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## THE ROYAL AIR FORCE IN TRANSITION, 1962-1965

*Address to the Royal Air Force Historical Society by Sir Michael Quinlan following its Annual General Meeting held at the RAF Club on 28th June 2000.*

It is a pleasure and a privilege, if a challenging one, for me to be here. I was particularly closely involved with the Service for sixteen years, in two phases. In 1952-54 I was, unglamorously but agreeably, a National Service officer in the Education Branch striving to teach the writing of elegant staff English to flight lieutenants and squadron leaders in the signals field. And then from 1954 to 1968 I was a civil servant in the Air Ministry and its successor, the Air Force Department of the unified Ministry of Defence. The most substantial, interesting and lively assignment I had in those years was as Private Secretary to the Chief of Air Staff from early 1962 to the end of 1965, first to Tom Pike and then to Sam Elworthy, for both of whom I came to feel deep respect and liking. It is about that period that I plan to talk this evening.

There is perhaps a risk of imposing retrospectively on those four years more coherence or significance than they really had, or than I perceived at the time. But the Service did undergo or share in a very notable transition in at least three respects, even if in one of them the shift was later half-reversed and is arguably, albeit in calmer and more modest degree, still at issue. The first respect was the loss of the prime strategic nuclear role. The second was evolution in the long argument about whether Britain should have one combat air force or two – the ‘carrier question’. And the third was the enforced acceptance, in the major set of project cancellations early in the first Wilson government, that we could not be equipped to *home-built* Rolls-Royce standards across the board.

The first of my three themes concerns the strategic nuclear role. When I came to the office the Service still had that role and the expectation of keeping it. The V-Force, though it had at one point been in most respects of higher all-round performance than any other country could command, was clearly losing the assured ability to penetrate deep in the free-fall delivery mode or even with stand-off capability in the order of Blue Steel Mark I; but though the debate about the Polaris possibility had already been through at least one

round, the Government's official position was that we would acquire the Skybolt air-launched ballistic missile which the Americans were developing, and this would sustain Bomber Command's viability for a long way ahead. As 1962 progressed, however, doubts mounted about whether the Americans would really find themselves able to carry through the development of Skybolt, which was a difficult project technically; and there were people in the UK – essentially Polaris sympathisers – who virtually encouraged the Americans to think that we would not greatly mind if they cancelled Skybolt. I recall that we found written evidence that one very senior defence figure was improperly telling them just that; but Hugh Fraser, then Secretary of State for Air, declined to take the matter up.

That prompts me incidentally to a general comment about defence policy and programme business around that time. Amid constant financial pressure it was clear that there would not be enough money for everything that each of the Services keenly wanted; and there was accordingly inescapable rivalry and contention, especially between the Royal Navy and the Royal Air Force as having the big equipment projects. But that rivalry was sharpened by two extra factors, to such an extent indeed that Field Marshal Sir Gerald Templer, when from retirement he chaired, in 1964 or thereabouts, a special committee on the control of air power resources, described the relationship as appalling. The first factor was the absence of any strong staff mechanism, especially but not only among the military, for arriving at a solidly-based and systematic view of defence priorities; when difficult choices arose and the chips were down the Joint Planners were little more than gladiators for their Services. And the second factor was the particular circumstance that the two key non-political 'defence' figures, Mountbatten and Zuckerman, were both, for all their remarkable characteristics in several ways, operators whose style of doing business was such that no one (and that includes the Royal Navy) wholly trusted them.

To come back, however, to the nuclear story, the Americans did indeed cancel Skybolt in late 1962, and Macmillan went to Nassau and did the deal – a remarkably successful deal, as we now look back – for Polaris. He did it without consulting the Chiefs of Staff, and some people deeply resented this; I remember a very heated letter to *The Times* from Jack Slessor. But Tom Pike was a realist, and he

recognised the irreversible; he made no fuss about either process or outcome, and the Service thereafter got on coolly with the prospect that in due course it would step back into a sort of sub-strategic nuclear role (though I am tempted to suspect that it never wholly thought through that role in its national, as distinct from NATO, operational planning – there was remarkably little read-across from the Nuclear Planning Group’s conceptual thinking in which we were one of the Alliance leaders).

One further example comes to my mind of how in those pre-unification days the central Ministry of Defence sometimes felt, rightly or wrongly, that it need not (or could not prudently afford to) consult the Service Ministries and the Chiefs of Staff in advance of awkward decisions. In 1963, in the wake of Cuba and perhaps as part of the tacit bargain for saving Soviet face in that context, the Thor IRBM force which the RAF had been operating in East Anglia was stood down. This was settled and announced very abruptly, and I vividly remember ‘Bing’ Cross’s steaming anger at the abruptness, and at the absence of any Ministerial message of thanks and appreciation to the personnel who had run the force to demanding professional standards.

Just two other things about nuclear forces stick in my memory. I mentioned Cuba just now. The UK was of course essentially on the sidelines in that episode; but the threat of wider war was taken seriously enough for the Service (primarily on ‘Bing’ Cross’s initiative, but with Tom Pike’s concurrence) to bring all its nuclear delivery systems to a higher alert state – not the highest, but higher than normal. That meant, including systems with dual-key US weapons, a total of around 250 (V-Force, Canberras, Thor). Interestingly, I think I am right in recalling that Ministers were not consulted or even informed, and the matter did not come to wider notice. I am not sure whether all this was formally correct, and things would certainly be different nowadays.

The other vivid nuclear memory is of the shock when, in 1964, a grave near-accident suddenly revealed in the Valiant a fatigue problem that could not be remedied at reasonable cost, and the entire fleet had to be retired almost overnight; a wry experience in relation to an aircraft type of fairly conservative design which had been acquired in the first place as a low-technical-risk insurance against the possibility

of development difficulties with the more ambitious Vulcan and Victor.

The second of my main themes was the future of the fleet aircraft carrier. This had been an issue for at least a decade, with the Royal Navy desperate to secure a new generation on one account or another. At one point they had even suggested that carrier-based air had advantages as, at least part of, the main strategic nuclear capability. In the absence, as I have mentioned, of any truly effective Defence Staff it fell unavoidably to the Air Staff, for the most part, to make the critical case – the case, in essence, that, on any scale the UK could hope to afford, carriers were an extremely expensive way of providing a small amount of air power output, of limited quality and constrained usability. That made for difficult relations. It stimulated the Navy, in return, constantly to argue the limitations of land-based air. The Government had, in effect, two rival, almost opposed, sources of professional advice on the components and application of air power, and I recall that Andrew Humphrey, our senior Joint Planner for part of this time, used to find that deeply exasperating.

The carrier issue came to the fore at two separate points in my time as Private Secretary. The first was in 1962, when the question was whether to proceed to project definition, entailing substantial expenditure, on CVA-01, the first of a hoped-for class of big new fleet carriers. There was sharp dispute, with a predictable line-up, about whether the Chiefs of Staff should give their collective support to this. The Air Staff were deeply sceptical, both on objective merit and because of the certainty, amid defence budget pressures, of conflict between this project and the TSR2 and other major RAF requirements to which I will return later. Tom Pike made an effort to find middle ground, and at one stage suggested to the First Sea Lord that there should be new flat-tops, perhaps around 30,000 tons, and without all the bells and whistles for full-blown sea control, from which the RAF would operate V/STOL aircraft. The Navy dismissed these ‘Pike ships’ out of hand. I find it wryly amusing that the future carriers envisaged in the 1998 Strategic Defence Review sound very like ‘Pike ships’. However, the 1962 argument ended rather suddenly when the Chancellor of the Exchequer, Reggie Maudling, agreed with Peter Thorneycroft, the Minister of Defence, to withdraw Treasury opposition to the project definition stage. Unkind speculation linked



this surprise to personal political motivations; but we cannot now know.

The second, more protracted and even more heated, phase of the carrier battle opened up in the autumn of 1964 as Denis Healey arrived and the question of actually ordering CVA-01 had to be faced. Nothing had occurred to diminish Air Staff scepticism, and the conflict became pretty fierce. There were attempts to conduct 'Defence' studies, for example under the aegis of the Deputy Chief Scientific Adviser; but these cast relatively little new light and often became simply battlegrounds over which the combatants fought to pre-cook the assumptions and scenarios in ways calculated to yield their preferred conclusion.

The Army, led initially by Dick Hull with the prospect of becoming CDS ahead of him and then by Jim Cassels, who was not a natural Whitehall warrior, essentially stayed out of the ring, and perhaps surprisingly Mountbatten was not much in evidence. He had other battles to fight; he perhaps foresaw a defeat with which he did not want to be closely associated, and he was anyway by this time in his mid-sixties and tired. So there was a lot of single combat, dark blue versus light, and suspicion was rife. Naval lore long cherished for example (indeed, I fancy it still does) the story of how the Air Staff modified geography to suit its case. What actually happened was that a scenario was put forward, by the Centre, of having to provide cover over land operations to deal with a resurgence of serious trouble in East Africa, and the assumed air base was the Indian Ocean island of Aldabra. The relevant Wing Commander in Air Plans – by simple incompetence, I am sure – he was no conspirator – used too low a figure for the distance between Aldabra and the Kenyan coast, so that combat air patrol endurance over the fighting zone was overstated. The error was soon detected, I think actually from our own side; but the Navy have always loved it dearly, and indeed tend to embellish it by substituting Australia for Aldabra. Some of the scenarios were pretty far-fetched, especially as the Naval Staff strove to find conflict demands far from good airfields. I recall, for example, an elaborate conjecture about big trouble in the Andaman Islands at the same time as a peaking of trouble with Indonesia. It is, again, retrospectively intriguing that none of the Naval Staff's imaginative striving ever thought of the Falklands.

Sam Elworthy and David Luce, the First Sea Lord, remained on courteous personal terms, but the battle overall was a rough one. I recall the indignation on our side when a careless piece of envelope-addressing in the Naval Staff delivered to VCAS, rather than VCNS, a copy of a detailed Navy brief, accompanied by full texts of highly-classified Air Staff papers, prepared for a television appearance by a senior retired naval officer.

By the time I left the office, in December 1965, the battle was not formally settled; but in retrospect I believe it is pretty clear that Denis Healey had essentially made up his mind some time earlier. I have always thought it rather regrettable that the spilling of blood was allowed to continue as late as the spring of 1966. That part of the story, with the resignations of the Navy Minister, Christopher Mayhew, and David Luce, lies however beyond my time-frame.

My third theme, more briefly, was the ending of the three big aircraft projects: the TSR2; the P1154 supersonic V/STOL aircraft and the HS681 replacement for the Hastings and Beverley.

The Society has, I know, 'done' TSR2 already, so I shall limit myself to recalling two things about it. First, Sam Elworthy had in early 1964, even before the change of Government, suggested that it be cancelled and replaced by the TFX (that is, the eventual F-111) as being too expensive, out of control cost-wise and too likely therefore to drain our budget dry; but Hugh Fraser thought this politically not on. I am not sure that he even mentioned it to Peter Thorneycroft. Secondly, just to illustrate the cost-control problem, I recall that in 1965 George Edwards of Vickers came specially to make a final personal appeal that Sam should put his weight behind saving the project. I was not present (George had asked for a one-on-one talk) but Sam told me afterwards that he had asked George, illustratively, not making a proposal, whether he could undertake to complete the project at a maximum of £300M development and £3M a copy, immense figures in money of the time, and well beyond the estimates then current. George had to say that he could not commit himself even to that.

The other two projects, less far advanced, went the same way for essentially the same reasons: too ambitious; too uncertain; too costly. I am not sure whether the P1154 would have been manageable even as a single-role aircraft; but Thorneycroft had earlier insisted that it must

satisfy both the Royal Navy requirement for an agile high-performance fleet-defence interceptor *and* the RAF requirement for a high-weapon-load close-support ground-attack aircraft. As other experience since then has perhaps suggested, once one gets beyond about the Hunter level of complexity, it may be very hard to blend roles as disparate as this. Sam Elworthy was for a while thereafter much exercised about whether he ought to acquiesce readily in a substitute as reduced in performance as the P1127, the early Harrier, but he decided to do so; I am sure, in the long run, rightly. And the navy, as we know, briefly got the prospect of some of the Phantoms from the package negotiated between us and the Americans, with the very expensive substitution, driven more by industrial and employment politics than by added performance, of the Spey engine for the J79.

The third project, the HS681, was to be a high-capacity transport with long range and exceptionally good short-field performance. I recall having to draft powerful papers explaining why the C-130 absolutely would not do. But, again, costs and development uncertainties proved too much; and, with hindsight, I hardly think that we can regret that.

I shall not attempt to draw extended lessons from this trio of projects; but in the round, I suggest, they brought home to us that the UK simply could no longer afford to develop and pay for the ideal. Each of the three aimed for too much. We had to settle for the practicable and affordable good, rather than the theoretical best; and I suppose that was a necessary lesson.

That covers the three topics which I said that I would talk about. I should emphasise, incidentally, that I have been speaking from memory, not from research or from diaries or papers retained. There were many other interesting things going on that I could talk about, of course, not least the unification of the Service Departments into the Ministry of Defence. But let me end here.

## **BOSNIA 1992-1995 – A CASE STUDY IN THE DENIAL OF THE ADVANTAGE CONFERRED BY AIR SUPERIORITY**

by

**Squadron Leader Steve Harpum<sup>1</sup>**

*In 1996 the Royal Air Force Historical Society established, in collaboration with its American sister organisation, the Air Force Historical Foundation, the Two Air Forces Award, which was to be presented annually on each side of the Atlantic in recognition of outstanding academic work by a serving officer or airman. It is intended to reproduce some of these papers from time to time in the Journal. This one was the winning RAF submission in 2000. Ed*

Conventional air superiority doctrine assumes an attritional conflict between air forces and ground based air defence systems (GBAD). However, where one protagonist is clearly inferior to the other it is possible for them to employ alternative strategies in an attempt to mitigate such superiority. During 1992-95 the Bosnian Serbs employed political measures, in combination with limited use of their GBAD and air forces, to enable them to continue to prosecute their ground war in the face of NATO air superiority. This essay examines the doctrine of asymmetric warfare with specific regard to the NATO/UN peace-keeping/enforcement operations in Bosnia.

The purpose of this essay is to examine the approaches that can be used by an 'underdog' to mitigate an enemy's air superiority. In the case in hand, the underdogs are identified as the Bosnian Serbs. Although there were multiple protagonists in the conflict in question, it was the Bosnian Serbs that NATO/UN force commanders identified as the aggressors<sup>2</sup> and it was, therefore, to counteract Bosnian Serb actions that the majority of the Western Alliance forces' efforts were deployed. In addressing the question, this essay will begin by examining the general conditions of the conflict in political and military terms and the conceptual framework of such operations, considering in particular the theory of asymmetric response. Although

<sup>1</sup> Sqn Ldr Harpum was promoted to wing commander on 1st January 2001 - Ed.

<sup>2</sup> A Mason, 'Operations in Search of a Title: Air Power in Operations Other Than War', in *Air Power Confronts an Unstable World*, ed by R P Hallion (London: Brassey's, 1997), p 158.

there is little or no documentary evidence from which this particular underdog's intentions can be directly determined, it is possible to make logical deductions from the rather more substantial volume of work written from the Coalition forces' perspective. In doing so, this essay analyses the Bosnian Serbs' responses to the opposing forces' air superiority at the strategic and operational levels, examining political actions, such as the use of hostages and retaliatory attacks, and military operations including ground based air defence, deception and dispersal. In particular, the Bosnian Serbs' ability to exploit the advantages afforded by political constraints upon their opponents and the disproportionate effect they were able to gain from their limited air and anti-aircraft assets are examined. The essay concludes by drawing comparisons between Bosnian Serb actions and the theories of asymmetry.

It is important to note from the outset that the NATO Coalition air forces were operating in a very different environment from that which they had enjoyed in the Gulf War of 1991. In Bosnia, the enemy were not an easily-identified invading force but were instead geographically dispersed elements of a fragmented nation; this was not inter-state war but civil war with multiple participant factions. It was often extremely difficult to distinguish between combatants and civilians, and these factors, combined with Bosnian Serb operational procedures, ensured that there were no readily-targetable concentrations of ground forces. In addition, the terrain and weather were far from conducive to air operations, as the Balkan region is mountainous and the climate temperate, providing plentiful ground cover. There was also a very different political situation from the Gulf War, as the intervening forces were not defending vital state interests but rather were seeking to prevent conflict and restore civil order in a peace-keeping/enforcement operation. This meant that additional self-induced pressures were applied to the Coalition forces, not least because there was scant agreement about the political or military objectives, and the international media were reporting home to a public sensitive to casualties, to which political opinion is also notoriously susceptible. The significance of these factors becomes apparent when considered as a natural advantage that the Bosnian Serbs were able to exploit, and the means by which they did so are examined further below.

Air superiority is defined in AP3000 as 'That degree of dominance

in the air battle of one force over another which permits the conduct of operations by the former and its related land, sea and air forces at a given time and place without prohibitive interference by the opposing force'.<sup>3</sup> It might, therefore, be argued that, with their considerable numerical superiority,<sup>4</sup> the Western Coalition forces enjoyed overwhelming air superiority in the skies over Bosnia. However, as the quote also implies, armed conflict is an unavoidably interactive process, in which neither side is able to pursue objectives without giving due consideration to the responses of the other. Rather, there is a constant manoeuvring between the two; as Handel notes, paraphrasing Clausewitz, 'He can attack your strategy as much as you can attack his. It is the strategic *interaction* that matters the most.'<sup>5</sup> However, before examining the specifics of the interaction between NATO and the Bosnian Serbs, it is appropriate to first consider an explanatory conceptual framework of air power in the circumstances. First, it must be borne in mind that air superiority is but a means to an end;<sup>6</sup> it enables the further objectives to be pursued. In this case, UN/NATO forces sought air superiority not for its own sake, but partly to prevent the Bosnian Serbs from using their (albeit limited) air assets in support of the ground campaign and partly to allow their own air forces to participate in, and sometimes be the sole prosecutor of, attacks on Bosnian Serb ground forces. There was also an element of coercion in their aims, in seeking to deter the Bosnian Serbs from further acts of aggression. Therefore, given the West's unwillingness to engage in ground combat, and the Bosnian Serbs' aims of territorial control, if the latter had been able to operate without fear of air power counter measures it is arguable that they would have succeeded in negating enemy air superiority, even if they were unable to operate in the air themselves.

In the same vein as Clausewitz above, Sabin notes that '...counter-air battles take the form of a dynamic air contest between the two

<sup>3</sup> AP3000 3rd Edn. Directorate of Air Staff, Ministry of Defence, 1999.

<sup>4</sup> Craig Covault, 'NATO Air Power to Enforce Peace', *Aviation Week & Space Technology*, 4 Dec 95, p 20.

<sup>5</sup> Michael Handel, *Masters of War: Classical Strategic Thought* (London: Frank Cass & Co Ltd, 1992), p 220.

<sup>6</sup> Professor Sabin, Lecture to ACSC3, 15 Nov 99.

sides, rather than a unilateral initiative by just one antagonist.<sup>7</sup> In a counter-air battle in a conventional conflict, therefore, the outcome will depend, *inter alia*, on the dynamic relationship between the two sides' rates of attrition, (which are in turn profoundly affected by the aggression of each protagonist's stance), numbers of forces, skill, motivation, technology and intelligence.<sup>8</sup> However, it is obvious that there are some occasions where there is little or no prospect of victory for one side (the Bosnian Serbs in this case, and hence the 'underdogs' of the title). In such circumstances, it may be better for them to adopt an asymmetric strategy instead. Sabin suggests that '...any such attempt must involve trying to reduce the impact of enemy air power on one's own surface targets, by making them less vulnerable or by discouraging the enemy from attacking them for fear of adverse political consequences or asymmetric retaliation (perhaps against hostages). All of these techniques have been used by the Bosnian Serbs in recent years to try to reduce the impact of NATO air dominance.'<sup>9</sup>

Having thus established the conceptual framework, it is now possible to examine the evidence supporting Sabin's assertion that this was the strategy applied by the Bosnian Serbs, and to what degree they succeeded. Turning first to the political situation, it is clear that the Western nations represented in the Coalition were, for a variety of reasons, far from clear exactly what they wanted to achieve, and more importantly, how they wanted to do so. Rules of Engagement (ROE) have, by definition, to be derived from political aims and so, as a consequence of the political confusion, NATO/UN ROE were often so tight as to be virtually unusable. For example, during the majority of the period 1992-95 the ROE for aircraft were what has become known as 'smoking gun', which required the pilot to positively identify the actual ordnance or aircraft from which an attack had been made. This situation was further complicated by the so-called 'dual key' arrangement, requiring both military and UN civilian agreement to air

<sup>7</sup> Philip Sabin, 'The Counter-Air Contest', in *The Dynamics of Air Power*, ed by A Lambert & A Williamson, (MOD, RAF Staff College: Bracknell, 1996), p 27.

<sup>8</sup> *Ibid*, pp 27-33.

<sup>9</sup> *Ibid*, p 37.

strikes.<sup>10</sup> Furthermore, there was little or no doctrinal guidance available within the air forces covering peace-keeping or peace-enforcement operations, although this did, perforce, develop during the conflict.<sup>11</sup>

The result was, of course, that Coalition aircrews found it very difficult to prosecute retaliatory attacks on ground forces contravening the cease fire and 'safe havens', or operating from territories not covered by the UN Security Council Resolutions. This did not escape the Bosnian Serb's attention, and they made every effort to play to the Coalition's divisions. They retaliated against air strikes by taking hostages from UN peace-keeping contingents and using them as 'human shields' around key installations, making television pictures of their captives available to the world's media.<sup>12</sup> Similarly, they would launch retaliatory attacks against UN peace-keeping forces or opposing factions' civilians, knowing that such actions would also serve to deepen the divisions between the Western democracies' politicians. One commentator noted that 'all aircraft may become deliberate targets when one or other of the warring factions wishes to apply pressure on the UN ....'<sup>13</sup> In the UN political forum the Bosnian Serbs also received support from their Russian allies, who, despite not being the world superpower they once were, were still able to exert considerable influence over the UN decision making process. There is no doubt that this was a deliberately calculated and co-ordinated strategy on the part of the Bosnian Serbs; Ratko Mladic, their ground forces' commander, stated that '...I understand the West better than the West understands itself.'<sup>14</sup> Indeed, Mladic himself was an expert at leading his troops '...to the brink of a crisis and then (*backing*) down at just the right time to cause the international community to lose its will to act.'<sup>15</sup> They knew exactly how to provoke the UN Coalition

<sup>10</sup> R C Owen, 'The Balkans Air Campaign Study', *Air Power Journal*, Summer 1997, p 15.

<sup>11</sup> *Ibid.*, p 11.

<sup>12</sup> G J Church, 'Pity the Peacemakers', *Time*, 5 Jun 95, p 27.

<sup>13</sup> P N Hinton. 'An Air War Without Front Lines: Air Operations in Bosnia', *Air Clues*, Jun 95, p 209.

<sup>14</sup> Tim Ripley, *Operation Deliberate Force*, Lancaster: CDISS, 1999.

<sup>15</sup> Thomas Quiggin. 'Do Air Strikes Amount to an Effective Policy?' *RUSI Journal*, Apr/May 99, p 17.



into tying itself into further knots, and did so, ably applying Sun Tzu's dictum 'know your enemy and know yourself ...'<sup>16</sup> It is noticeable that once the Coalition divisions were overcome this strategy was largely negated. During Operation DELIBERATE FORCE, in the latter half of 1995, the Western military were released from the overly-constraining ROE and dual key arrangements and a co-ordinated, forceful and effective air campaign was then able to play a significant role in bringing the Bosnian Serbs to the peace negotiations.

Militarily, the Bosnian Serbs had inherited much of the Former Republic of Yugoslavia's air and air defence forces and, with Serbian support, had managed to maintain some of this capability. The aircraft were largely ageing and difficult to support, but the GBAD system was considered to be capable and effective; NATO commanders certainly recognised it as a threat that had to be avoided in the absence of political approval to attack the missile and radar sites.<sup>17</sup> In June 1995 the Bosnian Serbs shot down Captain Scott O'Grady's F-16 with a SA-6,<sup>18</sup> exacerbating an already marked reluctance by the West to penetrate known SAM areas. Nonetheless, although the Bosnian Serbs had the capability to mount effective ground-to-air attacks it is arguable that they deliberately did not fully deploy their air defence forces or commit them to a war of attrition with NATO. Instead, they capitalised on NATO's caution, using infrequent GBAD radar illumination followed by covert redeployment of the missile launchers to constantly keep NATO planners on the back foot. Equally effectively, they deployed dummy SAM sites<sup>19</sup> and fired upon any NATO aircraft that did venture below the missile engagement height, reinforcing NATO's reticence. However, by not overplaying their hand, the Bosnian Serbs avoided provoking sufficient outrage in the West to restore political cohesion.

It is also important to consider the Bosnian Serb ground forces' *modus operandi*, as it had important repercussions for the use of air power. Quiggin records that:

'Bosnian Serb doctrine did not call for their forces to be used in

<sup>16</sup> Tzu, S, *The Art of War*, Herts: Wordsworth Editions Ltd, 1993, p 106.

<sup>17</sup> Tim Ripley, 'Silence of the SAMs', *Aircraft Illustrated*, Nov 95, pp 37-38.

<sup>18</sup> *Ibid*, p 36.

<sup>19</sup> J J Lok, 'Serbian SAM Site Scrutinised', *Jane's Defence Weekly*, 11 Jun 94, p 25.

large formations. A 'concentration' of Bosnian Serb tanks usually meant two or three tanks operating together. The same can be said for artillery and mortars. Numbers in any given area were kept low and assets were spread out. NATO, trained to look for finding regimental or division sized forces, were now forced to look for small numbers of forces spread out on terrain that was not conducive to most means of detection.'<sup>20</sup>

By denying them clear-cut military targets, the Bosnian Serbs had again thwarted NATO from enjoying the benefits of air superiority.

Violations of the NATO no-fly policy by Bosnian Serb fixed wing aircraft were infrequent. This was with good reason, for, as a US Department of Defense official commented, 'Whenever they fly up high enough that we can see them, and long enough that we can catch them, they're toast.'<sup>21</sup> Nevertheless, conventional counter-air engagements were infrequent, lending further support to the conclusion that the Bosnian Serbs took a deliberate decision to avoid engaging in an air war with the Alliance. Helicopter flights, however, were more common, numbering 5,711 between 1992 and 1995,<sup>22</sup> and when the Bosnian Serbs did take to the air, deception was not uncommon. For instance, helicopters prominently painted with the red cross were often seen,<sup>23</sup> and when challenged would either land only to complete the flight after the threat had gone, or would ignore the challenge, secure in the knowledge that NATO ROE would not permit an attack against an aircraft that might be carrying casualties or humanitarian supplies.

In conclusion, therefore, the Bosnian Serb underdogs, finding themselves faced with a reluctant, uncoordinated opponent, capitalised on the inherent NATO/UN political weaknesses by both direct and indirect means. In addition, they made effective use of their own limited but effective air and GBAD assets to maintain the Coalition's reluctance to use air power to enforce ground objectives, simultaneously supporting their political grand strategy. Finally, at the operational level they made good use of the local terrain and

<sup>20</sup> Thomas Quiggin, *Op Cit*, p 16.

<sup>21</sup> D A Fulghum, 'Bosnian Serb Aircraft Launch Air Offensive', *Aviation Week & Space Technology*, 2 Oct 95, p 61.

<sup>22</sup> R C Owen, *Op Cit*, p 21.

<sup>23</sup> *Idem*.

topography to deny NATO the opportunity to use its air superiority to good effect. All of which confirms Sabin's comments above on the use of asymmetric responses, and serves to remind us that in a peace-keeping/enforcement environment a lack of clear political aims has the strong potential to render air power more of a liability than a solution.

### **Bibliography:**

- Armitage, M J and Mason, R A. *Air Power in the Nuclear Age, 1945-84 Theory and Practice*. London: Macmillan, 1985.
- Beale, M. *Bombs Over Bosnia*. School of Advanced Air Power Studies thesis, Jun 96. Chaps 3-5.
- Hallion, R P. *Air Power Confronts an Unstable World*. London: Brassey's, 1997.
- Handel, M I. *Masters of War. Classical Strategic Thought*. London: Frank Cass & Co Ltd, 1992.
- Lambert, A & Williamson, A. *The Dynamics of Air Power*. MOD, RAF Staff College: Bracknell, 1996.
- O'Ballance, E. *The Civil War in Bosnia 1992-1995*.
- Peach, S. *Perspectives on Air Power*. Norwich: HMSO, 1998.
- Ripley, T. *Operation Deliberate Force The UN and NATO Campaign in Bosnia 1995*. Lancaster: CDISS 1999.

### **Journal and Magazine Articles:**

- Fulghum, D A. 'Bosnian Serb Aircraft Launch Offensive', *Aviation Week & Space Technology*, 2 Oct 95.
- Hinton, P N. 'An Air war Without Front Lines Air Operations in Bosnia' *Air Clues*, Jun 95.
- Lok, J J. 'Serbian SAM Site Scrutinised', *Jane's Defence Weekly*, 11 Jun 94.
- Meilinger, P S. 'Achieving Air Superiority: Issues and Considerations' *Air Clues*, Jan 95.
- Owen, R C. 'The Balkans Air Campaign Study Parts 1 & 2'. *Air Power Journal*, Summer 1997.
- Ripley, T. 'Air Power Vindicated'. *Flight International*, 1-7 Nov 95.
- Quiggin, T. 'Do Airstrikes Amount to an Effective Policy?' *RUSI Journal*, Apr/May 99.
- Stewart, I M. 'NATO's Air Power Weaknesses and Strengths' *Air Clues*, Jun 95.
- Sweetman, A D. 'Close Air Support Over Bosnia-Hercogovina'. *RUSI Journal*, Aug 94.
- Todd. 'Using the Magic Bullet – the Political Aspects of Air Power'. *Air Clues*, Aug 95.
- Vego, M. 'The New Yugoslav Air and Air Defence Forces', *Jane's Intelligence Review*, Jul 94.
- 'NATO begins to Assess Air Strike Damage as Peace in Bosnia Nears' *Jane's Defence Weekly* 11 Nov 95.
- 'Bosnia. Justice Collides with Peace' *The Economist*. 18 Nov 95.

'Enough About Me ...' *Newsweek*, 25 Sep 95.

'The Case for Patience' *Newsweek*, 17 May 93.

'The Sky Above, the Mud Below' *Newsweek*, 17 May 93.

**Other Publications:**

AP3000 3rd Edn. *British Air Power Doctrine*. MOD, 1999.

*Royal Air Force Air Operations*. Air Warfare Centre, 1996.



*The RAF's contribution to operations over Bosnia included Harriers and Tornados. These happen to be a Harrier GR 5 of No 1 Sqn over Norway and a Tornado F.3 of No 5 Sqn at Butterworth, the point being that wherever they are deployed, regardless of their degree of technical sophistication, the potential value of an air commander's assets can be severely constrained by the politically imposed ROE under which they are obliged to operate.*



## THE INFLUENCE OF SPACE POWER ON HISTORY (1944-1998)

by

**Captain John Shaw USAF**

*In 1996 the Royal Air Force Historical Society established, in collaboration with its American sister organisation, the Air Force Historical Foundation, the Two Air Forces Award, which was to be presented annually on each side of the Atlantic in recognition of outstanding academic work by a serving officer or airman. It is intended to reproduce some of these papers from time to time in the Journal. This one, the winning USAF submission in 1998, is reproduced courtesy of the Aerospace Power Chronicle. Since the RAFHS publishes for a largely 'Old World' readership, however, it has been considered appropriate to edit the text lightly, particularly to Anglicise spellings, although this has not been applied to the official titles of appointments, institutions and the like. Ed*

A primary task of the historian is to interpret events in the course of history through a unique lens, affording the scholar a new, and more intellectually useful, understanding of historical outcomes. This is precisely what Alfred Thayer Mahan achieved when he wrote his tour de force *The Influence of Sea Power upon History (1660-1783)*. He interpreted the ebb and flow of national power in terms of naval power, and his conclusions on the necessity of sea control to guarantee national welfare led many governments of his time to expand their naval capabilities.

When Mahan published his work in 1890, naval power had for centuries already been a central determinant of national military power.<sup>1</sup> It remained so until joined, even eclipsed, by air power in this century. Space, by contrast, was still the subject of extreme fiction a mere one hundred years ago, when Jules Verne's *From the Earth to the Moon* and H. G. Wells' *First Men in the Moon* were the 'authoritative works' on the subject. But in an exceptionally short period of time, all within this century, humankind has broken the

<sup>1</sup> Mahan, Alfred Thayer, *The Influence of Sea Power upon History* (Boston: Little, Brown & Co, 1890).

bonds of gravity and explored not only the atmosphere but also the vastness that lies beyond. These forays into space, manned and unmanned, have already had a profound influence on the events on the globe below.

In the same way that Mahan interpreted history through the lens of sea power, so too, can we interpret the history of the last half-century through the lens of *space power*. My purpose in this essay is to give only the broadest of overviews on how the medium of space and humankind's attempts to master it have already made their impact felt on the unfolding history of humankind. In so doing, I will discuss two key ideas. First, that the initiatives and outcome of the latter half of the 20th Century's bipolar Cold War were determined overwhelmingly by space power. Second, that space power is currently undergoing an historic transformation (and proliferation) from a primarily strategic tool of national security into one germane to all forms of national activities, civil, commercial and military. Together, these ideas have important ramifications for the USAF as it attempts to wield space power in the 21st Century.

### **Beginnings**

Space power's influence on the course of history began in 1944, when a metallic cigar rose vertically from the ground in Nazi-occupied Holland and flew, unimpeded (indeed, unstoppable) into the British Isles. The fear of this new *Vergeltung* wonder weapon forced a change in the grand strategy of the Western Allies, diverting supplies and air support from Patton's rampant 3rd Army to Montgomery to allow Monty to capture the launch sites.<sup>2</sup> One might speculate on how an unimpeded Patton could have crossed the Rhine earlier than he did and driven deeper into Germany, possibly beating the Russians to Berlin and altering the post-war environment. The influence of space on world history had begun.

The German V2 program played a significant role in the post-war attitude of the Soviet Union towards technology. In the words of Walter McDougall,<sup>3</sup> the USSR, out of national fear and necessity,

<sup>2</sup> Lyons, Michael J, *World War II: A Short History* (Englewood Cliffs, New Jersey: Prentice Hall, 1994), p225.

<sup>3</sup> McDougall, Walter A, *The heavens and the Earth: A Political History of the Space Age* (Baltimore: Johns Hopkins University Press, 1985).

became, at least temporarily, an extremely efficient technocracy, catching up quickly with Western Allied atomic successes and, ultimately, placing the first satellite into orbit. The small metal sphere that hurtled into planetary free fall on 4th October 1957 has had, for its small size, an extraordinarily huge influence on human events. It represented an instant victory for the Soviet Union on many fronts. The nation that was supposedly so far behind the Western Allies, so backward, had demonstrated to the world that its technology, and therefore (by the logic of the day) its ideology, was formidable.

Although it was a technological and political coup, *Sputnik* backfired on the Soviets in a number of unexpected ways. First, it aroused American public interest and galvanised political will towards a national space effort. Even though in 1957 the American space program was in full development and right on *Sputnik's* heels, *Sputnik* transformed it from a concern of scientists and engineers into one of concern to politicians and everyday Americans.

Also, more subtly, *Sputnik* made the first crack in what would be an ever-growing schism between the Soviet Union and Red China. Whereas, prior to *Sputnik*, the relationship between the two Communist countries had been one of technological collaboration, soon afterward, perhaps now feeling more comfortable standing alone against the West, the Soviet Union refused to share further nuclear and missile technology. Thus began the rift that set the stage for the political coup President Nixon would effect a decade and a half later.<sup>4</sup>

Furthermore, in one swift stroke *Sputnik* resolved a highly debated issue (both within the United States and internationally) of the day – the question of spacecraft overflight. Did national sovereignty extend *ad caelum*? If so, was permission required from each nation a satellite might pass over in its flight? Could the US use space for strategic reconnaissance over the increasingly hermetic Soviet Union? In its haste to demonstrate technological (and, hence, ideological) superiority, the USSR resolved the problem for the Americans – the nation which boasted about the small sphere which passed over North America could hardly now object to later overflights of its territory by Western satellites.

The shock of *Sputnik's* success registered its effect on many levels.

<sup>4</sup> McDougall, p253.

Many were surprised by the symbolic (and ideologically profitable) act of surpassing the United States in technology. But some saw *Sputnik* clearly for what it was, the implied ability, for the first time, for a nation in the Eastern Hemisphere to make a direct attack on the supposedly insulated continent of North America. The vast oceans and airspaces could protect America no longer, and a new weapon emerged which changed the entire strategic balance of offensive warfare.

### **The First Space Weapons**

The marriage of American atomic weapon technology with German rocketry produced what is arguably the single most influential weapon of the 20th Century – the Inter-Continental Ballistic Missile. The ICBM was, in fact, the very first military space system. Even though no silo-based ICBM has ever sprung from its subterranean lair in anger, the ICBM was the first weapon designed to travel into and through space. ICBM technology is also very closely linked with the engineering challenges of spacelift; in fact, with the exception of the Apollo launchers, every expendable launch vehicle developed in the United States has been derived from an ICBM platform. Furthermore, and with important implications for the future, any desired capability to defend against ICBMs (and other long-range missiles), ground-based or not, would ultimately involve space technology.

The ICBM (and its sister, the submarine-launched SLBM) completely transformed the nature of strategic warfare, effectively and ultimately realising Douhet's theories of indefensible aerial bombardment. ICBMs could visit megatons of destruction on any point on the globe with little or no chance of being intercepted. It was this fundamental change Bernard Brodie referred to when he said, 'Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them.'<sup>5</sup> Likewise, B H Liddell Hart called nuclear weapons a 'revolution in warfare' and theorised that they made war between rational actors impossible.<sup>6</sup> In the Soviet Union, faith in the effectiveness of this new

<sup>5</sup> Brodie, Bernard, *The Absolute Weapon* (New York: Harcourt Brace & Co, 1946), p76.

<sup>6</sup> Liddell Hart, B H, *The Revolution in Warfare*, (New Haven: Yale University Press, 1947).



space weapon was such that the new Strategic Rocket Forces quickly became the most élite branch of the armed forces.

Nuclear weapons have since had a peculiar impact on warfare. As the Friedmans point out in their book *The Future of War*, nations that have the ultimate weapon have been unwilling to use them in times of war, even when losing. There is no simple answer to the question of why nuclear weapons were not employed against Hanoi by the US or against Kabul by the USSR or, more interestingly, against Algeria by France, against Vietnam by China in 1977, or against the Arabs by Israel in 1973.<sup>7</sup> Hiroshima and Nagasaki, rather than setting a precedent for atomic/nuclear bombing, seem instead to have represented exceptions. At what point will a nation feel threatened enough to resort to the use of nuclear weapons? Will reluctance dissipate once the nuclear ‘spell’ is broken by first use? The importance of these questions increases as other weapons of mass destruction proliferate around the globe.

The debate about the military and political significance of ICBMs is far from over. But one thing that cannot be denied is that such significance exists – that the world’s first space weapon has also been the most influential one of this century. It was, finally, both the central focus of, and the eventual means of securing, victory in the Cold War.

### **The First Space Race**

The success of *Sputnik* provided grounds for Soviet jubilation, while provoking pandemonium among American technologists and policy-makers. In an era when the ideological battle between East and West was still taking shape, *Sputnik* provided a focus for the competition, a yardstick with which the world could judge the superpowers. What followed over the next thirteen years was an extraordinarily unique focus of the national wills and resources of both countries as they competed in a contest of ‘one-upmanship’ in accomplishing ‘peaceful’ technological feats in space.

In a sense, this first space race was a highly prized football game in which the Soviet Union played the underdog that had managed to score several unanswered touchdowns. Though formidable, Soviet technology had serious flaws; the immense size of their rockets, for

<sup>7</sup> Friedman, George & Meredith, *The Future of War* (New York: Crown Publishers, 1996), p86.

example, was more a sign of backwardness than of technological might.<sup>8</sup> It was really only a matter of time before the United States, once again the sleeping giant of Yamamoto's fears, made its industrial and technological power felt. The question was, would it do so before the clock ran out? In this instance, 'sudden death', in the eyes of the US at least, was a lunar landing (although, had the Soviets reached the Moon first, one could speculate on a proposed mission to Mars to perpetuate the space race until victory could be claimed). Thus, sights were focused firmly on a target, a symbol recognised by modern and primitive cultures alike, one which the whole world could see and understand: the Moon. The ensuing race for the Moon encompassed and focused national will on a single technological achievement in a manner never seen before. In the end, the United States was victorious, accomplishing a feat at which even the most hardened sceptics of the wisdom of such a venture must shake their heads in amazement.

But the American victory was by no means decisive. What it *did* do was recover a great deal of respect for American technology and for the American way of life amid a series of embarrassing 'seconds', over some of which American culture still seems to be in a state of denial.<sup>9</sup> The United States had managed, partially at least, to exorcise the demon named *Sputnik* and bring the space-centred theatre of the ideological Cold War to stalemate, for the Soviet Union could no longer claim superiority (although it could deny inferiority) in space.

The historical influence of this first space race is felt to this day. First, in Walter McDougall's view, the lasting legacy of the space race in Americana was the founding of technocracy, the precedent that the federal government can fund and direct scientific and technological progress on a large scale. There was also the resulting 'can do' attitude, a belief that technology can solve great problems, epitomised

<sup>8</sup> McDougall, p112.

<sup>9</sup> How many Americans are truly aware that Yuri Gagarin (not Alan Shepard or John Glenn) was the first human in space *and* the first to complete a full orbit? Or that Alexei Leonov (not Ed White Jr) was the first human to spacewalk, or that Valentina Tereshkova (not Sally Ride) was the first woman in space, two decades before Ride? Or that the USSR was the first nation to send unmanned craft to, around, and on return trips from the Moon? We (*Americans*) have tended to write our space history with more emphasis on 'American' rather than 'human' firsts.

by the phrase 'if we could land men on the Moon, then we can certainly do 'X'.<sup>10</sup> Both of these legacies are still felt today within the technical communities of the US. The race had also forced the Soviet Union onto a propaganda PR defensive in space. Despite the fact that evidence clearly shows that the Soviets were attempting to beat the United States to at least a manned circumlunar mission,<sup>11</sup> the public response in the Soviet press to the American Moon landings was that roubles were better spent on Earth-orbiting space stations, exploring humankind's ability to live in space. The irony in this Soviet back-peddalling has been its endurance. Whereas the former Soviet Union is still operating its ageing *Mir* (the last in a series of manned space stations), America has yet to return to the Moon after more than twenty-five years of absence.

Most importantly for the military, the overt 'non-military' approach of the first space race left a lasting legacy on subsequent military space efforts. Great pains were taken by both the USSR and the US to demilitarise the race for space feats and the Moon. This was, at the time, a political necessity for both nations. The first space race was cast as a contest between ideologies and economic systems. Thus, winning the race had to appear to be done through the peaceful, natural technological superiority of championed culture, not by brute military force. This also meant that the pursuit, though outwardly peaceful, could not possibly be co-operative. Even Soviet Academician Leonid Sedov admitted as much: 'If we really co-operated on man-in-space, neither country would have a programme because the necessary large support in money and manpower was only available because of the competitive element and for political reasons.'<sup>12</sup> The 'peaceful' exploration of space was, like a Clausewitzian war, simply an extension of politics by other means.

In many ways, this proclaimed demilitarisation, although outwardly profitable and politically necessary, was inwardly inefficient and artificial. NASA and the Department of Defense received separate space budgets, and there was to be redundancy in

<sup>10</sup> McDougall, p413.

<sup>11</sup> Orberg, James E, *Uncovering Soviet Disasters* (New York: Random House, 1988), p187.

<sup>12</sup> McDougall, p350.

spending for years to come as the military tried to develop its own manned space platforms, all of which were ultimately cancelled. The Air Force's Dyna-Soar, Blue Gemini and Manned Orbiting Laboratory (MOL) programs are prime examples of such programmes.

This public emphasis on demilitarisation resulted in a prevailing feeling among many that space should be a sanctuary; that it was no place for military missions and hardware. In truth, this was simply never the case, for military machines, vital to national security, were already in orbit before Yuri Gagarin ever got off the ground.

### **The Second Space Race: Eyes In Space**

While the boisterous race for spacewalks and Moonshots ensued, a quieter, and in many ways vastly more important, contest was being fought. The nuclear stability of the Cold War depended on accurate information on the opposing enemy's capabilities, lest policy and strategy degrade into the bomber and missile gap panic of the late 1950s. The initial American strategy for conducting reconnaissance over the vastness of the Soviet Union was to employ aircraft, secretly overflying the Soviet Union at such high altitudes that they were theoretically invulnerable to being shot down. Even before the Gary Powers' incident, however, Eisenhower had recognised the need to migrate the strategic reconnaissance mission into space. Powers only served to hasten this end.

The advantage of space systems for strategic reconnaissance was clear; they operated in the open 'international' realm of space, and were therefore (technically) free from being intercepted. As previously discussed, in an ironic twist, by being the first to launch a satellite, the Soviet Union had implicitly declared its position on the 'space overflight' question. Since overflight was now 'permissible', the only things the Soviets might oppose were intelligence-collecting payloads, which was a difficult characteristic to verify. President Kennedy's response to this problem was to impose a black out on all space-based intelligence collection sources, hoping that the USSR would back off its complaints if the fact of reconnaissance overflights were less public (especially as the USSR was developing spy satellites of its own).<sup>13</sup> The gamble worked and space-based intelligence collection was

<sup>13</sup> Burroughs, *Deep Black* (New York: Random House, 1986), p142.

conducted under heavy shrouds of secrecy.

It was in this atmosphere of secrecy that the National Reconnaissance Office (NRO) was founded in 1961.<sup>14</sup> Composed of Air Force, Navy, and Central Intelligence Agency programme offices, it built, launched, and operated intelligence-collecting spacecraft for the duration of the Cold War.<sup>15</sup> The Soviets did the same, orbiting numbers of imaging and radar platforms to track American nuclear capabilities and fleet movements.<sup>16</sup>

NRO satellites were not alone on their watch. Operating in concert with the NRO's spy craft were the Air Force's missile warning satellites, originally the Missile Detection Alarm System (MIDAS) and later the Defense Support Program (DSP). These spacecraft represented the 'first line of defence' against pre-emptive strikes, deterring such strikes by giving ample warning time to scramble manned bombers or to send instructions to ICBM Launch Control Centres and missile-armed submarines.

Only now is the NRO emerging from its nocturnal habitat in the 'deep black' of bipolar confrontation, blinking uncertainly in the morning twilight of the post-Cold War era. Declassification of early missions, acknowledgement of the NRO's very existence, and the first formal publication of (a part of) its history are evidence that the organisation's roles, and the way it sees itself, are changing.

In the context of the Cold War, the importance and influence of having 'eyes in space' cannot be overstated. The knowledge each superpower was able to gain of the size and location of the other's nuclear inventory served to make the nuclear question transparent and contributed greatly to the stability of the Cold War. Neither nation was operating in the panicky dark, nor was it vulnerable to a 'nuclear ambush'. A nation could neither conceal a nuclear superiority that might tempt it into launching a pre-emptive strike, nor could it hide an inferiority and bluff a boasted position of strength that might lure its foe into a false arms race. This 'levelling of the field', in turn, further dampened the chances of a nuclear confrontation.

<sup>14</sup> Haines, Gerald K, *The National Reconnaissance Office: Its Origins, Creation and Early Years* (Washington DC: Official NRO publication, 1997).

<sup>15</sup> Haines, p31.

<sup>16</sup> Orberg, p199.

### **The Third Space Race**

In the United States, the successes of the Apollo missions and the euphoria of emerging victorious in the first space race gave way to the space doldrums of the 1970s, where *détente* prevailed, the Outer Space, ABM and other Treaties closed doors to some policies, and Sky Lab (somehow metaphorically appropriately) re-entered the atmosphere. The Soviets embarked upon a program of ICBM modernisation, and also developed the first anti-satellite weapon. The United States countered with cruise missile development and deployment, as well as the new Peacekeeper ICBM. Meanwhile, the secret eyes in space continued their ceaseless vigil, counting the ICBMs, following the fleets, maintaining the Cold War stability.

But the pace would quicken yet again, with the successful launch of America's reusable space shuttle in 1981, and then the announcement in 1983, by President Reagan, of his Strategic Defense Initiative (SDI). The Reagan administration's grand strategy was to break, once and for all, the Cold War stalemate, which, as Reagan saw it, was leading the world on an inexorable path to nuclear war. His plan, oddly enough, was to force the Soviets into an arms race, to eliminate the threat of nuclear war and weapons by building more of them. His course of action frightened many and gave rise to the nuclear freeze movement.

The renewed arms race of the 1980s, many historians and political scientists are convinced, is what ultimately caused the Soviet Union to disintegrate. Mikhail Gorbachev's social reforms (*Glasnost*) and economic reconstruction (*Perestroika*) played key roles, to be sure, but one wonders if they would have had the same impact or been as successful if the Soviet Union had found itself the front-running global ideological leader of Krushchev's hopes, rather than the exhausted marathoner falling further and further behind the United States and its thriving economy.

At the core of this arms race was Reagan's SDI. It threatened to undermine the existing Soviet nuclear counter-force strategy completely and to antiquate the draining modernisation they had accomplished in the previous decade. The summit at Reykjavik in October 1986 stands as the best evidence of the Soviet fear of US gains in space technology. Gorbachev, desperate for some sort of agreement, brought everything to the table, not only short-range

missiles in Europe but also long-range ICBMs and even human rights issues. The one concession he demanded from the US was a curtailment of the SDI and its restriction to the laboratory. And this was the one concession Reagan refused.<sup>17</sup> Yet despite the lack of visible progress in negotiations at Reykjavik, it was the beginning of the end of the Cold War.

Thus, in the sense that the Cold War was a hot war that was never played out, the SDI was a decisive space weapon that was never deployed. In the complex psychological arena of deterrence, where threat alone influences behaviour, the unrealised space threat of SDI was able to influence the behaviour of the superpowers.

### **The First Space War**

The passing of the night of the Cold War brought a new dawn to the role of space power in warfare. The 1991 Gulf War stands as the first major conflict where space assets have played an integral role in attaining victory. Some have called it the ‘first space war.’ General Kutyna (CINC Space during the Gulf War) rephrased it as the ‘first space applications war’.<sup>18</sup>

Space power had already played a role in numerous other conflicts in its infancy; examples include early photo-reconnaissance and weather imagery over Vietnam<sup>19</sup> and the provision of photographic and signals intelligence to Great Britain during the Falklands War.<sup>20</sup> In these instances, however, the contributions of space were relatively small and made only at the higher decision-making levels; in the Gulf War space technology percolated down to nearly every level of the battlefield. Commanders relied upon satellite communications to keep in touch both within theatre and between the Middle East and the United States. Weather data and imagery from Defense Meteorological Satellite Program (DMSP) and other weather satellites greatly aided air strike sortie planning and troop movements. The Global Positioning System (GPS) was used by land, sea and air forces,

<sup>17</sup> Gorbachev, Mikhail, *Perestroika* (New York: Harper & Row, 1987).

<sup>18</sup> Attributed to Kutyna by Day, Dwane A in “The Air Force in Space: Past. Present.” in *Space Times*, Mar/Apr 96, p18.

<sup>19</sup> Spiers, David N, *Beyond Horizons: A Half-Century of Air Force Space Leadership*, (Peterson Air Force Base, CO: U.S. Government Printing Office, 1997), pp169-171.

<sup>20</sup> Hastings, Max and Jenkins, Simon, *The Battle for the Falklands* (New York: W W Norton & Co, 1983).

and made possible precise ground manoeuvres in a featureless desert. Missile warning data from satellites alerted Israel and Saudi Arabia alike of incoming Scud missiles. Finally, imaging and signals collection platforms provided the essential precision targeting information to execute the tremendously successful air campaign.<sup>21</sup>

Thus, it was the end of the Cold War that ushered space power into its latest role. No longer was it relegated solely to the strategic task of monitoring and guaranteeing deterrence. It had finally made its way to the battlefield, to the 'grunt in the grass', and it is there to stay. Even the use of space during the Gulf War appears primitive by today's standards, which include far more reliable and accurate missile warning capabilities, more Military Satellite Communications (MilSatCom) terminals and unmanned aerial vehicles using satellite links. The presence and influence of space power since the end of the Cold War has filtered from the closed chambers and capsules of national security to cockpits, CICs, tents, and even civilian automobiles, telephones and living rooms.

### **The Exodus Into Space**

Space was once, almost exclusively, the domain of superpower government-sponsored research or national security payloads. Not so today. A host of nations and corporations now have satellites in orbit, making the situation in space, like the political one on the ground, a multi-polar maze.

The exploitation of space for civilian uses is growing exponentially. In 1998, for the first time in history, commercial space expenditures will exceed defence spending on space. What was once an arena limited to a few communications satellites in geosynchronous orbit broadcasting HBO and MTV is now an industry teeming with systems of every conceivable kind. Numerous commercial programmes are either being deployed or are on the drawing board, guaranteeing to replace terrestrial communication pathways and move voice, data and the internet into space. Space is swiftly becoming the centre of gravity for the newest commodity in human history: information.

The Global Positioning System, once intended solely for military

<sup>21</sup> Spiers, pp245-259.



use, is now practically a household word. It has become what some have called the 'last word in global navigation', and it may well emerge as one of the most significant globally influential technologies of the 20th Century. Commercial remote sensing platforms now offer imagery to those who can afford it, presenting new opportunities to nations or actors previously denied information from space, and raising new problems for national security. Finally, launch vehicles, once the Cold War symbol of a country's national will, are for sale. One can only imagine Krushchev's horror, were he alive today, at witnessing the practice of Russian booster operators bidding, in capitalistic fashion, for Western launch business. The expectations of the man who boasted of *Sputnik* and declared to a decadent Western society, 'We will bury you', have suffered a profound and utter reversal.

### **The Future**

Historically, it is often the battle never fought that proves as decisive as any actual military engagement. In the words of Sun Tzu, 'To win 100 victories in 100 battles is not the acme of skill. To subdue the enemy without fighting is the acme of skill.' If so, then space power, in its brief history, has proven to be a valuable national security skill indeed.

In many ways, the Cold War was as real as any 'hot' shooting war. It pitted the national resources, ideologies and will of the national leadership and people of both superpowers against each other. Space power in its many forms, Moonshots, missiles, spy satellites, the SDI, etc, was, I have argued, the decisive force in winning it. It could be recast as 'The Great Fifty-Year Space War.' It was won on as many fronts as the human psyche can experience. It was won in the political and ideologically symbolic race to the Moon. It was won by the omnipresent threat of massive ICBM (and SLBM) retaliation, which suppressed major conventional confrontation in Europe and elsewhere for three decades. It was won by the NRO, which verified the size and nature of the Soviet threat. And it was the SDI, the threatened development and deployment of space-based defence systems, that drove the final nail into the coffin of the Soviet Union. It was space that provided the stabilising 'crisis containment' which allowed the otherwise unstable, frightful Cold War to reach full maturity and go

gentle into that good night, relegating the Soviet Union, in Reagan's now-prophetic term, to the dust heap of history.

This is not to say that conventional forces were meaningless, or that the manned bomber leg of the nuclear triad was impotent. But these were merely supporting actors in a drama where space power took centre stage.

The influence of space power is increasing. New commercial ventures in the communications and imaging arenas are blossoming, creating a whole new class of space merchant traffic. Space is no longer the realm of the former bipolar powers. The number of actors gaining access to space, whether they be nations, corporations or international consortiums, is accelerating.

### **Issues For The 21st Century Air And Space Force**

What, then, does this new era mean for the developing doctrine and force structure of military space? The sacred teachings of Mahan on the influence of sea power on history may hold part of the answer. Mahan believed that national power derived from a nation's ability to control the critical medium of his time, the sea. A nation, therefore, which relied upon the sea for economic success and military protection could not hope to be a truly powerful nation unless it could also *control* the sea. Appropriately, then, the US Navy was founded upon defensive principles. Its primary mission was not an offensive one limited to wartime only, but rather a full-time commitment oriented towards the protection of coastlines, sea lanes and merchant shipping.

As space becomes more and more the 'ocean of the future', the military's role in space will necessarily evolve along these same lines, the *need for effective control of space*. How do we protect ('escort') our space assets, military, civil and merchant? Can we truly expect, in this increasingly complex multi-polar world, to rely on the traditional 'sanctity of space' to protect them? How do we deny ('blockade') the use of space to an adversary? Space is certain to become a centre of gravity for military forces other than those of the United States. Only the most foolish of national security strategies would allow such a target to go unnoticed when American lives are at stake.

Historian Bruce Catton has said, 'Far from being isolated by the great seas, we are exposed by them .... our only real defence lies in

our ability to make our presence felt far beyond the horizon.<sup>22</sup> In similar fashion, we are not insulated by space. Indeed, as more of what we do on a daily basis moves into space, we, our national interests, are exposed by it. Thus, the United States is, truly, a spacefaring nation. It becomes the mission, then, of the evolving Air and Space Force, to find the best ways to defend these national interests.

Mahan records the actions of Carthaginian Admiral Bomilcar among the very first demonstrations of sea power. The influence of space power upon history is only just beginning to make its weight felt. We can no more conceive how it will shape military power and global history than Admiral Bomilcar could have predicted the historically influential naval events at Lepanto, Trafalgar and Yorktown. But, in the short history of space power, we have been given a glimpse of the awesome impact it will have in the years to come. It is a necessity, then, to learn from this history, to permit us to understand, develop and employ space power effectively in order to meet the challenges of the future.

**Acknowledgements.** My interest in this subject grew during my experiences as an Air Force Intern 1997-98, working in the Office of the Deputy Under Secretary of Defense for Space and in the Space and Nuclear Deterrence Directorate. I owe thanks to Mr Gil Klinger and BGen James Beale for their advice and guidance during my internships. Thanks also to Mr John Landon, Col Michael Mantz, Col James Warner, Lt-Col Robert Fisher, and Lt-Col David Spataro. Special thanks to Col Simon P Worden for his insight on this topic.

<sup>22</sup> Catton, Bruce, Foreword in Nathan Miller's, *The U.S. Navy: An Illustrated History* (Annapolis: United States Naval Institute Press, 1977), p7.

## **THE DE HAVILLAND VENOM WITH No 8 SQN IN THE MIDDLE EAST**

by

**Air Vice-Marshal L W Phipps CB AFC**

### **Venoms in the Middle East**

In the mid 1950s the single-seat Venom replaced the Vampire on the RAF's ground attack squadrons in Germany, the Middle East and the Far East. By 1956 there were five Venom squadrons based in the Middle East, Nos 6, 8, 32, 73 and 249. Nos 6, 8 and 249 Sqns, all equipped with the FB 4, took part in the Suez campaign operating from Akrotiri. During these operations No 32 Sqn (FB 1) remained in Jordan and No 73 Sqn (also FB 1) deployed to Aden, replacing No 8 Sqn who were normally based there.

By mid-1957 No 8 Sqn was back in Aden, where it was soon to become the only Venom unit remaining in the Middle East. The others were progressively re-equipped with Canberras to form a four-squadron light bomber wing at Akrotiri; the last of these units to give up its Venoms was No 249 Sqn, by then stationed at Eastleigh, which finally retired its single-seaters in October. By that time the impact of Duncan Sandys' 1957 White Paper on Defence was making itself felt and the last six Venom squadrons in Germany had all been disbanded before the year was out. Apart from Aden's No 8 Sqn, the only other Venom operators were in FEAF where No 45 Sqn was re-equipped with Canberras during 1957, leaving only No 60 Sqn, to handle the rapidly diminishing requirement for fighter-bomber operations in Malaya until 1959, and Hong Kong's relatively small No 28 Sqn, which continued to fly Venoms on garrison duties until they were finally replaced by Hunters in 1962.

No 8 Sqn had always been operationally active in the Western Aden Protectorate where air power was employed to support the rule of law. Tribes were historically hostile, both to each other and to any governing authority which tried to keep the peace. Many years earlier, before the Second World War and in other parts of the Middle East, the RAF had developed airborne 'colonial policing' as a highly effective alternative to the use of land forces. After Suez, as the unrest in Arabia intensified, No 8 Sqn became fully extended with operations

from Khormaksar, the airfield within the Aden base. It then became additionally extended with operations in the Sultanate of Oman to the north, where the Sultan called for British support to suppress externally inspired attempts to depose him and his government.

### **The FB 4 with No 8 Sqn**

Operationally the Venom FB 4 was a first class aircraft for the job it had to do. By mid-1950s standards, with its thin wings, powered ailerons, large engine and ample fuel, it had a sparkling performance and an impressive operational capability. It could achieve 535 knots at low level; it was highly manoeuvrable, a good weapons platform, could climb to 50,000 feet and had a ferry range of nearly 1,000 miles. The centrifugal compressor of its Ghost engine conferred another advantage during low level operations, as it seemed to be able to chew up birds, ricochets and other debris and still keep running.

For operations in the Aden Protectorate the FB 4 was fitted with wing tip tanks, which was the normal configuration for the Venom. For ferrying or deployment it carried additional fuel in underwing tanks. Armament consisted of 3 inch rockets with 60 lb high explosive heads plus four 20mm cannon. For training on the nearby Khormaksar Range, we would have four rockets with 60 lb concrete heads and use only one of the cannon loaded with 50 rounds.

The unit establishment of sixteen aircraft was quickly increased to eighteen as events in the central part of Oman, about 1,000 miles to the north east, begun to unfold and extend the squadron's commitments beyond the Protectorate. For most of the 1957-59 period of operations across the Arabian Peninsula the aircraft strength was in fact higher at around twenty. For this very big squadron, constantly engaged in armed operations, the engineering task was sizeable. It included a special programme to combat general deterioration and corrosion caused by the high temperatures, high humidity and the salt laden atmosphere. Battle damage repair was also frequently necessary. But regardless of engineering effort few of the fleet were able to satisfy the requirements of a Major Servicing economically at 700 hours. Aircraft life was therefore fixed at a very short 750 hours, after which the airframes were scrapped, sometimes along with their engines.

This seemingly depressing state of affairs was acceptable because



*Characteristic smoky start up of an Eastleigh-based Venom FB 4 of No 208 Sqn.*

more Venoms were available. Although FEAF's squadrons still needed to be maintained, more than half of the 150 FB 4s built had been delivered directly to the Middle East and the survivors of these, plus a few hand-me-downs from the disbanded Wunstorf Wing, provided ample stocks from which to sustain No 8 Sqn until a replacement type could be obtained. Interestingly, at least sixty-five FB 4s were on charge to No 8 Sqn at one time or another. To take advantage of the kinder climate, some of the surplus Venoms were held at Eastleigh where, from early 1959, No 142 Sqn was established to fly some of them, although this unit had become No 208 Sqn before the end of the year.

At the sharp end of all of this was the Squadron Engineering Officer, a young flying officer straight out of Henlow which, in the mid-1950s, was not at all unusual. With the backing of very experienced Flight Commanders he was able to rise to what was a formidable fleet management challenge. And, having previously gained his wings on Vampires, as sometimes happened in the Engineering Branch of those days, he was able to air test his Venoms personally.

Pilots came mostly from disbanded or re-equipped Venom squadrons in the Middle East and Germany with a couple from FEAF. There were, therefore, no truly 'first tourists' but many had been only half way through their first tour before being transferred to Aden so

that good training and tight supervision in a fast moving operational scenario was crucially important. In early 1958 these fundamentals came close to being outstripped by the pace of operational events. Around this time several aircraft and pilots were lost for causes which were not always easy to identify.

### **Background to Aden Operations**

After the Anglo-French intervention in the Suez Canal Zone anti-British and anti-colonial feelings throughout the Middle East were fanned into flames by the powerful Cairo Radio. Nowhere was this more so than in what was then simply the state of Yemen to the north of the territories of the Western and Eastern Aden Protectorates. Sanaa Radio reinforced Cairo's Voice of the Arabs, helping to spread disaffection against both the traditional Emirs and Sheikhs and the British protecting power. The Eastern Protectorate remained relatively peaceful. But in the Western Protectorate the various forces and agencies on the ground whose job it was to keep the peace between quarrelsome tribes found themselves being shot at or ambushed with increasing frequency. At the border areas Yemeni troops would frequently mass and attempt to occupy part of the Protectorate as a prelude to 'liberating all of South Yemen'. The Aden Protectorate Levies, the resident British Army Battalion, the local Government Guards and the Tribal Guards of the sheikhs, all found themselves in frequent armed action, protecting and maintaining territory, trying to contain disaffection and keep control. Wherever there was action, or likely to be action, support from airborne firepower was usually needed. This airborne firepower was provided by the Venoms of No 8 Sqn.

### **Venom Operations**

A pair of Venoms, armed with rockets and 20mm cannon, was maintained on standby at Khornaksar from dawn to dusk every day. The precise readiness state depended on intelligence assessments of the likely need for air support. The highest state was 10 minutes with pilots in their air conditioned crewroom. The aircraft sitting outside had no protection from the oppressively hot and humid climate, apart from a cover over the cockpit. For pre-planned operations further aircraft were armed and brought to readiness as required. And there always had to be a two-aircraft back up. During busy operational

periods the training programme was suspended and there could be up to eight aircraft rotating through operational turn rounds.

Air support was effective and was called on for a variety of situations. A border incursion from Yemen, cross-border retaliation when our own forces were fired on by mortar, an armed attack on an up-country convoy or the containment of outside inspired action which was getting out of hand – just a few examples of the situations in which the FB 4 was able to perform so well. Venoms would also be tasked to operate in a deterrent role, perhaps flying visibly and repeatedly over areas where trouble might be brewing ('flag wave'), or on airborne standby, patrolling the route of a convoy en route to an up-country destination ('cab-rank').

In most cases air action would be co-ordinated, and controlled by VHF radio, by an Air Liaison Officer (ALO) on the ground with the land forces. The ALO was normally a Venom pilot from No 8 Sqn. Each pilot had to take a turn at this sometimes exciting duty during which he might learn from his Aden Protectorate Levy driver that, when on holiday with his tribe, the driver might well be amongst those shooting at the Venoms! Apart from frequently encountering small arms fire, sometimes loosed off because it was a way of life as much as anything, the Venoms could run into heavier calibre AA weapons. On one occasion a Venom was shot down at the Yemen border by 37mm AA fire and the pilot killed.

In the Western Aden Protectorate the strategy and tactics of 'colonial policing' devised by the RAF in the Middle East before the Second World War had been greatly expanded and developed. The offensive air/ground attack component of air power became a dominant element of support in any success which the many elements on the ground might have had trying to keep order in what was eventually to become another chapter of disengagement from Empire. The Venom, and later its successor the Hunter, were exactly the right aircraft at the right time to take on such a key role. But if activity for No 8 Sqn appeared to be intense in Aden, developments elsewhere in the Arabian Peninsula were also calling upon the resources of the Khormaksar-based Venoms.

### **Oman and the Jebel Akhdar Campaign**

To the east and the north of the Aden Protectorates was what was



then known as Muscat and Oman. In the early 1950s the country was viewed as an oil bearing region with considerable potential but its territorial borders were ill-defined. Saudi Arabia had laid claim to the whole of the Buraimi Oasis (partly Omani) in 1952 and although, with British backing, the ruling Sultan had successfully dealt with this dispute, the legitimacy of his Muscat-based regime was being challenged by rival Omani factions which held sway in the interior and now had Saudi support. Towards the end of 1955, with an assurance of British backing if required, the Sultan's forces conducted operations into the interior which appeared to have been successful in establishing his authority as The Sultan of Muscat *and* Oman. But the group of leading players opposing him had escaped, in some cases to Saudi Arabia. They were biding their time, planning an armed rebellion which would start in Central Oman in the region of the Jebel Akhdar.

The Jebel Akhdar (the Green Mountain) dominates Central Oman, rising at its highest point to 10,000 feet. There is a central cultivated plateau at 6,000 feet with several small villages on and around it. In the valleys below the mountain are further larger villages and it was here in the spring of 1957 that battles for the control of the region recommenced. This time the Government forces were outmatched. The Sultan had effectively lost control of the central area with its potential oil reserves. Once more he called on the British Government for help. Based on the Aden experience it was believed that air power could be decisive. Four of No 8 Sqn's Venoms were dispatched to the area to operate from Sharjah, some 200 miles to the north of the Jebel. They were joined for a short while by six Venoms of No 249 Sqn, just before they reformed with Canberras at Akrotiri. Beverleys and Shackletons also became involved in their particular supporting roles.

From mid-1957 until January 1959 the Venoms with rockets and fixed cannon, and the Shackletons, with bombs and their twin 20mm front guns, played a leading role in what became the Jebel Akhdar Campaign.

### **Operational Phases**

The first part of this campaign in mid-1957 was fought around the valleys and villages below the Jebel. Since the spring set back, the Sultan's land forces had been quickly strengthened and augmented.



*Four of No 8 Sqn's Venom FB 4s photographed shortly after their arrival at Sharjah on 29th December 1958.*

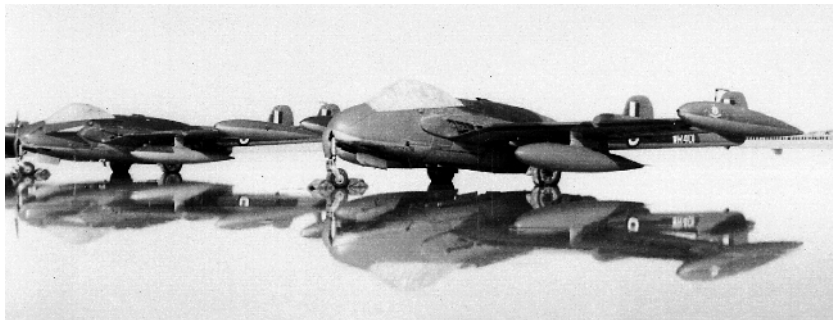
Some British troops with armoured cars were sent up from Aden. With airborne fire support these combined forces overcame the opposition and restored control. But the rebel leaders, with a sizeable force of their followers, escaped up into the stronghold of the Jebel, still determined to find ways of challenging the rightful Government.

The next part of the campaign ran, on and off, for about a year from October 1957 when Venoms and Shackletons operated over the whole area of the Jebel, but paying particular attention to the central plateau, disrupting crops and water supplies and generally attacking anything that moved. The intention was to make life so unbearable for the rebels and local inhabitants that they would be obliged to surrender. This plan did not achieve its aim. In spite of the miserable conditions which they faced the rebel force remained defiant.

The final phase, short and decisive, eventually ran from November 1958 until late January 1959. The Sultan's forces and a unit of the Special Air Service (newly arrived in the area) began mounting patrols and probing attacks from several directions in the foothills. Finally troops from two squadrons of the SAS, supported by the Venoms of No 8 Sqn, scaled the Jebel Akhdar. There were fierce hard-fought battles against a well-armed and well-trained enemy. The SAS, supported by the Venoms, eventually prevailed. The campaign had been won.

### **Operating Conditions**

Sharjah was not an ideal airfield for Venoms, but the only alternative, Masirah, had a runway surface which for continuous operations would have damaged the aircraft's high pressure tyres. The surface at Sharjah was rolled sand. There were two strips, one for take



*Lacking protection from the elements, working conditions for No 8 Sqn's tradesmen were always difficult. Despite the desert climate, they sometimes had to cope with heavy rain – even at Sharjah.*

off and one for landing. During a take-off run the blast from a fully-laden Venom meant frequent rolling of that strip. The parallel landing strip fared slightly better.

During Sharjah-based operations No 8 Sqn aimed to maintain an effective detachment strength of at least four aircraft. To achieve this, replacements were frequently required from Aden. Serviceability at Sharjah was very poor, for the most part due to the debilitating effect of the climate on the hydraulic, electrical and fuel systems. All servicing and re-arming was done in the open; there were no hangars and just one canvas shelter under which a Venom might sometimes sit for extended work. There was also a depressing site at the edge of the airfield where the remains of Venoms which had crashed or were otherwise beyond repair were abandoned to the elements.

### **Operations**

Aircraft flew with wing tip fuel tanks, normally eight rockets, with 60 lb high explosive heads, and 800 rounds of 20mm ammunition. The way in which the aircraft were wired meant that rockets could be fired only in pairs and mutual interference sometimes impaired accuracy. So, when accuracy was very important – when shooting into the mouth of a cave for example – only four rockets would be carried as this permitted each one to be fired individually.

Sortie length was up to 1 hour 40 minutes: 30 minutes to the area, 40 minutes over the Jebel, and 30 minutes for return to Sharjah. There were no diversions so there were no problems with calculating

minimum fuel states – just enough to get back to Sharjah and to hold off for a short while if you had to. Outward and return routes were usually flown at 20,000 feet, a pleasantly cool interlude for the pilots.

Aircraft arrived at the operational area with much remaining fuel and a full weapons load. Executing an attack manoeuvre with either rockets or guns required careful handling and sharp judgement, especially when operating over the Jebel Akhdar plateau at 6,000 feet. In the early stages of a sortie recovery from a 30° dive might mean firing from slightly beyond the ideal range. For cannon attacks the dive angle could be modified to perhaps 20°, but the very curved trajectory of the 3 inch rocket, needing a full 30° and 600 yards for accuracy, could lead the unwary to an excitingly close proximity with the ground during pull out. One aircraft did indeed fly into the ground, killing the pilot, but the true cause could not be established because of the circumstances: enemy fire was a distinct possibility. Several aircraft also suffered ricochet damage, often due to the rocky surface of the target area. But there were mercifully no Ghost engine failures, and the FB 4's basic handling qualities were so good that, with no aircraft-induced surprises, incidents were surprisingly few.

During the day-to-day tasking over the central plateau (October 1957 onwards) direct attacks on villages were avoided and fire was concentrated on water supplies and agriculture. Known enemy pathways, and ambush positions at lower levels, were targeted too. Venoms were also sometimes tasked in direct support of reconnaissance or probing missions by the land forces whose ultimate task it was to take the Jebel, capture the rebels and re-establish Governmental authority over the region. These support missions would often see much action, helping not only to win battles but giving soldiers confidence in the availability of what they could see was a powerful and effective airborne fire support system.

During the final phase of the war (November 1958-January 1959) dawn or dusk missions were often flown from the Sharjah base, frequently in support of the SAS who were by now becoming the key players in the action on the Jebel. After a dusk strike, Venoms got back to Sharjah in the dark with little in the way of navigational aids and a flare-lit sand runway to land on. The dawn strikes were often short, sharp and concentrated. Rockets into an enemy cave, just as the occupants were waking up, strafing the cave surroundings, and then a

follow up attack by the SAS who had been waiting overnight below the escarpment for the air strike which would launch their own operation. For the final and successful assault on the Jebel on 27th January 1959 the Venoms were in action from dawn until the rebel surrender later that day.

During the Jebel Akhdar campaign the Venom FB 4s of No 8 Sqn flew about 1,500 sorties, fired 3,800 rockets and expended 271,000 rounds of ammunition. The aircraft had played a decisive role in the winning of the campaign.

### **Retrospective**

With its sparkling performance and impressive all-round operational capability the Venom FB 4 seemed set to become a most worthy successor to the Vampire in the front line of the Royal Air Force of mid-1950s. Its short time in full service was due to the political decisions of 1957 which, incredibly, saw manned fighters as a thing of the past and overnight disbanded almost the whole of the RAF's day fighter/ground attack force. But the situation in Aden, and then the request for help under Treaty arrangements with Oman, called for an operational capability which only the Venom could provide. Not all FB 4s had been scrapped and so there were just about enough to maintain the one very large squadron tasked with operating in both the Western Aden Protectorate and the Jebel Akhdar.

The FB 4 might have continued longer in service with No 8 Sqn had it not been for the debilitating effects of the operating conditions, particularly the climate, on the airframe and engine of aircraft which were being constantly flown in action, mostly at low level and very frequently to the limits. A replacement type was urgently needed and in mid-1958 No 8 Sqn's crewroom also became the crewroom for pilots engaged in the Venom Replacement Evaluation Trial from which the Hunter emerged as the preferred successor. Within a year of the end of the Jebel Akhdar campaign No 8 Sqn had re-equipped.

Nevertheless, while it had long since been withdrawn from RAF service, the Swiss Air Force continued to operate Venom FB 4s until 1981 and they soldiered on with militia units until as late as 1984. Some of these ex-Swiss Venoms are still flying in the privately owned Vampire/Venom demonstration team currently based at Hurn Airport, Bournemouth.

**SQN LDR G D GRAHAM DSO MBE**

by  
**Frank Card**

One cannot go far in the mountainous areas of the UK without seeing a small group of Land Rovers, with 'RAF MOUNTAIN RESCUE SERVICE' placards over their cabs, parked in a lay by. One of the Service's five teams – based at Leuchars, Kinloss, Stafford, Leeming and St Athan – is either on a weekly training session, one of the thousands since its formation 55 years ago, or on a call out for a lost climber or a crashed aircraft.

The evolution of this organisation, from its wartime beginnings at RAF Llandwrog, is well documented but when I was researching and writing *Whensoever*<sup>1</sup> it soon became clear that a Flt Lt Graham had made a crucially important contribution to the story. Although he was not the only man to form and run a mountain rescue team (there were at least two others during the early 1940s) it was Graham who had had the vision to see that the need was for a comprehensive service, rather than one limited to the locality of his own station. Frustratingly, at the time, I was unable to find out very much about this most distinguished medical officer but now, thanks to some detective work, I can fill in some of the blanks.

From Merchant Taylors School George Desmond Graham went up to Clare College, Cambridge, switching to medical studies from classics. How mountain rescue history would have differed had he not made that change! He was commissioned into the RAFVR at the age of 27 in 1941. Posted to RAF Llandwrog (No. 9 Air Gunners School), he found that his duties as Station Medical Officer included organising a party to go into the hills whenever an aircraft crashed on his patch. Horrified by the number of unnecessary aircrew deaths caused by injuries or exposure, because nobody had the skills or equipment for mountain work, he made his first tentative moves to form a mountain rescue *team* as opposed to a scratch group of medical orderlies and others who happened to be available. In this he was helped by his pre-war climbing experience on Skye and in North Wales. As time passed the experience gained from a variety of incidents led to progressive

<sup>1</sup> *Whensoever - 50 Years of the RAF Mountain Rescue Service, 1943-1993* by Frank Card. (The Ernest Press, 1993).



*Flt Lt Graham photographed in July 1943 when the RAF Llandwrog Mountain Rescue Team was formally established.*

improvements in the equipment and techniques employed by the Llandwrog team. While it was not untypical, because the Sims crash was one of the worst cases, it provides a useful example.

On 17th October 1942, Sgt Mervyn Sims was flying a Boston (Z2186) of No 418 Sqn over North Wales in cloud. At 1115 hrs, at something above 3,000 feet, he hit Carnedd Dafydd, a favourite mountain of climbers, if not of airmen. When he came to he was in great pain. He could see virtually nothing except swirling mist, a few yards of rock and grass, the broken remains of his aeroplane and the bodies of his crew. Then came dusk and the seemingly endless night. Another day and night followed. Eventually, a young airman, walking on Carnedd Dafydd with his girlfriend, spotted the dark shape of the wreck, torn metal gleaming in the first sunlight for days. On going closer, they could discern three bodies. Running back down the hill, the young man flagged down a car driven by Dr Mostyn Williams, the Bethesda GP, who raised the alarm. The mountain rescue team from RAF Llandwrog responded and on reaching the site discovered that Sims was suffering from exposure, a broken back, a broken leg, a

fractured skull, concussion and a broken thumb along with various lacerations. Some of his injuries had turned gangrenous, but he survived.

Meanwhile, Graham had written to the Air Ministry to draw their attention to the deficiencies in his equipment. The reply indicated that this had not been the proper thing for a rather junior medical officer to do. He was advised to put his request in writing 'through channels'. That is to say via his commanding officer, who would, if he thought it worthwhile, forward it to 25 Group, who would in turn, if they thought it had merit, pass it on to Flying Training Command, who might then forward it to the Air Ministry. 'Don't do that again!' he was told.

Graham immediately replied, directly to the Air Ministry, explaining why it had been necessary to write in the first place, and the exchange of correspondence continued in this vein for some time. Eventually, HQ Flying Training Command's Wg Cdr Ruffell Smith, who happened to be both a doctor and a pilot, was directed to visit Llandwrog to find out what Graham was up to and to establish whether he had a real case. After lengthy discussion, and somewhat to the surprise of both Graham and the Air Ministry, Ruffell Smith agreed that there was a need for a properly founded rescue capability. As a result, a more suitable ambulance was provided, one able to negotiate the narrow mountain roads of Snowdonia, along with a Jeep, one-inch maps, marching compasses, Verey pistols, waterproof clothing and boots.

By this time training aircraft, mostly Ansons, were hitting mountain tops practically every week, each incident adding to the pool of experience and further highlighting deficiencies in the available facilities. To take just one example, consider the loss of an Anson, EG110, of No 9 (O)AFU which had taken off from Llandwrog in the hands of Plt Off Ken Archer on 14th January 1943. The aircraft developed radio trouble and, with visibility and darkness precluding map-reading, the crew were unable to fix their position. At about 2045 hrs the aircraft hit a gully some 2,400 feet up the north east face of Foel Grach, just above the Dulyn Reservoir. Two members of the crew were killed; Archer and the trainee navigator, Sgt Patterson, were badly injured.

The next day Archer was able to make his way down the hill to a



farmhouse. The farmer telephoned RAF Llandwrog, and Graham went to Tal-y-Bont with two nursing orderlies, arriving at about 1630 hrs. Archer, by then irrational, was unable to describe the location of the wreck, beyond being able to recall that he had climbed a ridge (probably Craig y Dulyn) and seen two lakes. The three men searched the mountainside far into the night, but at about 0200 hrs there was a heavy snowstorm and Graham called a halt. At dawn they started again, bolstered by another thirty men from Llandwrog plus some civilians.

Graham divided his available manpower into a number of smaller search parties. A Beaufighter of No 456 Sqn from Valley also took part in the search but, although the aircraft could be heard by the men on the ground, they had no means of communicating with its crew. Nevertheless, one of the search parties soon located the wreck; Patterson was still alive. It was then necessary to locate Graham so that the casualty could be professionally examined and given emergency medical treatment. That having been done he had to be loaded onto a heavy wooden General Duties stretcher which the team had to manhandle down the mountainside for the three-hour trek back to the ambulance.

Analysis of this incident revealed further weaknesses in the recovery arrangements: the excessive time taken to raise a search party; inadequate communications between them; unsuitable vehicles; unsuitable stretchers and a lack of the specific skills needed to search at night or in bad weather. Graham revised his procedures. First, he reduced the response time by dividing the team into two groups. There was to be an advance party, about twelve strong, to include the medical officer, three nursing orderlies, a driver and a wireless operator; at least three members of this group were required to have some practical experience of mountaineering or hill-walking. They would set off for the crash site immediately, the remainder, an untrained carrying party, would initially be held on standby.

As to searching, a system needed to be devised to permit operations to continue in poor visibility and/or at night. To solve this problem Graham required every other member of a team to carry a portable radio, a prismatic compass and a map. The MO would mark out the search area on the map but remain at the ambulance whence he could direct operations. The rest of the team was spaced out at 50-yard

intervals along one side of the area to be searched. The area was then swept by all of the men with compasses marching on the same bearing to maintain separation, the intervening men keeping in touch with whistles.

Thus were the foundations laid for a regularly-constituted team using a standard, controlled search technique underpinned by a validated training programme. These early procedures have been considerably refined over the years, but it was Graham's team that provided the template for the nation wide wartime military mountain rescue service.

On 2nd June 1943 Graham was awarded an MBE for services to mountain rescue, and shortly after that the Air Ministry gave approval for the official launch of the Mountain Rescue Service based initially on just three teams. By this time Graham's team had been responsible for rescuing thirty-three aircrew from twenty-two crashes. In March 1944 a Directorate of Mountain Rescue was established within the Air Ministry under Flt Lt Gill (whose responsibilities also embraced Air Sea Rescue). With this level of official recognition and support the network expanded to peak at ten teams based on Llandwrog, Madley, Harpur Hill, Topcliffe, Harrowbeer, Millom, Kinloss, Montrose, Wigtown and Wick.

In the meantime Graham had been posted to India where, in early March 1944, he joined No 357 Sqn at Dum Dum. This unit was engaged in dropping supplies and agents to sustain the Burmese guerrillas operating with Force 136. All but one of the twenty sorties flown by the squadron's Hudsons during March were successful.<sup>2</sup> A few days after Graham's arrival, Hudson AM949 was despatched to drop supplies at night near the Sino-Burmese border. The aircraft failed to return but shortly afterwards a radio message was received reporting that the crash site had been reached and that two of the crew had been found alive; medical assistance was requested.

Despite his lack of parachuting experience, Graham volunteered to go, and Flt Sgt Tom 'Chalky' White, a parachuting instructor, offered to be dropped with him. In the short time available, White gave Graham some elementary pointers while the doctor assembled his medical kit and both men drew walking boots, bush hats, revolvers,

<sup>2</sup> See *The Forgotten Air Force* by Henry Probert. (Brassey's, 1995).

cyanide pills and silver rupees as 'escape money'. They took off at 2350 hrs, landing at Chittagong an hour later to refuel and receive a final briefing. After a meal they were airborne again, with an ETA at the Drop Zone of 0500 hrs on 17th March. The DZ, which was on a 6,000-foot ridge, was located successfully; Graham went first, following a supply container and followed by White and a second container. White was able to manoeuvre himself close enough to shout instructions to Graham as to when to yank the cords and spill air.

In a personal account published a few years later, White wrote that 'the MO narrowly missed a tree, hitting his head slightly as he went into a 'rugby roll' on a mound of earth, but he was quite blasé about his first descent.'<sup>3</sup>

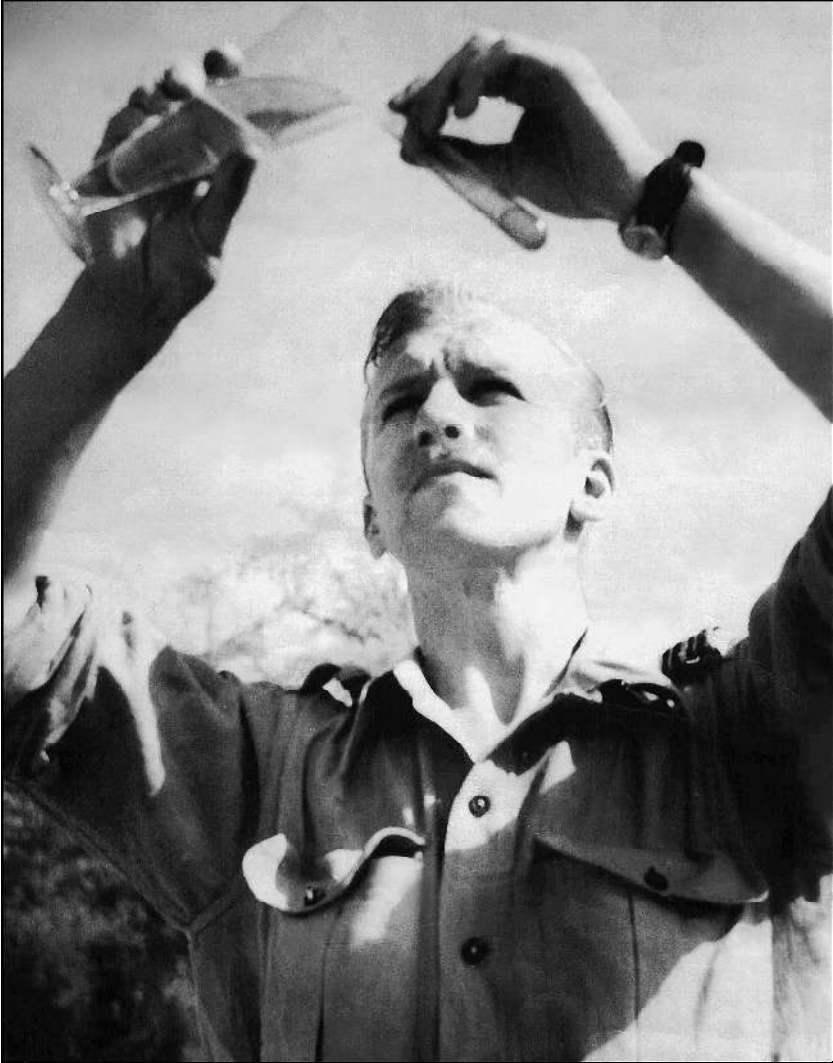
In May, Graham's wife, Ann, received a letter from her husband from which the following extract is taken:

'In my last letter I tried to give you a hint that I had been in Eastern Burma on the other side of the Japs in a kind of no-man's-land – beautiful mountainous country with a cool and invigorating climate, so pleasant after the beastliness of Bengal. As dawn was breaking on St Patrick's Day 17th March I landed on a mountain top. Some guerrillas met me and my companion and we trekked north for an hour and then stayed in a mountain hut made of bamboo and grass with a fire on the earth floor in the centre.'

The blue-uniformed Kokang guerrillas were commanded by Col Yang Wan Sang. Fg Off W Prosser RCAF was now the sole survivor of the crashed Hudson. He had a fractured skull and a fractured ankle. Graham administered such medical attention as was possible while making contact with Maj Leitch, a British intelligence officer, and Lt Parsons of the US Army.

White was told that after the Hudson had dropped its containers, one of its engines had started backfiring and trailing sparks. Turning away from the DZ, the pilot had headed up the Nam Po Ko valley to gain height, but had crashed near the top of a ridge. Graham visited the site where he noted the readings on those instruments which were intact and recovered the wireless operator's and navigator's logs before destroying all other documentation.

<sup>3</sup> *Mission to Burma* by Flt Sgt T E White CGM. (RAF Upper Heyford station magazine, December 1947).



*Flt Lt Graham photographed shortly after he joined No 357 Sqn at Dum Dum in March 1944.*

Prosser grew steadily weaker, but on the 20th Graham was joined by an American doctor, Capt Hookman, who had had a five-day a journey by mule from his HQ in China. Between them they fabricated

makeshift nasal feeding device using rubber tubing taken from the wrecked Hudson. A week later, on the 28th, it was reported that enemy troops had crossed the river at Kunlong, just four hours march away. In anticipation of an early move, a litter was made, bearers hired and mules acquired. Two days later, the Japanese presence was considerably stronger and, despite Prosser's condition, it was decided to move him to an Allied unit. Graham's letter continued:

'We stayed here looking after an injured man till the first of April and then set off N.E., rode mules for ten days out of Burma and into China. Our patient was carried in a litter by coolies. We had many adventures, though I never had to shoot anybody. Sometimes things were a little sticky, but I was very well armed. I can't tell much more not till the end of the war...'

High mountain passes were crossed, involving extremes of heat and cold. Mules fell off narrow tracks, taking men with them. Overnight stops were spent in a village schoolroom, a headman's hut and with US and Chinese Army units. Several Kokang coolies opted to desert, rather than risk conscription by the Chinese, and at times Graham was obliged to threaten others with his revolver. Despite these tribulations, they reached Shunning, the HQ of the American Y Force in China, on the 11th April, after the toughest day's march of all. Following a day's rest for the patient, they were driven the short distance to the US-Chinese hospital at Yunshien in a weapons-carrier. A further three days' drive took them to Yunnani Airport where they eventually secured a flight by C-46 Commando over the hump to Assam. From there they were flown by Dakota to Calcutta where an ambulance was waiting to take the three men to the British General Hospital, a month after the start of the operation. Graham was subsequently made a member of the Distinguished Service Order, White being decorated with the Conspicuous Gallantry Medal.

Aircrew serving overseas were entitled to repatriation after four years but, to reduce the demand for replacements, on the initiative of AVM R V Goddard, a scheme was introduced to encourage people to apply for a six-month extension following a period at a dedicated 'rest and recuperation' unit. This unit, the Aircrew Mountain Centre, was set up at Gandarbal (a little north of Srinagar, in Kashmir) with the main centre of activity at Sonamarg, 40 miles up the Sind River. Wg Cdr Tony Smyth, a pilot and an experienced mountaineer (and now

President of the RAF Mountain Rescue Association), volunteered to run the centre. Graham became a member of his staff. Another was Wilfred Noyce, later of Sir John Hunt's Everest expedition. A contemporary photograph shows a very thin Graham, in painful contrast to one taken in the hills near Llandwrog only a year or so earlier. Smyth remembers Graham as being very withdrawn, in complete contrast to how he is remembered by veterans of the Llandwrog team. Graham wrote to Ann on 15th August:

'I have journeyed westwards again an odd 1,500 miles up into Kashmir to join this party on a mountaineering job.... As I write this I am afloat on a houseboat on the lake outside Srinagar. The green clad mountains reaching up 11,000 feet encircle this valley and the billowing white sparkling clouds from India tower up above it.'

By December 1944 he had moved to HQ Air Command South-East Asia, in Ceylon, which he much preferred to India. The Japanese surrender in 1945 revealed PoW camps in Burma whose inmates were in a pitiful state. Operation MASTIFF was mounted to drop supplies and medical teams. Graham again, from a letter dated 26th October:

'In the unruffled calm of the upper air we steered S.E. for an hour or two until the Dropping Zone was due to appear. A thin wisp of blue smoke from the jungle below showed that they were waiting for us. Frank brought her down and she roared over a clearing in the jungle at 500 feet. Meantime the door was opened and we were busily stacking crates and sacks of food and supplies in heaps of six, each with its chute. Round again and the red light over the door flashed on. Then, as the green came on and the alarm bell shrieked out, four sweating men kicked the crates out just as we flashed over the strip. In an instant they were gobbled up in the roar of the slipstream. Out of the corner of my eye I could see white chutes opening. Round and round until 2½ tons had been shot out of the door.'

By February 1946 Graham was in Nepal, but a month later he was back in the UK where he was immediately admitted to Creighton Royal Hospital at Dumfries as a psychiatric case. One can only speculate as to whether this unfortunate outcome was a reaction to his ordeal in Burma with White and Prosser. Tragically, he had been diagnosed as a schizophrenic. This may help to explain a reported

sighting of Graham under arrest at an RAF station in India in 1945, an anecdote which I did not include in *Whensoever* because I could not verify it.

Whether it was before or after he spent a period in hospital in Northampton is uncertain, but it is known that at some stage Graham underwent the desperately drastic lobotomy operation. He was eventually moved to Cheadle Royal Hospital, another psychiatric unit, where he remained for the rest of his life. He died of stomach cancer in 1980; he was 67 years old. Thus, in tragic obscurity, ended the life of the remarkable man who, more than any other, was responsible both for shaping the RAF Mountain Rescue Service and for providing the inspiration behind the many civilian mountain rescue teams in the UK.

As a footnote to the story, the Chairman of the RAF Mountain Rescue Association, Sqn Ldr Brian Canfer, recently located a Professor Michael Graham at University College, London who turned out to be the elder of Graham's two sons. In March 1999, Mike and his wife were honoured guests of the Association at a dinner and ceilidh held at Shap in Cumbria. At this event the Association was deeply moved to be presented with Sqn Ldr Graham's DSO and MBE which it will hold in honour of generations of RAF mountain rescuers.

**Acknowledgments:**

Prof J M R Graham.

Royal Air Force Mountain Rescue Association archives.

*Sadly, as a second footnote, we should record that Tom White, Sqn Ldr Graham's companion during his adventure in Burma in 1944, died on 9th September 2000 following a stroke. Ed*

## THE RAF HERALDRY TRUST

by

Wg Cdr C G Jefford



Official unit badges (*not* crests) were introduced into the RAF in 1936. Yet in the short space of only sixty-five years the basic rules governing the award of badges have been changed at least three times. This has resulted in a degree of confusion and a number of anomalies. For instance, to begin with there was no ‘minimum time served’ criterion for the award of a badge, a unit simply had to exist and apply for its badge while it was still in being; retrospective applications were (and are) not permitted. In 1950 it was decided that, in order to be entitled to apply for a badge, a unit must have an establishment of at least 150 personnel and have existed for at least two years. It is just as well that this one was not applied retrospectively as, without resorting to some creative mathematics, it would have effectively disenfranchised most contemporary squadrons, certainly all of those that were operating under centralised servicing schemes. Today a unit has to have existed for at least five years before becoming entitled to a badge. Nevertheless, where there are rules one will almost inevitably find exceptions. For example, RAF Ascension Island was granted a badge less than two years after the station had been established and Strike Command had its badge approved two months *before* it came into being. Clearly, the rules can be bent when it suits the ‘establishment’ but, despite some very deserving cases, notably that of No 273 Sqn, the ‘no badges in retrospect’ clause seems to be immutable.

Having acquired its badge, the next stage of heraldic maturity is represented by the award of a standard, for which the normal minimum qualification is twenty-five years of service with a life expectancy of at least another five. The first thirty standards were awarded in 1943, thus commemorating the twenty-fifth anniversary of the formation of the RAF and simultaneously identifying the thirty



most senior squadrons in the Service. As with badges, there have been exceptions to the rules and the rules themselves have changed. Perhaps the most significant change concerns the display of battle honours, a subject which has often proved to be contentious. Indeed problems associated with the definition of battle honours contributed in large measure to the fact that, although they had been awarded in 1943, it was 1953 before the first ones were actually presented. When a unit is notified that it is to be awarded a standard, it is informed of the honours to which it is considered to be entitled and invited to select those which it wishes to display, ie to have emblazoned on its standard. It should be understood, however, that some honours may be awarded without the right to emblazonment, certain inter-war campaigns for example. Another nice refinement is that, while the *entitlement* of all units involved in a particular campaign is noted for future reference, individual honours cannot actually be *awarded* to a specific unit unless or until it has a standard. Because of the physical dimensions of an RAF standard it was originally decided to limit the honours to be displayed to just eight. In the aftermath of the Gulf War, however, this limit was raised to fifteen.

Reverting to the topic of badges, partly as a result of changes in the rules, the granting of exceptions to these rules and other anomalies, we do not know for certain how many badges have actually been approved. The vast majority of these emblems were awarded in pre-computer days so we are dealing with manual searches through dusty files, not a trawl through an electronic database at the speed of light. With little difficulty, the existing records do lend themselves to answering the question, 'Was No X Unit ever granted a badge?' but the only way to answer the question, 'How many units have had a badge approved?' would be to examine the records of every individual unit that has ever existed since 1936. No one has ever embarked on that exercise, hence the uncertainty over the precise total but it is of the order of 1,600. If, as each one was approved, a copy of every badge had been deposited centrally for record purposes we would, of course, know the numbers involved and have a complete collection. Since no one thought to do this at the time, however, apart from not even knowing the full extent of the problem, until recently it seemed likely that the badges of some of the shorter-lived units would disappear into permanent obscurity.

To prevent this happening, the RAF Heraldry Trust was set up in 1996. Many of the horses have long since bolted, of course, but, by closing the stable door and rounding up the strays, the Trust aims to create a collection of all unit badges – not only squadrons, but commands, groups, stations, MUs, OCUs, FTSs, ANSs, etc. Among the prominent personalities associated with the initial establishment of the Trust were the Inspector of RAF Badges at the time, Sir Walter Verco, Surrey Herald of Arms Extraordinary, and the then CAS, Air Chf Mshl Sir Michael Graydon. The original trustees included Mr John Brooke-Little, Clarenceux King of Arms at the College of Heralds, Mr David Lee, Deputy Director of the Imperial War Museum, AVM Peter Latham and Mr Charles Ross, Chairman of the Lightning Association. The artist commissioned to paint the badges was the prominent heraldic illustrator, Mary Denton.

Unfortunately, the Trust attracted no public funding, although it does have charitable status. It relies, therefore, on badges being sponsored by individuals or organisations. The cost is £87 per badge. What this buys is a rendition of the badge in full colour on goatskin parchment, along with its heraldic description, or ‘blazon’, including details of colours, or ‘tinctures’. All of the battle honours which a unit is entitled to emblazon are also shown, not just the limited selection which are actually embroidered on its standard. The finished articles, which measure 450mm × 320mm (ie a little larger than A3), are currently being deposited for safe-keeping at the College Hall Library at Cranwell. Regrettably, the limitations of the printing process and the fact that we are constrained to black and white fails, by a very long shot, to do justice to the illustration accompanying this article.

*Flypast* magazine has actively promoted the Trust ever since its inception and further details can be found on its website (<http://www.keymags.co.uk>). RAFHS members interested in sponsoring a badge, either personally or through a unit association, may also care to write to Mr Charles Ross, Chestnut Farm House, Ludford Rd, Binbrook, Market Rasen, LN8 6DR. (Tel 01472 398705).



**SUMMARY OF THE MINUTES OF THE FOURTEENTH  
ANNUAL GENERAL MEETING HELD IN THE ROYAL AIR  
FORCE CLUB ON 28 JUNE 2000**

**Chairman's Report.**

The Chairman reviewed the activities of the Society, noting that two seminars were held each year, and that its two or three high-quality journals reached nearly 800 members. The most recent seminars, both held at Hendon, had covered Air Transport in the RAF and Cold War Intelligence Gathering. Thanks were due to Gp Capt Richard Bates and Air Cdre Graham Pitchfork for masterminding these events. The next symposium would also be at Hendon on 18th October 2000 when AVM John Price would co-ordinate a seminar on Helicopters in the RAF. Sir Timothy Garden would be in the chair. Topics under consideration for the future included Nuclear Weapons in the RAF, the Tornado, and The Falklands Campaign. In addition, The Battlefield Trust would be holding a study day on the Battle of Britain at the RAF Museum on 16th September; the Trust's Chairman, Sir John Curtiss, had invited the Society to attend and to take part.

The Chairman was pleased to report that membership had continued to increase over the previous twelve months and that there was no need to increase subscriptions. On the other hand, while participation in seminars was satisfactory, indeed a record 150 had attended one event, he urged all members to support these events to the greatest extent possible.

It was noted that the Society was indebted to the RAF Museum authorities who welcomed its activities and gave their unstinting support. Although alternative venues had been considered, none could offer such pleasant and centrally located facilities. Nevertheless, the Chairman continued to hope that it would be possible to hold a joint seminar with RAF students at the Joint Services Command and Staff College (JSCSC).

Finally, the Chairman informed the meeting that the history section of the MOD(RAF) website now had a page devoted to the Society including advice on how to join.

In conclusion, AVM Baldwin expressed his thanks to his committee for its support, to Gp Capt Bates and Air Cdre Pitchfork for having taken on the task of organising the year's major events, and to the President, MRAF Sir Michael Beetham, and the Vice-President,

Air Mshl Sir Frederick Sowrey for their helpful advice, encouragement and continued interest in the Society's affairs.

### **Secretary's Report.**

The Acting Secretary (Gp Capt Dearman) noted that fifty-three new members had joined over the year, of which some 30% were serving officers. Fifteen memberships had lapsed, while nine members had died. The total membership now stood at a record 791.

### **Treasurer's Report.**

The Treasurer tabled the annual accounts which showed a surplus of £2,041 after a donation of £1,000 to the RAF Museum Appeal. It was anticipated that three journals would be published during 1999, however, which could result in a deficit of some £3,300 on the year, if so this sum would be covered by reserves. Overall, the Treasurer considered that the financial position was satisfactory and he did not recommend any change in the rate of subscriptions.

It was noted that the facility for paying annual subscriptions via a 'covenant' had, on the initiative of the Inland Revenue, been superseded by a simpler procedure involving a 'gift aid declaration'; both systems permitted the Society to reclaim the tax element of a member's subscription. About half of the membership currently paid their dues via a covenant and these would continue to be effective. Since there was a substantial financial benefit to the Society, however, the other half were invited to complete a gift aid declaration.<sup>1</sup>

It was proposed by AVM Herrington, seconded by Miss L Simpson, that the accounts be accepted, and that Messrs Pridie-Brewster of 29/39 London Road, Twickenham, TW1 3SZ be appointed as independent examiners. The motion was carried without dissent.

### **Amendments to the Constitution.**

The Chairman informed the meeting that, in order to reflect changes in financial practice it was necessary to amend the Society's Constitution to substitute the term 'independent examiner(s)' in place of 'auditor(s)'. He also considered it desirable that the Constitution should be amended to permit a member of the directing staff of the JSCSC to be added to the ex-officio membership of the committee.

<sup>1</sup> A Gift Aid Declaration form can be obtained on application to the Treasurer.

Wg Cdr A Brookes, seconded by Sir Kenneth Hayr, proposed that both of these amendments should be incorporated. The motion was carried without dissent.

### **Appointment of Executive Committee.**

The Chairman informed the meeting that Mr Roy Walker was retiring as publications manager and editor and that Wg Cdr C G Jefford had offered himself for election in his place. Gp Capt K J Dearman had offered himself as a candidate to replace Wg Cdr Jefford as Secretary. The remaining members of the committee had all offered themselves for re-election. It was proposed by Sir Frederick Sowrey, seconded by Gp Capt Madelin, that those standing for election should be accepted. There being no objections, and no alternative candidates, the committee as listed below, was duly elected to the next AGM:

AVM N B Baldwin	Chairman
Gp Capt J D Heron	Vice-Chairman
Gp Capt K J Dearman	Secretary
Dr J Dunham	Membership Secretary
D Goch	Treasurer
Wg Cdr C G Jefford	Publications Manager
Air Cdre H A Probert	
D H Wood	

The ex-officio members of the committee were:

Head of AHB	J S Cox
Director, RAF Museum	Dr M Fopp
DefS(RAF)	Gp Capt P W Gray
JSCSC	Wg Cdr A S Deas

### **Any Other Business**

Sir Frederick Sowrey announced that a file of papers relating to the establishment of the Society had been deposited with the RAF Museum's Head Archivist for safe keeping and future reference.

Air Cdre Dye deplored the fact that there was little or nothing to mark the achievements of the RAF in France during WW I and sought the Society's support for a campaign to build some kind of memorial, possibly at St Omer. While the Chairman did not believe that the RAFHS should become directly involved in the erection of monuments it was agreed that it would lend its support to such a

scheme.

Dr Thomas suggested that a bibliography of aviation biographies should be created. Mr Cox noted that the AHB already kept the obituaries of officers published in the *Times* and *Telegraph*, while the newspapers themselves kept obituaries in their archives. Air Cdre Pitchfork noted that, in his capacity as archivist to the Aircrew Association, he had been accumulating biographies and accounts of the experiences of veteran aircrew for some time. It was intended to deposit this collection with Yorkshire Air Museum and it was understood that the Bomber Command Association sponsored a similar collection. The Chairman was content that the Society should, in principle, support the idea of a centralised bibliography, although it would clearly be a substantial task.

The timing of seminars was discussed, many members suggesting a later start to facilitate travel arrangements. The meeting was evenly divided, but the Chairman agreed that the next would start at 1030 hrs as an experiment.

Mr Diamond raised the possibility of joint US-UK seminars. Sir Frederick Sowrey reminded the meeting that co-operation with the USAAF in WW II had been covered in London in 1990 and a return event in Washington three years later had dealt with the Cold War. While a further event was a possibility, the costs were likely to be excessive.

The Chairman announced that Sqn Ldr Steve Harpum had won the Two Air Forces Award sponsored jointly by the society and its counterpart, the (US) Air Force Historical Foundation. Sir Michael Beetham, presented the award to Sqn Ldr Harpum.

## FEEDBACK

*Members will recall that, during the April 2000 seminar, Sqn Ldr Crampton took the opportunity to refute what he perceived to be a slur on the RAF contained in a book written by Mr Robert Jackson, a founder member of the Society. Mr Jackson has claimed the right of reply and his letter is reproduced here. This matter is now closed and no further correspondence will be published. Ed*

My attention has been drawn to certain remarks made by Squadron Leader John Crampton, who was present at the Cold War Intelligence gathering in April 2000, about my book *The High Cold War*, published in 1998. In this work, I made reference to the RAF Special Duty Flight, which Sqn Ldr Crampton commanded in 1952 and 1954. In response to those remarks, I wish to make the following points.

I feel that in his address to the seminar, Sqn Ldr Crampton may have given the impression that *The High Cold War* was a book written by me entirely about the activities of the Special Duty Flight, in which I had done my best to disparage its operations. In fact, my account of the activities of the Special Duty Flight was straightforward and factual, forming about two and a half pages of text in a chapter on the RAF's strategic intelligence-gathering operations, 1946-54. At no point did I cast a slur on the crews involved, nor did I make any adverse criticism of their achievement. Indeed, I have nothing but admiration for the courage and skill shown by the crews in undertaking these missions, and in September 1998 I wrote to Sqn Ldr Crampton and expressed that very sentiment.

What I did query, in a single paragraph of eight lines, was the motive behind the authorisation of the second series of overflights, in view of the letter written by Air Chief Marshal Sir Hugh Lloyd to Major-General John McConnell, expressing regret that the operation had not provided the required answers. There is nothing 'alleged' about this letter, as Sqn Ldr Crampton claims; it is quoted on page 112 of Humphrey Wynn's *RAF Nuclear Deterrent Forces*, the official and definitive history. Wynn also states that '...the first flights were deemed to have been successful in their results' and that 'the later flights were not so successful.' This statement is completely at variance with Sqn Ldr Crampton's account. Dare I suggest that Mr Wynn's words, which doubtless will be consulted by future



generations of historians, are inaccurate?

The main question that must be raised, however, is why the RAF agreed to undertake such highly dangerous missions. In the paragraph following the one that offended Sqn Ldr Crampton, I wrote:

‘That they (*the flights*) were (*authorised*) was indicative of the desperate need that now attended the requirement to acquire strategic intelligence of the Soviet Union and its defences. The Americans, labouring under political constraints since the destruction of the Privateer ELINT aircraft over the Baltic in 1950, were unable to achieve their intelligence goals, and were prompted to offer the loan of the RB-45Cs (via the USAF Chief of Staff, General Hoyt S Vandenberg) to the RAF on the ‘gentleman’s understanding’ that any photographic intelligence obtained by them would be jointly shared. In the meantime, the USAF was restricted to ELINT flights around the periphery of the Soviet Union; and these flights served only to underline the growing might of Soviet air power in a world increasingly dominated by nuclear confrontation.’

I now know that US overflights of Soviet territory did in fact continue during the 1952-54 period. They included low-level reconnaissance of Soviet air bases in the Far East by RF-80s during the Korean War. So why did the RAF agree to fly very hazardous clandestine missions which the USAF was perfectly capable of flying itself? And why, if there was an urgent need to acquire photographic intelligence of a target list in the USSR, was the Special Duty Flight not reactivated for a second mission until two years later? There is an answer to that question, and answers to other related ones, but it is not for me to provide them. Perhaps they come under the umbrella of the ‘sensitive issues’ touched upon by someone in the discussion that followed Sqn Ldr Crampton’s short address to the April 2000 seminar, the record of which was inadvertently erased. I shall probably never know, because I was not present. (*Those who were present will recall that the discussion, which was not confined to the RAF’s RB-45 operations, did not actually disclose any new information to amplify the specific rationale behind the second mission. Ed*)

Squadron Leader Crampton’s remark, prompted by a single paragraph in *The High Cold War*, that this book ‘has damaged, and

will continue to damage, the good name of our Service, both at home and overseas' is wholly unacceptable. In the past thirty years I have written over sixty published works on aviation, military and naval subjects, the majority dealing in whole or in part with the activities of the Royal Air Force. In those books, I have constantly been at pains to present the Service in the most favourable light, and to promote it in terms of publicity.

The paragraph which Sqn Ldr Crampton finds so offensive is just 100 words long. I should point out that the book contains some 70,000 more words, covering all aspects of clandestine air reconnaissance, by all countries capable of mounting such operations, from the 1930s to the 1990s. Among other things, it deals with RAF PR, SIGINT and ELINT operations during and after the Second World War, including Canberra PR operations during the Suez crisis of 1956.

Hardly, I submit, a book calculated to 'damage the good name of our Service'.

Robert Jackson  
Mowden

### **PAT BAY – SO NEAR AND YET SO FAR**

Jack Dixon has written from Canada to draw attention to a slightly misleading statement in Donald Harris' letter (*Journal 23*) which dealt with an aspect of the training of wartime navigators. While the description of the airfield at Patricia Bay's having been 'near Vancouver' was probably adequate for those of us viewing the situation from the remote perspective of the UK, it was less so for those on the spot. Jack points out that the city of Vancouver is on the mainland, whereas the airfield was on Vancouver Island, about 28 kms north of Victoria. It is still there, incidentally, now rejoicing in the name of Victoria International Airport.

## BOOK REVIEWS

**Air Battle Dunkirk 26 May–3 June 1940** by Norman Franks. Grub Street; 2000. Price £17.99

This is a second edition of a book, originally published in 1983, which has been revised and updated from access to additional official records and the recollections of some of the pilots who fought the *Luftwaffe* over France and the Channel.

‘Where is the RAF?’ was the question asked by soldiers waiting on the beach at Dunkirk, to where they had retreated following the German *Blitzkrieg* through northern France, and where they were now being pounded by the *Luftwaffe*. Norman Frank’s original book provided the answer to that question. This new edition, published to mark the 60th anniversary of the evacuation, is an absorbing read and vindicates the RAF by detailing the outstanding achievements of the pilots who fought, in the main, using peacetime training tactics against enemy pilots who had had easy victories over the Polish, Dutch and Belgian air forces.

One squadron was still trying out the Rotol propeller when they were ordered into action over France. To begin with the RAF was able to operate on a detached basis from airfields in France until problems with refuelling and rearming forced them to return to the UK.

Franks tells of one pilot who, after being shot down, made his way to the beach but was refused permission to embark on a rescue vessel because he was RAF and not Army. But he also records that Lord Gort, CinC BEF, sent a message to Dowding expressing his extreme gratitude for the RAF’s invaluable presence and for the efforts of its fighters in preventing the embarkation being interrupted, and for the heartening effect that this had had on his troops.

**Lee Bedford**

**Wilfrid Freeman** by Anthony Furse. Spellmount, 2000. Price £24.95.

This 384-page biography is a major addition to the historiography of the Royal Air Force. It at last records the enormous contribution of Air Chief Marshal Sir Wilfrid Freeman to Allied victory in WW II. Its place in the foremost ranks of biographies of 20th Century military leaders is assured.

Freeman died in 1953 without writing an autobiography or leaving any collection of personal papers. These shortages deterred earlier

historians from attempting to write his biography. In 1987, however, test pilot Jeffrey Quill, supported by Sebastian Cox of the Air Historical Branch, began the task. When Jeffrey Quill's health failed, Anthony Furse, a nephew of Freeman, carried on. Furse served as a fighter pilot with the RAF and RAuxAF between 1946 and 1956.

Wilfrid Freeman transferred from the Manchester Regiment into the infant Royal Flying Corps in 1913. From 1914 to 1915, he served on the western front as a reconnaissance and spotter pilot for the artillery, being awarded the Military Cross in 1915. It may be noted that his first squadron commander, Major C J Burke DSO, was not only an exceptionally dedicated and brave combat pilot, but one of the first British officers to identify publicly the impending importance of command of the air. His example as a leader with mental strength and military distinction would not be lost on the young Freeman.

His skills took him for tours in the UK as a flying instructor and to the Middle East as a Squadron Commander. He returned to the western front as a Wing Commander in 1917. An efficient and imaginative leader, he was fortunate to avoid the air combat which inflicted such heavy casualties on his contemporaries and subordinates.

After attending the Royal Naval Staff College in 1918, Freeman was given duties of increasing responsibility and potential. He was one of four officers selected to be the first Directing Staff of the RAF Staff College, Trenchard's "cradle of the brain" of the Royal Air Force. From there, appointments as Commandant CFS, Deputy Director Operations and Intelligence at the Air Ministry, command of RAF Leuchars, AOC Palestine and Transjordan, and Commandant of the Staff College followed. This was the career pattern of a man destined to rise to the highest levels of the Service.

In 1936, he was promoted to air marshal, replacing Air Mshl Dowding as Air Member for Research and Development, and began his unique contribution to the preparation, maintenance and development of the RAF before and during WW II.

He was faced with an expansion of the aviation industry to meet ever changing targets set by the Air Ministry. He had to balance innovation with the need to produce aircraft in the immediate future. He encouraged Frank Whittle; he ordered the first 310 Spitfires; he insisted on quality in airframes and engines when others were

demanding quantity. He drove concentration onto the Halifax and Lancaster bombers and a selected number of other aircraft, rather than focusing on any one type. Perhaps above all, he supported the development of the Mosquito against the opinions of most of his uniformed contemporaries.

In 1940, Freeman's department was transferred to the new Ministry of Aircraft Production headed by Churchill's nominee Lord Beaverbrook. In May 1940, Freeman was promoted air chief marshal.

Beaverbrook's concentration on short term production, to the detriment of the heavy bomber programme, compelled Freeman to offer his resignation twice. Instead, he was persuaded to become VCAS to the newly appointed CAS, Air Chf Mshl Portal, in October 1940.

As VCAS, Freeman's contribution to the war effort expanded even further. Furse records the testimony of John Slessor that Freeman's day to day running of the Service left the CAS free to concentrate on his wider responsibilities within the Chiefs of Staff Committee.

In Portal's frequent absences, Freeman assumed the responsibilities of both appointments. He supervised the reinforcement of units in the face of the Japanese advance; he monitored appointments to air rank; he planned the basing of US squadrons in Britain; he maintained close contact with the aviation industry. In addition, he was instrumental in preserving Air Mshl Tedder's position in North Africa against Churchill's loss of confidence. He drove through a reformation of the RAF's maintenance and repair organisation; he laid the foundations for the Tactical Air Force structure and the principles of army co-operation which were to flourish, first in North Africa and later in North West Europe.

At home, he repeatedly sought to improve Bomber Command's effectiveness by concentration of effort, by improved aircrew training and by pressing strongly for the introduction of a pathfinder force. Somehow Freeman found the time to foster close and harmonious relations with the leadership of the USAAC/USAAF, seeking maximum emphasis on heavy bomber production, and most critically, inducing support for production of the Merlin-engined Mustang.

Meanwhile, however, the efficiency of his old area of responsibilities, the Ministry of Aircraft Production, had deteriorated alarmingly. In October 1942, Churchill finally concluded that,

however much he wished to retain Freeman as VCAS, he was now urgently needed back at MAP. And so, as Mr Freeman, Chief Executive of the Ministry of Aircraft Production, he began the last phase of his astonishing contribution to the war effort.

Despite opposition within his department, Freeman swiftly imposed his order of priorities and powerful management. He cleared a backlog of deferred decisions; he stopped inefficient departmental interference in the aviation industry and insisted on realistic target programming. Anthony Furse describes in great detail the measures taken by Freeman, up to his retirement in early 1945, to restore the productivity and focus of the British military aviation industry.

It is difficult within the confines of a book review to do full justice to Freeman's direct influence on so many of the RAF's activities during WW II. That can be done only by reading the biography itself.

Anthony Furse has scoured public records and drawn upon family correspondence to compile this enormous record. Justice has finally been done to a very great air marshal.

It is, therefore, a little regrettable that, while the man's achievements are so meticulously recorded and documented, Freeman's person is not so well served by his biographer. From Freeman's nephew there is more than a hint of hagiography in the frequent paeans of praise for the air marshal and the disparagement of those who either disagreed with him while he lived or criticised him subsequently. It is also highly likely that Freeman gave rather more credit for his achievements to his subordinates than his biographer does.

Slurs by the author on the character of Freeman's first wife, or speculative attribution to Benzadrine addiction to account for Whittle's illness during an interview and disagreement with Freeman, or unsubstantiated imputations of dishonesty to Roy Fedden, do not discredit Freeman, but his reputation does not need such enhancement. Frequent criticism of Portal to contrast the virtues of Freeman is equally unnecessary. The facts speak for themselves.

There seems to be family resentment of the fact that Portal, rather than Freeman, became CAS. On flimsy, unsubstantiated evidence, which contrasts strongly with the author's painstaking scholarship elsewhere, the choice of Portal is attributed to royal displeasure at Freeman's rather messy pre-war divorce. Quite apart from

contemporary opinions about a married AOC who sustained a clandestine relationship with the young daughter of a civilian colleague, there are other plausible reasons why Freeman was not preferred to Portal.

As already noted, and despite assertions in the biography, there is no evidence that Freeman's progression to high rank was in any way impaired or even jeopardised by his divorce. But in 1927, Freeman had worked for Trenchard and Salmond at the Air Ministry. After only eighteen months in post his health, never robust, gave way and he was short-toured by Trenchard to "a more out-of-doors job". Throughout his career, Freeman suffered from migraine and frequently endured ill health induced by pressure. By common consent, in 1940 Trenchard and Salmond were the king makers. There are no explanations on record as to why Portal was preferred to Freeman for CAS. But, quite apart from any considerations of comparative operational command experience or seniority, doubts over the physical fitness necessary to sustain the highest command in wartime must have been at least as cogent as any royal displeasure.

Other biographers might have reflected on the number of times Freeman offered, or threatened, to resign; or on the times he refused appointments; or why his personal inclinations appeared to obscure his awareness of the massive contribution he was making as VCAS; or indeed on the personal traits of intolerance and cynicism which were as much a part of the man as his good humour, judgement, discernment and dedication.

This is a family portrait which seeks to erase the wrinkles and lighten the shadows. More fittingly, it is also a long overdue testament to a great airman.

### **AVM Tony Mason**

**Number One in War and Peace: The History of No 1 Squadron, 1912-2000** by Norman Franks and Mike O'Connor. Grub Street, 2000. Price £25.

This book has been written by two acknowledged aviation historians and I would hesitate to question their accounts of combats and of who shot who. On the other hand, I would take issue with the extent to which they have indulged in potted biographies. What is (should be) important here is No 1 Sqn and what people did while



*While the narrative has little to say about No 1 Sqn's heraldry, it does include a photograph of the fin of a Fury showing what the authors have captioned as the squadron's 'unofficial' badge. It actually shows the 'winged 1' motif, as formally endorsed by Chester Herald and approved by the King, within the standard spearhead frame authorised for fighters by AMO A.14 of 1936. The illustration reproduced here shows the earlier unofficial emblem as sanctioned for informal use by the AOC Iraq, AVM Sir John Higgins, in 1925.*

servicing with it. While it is perhaps legitimate to claim a little reflected glory by noting which ex-members became air marshals, details of the careers of lesser mortals before and after 1 Sqn are surely irrelevant; if such information is considered to be essential then it ought to be included as footnotes so as not to dilute the central theme. There is also a heavy concentration on the exploits of pilots, practically all of whom seem to get a mention, at the expense of, often much longer serving, ground personnel. For instance, can it be that the likes of Lts Bolitho, Kirkpatrick, Noel and Jonckheers made no worthwhile contribution to No 1 Sqn's record during WW I? This conspiracy of silence is sustained throughout the book, only a few Adjutants and Engineering Officers being granted the odd mention in passing, references to non-commissioned groundcrew being equally sparse.

Then again, it is difficult to understand how squadron historians could fail to note the award of the unit's badge in 1936 or to mention the effective loss of its groundcrew in 1943; yet there is no mention of the creation of the semi-autonomous No 6001 Servicing Echelon, of its CO or of the implications that this development had for the squadron's well-being. Similarly, while the fact that pilots attached



from No 3 Sqn flew with No 1 Sqn in the South Atlantic is acknowledged (a pick'n'mix device that was to become commonplace during the Gulf War), there is no comment on the implications of this practice in terms of a squadron's cohesiveness and its corporate identity. All of these observations suggest, perhaps, a lack of understanding of the ethos of 'a squadron' and thus which facts are important and which are not.

The story also lacks a sense of proportion. One is gratified to see that WW I is given a fair crack of the whip, indeed at about fourteen pages per year it is treated even more generously than Round Two. The problem is the Harrier era, especially Operation CORPORATE which has ten pages to cover less than a month's activity, whereas the whole of 1942 gets only nine. Similarly, the three-month ALLIED FORCE campaign is allocated thirteen pages. Curiously, however, in contrast to the chapter on the Falklands, none of the numerous personal accounts of sorties flown over Kosovo are dated; and why identify some pilots with a 'call-sign' when at least one of them can be identified because his words are quoted twice (pps.231 and 235) and on the first occasion he is named?

Typos? Yes, almost inevitably. A number of definite and indefinite articles have been omitted and we have Honily (for Honiley), Honiton (for Honington); DFSL (for DFLS), LBG (for LGB), etc and there really ought to have been a glossary to decode the numerous acronyms that pervade the text, especially after the advent of the Harrier. Howlers? I am afraid so. Prior to being designated as No 1 Sqn in India on 1st April 1920, the unit had been identified as B Squadron, not B Flight, which had itself been established no earlier than 21st January (p.59). On p.71 we have the novel concept of a Hurricane with a 'two-speed' propeller – fast and slow perhaps? Vassincourt is 40 miles west of Nancy, not east (p.75). The V1 was powered by a crude form of ram jet; it was not a rocket (p.133). Most US aircraft lack the hyphen in their designations, thus P47, KC97, B66, etc, although the AV8-B (*sic*) does get one, albeit in the wrong place (p.223). Was the US 6th Fleet really operating F-86Ds in 1956? (p.157). Cowden and Theddlethorpe Ranges are off the coasts of Yorkshire and Lincolnshire, not Suffolk (p.168). The lists of aeroplanes used at Appendix 7 give some cause for concern, for instance: one of the Blériots (635) was a BE2a; several of the Moranes

(A154, A228, A229 and A291) were Nieuports; we have a whole flock of Hawker (*sic*) Siskins; Magister T9680 is listed twice, whereas N3907 is not listed at all, although it is noted (on p.71) as having met its end with No 1 Sqn (and didn't one of the squadron's pilots roll L8282 into a ball as well?). Hurricane L1692 is noted in the appendix as having crashed on 5th January 1939 and in the narrative (p.71) on 13th March; it was the latter. Harrier XV745 is listed as having been lost as a GR 1 on 19th January 1976 *and* as a GR 3 on 19th January 1975; both wrong, it was actually as a GR 3 on the later date. Enough, I think; treat with caution.

So, should you buy it? Yes, of course. The book is fundamentally sound, many of its flaws being relatively superficial. It would have benefited from a far more rigorous approach at the proof reading stage and, perhaps, from independent editing. Sadly, however, this sort of TLC was not forthcoming and it shows. In short, it is good; but it could have been so much better. Nevertheless, I would buy a copy, and I am not even an ex-member of the squadron. Anyone who is will find much to stir his memory, particularly Hunter and Harrier men.

**CGJ**

**No Hero, Just a Survivor** by G R T Willis. Robert Willis Associates Ltd (19 Rectory Lane, Emley, Huddersfield, HD8 9RR), 1999. Price £18.

Bob Willis flew Beaufighters and Mosquitos with No 47 Sqn between November 1943 and July 1945. In effect, *No Hero* is two books in one, in that it is an autobiography wrapped up in an account of the squadron's history. This dual aim may be one of the reasons why the timeframe occasionally skips back and forth, particularly during the description of operations over the Aegean, and passages relating to the author's personal life do tend to disrupt the squadron's story – or *vice versa*.

One could have a field day nit-picking. For instance: Chance and Verey lights need initial capitals; was the wing tip of Willis' Beaufighter damaged in combat with an Ar 196 (p.82) or a He 115 (p.112)?; on the map on p.83 Sidi Amor is misplotted by about 150 miles and Gordons Tree by 300; the Ballentine family are also identified as the Ballentynes; various sorts of air marshals get double 'l's and so on. None of these errors are critical, of course, but they do

jar and one must raise an eyebrow at the somewhat eccentric index. This lists personalities initially by rank, all pilot officers being in a bunch (even if they later became flying officers), and then arranges them alphabetically by the first character that comes to hand so that Plt Off H Smith is listed ahead of Plt Off Hardy.

All of that having been said, *No Hero* provides a long overdue chronicle of No 47 Sqn's wartime activities, sheds new light on operations in some of the lesser known theatres and is an absorbing account of one man's war. For those with an interest in colour schemes, incidentally, the illustration on the dust jacket is a real bonus; it is a reproduction of a contemporary painting which removes any doubt that SEAC's Mossies were camouflaged in green and brown.

Recommended.

**CGJ**

**Even The Birds Were Walking** by John A Kington and Peter G Rackliff. Tempus, 2000. Price £24.99.

A comprehensive account of the activities of the least known of the RAF's wartime air crew categories, the meteorological air observer (MAO), has long been overdue. 'Air crew category' is almost a misnomer, however, as the Air Council procrastinated over recognising its flying Met Men until almost the last minute. The winged 'M' badge was not approved until as late as 26th April 1945, just a fortnight before the end of the European war, by which time meteorologists had been flying operationally for two years.

As this book makes very clear, meteorological reconnaissance was no sinecure. It was, for instance, axiomatic that cancellations of sorties due to weather conditions were extremely rare, which represented a considerable hazard in itself. Nor were such sorties entirely benign; there were several instances of successful engagements with enemy aircraft and even submarines. Nineteen MAOs lost their lives during the war, 8.4% of the relatively small numbers that were trained. While primarily concerned with providing an impression of the vital work carried out by the RAF over the North Sea and Atlantic, the authors have not neglected to acknowledge the contribution of the USAAF and the extent to which this effort was supported by seconded RAF MAOs. The story also embraces British and American Mosquito

operations over occupied Europe in support of the bomber offensive.

While it concentrates heavily on the events of WW II, the narrative covers the evolution of 'met recce' from WW I to the present day, including brief details of the histories of units dedicated to this task. Almost half of the text takes the form of reminiscences furnished by those who were there. These anecdotes are supported by about 180 pertinent photographs illustrating aeroplanes, personalities and incidents. There is a slight tendency towards repetition but, beyond that, the text is easy to read and mercifully free from typos.

Highly recommended.

**CGJ**

**P-47 Thunderbolt** by Edward Shacklady. Tempus, 2000. Price £17.99.

About ten years ago there was a short-lived magazine-style aviation publication which went under the series title of *21st Profile*; issues 7 and 9 were largely devoted to the P-47. The series was published by the author of the book now under review. His first effort was better.

One of the most well-documented US combat aircraft of WW II, there can be little that we do not already know about the Thunderbolt and this volume adds nothing. Indeed, by reproducing a selection of coloured side elevation drawings, some of which are at least thirty-five years old, many (perhaps all) of them by the late Richard Ward, it actually sets the clock back. The more recent paintings are accurate enough but some of the earlier ones were based on information that we now know to have been erroneous. As a result, the myth of green and grey RAF Thunderbolts in SEAC may have been given a new lease of life (they were actually green and brown) and No 73 OTU's unique all-black Thunderbolt has regained its red lightning flash (later research has established that this embellishment was silver). It is some indication of the way in which this book has been thrown together that the collection of drawings includes a number of duplications so that we have two interpretations of 226418, 226540, 232710 and 420243 among others.

A fairly cursory examination of the text reveals far too many major inaccuracies, eg the French did not operate P-47s in Indo-China (p.8, although this page lacks a number) and the passage dealing with RAF

colour schemes on p.148 is simply wrong. The style is equally careless. We are, for instance, informed that the production run of the P-47M amounted to 130 aeroplanes. True, but we are told this three times in the space of just thirteen consecutive lines on pps.65-66! Did no one read the manuscript before it was typeset? Did anyone read it afterwards? Had they done so, they might have noticed that p.50 is half blank and picked up some of the numerous typos, eg there is only one 'l' in Manila (p.42 and elsewhere), 'USSAF' on p.58, 'XP-44K' on p.64; there are lots more.

One of the book's few redeeming features is its generous photographic content, something like 170 pictures, most of them quite well reproduced. Unfortunately, this positive aspect is negated by the inadequacy of the accompanying captions. I will offer just a few examples. Although it lacks one of its five stars, there can surely be little doubt that the badge of an 'unknown' P-47 unit illustrated on p.37 is that of the 59th FS. A very familiar airborne shot of a P-47 of the UK-based 82nd FS, fully decked out in European theatre D-Day markings and clearly showing its unit codes (MX-E) and its American star-and-bar markings, is captioned as being of 'E-MX, probably SEAC' (p.80). A P-47 identified as an Italian example is actually a French one (p.126); another Italian one is Iranian (p.127); an aeroplane represented as belonging to the American 92nd FS, is quite plainly wearing Chinese Nationalist markings (p.112). On p.120 we have a caption informing us that Chile operated Thunderbolts surmounted by a picture of a British example; this same picture appears again eight pages later where we are informed that RAF Fighter Command (*sic*) operated Thunderbolts in India. A tone drawing of a Mexican P-47 on p.146 is identified as being Brazilian. Enough! What is particularly odd is that some of the poorly captioned photographs were used in the *21st Profile* features where they were correctly identified.

Since they have both been published by Tempus, presentation of this book is very similar to that covered by the preceding review. Sadly, however, the similarity ends there, the contrast between the quality of their respective contents being quite remarkable. The Thunderbolt book is volume four of a series of at least five edited by the same author. Be warned.

**CGJ**

**Montrose Airfield from 1913: A History in Words and Pictures.**

No identified author or editor, published by the Montrose Air Station Museum Trust (c/o 104F Castle St, Montrose, Angus, DD10 8AX). Price £12.49 inc p&p.

While ‘only’ a paperback, this 146-page, A4 book is a substantial volume printed on coated paper. While some attempt has been made to record the life and times of Montrose in chronological order, the compilers have clearly not felt the need to be wholly constrained by this convention. They have, therefore, presented in addition a variety of anecdotes, illustrated by about 200 photographs and reproductions of contemporary documents, in a series of themed sections: crashes; group photographs; mountain rescue; ghost stories and so on. The overall effect is of a well arranged scrapbook.

It is a worthy effort. Proceeds go to support the thriving Montrose Air Station Museum and a second edition is in the works.

**CGJ**

**With The Yanks in Korea, Volume One** by Brian Cull and Dennis Newton. Grub Street, 2000. Price £25.

As its lengthy subtitle informs us, this book sets out to provide ‘the first definitive (does not definitive exclude the possibility of a second?) account of British and Commonwealth participation in the air war, June 1950-December 1951’ and it does exactly what it says on the cover. As we might expect, therefore, the book gives us a comprehensive account of the exploits of the major units involved, Nos 2 Sqn SAAF and 77 Sqn RAAF and the air groups from a succession of RN and RAN aircraft carriers, but it also covers the activities of the Austers of Nos 1903 and 1913 Flts, of the Sunderlands detached from Singapore and the contributions made by individual RAF officers who were attached to USAF units. It does far more than that, however, because, as implied by the ‘with the Yanks’ of the main title, while the Commonwealth’s commitment to the UN Force may have been of high quality it was the USA which provided the quantity. Inevitably, therefore, the major load was carried by the USAF, the USN and the USMC. The authors never lose sight of this fact and, while focusing on their chosen aspect, they succeed in presenting this in context so that we have a well balanced account of the first half of the air war, the operations flown by the Americans

being covered in considerable detail.

The book is well presented and includes about 125 photographs of personalities and aeroplanes, including coverage of Soviet and Chinese subjects. Indeed the narrative presents a good deal of information on the activities of the Communist participants. It is interesting to observe that, while fighter pilots have always tended to be a trifle overoptimistic in claiming victories, the Russians appear to have taken this to extremes. *With the Yanks* tells us that by the end of 1951 the Russians were claiming that, among the 544 UN aircraft which had fallen to the guns of their MiG-15s, there had been 234 Sabres and 27 Meteors; actual combat losses of these types had amounted to just fourteen and four respectively.

The book is not entirely free of typo blight; we have, for instance: P2V presented as P-2V (p.5) and P2-V (p.35); Yokata (for Yokota, p.6); Centurian (for Centurion, p.132); herculean (for Herculean, p.221); dingy (for dinghy, p.261); routing (for routine, p.265); Auberley (for Amberley, p.324). There are a few others plus some references to Auster pilots belonging to No 655 Sqn, which should surely have read 656 Sqn, but in general it is not bad in this respect, although one must deduct a couple of points for adding the common, but incorrect, 'Congressional' prefix to the Medal of Honour (or should that be Honor?). Two small maps are provided but they do not really cater for a narrative which is constantly telling you who shot what where. If you wish to keep track of the action, you will need something more comprehensive.

These are mere cavils, however, the only major problem with the book is that, in essence, it consists of a series of thumbnail sketches of missions flown – which unit, led by whom, did what; what happened, who got shot down, who had to make a belly landing. Once you have read one of these, you have virtually read them all; it certainly feels that way after a score or so. This is not the authors' fault, of course; it is in the nature of the beast. To be fair, they do break the cycle by including personal accounts (contributed by ground personnel, as well as aircrews) of incidents and by providing periodic updates on international political developments, on the state of play with the on-again-off-again truce talks, on the development of campaign strategy and the mounting of specific operations, and on the evolution of air and air-to-ground tactics. These interludes do provide some relief but

the text is still remorselessly repetitive.

*With the Yanks* is well researched and well written but, sadly, it simply is not easy to read. That having been said, it is rewarding to browse through and it undoubtedly constitutes an excellent reference work (there is an index to personalities). Volume Two is in the mill and will continue the story to the end of hostilities in 1953.

Recommended

**CGJ**

**Global Warrior** by Alain Charpentier, Lionel Lacey-Johnson and Geoffrey Jeudwine. Privately published by L Lacey-Johnson; 1999. Price £8.

*Global Warrior* tells the story of Gp Capt John Jeudwine DSO OBE DFC. After graduating from Cranwell in 1934, he spent a year flying Harts with No 12 Sqn before joining HMS *Glorious* and No 823 Sqn to fly Seals and Swordfish until early 1939, mostly around the Mediterranean. After two years with signals intelligence, he was appointed to command No 84 Sqn in time to lead its Blenheims from Egypt to the Far East as a response to Japanese aggression. Despite the squadron's efforts, it was a hopeless venture and it was all over by early March 1942. Jeudwine and eleven others managed to escape, spending forty-four days sailing from Java to Australia in an open boat (the log of the *Scorpion*, as No 84 Sqn's vessel was christened, is reproduced as an annex). Remarkably, after such a harrowing experience, he was back in Egypt by July commanding No 55 Sqn with whom he flew twenty-five Baltimore sorties before being rested. Staff duties did not suit the energetic Jeudwine and he soon wangled himself a series of flying jobs involving ferry and transport work. Returning to the UK in 1943, he took command of No 619 Sqn in December. Having flown seventeen Lancaster sorties he was posted to Coningsby to become one of No 5 Gp's team of master bombers. In that capacity he led another fourteen missions, six of them flown in a Mosquito and two in borrowed USAAF P-38s. Taken off operations in September 1944, Jeudwine subsequently commanded Strubby and Little Staughton. He was killed air testing a Typhoon which crashed on 10th September 1945 by which time he had logged 2,888 hours.

So much for the stirring content. How well is it presented? Disappointingly. Part of the problem is that the book was a



collaborative project. Almost inevitably, this has resulted in contrasting styles and a tendency towards repetition, both of which could have been smoothed out by ruthless editing. This process might also have served to remove some annoying errors, eg auxilliaris, vomitting, faired (for fared), Devenport (for Devonport), Leadon (for Yeadon), Devesoir (for Deversoir), Accension (for Ascension), Pitout (for pitot), Peterels (for petrels), anti room (for ante room), confusion between practice and practise and curiously misnamed military formations like 434 Sqn SAAF and the USAMEAF. It would also have permitted a much needed revision of presentation because, to judge from the inconsistencies in indents, justification, word-spacing, the use of bold typeface, punctuation and the like, the type-setter seems to have fought a losing battle with his PC. Finally, the binding of this A5 softback leaves something to be desired; some of the review copy's 184 pages are already working loose.

All of that having been said, despite its limitations, *Global Warrior* does rescue a remarkable officer from relative obscurity. Gp Capt Jeudwine's story was well worth telling and in doing so the authors have placed on record a series of achievements that fully merit an honoured place in the annals of the Service alongside the RAF's better known bomber pilots of WW II. For this enterprise they are to be commended, especially at the price.

**CGJ**

**Combat Aircraft Since 1945** by Stewart Wilson. Distributed in the UK by Airlife; 2001. Price £14.95

This book gets off to a slightly wobbly start as, in his Introduction, the author describes it as a comprehensive directory of the aircraft which have served the world's air forces since 1914 (*sic*). The title is closer to the mark; no Sopwith Camels here. This A4 softback has a total of 260 entries, some of the more significant aeroplanes appearing several times. The content is a little like that of the familiar *Observers Book*; there are no general arrangement drawings, but we do get a photograph, basic technical details (dimensions, weights, power plant(s), armament, performance and production figures) and a pretty good shot at a potted history. There are a few wild cards, for example, the majority of the Sabres supplied to the RAF were F.4s (not F.1s) and the Vulcan did not adopt low level tactics in 1963 because the

deterrent role had been transferred to the RN's Polaris (that did not happen until 1969). Some of the performance figures quoted are probably a little on the optimistic side; I would not expect, for instance, to encounter too many Tornado GR 1/4s travelling at 1,033 kts (M1.8) *with weapons above* 36,000 feet. Then again, the entry for the DH Hornet states that it replaced Spitfires and Beaufighters in FEAF; it was actually Spitfires, Tempests and Brigands. Although all five of these piston-engined types saw post-war combat, space has been found for only two of them. This highlights a fundamental problem with books of this nature; what to include and what to leave out? This is up to the compiler, of course, and a degree of bias is almost bound to be evident. In this instance, the P-51, which saw extensive action in Korea and elsewhere, is a rather curious omission, although the Australian-built Mustang has an entry all to itself, as do the Australian versions of the Lincoln and Sabre, betraying the antipodean origins of this publication. The transient interest of the RAAF may also explain the inclusion of TSR2, although its place could also be justified as an example of cutting edge technology, like the Canadian CF-105 which also has an entry, although the USA's equally remarkable XB-70 does not. There are some rather odd choices, the FFA P-16, for instance, although its presence does disprove Harry Lime's contention that the only significant achievement of the Swiss has been the invention of the cuckoo clock. Then again, it is difficult to see why Egypt's HA-300 warrants an entry while Argentina's Pulquí I and/or II do not. But, as I said, the selection is bound to be coloured by subjectivity.

These are but minor reservations, however; the book is a sound effort, providing a handy and generally reliable reference work. It is perhaps also worth mentioning that it is one of a series in the same format, other titles being *Aircraft of WW II* and *Airliners of the World*.

**CGJ**

**British Secret Projects – Jet Fighters Since 1950** by Tony Buttler. Midland Publishing Ltd, 2000. Price £24.95.

Many members will be familiar with Derek Woods' ground-breaking *Project Cancelled* which reviewed all aspects of post-war British aircraft development up to 1975. In this volume Tony Buttler has confined himself to a study of fighters and the high-speed research

programmes associated with their development. Inevitably, this has meant covering the mainstream, albeit unrealised, projects previously explored by Wood but he has added much detail on the unsuccessful offerings submitted to the same specifications by other manufacturers. With the release of additional documents, Buttler has also been able to amplify the implications and impact of such factors as: changing strategic and tactical constraints; the blind alleys represented by ill-fated armament concepts, eg the 4.5 inch gun and the RED DEAN missile; the hiatus caused by the 1957 White Paper on Defence; economic difficulties; political vacillation and the constant amendment of specifications by the air staff. He has, of course, also been able to bring the story up to date, although the 1980s and '90s were very barren in comparison to the 1950s. In those days, when a pre-rationalised aviation industry still supported many design teams, a specification might attract up to a dozen solutions, ranging from the pedestrian to the bizarre. With the passage of time the escalating costs of hi-tech aeroplanes inevitably obliged the UK to import (the Phantom) or to collaborate (the Tornado, Eurofighter and JSF). Nevertheless, while the country could not afford to build them, the drawing offices, notably those at Warton, Brough and Kingston, continued to scheme advanced concepts and many of these are covered in the book.

Anyone who is a regular reader of *Air Pictorial* or *Air Enthusiast* is likely to be aware of Tony Buttler's work already, as he has been publishing articles on the post-war aviation industry for several years but this is his first hardback. It is a handsomely produced, 176-page, A4 volume printed on coated paper. It contains in excess of 130 general arrangement drawings of projects schemed since the war (a few belie the 'since 1950' of the title) and about 140 additional illustrations, comprising photographs of actual hardware, in the form of aeroplanes, missiles and mock-ups, plus contemporary artists impressions of what many projects were expected to look like, these being supplanted by computer generated images in later years. Beyond one or two clumsy expressions, the narrative is very readable. Since it covers half-a-century, it is quite a long haul and the story has been conveniently broken down into fifteen relatively easy-to-digest chapters. Because it is so lavishly illustrated, however, it is a particularly easy book to browse through. If one flicks through the

pages, one is almost bound to be attracted by something – a sketch of a marginally supersonic hydro-ski seaplane fighter, perhaps – which leads the eye to search for more information in the text and you are soon seduced into reading the whole chapter.

*Jet Fighters Since 1950* is at the same time an interesting book and a useful one and, just for once, one in which this reviewer found no typos at all – which just goes to show that it can be done. It deserves to be very successful and one hopes to see it followed by a similar work on bomber and attack aircraft projects.

**CGJ**

**With Lawrence In The Royal Air Force** by Paul Tunbridge. Buckland Publications (Chaucer Business Park, Kemsing, Sevenoaks, TN15 6PW), 2000. Price £9.95.

Lawrence has always been something of an enigma. How was it that a cultured, sophisticated man of letters, who was at the same time a man of action, a full colonel who brushed shoulders with kings, prime ministers and generals, could elect to disappear into post-war obscurity? With his reputation the world was his oyster; he was, for instance, invited to write the official history of the war in the air. Yet he turned his back on opportunity for the privations of the enlisted man. Almost as surprising as his own decision was that of ‘the establishment’ which agreed to harbour him. No doubt 21st Century psychology will have an explanation for Lawrence’s behaviour, or at least a name for it, but Paul Tunbridge wisely elects not to go fishing in such murky waters.

Instead he provides us with a detailed account of Lawrence’s RAF career between 1922 and 1935, including the two-year interlude he spent with the Royal Tank Corps. The fact that this 132-page paperback is underpinned by some 400 footnotes testifies to the author’s having done his homework. Extensive reference is made to other published works, notably Lawrence’s own *The Mint*, but there is a good deal of fresh material in the form of personal anecdotes extracted from correspondence with about fifty people, ranging from ‘erks’ to air marshals, who knew Lawrence personally. The book is well produced and includes a score of photographs, most of them, inevitably, being somewhat familiar.

This excellent little volume paints a good likeness of its subject.

Nevertheless, I, at least, still find it hard to understand him, although I was rather drawn to Tunbridge's observation that Lawrence considered that it was the airmen and mechanics, rather than the star pilots, who were overcoming the air and that he had served in the ranks to the best of his ability in order to influence 'my fellow airmen towards a pride in themselves and their inarticulate duty.' This may well have become Lawrence's rationale by 1935, but can it have been his original motivation in 1922? The enigma remains.

**CGJ**

**A Trenchard Brat – A Life in Aviation** by Frederick Weston. Brewin Books, 1999.

Frederick Weston has always been a wanderer. He spent 1923-53 in the RAF (Cranwell apprentice to flight lieutenant engineer), nine of those years in Iraq and Egypt, and then worked for the De Havilland Engine Co (and various of its successors) until 1969, much of this time being spent in Indonesia, Germany and South Africa. Before his final retirement to the UK, he and his wife spent several years running a gift shop in Spain.

Clearly an interesting life, but what of the book? It is a well-produced, 300-page hardback, printed on coated paper but the content is something of a curate's egg. Some of the personal anecdotes are entertaining; I was particularly taken by Weston's accounts of motoring around Iraq in the 1920s, the tale of how he acquired a private pilots licence while on secondment to the Royal Egyptian Air Force (REAF) in 1940 and his description of working in the remarkable Tura Caves outside Cairo (No 111 MU) during WW II. Unfortunately, the author tends to embellish his recollections with inaccurate, and often unnecessary, background information and to offer the reader his very personal views on world affairs. Some of these 'facts' should have been checked and the reader may not always agree with the opinions expressed.

Examples of inaccuracies might include: p.9 – strictly speaking, the Kaiser did not describe the BEF as 'The Old Contemptibles'; p.43 – the device that Weston was tested on when being considered for pilot training in 1929 can hardly have been a Link Trainer (a Ruggles Orientator perhaps, but Edwin Link did not patent his device until 1930 and the RAF did not order any until 1937); p.62 – the UK

acquired its mandates over territories in the Middle East at the Conference of San Remo (not via the Treaty of Versailles); p.73 – the cruise carried out by No 45 Sqn in 1931 was Egypt-Nigeria, not Egypt-Cape Town; p.80 – the Italians invaded Abyssinia in 1935 (not 1938); p.87 – we have a graphic account of someone wrecking an Overstrand on take off, specifically by inadvertently retracting its undercarriage (the Overstrand's wheels were not retractable); p.95 – No 625 Sqn was in No 1 (not 4) Gp; p.99 – the AASF was based in France (not Belgium); p.102 – the REAF only ever had forty-three Magisters (not fifty-five); p.116 – the UK was not at war with Italy in February 1940; p.203 – Indonesia's Vampires were T.55 trainers (not 'fighters'); p.227 – the Sea Vixen was powered by Avons (not Ghosts); p.246 – the SAAF certainly did not order Buccaneers for 'maritime reconnaissance and submarine detection' and one is intrigued to learn that Weston supervised the assembly of 'a squadron of Westland Lysanders (*sic*)' in Kenya in 1960! Perhaps the worst example of misinformation occurs on p.230 where we are presented with an ill-founded attempt to draw a parallel between the Comet 1 disasters of the 1950s and the loss of the prototype four-engined Boeing 307 Stratoliner in 1938 (which the author has confused with the twin-engined Boeing 247 of 1933, compounding this error by calling it the Stratocruiser, the name of the post-war Boeing 377).

So, should you buy a copy? Sadly, not if you are seeking enlightenment in the context of aviation, because it contains too much 'duff gen' as distinct from hard fact. In order to be able to sort the wheat from the chaff, therefore, you already need to be so familiar with the subject matter that the book is unlikely to teach you much that you do not already know, although there is a deal of useful sociological background information on contemporary Service life embedded within the text. On the other hand, considered purely as an autobiography, this is the entertaining story of an enterprising individual who rose from very humble beginnings, via the RAF, to make a success of his life; a success which, I am sure he would agree, sometimes owed as much to luck as to good judgement. He who dares wins. Now well into his 90s, I think that Fred Weston could fairly claim to have won.

**CGJ**

**The Flight of Rudolf Hess – Myths and Reality** by Roy Conyers Nesbit and Georges Van Acker. Foreword by the Duke of Hamilton. Sutton Publishing Ltd, 1999. Price £19.99

Roy Nesbit's name should be well known to readers; his co-author Georges Van Acker is an historian, specialising in the *Luftwaffe*, who has spent some seven years researching the Hess story. This is, therefore, a very thorough production with an extensive bibliography and detailed sources.

The book covers Hess' early life; eldest sibling of a well-to-do family who, then aged 20, terminated his business training to volunteer for the German Army in August 1914 when the Great War commenced. Wounded three times and decorated during three years of mainly frontline service, he was commissioned before transferring to the Air Service where he joined a fighter squadron as a pilot just as the war was ending. His passion for aviation was to be exercised intermittently thereafter.

In the depressed and turbulent conditions of post-Armistice Germany, Hess, an early admirer of Hitler, soon became his most ardent disciple and he was Deputy *Führer* at the time of his epic flight from Augsburg to Scotland in May 1941. There is a wealth of information about the flight itself and on the various modifications to the aircraft which will appeal to professional flyers.

The stated objective of Rudolf Hess was to initiate peace talks between Britain and Germany; this was doomed. The Nazis, shortly to invade Russia, wrote Hess off as a madman, while on the British side the final words can be left to Churchill who described the flight as a 'frantic deed of lunatic benevolence.' The final chapter provides a very appealing rebuttal of the various conspiracy theories.

**Roy Walker**

**Dennis 'Hurricane' David – My Autobiography** by Dennis David. Grub Street; 2000. Price £18.99.

Barely a week goes by these days without the *Daily Telegraph* publishing the obituary of a pilot who fought in the Battle of Britain and survived to go on to other things. Such is the case of Dennis 'Hurricane' David who died just two days after making a contribution to David Dumbleby's recent television feature on the Battle.

Leaving school at 14 to become a warehouse junior in his uncle's

footwear business, David kept up his studies with the encouragement of his former headmaster and his employer to the extent that he was able to satisfy pre-war RAFVR requirements, enabling him to enlist as a trainee pilot. Commissioned in 1938, he was flying Hurricanes with No 87 Sqn in France soon after the outbreak of war. In ten days of hectic fighting in May 1940 David had numerous combats and was credited with at least eleven victories. By the end of the Battle of Britain he was a Flight Commander with No 213 Sqn.

After being rested with an OTU, David was posted to the Middle East in 1943 where he eventually took command of No 89 Sqn before leading its Beaufighters to Ceylon. There followed a series of appointments in Ceylon, India, Burma and the Dutch Indies before he returned to the UK in 1946 as a group captain. Accepting a permanent commission as a squadron leader, David subsequently commanded a wing of Vampires in the Canal Zone before filling a series of staff appointments, culminating in a stint as Air Attaché in Budapest during which he was dubbed 'The Light Blue Pimpernel' for helping 400 Hungarians to escape after the failure of the 1956 uprising. He had earlier already acquired the sobriquet 'Hurricane' from a young female reporter who had noted his advocacy of the Hurricane's claim to be given greater recognition for its part in the Battle of Britain.

On retiring from the RAF in 1967 Dennis David became president of the Hurricane Society and gave his time to the RAF Benevolent Fund and the RAFA.

### **Lee Bedford**

**The History of US Electronic Warfare, Vol III** by Alfred Price. Printed privately by the AOC (2000). See below for price and availability.

Many members will be aware of Alfred Price's seminal *Instruments of Darkness* which first appeared way back in 1967. Since then his reputation as a writer has grown to the extent that global sales of his books, which have been translated into ten languages, now exceed two million copies. It was perhaps the ultimate tribute to his expertise that when the American Association of Old Crows (AOC) decided to commission a history of electronic warfare (EW), a field in which the US is, and always has been, pre-eminent, they asked Alfred Price to handle the project. I have read only Vol III, which alone runs



to more than 600 pages, but if Vols I and II are equally as impressive, I am sure that the AOC will have been well pleased.

Subtitled, *Rolling Thunder Through Allied Force*, Vol III covers the employment of EW in, over and around Vietnam, Iraq and the former Yugoslavia, and in sundry lesser actions, like those in Libya, Panama and Grenada. While air applications, including the development of devices to support SAC's deterrent posture and the introduction of stealth technology, provide the mainstream of the narrative, due attention is paid to the evolution of tactics and equipment deployed on land and at sea. Since an understanding of the opposition's equipment and procedures is vital to success in EW, we are also provided with some insight into the scale and sophistication of America's intelligence gathering capabilities based on the use of a wide variety of specialised aircraft, ranging from the purpose-built SR-71, through bizarre variations on the KC-135 theme to adaptations of the humble Beech King Air festooned with arrays of aerials, not to mention space systems which are also discussed to the extent that security allows. The book ends with a glimpse into the possible future, including the frightening vulnerability of the computer-based national infrastructures of the industrial democracies, and thirteen key lessons drawn from the previous sixty years of experience.

EW is intrinsically a 'hi-tech' discipline and it would be all too easy to become bogged down in a welter of technical detail and jargon. The author has long been accustomed to addressing aircrew, however, and, as a result, his writing is underpinned by the KISS philosophy (Keep It Simple Stupid). It is inevitable that the reader will come across terms like travelling wave tube, swept square wave, backward wave oscillator and carcinatron but one can just take them in one's stride – it is simply not necessary to have a secure grasp on what these techniques involve. It is equally inevitable that one will be confronted by arcane alphanumeric designations, ALE-50, ALQ-131, ALR-23, MLQ-36 and so on, seemingly *ad infinitum*. Because of the way in which the story has been broken down into easily digestible bite-size chunks, these are not as confusing as one might imagine and there is a decode at the back of the book.

There are a few typos and minor errors which could have been removed by one last proof reading but not too many for a book of this size. One does have to put up with 'colonial' spelling (caliber, armor,

defense, program, maneuver, etc) but you get what you pay for and it was Americans who paid for this book. The book's US 'style' actually works to its advantage as the narrative is frequently amplified by quotes taken from interviews with scores of veterans, including those who designed, developed and tested the various systems, as well as the soldiers, sailors and airmen who used them. These are presented more or less *verbatim* and the 'punchy' American delivery illuminates the story and lightens the whole tone.

Of Dr Price's thirteen lessons, the one that impressed me most was No 9 – 'No matter how strong the standing of electronic warfare at any particular time, within ten years there will emerge a new crop of fighter pilots who believe that aircraft performance and flying skill will guarantee their survival.' As this book makes very plain, they are wrong. It was, therefore, fortuitous that the air war in the Gulf was directed by Lt-Gen Chuck Horner and Maj-Gen John Corder both of whom (contributed to this book and) had learned about EW the hard way in south east Asia. The point is that old pilots do not forget; it is the FNGs who have to be convinced.

A truly valuable book that is easy to read and easy to understand. Why is this American book of any significance to 'Brits'? Because, while the UK does maintain a national EW capability, it can afford neither the quantity nor the quality of the systems deployed by the USA, systems which have provided the protective umbrella under which the RAF has operated extensively in recent years.

*The History of US Electronic Warfare* is available by mail order from: AOC Headquarters, 1000 North Payne Street, Alexandria, Virginia, VA 22314-1652, USA. Tel 00-1-703-549-1600 or visit [www.crows.org](http://www.crows.org). UK prices, inc p&p are Vol I (1941-45) \$30, Vol II (1945-64) \$42 and Vol III (1964-2000) \$54 or all three for \$100. Visa, American Express, Master Card and Diner's Card accepted.

**CGJ**

**The Day of the Typhoon – Flying with the RAF Tankbusters in Normandy** by John Golley. Foreword by Wg Cdr R P Beamont CBE DSO\* DFC\* DL FRAeS. Originally published by Patrick Stephens, 1986. This edition by Airlife, 2000. Price £9.99.

John Golley's name will be recognised by many members as an established writer and, in particular, as the author of *So Few* – the

Battle of Britain 50th Anniversary Memorial Book. (*Sadly, we must record that John Golley died on 16th November 2000 – Ed*)

Using the pseudonym of Bob Stanhope, in order to avoid the first person, the author describes not only his own operational tour but also provides a descriptive history of No 245 Sqn for the period from D-Day to January 1945 when he was 'screened'. As the sub-title implies, the majority of the book concentrates on the Normandy period when, for a time, the success of the Invasion hung in the balance until the closing and subsequent decimation of the Falaise Gap.

As air-to-ground attack aircraft the Typhoons were seen at their very best during the battle of Mortain on 7th August 1944 when four German *Panzer* divisions were committed to drive a wedge between the British and American armies. Through a small gap in early morning cloud one enemy column was spotted, temporarily halted on a road which had been blocked by the breakdown of a leading vehicle, thus allowing time for positive identification. During a long day, all available Typhoon squadrons attacked repeatedly with rockets leaving the German plans in tatters by nightfall; an engagement of no mean importance.

Captivating reading. Recommended.

**Roy Walker**

**The Wartime News.** PO Box 1939, Bournemouth, BH1 3XA.

The Society has received a copy of this sixteen-page, A4, magazine-style publication. Now in its sixth year, it is neatly presented, illustrated and cleanly printed. The bulk of its content comprises a series of quite brief personal accounts contributed by veterans of the Home Front as well those who saw active service. The edition submitted for review included items by a fire fighter, a switchboard girl, a wireless operator who became an air gunner, a prisoner of the Japanese, an eye-witness who (as a schoolboy) watched a USAAF Boston crash in the Channel and so on. These anecdotes are of value because they often offer a slant on the more low-key aspects of wartime life and because they tend to provide a bottom-up view of events – the war as perceived by the ex-LAC, rather than by the more usual retired group captain. These tales may not tell us much about grand strategy but there is some useful sociological history embedded between the lines.

Members who think that they might be interested in subscribing are invited to write to the address above for further details and a sample copy.

**CGJ**

### **Philip Saxon**

It is with regret that we have to record that Philip Saxon died in December. Born in 1921, Philip flew with the RAF as an observer/navigator during WW II. A graduate of the Specialist Navigation Course, most of his flying was done with Ferry and Transport Commands in the Middle East, Africa and India. He left the RAF as a squadron leader in 1946 to read Mathematics and History at Cambridge. Following a career in industry he later joined the RAF Historical Society and in 1996 he organised for us a seminar devoted to air navigation. The Society has lost a stalwart member.

*It is no part of the Society's brief to preach on Flight Safety but it is a matter that has been of central concern to the Service ever since its inception and it is one that we who study the past should bear in mind when recalling the 'good old days'. The following short article first appeared in the June 1941 issue of Tee Emm. Despite the original title, which is reproduced here, the piece does close with a comment, and a chilling one at that. Ed*

## **WITHOUT COMMENT**

**Extracts from two reports on recent accidents.**

*Printed by order of the Chief of the Air Staff*

The pilot, Pilot Officer Wilson, flying a Havoc with full operational equipment for the first time, was detailed for a one-hour practice flight. After forty minutes he flew at a low altitude in the neighbourhood of Burnt Oak Farm, near Crowborough. He then proceeded to "shoot up" the farm buildings in a series of low dives and almost vertical climbs, at times within 50 feet of the ground and below the level of the surrounding high ground. Eye witnesses were duly impressed. When the aircraft came round for the third time it was pulled up into an almost vertical climb which was maintained until flying speed was lost. It then fell over backwards and spun to the ground. Both occupants were killed and most of the aircraft was destroyed by fire.

Enquiries revealed that a Miss ..... lived in a house near the scene of the crash and that the aircraft had circled over this house. She was a friend of the pilot who had done the same thing on several previous occasions.

This was a straightforward case of "shooting-up."

\* \* \* \* \*

A Hampden with Sergeant J J Campbell as pilot, took off to carry out a general test prior to an operational trip that night. The flight was to have been for about three hours' duration. Weather conditions at the time of the accident were favourable. The cloud base was about 3,000 feet and visibility was over five miles.

Two hours later the aircraft was seen flying at tree-top height near St Deny's Road, Evington. After circling for a few minutes it dived

slightly and then levelled out. Immediately afterwards the port mainplane struck the roofs of three houses, demolishing the chimney stacks. A woman standing in the back garden of No 26 St Deny's Road was killed by falling debris. After hitting the houses it struck high trees about 40 yards distant and the tail unit and part of the bomb compartment were torn off. It then crashed into the adjoining field and distributed itself over a distance of 120 yards, killing the pilot and 1st WOp/AG.

Interviewed at the hospital next day the 2nd WOp/AG, who was the sole survivor, said that a short while before the crash they had been flying round the telephone exchange at Uppingham.

It was later learned that the pilot had, until two days before, been on leave, staying at St. Deny's Road, Evington, with a lady friend, who was a telephonist employed at Uppingham Exchange.

### **Eighty-one pilots and crews have lost their lives in flying accidents of this nature in the last six months.**

#### **WAS THIS THE FIRST EVER PILOT JOKE?**

While browsing through some old Army Council Instructions at the Public Record Office; you know, like you do. (Get a life!) the Editor recently came across Instruction 1950 of 12th October 1916 which reads:

‘It is notified that approval is given for the issue of 2,000 powder puffs per wing per month to RFC units. Indents should be submitted to the DDOS, Woolwich Arsenal.’

The editorial mind boggled. Could it be that the reason why observers migrated from the front to the rear cockpits of the second-generation two-seaters of WW I was less to do with securing a worthwhile field of fire than avoiding the perceived risks inherent in having hordes of powder puff-wielding pilots bringing up the rear? Anyone having a (sensible) explanation of what lay behind this Instruction, is encouraged to contact the Editor – no navigator jokes will be published.

## **ROYAL AIR FORCE HISTORICAL SOCIETY**

The Royal Air Force has been in existence for over 80 years; the study of its history is deepening, and continues to be the subject of published works of consequence. Fresh attention is being given to the strategic assumptions under which military air power was first created and which largely determined policy and operations in both World Wars, the inter-war period, and in the era of Cold War tension. Material dealing with post-war history is now becoming available under the 30-year rule. These studies are important to academic historians and to the present and future members of the RAF.

The RAF Historical Society was formed in 1986 to provide a focus for interest in the history of the RAF. It does so by providing a setting for lectures and seminars in which those interested in the history of the Service have the opportunity to meet those who participated in the evolution and implementation of policy. The Society believes that these events make an important contribution to the permanent record.

The Society normally holds three lectures or seminars a year in London, with occasional events in other parts of the country. Transcripts of lectures and seminars are published in the Journal of the RAF Historical Society, which is distributed free of charge to members. Individual membership is open to all with an interest in RAF history, whether or not they were in the Service. Although the Society has the approval of the Air Force Board, it is entirely self-financing.

Membership of the Society costs £15 per annum and further details may be obtained from the Membership Secretary, Dr Jack Dunham, Silverhill House, Coombe, Wotton-under-Edge, Gloucestershire. GL12 7ND. (Tel 01453-843362)

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