sets."<sup>17</sup> Thus air operations for strategic effect still concentrate on bombing, the traditional strategic self-understanding of the RAF.

How the effect is to be achieved is clearly outlined, by introducing the idea of centre of gravity as a term of definition: "Air operations for strategic effect are aimed to destroy or disrupt the defined strategic centre of gravity of an opponent."<sup>18</sup> The understanding of strategic effect is thus tied to the concept of centre of gravity, though the implications of this are interpreted in a broad manner. The centre of gravity is being set up as the light switch that has to be turned off, and switching it off is strategic effect. What then does AP3000 mean by centre of gravity?



The airlift corridor that supplied 2,325,000 tons of essential material to Berlin.



British civil aircraft, such as this Lancastrian of Flight Refuelling Limited, were used to compensate for the lack of RAF transport aircraft during the Berlin Airlift.

## CENTRE OF GRAVITY

The roots of the term 'centre of gravity' are found in the ideas of Carl von Clausewitz, and his great work *On War*.<sup>19</sup> Clausewitz's idea is drawn from Newtonian physics, and is the point from which the weight of a body may be considered to act.<sup>20</sup> If the gravity is uniform, then the centre of gravity is the same as the centre of mass. In this sense one sees that a 'centre of gravity' is a point of vectors crossing. Thus for Clausewitz, the enemy is seen as a system, and unbalancing the equilibrium of the system shifts the centre of gravity. It is not a fixed point in a body. Additionally, it is important to note that it used by Clausewitz as an analogy, illustrating the cohesive point of many factors pulled to a centre. As he wrote, the fighting forces of each belligerent in war have a certain unity and cohesion, "Where there is cohesion, the analogy of the centre of gravity can be applied."<sup>21</sup> Clausewitz famously included the central role of political aims and moral cohesion in the essential factors that must be considered – the geometry of opposing forces was not a sufficient understanding of war. The centre of gravity is the hub of all power and movement, upon which everything depends and for Clausewitz is the point that must be attacked.<sup>22</sup>

*The centre of gravity is the source of the strength of the enemy, and as such needs to be crushed*

This fits Clausewitz's broader concern with decisive battles. The centre of gravity is the source of the strength of the enemy, and as such needs to be crushed.

Claiming roots in Carl von Clausewitz's writings, AP3000 is actually rather unclear on what exactly a centre of gravity is. "Characteristic(s), capability(ies), or locality(ies) from which a nation, alliance, a military force or other grouping derive its freedom of action, physical strength or will to fight."<sup>23</sup> Apart from being 'lifted' from US doctrine,<sup>24</sup> this is a broad remit, basically because the term in Clausewitz's day referred primarily to the opponent's army. In AP3000:

*an opponent's centre of gravity may take many forms and often different degrees of accessibility. What is clear, however, is that far from being limited to physical destruction of targets with high explosives, we now seek to achieve strategic effect on target sets.*<sup>25</sup>

This quotation makes clear that the replacement of simple bombing, with operations for strategic effect, requires an understanding of strategic effect that is not strategic. A truly strategic understanding of the term would refer to achieving strategic effect through, not on, target sets.



*...in WWII German oil was a critical weakness as it could be effectively targeted and all facets of the German war machine were dependent upon it. It was not the source of German strength*

Secondly, the term 'centre of gravity' only recognises the positive strengths of the opponents, it does not recognize the crucial weaknesses that can be hit, allowing the strategic effect to be materialized.

As the current doctrinal mantra goes, British forces now aim to "shatter cohesion and will" by targeting weakness, and using manoeuvre and surprise, which AP3000 repeats.<sup>26</sup> However, its understanding of 'centre of gravity' does not generate the weaknesses to be hit. This is due to a compressed understanding of 'centre of gravity'. For example, in WWII German oil was a critical weakness as it could be effectively targeted and all facets of the German war machine were dependent upon it.

It was not the source of German strength. The ambiguity in AP3000 on this point of relating the strength to the weakness of an enemy is not unusual. The influential American air power theorist John Warden, for example, argues that the centre of gravity is the most vulnerable point and where an attack will have the best chance of being decisive.<sup>27</sup> The link of strength and weakness to the understanding of 'centre of gravity' needs clarification.

To illuminate this difficulty of reconciling attacking weakness and recognising the strength of 'centre of gravity' Joe Strange's model is very useful. It also allows a better definition of strategic effect, actually allowing it to be strategic, by outlining a more developed understanding of 'centre of gravity' that itself allows the issue of strength and weakness to be related.

## STRANGE'S MODEL

Strange makes a clear distinction between the centre of gravity, and the critical capabilities, requirements and vulnerabilities contained within it. In other words, he teases out what qualities are within the centre of gravity. For him, the 'Centre of Gravity' is a noun, the primary source of physical or moral strength. This is uncontroversial. However, for Strange, what give the centre of gravity its abilities to be one, are referred to as Critical Capabilities. In other words this is the active element, the verb to go with the noun. For the capability to be realised, to be active, there are Critical Requirements, which covers the conditions, resources and means for the capability to become operative. This is a very important step, because if one takes the analysis one step further, one can see that the Critical Requirements, or components of them, can be vulnerable to attack, neutralization or interdiction. Strange calls these Critical Vulnerabilities and sees that recognising them can achieve decisive results. The importance of this analysis is that 'centre of gravity' is redefined. As Strange says, they "are not characteristics, capabilities, or locations; they are the moral,



The Deutsche Vacuum oil refinery at Bremen seen here following an attack by RAF Bomber Command on 21 March 1945.

political and physical entities which possess certain characteristics and capabilities, or benefit from a given location/terrain."<sup>29</sup> A centre of gravity cannot thus be a critical vulnerability. For the RAF this means that Critical Vulnerabilities need to be addressed, not a centre of gravity as in current AP3000 understanding. Hence the RAF achieves its strategic effect through operational and tactical operations against critical vulnerabilities within the 'critical capability - critical requirement' nexus. The consequence of this is that analysts are required to understand that a centre of gravity is not a critical requirement, such as transportation nodes. A centre of gravity is a dynamic agent, which needs to be understood for its effect on the overall grand and military strategy.

This approach forces analysts to determine the opponent's ensuing critical capabilities – critical requirements – critical vulnerabilities. This forces them to return to genuine strategy by determining the genuine centre of gravity of an opponent, unencumbered by issues of accessibility. This then generates alternative courses of action, before deciding what target sets are to be destroyed, or assets to be deployed. By understanding the centre of gravity as a dynamic agent, a simplistic formula of the standard "characteristics, capabilities or locations" to be destroyed does not make sense. The strategic effect has to be a product of the overall strategy against a dynamic system.

In many ways this thinking is not so radical in its conclusions. One can see that the understanding of decisive points can be adapted to accommodate the thinking on critical vulnerabilities. It does challenge the traditional perception of the RAF's self-understanding.

**The Lancaster was the mainstay of the RAF Bomber Command during the latter stages of the strategic bombing campaign.**



It is possible, however, to draw upon RAF experience to show how this type of thinking can be realised by the current RAF doctrine.

Christina Goulter's study of Coastal Command's anti-shipping campaign during WWII is rightly titled 'The Forgotten Offensive'.<sup>30</sup> As she shows, the RAF's preoccupation with strategic bombing doctrine excluded other uses of air power such as maritime and army support. What is important here is that by targeting German critical vulnerabilities in foreign raw materials, the RAF were able to offer a complementary strategic effect to that of traditional strategic bombing. Targetting vulnerabilities undercut the requirements of key German war making capabilities. This case study shows the importance of broadening the use of air power for strategic effect from simply bombing land targets that are seen to make up the centre of gravity.

The shift away from capability to effect that the Coastal Command example gives is the heart of this article's argument. By understanding strategic as a component of the grand strategy of a nation, rather than as a component that is separate from the operational level commander's responsibilities, opens up many possibilities for the use of air power. The cases described above show that strategic effect is possible, but is far more commonly achieved through the accumulation of tactical and operational level operations.

Like much of the British debate about doctrine, the thinking needs to move away from looking at the capability inputs to assessing outputs in terms of the aims of the overall national strategy. It is difficult to describe this, because in a Joint environment one cannot make too much of the independent capability of the RAF. This is clearly shown by the UK having British Air Power Doctrine, with a joint crest on the cover, rather the RAF Doctrine. One could suggest that the concept is renamed to 'The Independent Effect of Air Power', or 'Distinctive Effect' if a name is needed for the distinctive capability. However, if the aspiration to examine air power's contribution to national strategy is taken seriously, then a renaming of what goes on would be closer to 'The Operational Effect of Air Power' with a redefinition of the 'Strategic Effect of Air Power' being related to effect rather than capability. For air operations for strategic effect to be appropriate then the doctrine has to change. This would tie together the range of assets the RAF has and how they can all be used for genuine strategic, rather than independent effect, one which aims to exploit the enemy's Critical Vulnerabilities. In other words, it links strategy to tactics, the heart of the operational level.

## CONCLUSION

Current RAF doctrine on the 'Strategic Effect of Air Power' says rather more about the organizational preferences and history of the service, than it does about strategy. There is still a heritage of independently bombing land targets and understanding this as strategic effect. In the current volatile strategic environment the RAF needs to refine this understanding to make itself genuinely more strategic in its thinking and operations. To aid this process, this article has advocated that the thinking behind the understanding of the 'centre of gravity' needs reform so that genuine strategic thinking will shape the planning and understanding, and that the enemy's weakness can be tackled, rather than simply hitting strength, to disable the effect rather than simple capability of them. Hopefully this approach will enable a more nuanced, effective use of air power to come about.

Organizationally the approach of this article challenges the over-emphasis on fast jets and their influence in the RAF. They are not the sacred key holders of the Service, as the Service is ultimately a tool of the

*As the great British strategist Colonel G F R Henderson put it, "Strategy...is an art which almost more than any other is concerned with the fate of nations..."*

government. In current operations for example, there is a great demand for strategic lift, of which there is a huge shortfall, whilst the RAF is simultaneously buying 232 Eurofighters. A shift in the organization's thinking needs to take place.

A strategic service needs to take strategy seriously, shibboleths or not, and the RAF can start by re-examining its understanding of 'strategic effect' and 'centre of gravity', the core of its doctrine. As the great British strategist Colonel G F R Henderson put it, "Strategy ... is an art which almost more than any other is concerned with the fate of nations. Its study should be as assiduous as its practice should be correct."<sup>31</sup> Henderson wrote this over a hundred years ago and he is today little read. Ironically, however, in typical British fashion his portrait hangs in the mess bar named after him at the Joint Services Command and Staff College. His image and name are remembered and even honoured. The substance of his work is missing from current curricula. It is time to turn from concentrating on the self-image of the RAF towards more and "assiduous" thinking about strategy.

### Notes:

- 1 The author is a Lecturer in Defence Studies, Defence Studies Department, King's College London at the Joint Services Command and Staff College.
- 2 I would like to thank Wg Cdr Chris Finn and Dr Christina Goulter for reading and commenting on earlier drafts of this article, and Maj Andreas Schaer of the Swiss Army and Col Richard Iron for the many discussions on these and associated issues. The analysis, opinions and conclusions expressed or implied in this article are the author's alone and do not necessarily represent the views of the JSCSC, the UK MOD or any other government agency.
- 3 JWP 0-01 British Defence Doctrine. (London: HMSO, nd) p 1.2
- 4 Farrell, Theo. 'Making Sense of Doctrine'. Strategic Studies 1: Doctrine and Military Effectiveness. (Exeter: University of Exeter/ Britannia Royal Naval College, 1997) p 2.
- 5 AP 3000. British Air Power Doctrine. Third edition. (London: HMSO, 1999)
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- 7 Freedman, Lawrence. The Evolution of Nuclear Strategy. 2nd Ed. (London: Macmillan/IISS, 1989) pp xx-xxi.
- 8 I would like to thank Chris Finn for drawing my attention to this point.
- 9 AP 3000 p 2.6.6
- 10 AP 3000 p 2.6.2
- 11 Gray, Peter W. Air Operations for Strategic Effect – theory and practice in Kosovo. RAF Air Power Review. 3, 1 (2000) pp17-31.
- 12 Clodfelter, Mark. The Limits of Airpower: The American Bombing of North Vietnam. (New York: Free Press. 1989)
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- 15 Gaddis, John Lewis. Strategies Of Containment: A Critical Appraisal of Postwar American National Security Policy. (Oxford: Oxford University Press. 1982)
- 16 AP 3000 p 2.6.1
- 17 AP 3000 p 2.6.1
- 18 AP 3000 p 2.6.1
- 19 Clausewitz, Carl von. (Howard, Michael and Paret, Peter. ed and trans.) On War. (Princeton. NJ: Princeton University Press. 1976)
- 20 Handel, Michael I. Masters of War: Classic Strategic Thought. 3rd Ed. (London: Frank Cass, 2001) p 53
- 21 Clausewitz, On War. pp 485-6
- 22 ibid. pp 595-96.
- 23 AP 3000 p 3.13.2
- 24 For example see Joint Publication 3-0 , 1995 p III-20. The AP3000 definition is different in use of the plural, and in adding nation and alliance – the rest is the same.
- 25 AP 3000 p 2.6.1
- 26 AP 3000 p 2.6.7
- 27 Warden, John A. III. The Air Campaign: Planning For Combat. (Washington, DC: Brassey's, 1989) p 7.
- 28 This section based upon: Strange, Joe. Perspectives on Warfighting. No 4.: Centers of Gravity and Critical Vulnerabilities. 2nd Ed (Quantico, VA: Marine Corps University Foundation, 1996)
- 29 ibid. p 48
- 30 Goulter, Christina J M. A Forgotten Offensive: Royal Air Force Coastal Command's Anti-Shipping Campaign, 1940-1945. (London: Frank Cass, 1995)
- 31 Henderson, G F R. The Science of War: A Collection of Essays and Lectures 1891-1903. (London: Longmans, Green and Co., 1919) p 46

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