Arthur ‘Bomber’ Harris

Lord Trenchard

A Practical Prophet?

Arthur Harris,
the Legacy of Lord Trenchard,
and the Question of ‘Panacea’ targeting

Arthur “Bomber” Harris was, and has remained, a figure of intense controversy. More than 50 years after he held command he still attracts opprobrium, even vilification. Yet unlike other controversial or “unpopular” air commanders such as Goering, Harris served on a winning side fighting what can only be regarded as a just and necessary war. As Commander-in-Chief of RAF Bomber Command from early 1942 until the end of the Second World War, Harris relentlessly sought to pursue a policy of area bombing German cities. Notwithstanding the generally acknowledged justice of the wider allied cause, this policy has often been seen as either immoral or unnecessary.[1] By their very nature these issues are difficult to resolve definitively, and so will continue to provoke dissention and even distress. But it is fair to say that Harris himself has been, or should be, cleared of the charge of being solely or directly responsible for the destruction of Germany. Although a proponent of area bombing, he did not invent the idea, which was already in place as with this policy actually took place at the political and grand strategic level, and were passed down to Harris either directly or, more usually, through instructions issued at the Chiefs-of-Staff level. The most basic consideration underpinning these decisions seems to have been a perceived need morally and materially to assist the Soviet Union at a time when an Invasion of western Europe was not considered feasible, and when the strategic bombing of Germany along precision lines was not yet possible.[2]

Harris can also now be seen in a more favourable light in regard to the question of the success of his policies. At one time it was customary to doubt whether the bombing of Germany contributed significantly to winning the war at all, and it was not uncommon to suggest that adherence to this policy had actually hindered the allied war effort.[3] But recent scholarship has tended to emphasise both the damage done to the German war economy by bombing itself, and the massive diversion of German resources caused by the need to defend the homeland from aerial attack.[4]

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Harris is, however, still almost universally criticised on one point. He is seen as having persisted with area bombing for too long, in the process ignoring the validity of the idea of precision attacks against "bottleneck" targets. It is acknowledged that there might have been little alternative to area bombing by night in the earlier stages of the war. But critics of Harris point out that at least by 1944 technical advances and changed circumstances had rendered precision bombing possible, even necessary. And although he ultimately deferred to his superiors in these matters, there is no doubt that Harris did everything in his power to resist Bomber Command being diverted from what he regarded as its primary function, namely area bombing German industrial cities in order to destroy the enemy's capacity and will to continue fighting. Although he actually argued against the extensive use of strategic bombing in support of the Normandy invasion, critics of Harris usually focus on his opposition to attacking what he referred to as "panacea" targets such as the German ball-bearing industry. Most notably, during the last winter of the war Harris famously but unsuccessfully attempted to dissuade his immediate superior, Charles Portal, Chief of Air Staff and a former Commander-in-Chief of Bomber Command, from insisting that priority be assigned to attacking the German oil industry, the destruction of which Portal believed offered the best available prospect of ending the war quickly.[5]

After the war it appeared that Portal had probably been correct. Harris' position in this and other similar arguments on the question of "panacea" targets was therefore readily reduced to being seen as the mere product of a stubborn inflexibility. And while it has become possible to see Harris in a relatively favourable light regarding other issues, his late-war antipathy to precision targeting remains a banner around which anti-Harris sentiment still rallies. It therefore seems appropriate to examine Harris' position on this point more closely. Accordingly, this piece of work will attempt to show why he clung so firmly to the idea of area bombing. The aim will be neither to argue that Harris was right after all, nor to follow the debates themselves in detail. It will, however, be suggested that his position was intelligible in itself and not without force. It will also be shown that Harris' commitment to area bombing was underpinned by a doctrine, the validity of which was widely accepted. Again, the aim will not be to prove that this doctrine was correct. Nevertheless it will be seen to have provided Harris' ideas with a sort of logical coherence that gave additional strength to the impressions formed in his otherwise essentially empirical mind. Conversely, and more importantly, Harris' dynamic practicality will be shown to have imbued this doctrine with potentialities that

it otherwise lacked. Because he did possess a natural practical bent and a concomitant distrust of abstract speculation, it is necessary to include a brief survey of Harris' earlier career with a view to formulating what may be taken to be his own bombing doctrine. The policies of Bomber Command before he took charge also need to be touched on. Firstly, however, a brief discussion of the ideas and influence of Hugh Trenchard, leader of the RAF from 1919, is required in order to appreciate the background doctrinal imperatives that informed Harris' thinking.

Although Trenchard had commanded the RFC from 1915, he only became associated with strategic bombing in any direct sense in 1918 as head of the Independent Force created to strike back at Germany in retaliation for her long-range attacks against England. Trenchard was already committed to the concept of the intrinsically offensive nature of air power and, like many others, he came to feel that enemy (civilian) morale could easily be broken by strategic bombing. At the time there seemed several reasons for such a belief, not least the fact that German air raids, although hardly bringing about social collapse, had caused considerable distress among British civilians. The defeat of Germany also came to be understood as having been precipitated by a social breakdown. Moreover, after the war bomb-damage inspection teams concluded that the overall effect of the strategic bombing of Germany had been greater than the actual damage inflicted seemed to suggest. Trenchard's views on these matters hardened further in the early 1920s in the course of the "Battle of Whitehall" when he sought to protect the existence of the RAF amid a general debate being waged concerning the best means of defending Britain and the empire in any future conflict.[6] Throughout this period he stressed that, while armies and navies were now at the mercy of aircraft, the best form of defence would be an assault on an enemy's homeland by means of a strategic aerial offensive which would cause industrial paralysis and, especially, destroy the will to fight on. While no major conflict occurred during this period, Trenchard was able to put some of his beliefs into practice, albeit in a very attenuated form, by what is referred to as "substitution." This procedure was based on the idea that the air force, that is to say the implied and real threat of aerial attack, could control the empire more cheaply and effectively than the army and the navy.

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Trenchard's theory of air power may therefore be seen as having consisted of three basic tenets: the necessity of offensive action; the potential vulnerability of civilian morale to air attack and the consequent likelihood of precipitating social collapse by bombing; and "substitution" in the wider sense of believing that the air force could now virtually replace the army and navy, even in a major conflict. Trenchard's ideas are particularly important because from the mid 1920s, with the existence of the RAF now secure, they began to be converted into official doctrine, being propagated through the RAF Staff College and in the Air Ministry.[7] Significantly, while perhaps not being inconsistent with the idea of precision bombing in any logical sense, Trenchard's line and style of thought basically encouraged area attacks.[8] It should perhaps be added in fairness that during the period when Trenchard's ideas were forming, precision bombing as understood by later generations barely existed as a concept, let alone as

a practical possibility. Whatever the case, by the late 1920s the official policy of the RAF seems to have been that even when selected industrial targets were to be attacked, relatively near misses would be more than acceptable because nearby civilians would still be demoralised as a result.[9]

Some voices of dissent were, however, heard during this period. John Slessor, for one, seems to have felt that Trenchard's emphasis on morale was excessive. Slessor did acknowledge that bombing might well have a great effect on civilian morale in certain circumstances,[10] but he regarded the issue as something of an imponderable, focussing instead on restricting industrial output and strangling supply to the enemy's armed forces. Slessor therefore seems to have been less extreme than Trenchard in all areas as his ideas also carry the implication that air power alone would not be sufficient to win a war.[11] Portal, too, while something of a protégé of Trenchard, thought that the absolute priority the latter assigned to bombers over fighter aircraft was wrong.[12] Too much should not be made of such dissent as it existed at the time, but it does arguably represent the beginnings of an undercurrent of thinking that would from time to time seek to moderate the manifest extremity of Trenchard's views, without necessarily challenging their hegemonic status.[13]

Unlike Portal and Slessor, Arthur Harris did not oppose any of Trenchard's views. Indeed, important phases of Harris' interwar career can be seen virtually as concrete expressions of Trenchard's thinking. Most notably, having emerged from The Great War with considerable experience in flying both fighters and bombers at night, and after a short posting to India, Harris took command of a squadron in Mesopotamia in 1922, serving there for two and a half years. This squadron had been moved from Egypt specifically to take part in what was then called the "RAF control scheme," that is to say operations involving Trenchard's concept of "substitution." Harris displayed enormous energy in this command, converting his squadron from a largely transportation role to an all-out bomber force, and personally designing and installing bomb-aiming devices. He also trained his squadron in night operations, believing that bombing by night should entail a greatly increased psychological effect.[14] Technical and operational innovation, the idea of bombing by night, and an emphasis on training became characteristic themes in Harris'

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commands throughout the interwar period. For example, in 1926, when he was commanding a “heavy bomber” squadron in England, Harris’ desire to experiment with training in formation flying at night required the permission of Trenchard himself, who accordingly sanctioned an amendment to the Flight Training Manual.[15]

Although dominated by Trenchard’s ideas in the period between the wars, there is little doubt that the RAF was so unprepared for the Second World War that Bomber Command was in no position to put these ideas into practice. It is customary to attribute the RAF’s unreadiness for a major conflict to interwar cost-cutting and a wishful pacifism at government level, both tendencies being epitomised in the notorious Ten-Year Rule.[16] Some have gone further and actually blamed the extent of the hegemony of Trenchardist thinking for Bomber Command’s lack of preparation for conflict and for its operational failures in the early stages of the war.[17] So confident were the RAF and the Air Staff that a swift and easy victory would be brought about by air power, the argument runs, that little or nothing was done about it by way of either tactical and technical development, or meaningful training. Although this line of thought does seem rather extreme, it is perhaps fair to say that between the wars Bomber Command did begin to exhibit signs of ossification in respect of the relationship between doctrine and practice. If this was in fact the case, Harris stands out as an exception to the rule by not only continuing to treat Trenchard’s ideas as viable, but also striving to be in a position to put them into practice.[18] Moreover, for one who achieved such high rank Harris held surprisingly few staff positions. Yet it is significant that when he did so, notably in the mid 1930s as Deputy Director Plans, he worked vigorously for the creation of a long-range, heavy-bomber force, in the process arguing against maintaining any commitment to light and medium bombers.[19] Harris’ time away from active command may therefore be seen as having involved the pursuit of Trenchard’s vision. In other words, the interwar years not only reveal Harris to have been a committed Trenchardist, but also show that he was remarkable in having possessed both the desire and the ability to make this vision a reality.

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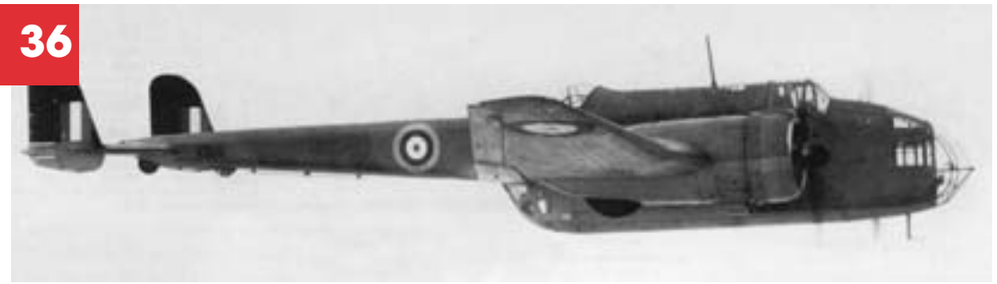

RAF Hampden of the pre-war years

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During the time Harris served as Deputy Director Plans, the Air Staff was in fact beginning to appreciate that the RAF was unprepared for the war with Germany that increasingly seemed imminent. The years just before the outbreak of war were marked by a flurry of activity involving rearmament programs, policy evaluations, and calls for proposals concerning how air power might best be used in a strategic sense.[20] Interestingly, this period of flux and uncertainty marked the re-emergence of the relatively subtle approaches of Slessor and, to a lesser extent at this stage, Portal to strategic bombing. And as war loomed closer this tendency towards subtlety was amplified to some degree by political antipathy towards the sort of bombing that might provoke reprisals. Most of the many bombing proposals that emerged during this period involved more or less precision attacks on aspects of German industry, with Slessor himself seeming to favour targeting oil, aircraft production, and the creation and distribution of electrical power.[21] Nevertheless, and perhaps not surprisingly in the circumstances, the proposal that ultimately commanded the most attention was, in the short term at least, the most nebulous and indecisive. Importantly, this proposal suggested that an independent strategic bomber force could eventually become the means of victory if it were initially held largely in reserve, allowing it to gather sufficient strength for the task.[22] While indecision in all of these areas, and doubts about the effectiveness of Bomber Command would persist well after hostilities had begun, an essentially Trenchardist vision of victory through air power still persisted, despite not being considered feasible for the moment.

From late 1940 this idea of a massive and war-winning area bombardment of Germany began to gather momentum. Although it is interesting that Trenchard himself, emerging from retirement but hardly from obscurity, had become vocal again,[23] this change in thinking can be associated with new perceptions at the highest political levels. Churchill in particular now exhibited what has been referred to as an "uncritical enthusiasm" for bombing.[24] Portal, newly created Chief of Air Staff, now shared Churchill's enthusiasm for area bombing,[25] albeit without wholly abandoning the idea of pinpointing vital aspects of the German war industry such as oil and aircraft production.[26] In November 1940 Churchill told Portal that Germany should be subjected to heavier bombardment, while a year later Portal insisted that more bombers would be needed if the desired effects on German morale were to be achieved.[27] By late 1941, in the face of embarrassing operational failures,

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Churchill began to doubt the feasibility of achieving victory through bombing.[28] He would continue to blow hot and cold on the matter, becoming dispirited when bombing failed to fulfil his expectations. For the moment, however, Churchill came to feel that a fresh attempt was needed, with pressure now building to support the Russians. Accordingly, it was decided that a new bombing offensive should be undertaken in early 1942, consisting of heavy blows and largely incendiary attacks with a view to undermining German morale.[29] Feeling that a new operational approach would also be needed, Portal specifically chose Harris for the job, promoting him to Commander-in-Chief of Bomber Command.[30]

What doctrines and beliefs about air power would underpin the new Commander-in-Chief's decisions? Harris possessed a practical person's antipathy to philosophising about anything at all, let alone about strategic bombing. His post-war memoirs, for example, are virtually free of air-power theory. In these memoirs, however, Harris does at one stage quote directly from the seminal Smuts Report of 1917:

> *…there is absolutely no limit to the scale of [air power's] future independent war use. And the day may not be far off when aerial operations with their devastation of enemy lands and destruction of industrial and populous centres on a vast scale may become the principal operations of war, to which the older forms of military and naval operations may well become secondary and subservient.*[31]

Smuts' vision had clearly captivated Harris. And it is important to note that Smuts was speaking in terms of the potential, rather than the reality, of air power. Smuts' vision also contained some of the essential elements of Trenchard's doctrine, and it may be regarded as having given rise to the conceptual, operational, and even institutional framework within which Trenchard's own ideas would develop.

Moreover, despite his dislike of theoretical discussion, the position and high rank Harris achieved in early 1942 meant that he was in fact required to commit his thoughts on air power to writing from time to time. His correspondence with Churchill is particularly significant here because in it Harris elaborates his position in a very general way, thereby revealing the range and depth of Trenchard's influence on his thinking.[32] The central theme of Harris' letters is the war-winning capability of a

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properly handled strategic bombing offensive. His precise position varies from claiming that no invasion of Germany or of anywhere else in Europe would even be necessary, to suggesting that bombing could provide a "walk-in" for allied ground forces whose role might therefore amount to little more than policing and occupation. Whatever the case, Harris' point is that a bombing offensive offered not only the sole means available for victory, but also an alternative, as he put it, to "vastly protracted and avoidable land and sea campaigns." [33] To achieve these ends Harris envisaged an area-bombing assault which would "raze substantially to the ground 30 or 40 of the principal German cities," and which would, he believed, fatally affect "German morale and German production." [34]

While the parallels with Trenchard's ideas are obvious – Harris' own stated position virtually consisting of doctrinaire Trenchardism as applicable to the then current circumstances – the essentially practical nature of Harris' approach must also be stressed.[35] In 1942 the question had ceased to be whether a Trenchardist area assault against Germany was desirable. Almost everyone favoured the idea at that stage. The question was whether it was possible. Harris' approach to the problem was based on a stunning appreciation of the importance of the principle of the concentration of one's forces. And it is significant that Harris' use of this principle actually departed from Trenchard's *operational* approach as leader of the Independent Force in the Great War in as much as the latter had believed that the maximum effect on enemy morale would be achieved by bombing as many different targets as possible. Harris sought to place the greatest possible bomber force over a given target, not only in terms of raw numbers, but also, and perhaps more importantly, within as brief a period of time as possible.[36] Maximum damage would therefore be achieved along with a saturation of the enemy defences, hopefully leading to proportionally lower losses on the part of the attackers. Nevertheless the effort required to put these ideas into practice would be enormous, involving a massive investment in training – the continuation of an emphasis apparent throughout Harris' earlier career – and the harnessing of new technologies as they became available.

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As his methods began to bear fruit, Harris received praise and encouragement. In particular, the thousand-bomber attack on Cologne in late May 1942 was rapturously welcomed on both sides of the Atlantic and in Russia. But Harris regarded this period as a preliminary phase of operations, the Cologne raid really being a demonstration of what could be achieved if a continued build-up of bomber strength was maintained in the face of what he took to be importunate pressure, particularly on the part of Coastal Command, to divert resources to other theatres of war. By mid 1943, while still planning for the future, Harris felt sufficiently confident to begin his task in something approaching earnest, embarking on the "(First) Battle of the Ruhr," and an assault on Berlin later that year. At this point he was ordered to prepare the way for and to support the landings in Normandy, which he did so with a degree of success that surprised no one more than himself. In late 1944, with Harris worried

that the “Overlord diversion” had allowed the German home front a period of six-months or more in which to recover, and as he prepared to resume his assault on the Ruhr, the question of precision or “panacea” targeting resurfaced or, rather, erupted.

The forceful and even exasperated nature of Harris’ responses to the demands of those in favour of precision bombing from this time can therefore be attributed in part to the fact that he felt himself again thwarted from pursuing a course of action he believed in and had been preparing for over a period literally of years. He drew attention, moreover, to a recent history of both indecision as to what the correct “panacea” target was, and of disastrous operational failures when attacking them, notably the American raids on Schweinfurt. In addition, he was able reasonably to argue that, although having received a mass of contradictory orders and suggestions, in carrying out area attacks focussing on German industry in general and on enemy morale, he was complying with what seemed his most authoritative directives, namely the *21 January 1943 Combined Chiefs of Staff* Directive which emanated from the Casablanca Conference, and the *Pointblank* Directive of 10 June 1943.[37] Indeed, in the face of this conflict and confusion, his dogged pursuit of a single line of policy seems understandable, and perhaps even praiseworthy. He also pointed out, finally, that many of the precision targets he was being urged to attack were difficult enough to find, let alone to destroy.[38]

But is necessary to acknowledge that these arguments, and the debate itself, were the products of deeper forces. Various background factors, moreover, seem to have played a part in bringing these forces to the surface. At this stage in the war emphasis had arguably shifted towards the question of how the struggle could be brought to an end and, within this, how the present relatively advantageous situation might best be exploited. The example of American strategic bombing was perhaps a factor here as well, the Americans having always, at least in theory, been committed to the idea of precision bombing. Some of the guesswork involved in proposals for targeting also appeared to have been eliminated on account of a streamlining of the means of gathering and passing on relevant information.

On an even more fundamental level, however, the debate over “panacea” targeting that came to the surface in this context was a manifestation of the tension between two approaches to strategic bombing: the impulse towards subtlety and precision exemplified by Slessor and, increasingly, by Portal; and a generally dominant Trenchardism. While this tension had existed in the RAF for some time, perhaps for decades, anti-Trenchardist thinking had not really been visible since the confusion and uncertainty of the late 1930s and early war period. Harris possessed both a dispositional, and a Trenchardist antipathy to this line of thought. This antipathy had been strengthened in the course of his own essentially practical refinements to Trenchard’s doctrine, and it underpinned his narrower (practical) arguments against “panacea” targeting.

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In terms of his abstract doctrine and in his writings, then, Harris appears as an interesting enough but basically unreconstructed Trenchardist. In practice, however, Harris strikes one as dynamic and effective, far exceeding Trenchard himself who, aside from his role as the “Father of the RAF,” should really be seen more as an air-power visionary or prophet. Trenchard wrongly thought that his ideas were, or could readily become, a reality, and many agreed. In fact he left an exceedingly problematical legacy, and it is difficult to imagine anyone except Harris being able to cope – let alone thriving – having been given the burden that this legacy was becoming. We now may feel that Harris’ job had been completed by 1944. But at the time it was far from clear that this was the case. And although he ultimately followed orders in this as in all matters, we cannot blame Harris for exhibiting a characteristically fierce determination to persist with a policy which he had been specifically chosen to implement, which he had been encouraged to pursue, and which he himself had rendered possible, all the while knowing full well, one suspects, that he would be condemned by posterity.

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NOTES

1 See Sebastian Cox's introduction to Arthur T. Harris, *Despatch on War Operations 23rd February 1942 to 8th May 1945*, HMSO, London, 1995, esp. p. ix.

2 Richard Overy, *Why the Allies Won*, London, 1995, pp. 102ff.

3 For some examples of this sort of thinking see Richard Overy, "World War II: The Bombing of Germany," in Alan Stephens (ed.), *The War in the Air 1914-1994*, Canberra, 1994, pp. 113-140, esp. pp. 113f. + fns. Denis Richards, *Portal of Hungerford*, London, 1977, p. 299 also provides an interesting broad-brush summary of various criticisms of the bombing of Germany.

4 Landmark works in this reappraisal are Overy, *Why the Allies Won*, esp. pp. 101-133, and Alfred C. Mierzejewski, *The Collapse of the German War Economy 1944-1945: Allied Air Power and the German National Railway*, Chapel Hill and London, 1988.

5 Criticism of Harris' antipathy to precision bombing has ranged from the relatively sober view of Webster and Frankland, the official historians, to shriller attacks such as HR Allen, *The Legacy of Lord Trenchard*, London, 1972. Allen (pp. 158-173) discusses the oil debate in the context of "the rape of Dresden." For the oil debate itself see Henry Probert, *Bomber Harris*. *His Life and Times*, London, 2001, pp. 306-315, Charles Webster and Noble Frankland, *The Strategic Air Offensive Against Germany*, HMSO, London, 1961, esp. Vol. 3, pp. 75-78, and Denis Richards, *op. cit*., pp. 317-332, which provides a nuanced account both of Portal's position in the debate, and of his relationship with Harris at the time. Probert's recent book (pp. 332ff., 382-5) also contains some interesting remarks on the view taken by the official historians towards Harris in general.

6 Andrew Boyle, *Trenchard*: *Man of Vision*, London, 1962, pp. 468-473.

7 Phillip S. Meilinger, "Trenchard, Slessor, and Royal Air Force Doctrine before World War II," in Phillip S. Mellinger (ed.), *The Paths of Heaven: the Evolution of Airpower Theory*, AUP, Maxwell AFB, 1997, pp. 41-78, esp. pp. 54f.

8 This connection between Trenchard's views and (later) area bombing is noted in David S. Fadok, "John Boyd and John Warden: Airpower's Quest for Strategic Paralysis," in Meilinger, *op. cit*., pp. 359-400, esp. pp. 385 f. See also Overy, *Why the Allies Won*, p. 106.

9 Horst Boog, "Harris – A German View," in Harris, *op. cit*., pp. xxxvi-xlvii, esp. p. xli. Boog discusses the Royal Air Force Manual of 1928/1940. See also Trenchard's "Memorandum by the Chief of Air Staff for the Chiefs of Staff Sub-Committee on the War Object of an Air Force, 2nd May, 1928," in Webster and Frankland, *op. cit*., Vol. IV, pp. 71-76.

10 In 1915 Slessor, a young pilot-officer in the RFC, had been menaced in the London's East End by victims of Zeppelin attacks. John Slessor, *The Central Blue*, London, 1956, pp. 14f.

11 Meilinger, "Trenchard, Slessor and RAF Doctrine," and JC Slessor, *Air Power and Armies*, London, 1936, esp. pp. 65-69.

12 Neville Jones, *The Beginnings of Strategic Air Power. A History of the British Bomber Force 1923-1939*, London, 1987, pp. 28f. Cf. Richards, op. cit., pp. 88-91. It is tempting to suggest a parallel between the relatively subtle approaches that Slessor and Portal advanced and the search for sophisticated alternatives to conventional warfare by interwar military theorists such as Fuller and Liddell Hart. See Meilinger, op. cit., p. 62 for some remarks that could be taken to support such a line of thought.

13 Interestingly, Tami Davis Biddle regards a paper written in 1917 by Major Lord Tiverton, a future Air Staff planner, as propounding an embryonic doctrine of precision targeting. Biddle acknowledges, however, that a year later Tiverton himself had become an advocate of morale or area bombing, now toying with the idea of what would become known as "de-housing." See Tami Davis Biddle, "British and American Approaches to Strategic Bombing: Their Origins and Implementation in the World War II Combined Bombing Offensive," *Journal of Strategic Studies*, Vol. 18, No. 1, pp. 91-144, esp. p. 93.

14 Dudley Saward, "*Bomber*" Harris, London, 1984, pp. 27-31. Harris himself also regards the operations he was involved with in India as 'primitive essay[s] in the "air control" we were later to use in Irak [sic.].' Arthur Harris, *Bomber Offensive*, London, 1947, p. 21. In 1938, as Air Officer Commanding Palestine and Transjordan, Harris used a similar substitution-style approach, referred to at that time as the "air-pin." Saward, p. 63.

15 Jones, *op. cit*., p. 55.

16 For example *ibid*., p. 172.

17 Scot Robertson, *The Development of RAF Strategic Bombing Doctrine, 1919-1939*, Westport & London, 1995, esp. pp. 158-161. See also Allen, *op. cit*., esp. p.85.

18 Robertson (p. 161) does cite Harris' efforts in Iraq as an exception to the perceived general pattern, but he goes on to claim that "following that posting [Harris] seems to have neglected what is now called operational research."

19 Saward, pp. 46f; Slessor, *The Central Blue*, p. 174.

20 Jones, pp. 126-167.

21 *Ibid*., p. 158; Slessor, *The Central Blue*, p. 246.

22 Plan "WA 5." Jones, pp. 131f. See also Slessor, *The Central Blue*, pp. 206f., and Probert, *op. cit*., p. 98 + fn. for the development of this idea of the conservation of the bomber force.

23 For an overview of Trenchard's public and private pronouncements during the war see Richards, pp. 146, and esp. 223-229. In May 1940 Trenchard wrote to Portal, then Commander-in-Chief of Bomber Command, and rather bizarrely opined that if it had been properly used, bombing "probably [could] have ended the war by now." Trenchard's highest profile missive from this period, "Memorandum by Marshal of the Royal Air Force Lord Trenchard on the Present War Situation Mainly as it relates to Air, 19th May 1941," which Churchill circulated to the Chiefs of Staff, is found in Webster and Frankland, Vol. IV, pp. 194-197.

24 Overy, "The Bombing of Germany," p. 103.

25 Richards, p. 164.

26 *Ibid*., pp. 300f. In the winter of 1940/1941 Portal wanted to target German morale by area attacks when the absence of moonlight made "precision" bombing impossible.

27 *Ibid*., pp. 187ff.

28 *Ibid*., p. 303.

29 *Ibid*., p. 305, and Overy, "The Bombing of Germany," p. 116. The directive for this new offensive issued by the Air Staff on 14th February 1942 is found in Webster and Frankland, Vol. IV, pp. 143-148. Probert (p. 132) points out that this directive marked the end of the idea of the conservation of the bomber force for future operations.

30 Richards, p. 305.

31 Harris, *Bomber Offensive*, p. 17.

32 Prominent examples of this correspondence are quoted and discussed in Saward, pp. 148-170 and Probert pp. 14Off. Probert does not seem to attach any special significance to this exchange and concludes that it reveals Harris at "very far from his best."

33 Saward, pp. 160f. See also Harris, *Bomber Offensive*, p. 17.

34 Saward, p. 169. This letter was written on 3 September 1942.

35 A contrast between Harris and Trenchard is apparent in their respective analyses of World War One. While Trenchard felt that the "evidence" of the Great War verified his theories, Harris believed that the submarine had been the outstanding strategic weapon of that conflict, bombing having (merely) shown that it had the potential to be absolutely decisive in the future. Here Harris reveals himself as both imaginative and practical. *Bomber Offensive*, pp. 17, 279.

36 *Bomber Offensive*, pp. 70-89, esp. p. 83. Harris' exhortations to his aircrew to attain concentration over the target were frequent. Examples pertaining to the raids on Essen and, with particular emphasis, Cologne in early 1942 can be seen in Probert, pp. 133, 185.

37 Both documents, if not considered internally contradictory, are at least sufficiently ambiguous to be susceptible to various interpretations. Both, however, do seem at times to encourage the sort of attacks Harris was pressing for. A ludicrous state of affairs had been reached in early 1944 when NH Bottomley, DCAS, in the course of pressing Harris to attack Schweinfurt by night, urged him to "adhere to the spirit" of the *Pointblank* Directive. Webster and Frankland, Vol. IV, pp. 153f., 158ff., 160f. It should perhaps be added in fairness that, as Probert (p. 252) points out, Harris himself had been consulted in the course of drafting the later proposal. His suggestion to amend the wording – "slightly but significantly" according to Probert – so that it included direct reference to the Trenchardist goal of undermining German morale was accepted.

38 An interesting and not unsympathetic account of Harris' arguments against "panacea" targeting is found in Cox, *op. cit*, passim, esp. pp. xv, xixff.