# ROYAL AIR FORCE

# HISTORICAL SOCIETY


## JOURNAL

## 58

First published in the UK in 2014 by the Royal Air Force Historical Society



ISSN 1361 4231

Printed by Windrush Group
Windrush House
Avenue Two
Station Lane
Witney
OX28 4XW

## ROYAL AIR FORCE HISTORICAL SOCIETY

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## CONTENTS

## SELECTED ABBREVIATIONS

| | |
|---|---|
| ADIZ | Air Defence Identification Zone |
| AFB | (US) Air Force Base |
| BAWA | Bristol Aerospace Welfare Association |
| CND | Campaign for Nuclear Disarmament |
| COMBRITBOR | (HQ) Commander British Forces Borneo |
| DZ | Dropping Zone |
| FARELF | Far East Land Forces |
| FATA | Federally Administered Tribal Areas (of Pakistan) |
| ICBM | Intercontinental Ballistic Missile |
| IRBM | Intermediate Range Ballistic Missile |
| ISTAR | Intelligence, Surveillance, Target Acquisition and Reconnaissance |
| JSLS | Joint Services Language School |
| JSSL | Joint Services Schools for Linguists |
| LZ | Landing Zone |
| MRBM | Medium Range Ballistic Missile |
| ORBAT | Order of Battle |
| RMAF | Royal Malaysian Air Force |
| RPA | Remotely Piloted Aircraft |
| RPAS | Remotely Piloted Air Systems |
| RPE | Rocket Propulsion Establishment |
| SACSEA | Supreme Allied Commander South East Asia |
| SAGW | Surface to Air Guided Weapons |
| SEAC | South East Asia Command |
| SHAEF | Supreme Headquarters Allied Expeditionary Force |
| SLR | Self-Loading Rifle |
| SMG | Submachine gun |
| SSEES | School of Slavonic and East European Studies |
| TNA | The National Archives |
| TNKU | *Tentera Nasional Kalimantan Utara* (National Army of North Kalimantan) |
| UAV | Unmanned Aerial Vehicle |

## EDITORIAL NOTICES

### Change of Membership Secretary

Sadly, we have to record the passing of our long-serving Membership Secretary, Dr Jack Dunham (see page 127). A member of the Executive Committee, Wg Cdr Colin Cummings, has been co-opted to fill the vacant post pending confirmation at the 2014 AGM. His contact details are on the last page of this Journal.

### Revised Website

As a result of the industry and enthusiasm of Wg Cdr Steve Chappell, the Society's page(s) on the MOD website have been extensively revised, updated and generally given a makeover. Well worth a look – just start Googling 'RAF Historical Society' and it will take you there before you have finished entering it.

### On-line Publications

Members may have experienced difficulty in accessing some of the back-issues of Journals via the RAF Museum website. They have all been compressed to a manageable size and are now available via the Society's revised website. In due course, it is intended to replace the files currently on the Museum's site with the compressed versions so that they will soon be readily available there as well.

**Our Guest Speaker at the RAF Club, following the Society's Annual General Meeting on 25 June 2013 was the Research Professor at the University of Huddersfield**

**Professor Richard Morris**

**whose topic was:**

# BOMBER COMMAND IN POPULAR LITERATURE AND PERCEPTION[1]

'The great difficulty about strategic bombing is that people prefer to feel, rather than to know, about it and the main difficulty with the official history of it is that they like to pronounce upon it but do not care to read it.' Thus Dr Noble Frankland, co-author of the official history of the strategic air offensive against Germany speaking to this Society in 1996.[2] Frankland illustrated his point with headlines in the *Sunday Telegraph* which had followed publication of that history in 1961; one of them proclaimed that he and Sir Charles Webster had found Bomber Command's efforts during the Second World War to have been a 'costly failure'.[3] This is not what they had said, but it went round the world anyway.[4] It still does.

Since the later twentieth century public attitudes towards Bomber Command have been a source of unease and frustration for its former members. Unease, because those who served are remembered equivocally. Frustration, because it is generally believed that national recognition of the contribution of Bomber Command was refused by politicians in 1945 and denied thereafter until the creation of the Memorial in Green Park (2012) and the award of a clasp (2013). Linked to both has been a growing body of opinion that the offensive was morally faulted in a way that other kinds of action were not. No one doubts the courage of those who flew with Bomber Command, but a kind of discredit by association arises from the policy that led to the wasting of 131 towns and cities, killed upwards of 410,000 German civilians and 100,000 civilians among our own allies, and left 7·5 million homeless. Few journalists, and not all historians, have been detained by the need to differentiate between the authors of this policy and the deeds of those who carried it out.[5]

The purpose of this essay is to look at some ways in which public perception of Bomber Command has been influenced by those who

mediate informally between academia and the public: popular historians, novelists, biographers, screenwriters and journalists. This will be done in three steps. In the first, some of these categories will be quantified. Next, the essay looks at facets of the subject that await fuller treatment. Third and last is a case study: the campaign medal controversy, in which it will be argued that the commemorative debate has been permeated by legend and distortion.

**Writings for public audiences**

Figures 1-6 give very approximate figures, by decade, for different kinds of writing and public depiction of Bomber Command. Figure 1 concerns histories for general audiences, whether stand-alone or as parts of larger works. Figure 2 surveys histories of groups and squadrons, followed (Figure 3) by accounts of individual raids, episodes or genres. Then come biography and autobiography (Figures 4 and 5), fiction (Figure 6), and feature films (Figure 7).

To introduce them, some caveats. The graphs exclude two of the most pervasive influences of all – journalism and the internet. We have already seen examples of the way in which journalistic repetition can transform opinion or misapprehension into 'facts' that 'everybody knows'. This is even more the case with the internet and digital media, which enable consultation of ever-increasing categories of primary records and publications, and provide ways for relatives of those who served in the RAF to trace what they did and what happened to them.[6] Alongside such benefits digital media allow unmediated access to misinformation and error, which circulate as freely as fact. Measurement of these growing influences would call for a more sophisticated methodology than is being used here, and for substantial resources. Likewise, while it would be possible to make keyword and subject searches from fully digitised periodicals like *The Times*, *The Times Literary Supplement* or indeed *Flight*, the task of making a qualitative survey of newspapers, magazines and broadcast media across 70 years is too large to be attempted here.[7]

Next, the graphs exclude monographs on aircraft, weapons and airfields. The literature for these is vast, and continues to burgeon. While it might be interesting to ask why this should be, discussion here is limited to Bomber Command and its constituent communities.

A third caution concerns limitations in arriving at the figures. Most

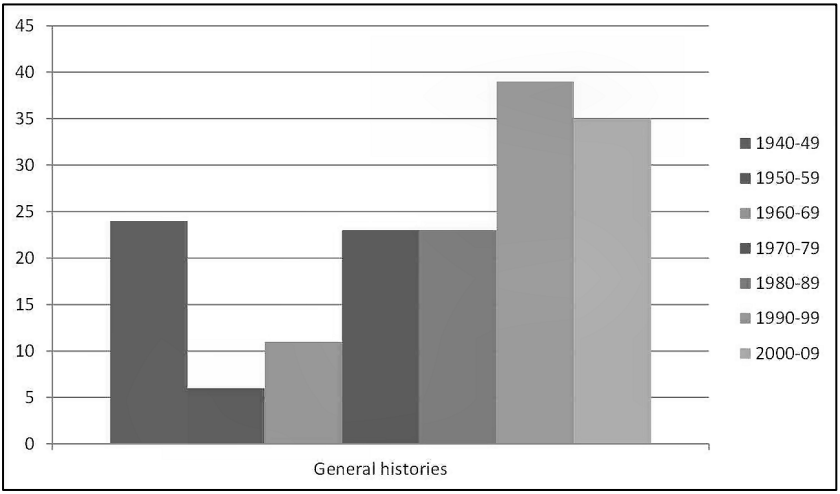



*Figure 1.*

of them are derived from Jonathan Falconer's useful survey of writing and film.[8] However, that review was published in 1996, and while the Royal Historical Society's bibliography of British and Irish History has been used to update historical coverage, analysis of fiction and drama since 1996 will be hit and miss. Quantities are thus approximate and understated. It is nonetheless hoped that their contours give a representative impression.

Fourth, while the works graphed are written in English, not all of them were produced in the UK. Bomber Command was an international community, with members from other European countries as well as large contingents from Australia, New Zealand, South Africa and Canada. This introduces a further dimension, not only because other nations have their own versions of the evolving narrative, and their own official histories, but also because those other narratives embrace the history of relations with Britain as well as the air offensive against Germany.[9]

Turning now to the graphs, Figure 1 reminds us that significant material appeared during and immediately after the war itself. Favourable officially-sanctioned interim reports on Bomber Command and its members,[10] motivational posters, Harris's personal account in 1947,[11] and numerous wartime communiques which stressed the damage being done to industrial and military targets – all acted to lift

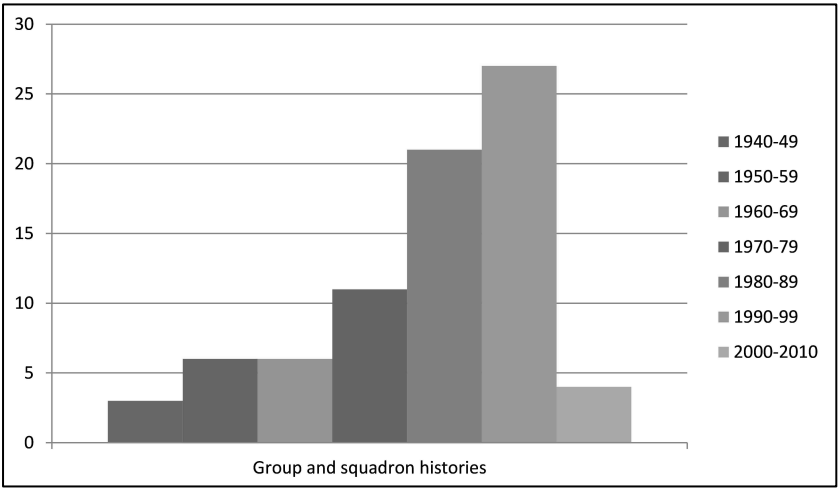



*Figure 2.*

public expectations and thereby increase the distance of their fall when the official history gave its more nuanced account. [12] In the 1970s and '80s the release of original records enabled fuller and independent historical enquiry, from which emerged integrated surveys such as Richard Overy's *The Air War* (1980), John Terraine's *The Right of the Line* (1985), and Max Hastings's initially controversial, sometimes anecdotal, but lastingly influential *Bomber Command* (1979). By the 1990s there is re-analysis, a growth in interdisciplinary work, transnational scholarship, and a growing awareness that the effects and costs of the air offensive were more complicated than earlier simple judgements based on production alone had made them seen.

Group and squadron histories (Fig 2) begin with W J Lawrence's 1951 book on 5 Group.[13] We note again the early influence of Harris on post-war perception, for during the war Wing Commander Lawrence had been Harris's press officer. As group, station and squadron operations record books that detail daily activity were opened from the 1970s, so this genre escalates. It also parallels the demography of squadron associations which in turn had a context connected with the life course. Interviews with men and women who served in wartime Bomber Command reveal a pattern: immediately after the war many of them refocused on their homes, families and

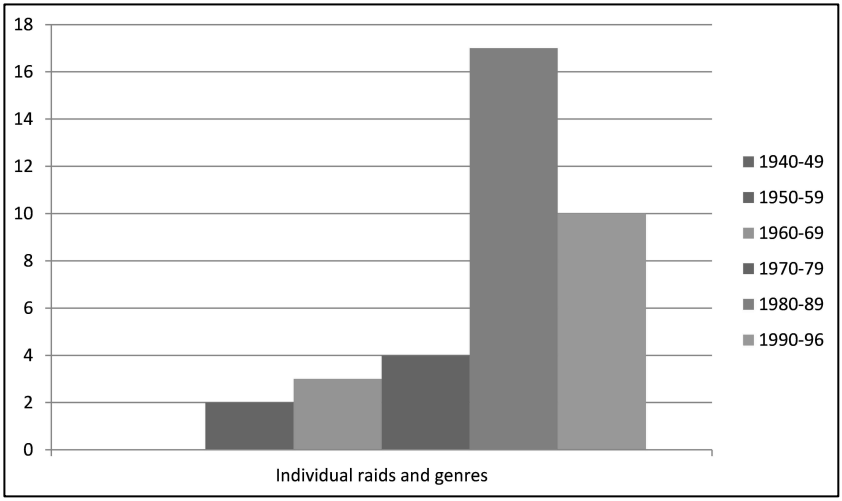



*Figure 3.*

interrupted careers. Above all they looked to the future, and for twenty or thirty years they put the war behind them. The later twentieth century saw many of them coming back together. Now in middle age, with more time to reflect and perhaps a little money with which to travel, they looked back to the days and deeds of their youth, sought out old friends and returned to the places from which they flew. Until quite recently in summer months it was not unusual to hear Canadian voices in pubs near Yorkshire airfields, or Australians and New Zealanders in certain parts of Lincolnshire. But the very youngest are now in their mid-eighties, the visitors become rarer by the year, the reunions are ceasing – and the squadron history genre has probably passed its peak.

A very substantial output has addressed specific operations (Fig 3), as against Hamburg or Peenemunde, specialised categories like the attacks on Gestapo buildings in Oslo and Copenhagen, or the prison at Amiens. Beginning with Brickhill's *The Dam Busters* in 1951, the point of reference for this genre is arguably Martin Middlebrook's *The Nuremburg Raid*. First published in 1973, its combination of research among primary records and personal recollection was influential not only for its account of that tragic operation but also for the way in which it was contextualised: Middlebrook explained how crew

members were trained, how they came together, how they lived and their prospects of survival. His stark table showing of a given group how many would die on operations, how many would perish in training, how many would become prisoners and how many would survive was for many an eye opener. Middlebrook also addressed aspects, like Lack of Moral Fibre, which others had skirted, social class and educational background.

Middlebrook's cool style contrasted with the pity of his subject. After reading this book no one would find it Beyond the Fringe's portrayal of bomber men as ex-public school twits as typical. *The Nuremburg Raid* substituted a more developed, complicated, grounded perception of Bomber Command for the simplified images received from wartime propaganda and early post-war film. Middlebrook's format has since been widely imitated, not least by himself, although with the passing of those who took part the scope for interplay between oral history and original sources has shrunk. On the other hand, as the torrent of publications attending the 70th anniversary of Operation CHASTISE reminds us, publishers like anniversaries and new books about certain raids are being written in every decade.

On to biography (Fig 4), where the trend broadly mirrors that of the squadron histories – an accelerating intensification that reflects, on one hand, widened public awareness of the subject, a younger generation of readers for whom it is all new, and a dwindling band of living candidates.[14] However, if we compare this with autobiography (Fig 5) we see a slight but interesting contrast: a number of key works during and just after the war followed by a low plateau through the '50s, '60s and '70s, mainly from the pens of increasingly elderly senior officers. The wartime works include several accounts of enduring interest, notably Leonard Cheshire's *Bomber Pilot* (1943), R C Rivaz's *Tail Gunner* (1943), and Guy Gibson's *Enemy Coast Ahead*, first published in 1946 but completed in August 1944. All three remain in print and catch the idiolect of the time. Similarly authentic, but rare, are essays and poems written by airmen that appeared in home-made cyclostyled magazines that were published on some RAF stations at the time.[15] The evanescence of such material is a caution against assuming that the apparent fewness of personal bomber memoirs written during the war, as distinct from the many

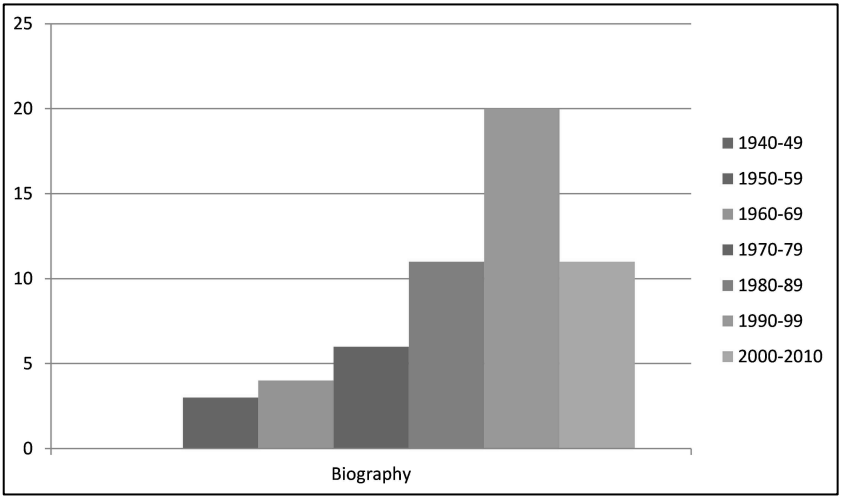



*Figure 4.*

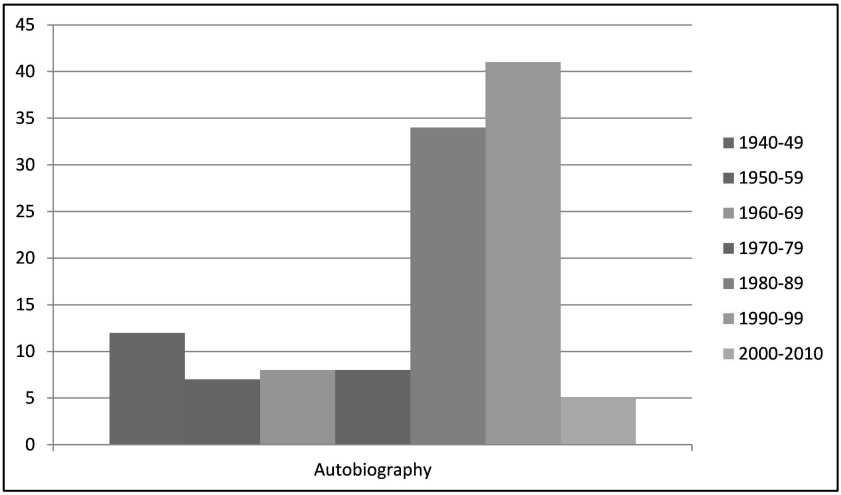



*Figure 5.*

written since, is simply a reflection of the fact that potential authors were busy doing other things. There is perhaps also a cultural point later discussed by Cheshire: in wartime Bomber Command talking about yourself in favourable terms, let alone writing it down, was unfashionable. People who did this were regarded with sus-

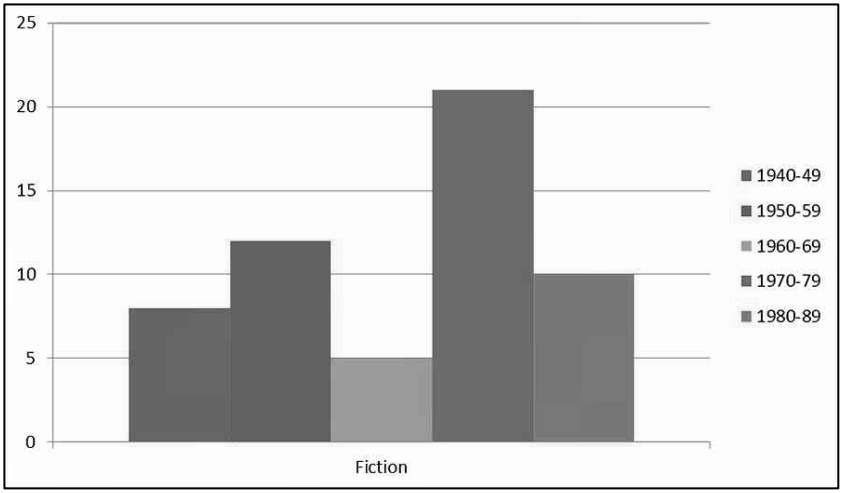



*Figure 6.*

picion, as Cheshire found when he arrived to take command of No 617 Squadron in November 1943: as he entered the Mess a number of officers were ostentatiously reading copies of his book, and then just as affectedly walked away and left them. [16]

The spate of memoirs from the early 1980s links to a point already made, that for some time after the war survivors were not only self-effacing about their service but put it behind them. In later life, around retirement, they began to realise that others might wish to read about their experiences, and to look back at their younger selves with new interest. And as this graph shows, there was only so much time left in which to write.

Bomber aircrew lived a double life, living in rural England while fighting over continental Europe.[17] The duality gave material for fiction, poetry and drama (Fig 6) witnessed, for example, in short stories by H E Bates, John Pudney's poetry,[18] Neville Shute's novel *Pastoral*, and Terence Rattigan's three-act play *Flare Path*, premiered in 1942. Rattigan, Pudney and Bates were members of the RAF during the war, and while most of Neville Shute Norway's wartime career was in the Royal Navy his pre-war aviation connections had included work with de Havilland, senior membership of the team that had built the R100 airship, and being a founder director of Airspeed. Rattigan's

*Flare Path* became the basis for the 1945 film *The Way to the Stars* which featured Pudney's achingly simple poem 'For Johnny'.

Very different was Rex Warner's *The Aerodrome*, described in the introduction to a recent edition as a 'cogent vision of England compromising with fascism'.[19] The 'clean, pure fliers' who live on the aerodrome in contrast to bucolic locals do, however, remind us that the imagery of aviation in the 1920s and '30s had a strong influence on perceptions of Bomber Command as it went into the war, just as the experience of the war altered the imagery that emerged. In the interwar period powered flight was widely conceived as a source of exceptional cultural stimulus. 'Is not to fly to achieve a synthesis whose exact parallel is not provided by any other human activity?' asked Robert de Marolles in 1938.[20] Flying, so went the theory, lifted the heart above mediocrity and imparted a finer state of consciousness. Jules Roy thought that the beauty, danger and freedom of flight combined to purify the flyer's senses so that 'the aviator sees clearly the essential, he discovers his lost treasure'.[21] Flight also meant accelerating innovation: in its dizzy world 'everything is scrapped in a year.' [22] Similar ideas attended how flyers saw things. The modernist Le Corbusier considered the aerial view to confer a kind of intensified lucidity: 'When the eyes see clearly, the mind can decide clearly.'[23] The aerial view was thus a kind of truth, and the aircraft which afforded it a figure of modernity. This kind of euphoria was dispelled by the aerial view of burned and blasted cities.

The 1960s show a slump in fiction and drama which might reflect a combination of influences, among them the effects of revisionism, the end of national service, growing irreverence towards authority (*Beyond the Fringe*, *That Was the Week That Was*), cultural effects of the Cuba Missile Crisis, and the Vietnam War – more bombing. Alongside that drop ran a critical devaluation of earlier writers: in the presence of new forms of realism authors like Rattigan and Pudney were for a time dismissed as indulgent and sentimental – a view itself now reversed. When the upturn began (paralleling increases in several other genres) it did so with a novel which has things in common with *The Nuremburg Raid* – Len Deighton's *Bomber* (1970). Like Middlebrook, Deighton democratized Bomber Command. In place of stiff upper lips and guarded emotions *Bomber* is about class frictions, weaknesses and hopes, messy lives, and what happens when ordinary

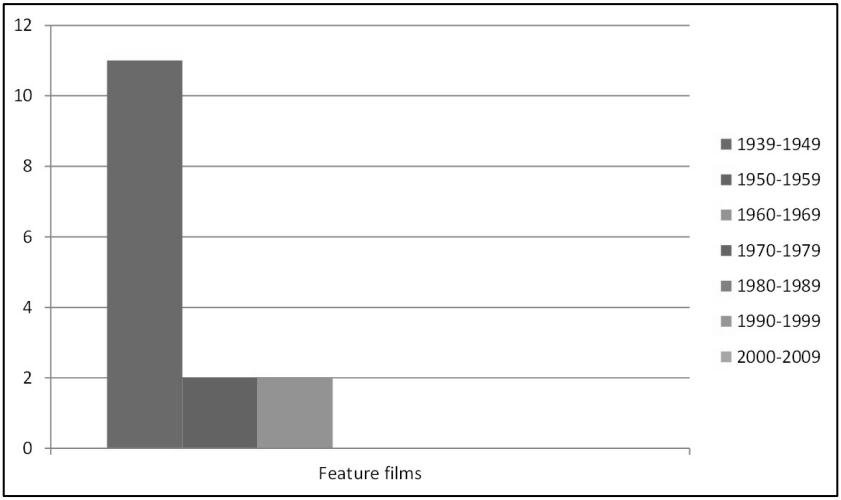



*Figure 7.*

people from different backgrounds are thrown together. In 1995 *Bomber* was broadcast as a Radio 4 play, transmitted across an entire day in sections that corresponded with the actual times of preparation, undertaking and return – or not.

In contrast is British mainstream cinema (Fig 7), which produced a flourish of movies during and soon after the war and not much else. In the 1940s films such as *Millions Like Us*, *Journey Together*, and *A Matter of Life and Death* dwelt on social cohesion, Anglo-American friendship and teamwork. Michael Powell and Emeric Pressburger also wrote the screenplay for *One of Our Aircraft is Missing*, an essentially propagandistic film that was made with the active encouragement of the Ministry of Information. Another film that portrayed Bomber Command to the wartime public was *Target for Tonight* (1941), directed by the documentary maker Harry Watt, whose later feature titles included *The Overlanders* (1946) and *Where No Vultures Fly* (1951). All characters in *Target for Tonight* were serving members of the RAF, among them Percy Pickard who lost his life in 1944 in the course of Operation JERICHO. But no aircrew die in the course of this story, and despite tensions and mishaps the operation it recounts is a success. In contrast was Anthony Asquith's bittersweet *The Way to the Stars*, which on release in 1945 was

described from afar by an American critic as 'a wistful reflection' upon a period of national heartache. As we have seen, the film derived from *Flare Path*. Rattigan co-wrote the screenplay using avoidance of spectacle and understatement to explore values being fought for rather than fighting itself. [24] As David Edgerton says, it summoned up a pastoral England where there was 'hardly a bomber in sight'. [25]

During the late 1940s British studios produced no counterparts to films such as MGM's *Command Decision* (1948) or the enormously successful *Twelve O'Clock High* (Twentieth-Century Fox, 1949), both of which concerned the Eighth Air Force and depicted strains of organizing and undertaking daylight attacks against Germany. The UK's eventual answer was *Appointment in London* (1953) and Michael Anderson's *The Dam Busters* (1954) with a screenplay by R C Sherriff and cinematography by the German-born Erwin Hillier. Hillier had worked extensively with Powell and Pressburger. Like the English painters Constable and Turner he was fascinated by clouds. The skyscapes seen in *A Canterbury Tale* and *The Dam Busters* are more than incidental background; they are a visual lexis, linking nature with 'the values and traditions of an England under fire'.[26] *Appointment in London* broached combat stress; it was written by a former bomber pilot – John Wooldridge, who also wrote the score. These post-war films sustained themes found in the wartime movies: David Edgerton sees them as 'elaborations, and very effective ones, of national stereotypes, which are implicitly, and sometimes explicitly, connected to a broader picture of England: as a nation which is attacked, not a nation which attacks; as a lethargic nation raised to genius by emergency, and saved by heroic, aristocratic pilots and shy boffins', the latter epitomised by Michael Redgrave's portrayal of Barnes Wallis.[27]

*The Dam Busters* was the most successful war film of the 1950s. Not much followed. *The War Lover* (1962) was British-made but not chiefly about the war, and its airmen were American. *633 Squadron* (1964) was thinly written. There has been little since. Is it possible that exertions in making *The Battle of Britain*, filmed in 1968-69 for release on the battle's thirtieth anniversary, diluted subsequent desire to do anything comparable for Bomber Command? A linked factor may have been the way in which post-war films were financed: a major British feature is difficult to fund without the prospect of a

substantial US audience, and market research indicates no sufficient audience in the US for a film about British airmen. The movie that in 1990 became *Memphis Belle* was originally entertained as being about Bomber Command, but apparently its makers found that it could not be financed on this basis; an American subject was substituted. Funding, however, cannot be the whole story. There must also be a question of what screenwriters want to explore, and what commissioning editors expect audiences would like to see. The subject could have been tackled in TV drama by writers like Alan Prior, Jack Rosenthal or Alan Plater – but what we rather see is its avoidance. The bomber offensive made only brief and lacklustre appearance with the 1972-3 ITV series *Pathfinders*, in Don Shaw's 85-minute play about Harris, and in a one-off drama by William Ivory about a bomber crew reunion screened in 2002.

If we now put some of these things side by side, a little more can be said. The Bomber Command remembered today is largely constructed from interplay between historical writing, fiction and TV documentary in the 1970s. This in turn rested mainly on the official history and responses to it in popular journalism, both of which differed substantially from the account that had been given to the public by the government during and after the war. A backdrop to such reappraisal already existed in responses to the fiftieth anniversary of the First World War. The BBC's 1964 documentary series *The Great War* had put original records and personal witness into conversation to re-examine a subject about which the public thought it already knew. In counterpoint with it ran Theatre Workshop's influential musical *Oh, What a Lovely War!* (1963) which mingled irony, satire and nostalgia to shape popular opinion and feeling in ways that circumvented critical history. Preceding both was the consecration of the new cathedral in Coventry. Basil Spence's building epitomized a new national mood – it went with urban renewal, the first motorways, irreverence towards authority; above all it stood for looking ahead and reconciliation, things opposite to the bombing and the war that had prepared its site. The consecration was marked by a new work, Britten's *War Requiem* (1962), which widened awareness of Wilfred Owen's poetry and so helped to prime public response to the twenty-six episodes of *The Great War* that soon followed. That series in turn paved the way for *The World at War*,

first shown in 1973, in which the episode on Bomber Command, written by Charles Douglas-Home, ended after the Berlin raids but before D-Day – Germany undefeated, Berliners still whistling.

*The World at War* was near coincident with *The Nuremburg Raid* and itself followed by Hastings's *Bomber Command*, a book that as we have seen was successfully aimed at a general readership, with a concluding verdict that 'the cost of the bomber offensive in life, treasure and moral superiority over the enemy tragically outstripped the results that it achieved'. These three together arguably set the tone for the way in which the air offensive and those who undertook it are remembered today.[28]

More nuanced interpretation provided by recent scholarship has not yet been absorbed by the media or heritage industry. An example of the former is provided by the furious antagonism between Royal Canadian Air Force veterans and the makers of the 1992 CBC TV documentary *Death by Moonlight*, a programme which alleged that Bomber Command concealed its aim deliberately to slaughter civilians and betrayed the trust of Canadian aircrew. In 2005 controversy broke out anew over Forged in Fire, an exhibition at the Canadian War Museum which contained panels of text like this:

> 'The value and morality of the strategic bomber offensive against Germany remains bitterly contested. Bomber Command's aim was to crush civilian morale and force Germany to surrender by destroying its cities and industrial installations. Although Bomber Command and American attacks left 600,000 Germans dead, and more than 5 million homeless, the raids resulted in only small reductions in German war production until late in the war.'

The statement angered RCAF veterans, their frustration being magnified when an investigation by a committee of Canada's Senate endorsed it.

**Stories awaiting tellers**

If space allowed we would look at areas which await fuller exploration, like the lives of prisoners of war (a category for which Bomber Command provided a regular supply), families and relatives, or the diverse roles played by women. Another subject would be

regenerative medicine. In 1940 strides were taken in reconstructive surgery and treatment of burns – a subject recorded in Richard Hillary's memoir *The Last Enemy* (1942) and the focus of much discussion since. However, while Archibald McIndoe and colleagues like Fenton Braithwaite are identified in public memory with fighter pilots and the Battle of Britain, from 1941 much of their work was with injured bomber aircrew through the crash and burns unit at No 4 RAF Hospital Rauceby in Lincolnshire. One reason why this is less known may be that Bomber Command produced no counterpart to Hillary to write about it.

But the main point here must be that seven decades on it is no longer possible or appropriate to address the bombing offensive from a national or Allied perspective alone. [29] Commemoration must speak to, and be spoken to by, Bomber Command's victims as well as its members. In doing so it faces new challenges. *In Forgotten Blitzes: France and Italy under Allied Air Attack, 1940-1945* Claudia Baldoli and Andrew Knapp point out that Allied bombing killed almost twice as many civilians as Britain's own 60,000 bombing dead. [30] It has been said that this extraordinary toll has not hitherto found a place in national narratives, although historians who have been working in France report that the narratives are there in individual places – places like Brest, Boulogne, or Le Havre where between 1,500 and 2,000 civilians died in air raids just in the days ahead of Allied capture in September 1944.[31] Until recently such memories seem to have been pocketed, each place remembering its own trauma, and only latterly making connections with others and coming to terms with the grimmer, larger picture.

Did the same apply in Germany? W G Sebald's *On the natural history of destruction*, first published as *Luftkrieg und Literatur* in 1999,[32] has taught us that the destruction wrought by Allied bombing was treated as a kind of taboo in German post-war writing. An example was the experience of the Swedish journalist Stig Dagerman. While travelling on a jam-packed slow-moving train between Hasselbrook and Landwehr in 1946 Dagerman was awestruck by the desolation of the bombed landscape to either side. Gradually he became aware that other passengers in the carriage knew him not to be German because he was the only person looking out at it.[33] Even the literary exceptions to the 'ominous silence' reinforce Sebald's view,

for some of them remained unpublished until well after the war.[34] Jörg Friedrich agreed. His book *Der Brand* (characterized by a German critic, Andreas Kilb, as a work of 'hysterical expressivity') appeared three years after Sebald's *Luftkrieg.*[35] 'The bombing left an entire generation traumatised' said Friedrich in an interview when the book was published in English in 2006, 'but it was never discussed.' [36]

*The Fire* was followed by *Brandstätten*, a book of photographs. [37] As Richard Overy observed in a review of *The Fire*, while Friedrich never quite says that the campaign was genocidal, his language 'is immoderate and reproachful. These are massacres, the cellars in which ordinary Germans were roasted to death become 'crematoria', and the bomber crews are exterminating the enemy, not simply destroying his will to resist.'[38] This emerging view of a kind of equivalency between the Allies' wartime past and Nazi atrocities, German civilians being victims of both, leaves the veterans themselves even more isolated than they felt before.

Other works published around the same time, as by Keith Lowe on Hamburg and A C Grayling's *Among the Dead Cities*, dwell on linked aspects. [39] But it may be asked if memory in post-war Germany was more akin to that in post-war France – that individual places knew very well what had happened to them, the fire being a great divide, *the* great divide into before and after; what took time was the integration of the particular experiences into a national narrative. In the process, the effects of Bomber Command have been transformed from military into social and psychohistory history. An example is the Hamburg Firestorm Project which asks to what extent war experiences lead to long-term trauma and how this is processed in the context of the individual, the family, society, and place. In a collaborative effort, experts in psychology, history and child psychology have set out to answer to these complex questions, and to ascertain how such events are passed down within families and the subsequent effects up to the present day. Thus has the focus shifted from bombing to its legacies.

The initial suggestion, then, is that various kinds of post-war popular writing, and particularly writing since around 1970, have had a strong influence on the directions and ways in which Bomber Command's original members look back, and on the milieu of commemoration. This conclusion may not seem unusual in itself, but it takes on particular significance in relation to the campaign medal

controversy to which we now turn.

**Bomber Command and the politics of recognition**

When the Queen unveiled the Bomber Command memorial on 28 June 2012, Lord Ashcroft, who gave £1 million to the project, proclaimed that 'a 67 year wrong' had 'finally been righted'.[40] Ashcroft's statement reflected the widespread belief that during the last months of the war there was growing political uneasiness about the effects of Allied bombing, and that some politicians had accordingly sought to distance themselves both from the policy and from the commander-in-chief of the force that had carried it out. [41] Here, for instance, is Sir Simon Jenkins writing in the *London Evening Standard* the week before the unveiling:

> 'Survivors of Bomber Command felt they were hard done by after the Second World War. This was largely due to a surge of revulsion against the policy of its commander, Sir Arthur "Bomber" Harris, and his belief that . . . bombing of civilian targets would force Germany's surrender, which it never did.' [42]

In July 2012 Sir John Holmes submitted his review of military medals to the government. In it Holmes repeated the belief held by 'many veterans' and 'others' that 'the decision not to award any separate medallic recognition for Bomber Command reflected the controversy surrounding the intense bombing of cities like Dresden.' [43] Here, then, are influential, articulate people who agree or at least repeat that members of Bomber Command were wronged. It is a view that has been repeated countless time. Yet plain chronology exposes a problem: policy on campaign stars and medals was decided before Dresden was bombed.

In May 1945 a statement was published that explained proposals for new Campaign Stars and The Defence Medal.[44] Aircrew of Bomber, Fighter, Coastal and Transport Commands were eligible for one of several Campaign Stars – Atlantic, Aircrew Europe, France and Germany, Italy, others. The main framework for the awards had been settled in January 1945.[45] It emerged from discussion between Churchill and the Committee on the Grant of Honours, Decorations and Medals in the Time of War, which had been deliberating for several years. On 16 September 1944, Churchill, then in Quebec for

the Octagon conference, dispatched a telegram to the Committee with his comments on its latest proposals. One matter that needed to be resolved was the basis on which troops in the UK might qualify for the intended 1939-1945 Star. [46] Churchill urged a principle of engagement. Units such as anti-aircraft and coastal batteries that had engaged the enemy should be eligible. RAF ground crews and the RAF Regiment, on the other hand, should not. Of these Churchill wrote: 'I decidedly reject all claims.'[47]

Minutes and correspondence between members of the Committee in following days give context for Churchill's objection: 'Make no doubt about it . . . in conversation, and sometimes in his minutes, he frequently recurs to the theme that an airman on the ground in the blitz incurred no more danger than the ordinary civilian in one of the blitzed towns.'[48] Or again: 'In point of fact the Prime Minister has always been strongly prejudiced against the ground staff of the Royal Air Force as being an "enormous mass of non-combatant personnel who look after a very few heroic pilots who alone in ordinary circumstances do all the fighting.".'[49]

The Committee noted that Churchill's proposal to extend the award of this star to one kind of home service only would introduce all kinds of intra- and inter-service anomalies, some of them based on no more than the colour of a uniform. [50] A minute to the Secretary of State via Portal, copied to AVM Harries (Director-General of Personal Services, Air Ministry, and a member of the Committee) pointed out that the exclusion of RAF personnel working on the ground would be neither fair nor logical.[51] Many of them had been under direct attack, many had engaged the enemy, and without them no fighters or bombers would have flown. But the Committee found itself in a quandary: was it in a position to argue? The Committee consisted of more than a dozen civil servants and four senior officers of the fighting services. While it was cohesive and professionally informed, its chairman, Sir Richard Hopkins (Permanent Secretary to the Treasury), was sure that the Prime Minister looked upon it 'as a body of *individuals* on the official plane serving as his advisers'. Hopkins considered that the Committee was 'at present being used by the Prime Minister for advising him about stars and medals etc'. Or as one of Churchill's private secretaries put it in a draft letter to Sir Arthur Harris: 'the Prime Minister . . . will have the last word – as he had the

first – in framing this scheme for awards to all three Services.'[52] Hopkins concluded that it was now for Ministers rather than the Committee to try to change the Prime Minister's mind.[53]

Churchill was advised to abandon his proposal to extend the award of the 1939-1945 Star to only one kind of home service.[54] He subsequently did so, not by relaxing criteria towards branches of home forces (like RAF ground crew) to which he had previously been opposed, but by excluding those (like AA Command) he had earlier been minded to include. The eventual alternative was The Defence Medal, to which members of both Anti-Aircraft Command and RAF ground crews were entitled. In due course this led to parliamentary protests akin to those made on behalf of Bomber Command.[55]

The dispute over eligibility for the 1939-1945 Star was not the only one of its kind. Another inconsistency emerged in the qualifying criteria for the Air Crew Europe Star and the France and Germany Stars, between which ran the boundary of 5 June 1944. The qualifier beforehand was clear – aircrew who had flown operationally. But afterwards, any member of forces in continental Europe who had served for a minimum qualifying period would be entitled to the Star, regardless of role. From 5 June 1944 there was thus medallic equivalence between the roles of, say, non-combatant cooks or administrators and operational aircrew. This led to a further disparity: whereas RAF ground staff at home would be denied a campaign star on the grounds that they were non-operational, their counterparts undertaking identical work on continental airfields would so qualify.

Harris weighed in to the debate in October 1944 with a robust letter to Sir Archibald Sinclair complaining of 'arbitrary discrimination in the distribution of war medals'. 'With regard to the Africa Star and the 1939-43 (*recte* 45) Star', he wrote:

> 'At the conclusion of the continental campaign an award of yet another campaign medal for those who served on the continent will inevitably be demanded and awarded. An airman employed in a Tactical Air Force squadron in Egypt is entitled to the Africa Star for doing ground duties no more dangerous and certainly no more exacting than precisely similar duties performed by an airman in Bomber Command. The same airman who has 'earned' the Africa Star, where his Bomber

> Command opposite number got nothing, may well earn a second medal for service on the continent and his Bomber Command opposite number will again get nothing.'[56]

Harris identified more anomalies. The award of stars for theatres (Africa, Italy and so on) ignored the fact that long-range aircraft could and often did operate from bases well outside such areas. Crews of long range bombers would thus 'frequently if not automatically find themselves excluded from awards which will go to their opposite numbers in other Commands merely by reason of the short range of their aircraft.' Harris told Sinclair: 'It appears that we shall eventually be driven to some allotment of medals based upon the range of the aircraft employed!'[57]

Then the nub:

> 'I am not suggesting that the right solution is that everybody in the operational commands should be awarded such medals, but am bringing this to your notice in the hope that sufficient thought will be taken in the future so that the discriminatory issue of *campaign* [Harris's emphasis] medals may be avoided altogether; or that such campaign medals if issued *will be issued to all personnel involved in the campaign in any operational command* [my emphasis] or that, alternatively, if it is considered desirable to confine them only to aircrew they will be issued in the form of a special decoration and not a campaign medal.'

Bomber Command's ground crews had worked through six winters, mostly in the open – few bombers lasted long enough to need major overhauls – and poorly accommodated. Ground crews had come under enemy attack, had frequently been victims of industrial accidents, blackout accidents, premature detonations and hypothermia. Around 8,000 men and women had died in the course of training and support.

Harris's letter was forwarded to Churchill, one of whose private secretaries put it before him with a covering note 'Prime Minister: I think you should see this letter from the Air Officer Commanding-in-Chief, Bomber Command . . . I have marked the passages in which he gives striking anomalies to which the present arrangements give rise.'

One of the passages so indicated was Harris's next paragraph:

> 'I know you will appreciate that I raise this not only with the idea of avoiding difficulties in the future but also to bring to your notice the fact that my ground crews in this country have worked probably harder, certainly far longer, and undoubtedly under just as great discomfort and personal risk as any of the ground crews in France, Italy or Africa. Their work was as directly part of the campaigns – pre-Dunkirk – in France, in Africa, in Italy and now again in France, as the work of any ground crew stationed in those countries. Yet merely because of the long range of their aircraft, they get no official recognition by way of campaign medals, that they took part in those campaigns.'[58]

Harris concluded: 'Bomber Command could be forgiven a smile at the Gilbertian outcome to date'. But comedy was far from Harris's mind in May 1945 when he realised that his appeals for logic and fairness had gone unheeded. On 1 June he wrote to Portal and Sinclair to restate the case for just recognition: while aircrew would receive fitting campaign stars, everyone else, including all the ground personnel, would be awarded only The Defence Medal. Even the language was wrong: his Command's role had been 'offence'.'[59] Harris's new plea was passed to Harold Macmillan, who had succeeded Sinclair in the caretaker government, but to no avail.

Harris's response appears to have been to live up to a promise made in his letter of protest to Portal: since the generality of Bomber Command's personnel would receive no more than The Defence Medal, then neither would he: if any further 'decoration, award, rank, preferment or appointment' were to be offered, it would be declined. Henry Probert, Harris's biographer, considers this to be the key to Harris absence from the list of senior British commanders who were put forward for peerages by the new Labour Government in 1945.[60] That exclusion has been interpreted by some as evidence for the desertion of Harris by Churchill,[61] and by others for slighting treatment of Harris by the Attlee government;[62] both have been linked to misgivings about the bomber offensive. Probert's findings, however, point in a different direction: 'there seems little doubt that it was not the Labour Government that denied him his peerage but he

himself, essentially for the best of reasons: his loyalty to the men and women of Bomber Command'.[63]

In place of the legend that Bomber Command's aircrew were snubbed after the war something else emerges: Harris's appeal was on behalf of all who had taken part in Bomber Command's endeavour, and its refusal stemmed not from latter day misgivings about bombing but from Churchill's long-standing depreciation of what much of that endeavour had involved.

**Notes:**

[1] This is a slightly expanded and referenced version of a lecture given to the Society on 25 June 2013. I thank Sebastian Cox, Dr Lindsey Dodd and Robert Owen for advice and criticism during preparation of the lecture.

[2] Noble Frankland, 'Some thoughts about and experience of official military history', *Journal of the Royal Air Force Historical Society*, 17 (1997), 5-15, at 6.

[3] 'Row Breaks Out over Last-War Bombing'; 'Sir Arthur Harris's retort to Charge of Costly Failure'; 'Bias Denied by Historian', *Sunday Telegraph*, 17 September 1961; 24 September 1961; 1 October 1961.

[4] Noble Frankland, 'History in the News', *History at War: The Campaigns of an Historian*, London 1998, 114-135.

[5] John Keegan is among those who have attributed the origination of area bombing policy directly to Harris: *The Battle for History*, London, 1995, 26.

[6] For example, RAF squadron Operations Record Books are now available on line from The National Archives (TNA AIR 27).

[7] The last chapter of Mark Connelly's *Reaching for the Stars: A New History of Bomber Command in World War II*, New York, 2001, examines the influence of journalism.

[8] Jonathan Falconer, *RAF Bomber Command in Fact, Film and Fiction*, Stroud, 1996.

[9] See for example William S Carter, 'Anglo-Canadian Wartime Relations, 1939-1945: RAF Bomber Command and No 6 (Canadian) Group, McMaster University, DPhil thesis, 1989.

[10] For example: *Bomber Command – The Air Ministry Account of Bomber Command's Offensive Against the Axis September 1939-July 1941*, 1941; Sir William Rothenstein & Lord David Cecil, *Men of the RAF*, London, 1942.

[11] Sir Arthur Harris, *Bomber Offensive*, London, 1947.

[12] C Webster & N Frankland, *The Strategic Air Offensive Against Germany*, 4 volumes, London, 1961.

[13] W J Lawrence, *No 5 Bomber Group RAF*, London, 1951.

[14] Also to be reckoned is collective biography and prosopography: Martin Francis, *The Flyer: British Culture and the Royal Air Force, 1939–45*, Oxford, 2011; *cf* Dr Matthew Grant, review, *Flyers and their traumas: the RAF in the Second World War*,

(review No 1172) URL: http://www.history.ac.uk/reviews/review/1172, Date accessed: 23 January, 2014.

[15] See for example *The Gen*, a station magazine which was written by servicemen and women and circulated at Coningsby in 1944. Copies are preserved in the appendices of 54 Base ORB: TNA AIR 29/854.

[16] David Shannon, conversation with author, 3 July 1989; Leonard Cheshire, *The Face of Victory*, London, 1961, 21.

[17] Lord David Cecil's sketch of this existence, a life 'unlike any I had ever known before', is worth revisiting: 'The RAF: A Layman's Glimpse', in Sir William Rothenstein & Lord David Cecil, *Men of the RAF*, London, 1942, 65-84.

[18] John Pudney, *Dispersal Point and Other Air Poems*, 1942; *Ten Summers: Poems 1933-1943*; *Beyond This Disregard: RAF Poems*, 1943; ed With Henry Treece, *Air Force Poetry*, 1944.

[19] Michael Moorcock, 'Introduction' to Rex Warner, *The Aerodrome: a love story* [1941], London 2007, xii.

[20] Robert de Marolles, *Aviation, école de l'homme*, Paris: Plon et Nourrit, 1938.

[21] Jules Roy, *Comme un mauvais ange*, Chalot, 1946, 35.

[22] Le Corbusier, *Aircraft* [1935], Madrid: Abada Editores, 2003, 92.

[23] Marolles, *Aviation*, 64; Le Corbusier, *Aircraft*, 13; *cf* Ernst Jünger, ed, *Luftfahrt ist not!* Leipzig, Nürnberg, 1928, 9-13.

[24] Bosley Crowther, Movie Review, *The New York Times*, 16 November 1944.

[25] Edgerton, *England and the Aeroplane: Militarism, Modernity and Machines* [1991], London, 2013, 95.

[26] Xan Brooks, 'A pilgrim's progress: on the trail of A Canterbury Tale', *The Guardian*, 9 August 2013.

[27] Edgerton, *England and the Aeroplane*, London, 2013, 97.

[28] Another influence is what is taught through the National Curriculum (which despite its name is specific to England), for which see Keith A Crawford & Stuart J Foster, 'Wartime or War Crime? The Destruction of Dresden in English History Textbooks', in *War, Nation, Memory: International Perspectives on World War II*, Greenwich CT, 2007, 43-61.

[29] For the subject at large see now Richard Overy, *The Bombing War: Europe 1939-1945*, London, 2013.

[30] C Baldoli & A Knapp, *Forgotten blitzes: France and Italy under Allied air attack, 1940-1945*, London, 2012. *Cf* C Baldoli, R Overy & A Knapp, eds *Bombing, states and peoples in Western Europe, 1940-45*, London, 2011.

[31] A Knapp, 'Des bombardements alliés sur la France en général et Le Havre en particulier', *Cahiers Havrais de Recherche Historique*, Vol 69 (2011), 121-154.

[32] W G Sebald, *Luftkrieg und Literatur*, Munich, 1999.

[33] W G Sebald, *On the Natural History of Destruction*, transl Anthea Bell, London, 2004, p30, citing Enzensberger, *Europa in Trümmern*, p240 (see following note).

[34] Examples given by Sebald include Hans Magnus Enzensberger, *Europa in Trümmern* ('Europe in Ruins'), Frankfurt, 1990, a collection of writings mainly by foreign journalists, and Heinrich Böll's novel *Der Engel schwieg* ('The Angel Was Silent), written in the late 1940s but not published until 1992.

[35] Jörg Friedrich, *Der Brand: Deutschland im Bombenkrieg* 1940–1945, Munich, 2002.
[36] Jörg Friedrich, *The Fire: the Bombing of Germany 1940-1945*, New York, 2006.
[37] Jörg Friedrich, *Brandstätten: Der Anblick des Bombenkriegs*, Munich, 2003.
[38] Richard Overy, 'Are we beasts?', *Literary Review*, March 2007.
[39] Keith Lowe, *Inferno: The Devastation of Hamburg*, 1943, London, 2007; A C Grayling, *Among The Dead Cities: The History and Moral Legacy of the WWII Bombing of Civilians in Germany and Japan*, London, 2007.
[40] http://www.conservativehome.com/platform/2012/06/lord-a-photo.html, 28 June 2012, accessed 20 January 2014. The fittingness of the memorial is another matter: Jonathan Meades reflected that the 'urbane Air Forces Memorial at Runnymede was evidently reckoned insufficiently specific' and described Ashcroft's philanthropy as 'narcissistic' (his name appears on the memorial together with those of other donors): 'At Hyde Park Corner', *London Review of Books*, Vol 34, No 20 (2012), 32. Writing on the website of *BBC History Magazine* Keith Lowe suggested that the men of Bomber Command deserved 'something more modest, and more honest, like the men themselves. This triumphalist monolith says more about our unhealthy fetishism of the war than it does about the men who died trying to bring it to an early end.' http://www.historyextra.com/bomber, 28 June 2012, accessed 22 January 2014.
[41] Sir Martin Gilbert noted Churchill's growing scepticism towards area bombing during the latter months of the war: 'Churchill and bombing policy', Fifth Churchill Centre Lecture, Washington DC, 18 October 2005 (2008).
[42] Sir Simon Jenkins, 'Defacing a park is not the way to honour war dead', *Evening Standard*, 19 June 2012.
[43] Sir John Holmes, *Military Medals Review*, 2012, 31-32.
[44] *Committee on the Institution of Honours Decorations and Medals in Time of War, Campaign Stars and The Defence Medal*, London, HMSO, May 1945.
[45] The printed draft for what was later issued as a White Paper on campaign stars was dated 27 January 1945: 'Campaign Stars', TNA AIR 2/6762 65A.
[46] While the war was in progress campaign stars were given various working names in government minutes, correspondence and memoranda; for simplicity, their final names are used here.
[47] Churchill to 'Honours in War Committee', 16 September 1944, TNA AIR 2/6762 7C, paras 1 & 2.
[48] Minute to AVM Harries (Director-General Personal Services, Air Ministry), with copies to Portal and Deputy Under-Secretary, 16 November 1944, TNA AIR 2/6762.
[49] *Ibid*.
[50] Draft Minute to the Prime Minister, November 1944, TNA AIR 2/6762, 26A, 24A.
[51] Minute to Secretary of State and CAS, 27 September 1944, TNA AIR 2/6762.
[52] Draft Letter from Prime Minister to ACM Sir Arthur Harris, October 1944, TNA AIR 2/6762 27B.
[53] Sir Richard Hopkins to Sir Arthur Street, letter, 19 October 1944, TNA AIR 2/6762, 24A, 20B.
[54] Draft Minute to the Prime Minister, TNA AIR 2/6762 26A.

[55] Motion for adjournment to protest against the denial of a campaign star to Anti-Aircraft Command: *Hansard*, 6 February 1948 Vol 446 cc2130-42.
[56] Harris to Sinclair, letter, 20 October 1944, TNA AIR 2/6762 27a.
[57] *Ibid*.
[58] *Ibid*.
[59] Henry Probert, *Bomber Harris: His Life and Times*, London, 2001, 347; RAF Museum, Harris Archive, Folder H84; H50.
[60] Probert, *Bomber Harris*, 349-351.
[61] For example, Max Hastings, *Bomber Command*, 418.
[62] For example, Dudley Saward, *Bomber Harris*, London, 1984, 425-30.
[63] Probert, *Bomber Harris*, 351.

## DISCUSSION

**Sebastian Cox**. Richard – I agree with most of what you said but I have a question concerning campaign medals. As you will be aware, the Government's initial thoughts were to treat the war as four regional campaigns – Africa, India/Burma, the Pacific and Europe with a medal for each. Churchill took issue with that and insisted on having an Italy Star and a North West Europe Star, which changed the whole game. Taking Churchill's initiative as a precedent, the Navy objected to the broad-based 'theatre' medals on the grounds that a typical soldier might well accumulate three or four of these whereas a sailor who had spent five years fighting the Battle of the Atlantic would attract no more than the 1939-45 Star. The Admiralty, therefore, pressed for a specific Atlantic Star. On the basis that Bomber Command's men would be in a similar situation, the Air Ministry then in turn pressed for an Aircrew Europe Star and Churchill endorsed both of these proposals.

That being the case, why did Bomber Command crews stop being awarded the Aircrew Europe Star in favour of the France & Germany Star? Between April and September 1944, while Bomber Command still maintained its offensive against Germany, it was at the disposal of SHAEF and a great deal of its effort was actually expended in direct and indirect support of OVERLORD – isolating the beachhead in advance by bombing the railways, for instance, and directly assisting in the subsequent breakout by attacking land targets and by neutralising isolated pockets of resistance – you mentioned the 60,000 French casualties. Against this background, this shift in focus, it appears that the Government decided that post-5 June 1944 the France and Germany Star would be awarded to Bomber Command aircrew instead of the Aircrew Europe Star. My problem is that I have been unable to substantiate this and I wondered whether you had come across any documentary evidence to support this interpretation – or whether you think that there may have been some other rationale.

**Richard Morris.** I think that the explanation will have been pretty much as you described. But, that said, what infuriated Harris was the asymmetry within the system – who, within Bomber Command, would actually qualify for, what ended up being called, the France and Germany Star – and, more to the point, who would not? He wrote very

passionate letters about this when he first found out about it, which was in about September 1944, at which point there was a sense of urgency about this issue. In August the Allies had advanced 170-180 miles in less than a week and, if Arnhem had succeeded, they might have been in Germany within a fortnight with the war won shortly afterwards, so they really needed to get this medals question settled. And that was more complicated than it sounds, not least because any decisions would have to be endorsed by the other Commonwealth Governments.

Harris felt that there was an injustice in that the efforts of most of his people, those who had sustained Bomber Command's long campaign from England, would not be acknowledged at all, beyond the Defence Medal. That was why he was arguing. There are many documents, minutes of meetings, indeed many files, dealing with this and associated issues. There's a whole life's work here for somebody and it would be nice to have it all unravelled. It is complicated, but I would make the point that the substitution of the France and Germany Star for the Aircrew Europe Star was not intended as a snub to Bomber Command.

**Cox.** I agree. There is no denial of a medal for Bomber Command *aircrew*. There is, however – quite explicitly – at the Prime Minister's instigation – a denial of a medal for Bomber Command *groundcrew* and that is what infuriated Harris.

**Air Cdre Peter Gray.** A brief comment and two questions, if I may Richard. In the context of the medals saga, shortly after the war – September 1945 – the Air Member for Personnel wrote something along the lines of 'the trouble with the committee dealing with medals is that they don't understand the global nature of air warfare', in other words, that they were too geographically constrained by their specific oceans and theatres. I found it interesting that it took until September 1945 for that point to be made in any of the minutes. (**Morris** – *Whereas Harris had made the point the previous year*.) Yes – but it's interesting that the Air Ministry didn't.

My first question arises from your graphs. I wondered whether you had done any analysis of, for instance, unpublished PhD theses – to see what's going on in academia. I know, for instance, that Bufton is currently the subject of a major PhD thesis in New Zealand.

*Post-war portrait of MRAF Sir Arthur Harris whose ribbons include those of the 1939-45 Star and the France and Germany Star.*

My other question relates to medals. Harris said that he would not accept anything other than the Defence Medal, if that was all that his people would be getting. He makes no mention of the Aircrew Europe. And yet, if you examine post-war pictures of him, he is wearing the ribbons of both the 1939-45 Star and the France & Germany Star. If anyone knows how and when he got those, I would be interested to hear from them.

**Morris.** I don't know the answer to the medal question – perhaps at the same time as he accepted his peerage?

The PhD point is interesting, as they have actually been at the cutting edge in this field for the last fifteen or twenty years. There are a number of PhDs being written at Birmingham – at London, and indeed abroad – where students are studying the material in detail. They are reading the original documents and correspondence, getting back to the primary sources, not simply recycling the secondary literature. And by studying these primary sources, they are tending to be drawn laterally into the other fields that informed those sources, giving us a much more nuanced, refined, interesting – sometimes more impressive, certainly more enlightened – picture than we have had before. I would cite, for instance, the work done on Whittle a year or two ago. So there is a lot of interesting work going on, not least by people like yourself. In fact there is a database of historical theses in progress, perhaps we should fillet that and see what it throws up?

**Frank Haslam.** Just to record points of contact with a couple of the people that you mentioned. William Ivory, whose father served on 207 Sqn, my father's wartime squadron, is a 'Friend' member of the Squadron Association, and 'Dim' Wooldridge – the composer and writer of *Appointment in London* – also served on the squadron. When

other people were inclined to linger over drinks in the Mess, it's reported that 'Dim' would say, 'I'm off to do my concerto? – which always caused amusement.

As to the Aircrew Europe Star, my father is a case in point. His crew flew their first operation, to Munich, on 24 April 1944. Their thirteenth, and last, target – they were shot down, as part of a nearly 30% loss rate – was Wesseling on 21 June. He was not awarded the Aircrew Europe Star and he never really understood why. We are still waiting to hear from MoD over our application for an aircrew clasp – a Bomber Command clasp – for his 1939-45 Star

**Richard Bateson.** I understand that the highest loss rate suffered by any unit of Bomber Command was that of 1 Group's No 101 Sqn. Based at Ludford Magna with Lancasters from June 1943 onwards, no fewer than 1,176 aircrew were killed on operations or in wartime accidents. Aside from the normal bombing duties, these aircraft carried an eighth crew member to operate ABC – Airborne Cigar R/T monitoring and jamming equipment to blot out enemy speech traffic. Did German night fighters home onto these jammers? Was this the reason for 101 Squadron's high wastage?

**Morris.** Is this perhaps about Monica? Seb, perhaps I could redirect this one to you?

**Cox.** Since he is an ex-OC 101 Sqn, I shall pass it to Peter Gray!

**Gray.** No 101 Sqn was unique in that it was the only unit able to provide that jamming facility which meant, in turn, that they were more or less obliged to fly on every major raid. Since they probably flew more often, that must surely have had some impact on the loss rate.

**AVM Nigel Baldwin.** Perhaps I could interject on behalf of Sir Michael, because, if he were here, I am sure that he would make the point that No 50 Sqn lost 1,061 and its sister squadron at Skellingthorpe, No 61 Sqn, lost another 950. These figures are quite extraordinary, and very close to those of No 101 Sqn. I don't think it is valid to assert that 101 Squadron was at the top of some sort of league table. There were several squadrons around the thousand mark.

**Morris.** I do agree, but the frequency of operations must have been a

factor, even if it was one among many. A squadron might have a particularly good maintenance record, for instance, which would be reflected in the Group figures for serviceable aircraft. For example, towards the end of Cheshire's time in command of No 76 Sqn, it had a higher serviceability rate than any other squadron in 4 Group. It followed that, with more aircraft available, the squadron's crews would have flown more often and, as a result, they would have been exposed to danger more often. How ironic is it that by being good at some relatively incidental factor, like maintenance, you could actually drive up your loss rate?

**Cox.** To provide a definitive answer to this you would have to look at many issues, including: the number of sorties flown; the number of aircraft lost; the number of crew on each aircraft, as compared to other squadrons; and you would also have to analyse the accidental loss rate because, bizarrely enough, No 101 Sqn's base, Ludford Magna, had a far worse weather factor than some other stations, because of fog. A simple arithmetical total is just too simplistic.

**Wg Cdr Colin Cummings.** In his *101 Nights*,[1] Ray Ollis, does specifically claim that enemy aircraft were attracted to the squadron's Lancasters as a result of the transmissions they were making.

My question, however, is sparked by a friend of mine – who put the spire on Coventry Cathedral. In 1995, whilst speaking in the streets of Dresden, the then Bishop of Coventry, Simon Barrington-Ward, called Bomber Command aircrew 'mass murderers'. Could I invite you to comment on that?

**Morris.** He said 'mass killers' – and we can't deny that they did kill a lot of people. But 'murder' implies – in English law at any rate – an intent. If you specifically set out to kill, that is murder, but if death is an incidental consequence, that is manslaughter. I think that probably answers your question, but you might want to have a look at Bishop Bell's famous speech on bombing which he delivered to the House of Lords in February 1944. Knowing that I was coming here tonight, I re-read it the other day, along with the responses of those noble Lords and Ministers who chose to comment. It should be understood that, contrary to what many folk believe, Bell's speech was not actually

1 Ollis, Ray; *101 Nights* (Cassell, London, 1957).

against *bombing*. It was only against certain *kinds* of bombing – certain *kinds* of target.

It is interesting to reflect that much of the on-going debate about bombing has focused on aircraft and cities, as distinct from the kinds of bombs that were used and the kinds of targets that they were designed for – the big versus small bombs question. If you read Bell's speech, you will find that it was actually very moderate – he accepted that bombing was inevitable, and that many people would be killed, and he recognised that many of them would have to be civilians. What he was taking issue with was targeting policy.

I would like to see your 1995 Bishop of Coventry debate this issue with the Bishop of Chichester of a half-a-century earlier – perhaps they could conduct their discussion on a higher plane.

**Cox.** Perhaps I could add a footnote. The helicopter pilot who put the spire on Coventry Cathedral was a devout Catholic who had flown Lancasters during the war. He discovered that his rear gunner, some of whose family had been killed during the Blitz, was in the habit of taking one or two 4lb incendiaries up with him and, when he decided that the time was right, he would drop them on Germany. His captain ordered him to desist on the grounds that this was a personal, and therefore entirely unethical, action inspired by revenge. This contrasted with mass bombing raids which, despite their nature, had a military purpose which meant that they were both legal and ethical. He told me this story, personally, by the way, and he was very clear that, although a couple of incendiaries among the millions that were being dropped could have made no difference whatsoever, he was unable to tolerate his gunner's actions – the war was about the defeat of evil, not the exacting of revenge.

So that was the view of the Catholic pilot who put the spire on the Protestant cathedral in Coventry in 1962. I wonder what the Bishop of 1995 would have thought about that.

**Cummings.** There may be a clue in the fact that, the Bishop banned all military ceremonies in his cathedral during his tenancy.

**Sir Freddie Sowrey.** Was there any intention to make the medals for the Second World war dateable, like those of the First? You will be aware that you can tell from a First World War medal group whether,

or not, that individual had been fighting in 1914-15. The 1939-45 Star had originally been introduced as the 1939-43 Star and was issued to those who had been on operations during that period. At much the same time the Africa Star came into being. Was this a result of public pressure – to provide some recognition of those who were serving in operational units? Or was this a decision from a Medals Committee that hadn't really thought it through – hadn't considered what would need to be done about the rest of a war that was still far from over?

**Morris.** I'm afraid that I can't answer that one – I've only really followed the subject back to the summer of 1944 while trying to understand what happened within Bomber Command. It was certainly an evolving process; changing almost month to month. Perhaps Peter Gray can shed some light?

**Gray.** From the very outset of the medals saga, the Prime Minister and the Treasury – and it was, incidentally, the Treasury that chaired the Committee involved – set out to avoid the mistakes of the First World War by doing something different. It was, as you say, an evolutionary process, but there are bits that you can date. We have already discussed the Aircrew Europe Star which expired on D-Day, so you can tell whether somebody was flying pre- or post-OVERLORD with the overlapping period obviously still being somewhat contentious. The only other medals that you can date are those given to elements of the Army, the 8th Army for example. But unlike the 1914-15 Star, the 1939-43 Star was simply restyled as the 1939-45 Star and there is no way to tell by inspection who had fought during the earlier part of the war.

**Cox.** At one point the Committee recommended that the 1939-43 Star should be retained and that a second Star should be created for 1944-45. This proposal was eventually sidelined, becoming a casualty of the horse-trading that went on as a result of the Prime Minister's wanting an Italy Star and a North-West Europe Star. The other point, of course, is that the balance was perceived to have tipped in favour of the Allies in 1943. Churchill decided that we really were finally starting to win and that it would, therefore, be appropriate to award some medals, hence the 1939-43 Star and the Africa Star, both of which were introduced in 1943.

# SUMMARY OF THE MINUTES OF THE TWENTY-SEVENTH ANNUAL GENERAL MEETING HELD IN THE ROYAL AIR FORCE CLUB ON 25 JUNE 2013

## Chairman's Report

AVM Baldwin, Chairman, noted that Journal 55, published recently, recorded the minutes of the 2012 AGM, the winning 2011 Two Air Forces Award paper, and articles chosen by our editor. The Journal also included an extended version of the lecture given by Professor Richard Overy on Bomber Command in WWII and the lessons from the London Blitz in 1940-41.

The Society had held two seminars during the year; the first, 'Shot Down Behind Enemy Lines', was held at the RAF Museum, Hendon, in October and dealt with POWs, escapees and the work of MI9. At the spring seminar, also at Hendon, Air Chf Mshl Sir Patrick Hine, the Joint Commander of all UK Forces during the Gulf War of 1990-91, chaired a day describing and analysing that campaign. The autumn 2013 seminar would be held on Tuesday, 22 October at the BAWA, Bristol, and would cover the RAF service of the Avro Vulcan.

The finances of the Society continued to be healthy, though a small loss of £630 left some £25,000 in accumulated funds. The slow reduction in membership continued, and costs steadily increased, especially postal charges. Annual subscriptions would be maintained at £18, and the increased charge for seminar attendance would remain at £20. The Society would continue to support the study of the RAF's heritage and a further grant would be made to the RAF Museum's Dornier 17 appeal after the successful recovery of the aircraft to Cosford for conservation.

All Society journals up to No 42 were now online and could be downloaded from the RAF Museum's website. However, Wg Cdr Mick Ryan had offered to convert journals into web pages which could then be automatically accessed by a search engine such as Google. This would greatly improve access to the valuable, but often fairly obscure, information in the public domain. Concluding, the Chairman thanked the committee for their continued hard work, and expressed his appreciation of the wise support and encouragement of the President, Sir Michael Beetham, and the Vice-President, Sir Frederick Sowrey.

**Secretary's Report**

Gp Capt Dearman, Secretary, reported that since the last AGM, nineteen new members had joined the Society, one had resigned, and five had lapsed, leaving total membership at around 700. Journal sales had amounted to £94.

**Treasurer's Report**

Mr Boyes, Treasurer, tabled the 2012 accounts and noted that for financial year 2012, a loss of £630 had been incurred. However, the accumulated fund stood at a healthy £25,154. Proposed by Wg Cdr Cummings and seconded by Sqn Ldr Hall, a motion that the accounts be accepted and that J R G Auber Ltd be reappointed independent examiner was carried.

**Appointment of Executive Committee**

The Chairman noted that all the executive committee members had offered themselves for re-election together with Wg Cdr S Chappell RAF. A proposal by Wg Cdr Ryan seconded by Air Cdre Gray, that all members and Wg Cdr Chappell be elected was carried. The executive committee members so elected were:

| | |
|---|---|
| AVM N B Baldwin CB CBE | Chairman |
| Gp Capt J D Heron OBE | Vice-Chairman |
| Gp Capt K J Dearman FRAeS | Secretary |
| Dr J Dunham PhD CPsychol AMRAeS | Membership Secretary |
| Mr J Boyes TD CA | Treasurer |
| Wg Cdr C G Jefford MBE BA | Editor & Pubs Manager |
| Air Cdre G R Pitchfork MBE MA FRAeS | |
| Wg Cdr C J Cummings | |
| Wg Cdr S Chappell MA MSC RAF | |

The *ex-officio* members of the committee were:

| | |
|---|---|
| J S Cox BA MA | Head of AHB |
| AVM P Dye OBE BSc(Eng) CEng ACGI MRAeS | DG RAF Museum |
| Gp Capt P M Squires OBE MA BEng RAF | DDefS(RAF) |
| Wg Cdr D Stewart BEng MA RAF | JSCSC |

**Discussion**

In response to a question on interest rates, the Treasurer indicated that he would investigate charity accounts offering up to 2.75%.

Sqn Ldr Hall deprecated the lack of any mention of Coastal Command's achievements in the recent celebrations of the Battle of the Atlantic. Air Chf Mshl Sir David Cousins noted that, of 258 confirmed submarines sunk, 141 had been accounted for by aircraft.

AVM Dye thanked the Society for its support for the project to raise the Do 17. Responding to a comment by Frank Haslam, he emphasised the importance of succession planning for historic and archival websites. Al Pollock, concurring, noted that this would become a national problem if suitable arrangements were not made.

**Two Air Forces Award.**

Air Mshl Sir Frederick Sowrey, Vice-President of the Society, concluded the AGM by presenting the Two Air Forces Award to Wg Cdr N Tucker-Lowe DSO MA RAF for his paper on the ethical implications of UAVs, and congratulated him on his recent promotion to group captain.

*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 2012.* ***Ed***

# RPAS AND THE ETHICAL LANDSCAPE OF CONTEMPORARY CONFLICT

**by Wg Cdr Nicholas Tucker-Lowe**

**Abstract:** This article considers the ethical implications of uninhabited systems against the backdrop of rapid technological development and the changing character of conflict. The author argues that contemporary conflict is complex and contextually sensitive, and that ethical debate is lagging behind the development and proliferation of uninhabited combat systems. Consequently without timely debate, development risks detracting from humanity in warfare and may exacerbate inter-societal divisions.

'. . . science gathers knowledge faster than society gathers wisdom.'[1]

The employment of uninhabited systems in combat is an emotive subject and is becoming increasingly so as uninhabited system proliferation accelerates. Uninhabited systems are attractive to the military and politicians alike as they offer persistent capabilities, can be relatively cheap, go where combatants cannot go and reduce combatants' exposure to risk. Consequently, for many years uninhabited systems have been acclaimed for their suitability for the '3Ds tasks: dull, dangerous and dirty.'[2] The crux of this debate is in the nature and use of uninhabited systems when combatants face the ethical paradox of killing.

To inform the debate, it is necessary to consider two questions of ethics: to what extent can the battle-space be automated, and what are the implications of further removing personnel from the battle-space? The current degree of disconnection, reduced personal risk and the potential reduction in the burden on the individual for taking another human's life does alter the current ethical landscape; however, it does

not fundamentally change it. The advent of full autonomy would precipitate fundamental change, but this paradigm shift is yet to emerge due to the technological challenges of assuring discrimination and proportionality, the inability to maintain accountability and the incapacity of computers to differentiate when one *should not* act although legally one *could* act. Nevertheless the implications of uninhabited systems modifying target and individual behaviours, and positively or negatively modifying civilian or enemy ethical perceptions of the friendly forces, already vary in degrees dependent on perspective. Furthermore, use of uninhabited systems by some countries in the ethically controversial context of targeted killing may catalyse fundamental change.

When considering these questions, four themes emerge. First, that the ethical landscape and the character of conflict are ever-changing, due to the pace of technological development and consequential reactions. Second, the perceived degree of change is dependent on perspective due to differing societal norms. Third, law satisfactorily answers the majority of questions in modern or post-modern military force-on-force applications, where the options are 'can or cannot'. In complex hybrid conflicts, legal 'can or cannot' guidance is insufficient, ethically based socio-political situational understanding is required to decide when combatants 'should or should not' act. Finally, ethical decisions pertaining to '3Ds tasks' are relatively straightforward; the crucial decisions are those for tasks that are distant or deadly. To show this, first the scene will be set by taking a snapshot of the development of uninhabited systems against the character of contemporary conflict and the existing ethical landscape. Then the ethical questions pertaining to the use of uninhabited systems and the changing cultural importance of the warrior will be considered. Finally this article will explore potential political and ethical implications of uninhabited systems.

## Modern uninhabited systems and the contemporary ethical landscape

Uninhabited systems have been given various terms during their history, but consensual nomenclature remains elusive. The US had broadly used the terms unmanned systems or unmanned combat systems, highlighting the multi-component nature of the capability,


*A leased Elbit Hermes 450 RPAS operated by the British Army pending deployment of the delayed Watchkeeper system. Both are unarmed passive systems and thus restricted to '3Ds tasks'.* (Thales)

yet journalists often refer collectively to such as robots or drones. The Royal Air Force has adopted the terms Remotely Piloted Aircraft (RPA) and Remotely Piloted Air Systems (RPAS), reassociating such with their human controllers.[3] This is not semantics; nomenclature identifies both a type of system and its nature of use. Ethical and legal consideration of passive uninhabited systems, such as the reduction of personal risk associated with bomb disposal robots, has deemed such systems as relatively uncontroversial.[4] It is those considerations associated with distant operations, particularly if controversially penetrating another country's sovereignty, and the application of deadly force which remain most ethically challenging. Consequently, while the '3Ds tasks' adequately describe passive uninhabited systems, to encompass offensive uninhabited systems this is better articulated as the '5Ds tasks': adding distant and deadly. The nature of the task is further dependant on the system's degree of autonomy, from a fully autonomous system, which can satisfactorily make the decisions demanded of a human, to one that has some autonomous

functionality, but which requires considerable human input or guidance.[5] It is too simplistic to consider all uninhabited systems as broadly similar and the same is true for the ethical landscape of conflict.

The nature of war does not change, but the character of conflict does, and that change demands the closest attention.[6] Indeed the character of conflict is a subjective combination of political, military, societal and cultural elements.[7] The characteristic essence of contemporary or hybrid warfare has been argued to be the simultaneity and barbarity of force-on-force fighting, counter-insurgencies and counter-terrorism.[8] Similarly, while ethics may be differentiated from morals as general truths and objective principles, these are neither *so* objective nor *so* general to be universal. The ethical landscape of contemporary conflict is analogous therefore to the visual effects of low sun over varying terrain. Ethically similar concepts with differing histories may emerge from an array of differing perspectives as light on gently rolling ground: full of subtlety with few hard contrasts. However, an ethical division between societies may appear as a starkly silhouetted ridge-line from one perspective yet is so well-lit from another than it is indistinguishable from the background. The addition of global extremist ideologies such as *Takfiri*[9] has also served to split established societies' ethical norms, further complicating the ethical landscape. Macroethical rifts also scar the contemporary landscape due to the resurgence of 'Just War theory'[10] and increasing casualty aversion in post-modern societies, a trend not mirrored in pre-modern society. Moreover the irony of post-modern warfare has been fuelled by Western powers' overwhelming technological advantage. Pre-modern enemies have used this approach to dehumanise post-modern forces and thus maintain a sense of local moral superiority.[11] Consequently contemporary combatants are required to make decisions based on more than law and military pragmatism: on fine ethical judgements based on sound personal morals and a remarkable degree of contextual understanding. The ethical landscape contains dilemmas where combatants may elect to take greater risk of sustaining friendly combatant casualties due to the consequentially disadvantageous effect on the objective population. There are occasions when combatants *could* kill but *should not* kill. The ethical landscape of contemporary conflict is complex: it is subtle

and stark, based on ancient theory yet evolving daily, consequently it is remarkably sensitive to temporal and societal perspective. A slight change in the nature of an action on the system, such as those intrinsic to the advent of uninhabited systems, can therefore produce an array of likely outcomes, some of which may be profound and none of which are more significant than when deciding whether or not to kill.

**The ethical considerations of killing using uninhabited systems**

The crux of the military ethical paradox is the decision to kill in order to save life. The advent and actions of uninhabited systems does not fundamentally change the ethical landscape, at least not yet. They do however shape the landscape and in a rather uneven way. Some argue that the logical drive to reduce risk to friendly forces will result in 'more and better robots' and ultimately to a utopian 'fully autonomous engagement without human intervention.'[12] In one sense, uninhabited systems are an ethically logical progression and akin to the stand-off advantage of the longbow compared to thrown projectiles. Others however recommend caution because 'Humans understand one another in a way that systems cannot and we don't fully understand how.'[13]

For more than a century the nature and employment of certain weapons has been discussed by ethicists and such discussions have informed policy. Uninhabited systems are not fundamentally unethical *per se*, but they do deserve examination as they share some attributes with previously censured weapons such as crossbows and land mines, moreover their nature of employment could affect their ethical standing. For example, uninhabited systems differ to mines in many respects, but also share similarities, and with mines and cluster-munitions have been described as so 'cruel as to be beyond the pale of human intolerance.'[14] However, only fully autonomous uninhabited systems could kill without human decisions from point of deployment to time of killing. The foremost advantages of all but fully autonomous uninhabited systems are temporal and that they are systems, not weapons. The decision to kill is taken by a combatant far closer to the time of killing and with vastly superior discrimination than is possible for a land mine distributor. Therefore, the combatant is capable of a greater degree of responsibility for the actions of the uninhabited system than may be the case for a land mine distributor.

Of course this assumes that to decide to kill can be reasonable.

The decision to kill is a paradox of human survival. Moreover, the will to kill underpins the most fundamental characteristic of war: that killing can be *just*. Hence combatants are not normally considered as murderers. Unless a nation is engaged in a Clausewitzian 'total war', there will be rules: killing will be controlled, such as limiting killing to last resort self-defence. Furthermore, many contemporary conflicts are not legally 'wars' but conflicts. Even wars of national survival do not absolve the leadership of moral obligations, as the state is part of an international system that interprets the state's actions. In contemporary conflicts, however, where positively influencing the objective population is crucial, the decision to kill is particularly complex. It is therefore advantageous to gain broad consensus on the ethical justification for killing. Nevertheless, the irony of killing is inescapable; deciding to kill may be considered therefore in 'degrees of awfulness'.[15] Furthermore that 'degree' is affected by the risk that the combatant is facing.

Combatants accept risks in conflict that otherwise they would deem unacceptable. This is reflected by the conceptually and geographically representative cliché of a combatant 'going to war'. Notwithstanding the advantages of technological development, the acceptance of risk, including the risk to one's life, is critical as the decision to kill is an emotional contest.[16] When combined with the humanity of the cosmopolitan stoic, while it may be more ethical to remove the combatant from conflict and risk of being killed, removal of the combatant may make killing less ethical. Furthermore, the impact of personal risk on the ethics of defending against aggression is significant as 'Aggression is a singular and undifferentiated crime because, in all its forms, it challenges rights that are worth dying for.'[17] If aggression was opposed without risk of dying, this could be perceived as aggression being less of a crime and that the human price to counter aggression was one that might be unacceptable. In either case, if a combatant was *completely* removed from risk of death when deciding whether to kill was *just*, it would fundamentally change the ethical landscape of conflict.

Many have highlighted that such remote combatants do not physically 'go to war' and that being psychologically detached from the horrors of war, risks altering the character of war itself.[18] Evidence

from the Vietnam War identified reductions in the psychological consequences for US Air Force pilots, operating thousands of feet above the jungle floor, when compared with their ground-based US Army colleagues. This 'morality of altitude' was attributed to the pilot's disconnection from the destruction his decisions caused.[19] The development of long-range RPAS control accentuates the concept by significantly increasing stand-off. Furthermore, removing the pilot from the aircraft reduces his exposure to risk. Consequently, this concept could be more contemporaneously expressed as the morality of disconnection. Disconnection threatens to change the ethical landscape, but only if one perceives that the quality of the decision to kill, the degree of personal risk taken by the combatant or the responsibility for his actions has fallen below a reasonably acceptable threshold. Indeed some have questioned whether dislocation risks the combatant's psychological well-being, as he realises he is unable to intervene when driven by cosmopolitan stoicism.[20] Others have questioned the potential psychological effect on dislocated decision-makers, who decide to kill a human target in another country while seated at a control station near their home.[21] If the degree of disconnection affects the ethical landscape, it is reasonable to suggest that the degree of autonomy would also affect it, so this too demands consideration.

While uninhabited systems can be relatively cheap when compared to manned systems, ironically the personnel budget required to operate uninhabited systems can be considerable. A greater degree of autonomy could let one decision-making combatant supervise several systems concurrently, thus reducing the personnel burden while retaining control and responsibility. Moreover due to the processing power of modern computers, assuming it receives the necessary inputs, such computers could decide on the apposite option more quickly than a human could.[22] Such concepts are reliant on 'human supervisory control.'[23] Initially, human supervisory control would appear to offer something to many: reduced cost, quicker decisions and adequate control. Further analysis however proves paradoxical, highlighting the risk of ethical unacceptability. It is deemed legally acceptable that an RPAS operator can decide to commit an autonomous weapon system once he considers that it is capable of discriminating satisfactorily by limiting its options to those which are

*The pilot of a two-man RPAS 'crew' (the sensor operator has a similar console, out of shot to his right) at Creech AFB, Nevada controlling a Reaper flying – where?* (MOD)

legal.[24] Yet as autonomy enables a reduction in human involvement, human machine interface issues multiply, which could degrade individual responsibility. Indeed although autonomy can offload many of the tasks from the combatant, allowing him to devote more attention to decisions, by the very nature of his detachment from those tasks, he is at greater risk of dislocation and insufficient understanding leading to inadequate decision-making. While human supervisory control offers personnel reductions and computer-aided decision-making, ironically human decision-making quality and reduced accountability risk undermining the ethical nature of the decision to kill. So what if the degree of autonomy is increased further?

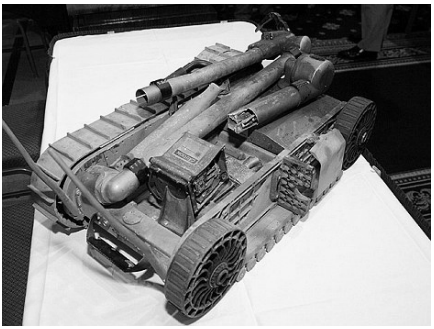
A fully autonomous armed system is the extremity of the autonomous spectrum, yet it is not so futuristic when considering the current proliferation of robotic systems in industrial and military '5Ds tasks' or the seductiveness of technology to make war more humane. The critical element is not the mechanics of robotic systems, rather the implications of the development of artificial intelligence: a sentient

system deciding to kill. Just because an autonomous system decides it *could* kill does not mean it *should* kill. While autonomous attack may be appropriate in some circumstances, numerous environments will remain where qualitative human judgement is essential. Indeed responsibility for a fully autonomous system's decision to kill may not be reasonably attributable. Ultimately, removal of the combatant's moral burden could dehumanise war. Academic opinion is split on whether any autonomous armed systems can make conceptually ethical decisions. There are compelling reasons for autonomous decision-making. Purely logical decisions could be more ethical than human decisions, as they are not emotionally value-laden. Moreover, due to the logic process, autonomous systems are constrained to follow orders; deviation into brutalisation or atrocity is unlikely, if appropriately programmed.[25] Conversely, a human's ability to think metaphorically and use analogies provides moral character; no robot can do this.[26] Furthermore, qualitative reasoning is intrinsically subjective and underpinned by feelings. Systems are not yet capable of feelings; sentience remains an aspiration. Indeed sentience may never be achieved, as it may prove impossible to produce a man-made version of the human mind.[27] Central to the ethical decision to kill are the abilities to discriminate and to act proportionally; tasks that draw heavily on subjective human assessment. For example, many argue that systems cannot discriminate sufficiently between civilians and combatants as although they can confirm 'not friendly', they cannot confirm anything else.[28] To act ethically, an autonomous system would require more than iterative decision-making, it would need to feel guilt for wrong-doing and compassion to refuse an order. Guilt is theoretically achievable but compassion is elusive.[29] An autonomous system could not be used with the same ethical basis as a human decision-maker in the majority of contemporary conflict environments, as it would not be able to autonomously determine when it *could* but *should not* kill. Consequently unless artificial intelligence is trusted to automatically discriminate, act proportionally, deal with ambiguity, and react to guilt *and* compassion, it would require human authorisation to achieve an adequately ethical decision, both in practical terms and to ensure accountability. Finally, it could be argued that many people could be responsible for the actions of an autonomous system: the commander, support staff or the programmer.

'If the nature of the weapon or other means of war fighting, is such that it is *typically* impossible to identify or hold individuals responsible for the casualties that it causes then it … will not be ethical to employ this means of war.'[30] The acceptable degree of autonomy still has many questions unanswered and owing to the effect of cultural perspective, *the* answer many never exist.

**Perceptions and reactions to uninhabited systems**

It is important to realise that no global ethical baseline exists. Consequential perceptions and the effects of cultural perspectives could affect the complete array of uninhabited systems. When considering the effect of other perspectives, such as that of the Muslim world, it is important to understand the differences, and that such are rarely diametrically opposed or even distinct. For example, 'there is not one canon of [Islamic] theological and juridical texts' and ideological concepts differ in time, place and interpretation.[31] Moreover there may never have been an Islamic parallel to the published Christian Just War literature.[32] Differentiation between the Muslim world and the *Western* rather than *Christian* world highlights that furthermore, cultural norms may be viewed through two societal lenses: one religious and the other secular. Many of these consequential incompatibilities are minor, and indeed there are many commonalities between post-modern secular Just War theory and pre-modern Islamic juristic tradition. Nevertheless differences are notably stark when considering the role of the human in war: the warrior ethos and the role of honour. Some argue that such cultural norms are increasingly divergent due to 'the insidious rise of post-modernism, ending the West's distinctive honour culture.'[33] In post-modern Western society, the description of a combatant as a warrior is uncommon. Industrial war has helped dull popular post-modern concepts, replacing self-esteem with 'respect', ideological belief with utilitarianism, and distancing concepts of bravery and honour. The proliferation of uninhabited systems risks catalysing the Western dilution of warrior ethos, and exacerbate the widening gap between post-modern and pre-modern societies. Warriors remain central to conflict; conflict without warriors illuminates the ethical landscape in



*'Scooby-Doo', the PackBot whose loss was mourned by US soldiers after it had successfully disposed of nineteen explosive devices*. (Paul Morigl)

the starkest contrast. Moreover, depending on whether the observer is friendly, an enemy or part of a population, their perspective of the uninhibited system could be similarly contrasted.

Uninhabited systems are frequently accepted as welcome additions to friendly forces due to their ability to conduct the '3Ds tasks.' From the author's own combat experience of air-land operations though, the greatest value provided by an aircraft, manned or uninhabited, in a tense ground situation is not the mere presence of the aircraft, but the substantial verbal reassurance the aircrew provide. As standoff increases, so does the risk of disconnection detracting from effective verbal reassurance. Moreover due to perceptions of uneven risk exposure, the psychological bond between the uninhabited system, the remote operator and those in the battle is weakened. Conversely when remote stand-off is minimised, the bond between operator, fellow combatant and the uninhabited system can be strong. Indeed during 2003 in Iraq, this led US soldiers to mourn the loss of their 'PackBot' uninhabited system, which they had chosen to name 'Scooby-Doo'.[34]

From the enemy's perspective however, new technology can appear shocking and terrible; an uninhabited system killing an enemy in a comparably ethical manner may be more dispiriting for the dead enemy's colleagues than if killed by a human adversary.[35] Furthermore, the technological capability of uninhabited systems may not be understood by enemies, which can provide significant intelligence advantages for minimal human risk, as the enemy unwittingly fails to protect valuable information.[36] The unusual becomes usual however; uninhabited systems appear less shocking with time and unknown capabilities become understood. Moreover from the Islamic ideological perspective, uninhabited systems have been frequently perceived as dishonourable.[37] Uninhabited systems


*While able to carry out '3Ds tasks', the RAF's Reapers are fully '5Ds-capable', as they can also deliver 500lb laser-guided bombs and Hellfire missiles.* (MOD)

militate against stoicism; they create fear in enemies *and* reveal fear amongst friendly populations.[38] Any perceptions of dehumanised war risks offering those enemies, who are not truly ideologically guided, a justification for inhumane brutality and atavistic violence.[39] Paradoxically, a technological invention designed to be more humane may incite a less humane enemy response.

The perception of uninhabited systems within an objective population is likely to be different to, yet not necessarily opposed to, that of the friendly forces' homeland population. For democracies, the home population's support and sympathetic international opinion are essential for persistent campaigns. Yet it is the effective positive influence of the objective population to follow their nascent or redeveloping government that proffers success in such campaigns. The proliferation of uninhabited systems partially obscures the human face of conflict from these audiences, which could be perceived to change the ethical landscape. The home population can quickly acknowledge the humane advantages of uninhabited systems for the '3Ds tasks', as this translates to fewer dead and wounded countrymen. Popular support for all of the '5Ds tasks' is more problematic. Indeed, the language of such activity has become pejorative with increasing reference to 'drones' when pertaining to RPAS strikes, but terms such as 'UAV' frequently being used for '3Ds tasks'.

To win the contest of narratives in contemporary conflict therefore it is important to understand the likely reaction to uninhabited systems across an objective population. The use of uninhabited systems may be highly desirable when considering the enemy, yet by the population it may be considered ethically advantageous and disadvantageous; simultaneously minimising the external effect on the population's routine, yet potentially detrimentally altering their view of foreign forces and local government. Uninhabited systems can reduce the footprint of occupying forces through substitution or because they supplement existing forces, but are controlled at range. Uninhabited systems could therefore provide reassurance for the objective population, assuming their activity was perceived as ethically acceptable. Indeed in the Federally Administered Tribal Areas of Pakistan (FATA), where RPAS strikes were initially overwhelmingly condemned by the objective population, their unpopularity diminished as they began to be perceived as a 'lesser evil' than the insurgents.[40] Conversely, uninhabited systems supplementing or substituting occupying forces could be perceived as diluting commitment to conflict resolution, because manpower-contributing nations demonstrate resolve by risking the lives of their own combatants.[41] Moreover, any enemy perception of cowardice through the use of uninhabited systems could easily spread to the objective population making conflicts harder to resolve, particularly if culturally akin to Pashtun belief that 'Courage is the coin of the realm.'[42] When combined with reduced physical presence stymieing genuine partnerships, occupying forces could be alienated from the objective population. Indeed contributing nations that minimise their manpower footprint are sometimes perceived as preferring safer, 'distant war'.[43] Yet there are fewer ethical challenges for the employment of uninhabited systems in geographically separate, contemporary military force-on-force short duration conflicts.[44] The most significant ethical challenges arise, however, when uninhabited systems are used where human interaction is vital, including counter-insurgencies and prolonged conflicts, where maintenance of moral ascendancy at home and in theatre is crucial.[45] In such campaigns, uninhabited systems may be successfully used in the short-term when targeting irreconcilables or forcing them from their desirable area of operations. A paradox exists however, as in the longer-term the destructive

combination of uninhabited systems' highly technological nature and the ethical perceptions of their use can ferment 'accidental guerrilla syndrome' where more insurgents are bred from the objective population through the actions of coalition forces than are reconciled or killed.[46] Critically, the potential for perceived abandonment of combatant honour and warrior ethos or the popular perception of dehumanised war risks fundamentally changing the ethical landscape of conflict and brings with it significant implications.

## Wider implications of uninhabited systems

> '. . . instead of total war, we have the promise of easy war – easy in the sacrifices it demands of us, easy on our consciences, easy on our pocketbooks.'[47]

The effects of uninhabited systems on the ethical landscape of counter-insurgency are not consistent for other forms of conflict or indeed activities that do not cross the legal threshold to be 'conflicts'. Uninhabited systems can successfully reduce the number of combatants exposed to risk in '5Ds tasks' and are therefore arguably sensible, humane tools for conflict resolution. Furthermore, advanced, closely-coupled sensors and weapon systems can reduce error margins, protecting civilians. Yet to risk fewer lives in conflict, governments may be attracted to choose uninhabited systems that are either perceived as being less ethically acceptable by other cultures, or are actually less ethically acceptable, because they indiscriminately or disproportionately increase enemy and civilian casualties. Governments risk striving for 'humane warfare' but missing the irony or absurdity of the phrase and thus select practicality, mistakenly believing it brings ethical advantage.[48] Such quandaries are less evident in geographically distinct, force-on-force conflicts where uninhabited systems could significantly reduce combatant casualties on both sides by focussing on neutralising military equipment, consequently destroying the will to fight when facing an overwhelming force.[49] In prolonged campaigns, however, technologically leveraged dehumanised approaches are more likely to drive a wedge between post-modern and pre-modern societies, feeding perceptions of ethical inequality and producing disadvantageous influences of the enemy and objective population.[50] Such perceptions

may be overcome if post-modern societies can successfully articulate uninhabited systems' ethical advantages in terms that are similarly acceptable to pre-modern societies. The RAF's adoption of the term '*Remotely Piloted* Aircraft'[51] to address the misconception that there is no human involvement in their operation is such an attempt. Notwithstanding the need to dispel misconceptions about uninhabited systems in order to realise their potential, inconsistent ethical perceptions will continue due to the audience's varied nature and inherent cultural inertia.

In March 2003, before Operation IRAQI FREEDOM, one prominent US academic suggested that notwithstanding the lack of proof that the realities of conflict had changed, the perception was evolving that the mass brutality of industrial twentieth century war was being replaced by 'easy war.' Indeed when considering the US's commitment to that contentious conflict, it was suggested that: 'Perhaps that's why Americans are so ready to go to war. There is no sense that we will have to bear any burden whatsoever in fighting it.'[52] Certainly Western governments pay close attention to their military's casualty rates, but whether there is a direct correlation between reduced losses and increased appetite for conflict is a point of contention. Some have argued the Hobbesian view that as risk is reduced, so is restraint.[53] Conversely others have recommended reasserting the net humanitarian advantages of uninhabited systems, rebutting any accusation of 'some abstract increased propensity for violence.'[54] If the proportionality and discriminatory capability of the uninhabited system is maintained, as autonomy increases and the combatant's exposure to risk reduces, the enticements for dehumanised conflict could intensify. Ironically, such enticements may gain ethical traction, if it is robustly argued that the ability for earlier intervention, leveraged by the lower-risk use of uninhabited systems rather than manned solutions, can reduce total casualties in the longer-term. Furthermore reduced casualty acceptance may detract from the likelihood of sustained conflict, which could be ethically advantageous or disadvantageous. If post-modern conflict is perceived to attract less personal or political risk, the forecast or actual number of friendly casualties that fundamentally changes the political will, for conflict commencement or continuation, could drastically reduce.

Uninhabited systems are already being used to conduct distant and

deadly missions that would otherwise be unacceptable due to casualty aversion. Israel and the US have frequently used RPASs for targeted killings as preventative self-defence: precision strikes on insurgents and terrorists before they can act. Indeed the US has annually increased their use since 2007.[55] Targeted killings by RPASs have been shown to be an effective counter-terrorism tactic, particularly in areas where the terrorist would be otherwise unreachable by either law enforcement authorities or the military. Targeted killings using RPASs in the FATA have however generated significant international controversy with many questioning their legality, including the UN's Special Rapporteur on extra-judicial killings.[56] Others have argued that they are legal, within certain boundaries, as 'the international normative paradigm of hostilities does not prohibit, but imposes extensive restraints on the method of targeted killing.'[57] Indeed some have blamed terrorists and insurgents for the controversy, as it is they who hide amongst the protected civilian population 'acting in gross violation of the rights of others and of the rules of war.'[58] US authorities had previously denounced what it deemed were Israeli extra-judicial killings of Palestinians.[59] More recently however, US authorities have remained notably quiet regarding the use of RPASs for targeted killings, even though they have been asked to formalise a framework for targeted killings and thus quell the ethical disquiet. Indeed some academics have concluded that on balance the sustainability of targeted killings should be ensured through open justification and agreement of their legitimacy.[60] Although the UK does not utilise preventative self-defence or conduct targeted killings, RPASs similar to those used for targeted killings by others are used by the RAF for offensive tasks to support land forces. Unless the legal and ethical differences in national approaches are explained, the increasing use of RPASs for targeted killings, risks wrongly stigmatising all RPASs, and uninhabited systems more broadly, as unethical.

## Conclusion

The advent of uninhabited systems has led to the widely accepted realisation of the great utility they offer, so their development and proliferation are likely to continue. The considerable ethical advantage of uninhabited systems for dull, dangerous and dirty tasks is broadly

accepted. It is predominantly those tasks which are deadly or which are distant that are crucial to the debate and which are already generating more ethical controversy. Concurrently, the ethical landscape of conflict is also changing, creating new ethical dilemmas.

While uninhabited systems and computer-aided decision-making offer the potential for greater objectiveness, using distance to assuage undesirable human emotions such as rage, they also potentially repress admirable human emotions, notably compassion. Furthermore, increasingly disconnected decision-making risks losing contextual sensitivity, which is fundamental to fine judgement and thus ethically robust decisions to kill. If the ethical basis for future conflict is to remain extant, broad agreement of the acceptable level of autonomy for uninhabited systems that can kill must be sought.[61] A greater degree of autonomy may be acceptable in geographically distinct force-on-force operations, where the crux of the decision to kill is legal: whether the combatant uninhabited system operator *could* or *could not* kill. Such straightforward legal decisions are insufficient for contemporary hybrid conflicts however, where an additional ethical basis is required to answer whether the combatant *should or should not* kill.

Just as war itself is judged at least twice, so are uninhabited systems. The advent of uninhabited systems affects the principles that formed the ethical landscape *and* the consequential effects on that landscape, actual or perceived. The principle of distant and deadly uninhabited systems has altered the ethical landscape, but it is the consequential nature of use that has catalysed fundamental change. The risk reduction advantages of uninhabited systems have been seized upon by some as proof of cowardice and with implications for more conflicts, even though uninhabited systems were developed predominantly as a more humane tool for certain tasks. Therefore to maximise the potential advantages of uninhabited systems in contemporary conflict, requires clear articulation of their nature, including their degree of human control. Moreover, achievement of thorough ethical understanding demands cross-cultural debate regarding uninhabited systems' principles and consequences. Ironically, without such debate the remarkable success of uninhabited systems to conduct '5Ds tasks' could also be their principal limitation.

Although the ongoing drive for autonomy is understood, the ethical

implications of uninhabited systems are not. Uninhabited systems are already reshaping the ethical landscape and full autonomy would fundamentally change it. Contemporary ethical perceptions of the use and implications of uninhabited systems, such as targeted killing and dehumanised war respectively, are disparate and risk mistakenly being perceived as owing to uninhabited systems themselves, rather than more accurately owing to wider ethical issues in contemporary conflict. Although conflated, such perceptions also risk fundamentally changing the ethical landscape. Nevertheless alteration to the ethical landscape of conflict could be constructive as well as destructive. In all cases therefore, ethical debate must at least keep pace with the development of uninhabited systems and ideally should lead it; if not we are destined to prove Azimov's hypothesis that '... science gathers knowledge faster than society gathers wisdom.'[62]

**Notes:**

[1] Asimov, Isaac and Shulman, Jason (Eds); *Isaac Asimov's Book of Science and Nature Quotations* (Weidenfeld & Nicolson, New York, 1988) p281.

[2] Burridge, Brian; 'Post-Modern Warfighting with Unmanned Vehicle Systems: Esoteric Chimera or Essential Capability?'; *RUSI Journal* Vol 150, Issue 5 (2005) p20.

[3] United Kingdom, Royal Air Force, *Adoption of new terminology for the RAF: Remotely Piloted Air Systems*, 4 News Brief (MOD, 2010) p1.

[4] Boothby, William; *Weapons and the Law of Armed Conflict* (Oxford: 2009) p81.

[5] Mardell, Allison; 'Unmanned Aerial Vehicles – the Legal Perspective' in Owen Barnes (Ed) *Air Power: UAVs: The Wider Context* (Royal Air Force Directorate of Defence Studies, 2009) p69.

[6] Von Clausewitz, Carl; from *On War*, eds Michael Howard & Peter Paret (Princeton University Press, 1976) p220.

[7] Gray, Colin; 'Future Warfare: Or, the Triumph of History', *RUSI Journal* Vol 150, Issue 5 (2005) p19.

[8] Hoffman, Frank; *Conflict in the 21st Century: The Rise of Hybrid Wars* (Potomac Institute for Policy Studies, Virginia, 2007) p7.

[9] *Takfiri* is an extremist ideology in which non-Muslims and non-*Takfiri* Muslims 'are infidels who must be killed.' See Kilcullen, David; *The Accidental Guerrilla: Fighting Small Wars in the Midst of a Big One* (Oxford University Press, New York, 2009) pxviii.

[10] Just War theory including the concepts of *Jus ad Bellum* and *Jus in Bello* are based on St Thomas Aquinas's twelfth century adaptation of Augustine of Hippo's earlier theory.

[11] 'Human Effects of Combat Technology: The Drone Debates'; *Science of Global Security & Armed Conflict*, 23 June 2009; http://globalcrim.blogspot.com/2009/06/human-effects-of-combat-technology.html (accessed 6 January 2010).

[12] Debusmann, Bernd; 'Killer Robots and a Revolution in Warfare', *Reuters*, 22 April 2009, http://blogs.reuters.com/great-debate/tag/uav (accessed 29 October 2009).
[13] Sharkey, Noel; 'Grounds for Discrimination: Autonomous Robot Weapons', RUSI Defence Systems 11, No 2 (2008) p88.
[14] Lord Bingham in Robert Verkaik, "Top judge: 'use of drones intolerable'," *Independent*, 6 July 2009, http://www.independent.co.uk/news/uk/home-news/top-judge-use-of-drones-intolerable-1732756.html (accessed 25 November 2009).
[15] Wasserstrom, Richard; 'On the Morality of War: A Preliminary Inquiry' in Coady, C A J and Primoratz, Igor; *Military Ethics* (Ashgate, London, 2008) p19.
[16] Clausewitz in Peter Almond, 'Manning Unmanned Air Vehicles: Fighter Pilots or Geeks?'; *RUSI Defence Systems* 12, No 1 (2009) p79.
[17] Walzer, Michael; *Just and Unjust Wars: A Moral Argument with Historical Illustrations*, 3rd ed (Basic Books, New York, 2000) p53.
[18] Palmer, Jason; 'Call for Debate on Killer Robots', *BBC News*, 3 August 2009, http://news.bbc.co.uk/1/hi/technology/8182003.stm (accessed 23 November 2009).
[19] Burridge; 'Post-Modern Warfighting', p 22.
[20] Sackur, Stephen and Bowlby, Chris; 'Robo Wars' (BBC Radio 4, broadcast 1 February 2010).
[21] 'Human Effects of Combat Technology: The Drone Debates'; *Science of Global Security & Armed Conflict*.
[22] Sharkey, interview with author, 11 December 2009.
[23] Cummins, Mary; 'Supervising automation: humans on the loop', *AeroAstro*, No 5 (2007-2008) p7, http://web.mit.edu/aeroastro/news/magazine/aeroastro5/aeroastro5.pdf (accessed 5 March 2010).
[24] Boothby, *Weapons and the Law of Armed Conflict*, p231.
[25] Arkin, Ronald in Quintana, Elizabeth and Grouille, Olivier; 'Debate: Robots and Robotics', *RUSI Defence Systems* 12, No 3 (2010) p32.
[26] Christopher Cocker, interview with author, 28 May 2010.
[27] Sharkey, interview with author, 11 December 2009.
[28] *Ibid*.
[29] Arkin in Magnuson, Stew; 'Debate Over Legality of Robots on the Battlefield', *National Defense* (November 2009) p29.
[30] Sparrow, Robert; 'Killer Robots', *Journal of Applied Philosophy* 24, No.1 (2007) p67.
[31] Donner, Fred; 'The Sources of Islamic Conceptions of War', in *Just War and Jihad: Historical and Theoretical Perspectives on War and Peace in Western and Islamic Traditions*, eds. John Kelsay and James Turner Johnson (Greenwood Press, New York, 1991) p32.
[32] *Ibid*, p57.
[33] Evans, Michael; 'Stoic Philosophy and the Profession of Arms', *Quadrant* 54, No 1-2 (2010), http://207.57.117.110/magazine/issue/2010/1-2/stoic-philosophy-and-the-profession-of-arms (accessed 5 February 2010).
[34] Singer, Peter; *Wired for War: The Robotics Revolution and Conflict in the 21st Century* (Penguin Press, New York, 2009) pp308-309.
[35] *Ibid*, p298.

[36] *Ibid*, p307.
[37] *Ibid*, p311.
[38] *Ibid*.
[39] Former CIA lawyer Vicki Divoll in Mayer, Jane; 'The Predator War', *The New Yorker*, 26 October 2009, http://www.newyorker.com/reporting/2009/10/26/091026fa_fact_mayer (accessed 5 March 2010).
[40] Bergen, Peter and Tiedemann, Katherine; 'The Drone War', *The New Republic*, 3 June 2009, http://newamerica.net/publications/articles/2009/drone_war_13672 (accessed 10 February 2010).
[41] Strategic Comments, 'Prospects for unmanned aerial systems: The lessons of Kosovo', *Strategic Comments* 6, No 7 (2000) p2.
[42] Singer, *Wired for War*, p307.
[43] Ex-Pakistani Army officer Talat Masood's concept, amplified by Singer: *Wired for War*, p310.
[44] Sharkey, interview with author, 11 December 2009.
[45] Kilcullen, *Accidental Guerrilla*, p286.
[46] *Ibid*, p35 & 38.
[47] Starr, Paul; 'The Easy War', *American Prospect* 14, No 3 (2003), http://www.prospect.org/cs/articles?article=the_easy_war (accessed 27 April 2010).
[48] *Ibid*, p14.
[49] *Ibid*.
[50] Coker, Christopher; *Humane Warfare* (Routledge, New York, 2001) pp117-121.
[51] Author's emphasis.
[52] Starr, 'The Easy War'.
[53] For example see Coker, *Humane Warfare*, p150.
[54] Anderson, Kenneth; 'Predators over Pakistan', *Weekly Standard* 15, No 24 (2010), http://www.weeklystandard.com/articles/predators-over-pakistan (accessed 27 April 2010).
[55] Bergen and Tiedemann, 'The Drone War'.
[56] *UN News Center*, 'UN rights expert voices concern over use of unmanned drones by United States', 28 October 2009, http://www.un.org/apps/news/story.asp?NewsID=32764&Cr=alston&Cr1=# (accessed 11 December 2009).
[57] Melzer, Nils; *Targeted Killing in International Law* (Oxford University Press, 2008) p395.
[58] Etzioni, Amitai; 'Unmanned Aircraft Systems: The Moral and Legal Case', *Joint Forces Quarterly* 57, No 2 (2010) p66.
[59] Mayer, 'Predator War'.
[60] Byman, Daniel; 'Do targeted killings work', *Foreign Affairs* 85, 61 No 2 (2006) p111.
[61] An argument echoed in Air Vice-Marshal Jon Lamonte, *'The Future of UAVs: Concepts and Considerations'*, http://www.raf.mod.uk/role/thefutureofuav.cfm (accessed 26 March 2010).
[62] Asimov and Shulman, eds, *Science and Nature Quotations*, p281.

## BRUNEI – 1963

### AVM Alan Johnson

In December 1962 I was a squadron leader at RAF Abingdon, where I served as Medical Officer to No 1 Parachute Training School. The winter of 1962/63 was a particularly severe one and throughout December there were alternating snowfalls and freezing nights which produced a deep layering of snow and ice which persisted until late April. My duties consisted of attendance at RAF Weston-on-the-Green, a grass airfield north-east of Oxford which was used as the dropping zone (DZ) for trainee Army paratroopers. With the DZ frozen, all parachute training had been suspended so I had time on my hands.

Perhaps aware of this, the Principal Medical Officer at Headquarters Transport Command (Air Cdre Davies) telephoned me on 26 December to ask if there was any reason why I could not go on detachment. In view of my enforced idleness I had to say that I was available. At the time he did not say where the detachment would be, merely that he was seeking potential candidates.

Ten minutes later the phone rang again and he said that I had been selected. “Where to?” said I, imagining that it would be to some other station, like Northolt or Lyneham to cover illness. “Brunei,” he replied. “Where’s that?” I asked in genuine ignorance. “It’s in Borneo,” a rather surprised PMO answered, “Don’t you ever read the newspapers?” I had to confess that my reading did feature more the sports pages than international news so he patiently explained that there had been a revolution in the State of Brunei and I was to be the Medical Officer for the RAF Detachment there, rejoicing in the title of Senior Medical Officer (RAF) Borneo and that I was to leave in two days.

Needless to say my wife was not enamoured by the prospect of my leaving her alone at home with our four small children in a married quarter which, in those days, did not have the benefit of central heating – and with eighteen inches of frozen snow outside!

The journey from Abingdon to Lyneham is only a few miles but it had to be by Land Rover as all other forms of RAF MT could not make the trip because of the hazardous nature of the roads. We passed large lorries parked by the roadside with their drivers lighting fires

*The airport terminal building which became SHQ and Ops, RAF Brunei.*

underneath the fuel tanks to melt the diesel! Take off from Lyneham was delayed for 24 hours because of the severe icing conditions affecting both the Britannia and the runway.

Eventually, after refuelling at El Adem and Aden we reached our destination – Paya Lebar Airport in Singapore. We seemed very much out of place in our heavy blue uniforms and greatcoats as we boarded a bus for RAF Changi for an overnight stay. The transition from a temperature of -10ºC to +36º and 80% humidity came as quite a shock.

Twenty-four hours later, we had packed away our blue uniforms into plastic bags provided by Stores and given them into their safe keeping until our return. Incidentally, many of those of us on detachment found that our uniforms had been packed in the company of ravenous moths which caused irreparable damage. Now clad in jungle green we were conveyed across the South China Sea to Borneo by Hastings, landing on the single tarmac runway of Brunei airport.

This small civilian airport was situated 2 or 3 miles north of Brunei City and was essentially an airstrip in a clearing that had been hacked out of the primary jungle. The airport building comprised a central circular air traffic control tower with a single storey wing extending either side. The control tower had a ground floor which normally served as the arrival/departure area, and a second floor which was designed to be the radar room. It was windowless, about 15 to 20 feet

*The palatial corrugated aluminium-roofed domestic accommodation that was eventually provided at Brunei.*

across and accessed by a circular metal staircase. Needless to say there was no radar equipment so it served as the sleeping accommodation for the ten or twelve officers who made up the detachment. We slept on safari beds arranged like the spokes of a wheel round the central staircase. The floor above was a traditional air traffic control 'greenhouse' giving a 360º field of view.

The single-storey wings housed, on one side, stores, the all-important cookhouse, engineering and the airmen's sleeping quarters, and on the other side, the Detachment Commander's office, the Operations Room and my small Medical Centre. Later domestic accommodation was constructed next to the airport building – made from timber and corrugated aluminium. We had two toilets. An Asian one that had a tiled floor with a hole in it flanked by two footrests. As it had a cistern for flushing purposes it was quickly adapted to serve as a shower, using a large overhead perforated tin can, which had previously held peas! The other toilet was a conventional western flush lavatory which, with patience, satisfied the needs of the approximately 150-strong unit. Not what the purist would have recommended but it served our purpose.

On the hardstanding outside were our resident aircraft. Two or three Belvederes of No 66 Sqn whose long slender fuselages meant

that the locals soon christened them ‘Flying Longhouses’. Our helicopter force also included two single-engined, four-seater Sycamores from No 110 Sqn, then home-based at RAAF Butterworth. In addition we often had one or two Army Air Corps Austers and, occasionally, a Beaver which was used as an air taxi between ourselves and Labuan which was situated on an island some 10 miles away in Brunei Bay. Labuan had an airstrip, which was home to several Pioneers and Twin Pioneers of No 209 Sqn from Seletar. Both types were ideally suited to local operations because their remarkable short landing/take off capabilities allowed them to operate in and out of the small jungle airstrips cleared out of the dense jungle in Brunei, Sarawak and North Borneo (now Sabah). They were frequent visitors to our unit, as were Beverleys and Hastings from Singapore, which delivered personnel and supplies several times a week. RAF Brunei itself comprised some 150 personnel, all drafted in (like myself) from the UK or FEAF.

Why were we there? For several years A M Azahari bin Sheikh Mahmud, an avowed nationalist, had tried to exploit popular dissent with the Sultan’s regime. He formed the Brunei People’s Party and gradually became increasingly influential in the Brunei executive. His ambition was the formation of a single autonomous North Kalimantan state. The Brunei People’s Party had within its ranks dissident groups such as the communist North Kalimantan People’s Party and the underground National Army of North Kalimantan (*Tentera Nasional Kalimantan Utara* – TNKU). The latter was under the command of Yassin Effendi and comprised disaffected Kedayan tribesmen and Chinese. There was suspicion that the organisations had the backing and help of the Indonesian government under President Sukarno.

In November 1962 the Sultan of Brunei assured Tunku Abdul Rahman of his support for the new Federation of Malaysia but during the legislative elections Azahari scored a significant electoral victory on the basis of a separate federation of the states of Brunei, North Borneo and Sarawak. Brunei would be transformed into a socialist republic with the Sultanate reduced to a puppet monarchy with Azahari as Prime Minister. However, his ambitions were foiled when the Sultan neutralised Azahari’s majority by appointing his own people to the Council.

Aware that the TNKU were planning an insurrection in response to

this rebuff the authorities arrested several senior TNKU officers and held them in the police station in Limbang. This in turn prompted Yassin Effendi to instigate the revolt on 8 December 1962.

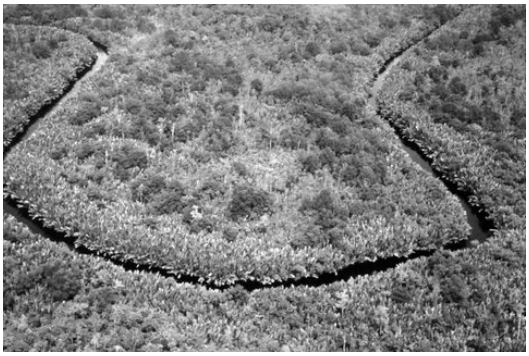
The Brunei power station and police station were overrun but attacks on the Sultan's summer palace and the Prime Minister's residence were repulsed. The rebels also made the fatal mistake of failing to occupy the airport. In a rapid response HQ FARELF despatched four Beverleys carrying elements of 1/2 Gurkha Rifles to Brunei and Labuan where they secured both airports without meeting any opposition.

On the following day, the 1st Queen's Own Highlanders recovered the Seria oilfields by a two-pronged air landing on Anduki airfield. Over the next four days the revolt was effectively crushed with the loss of seven of our troops killed and twenty-eight wounded. Many of the rebels fled into the jungle and the subsequent four months were to be spent finding, capturing or eliminating them. But further problems in the area were brewing as it became increasingly obvious that there was more than covert support from Indonesia for this attempt to disrupt the Malaysian Federation. President Sukarno had ambitions to control the whole of Borneo and evidence of cross-border incursions by elements of the Indonesian Army presented a far more significant and sinister problem.

Flying operations from Brunei presented many challenges like the weather, the inhospitable terrain, the lack of navigational aids (maps of Brunei, Sarawak and Sabah had large, blank 'unmapped' areas) and the climate. The detachment at Brunei was a truly expeditionary unit operating out of a tiny airport with little technical support apart from that which it brought, and living in unsuitable domestic accommodation. Despite all of this, morale was high and I hardly ever saw any personnel on 'Sick Parade'.

At that time (long before any logging/deforestation had occurred) the whole of central Borneo was covered in dense primary rainforest. The central spine of the country in the region of the Indonesian border was mountainous with steep hills reaching to 5-6,000ft. The area was drained by innumerable streams and rivers rising in these hills and flowing via contour tracing routes westwards to the sea. Looking down on these brown rivers brought back schoolboy geography lessons, as sinuous curves and ox-bow lakes were there to see, and

distinctive river features such as these provided valuable navigational information to overflying aircraft. The rivers also provided the major highways for the indigenous population in their dugout canoes.



*A classic ox-bow lake in Borneo.*

As previously mentioned, aerial navigation was complicated by the lack of ground-based radio beacons or any other aids. Denied these 'aerial signposts' flying was by dead reckoning and map-reading. This precluded night flying and daytime flying was frequently restricted by the dense cloud/mist, which obscured landmarks especially in the afternoon. Most days began with clear blue skies but by late morning mist and cloud would begin rise over the treetops and gradually coalesce to form complete cloud cover.

From the air the jungle canopy presented an unbroken vista of greenery which had the appearance of an endless field of broccoli florets. Tree trunks extending 150-250 feet down to the jungle floor supported this leafy canopy. Any aircraft crashing into these trees would penetrate this canopy which would close over it making location of the crash site difficult.

A further complication of flying operations were the routine daily thunderstorms. As the cloud cover thickened around noon it would begin to rain torrentially accompanied by lightning and thunder for about an hour after which it would clear and permit the resumption of flying. From a personal point of view the climate was very hot (80ºF) and very humid, often approaching 100% so everyone perspired a great deal and I had to encourage high fluid intakes and salt tablets which were available at all mealtimes.

As far as my medical duties were concerned I had little to do. Despite the conditions, very few airmen reported sick. They worked hard and were dedicated to the job, perhaps because they were finally actually doing what they had been trained to do – and for real. This

lack of a medical challenge was for me a little professionally frustrating. I had attended a course in tropical medicine back in England and had gone to Borneo prepared to do battle with all manner of exotic diseases. Imagine my disappointment when I was told by the Brunei Medical Officer of Health that his commonest problems were influenza and measles! There was, of course, the possibility of malaria but strict anti-malarial practices were observed. I had on my staff (of three) a corporal field hygienist who supervised camp hygiene, mosquito suppressive measures, catering standards, etc. We did not attempt to build deep trench latrines, as I considered that the one flush toilet would meets the needs of the detachment. This did get me into trouble as the Principal Medical Officer, back in Singapore emphatically directed that latrines should be dug as one toilet between 150 men did not satisfy the regulations! Despite my protestations that we were living on what was effectively a swamp and that any hole dug in the ground would immediately fill with water he was insistent. I have to confess that I chose to ignore him.

Despite the tropical conditions and the absence of any form of air conditioning, there were no cases of heat stress which was remarkable when the airmen were working outside with no shade during refuelling and routine servicing of the aircraft.

To pass the time productively I worked in the next door Ops Room helping with aircraft tasking by logging aircraft movements in and out on the Ops Board – a job considered to be within the capability of a medic.

Among the army detachment in Brunei was D Sqn, SAS. Commanded by Major Harry Thompson and located in the ‘White House’ down in the town; their task was to keep an eye on the border to detect any incursions by the Indonesian Army. This was effected by positioning two-man patrols along the border some 50-60 miles apart. Adopting the ‘hearts and minds’ policy that had been so successful in the Malayan Emergency, they enlisted the help of the indigenous population to act as their eyes and ears. In return they provided medical help utilising the enhanced medical training that all members of the SAS receive. To do this they needed medical supplies, which I was only too willing to provide being aware of their skills and with the knowledge that if they did not provide medical care no one else was available. This got me into trouble again as a visiting army

medical logistics colonel complained that I was requesting far more supplies, such as antibiotics, than were needed by such a small unit. When I pointed out where they were going he went apoplectic saying that such medication should only be given by a qualified doctor. I was advised/ordered to stop the practice immediately – another order I chose to ignore.

Occasionally troops in these isolated positions were taken ill. The Army has a splendid 'medsick' reporting system whereby the history, symptoms and the results of a medical examination were signalled back to HQ in a coded form. As previously mentioned, the additional medical knowledge possessed by the SAS meant that such information usually led to a diagnosis and a suitable form of treatment could be relayed back. This was important, as time and inaccessibility would have precluded evacuation in many cases. Maj Thompson sought my help in several cases and I was delighted and privileged to be able to assist such a distinguished regiment. The SAS, like all Special Forces, are an exclusive body with demanding entry requirements which are rigorously observed. Perhaps my association with Special Forces at the Parachute School helped my acceptance and confidence.

Before my posting to the Parachute School, I had been a member of the Near East Air Force Parachute Rescue Team while serving as a junior surgeon in the RAF Hospital at Akrotiri and so was experienced in rescue and survival techniques. In anticipation of the possibility of an aircraft crashing in the jungle, I had discussed with Maj Thompson how a rescue might be effected, bearing in mind the limited performance and capabilities of the available aircraft. The options we debated were as follows:-

a. **Bristol Belvedere** – a twin engined helicopter capable of carrying 18 fully equipped troops. It could hover at altitudes up to 5,000ft but lacked a winch. Maj Thompson and I decided that the only way to get into the jungle was by a rope scramble using this aircraft. In view of the height of the tree canopy, this would involve a hand-over-hand climb down of some 200ft!

b. **Bristol Sycamore** – a single-engined helicopter with a crew of two and room for up to three passengers. Underpowered, no winch and incapable of hovering at the anticipated altitudes.

c. **Westland Wessex** (or it may have been Whirlwind)[1] – occasionally seen from Commando Carriers HMS *Albion* and

*Bulwark*. Although fitted with a winch, these aircraft were underpowered and could not hover at the predicted heights and the winch cable was not long enough for our purpose.

d. **Fixed Wing Aircraft**. – As previously described several fixed wing aircraft were available. As both the SAS and myself were parachute trained, we discussed the possibility of parachuting into the jungle. Although this technique had been employed in Malaya during the emergency, it was fraught with hazard. A successful descent depended on the parachute being caught by the tree canopy. If caught, the parachutist would be suspended up to 200 ft above the jungle floor. There was an abseil system, which could be used to effect a descent from this height, but this option was ruled out for the following reasons. First, because we did not have abseil gear in theatre and secondly becsuse, even if we acquired some, the chances of a successful tree canopy hang up were only 70-80%! If unsuccessful, the prospect of an unretarded 200 ft fall to the jungle floor was distinctly unappealing.

Little did we know, when we were having this discussion, that we would soon be faced with a real situation of this kind.

On 14 February 1963, I had arranged to fly in a Sycamore to a village called Long Semado. Flt Lt Bob Jones was the pilot and he had been tasked to position there while a search was being conducted for a lost patrol of Sarawak Rangers who were operating in the area but had been out of radio contact for several days. I accompanied Bob to act as an additional pair of eyes and also to see if any of the villagers required medical attention. I had previously done this on several occasions, as it was considered to be a useful part of the ‘hearts and minds’ policy to win over the local population.

En route we encountered the silver Twin Pioneer ‘Voice’ aircraft (XN318) of No 209 Sqn which had been tasked to conduct the low level search. It was equipped with externally mounted loudspeakers so that the operator on board could ‘talk’ to the ground. The ground party would then respond with either a flare or a smoke signal. Normally having a crew of two and a voice operator, they had been augmented with two other personnel from Labuan who had volunteered to act as additional ‘eyes’ during the search. Simultaneously overflying the area at height was a Valetta acting as a radio relay link between XN318 and Labuan as direct radio communication with base was not

possible from the low flying ‘Twin Pin’.

After visual contact had been established with XN318 and the exchange of a few words, Bob advised that we would have to land at Long Semado as our fuel state was low. After wishing ‘318 good luck we turned towards the village. I kept watching the Twin Pioneer and was horrified to see the aircraft suddenly veer to starboard and fly into a steep cliff face. It fell into a river and burst into flames. Alerting Bob we turned to make a low pass over the crashed aircraft. The forward part of the fuselage was enveloped in flames but the rear of the aircraft appeared reasonably intact. The outboard wing sections were also intact and appeared to be propped up against the cliff face. On our approach to the crash site there were parts of the aircraft’s tail assembly in the tree tops just before the final and fatal turn was made. The Twin Pioneer had a very distinctive tail unit, comprising three very large fins and rudders. As was the practice at the time, wing tips and the tips of all flying surfaces were covered with bright day-glo material and these stood out in the tree tops. To me it was apparent what had happened. Flying low over the trees as was required by the mission, the aircraft had struck the tree tops, losing part of the tail assembly causing the pilot to lose directional control. The aircraft then made an uncommanded turn to starboard and flew into the cliff face.

Circling the crash site we could see no signs of survivors. After several minutes, we had to leave as our fuel state was getting critical. I asked Bob to follow the course of the river to see if there was a suitable site where a helicopter could land, because, although there was no indication of any survivors, one can never assume that that is the case, so a ground search would be essential. The course of the river was hard to follow as it was obscured by the dense overhanging tree canopy. Eventually an opening was seen, the water of the river glinting in the sun and its position was noted (accurate positioning was not possible in those days – GPS had not been invented).

**The Rescue Attempt.**

On landing on the small grass airstrip at Long Semado, I got Bob to radio base (Brunei) to give a rough explanation of what had happened and to request they contact D Sqn and tell Maj Thompson to bring ‘the rope’ that we had talked about during our discussions. In a comparatively short time a Twin Pioneer arrived with Maj Thompson

*A Twin Pioneer (XN321) of No 209 Sqn alongside one of the squadron's Pioneers (XL705).*
(David Taylor – http://www.focalplanes.co.uk)

and several members of D Sqn. Unfortunately, when landing on this bumpy jungle strip, the Twin Pioneer lost its tailwheel, rendering it unserviceable! With Maj Thompson was a warrant officer, a staff sergeant and three troopers. After discussing the situation, we requested a Belvedere from Brunei. In the interim, a Royal Navy Wessex had arrived and parked in the middle of the strip. The pilot then informed us that he was out of fuel and, as we had no suitable fuel for his aircraft, we had to manhandle it out of the way. He was not a popular guy. Then followed an airdrop of fuel from a 34 Sqn Beverley and the arrival of a 66 Sqn Belvedere piloted by Flt Lt Jim Reilly.

Another arrival was a Pioneer of No 209 Sqn which immediately took off again with a Murat tracker who could advise us how to get to the crash site and how long it would take us. On his return he told us it would take between 4 and 6 days on foot from Long Semado so this was immediately rejected.

This left us with the ‘rope scramble’ alternative as the only means of gaining access in the shortest possible time. Maj Thompson then produced the ‘rope’ which he had ‘commandeered’ from a Navy minesweeper docked in Brunei harbour. I say ‘rope’ but, in effect, it was three 30-foot lengths of rather tatty 1½" rope, each having a large metal eyelet at one end. To make a continuous length a crude knot had to be tied through each of these eyelets. It looked distinctly unsafe but Maj Thompson, ever positive, demonstrated its reliability by suspending his not inconsiderable weight from it – albeit at a height of three feet from the ground. He provided further reassurance by producing a ‘safety rope’; a rather thin piece of rope, which would be secured, to a fixed point in the helicopter and the other end would be tied to a safety belt which we would wear. Harry Thompson was a great leader, a positive character who exuded confidence and inspired confidence in those he led.

Because of the height of the crash site it was decided to deliver the rescue party in two separate lifts. I would be in the first with WO —— and Staff Sgt ——. The three troopers would be in the second lift. Maj Thompson would supervise the descent.

I estimated that the potential lowering point was some 800 yards downstream from the crash site. Because speed was of the essence we were lightly loaded. I had a small medical backpack and carried a


*A Belvedere of No 66 Sqn – XG474/B.*

machete. Staff Sgt —— was similarly equipped, but he was also carrying his Sterling sub machine gun. Despite my entreaties that time was passing, the logistical difficulties of assembling the team and the provision of the aircraft meant that we could not lift off until about 1500 hrs.

We were over the crash site within 10 minutes, but there was no sign of life so we flew back downstream looking for the entry point. Flt Lt Reilly identified the spot and descended as low as he could. The rope was lowered and, thankfully, reached the ground. WO —— made the first descent. The 90ft rope was at its fullest extent and the pilots flying skills were tasked to the full, keeping the end within a safe distance from the ground. I was second down and stepped off the door sill with some trepidation, despite Harry's reassurance that all was well. Going hand over hand down a thick rope did not present much of a problem but after a few feet I looked at my hands and remembered that I had sustained a severe fracture dislocation of my left wrist on a parachute landing one year before, which had required some 9 months in plaster of Paris and I had only got clearance for a return to full duties a couple of months ago. I was, however, confident that my grip

would hold. The descent was trouble free until I encountered the big, clumsy knots, which meant that I had to unwind my feet from the rope and rely on my hand grip while I negotiated the obstruction. All was well and I arrived on the ground safely. Staff Sgt —— joined us and the helicopter then left to pick up the other three members of the party. I distinctly remember looking around at the gigantic trees and the dense vegetation and thinking 'welcome to the jungle', a place that I had imagined in my boyhood dreams, but now that I was actually here I just found it awesome and somewhat intimidating. But there was no time to look and wonder.

We decided, because of the time imperative, that Staff Sgt —— and I would leave immediately. The WO would wait for the remainder of the team and then set off to join us; after all, the crash site was not all that far upstream!

From the onset it was apparent that progress would be slow and difficult. The river was a steep and fast flowing stream, its bed consisting of large and small boulders, covered with slippery moss. We initially attempted to climb up the stream as the shortest route but progress was painfully slow. In no time at all we were soaking wet, both from the water and from the sweat produced by our physical efforts. We eventually decided to leave the stream and climb up the steep bank of the cutting which had been excavated by the stream over countless years. This made for marginally better progress but we were now in primary jungle at its worst. We had to pick our way carefully over rotting tree trunks, fallen boughs and the detritus of aeons of foliage which had accumulated over the years forming a platform, or false jungle floor, at times several feet off the ground. Progress demanded careful foot-placement, treading on branches which we hoped were strong enough to bear our weight. A fall through would inevitably have resulted in injury. We pressed on, however, driven by the possibility that there might be survivors whom we had to reach as soon as possible.

My personal knowledge of the jungle had been moulded by Hollywood movies where the hero, inevitably Errol Flynn, would clear a path by hacking away with his machete. I soon realised that this technique was of no use. Large obstructions you go around. The jungle vines and ground level foliage you part carefully with your hands, as blundering aimlessly into them will rapidly entangle your

arms and legs and no amount of hacking with your machete will actually cut their soft, green, but fibrous, stems. A pair of gloves was invaluable, as careless pulling on many of these stems would result in hands and arms being scratched by the many thorns with which the stems were equipped. We wore soft canvas jungle hats, which constantly fell prey to the overhanging tendrils of one particular plant, which rejoiced in the name of 'Catch your Hat'. Wildlife was, I am sure, all around but I never saw any sizeable creatures except the many ever present creepy crawlies. Rest stops inevitably attracted ants of various sizes and colours, which could bite with varying degrees of discomfort. And then, of course, there were the leeches – but more of these later.

I recall one particularly interesting object that we came across while we were still attempting the climb up the stream bed. During a rest pause I took off my air force-issue spectacles to clean them – a useless exercise, as sweat soon blurred the lenses and they were forever slipping down my nose. The rock I placed them on caught my attention as it was not, as were most of its neighbours, covered in moss. There on its surface was the fossilised imprint of a large creature, somewhat like a giant woodlouse. 'Fascinating', I thought, but Staff Sgt —— said it was time to go on, so we left it, no doubt to be undisturbed for another million years. Incidentally, I forgot to pick up my specs so perhaps some intrepid explorer may find them sometime in the future and ponder on their origin.

Still pressing on in the belief that we had only 800 yds to go, we were confident that the crash site would be around the next turn in the river. This was not to be and at 1730hrs, Staff Sgt —— said that we would have to stop and find a safe place for the night. I objected to this, as it was still daylight, but he pointed out that night falls quickly in the tropics and he estimated that we had only 15 minutes of effective daylight left. He also pointed out that we had to get out of the river bed area and climb up the side of the valley to a safe height because of the risk of a storm causing a flash flood. In deference to his jungle experience I concurred.

This prudent, but disappointing, decision meant that we had to scramble up a very steep and muddy slope to find a spot flat enough for us to spend the night. To complicate matters further it began to rain. Eventually we found a flat enough area where we could sit/lie

down and review our situation. As we had set off lightly equipped because of our mistaken belief that we would rapidly reach the site, we had little kit with which to make ourselves comfortable – not even a poncho cape to make a shelter. By this time we were completely soaked and getting cold. Despite being near the equator, when the sun goes down it gets very cold at an altitudes approaching 5000 ft and being wet through did not help. The incessant rain and lack of shelter defied all our attempts at fire lighting, despite using the alcohol from a glass tube containing suture material and the dry wadding from a field dressing. Food was another problem but the ever resourceful Staff Sgt found in his pack a two-ounce tin of processed peas and a small cube of cheese. We shared this, washing it down with river water from our water bottles sterilised with chlorine tablets.

After a couple of hours chat, we agreed it was time (about 2000hrs) to try to get some sleep. I lay down in the mud, resting my head on my small back pack. Sleep was not possible because of the extreme cold and the repeated pinpricks which heralded the presence of yet another leech. We did not have any of those dropper bottles containing iodine which when dropped on a leech causes it to drop off and, at the same time, disinfects the tiny puncture wound. Neither did we have any cigarettes, a time honoured way of removing leeches. It was also pitch black so the only way was to feel for their blood bloated bodies and pick them off by hand, a practice not to be recommended as it leaves the head in the wound which encourages continued bleeding at the site. Bare skin removal was not too bad but as time progressed it became tiresome to try and remove them from ones hair and in particular one adventurous creature that had found its way into my ear.

At about 2200hrs I could no longer hear the noise of my teeth chattering for the noise of the Staff Sgt's teeth doing the same. He was lying a discrete distance from me. "Are you as cold as I am?", I asked. "Yes," he replied. I then said, "I have an idea," but before I could explain what it was, he said that he had had the same idea and, without further ado, we slithered over to each other and spent the night in an intimate, but warmth-giving, embrace that was surely not permitted within Queen's Regulations.

Dawn broke at about 0600hrs. It had stopped raining, but it took some considerable time to get the stiff joints moving again in order to continue our journey upstream. If anything, it was even steeper and

rockier down in the stream bed than before, so it was back up to the tangled branches on the bank. After about an hour I had to admit that I was shattered and felt distinctly unsafe picking my way over the jungle detritus. Staff Sgt —— said he would press on while I rested and waited the arrival of the rest of the team.

After about an hour I saw leaves moving on the other bank. Realising it was the other team, I stood up waving my arms and shouting "Over here." There was no apparent response but a few minutes later one of the team appeared at my side, as if by magic, and gave me a frank and colourful dressing down for making such a noise. "Don't you know how near we are to the Indon border?" he said – with meaning. Suitably chastised, I was then instructed as to how the SAS communicate in the jungle – by a series of animal noises.

At this point the Staff Sgt returned with the disappointing news that he had not found the crash site. Perhaps because of my fatigued state, I began to question whether we were on the right river – there are so many of them. The team soon rustled up a brew which immediately put new life back into Staff Sgt —— and me. Meanwhile, our signaller had contacted base at 0945hrs and they proposed to send a helicopter which would hover over the site. We were then to fire a green Very cartridge to permit the crew to ascertain the distance/direction of our position from the site which would then be relayed back to us.

After the 'tea break' we continued our painfully slow trek and at 1015hs admitted to COMBRITBOR that the going was very tough and that the distance to be covered had been badly underestimated. I think that I had initially made the elementary error of estimating the straight-line distance between the site and the lowering point, not taking into account the meanderings of the river, which were concealed from the air by the tree canopy. At ground level, horizontal visibility was limited to a few yards and our attempts to look upwards through the dense canopy were limited to occasional glimpses of the sky.

A little after mid-day we heard a helicopter and accordingly fired a green Very. Ten minutes later we received a call that the helicopter had dropped a message over our location – a container with a long red streamer. We searched, but failed to find it. More frustration. However, 20 minutes later we were informed by Base Ops that the site

was approximately one mile ahead, upstream! We were encouraged to 'Keep bashing.' In today's world of sophisticated communication systems, it may seem strange that we were unable to communicate directly with the helicopter. But in 1963 our messages were actually sent, by Morse code, to SAS HQ in the UK who relayed the message to Borneo! Their reply to us had to follow the same tortuous route.

**The Crash Site**

At 1530hrs we finally arrived and a quick recce around the wreckage clearly showed that no one had survived the impact. As had been seen from the air, the river, describing a semi-circular curve had cut into the hillside leaving a 200-300 foot cliff face on the convex part of the curve and a small flat 'beach' on the concavity. XN318 had struck the cliff face head-on and had dropped into the river. The fuselage to the rear of the access door was relatively intact and untouched by the post-crash fire. The tailplane was still in place but the fins and rudders were missing. These were the day-glo covered components, lodged in the tree top canopy, that we had seen from the air.

The whole forward section of the fuselage was completely burnt out and unrecognisable as was the section of the wings inboard of the engine nacelles. The outer sections of both wings were propped up against the cliff face. Both engines were semi-submerged in the river.

With one exception, there was no sign of any bodies or body parts. To take a closer look, I entered the water to examine the remains of the forward fuselage and cockpit. The fire had been intense and what remained of the fuselage was little more than aluminium ash. It was possible to recognise parts of human bones which, although also reduced to ash, had retained their shape until touched when they collapsed. Careful examination allowed me to conclude that these were the remains of five individuals but, apart from one case, it was impossible to make any individual identifications. In the skeletal metal frame of the right-hand, co-pilot's, seat there was a body, completely incinerated but wearing an aircrew watch on its right wrist. I was determined to recover this as an aid to identification. Moving forward through the ever-deepening river – I was up to my neck at this point and standing on a very unstable part of the submerged wreckage – I stretched out to reach the watch, when the overhanging mainplane

moved. The WO shouted for me to get out, as the whole precariously balanced assembly seemed about to collapse.

Sitting on the beach we discussed what to do next. We had reached and identified the aircraft and had achieved our primary objective, which was to establish whether there had been any survivors. From what I had seen, first from the air and now on the ground, the cause of this accident was apparent. Inadvertent contact with the tree tops by this intentionally low flying aircraft had resulted in loss of elements of the tail assembly resulting in a loss of directional control and flight path deviation leading to a head-on impact with the cliff face. This caused severe damage to the crew compartment. The two pilots would have taken the full force of the impact. The passengers seated, or not, in the fuselage (they may have been unrestrained, looking out of the side windows, which was their role) would have been projected forwards due to the sudden and violent deceleration sustaining severe and probable fatal injuries. Immediately on impact (as witnessed) a fierce fuel fire consumed the nose, cockpit area, centre section and the forward part of the fuselage. In my opinion, death would have been instantaneous. We then discussed the recovery of the one relatively intact body. Most people know now that the SAS have a unique way of debate – the Parliament. If possible, situations are discussed with each member of the team at liberty to contribute, regardless of rank.

How could we recover the body? As we had discovered, it was too dangerous to reach it through the water, so this was not an option. One suggestion was that if we had a rope we could lasso the body and drag it ashore. This had to be discounted, as we did not have a rope and we considered that, even if we succeeded in manufacturing one from lianas the recovery of the remains by such a means would have been unacceptably undignified. Finally, based on his considerable jungle experience, the WO opined that, even if we could recover the body, we would have to carry it downstream to a suitable helicopter landing site on a manufactured stretcher, a task which, in view of the terrain, could well take two to three weeks.

Reluctantly we decided we would have to leave him where he was, where he had died in the company of his friends and comrades. This decision was relayed to Ops who concurred. Ops asked if we would be able to bury the bodies. Because of the limitations in communications they had obviously not appreciated our dilemma but they finally

agreed to leave it to our discretion.

At this point in the late afternoon, we left the scene and went downstream in search of a suitable campsite. We paused before we left and, following an unspoken prompt by the WO, I said an impromptu prayer for those as yet unnamed and unknown colleagues who had died so suddenly and unexpectedly so far from their homes and loved ones.

**The Recovery**

Ops asked for our opinion on the quickest form of exit/extraction. They suggested that we be lifted from the original scramble point but pointed out that it was too dangerous for a Belvedere to descend any lower until the Landing Zone was widened and proposed an air drop of an explosives pack so that this could be accomplished. We decided to consider our options overnight. That night was spent in reasonable comfort as we had some food – warmed over the ubiquitous Tommy Cooker. I was further indoctrinated into the SAS' philosophy. On arrival at this overnight stop, a smallish, boulder strewn area by the river, I looked round for a reasonably flat spot on which to rest my head only to find that my colleagues had already snapped up all the more promising spaces. It was clear that, so far as 22nd Regt SAS was concerned, 'rank has no privileges', at least when working in the field, providing another demonstration of the no-nonsense democracy practised by the SAS. There was a surprise in the morning, after a moderately comfortable night achieved by the meticulous clearing of rocks and pebbles from my 'bed space', when WO —— approached me and asked if I would like to borrow his razor for a shave! Secretly, I was a little disappointed at this offer, as I already had two days of stubble and envisioned returned to base slightly bearded with the appearance of a hardened jungle veteran. One does not, however, turn down such an offer from a grizzled WO, especially one from the SAS, so I meekly accepted and scraped off my embryonic beard.

An exchange of early morning signals advised us that there appeared to be a better clearing, some five hours' march downstream that could probably be rendered acceptable to the Belvedere with an hour's work. We requested an air recce at 1400hrs prior to a lift out at 1500hrs. Ops were advised that, despite our widening of the LZ, it would still not be possible for the Belvedere to land so some

alternative method of extraction would have to be devised.

At that point we departed, but progress was slow and our estimated time of arrival at the suggested LZ was not achieved, so we settled down to improve the LZ and resigned ourselves to another night in the jungle. Fortunately, one of the troopers had a small quantity of explosives in his Bergen, so we were able to fell two of the largest trees, which opened the canopy a little bit more, but it still looked very small for the Belvedere to be manoeuvred down to us. Nevertheless, sunlight did penetrate and the sight of blue sky helped brighten up our campsite.

Ops signalled that the helicopter would be with us sometime after 1000hrs and that a memorial service would be conducted by a chaplain at 1000hrs, overflying the crash site in a Twin Pioneer.

Disappointingly, at 1230hrs there came another signal saying that the Belvedere was temporarily unserviceable at Long Seridan airstrip, but that a servicing team had been despatched and that the aircraft should be repaired in time for us to be extracted that day. No time was given but, realising that we were obviously short of rations, an air drop would be organised from a Beaver at around 1530hrs. At 1600hrs we heard the Beaver, but it was way south of our position. As instructed, we lit a smoke flare to indicate where we were. This required a little ingenuity as the firing mechanism was damaged, so the flare was impossible to ignite by the conventional method. Ever resourceful, one of the troopers jammed the faulty flare in the branch of a tree some twenty yards away, fired a single shot from his Sterling SMG which ignited it instantly. A remarkable shot from such a weapon. My admiration for these elite members of Special Forces increased immensely after this demonstration of shooting skill.

A few minutes later the Beaver arrived and we saw two parachutes despatched. Sadly, one load shed its parachute and the bundle disappeared into the trees some distance away. The other bundle landed within sight and was rapidly retrieved. A search for the other was fruitless. The team's only concern was the possibility that there might have been mail in the lost bundle. Ops informed us that this was not so, much to everyone's relief, but also passed on the news that it was unlikely that the Belvedere would be fixed today after all. Although we were disappointed at having to stay yet another night, we now had the comfort of eight days' rations so a hearty meal was

*These pictures provide some inkling of what servicing 'in the field' meant in Borneo. Note the duckboards to minimise the problems associated with mud – and the SLR leaning against the barrel.*

guaranteed for that evening. The remainder of the day was passed making our campsite more comfortable and exchanging stories. I continued to be impressed by the talents and skills of my companions. Our signaller, who had already demonstrated his climbing skill by climbing up a bare trunked tree to extend his aerial and improve the link with the UK (remember all our to and fro messages had to be relayed through Hereford using Morse). In casual conversation he said he spoke Norwegian, a skill he had learned whilst serving in the Regiment.

From my point of view as a Medical Officer, we all seemed to be in good shape, although a little tattered and torn. Our jungle green clothing was the worse for wear with innumerable tears and rips. The half-calf canvas and rubber soled jungle boots had stood up well and the same could be said for our feet, despite being soaking wet most of the time. This was due to the 'foot discipline' of my companions who took every opportunity to dry their feet and change socks. Despite

uncountable scratches and abrasions on exposed skin, no one had any infected lesions at all.

The next day (18 February) was a day of frustration. There were innumerable exchanges of signals informing us that the Belvedere assigned to lift us out was still sick but attempts were being made to get another one serviceable. Later in the day we were told that the helicopter had made one attempt but had been obliged to turn back because of bad weather. We did, however, have food and cigarettes so life was tolerable, especially as we were confident that we would be lifted out the next day.

That evening, however, it began to rain heavily. I was sharing a 'basha' with one of the young troopers. I say a 'basha', but it was merely a poncho slung between two trees and its only purpose was to keep the falling rain off our heads. We had no ground cover and our covered space was soon running with water, so we were back to lying/sitting in mud. It was extremely cold and miserable, for me that is, but my young colleague was cheerful, despite these trials. We had eaten – rice, flavoured with curry powder, and he lay back enjoying a cigarette. He looked at me and said, "This is the life. A roof over our heads, a full belly and a cigarette. What more could a man want?" I nodded agreement, but I had never felt so miserable in all my life! It did, however, serve to reinforce, yet again, my admiration for the SAS, its members, its toughness and its humour. We talked about many things and he told me that he would shortly be leaving the Regiment for civvy street. I asked him what he intended to do. He said that he had no civilian trade or experience but the Army had taught him to blow things up so he thought that he might get a job in demolition! I hope he was successful.

Confident that we would be extracted in the morning, care was taken to destroy the remaining contents of the ration packs and we settled down to what we hoped would be our last night.

## The Extraction

Dawn broke dry and clear. Our early morning call to base informed them of the weather and also the fact that we had no fuel or matches to light a fire to indicate our position. This was the result of the prudent destruction of our supplies the night before and prompted a somewhat cynical reply expressing shock that we had no matches or fuel but said

that Base Ops would give up smoking in sympathy until our return. They added that our retrieval helicopter should be overhead at 1000hrs. In view of the repeated promises of the past two days, we were not too confident.

As we sat down to wait, one of the troopers decided to chop at a log using his machete. One particular vicious blow resulted in the machete bouncing off and hitting him on the top of his foot. The canvas jungle boot offered little protection and he sustained a deep cut. After cleaning it and stopping the bleeding, a couple of stitches to close the wound was required, but my small medical kit had been dumped in the river the previous night along with the rations. Necessity being the mother of invention, the wound was closed with a safety pin and all was well.

Eventually, and to the relief of all concerned, we heard the sound of the approaching Belvedere. Looking up at the hole in the tree canopy that we had tried to enlarge, it seemed small in comparison with the elongated fuselage of the helicopter and its two whirling rotors. Jim Reilly, the same pilot who had delivered us, descended slowly the helicopter blades shredding leaves and small branches en route. On the jungle floor, looking up amid this shower of leaves we realised that Jim could descend no further than half way which was no help to us. However, with incredible skill and dexterity he rotated the helicopter through 90º so to orient his long axis into a wider part and continued down, eventually hovering some 10 to 20 feet off the ground, a remarkable feat of airmanship.

In the door of the Belvedere was the ruddy-complexioned, moustachioed face of Harry Thompson. Attached to a strong point above the door was a Heath Robinson block and tackle assembly which he lowered down. At the end of a rope was a crewman's safety harness. With Harry shouting above the noise of the aircraft's engines, the whirling blades and the canopy destruction going on overhead, we each in turn donned the harness and were lifted into the aircraft by Harry and two others hauling on the block and tackle contraption. When we were all on board, Jim Reilly gently reversed his flight path up through the trees again and set course for Brunei.

I don't know about the others; they were far more experienced than I was in terms of jungle living, but there was a feeling of relief at getting out, tinged with sadness that our mission had not been

successful. The prospect of a shower, albeit in our primitive airfield contraption was something to look forward to, but it was not to be.

**The Aftermath**

On arrival we were welcomed back by our friends who thoughtfully provided us with a few cans of *Tiger* beer, which tasted like nectar. The celebrations were interrupted by a request (order) for me to report to the Board of Inquiry which had been assembled to investigate the circumstances of the fatal accident. There they were, all four of them, sitting behind a table, all clean and smart in their pressed khaki bush jackets, no doubt well fed and hydrated. Seated on a single chair facing this inquisition was I, dirty, smelly, hungry (I had lost 35lbs in weight) and still somewhat dehydrated, my jungle green in tatters, stained with dried blood from countless cuts, scratches and leech bites and beginning to feel extremely tired, the inevitable reaction to being back 'home' and safe.

The Board members were keen to get on, having had to sit around for days waiting for our extraction. I went through my story, eventually coming to the conclusion that I had made regarding the cause of the crash. In the years to come I would be a member of many Boards of Inquiry and became well-versed in the *modus operandi*, which is to consider all possible causes. The engineering member postulated that a sudden loss of power in the starboard engine could have caused the aircraft to yaw to starboard and hit the cliff. He asked if I knew whether the starboard propeller was feathered or not (an action which would have been taken by the pilot in the event of failure of that engine). When I told him that the engine was under water and I could not see it, he asked if I knew what a feathered propeller looked like, the implication being that I was only a doctor and would not know these technical things. My fuse was burning a bit short by that time and I told him in no uncertain terms that I was well versed in aircraft design, having been accepted as a student at Cranfield College of Aeronautical Engineering before I changed to medicine. He muttered that a team would have to go in and make a proper study of the wreckage before the true cause could be established. All this, in spite of my eye witness evidence that there were elements of the tail plane on the terminal flight path. At this point the medical officer member of the Board intervened and said it would be better if I were

allowed to clean up, eat and have a good long sleep before continuing my evidence. The Board, with some reluctance, concurred.

The next day I concluded my evidence in perhaps a calmer manner. The next witness was WO ——. He was equally outspoken when the question of an investigation team visiting the site was raised. “Out of the question,” he said and there the matter ended.

I found out much later that the conclusion reached by the Board was that the true cause could not be identified, a verdict of ‘inconclusive’. That rankled with me then, and still does half a century later.

**Postscript**

Several weeks later I received an extraordinary signal from MOD stating that the families of the deceased crew members were being obstructed by the relevant insurance companies because of the absence of a death certificate. This would normally be provided by the Coroner at an Inquest to determine the circumstances surrounding their deaths. Inquests were not normally a feature of life, or death, in Borneo but I managed to track down a magistrate. A short helicopter flight took me to Limbang. From the LZ I walked to a courthouse where I met a smiling, rather rotund, Chinese magistrate who wondered how he could help. I explained that the insurance companies demanded an inquest and would he be willing to conduct one. “Of course,” he said, “What do I have to do?” I explained that the purpose of an inquest was to establish who had died, how they had died and whether there was any cause for public concern.

With that explanation we entered the Courtroom. He apologised when he invited me to go into the witness box, a bamboo cage, presumably intended to restrain less than friendly witnesses or accused.

Then I told him that my evidence had to be given on oath. Another problem – no bible! He asked me if I could remember the wording and so in this attap-roofed wooden building, standing in a bamboo cage I intoned the familiar words “I swear by Almighty God that the evidence . . .”

I produced the aircraft manifest, which listed the names of all five crew and passengers. I said that the aircraft had taken off from Labuan, had not made any intermediate stops until it crashed into the

jungle. The remains of the five people that I had determined at the crash site must, therefore, be the personnel who had taken off from Labuan. The cause of death was multiple injuries commensurate with an accident of this type and, as this was the result of a military operation, the public was not involved.

He seemed satisfied with this and so, together, we fashioned a form of words for a death certificate for each of the victims which I hoped would satisfy the insurance companies. A bizarre conclusion to a tragic accident. Over the succeeding weeks of the campaign I carried out my duties with occasional moments of excitement but that is another story.

**Post-postscript.**

Major Harry Thompson and I devised a better method of entry into the jungle using abseil equipment. This consisted of a 200-foot nylon strap, some two inches wide, which, when fed through a metal ring attached to a canvas 'bikini' permitted a controlled descent. We practised this technique several times from a Belvedere over the airfield. Tragically, Harry was killed in a Belvedere which crashed in North Borneo some six weeks after I had returned to the United Kingdom. The Regiment lost a very gallant gentleman.

**In Memoriam**

Those who died on 14 February 1963 were:

Plt Off J E Pearce, pilot, and Flt Lt D Berry, navigator, both of No 209 Sqn; Flt Lt M R Morling, navigator (attached supernumerary to No 209 Sqn); Jnr Tech J D Crane, voice operator, and L/Cpl D Hargreave, 47 Co, RASC (AD), observer.

Like several other men who died in aircraft that crashed during the 'Confrontation' with Indonesia, and whose remains were similarly never recovered, their names are recorded on the Terendak Military Cemetery Memorial Wall in Malacca.

[1] It could have been either as HMS *Albion* was in the vicinity and Wessex of No 845 Sqn and Whirlwinds of No 846 Sqn both operated from Labuan and/or Brunei at about this time.

*A wreath laying held at the Labuan Military Cemetery to commemorate the loss of the crew of XN318.*

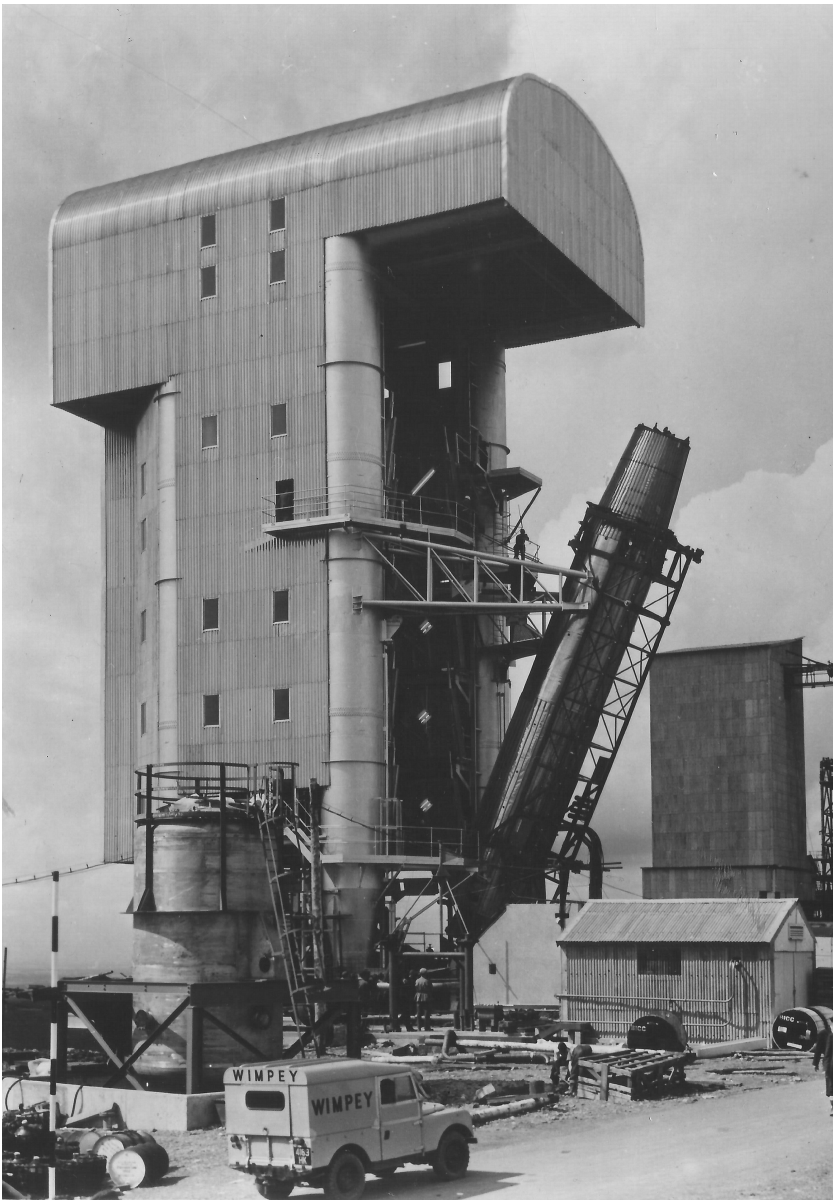
## THE BLUE STREAK UNDERGROUND LAUNCHERS

**by John Boyes**

In the late 1950s the Royal Air Force found itself engaged in two ballistic missile programmes, one home grown the other courtesy of the United States. The American connection was in the form of sixty Douglas SM-75 Thor Intermediate Range Ballistic Missiles (IRBM). Supplied by the United States, but operated by RAF crews, these missiles were deployed operationally between 1959 and 1963 at twenty sites ranging from Yorkshire in the north, East Anglia in the south and Northamptonshire in the west. The gleaming white missiles, sentinels of the Cold War, stood at 15 minutes' constant readiness to launch. To satisfy political sensitivities and to protect against unilateral use, the missiles were under dual-key arrangements. Control remained the prerogative of the British Prime Minister and the US President. The RAF key started the launch procedure whilst the US key armed the 1·44MT nuclear warhead.

Although Project Emily, as it was known, in planning and logistic terms was one of the most successful examples of cooperation between two air forces, there were many who were critical of the placing of American missiles on UK soil including the supporters of the nascent Campaign for Nuclear Disarmament (CND). It was impossible to hide these missiles in the English countryside and all twenty fixed locations were clearly as well known to the Soviets as they were to the local inhabitants. Further-more, those who criticised the missiles were quick to point out their vulnerability. Exposed and above ground a sniper's bullet would have been sufficient to render them *hors de combat*. A negligent discharge by a Turkish soldier had been enough to write off an engine in one of the Jupiter IRBMs deployed by the US Air Force in Turkey. But Thor was never designed to be operated other than in the open. The missiles were also vulnerable to the electromagnetic effects of a nearby nuclear explosion and this limited their utility as a retaliatory weapon.

Part of the Thor Agreement covered the training of the launch crews. This was largely undertaken in America – a feature which proved an attractive adjunct to the programme. Training courses culminated in a live firing of a missile at Vandenberg Air Force Base. It was originally envisaged that every crew would have the oppor-




*A Blue Streak in the de Havilland test stand at Hatfield.*

tunity to experience a launch but US budget constraints limited this to 21 live firings during the four years of Thor's deployment. Although strongly protested by the Air Ministry and to the disappointment of the launch crews who were not chosen, the US would not give way on the reduced launch programme. However in the context of live firing facilities in its earliest form the selection of UK sites incorporated a request by the US for a test site in the remote North of Scotland from which live firings could take place. Britain was geographically ill-suited to a live rocket range on the mainland and the idea was fortunately short-lived as it would undoubtedly have proved controversial. In addition, perhaps, the Americans had not looked at a road map of the area. The last part of the main road to the north coast of Scotland was 'single track with passing places' – far from ideal for a sixty-foot missile on its transporter. But Scotland had not totally escaped the attention of those looking for possible launch sites. It would not, however, be for Thor.

In 1955, Britain, with American assistance, had started development of its own Medium Range Ballistic Missile (MRBM) which was to be called Blue Streak. It was designed to meet Air Ministry OR1139. This called for a ballistic missile with a 1MT warhead and a range of 2,000 nm which would reach strategic targets in the western Soviet Union. Overall design authority had already been earmarked for de Havilland Propellers Ltd whilst the contract to develop the rocket engines went to Rolls-Royce Ltd. Guidance was to be provided by Sperry Gyroscope Co Ltd. The US, embarked on its own challenging programme to develop the 6,500 nm range Atlas Intercontinental Ballistic Missile (ICBM), was willing to encourage Britain to develop an MRBM which it saw as a stopgap measure to fill the gap until Atlas became operational – projected to be in the late 1950s if all went well.

The reality of the UK launching an attack against the Soviet Union was remote in the extreme unless as part of a coordinated NATO operation. Consequently the Soviet planners believed that Britain would never take the risk of launching a nuclear attack on its own. So Blue Streak, from a UK perspective, was essentially a weapon of retaliation and thus had to be able to survive a first strike by the Warsaw Pact. Because of the obvious vulnerability of surface sites, it was conditional on the design that Blue Streak would have to be

protected underground and launched from huge underground launch tubes. They were called Underground Launchers – the word 'silo' coming into use later when the Americans started developing their own versions for the Titan II and Minuteman ICBMs.

The survivability of surface and underground sites after a 1MT nuclear warhead burst at various ranges was reckoned to be:

| Range from detonation (miles) | 0.5 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| Surface | 0% | 0% | 6% | 29% | 50% |
| Underground | 50% | 84% | 96% | 98% | 99% |

Clearly some considerable initial development work would have to be undertaken. There is evidence that some interest in placing missiles in hardened facilities had originated in the Washington-based British Joint Services Mission (BJSM) in 1956 when a study based on the German project to house V2 rockets in huge bunkers had been studied. However, the conclusion in this instance was that the damage to these installations, which had prevented their operational use, had been largely as a result of bombing during construction and had the attacks been made against completed installations, the outcome might have been very different, thereby strengthening the validity of underground storage as a concept.[1] As with Thor, the nominal ORBAT called for sixty missiles although a total force of 120 was briefly considered. The idea of a subterranean launcher was completely unproven and serious concerns were voiced over the acoustic effects within the launcher which might threaten the integrity of the missile before it had even been launched. There was also concern over the possible electromagnetic effects of a nearby nuclear explosion – an area of research about which comparatively little was known at the time. The design brief called for the site to be able to survive a 1MT warhead explosion half a nautical mile from the launcher and an overpressure of 140psi. Seventeen seconds was the design parameter for sliding back the lid and provision was to be made for high pressure hoses to clear the lid of any debris. Contemporary US thinking for basing their Atlas ICBM was towards raising the missile from its underground storage for surface launch: such was the uncertainty surrounding hot launches within a launch tube. For Britain, at the forefront of the concept, it was also likely to be an expensive developmental learning

curve at a time when the UK defence budget was under considerable pressure. Nonetheless by 1957, Duncan Sandys' Defence White Paper placed considerable emphasis on a future which relied heavily on missiles for both defence and offence. Blue Streak fitted this bill.

The basic configuration quickly evolved into a U-shaped installation with the missile in one arm of the 'U' and the exhaust gasses exiting through the other arm. Testing of the practicality of the design was undertaken by staff at RPE Westcott who considered four configurations of the 'U' shape. (Fig 1). Concerns were expressed about the possible acoustic effects within the launch tube and there were fears that this might cause the missile to 'self-destruct' after engine start. The available plans of the silo show an acoustic liner in place around the shaft. A 1/60th scale model was made, primarily to examine exhaust flow. This was followed by a 1/6th scale model into which a small Gamma rocket engine was fitted and which featured the octagonal shape of the final designs. The remains of these test samples still exist at Westcott – now an industrial estate. The results of these tests were summarised in a technical note dated October 1958 compiled by B W A (Barry) Ricketson and E T B Smith.[2]

It was decided to construct a prototype launcher, designated U1, at RAF Spadeadam in Cumbria where test stands for Blue Streak static firing trials were already being built. A site close by these test stands was selected and although initial groundworks were started, little if any actual construction took place before the project was terminated. After cancellation, nature took over the site until it was 'rediscovered' during an English Heritage archaeological survey of the area in 2004.[3] Only the bottom 30 feet of the U1 launcher were to have been underground the remainder of the tube would have visible and accessible above ground. A further two trial launchers were to be built at the rocket range at Woomera in Australia and this would have allowed live launches to have been incorporated into the test programme. These were to be constructed in the side of an escarpment. As an aside to this the Air Ministry was asked, when drafting the specification for a projected Beverley/Hastings transport replacement, to consider including a capability to fly Blue Streak to Australia and the Outer Hebrides, although there is no indication that a launch facility was ever considered at the Royal Artillery Range on South Uist where the Army's Corporal missile was being test fired.

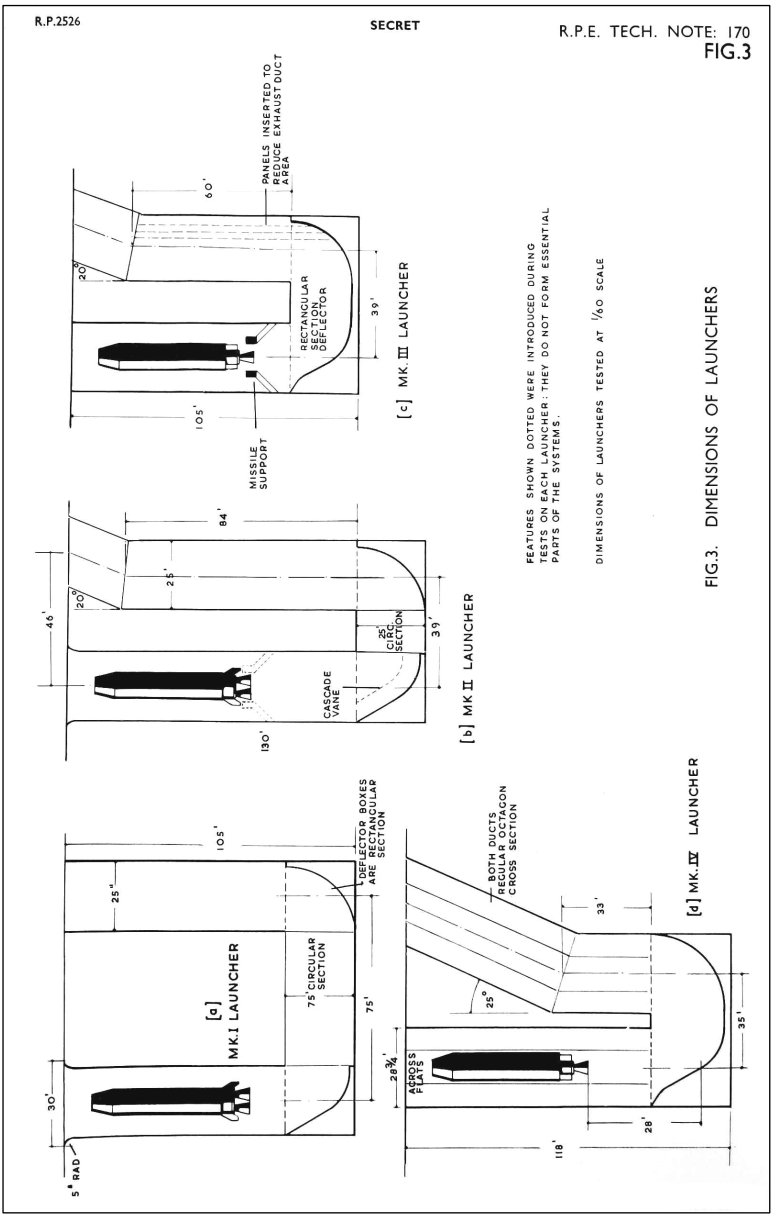



*Fig 1. Possible configurations for the underground launcher, from RPE Westcott's Technical Note 'Work Supporting Development Of An Underground Launching System For Blue Streak'.*

Conceptually the operational deployment would be in clusters of six sites equally spaced six miles from a central hub which would support domestic and technical requirements. In terms of operational sites, in 1957 a list of 92 locations had been drawn up but these corresponded closely to empty airfields left unneeded after the war. Little actual consideration had been given to their suitability. One constraint was the need to find sites in geologically stable ground. The search was therefore widened to include quarries but deleted clearly unsuitable sites. By midsummer 1958 a parallel search was on to find sites suitable for basing Thor and there is some evidence to show that co-location was considered or that Blue Streak would replace the US missile on the Thor bases. This refined list identified Duxford, for its proximity to de Havilland's factories at Stevenage and Hatfield as the site for the prototype launcher designated 'K1'. Consideration also had to be given to the suitability of access roads for the 80-foot transporter. Exploratory boreholes,[4] however, identified high levels of water, a factor that would also seem to have ruled out using a number of the Thor sites where water was an ever present inconvenience. Other possible sites were Odiham, Waterbeach and Stradishall. To this list were to be added, in 1959, Castle Camps, Ridgewell, Sudbury, Raydon and Lasham. The sparsely populated Yorkshire moors were also, in theory at least, attractive but the poor road access would have added considerable cost and by then the parameters for locations had narrowed to avoid evacuation areas, although in reality only the remotest areas of the UK would be immune to some effects from a nuclear strike. Nonetheless, one suitable site, seven miles northwest of Scarborough was identified. East coast sites always had potential, as these involved the shortest flight paths over populated areas, and this was also a consideration for the Thor sites. Hence Tibenham, Hardwick, Eye, Beccles, Metfield, Bungay, Halesworth and Horham were added to the list. Bircham Newton was initially a strong contender but its proximity to Sandringham soon ruled it out. Watton was not on the list but it had attracted the attention of CND as a possible site. CND were usually surprisingly well informed about such things – things that they should not have known about. By 1959, in response to requests to select sites away from evacuation areas, the whole emphasis had moved north with sites at Acklington, Eshott, Ouston and Morpeth being considered. Acklington was excluded

because of subterranean mining operations. By the end of 1959, further fine tuning had ruled out all areas other than a small part of East Anglia, the East Yorkshire moors, the east of Scotland but excluding the Tay, Forth and Tweed valleys, and part of north eastern England to the north of Newcastle. It was recognised, however, that the SAGW air defence screen could afford little or no support to these locations.

In January 1960 Ouston was declared the preferred site with Morpeth second. Ouston was the better of the two sites as Morpeth, which had replaced Eshott, was considered far from ideal but was the only one to have a suitable geological profile and fulfilled outside safety requirements. Interestingly, little mention is made on any of the lists of Crail. Roland Hall who worked for the Air Ministry and had already been involved in the design of the Thor sites is clear in his memory that Crail was the chosen site for the first operational base.[5] When looking at the location on the east cost of Fife it is clear to see its geographic attraction although it lay on the fringe of a populated area. On the coast, and therefore carrying no danger to human habitation under its flight path, the logic of choosing the location is clear. The RAF had only briefly made use of the site during 1918/19 after which it closed but had been occupied by the Royal Navy since 1940 and named HMS *Jackdaw*. In 1947 its name was changed to HMS *Bruce* and since 1953 it had been a foreign language school although flying still took place under the auspices of the St Andrews University Air Squadron. The Air Staff favoured the site because of its existing accommodation facilities. They saw it being used as either an operational site, the site for K11 or an OCU for Blue Streak crews or in fact any combination of two of these scenarios although there was an overriding requirement that the K11 site would eventually become one of the operational sites. The Admiralty were duly informed of the interest in Crail and asked to ensure that no commitment was made to return the land to its former owners. By January 1960 The Cementation Co Ltd, who enjoyed a high reputation within the War Office, was already undertaking boring at Crail. On completion of this project they were asked to take bore samples at Ouston and Morpeth. However, with the cancellation of Blue Streak, there is no evidence of further sites being visited. The fact that Crail seems to have been the first boring done at a potentially operational site arguably adds

credibility to its choice as the first site. Minister of Defence, Duncan Sandys thought Crail was too far north but the Air Ministry did not share his concerns, observing that 'this does not imply that money being spent on boring is wasted as this area will almost certainly feature in the operational plan'.[6] Further corroborating evidence of the interest that was being taken in Crail is the documented concern of Scottish MPs who had to respond to their constituents about rumours of rocket bases in Scotland. This has, up until now, been regarded as concerns over the possibility of Thor being based in Scotland, but maybe, and unwittingly, it was Blue Streak that was also implicated. Crail's proximity to the sea gave rise to one particular question: a 1MT warhead explosion out to sea would have generated a tsunami style tidal wave which would have engulfed the site. Hall was asked to estimate how long it would be before the launcher cover could be slid back to unleash a retaliatory strike. With little constructive evidence on which to base a judgement, he advised that the sea should have receded within 30 minutes. No one disputed this information.

What is now certain however is that, once Duxford had been eliminated, the prototype launcher, now named K11, was destined for RAF Upavon and that an initial survey leading to actual plans being drawn was undertaken. (See Fig 2). The Cementation Company had already undertaken boring operations at Netheravon, Upavon and Windrush in the spring of 1959. The Home Office was against Upavon because of fallout problems were it to be subjected to a nuclear attack. However by this stage in early 1960, Blue Streak as an MRBM was essentially destined for cancellation. Had it been constructed, K11 would have been sited at the south western end of the airfield and would have used the existing taxiway as an access road. In the centre of the site was the launcher with access roads that would have allowed the transporter to manoeuvre to lower the missile into the launch tube. The site was contained within a 400ft square surrounded by a perimeter security fence illuminated by lighting standards at intervals of 60ft. Three acres was considered necessary for each site. Considerable provision was made for drainage indicating that the water table was quite high. Two existing perimeter fences around the airfield provided additional protection.

At least three differing designs for the launcher exist (see Table 1). K11 was configured with one large cover which was drawn back to

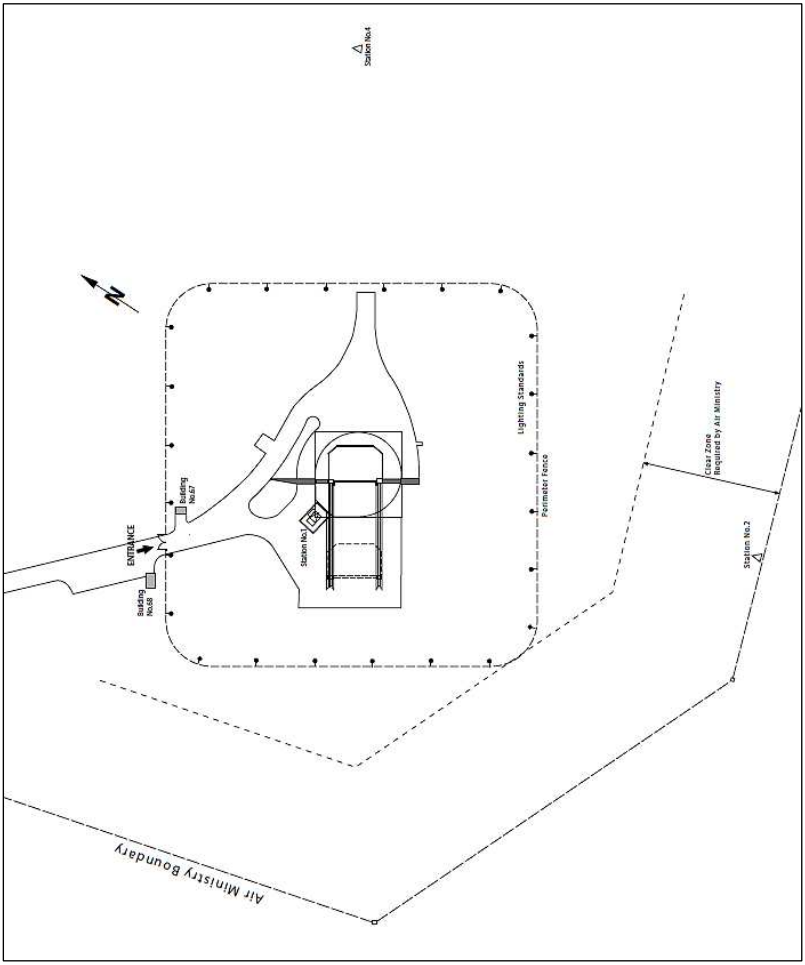



*Fig 2. Proposed K11 Site at RAF Upavaon. Based on Air Ministry Drawing 8809/59.*

| Floor | K11 | | Version 2 | Version 3 | |
|---|---|---|---|---|---|
| Upper First Floor | N/A | | Machinery Room | Warhead Room | Tank and Machinery Room |
| 1st | Lid operating equipment<br>Air conditioning unit | | Warhead Room | | Machinery Room |
| 2nd | Upper storage area<br>Refrigeration supply for guidance unit<br>Protected by blast proof doors | | Workshop and Stores | Workshop and Stores | |
| 3rd | Auto-collimator<br>Radio and communication<br>Missile control and checkout<br>Azimuth and GP telescopes | | Auto-collimator<br>Communications<br>De Havilland facility | De Havilland facility | |
| 4th | Personnel floor | | Personnel floor | Personnel floor | |
| 5th | Main storage area | | Main LOX Tank | Main LOX Tank | Main Kerosene Tank<br>$GN^2$ Storage (7th Floor) |
| 6th | Lower Storage Area | | Kerosene Storage | | |
| 7th | Main LOX Tank<br>Main $GN^2$ Tank | Main Kerosene Tank | $GN^2$ Storage | | |
| 8th | | | | Empty | |
| 9th | N/A | | Plant and Pump Room | Plant and Pump Room | |

*Table 1. Comparison of the configurations of Versions 2 and 3 of the K11 launchers.*

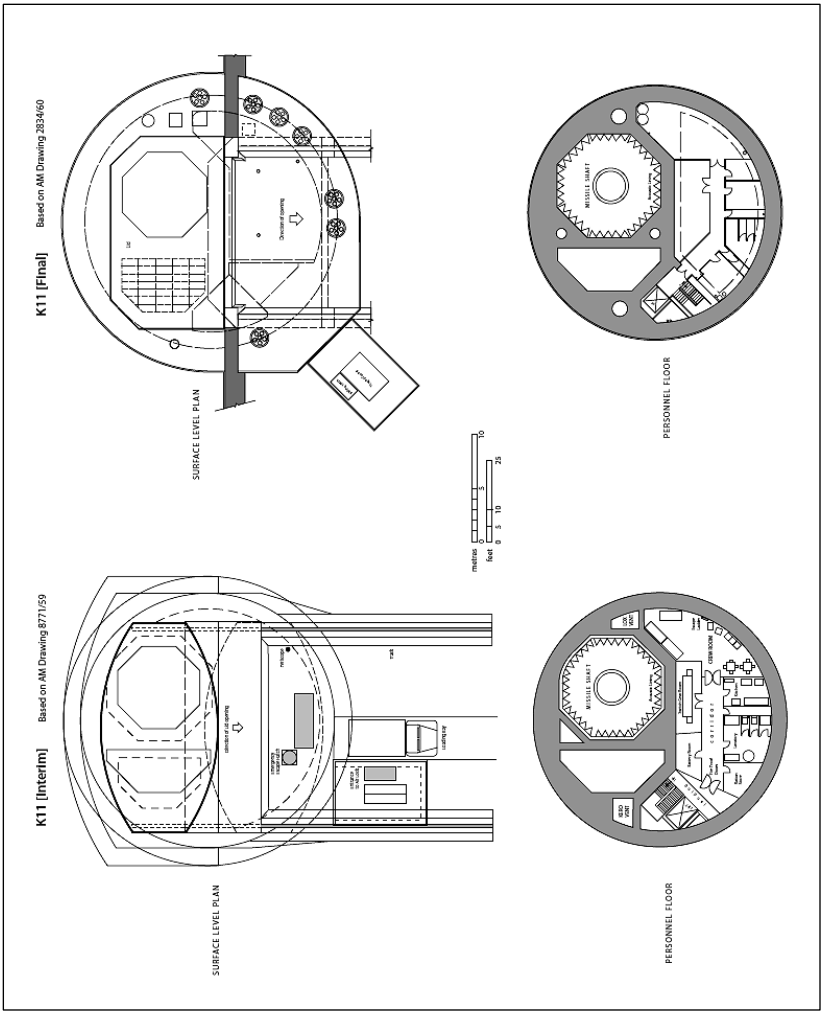



*Fig 3. Comparison of Interim and final designs for the K11 launcher.*

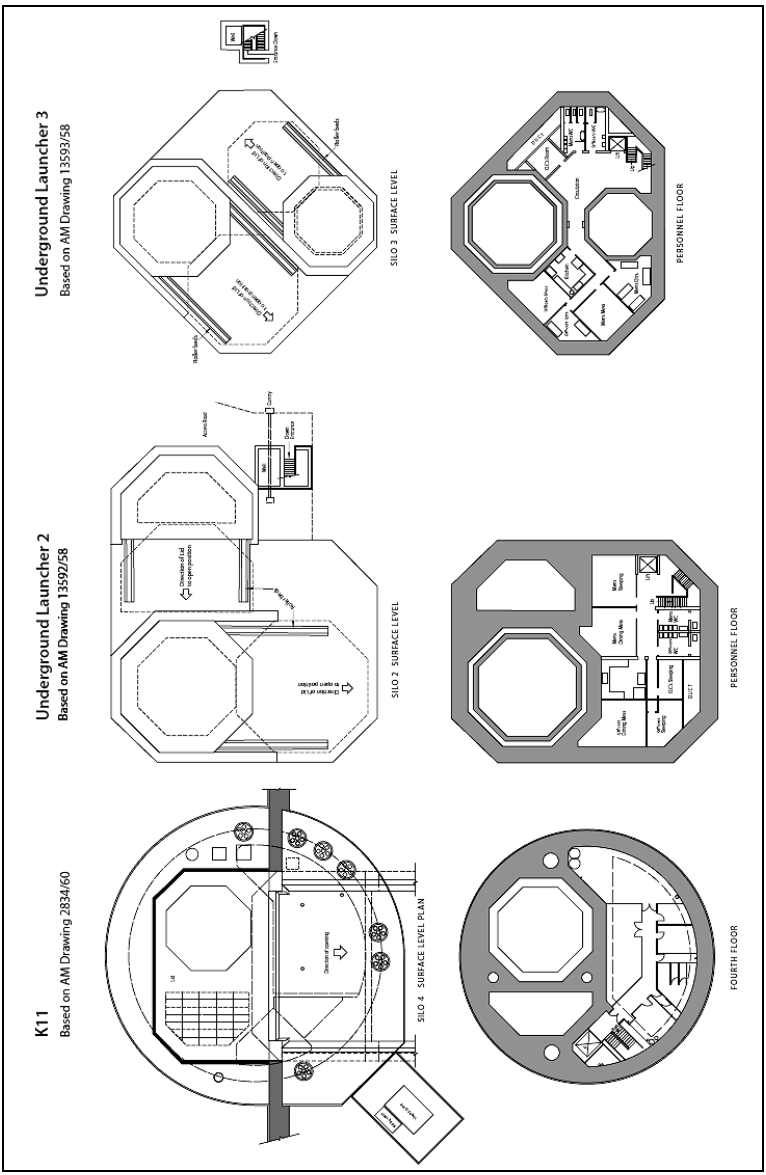



*Fig 4. The surface level and personnel floor layouts for 'Designs 2 and 3', compared with K11.*

expose the launch tube and the efflux tube. Published sources[7] refer to the plan available in the National Archives based on Air Ministry Drawing 8771/59. However, a later version of K11 (AM Drawing 2834/60) has recently been found and as this is dated only a month before Blue Streak, as a weapon, was summarily cancelled it can reasonably be considered as representing the final thoughts on the subject. It also conforms to the design used in the Upavon plan. Though broadly similar, it differs in detail from the earlier design. (Fig 3) Two other designs are known to exist. Launchers annotated '2' and '3' differed in their layout and in both cases, separate covers were provided for launch and efflux tubes. (Fig 4). Version 3 shows an octagonal efflux tube matching the launch tube whereas the K11 and Version 2 designs show a half octagonal efflux tube. All were 150ft deep measured to the bottom of the flame deflector, the launch tube was 122ft 6ins in depth and consisted of a number of floors. Access was by lift and staircase from the surface down to the sixth floor. The layout of the floors, seven for K11 and ten for Versions 2 and 3, showed considerable variation as the design evolved (Fig 4).

The upper floor contained the mechanism for opening the lids, the generator and air conditioning system. In case of contamination it could be isolated so that the air conditioning could continue to operate without the risk of further contamination. The first floor was the warhead room, separated by blast doors from the missile tube. Air Ministry OR1142, which covered the Warhead for a Medium Range Ballistic Missile, required the warhead to be removed or fitted in 30 minutes. By the time the K11 drawing was completed, the Red Snow warhead design had evolved from using a re-entry vehicle of a blunt-cone heat-sink design. similar to Thor. to a pointed nosecone indicating that the design of the re-entry vehicle had evolved and would now utilise ablative materials. Human comforts for the launch crews were provided for on the fourth floor in all designs. Messing and sleeping accommodation sufficient for officers and men of two launch crews was provided, the two segregated by a small kitchen. Victualing was planned to last for a perhaps remarkably optimistic period of four days. Two further regulating factors regarding the building of the launchers were the availability of sufficient concrete for their construction at a time when motorway building was in full swing and the availability of sufficient fissile material to build sixty

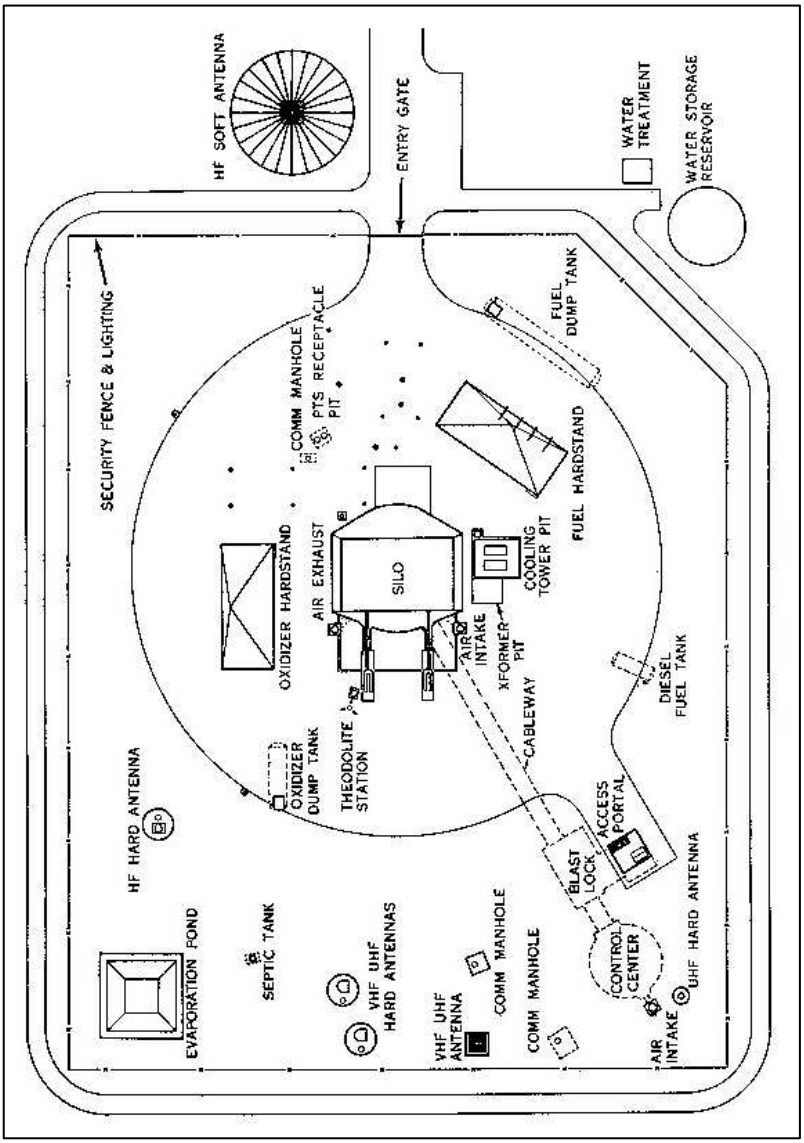



*Fig 5. Layout of a Titan II missile complex.*

warheads for the missiles. Specific solutions for these two problems have yet to be found within the official records.

But all this effort was in vain. Blue Streak's cancellation was announced when Minister of Defence Sir Harold Watkinson made a statement in the House of Commons on 13 April 1960. An unprecedented parliamentary turmoil followed during which the Labour opposition railed on the Government's vacillation over a British deterrent and only the fortitude of Black Rod prevented him from being excluded from the Commons as he carried out his official duties.

As with many ideas originating in the British aerospace industry, the Americans acquired and developed the technology. In 1958 Colonel William E Leonhard, Deputy Commander, Civil Engineering, and Assistant For Site Activation at Headquarters, Air Force Ballistic Missile Division, had visited the UK to discuss the British design and also to see the results of tests undertaken at Westcott. The Titan II silos bore more than a passing similarity to the Blue Streak design (Fig 5) and remained operational until the final missile was deactivated at Little Rock AFB on 27 June 1987 and therein perhaps lies the Underground Launcher's true legacy.

**Note:** This paper, in its original form, first appeared in the Airfield Research Group's quarterly *Airfield Review* (No 140, September 2013).

**Notes:**

1 TNA AIR 2/13675.

2 TNA AVIA 68/23.

3 Cocroft, Wayne D; 'The Spadeadam Blue Streak Underground Launcher Facility U1' published in *Prospero No 3. The Journal of British Rocketry and Nuclear History*.

4 Boreholes were 5·75 inches in diameter and 500 feet deep.

5 Conversation with Roland Hall, 2013.

6 TNA AIR 2/15246.

7 Cocroft, Wayne D and Thomas, Roger J C; *Cold War. Building for Nuclear Confrontation 1946-1989* (English Heritage, 2005) and Hill, C N; *A Vertical Empire* (Imperial College Press, 2001).

# JOINT SERVICES SCHOOLS FOR LINGUISTS 1951-60

## National Servicemen preparing for war as Russian linguists

### by Dennis Mills

The communications intelligence work of Bletchley Park and its Y Stations during the 1939-45 war is deservedly well known, but what happened next in relation to the threat from the Soviet Union has received much less attention. Even as early as 1944 the Joint Intelligence Committee of the Chiefs of Staff had begun to consider the gross shortage of Russian speakers in Britain, and by 1948 British intelligence operations, having been run down after the war, were expanding once more. The communists took over Czechoslovakia in 1948 and Hungary in 1949. The exploding of the first Soviet atomic bomb in 1949 caught Western intelligence by surprise and the Korean war began in June 1950.[1]

The first large scale initiative in language training was a response to the need for about 200 Russian interpreters to join the staff of the Allied Control Commission in newly occupied Germany. In 1945-46 Professor Elizabeth Hill ran some six-month courses at Cambridge for these servicemen. Small numbers of interpreter students were also taught during the same period at the University of London's School of Slavonic and East European Studies, when twenty-four service personnel, twenty men and four women, attended part-time courses. A similar scale of activity carried on into 1950-51 when there were thirty-nine service students, including two women, learning a range of east European languages on a part-time basis.[2]

In 1949 an inter-Service committee under the Ministry of Defence began to study ways and means of setting up courses for very much larger numbers of national servicemen. As a consequence of the outbreak of the Korean War, an extension of the National Service Act was rushed through Parliament in September 1950 to increase the period of training from eighteen months to two years. A long period of Russian language training then became possible, followed by some useful intelligence work by those who qualified as translators. The committee's objective became the creation of a reserve of men who could be mobilised in case of hostilities, and in November 1950 a

target of about 4,100 by 1954 was adopted.[3] Meanwhile an initiative by the Air Ministry in 1949-52 comprised four one-year courses for 30-40 regular, as opposed to conscript, servicemen at RAF Kidbrooke, in south-east London. The students were mainly airmen, both officers and men, with a few additionally sponsored by the Army and the Navy. Some were already experienced W/T (wireless telegraphy) operators.[4]


In March 1951, after much debate the inter-Service committee started to take executive action, leading to the commencement of courses in October 1951. They had in mind lower and higher grade linguists corresponding to the terms 'translator' and 'interpreter', the former to be perhaps 65-75% of the total. Joint Services Schools for Linguists (JSSL) run by the Army were established at Bodmin in Cornwall from October 1951 to Easter 1956; at Coulsdon Common near Croydon from February 1952 to August 1954; and at Crail in Fife from Easter 1956 to March 1960.[5]

Evidence has been found of twenty-four intakes between 1951 and 1959. Bodmin and Coulsdon started by taking in 300-360 men at three points in the year, approximately 1 October, 1 February, 1 August, with roughly equal numbers from each Service. Among the national servicemen in these early courses there was also a scattering of RAF and a few Army regulars, amounting to as many as the twenty who passed the course at Bodmin in 1955, fifteen RAF and five Army students.[6] Owing to Treasury economies, the pace had to be slackened in 1954 when one intake was probably abandoned altogether and the intake size was reduced to about 100-150 until the summer of 1956. Following this, there was an intake of the original size at Crail in November 1956, but the levels fell again in 1957. The last five intakes, after the Navy had stopped sending men, were down to only about twenty-five men, a dozen or so each of soldiers and airmen.

The exact number of students sent to JSSLs has possibly not survived, but some estimates are available, starting with the 'upwards of 5,000' suggested by Elliott and Shukman.[7] The present author has used two different but broadly congruent methods to offer an alternative suggestion of rather more than 4,000. Tentative use of planning sources in The National Archives indicates 4,182, very close

*Students of the first (autumn 1951) intake at JSSL Bodmin; the instructor is Dani Bondarenko, a Ukrainian.* Courtesy of John Miller, at far left.

to the original target; whilst a combination of the more reliable of the figures in those sources and a consensus of student recollections leads to a figure of 4,270. Both of these numbers look exact, but they are nothing of the kind, yet both point to the conclusion that Elliott and Shukman's figure is much too high and 'about 4,200' is probably a better estimate.[8]

It is more important to say that the planning target was eventually reached before the abolition of national service would, in any case, have forced a different strategy on the Services. Had Crail closed two years before its demise in 1960, in terms of numbers it would have made little difference, but in terms of cost it would have supplied the Treasury with the best possible economy measure. In this late period Crail was also running Polish and Czech courses, but only for a handful of students.

Interpreter JSSLs were set up at the University of Cambridge, administered for service purposes by the RAF, and in the School of Slavonic and East European Studies (SSEES) in the University of London, administered by the Navy. Unlike the Service-run JSSLs,

however, they were run academically by civilians, Professor Elizabeth Hill at Cambridge and Dr George Bolsover as Principal of SSEES, with Ronald Hingley as the Course Director followed by Bryan Toms. In October 1951 these schools both took men straight from initial service training on to Course A lasting one year, followed by a military Russian course at Bodmin lasting about five months. For subsequent interpreter courses, men were selected at the first major progress test after 6-8 weeks of tuition in the Service-run JSSLs. Course T, which started in October 1957, was the last interpreter course.[9]

These courses have often been described as being superior to contemporary degree courses so far as linguistic knowledge was concerned, leaving aside the study of Russian history, literature and culture, although these aspects of Russian studies were by no means neglected. Oral proficiency was particularly high. At the end of their courses most interpreters obtained Civil Service Interpretership certificates. After that the Army probably sent most of their interpreters to the Intelligence Corps depot at Maresfield in Sussex to take the course on interrogation techniques. Some of them finished off their national service as privates in the units from which they had gone to JSSL, but at least one became a sergeant in the Intelligence Corps. In their 'spare time' up to demobilisation, some of the Navy's interpreters also went to Maresfield and/or on to a variety of jobs for a few weeks or months according to how long after call-up they had gone to JSSL. Some of these jobs were quite unrelated to their interpreter training. The scanty evidence available suggests that the RAF did not give their interpreters further training after the Civil Service exams, but were promoted to pilot officer on demobilisation.

The JSSLs were very successful despite tensions between the military commandants at the Service-run schools and the academic staff, especially in the early years. Many of the translators, who received all their language training at a service school, gained A Levels in Russian, frequently finding the language papers much easier than the service end-of-course exams.

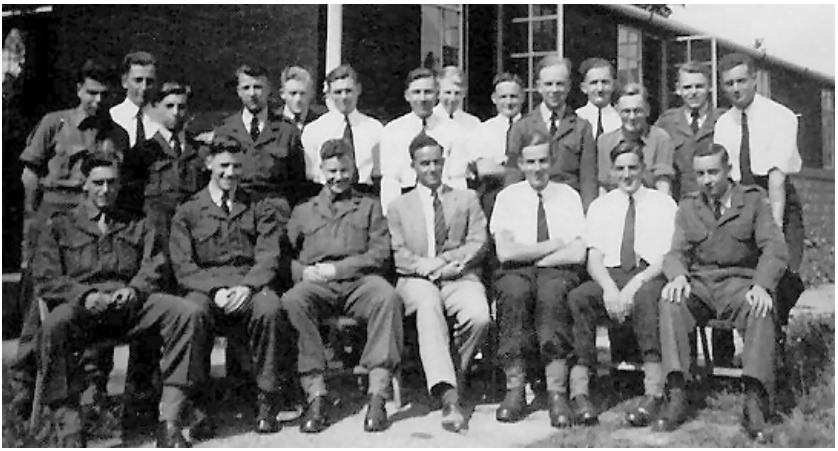
There was enough drop-out in the first three intakes to have caused the inter-Service committee to revise its target date. However, the overall drop-out rate on translator courses was probably below 5%, about level with university first degree rates in the same period.[10] The

*A tri-Service group of students at Coulsdon in 1953 with their Ukrainian instructor Oleg Kravchenko.* Courtesy of Laurie Fox, middle of front row.

interpreter courses were much more demanding, even allowing for the higher marks obtained by their entrants at the first major progress tests. Interpreter drop-out rates were substantial at first, for instance, seventeen out of sixty entrants to the London course in January 1953, but also appear to have improved over time, and the overall rate may not have exceeded 10%.

The success of the JSSLs might be ascribed to four main factors. First, the selection procedures, amateurish, haphazard and chaotic as they were, succeeded in finding among the mass of national servicemen a sufficient proportion of intelligent young men, usually with good linguistic qualifications at O Level or equivalent, but more often at A Level as well. Many were to go on to university after national service and a significant minority had already taken first degrees in various subjects before call-up.

Secondly, the high levels of enthusiasm for their work displayed by the many East European instructors were often combined with charisma acquired during their previous lives in Tsarist Russia or the Soviet Union. Typically, they were newcomers to Britain, but had



*Another tri-Service group at Coulsdon in1953; the civilian instructor is Mr Sandon. Army students are distinguishable by their dark (khaki) shirts, RAF and RN by pale ones but, anomalously, the Navy students are wearing Army-style gaiters on the orders of the Commandant, Lt-Col Black.* Courtesy of Bill Musker.

been jobless and dispirited and were willing to work for the mean rates of pay of temporary Civil Service posts. In the last three years or so of JSSL Crail, due to a decline in the numbers of students, there were more tutors than were needed. Some were therefore employed on creating, at a rate of one per week, JSSL's own texts in the form of duplicated booklets to replace the dated grammar books used before.[11]

Thirdly, their students responded with a keenness reinforced by a strong desire not to be returned to their units (in the case of the Army and RAF students) or to be re-categorised to another branch (in the case of the Navy students). They had looked forward somewhat miserably to a largely wasted two years, but instead found themselves being taken into an almost entirely unknown, exciting intellectual world. Frequent progress tests were also important incentives to do one's homework thoroughly.

Fourthly, but most importantly, inspirational leadership by Prof (later Dame) Elizabeth Hill is to be applauded. It was she who understood from pre-war experience at Cambridge the importance of oral practice. She also had enough contacts in the Russian and related diasporas to find appropriate instructors and possessed the

organisational skills to deploy them to the greatest advantage. In her 1945-46 courses she divided the students into classes of 25-30 in which they were taught by a relatively small number of British graduates in Russian studies combined with native Russian speakers or bi-linguists who had a good knowledge of grammar and perhaps some teaching experience.

An *equal* amount of time was spent in smaller groups of eight or nine students (sometimes less) led by fluent Russian speakers who, strictly speaking, were never supposed to address their groups in English. Reading aloud, question-and-answer work, dictation and written interpretership were all practised in the Service-run JSSLs, often complemented by singing, the recitation of poems and the telling of colourful stories from their former lives.

The Cambridge method was adopted to great advantage in all the JSSLs, with variations on the original according to local and personal circumstances. In particular the allocation of 50% of contact time to oral work was strikingly different from the usual way of teaching a foreign language at this time. There was healthy competition between the JSSLs at Cambridge and London, as SSEES had also acquired considerable expertise in its field. After the national service courses finished, interpreter courses for regular servicemen at defence establishments kept up the supply on a lesser scale for various languages. One such establishment is that opened at Beaconsfield (Bucks) in 1960, which later became known as the National Defence School of Languages and recently (2013) has been scaled down and has become part of the UK Defence Academy at Shrivenham.[12]

Translators who passed their courses were then trained for monitoring Soviet military radio traffic, mainly from locations in West Germany.[13] The Government Communications Headquarters trained the Army personnel, whilst the Navy personnel joined their RAF colleagues in secure accommodation at the Applied Languages School. Initially this was located at RAF Wythall near Birmingham, moving first to RAF Pucklechurch in Gloucestershire, later to RAF Tangmere in Sussex.

When JSSL Crail closed, at least some of its equipment and staff was transferred to Tangmere, where the unit was re-named the Joint Services Language School (JSLS). There regular personnel of the RAF and Navy received both their general language training and

*An RAF/RN group at Bodmin in 1954; the instructors, at front centre, are Brian Hawkins (left) and Josef Godlevski, Polish.* Courtesy of John Mitchell, extreme left second row.

related radio training. The RAF had been anticipating such a transition for at least a couple of years by encouraging or requiring those who volunteered for the JSSL courses to take three-year regular engagements instead of doing two year's national service.

**Note on sources for further research.**

As far as documentary sources are concerned, this writer has relied on files in the Admiralty collection at the National Archives: ADM 116/6331-6334, the only files identified as concerning the JSSLs. They run through the period 1949-54 with occasional obvious gaps, and leave the later years of JSSL without any coverage. Much of the material comprises minutes of inter-Service committees, which are also likely to have been deposited by the War Office and the Air Ministry, along with their internal papers on Russian language training. There may also be relevant documents under TNA/MOD and

TNA/JIC. Elliott and Shukman, *Secret Classroom*, pp.240-41, cited ADM 1/24711, but this collection is concerned with language training in the regular Navy for interpreters in a range of languages, as is the collection in ADM 1/23398.

For the other two Services Elliott and Shukman listed: WO32/16497 and 19673, and AIR 2/11395, 11994, 12599 and 13255; also DEFE 10/137 and 343 and for Civil Service Exam results CSC 10/4907, 4910, 4917, 4927 and 4940. There is a considerable collection of Prof Elizabeth Hill's papers in Cambridge University's Library under SLAV1; and the University of London's School of Slavonic and East European Studies has some records of their courses. The Brotherton Library at the University of Leeds has a Russian archive, which contains a JSSL section where Elliott and Shukman deposited the papers they collected in the course of writing their *Secret Classrooms.* Full use of the documentation would make possible, for example, a comprehensive inter-Service comparison, or a deeper assessment of this aspect of military planning in a period when the fledgling Ministry of Defence had to deal with three 'independent' Service ministries.

It goes almost without saying that the gathering of further recollections cannot go on for many more years as even the youngest students who went through the JSSLs are now at least well into their seventies (in 2013).

**Notes:**

[1] Aldrich, R J; *The Hidden Hand: Britain, America, and Cold War Secret Intelligence* (Woodstock and NY, 2002) and his *GCHQ. The Uncensored Story of Britain's Most Secret Intelligence Agency* (London, 2010) especially pp68, 100, 103, 107-8. Also Hennessy, Peter; *The Secret State: Whitehall and the Cold War* (London, 2002) Ch 1.

[2] Hill, Elizabeth; *In the Mind's Eye: the memoirs of Dame Elizabeth Hill* (Lewes, 1999) pp230-36; Muckle, James; *The Russian Language in Britain: a historical survey of learners and teachers* (Ilkeston, 2008) pp120-21. This is an excellent general survey, pp120-36 in particular, including further information on pre-JSSL initiatives. My thanks to Lesley Pitman, Librarian at SSEES, for the London data.

[3] Surviving minutes of this committee are in the National Archives at ADM116/6331-34. See also Cash, Tony and Gerrard, Mike; *The Coder Special Archive: the untold story of Naval national servicemen learning and using Russian during the Cold War* (Kingston-on-Thames, 2012 – available on-line) and Mills, Dennis R; 'Signals Intelligence and the Coder Special Branch of the Royal Navy in

the 1950s' in *Intelligence and National Security*, Vol. 26 (5), October 2011, pp639-55.

[4] Much information of this kind has come from about 100 former Russian linguists of all three Services and many different intakes, to whom the author is most indebted. Some of the RAF personnel are members of the RAF Linguists' Association, https://sites.google.com/site/raflingassociation/home-page

[5] On Crail see Boiling, Graham; *Secret Students on Parade: Cold War Memories of JSSL* (Crail, 2005). On Coulsdon see Berrill, Maurice; **'**Moscow in Surrey**:** Recollections of Coulsdon Common Camp and the not-so-secret classrooms of the Joint Services School for Linguists' in *Local History Records* (journal of the Bourne Society) Vol 68, August 2011, pp2-15 and Mills, Dennis R; 'The training of linguists for war, Coulsdon, 1952-54' also in *Local History Records*, Pt I in Vol 73, November 2012, pp3-13 and Pt II in Vol 74, February 2013, pp3-12. No comparable account has been found in print about JSSL Bodmin, but John Miller included his own recollections of being in the first intake there and of subsequent intelligence work in the War Office in a book that is mainly about his life as a journalist in Moscow over many years: *All Them Cornfields and Ballet in the Evening* (Kingston-upon-Thames, 2010 – available online).

[6] Information from Martin Higgins, RAF.

[7] Elliott, G and Shukman, H; *Secret Classrooms: a Memoir of the Cold War*, (London, two editions, 2002, 2003) p42 of the second edition.

[8] These figures relate only to students taking the Russian courses. There was also a handful of students in the later days of JSSL, Crail taking courses in Czech or Polish. It is much more important to note the initiative by the Air Ministry to set up courses in Chinese, mostly attended by RAF national servicemen. They were held in secure accommodation at the Applied Languages School, later known as the JSLS, which is mentioned below. The numbers per course were mostly between 20 and 40, almost 300 in total. See Hunt, R, Russell, G and Scott, K; *Mandarin Blue. RAF Chinese Linguists - 1951 to 1962 – in the Cold War* (Oxford, 2008).

[9] The interpreter courses, especially from the perspective of the Army and RAF students, have been well described by Elliott and Shukman in *Secret Classrooms.*

[10] Some problems at Coulsdon were recorded on pp.216-17 in MacDonell, Donald; *From Dogfight to Diplomacy: a Spitfire pilot's log, 1932-58*, edited by Lois MacDonell and Anne Mackay, (Barnsley, 2005). MacDonell's remarks about poor teaching and high drop-out support the recollections of some Navy students of the August 1952 intake. This book is the only memoir of a JSSL principal so far found.

[11] Information from Geoff Phillips, a Navy student in the February 1957 intake.

[12] Muckle, *Russian Language in Britain*, pp178-81 and Hurst, Roy in *Frinton Signal*, No 158, October 2013, p5 (*Frinton Signal* is the newsletter of the Former Russian Interpreters in the Royal Navy).

[13] See: for the Army, Jeremy Wheeler's History project on www.langeleben.co.uk (Ch 10): for the RAF, Woodhead, Leslie, *My Life as a Spy* (London, 2005) and for the Navy, Mills, Dennis; 'One third of us might have been Wrens', *East-West Review* (journal of the GB-Russia Society), Vol 11 (2), 2012, pp5-9.

# MANNA FROM HEAVEN
## Development of aerial re-supply by the Royal Air Force and Indian Army in India and Burma 1942-1943

**by Gerald A White Jr**

This paper is derived from one presented at the Annual Meeting of the Southern Conference on British Studies at St Louis, MO on 1 November 2013.

How do you supply an army fighting through impenetrable jungles with mountains and extreme weather but no roads, no railroads and no navigable rivers to use as supply routes? In northern Burma during 1942 and ‘43, a new method of supply was created. This paper discusses early development of aerial resupply during WW II by the Royal Air Force and British Indian Army. This experience resulted in a dichotomy, with ground combat troops fighting under the most primitive of conditions supplied by a way of war so new that equipment was being developed and processes tested and perfected almost literally on the fly.

WW II changed much of what we understood about war. One aspect of great change was how military forces were supplied. For thousands of years, animal transport moved military supplies on their backs or pulling carts and wagons until augmented by railroads and later, motor transport. As modern weaponry and other equipment was added to the field force’s arsenal, logistic tails grew longer and larger. The advent of aviation created a new way of war not limited by geographical barriers or transportation networks, potentially relegating major portions of the logistic support infrastructure to well behind active combat zones.

Military logistics has a number of definitions but is, in essence, delivering munitions, rations and everything else the warfighter needs for battle into his hands at the right time. The geography of the Burma campaign, both physical and political, came together with improvements in aviation to drive development of aerial resupply to a scale not seen in other theatres of the global war. Aerial resupply, or supply dropping as it was known there, relieved combat formations of much of their logistic train, permitting almost instant resupply of *actual* requirements versus troops having to carry what *might* be

*Despatcher preparing to release a load from a Dakota in SEAC.*

needed, thereby significantly reducing force size and increasing mobility. In a July 1944 message to 'Hap' Arnold, Commanding General US Army Air Forces, Admiral Lord Louis Mountbatten, SACSEA, made this point stating, 'Perhaps in no other theatre of war are logistic conditions so difficult. Operations this coming dry season will be strongly influenced – in fact, the degree of success will be determined – by our ability to manoeuvre by air certain elements of our ground forces and then to supply them. Failure to do so would sacrifice our air supremacy and involve us in jungle warfare conducted at the unacceptable tempo of the ox cart.'[1]

Aerial supply had several aspects; air-land, where an aircraft lands and is manually unloaded or, as addressed in this paper, delivering supplies from aircraft by free fall or parachute. Supply dropping

involved a complex series of processes and events from positioning supplies at airfields, properly packing them in sacks or containers, with or without packed parachutes and loading them onto aeroplanes while ensuring that each of these consignments was properly matched to the units that needed them. Once airborne, the crew, flying over jungle and mountains, needed to locate the drop zone and authenticate the proper recipient, before authorising the air despatchers in the cabin to push the containers out of the door at the appropriate release point. Not only did this procedure require new flying units with specialised skill sets but also specialised logistic organisations to package supplies together with specialised delivery equipment. These requirements competed with other Army and RAF necessities in a significantly resource-constrained environment, given the low priority afforded to the India-Burma theatre.

Many air forces, including the RAF, experimented with aerial resupply from early in the aviation age and it became part of the RAF's army co-operation task set. It was tested, primarily in, what is now, Iraq when the RAF assumed command of that region after WW I and codified in 1932 when the Air Ministry published *The Royal Air Force Manual of Army Co-operation.* [2]

Prior to WW II, supply dropping capabilities were very limited with few aircraft of the inter-war period having the payload or range to support more than reconnaissance patrols. As an Indian Army staff officer in the 1930s, Major William Slim (later to command the 14th Army as a lieutenant-general, 1942-45) took part in experiments in air supply involving Indian Army and RAF units along India's North West Frontier.[3] As an example, the Operations Record Book for No 31 Sqn, then flying in the army co-operation role, shows them practising supply dropping, eg in exercises conducted in November/December 1933.[4] Other sources record supply dropping being employed in several campaigns in the tribal areas of what is now Pakistan in 1935-37.[5] More research is needed to better understand the equipment, procedures and tactics used and the extent to which these influenced later capabilities. At some point, the Royal Indian Army Service Corps (RIASC) developed what proved to be a very useful air supply function (another topic worthy of further investigation) as it constituted a ready source of equipment and trained personnel when supply dropping operations began in Burma in early 1942.[6]

Burma was administered from the mid-1800s as a province of India until 1937 when it was reconstituted as a separate colony with Rangoon as its capital. Most commerce was along the coast and up the Irrawaddy, Chindwin, Sittang and Salween river valleys. The internal road and rail network was modest at best. The most important route was the Burma Road, which served as Nationalist China's main link with the rest of the world once the Japanese had occupied all the significant ports on the Pacific coast. Between India and Burma, there were only unimproved tracks running through almost impenetrable mountains and jungles, most pre-war external commerce being conducted by boat.

Among the steps taken by the British and Dutch to reinforce their Asian possessions during the late 1930s was the establishment of a British-officered Burmese army but this project was far from complete when the Japanese struck in December 1941. When the Imperial Japanese Army swept through Southeast Asia after Pearl Harbor, the Burma Corps was ejected from Rangoon and retreated up the various river valleys.

While all of lower Burma was taken by the Japanese during 1942, some areas of northern Burma remained in British hands and it was decided to hold the Fort Hertz area, to serve as a springboard from which to retake Burma and to protect the incipient airlift to China mounted by the USAAF in response to the Japanese closure of the Burma Road.[7] America's role in this area is not addressed in this paper, although it was significant and grew considerably between early 1942 and 1945. The northern Burma region became a major focus of No 31 Sqn's operations and its activities were followed closely by senior commanders.[8]

The RAF in India (which included what is now Pakistan and Bangladesh) initially consisted of six squadrons of obsolescent aircraft and the first squadron of the Indian Air Force, all under the tactical control of, and funded by, Delhi. In 1939 No 31 Sqn's role was changed from army co-operation to bomber-transport when it traded-in its single-engined open-cockpit Westland Wapiti biplanes for twin-engined open-cockpit Vickers Valentia biplanes. The squadron flew its Valentias, an only slightly updated version of the Vimy of WW I, throughout its early operations in Iraq and the Middle East in 1941.[9]

When operations moved to Burma, the squadron began to re-equip

with Douglas DC-2s purchased, donated or impressed from a variety of sources, but these civil airliners were not designed for the usage that they were about to receive. Over the next fourteen months, the DC-2s were flown far more intensively and under much harsher conditions than its designers had ever envisioned. While the contribution made by the DC-2 was vital it had been at best a stop-gap solution as they had a useful payload of only 1,500-2,500 lbs and a relatively short range.[10]

By mid-April 1942, the first DC-3s had entered service, also purchased or obtained second-hand from commercial sources. These aircraft provided significantly increased range and capacity and, like the DC-2s, they too were flown hard, several being lost in action, including two destroyed during the Japanese bombing of Myitkina during the evacuation.[11] The first C-53, a passenger-type DC-3 produced for the USAAF and passed to the RAF, arrived for service on 29 June 1942 and the first C-47s, known by the RAF as Dakotas, arrived in March 1943.[12] Dakotas rapidly became the standard aircraft operated by most RAF transport squadrons with over 1,900 being supplied to the RAF through the Lend Lease programme.[13]

A word about this unique aircraft, for many years possibly the most famous aeroplane in the world. The DC-1 was a one-off prototype passenger aircraft introduced in 1933. From the test programme came the 14-passenger DC-2 which entered airline service in May 1934. While an early success, only 198 were built as it was soon replaced by the DC-3. A larger aircraft carrying up to 28 passengers, the DC-3 first flew in mid-1936 and about 600 were already in service or on order when WW II started. Designed as an airliner, the exit was at the rear, which, as discussed below, was not ideal for the delivery of supplies by parachute. The USAAF adapted some DC-2s and DC-3s for military use, and ordered a version of the DC-3 modified for the carriage of both paratroops and cargo as the C-47. With an enlarged cabin door, a wooden floor, bucket seats down both sides seating 28 troops and the tail equipped with a fitting for towing gliders, along with other mission specific alterations, the first C-47s rolled off the production line in December 1941. Rugged and reliable, more than 10,000 C-47s were delivered over the next four years and they served in every theatre.

When war arrived on India's doorstep in 1942, the RAF was not in

*One of No 31 Sqn's Dakotas (strictly speaking a DC-3, LR231) evacuating personnel from Myitkyina in 1942.*

good shape. Having been engaged with the enemy in Europe and the Middle East/North Africa since 1939, the resources needed to expand and modernise the air force in the Far East were scarce. The few RAF units despatched as reinforcements had been defeated with significant losses by early 1942. Those men who managed to survive the fall of Burma withdrew to India, mostly on foot, many with nothing more than the clothes on their backs. There was not much of an air force to greet them when they got there. Small and woefully under-equipped – when Air Marshal Sir Richard Peirse arrived in New Delhi on 2 March 1942 to take command, his Headquarters consisted of just 30 men – the RAF in India was still primarily concerned with the North West Frontier, although it had begun to raise a coastal defence force and had started to shift its focus towards the threat from the east.[14]

In December 1941, 31 Squadron started flying two DC-2s into Burma, delivering supplies and evacuating personnel, until Rangoon was attacked on 23 December.[15] Once the airfield at Myitkyina had been lost, airdropping supplies to the refugees streaming north became one of the squadron's primary tasks, the first drops being made on 9 May 1942.[16] In addition to shortages of aircraft, trained crews, spare parts and tools and opposed by the Imperial Japanese Air Force, supply dropping crews also had to contend with rugged terrain and monsoon rains. Normally running from mid-May to September, 1942's monsoon season had started in late-April, with clouds, wind and rain adding an extra level of complexity and difficulty to this new task.[17] Although some sorties were obliged to turn back, 31 Squadron

dropped on every day that weather and supplies permitted. The unit's history does not differentiate between free-fall and parachute deliveries, but most refugee supplies consisted of rice and other foodstuffs that could be double- or triple-bagged and dropped without parachutes.[18] Overall, between 21 May and 31 December 1942, the squadron flew 1,863 operational hours, dropping almost 1.4 million pounds of supplies.[19]

Early on, the flexibility and responsiveness of air supply had been noted by the staff at HQ IV Corps resulting in a letter to RAF Dinjan, discussing the supply situation in the Chin Hills region, which noted:

> 'Our calculations from here show that to send Rs [*Rupees*] 48,000 and 10,000 lbs of rice, etc., to TIDDIM by mule with an escort of one [*platoon*] will take 250 mules, of which 160 mules are required for food for themselves and the escort, and even then we have not reached either PALAM or HAKA where the need is greatest, and it could not reach them for a month thereafter.'

By comparison, the flying time from airfields in East Bengal was less than 2 hours each way and would require no more than three aircraft to deliver the same quantity of supplies.[20]

As noted above, the DC-3 was not ideal for this type of work, the combination of a small door and small drop zones, often requiring multiple passes to deliver a full load, increasing the likelihood of both the aeroplane and the receiving unit being engaged by the enemy. A fully loaded C-47 carried up to 7,500 lbs of supplies packaged in multiple bags or containers, distributed along the centre line of the hold. For aerial delivery, they were pushed towards the back and out of the door – all in one go with a large drop zone but in separate batches with a small one. Air despatch involved considerable physical effort, often while the aircraft was being bounced around by thermal updrafts or while evading enemy gunfire.

Parachute delivery brought its own hazards as they could catch on and/or damage the aircraft's tail. A variety of experimental bundles were tested by No 31 Sqn on numerous occasions with mixed results.[21] As the principle unit engaged in the early days, the squadron's personnel became the acknowledged experts and they often suggested changes that might improve efficiency. In a May 1943 letter to Air HQ Bengal, for instance, OC 31 Sqn recommended that,

to avoid damage to the tail, a hole might be cut in the floor to permit bundles to be dropped directly rather than using the door.[22] This proposal was not implemented.

While 'on-the-job training' and experimentation in the field were still the order of the day in 1942, as early as 22 September 1941 the RAF had opened an Air Landing School at Chaklala near Rawalpindi.[23] At the same time, an Experimental Section, later the Technical Developments Section, was established to devise and test aerial resupply equipment and procedures but the unit lacked access to the workshops, equipment and aircraft needed to create, modify and test aerial delivery packaging.[24] By December 1942, the RAF's first Air Supply Company was in training at Chaklala with more to follow as the RAF had assumed responsibility from the Army in mid-1942 for managing containers and parachutes and packing them for airdrop.[25] [26] In December 1942, Air HQ India published *Notes on Supply By Air*, a 30-page booklet describing the equipment and procedures involved in the packing of different kinds of containers and their delivery by air dropping.[27]

While 1942 had been characterised by retreat followed by the creation of an air supply capability, 1943 saw the start, albeit limited in scope, of offensive operations during which the concept of aerial resupply was validated. The mission was to retake Burma but, since military and political factors made an amphibious assault via the Bay of Bengal impractical, the only option was a land campaign over the mountains and through the jungles that lay between India and Burma.

Orde Wingate was an unorthodox Royal Artillery officer who persuaded the Indian Army leadership to authorise Operation LONGCLOTH, an expedition behind enemy lines in Burma. Wingate's 77th Brigade, better known as the Chindits, marched into Burma in February 1943 with seven columns, each with 300 men and 100 mules. Despite problems and setbacks, they created confusion and uncertainty among the Japanese, with results considered successful enough to justify further operations.[28] Chindit mobility was based in part on aerial resupply by No 31 Sqn dropping rations and other material to minimise what Wingate's columns had to carry – Operation VICKI, which began on 24 February 1943.[29]

A limiting factor in providing aerial resupply at this time was the scarcity of aircraft, British production being confined almost

*Parachutes falling into a difficult-to-find DZ embedded in typical jungle covered mountainous Burmese terrain.*

exclusively to combat types.[30] The USA, therefore, became the default provider of transport aircraft, meeting the UK's global requirements as well as its own, but with America's relatively late entry into the war, the build-up was slow.[31]

Another limitation was the Indian Army's having established 50 Parachute Brigade in October 1941. By October 1943, two of the, by then, four transport squadrons in India were training with the Parachute Brigade rather than flying resupply missions to support operations in Burma.[32] As only one battalion-size parachute operation was executed in Burma, and that very late in the war, it may be asked whether this had been an effective use of resources as the diversion of air transport assets may have precluded other options that might have

*ADakota of No 436 Sqn in India.*

hastened Burma's liberation – another topic worthy of further study.

The last aspect of air supply to be addressed by this paper is the massive requirement for both parachutes and containers. India was at the end of a long and fragile shipping pipeline while the level of local industrialisation was such that parachutes, containers, straps, buckles, etc were items that could not, at least initially, be produced in either the quality or the quantity required. Even with new American and Canadian production coming on line by the end of 1943, the Combined Joint Chiefs of Staff had to balance requests for imported supplies, especially parachutes, against the needs of other theatres, including the large scale airborne assault on Sicily and the eventual landings in Normandy. In the fullness of time, Indian domestic production was increased to meet local demand and in January 1944 alone, 61,000 18-foot diameter cotton cargo parachutes were produced, compared to only 35,000 in the previous October. Also being tested was a cargo parachute made from jute cloth (hessian). While not as effective as cotton parachutes, it was locally made from indigenous materials, as were bags also made of jute cloth.[33] Many basket-type containers were locally produced in villages around the airfields in East Bengal. Until fairly late in the war, parachutes were seldom recovered, salvaged or reused.[34]

Even before the successful defence of Imphal and Kohima in early 1944, where victory had hinged on massive aerial resupply, offensive operations planned for Burma in 1944 and 1945 greatly increased the anticipated requirement for Indian parachute production in 1943 involving, for example, a demand for an additional 200,000 yards of high-grade Indian cotton per month. This proposal was opposed by the

Viceroy, Sir Archibald Wavell, who was greatly concerned over the potential impact on the domestic economy.[35] Furthermore, while beyond the scope of this paper, there can be little doubt that the growing independence movement and other economic factors, will have had an impact on the way in which India perceived its participation in the war and the manner in which it responded to its demands.

To summarise, the art and science of supply dropping in India and Burma advanced significantly during 1942 and 1943. At the beginning of 1944, equipment, techniques and organisational changes were still evolving and the necessary equipment still needed to be significantly improved and production increased. The additional squadrons and associated units that would be needed to support the British and American ground forces preparing for the major operations planned for 1944 and 1945 were still being formed and trained but it had been accepted that Allied success would be critically dependent on supply dropping. Further research would shed more light on the way in which this entirely new mode of combat logistic support continued to develop and contribute to the ultimate success of the campaign in Burma.

**Notes:**

1 Message 081025 July 1944 from Adm Mountbatten to Gen Marshall and Gen Arnold. Record Group 338, India Burma Theatre-Records of the Adjutant General, Formerly Classified Messages, Box 410, File Pacific-IBT AG Section ComCarSq, [US] National Archives, College Park, MD.

2 Richards, Clive'; ''Undiluted Nonsense?'; The Royal Air Force in the Army Cooperation Role, 1919-1940' in *Journal of the Royal Air Force Historical* Society. No 54, pp36-66. See also Cole, Christopher and Grant, Roderick; *But Not In Anger: The RAF in the Transport Role* (Shepperton, 1979).

3 Lewin, Ronald; *Slim: The Standard Bearer, A Biography of Field-Marshal The Viscount Slim* (London, 1976) p 54.

4 TNA AIR 27/351; F540 for No 31 Sqn 1928-43, p11.

5 Mathews, Matt M; *An Ever Present Danger: A Concise History of British Military Operations on the North-West Frontier, 1849-1947* (Combat Studies Institute Press, Fort Leavenworth, KS, June 2010) pp57-61.

6 TNA AIR23/2022; see multiple messages in file, *Supply Dropping – Requests for and Operational Orders*', see, for instance, E 9, a letter, 65/A/Q4 of 4 May 1942 from QMG's Branch, New Delhi to HQ Eastern Army, Ranchi.

[7] *RAF Narrative (First Draft): The Campaigns in the Far East, Vol V, Air Supply Operations in Burma, 1942-1945*; unpublished Air Historical Branch manuscript, 1949.

[8] TNA AIR 23/5153; see E11A, a memo, dated 1 December 1942, from Air HQ Bengal to OC 31 Sqn Detachment.

[9] TNA AIR 27/351-356; F540s for No 31 Sqn 1928-45 and Franks, Norman L R; *First in the Indian Skies* (Lincoln, 1981).

[10] TNA AIR 27/351; F540 for No 31 Sqn 1928-43, p45. See also TNA AIR 27/356; Appendices to F540 for No 31 Sqn – specifically letter 'Deployment of Transport Aircraft' dated 20 April 1942 to Air HQ India at p3 and response of 23 April at p4.

[11] TNA AIR 27/351, p 45.

[12] *Ibid*, pp 30-31.

[13] http://www.raf.mod.uk/history/TheDakota.cfm

[14] Probert, Air Commodore Henry, *The Forgotten Air Force: The Royal Air Force in the War Against Japan, 1941-1945* (London, 1995) p108. For a first person narrative, see Russell, Wing Commander Wilfred W; *Forgotten Skies: The Air Force in India and Burma* (London, 1945).

[15] The precise date on which this shuttle service began is obscure as No 31 Sqn's ORB (TNA AIR 27/351) lacked daily entries prior to 1 April 1942. See also *RAF Narrative (First Draft): The Campaigns in the Far East, Vol V*.

[16] TNA AIR 23/2022; see entire file *Supply Dropping – Requests For And Operational Orders* (1942-43).

[17] TNA AIR 27/351; crews were reporting bad weather by 23 April 1942 and almost daily thereafter with some sorties recorded as unsuccessful or cancelled. See also Chapter 1 of *Wings of the Phoenix – The Official Story of the Air War in Burma* (HMSO, London, 1949).

[18] *Ibid*. On numerous occasions in the early days of the evacuation No 31 Sqn recorded that no supplies were available for dropping and a shortage of hessian bags on 14 May. See also TNA AIR 23/2870; letter of 25 March 1944 at E6/6A from Wg Cdr W H Burbury, OC 31 Sqn, to Wg Cdr D I C Eyers, Air HQ ACSEA, covering paper, 'Supply Dropping, India Command, 1942-1944'.

[19] TNA AIR 23/1918; 'Report Covering 31 Squadron's Operational Activities (period May 21st to December 31st 1942)'. Part F records the delivery of 1,385,729 lbs but this does not include drops made between 9 and 20 May.

[20] TNA AIR 23/2022; see E77, a letter of 14 June 1942 from Brig E T L Gurdon, HQ IV Corps to Gp Capt Roberts, RAF Dinjan via Air HQ Bengal. See also TNA AIR 27/351 which records, for example, a crew delivering Rs30,000 on 23 October in 3 hrs 5 min flying time.

[21] TNA AIR 27/351; see, for example, entries for 20 December 1942 and 10 March 1943.

[22] TNA AIR 27/356; see Appendix F, a letter (for the attention of AOC at his personal request) entitled 'Damage to supply dropping aircraft' dated 28 May 1943 from No 31 Sqn, Kharagpur to Air HQ Bengal.

[23] TNA AIR 23/5386; 'Report on The Air Landing School, Chaklala, India, 22 Mar 1943' by Wg Cdr M A Newnham.

[24] TNA AIR 23/5153; memo, at E15A, by Wg Cdr Wollett dated 21 November 1942 covering the 'Minutes of a Conference on Supply of 'X' Type Parachutes, Large Packs and Containers' held the previous day.

[25] *Ibid*; on Air Supply Companies, see Directorate of Army-Air Liaison memo of 30 December 1942 at E22A.

[26] WO 203/3714; on the shift of responsibility for storing and maintaining supply dropping equipment from the Army to the RAF, see specifically E75, a letter of 8 August 1944 from Principal Administrative Officer (PAO), GHQ India to PAO, SEAC, responding to a proposed change in arrangements for dealing with supply dropping equipment; much of this file concerns the proposal to transfer this function back to the Army

[27] A copy of *Notes On Supply By Air*, is available at Maxwell Air Force Base, Alabama, at: USAAF, China-Burma-India Documents, Administrative History Files, Vol 3, 12 Feb 1942–15 Dec 43.

[28] Rooney, David; *Wingate and the Chindits: Redressing the Balance* (London, 1994) Ch 5 and Royle, Trevor; *Orde Wingate: Irregular Soldier* (London, 1995) Ch 11.

[29] TNA AIR 27/351, p102 *et seq*.

[30] While the RAF had numerous small transports aircraft, it had nothing the size and utility of the Dakota. Avro eventually developed the Lancaster-derived York but only 41 of these had been delivered by the end of 1944.

[31] Wynn, Humphrey; *Forged in War: A History of Royal Air Force Transport Command 1943-1967* (HMSO, London, 1996) Ch 1.

[32] TNA AIR 23/5153; letter, 'Transportation of Frozen Meats and Fresh Supplies', of circa 17 October 1943, at E69A, from AOCinC Air Forces in India to the CinC, India.

[33] TNA WO 203/3712; HQ SACSEA file 'Parachutes: test on jute and hessian productions'.

[34] TNA WO 203/4712; HQ SACSEA Paper (44) 126, 'Recovery and Repair of Supply Dropping Equipment' dated 15 March 1944.

[35] *Ibid*. Note, dated 20 November 1943, from Adm Mountbatten to Lord Wavell, responding to Wavell's letter of the 14th, regarding supply of India-produced parachutes, and related correspondence arising from an India Command Chief of Staff Committee Meeting held on the 4th.

## IN MEMORIAM – JACK DUNHAM

Sadly, I have to record that Jack Dunham passed away on 8 February 2014. His funeral was held at Westerleigh Crematorium, near Bristol, on 22 February.

Jack had been a stalwart member of this Society and was far and away the longest-serving member of its Executive Committee having been our Membership Secretary since 1993. His interest in the RAF began in 1940 when, as a 15 year old, he was influenced by an uncle who had joined the Service earlier as a Boy Entrant. Having spent the war as a member of the Air Training Corps, Jack was called up just as it was coming to an end. Having previously completed a Teacher Training College course, he became a Physical Training Instructor on the staff at RAF Chessington, then the RAF's major Medical Rehabilitation Unit, dealing mainly with junior ranks. While there he developed a life-long interest in the effects of both physical and psychiatric injuries, in essence, what made people tick, especially when under stress, which led to his future career as an educational psychologist.

In 1966, Jack became a founder member of the new Bath University as Senior Research Fellow and Lecturer in Social Psychology and stayed at the University until 1983 by which time he had earned a PhD. He then contributed to and edited a major publication 'Stress in Teachers: Past, Present and Future'. By the late 1980s, Jack had become a nationally recognised expert in the field of stress management in the aircraft industry and in education. But his interest in the RAF never faded and his involvement with the Society brought him into contact with all manner of folk, most, but not all, of them ex-servicemen, including some very senior air force officers, many of whom had extraordinary stories to tell.

He will, of course, be mourned by his family, but I and my Committee will also miss his guidance and the invaluable contribution that he made to the administration of our Society.

**Nigel Baldwin**

## BOOK REVIEWS

**Note that the prices given below are those quoted by the publishers. In most cases a better deal can be obtained by buying on-line.**

**SIGINT: the Secret History of the Signals Intelligence 1914-45**, by Peter Matthews. The History Press, 2013. £18.99

The title of this book covers a very wide field, but it should perhaps have been more specific because the narrative focuses primarily on the organisation and achievements of the various elements of German Signals Intelligence and, in that context, tells the other sides of the story, those of Admiralty Room 40 during WW I and of Bletchley Park and Room 39 in WW II. As such it is a useful addition to the literature.

Chapter 2 addresses 'Intelligent Warfare' and, whereas this is a very general discussion, there are errors of fact which may disturb an informed reader. For example, there is (at p43) an interesting quotation attributed to Montgomery's Chief Intelligence Officer in the Western Desert, saying that, 'Military Intelligence is always out of date.' In the light of the huge volume of ENIGMA-based intelligence that was available to Montgomery, that quotation begs the premise that signals intelligence can and does provide a commander with knowledge of enemy intentions, as is later noted at p156. Chapter 2 makes a very fair point about the use, or the disregard, of intelligence and the subsequent consequences for commanders and politicians. I feel that Matthews is wrong to say that ELINT covers the jamming of enemy missile control systems.

Chapters 4 to 7 describe the development of German signals intelligence during WW I. There are several very interesting case studies based on specific air, land and sea battles, which illuminate the use of signals intercept in different scenarios and the ways in which commanders made use of that information. I found the chapter on the War at Sea particularly interesting. There is also an overview of the infamous Zimmermann telegrams which led to the USA declaring war on Germany on 6 April 1917; those telegrams were variously acquired or intercepted and then decrypted by the Admiralty staff in Room 40. All of this is instructive and readable, but it begs questions as to verification which could have been resolved by clarification in

footnotes.

Chapter 8, which is headed 'The Inter-War Years', largely addresses the work of the post-WW II Target Intelligence Committee (TICOM). The analysis of TICOM's activities makes good reading but it would have been better placed after the chapters on WW II. There is also direct reference to a publication, entitled *War Secrets in the Ether*, by Wilhelm Flicke who had a remarkable career in German signals intercept and intelligence spanning both WW I and WW II. Matthews met Flicke and he acknowledges (at p132) that he drew heavily on his book for information on the German signals intelligence service. Since that was the case, why was it not included in the bibliography? Flicke's book is quite hard to find (and very expensive) but I commend it to any reader who seeks more detail. Another curious omission is that of *British Intelligence in World War Two* by Hinsley and others.

Chapters 9, 10 and 11 address WW II. I found myself questioning the assertion (on p152) that Hitler ordered the invasion of Norway because of the *Altmark* incident. The original instruction to prepare for the Norwegian Operation was issued by Hitler on 14 December 1939 after a meeting with Quisling. The order to commence the operation on 9 April 1940 was actually given in the light of the German signals intelligence assessment of the disposition of Royal Navy forces – at this stage of the war the Germans were easily winning the intelligence battle. Another assertion (on p156) is that the breaking of the German Air Force RED Key by Bletchley Park on 22 May 1940 was the first step along the road of ULTRA; but that 'first step' had actually been taken in January by the Admiralty working in conjunction with Bletchley Park. Factual errors of this kind may exasperate some readers who may then question other details.

As a point of interest, the author discusses (at p180) the case of Colonel Fellers, the US Military Attaché to the British Army HQ in Cairo. Fellers was a complete Anglophobe who unwittingly compromised a huge amount of information about the British Army; he was unaware that the Germans had a copy of the American Black Code Book and that they were reading all of his messages back to Washington between July 1941 and June 1942.

An issue that bothered me was the extent (or not) to which the bulk of the narrative addressing WW II was based on a single source of

information – Wilhelm Flicke. I believe that any book of this nature which seeks to enlighten the reader, should be underpinned by footnotes which cite the sources from which quotations and other key facts have been drawn. This one lacks footnotes and the bibliography is surprisingly short; just nineteen published books and eleven aggregate sources, such as the Imperial War Museum and the internet. I was therefore, less than comfortable having to accept the many unsupported facts and assertions that this book contains and I suspect that others may feel the same way.

Many potential readers, even within the RAF Historical Society, will probably have a relatively limited awareness of the extent of signals intelligence in general and of German signals intelligence in particular. However, and this is a big 'however', if the reader were looking for a general overview of what was a massive subject, covering more than thirty years and two world wars, then this book might be a good place to start. That said, I think that anyone who already has a sound grounding in this field will be less satisfied.

**Wg Cdr John Stubbington**

**RAF Labuan – Borneo** by David Bale. The Book Guild; 2014. £8.99.

Labuan is a small (35 sq ml) island which lies a few miles off the NW coast of Sabah – British North Borneo as was. This 220-page softback begins with a short summary of the colonial history of the island, which began in 1846. This is followed by an account of various aspects of WW II: the Japanese occupation; the fate of internees and POWs; the opposed landings by Australian forces in June 1945 – there are 500 Australian servicemen who died between June and August 1945 buried in Labuan Military Cemetery; the subsequent RAAF airfield construction programme; the arrival and subsequent operations of Kittyhawks, Spitfires, Beaufighters and Mosquitos. The Australians withdrew in the spring of 1946, most being repatriated although one squadron, by now equipped with Mustangs, moved to Japan to join the British Commonwealth Occupation Force.

The first RAF contingent arrived on 12 January 1946 and soon assumed responsibility for running the airfield and handling Singapore-based flying boats. For most of the next fifteen years Labuan was a relatively low-key staging post, turning round transient RAF Sunderlands, Dakotas and, later, Valettas, RAAF aeroplanes en

route to Butterworth and the occasional USAF or USN aircraft. From time to time it also hosted Mosquitos engaged on No 81 Sqn's interminable task of attempting to complete an aerial survey of Borneo. There was a gradual increase in civil aviation too with Qantas, Garuda, Air France and, of course, Malayan Airways, all making use of the facilities. Of particular interest is an eighteen-page chapter devoted to the circumstances of the loss of Shackleton VP254 in the South China Sea in 1958 – a tale that has been told before, but well worth telling again.

The place was suddenly transformed in December 1962 when it became the airhead for the forces deployed to suppress an attempted revolution in Brunei. This operation soon morphed into the 'Confrontation' with Indonesia which kept Labuan very busy until 1966. From a typical 'pre-war' establishment of a flight lieutenant CO and about forty NCOs and airmen handling perhaps 100 movements per month, by 1965 the CO was a wing commander and there were some thirty officers and 600 non-commissioned personnel on the ration strength handling more than 2,500 movements per month. By this time, in addition to supporting the operations of the likes of Hastings, Argosys, Beverleys, Shackletons, Single and Twin Pioneers, sundry helicopters and Canberras (No 81 Sqn still trying to complete the Borneo survey), the facilities now included a surveillance radar deployed to maintain an ADIZ which was policed by resident Hunters and Javelins. Confrontation ended in August 1966 and Labuan promptly became the focus for the withdrawal of the British forces in Brunei and Sabah. By 1968 the RAF had gone, having handed the airfield over to the RMAF who had first begun to operate from Labuan as early as 1963.

The account of the pre-RAF period flows easily enough but thereafter there are some longeurs when, in the absence of any other sources, the author has fallen back on extracting tit bits from the F540 and/or from correspondence with veterans and presented them as isolated facts, with no real attempt to link them into a narrative. Thus, for instance, we have 'John Stacey, an SAC engine mechanic worked throughout his tour on helicopters of 103 and 110 Squadrons.' That's it. There is no amplification, no context – just a random statement. When this occurs the staccato delivery of raw information makes the book a little uncomfortable to read, although the facts are, of course,

interesting in themselves. There are some 125 monochrome photographs, mostly of aeroplanes, many of them taken by men who served at Labuan. Sadly, whoever laid out the pages decided to reduce most of the pictures to much less than full page width – which is a bit of a shame as many of the pictures will not have been published before. As an aside, the 'Kittyhawk' on p45 is a Spitfire and of three pictures captioned as being of US Navy R4D-8s, only one is actually a 'Dash-8' model, the others being conventional R4Ds, rather than the very different 'Super DC-3'.

These criticisms aside, there is much to enjoy in this book and the rather unstructured intervals are enlivened whenever the author is able to use anecdotes provided by those who were there. He is able to do this quite frequently and these inserts, which provide a good feel for what life was like on the island at various times, are particularly valuable as most have been contributed by airmen rather than aircrew officers which is the more usual case. It is clear that folk obliged to spend time at 'Lab' either loved it or hated it. If you ever experienced its delights yourself (as I did on several occasions, albeit in fairly short bursts), this book will jog lose a lot of memories and at less than £10, what's not to like?

**CGJ**

**The Long Road** by Oliver Clutton-Brock and Raymond Crompton. Grub Street; 2013. £30.

In recent years Oliver Clutton-Brock has established a fine reputation as a researcher and author specialising in RAF personnel unfortunate enough to find themselves behind enemy lines either as a POW or an evader. For his latest venture, a 368-page hardback with two sections of b&w photographs, he has joined forces with Raymond Crompton who has many years' service in the RAF and the aircraft industry.

The strategic bomber offensive increased dramatically in the winter of 1943 and early months of 1944 and the number of RAF and USAAF aircrew shot down rose to such an extent that the *Luftwaffe's* capability to house them all reached breaking point. To ease the problem, some camps (such as *Stalag Luft III* at Sagan*)* were extended and new ones were built. One of the latter was *Stalag Luft VII* at Bankau in Poland, the last of the *Luftwaffe's* camps. *The Long Road*

concentrates on the history of this camp.

*Luft VII* opened in June 1944 and existed for a mere seven months before it had to be evacuated in the face of the Russian advance into Poland and Germany from the east. With this background, some might question the value and the importance of such a book. Indeed, bearing in mind the number of other published accounts of life 'behind the wire', and the relative inactivity in *Luft VII*, it was my first reaction. Having read the book, those misgivings proved to be unfounded.

The authors have been able to make use of many interviews, letters, diaries and reports by former inmates and they have brought these together using a 'day-by-day' diary format. Every day is covered, albeit some merit little more than recording that Red Cross parcels arrived or a further *Trupp* of 'x' men had arrived. Others are full of detail of events, personal experiences, etc.

Incorporated into the diary narrative are details of individuals and their service and the circumstances that led to their capture and incarceration at *Luft VII*. These experiences alone are stimulating and worthy of publication and are a reminder of the myriad of adventures aircrew 'on the run' experienced. By adopting this approach, the authors provide a fitting tribute to the men who spent their younger years in captivity. So, whilst the book records the day-to-day activities at Bankau, in many respects, it is much more about the dramas of being shot down, evading and the eventual capture of the camp's inmates.

These accounts remind us of the ordeals and tribulations suffered by POWs, and in doing so, highlight and emphasise the immense fortitude, courage and, at times, light-hearted comradeship that were all-pervasive in these tight and unique communities.

Some remarkable characters emerge such as Captain the Reverend John Collins, who had been captured at Tobruk. A beacon of hope in all the camps in which he was interned, his inspirational conduct on the grim Long March the 'kriegies' suffered in the harsh winter and blizzards of 1945, brought fulsome and heartfelt gratitude from his colleagues. Yet, the authorities could do no more than award this saintly man a mere Mention-in-Despatches. There are many others who typify the courage and sheer 'bloody-mindedness' and cunning that has always been a feature of the British military when faced with adversity. This book is a tribute to them all.

The authors have provided some excellent Appendices, one listing the details of every POW. This is not a book for bedtime reading but it is a compelling read and a first class reference book for the serious RAF historian and those with a particular interest in accounts of captivity. As we have come to expect from Grub Street, this is a well-produced book and it is one that will adorn my bookshelves and see regular use. Recommended.

**Air Cdre Graham Pitchfork**

**Sculthorpe – Secrecy and Stealth b**y Peter B Gunn**.** The History Press; 2014. £14.99.

At first sight, Peter Gunn's book seems unlikely to stir the pulse, or even to arouse much more than polite interest in the history of an obscure East Anglian airfield. In fact, it is an absorbing read which does indeed chronicle Sculthorpe's history, but offers far more by way of the strategic, political and social background to its nearly fifty years as an active station. More particularly, The book's coverage of the forty years in which it was built up to be a major USAF nuclear base makes an important contribution to an understanding of the Cold War years.

Sculthorpe enjoyed only a brief existence as an operational Royal Air Force station. Work, initially to create a satellite of West Raynham, began in the Spring of 1942 and by May 1943, the three runway airfield received its first flying unit, No 342 (Lorraine) Squadron of the Free French Air Force, equipped with Boston light bombers. Its stay was short and by mid-1943, the Squadron was replaced by No 140 Wing, with three squadrons which re-equipped with Mosquitos. By the time it left in December 1943, the Wing, led until his death by Group 'Boltholing' RAF squadrons. Aircraft that had been provided by America to other NATO countries under the Mutual Military Assistance Program were converted or scrapped at Sculthorpe in the 1980s.

Understandably much of this 239-page book, which is complemented by 130 B&W photographs, is devoted to detailing deployments and operations. This has been achieved in an easy, readable style, if not always without errors of detail: the author is not the first to have been confused by the Atcherley brothers! Its real value, however lies in the clear way in which he lays out the context

in which events were played out. It makes an invaluable contribution in terms of Norfolk's social history and this is matched by the author's skilful description of contemporary strategic and political developments central to the Cold War era. Most of all, he sheds light on the USAF presence in East Anglia during that period and on the inevitably veiled history of American nuclear forces in UK.

**AVM Sandy Hunter**

**Air Power and Sea Power in World War I** by Maryam Philpott. I B Tauris; 2013. £59.50.

The author's contention is that most writing on WW I has focused on the experience of soldiers at the expense of that of sailors and airmen and she sets out to restore some balance by considering 'combat and experience' in the RFC and RN and their consequences for each service. Since I am not competent to express any opinion on sea power, my critique will, perforce, be confined to 'air' aspects. That said, there is an uncomfortable asymmetry in comparing the might of the entire Royal Navy, but excluding the RNAS, with the RFC, but excluding the might of the rest of the Army. This is hardly comparing like with like and, although the RNAS's involvement in home defence is acknowledged, the picture is severely distorted by overlooking its major contribution in the context of strategic bombing and its pioneering of all aspects of maritime air power, both shore-based and afloat.

Starting with the statement that the 'Aerial Navigation Act established the Royal Flying Corps on 1 April 1912' (p4), which is patently nonsense, there are other clues that suggest that the author may not have a very firm grasp on the nature of the RFC or its internal organisation. For example we are told that the RFC's 'structure mirrored the army' and that its officers used its rank titles extending as far as field marshal (p5). There was no 'mirroring' involved. The RFC was an integral part *of* the Army, just one of several corps, and the most senior aviation post was ranked at 3- (not 5-) star level. Similarly, it is simply not true to say that, 'The aviation terms 'Flying Officer' or 'Wing Commander' would come much later with the establishment of the Royal Air Force' (p211). Both were RFC employment grades; the first had been introduced as early as 1912, the second being added when the RFC was reorganised into wings in

January 1915. Both were used routinely and extensively until 1918 – see, for example, contemporary *London Gazettes* or unit Routine Orders. Similarly we have 'All pilots were officers . . .' (p218). Again, simply not the case; *most* pilots were commissioned, but certainly not *all*.

It soon becomes apparent that the writer's knowledge of early aviation is somewhat superficial. The narrative is punctuated by factual errors, far too many to list here. Suffice to say that no one with any familiarity with and/or feeling for the air services could possibly write of the Sopworth Pup or 'the 12th Squadron' or render 'airforce' as one word – on several occasions – and who was the Captain Charles Paine who, we are advised, commanded the Naval Flying School at Eastchurch (p141)? I am guessing that should have read the Captain Godfrey Paine who was the first Commandant CFS. There is much more of this sort of thing.

By the summer of 1916, the RFC was still a tiny force – there were fewer than 600 men flying in France at the time and this raises another issue. Only half of them were pilots, yet the narrative is almost exclusively concerned with pilots and their 'chivalric heroic' image. That there was such a mythical image is beyond dispute, but it was generated by a handful of particularly notable and glamorous individuals. What of the other pilots? And what of the men who flew with them? We learn practically nothing of the observers and gunners who were obliged to entrust their necks to inadequately trained, and thus barely competent, often teenaged, aeroplane drivers. In November 1918 there were 1,046 such men (and 1,060 pilots) on the strength of the multi-seat units reporting to HQ RAF in France – what was the back-seaters' experience of combat? And what of the men who flew in balloons?

Somewhat incongruously, since little attention had been paid to the air mechanics of WW I, when the writer goes on to consider the influence of the RFC's heritage on the RAF of the 1920s, she notes the new service's policy of recruiting boys as young as 15 to provide the foundation of the peacetime RAF's technical support. The new pilots who were to be the next generation of chivalric heroes were to come, primarily, from the RAF College, but, oddly enough, there is no mention of Cranwell. There is, however, disproportionate emphasis placed on the contribution made by the university air squadrons. It is

true that UASs were set up at Oxford and Cambridge in 1925 but it was several years before serious (in-term) flying began. Even then the numbers involved were tiny and it was certainly not the case that graduates of the 1920s 'could apply to join the Royal Air Force Volunteer Reserve' (p169), as the VR was not established until 1936 and recruiting did not start until 1937.

Many of the problems in this book probably stem from the fact that the author has drawn extensively on secondary sources, in the form of the pre-digested views of historians, practically the only primary sources being the memoirs of veterans. She actually acknowledges that the latter are 'unreliable' (p6) but relies on them anyway, and her unquestioning acceptance of the, often flawed, recollections that they contain may account for some of the inaccurate information presented in the book. Furthermore, relying so heavily on this kind of material distorts the overall picture, because the men whose works were published, tended to be articulate, even gifted, writers – but there were not very many of them. There is, therefore, a lack of perspective. To present a more balanced view the author needed to have established what the silent majority thought about 'combat and experience' in the RFC. Incidentally, among the pilots whose writings are quoted are 'Billy' Bishop and William Fry, both of No 60 Sqn, but we do not get Fry writing *about* Bishop – and Fry's informed views shed some very interesting light on the nature of the chivalric, heroic 'knight of the air'.[1]

This 258-page hardback originated as a successful doctoral thesis. That it passed muster as such is a little surprising in view of the many errors that it contains, which must, in turn, raise questions over the rigour of the academic supervision. Had the publisher employed an editor, it might have been possible to attend to these defects before they appeared in print, but that opportunity was also missed.

The author's, somewhat unsurprising, conclusions are that, having been denied a decisive, war-winning fleet action, 'combat and experience' during WW I for the Navy had meant that it had effectively marked time, whereas the air services (which really should have included the innovative RNAS) had successfully responded to

[1] Fry, William Mays; 'The Bishop Affair' in *Cross and Cockade Journal, No 32*, 2001, pp38-45.

the challenges presented by the addition of a third dimension to warfare and had, as a consequence, grown in both strength and maturity. Unfortunately, while this reviewer would not dispute these findings, they are seriously compromised by the number of factoids invoked to argue the case. While this book does contain some interesting views and could stimulate a lively debate, I cannot recommend it to this Society – and certainly not at the quite extraordinary asking price.

**CGJ**

**Never Not Ready** by Graeme Deeley. Barny Books, Grantham, 2012. £26.00 (inc P&P in UK).

As its sub-title explains, between the covers of *Never Not Ready* (the translation of the Latin motto of No II Sqn RAF Regiment, *Nunquam Non Paratus*) is 'The History of RAF Regiment Parachute Units 1942-2012'. It is a veritable doorstop of a book, 652 (slightly less than A4) softbound pages with more than 1,400 photographs, many of the later ones in colour.

I need to get the inevitable 'cons' out of the way first. The publisher's website claims that it provides proof reading, but this would seem to have been of indifferent quality. More attention to detail would have avoided some howlers, eg 'companies' for 'company's', 'hanger' for 'hangar', 'dingy' for 'dinghy', marshal with two 'l's, the occasional typo and some folks' names being misspelled – CinC NEAF in 1970 was Air Mshl Hodgkinson (not Hodkinson) and CinC FEAF in 1966 was Sir Peter Wykeham (not Wireham). There is also a problem with some of the photographs which have been stretched or compressed to fill the space available, which has resulted in some curiously proportioned people and a rather elongated Dakota (p91). There is a Contents page, which lists the various chapters, but lacks page numbers, which is a bit inconvenient as you are left to guess where, among the 652 pages, to start looking and then riffle through them hoping to spot the one where the chapter starts. It is issues such as these, and a slightly untidy lay out, that give the book something of a 'DIY' feeling.

But enough of the 'cons', most of which are relatively superficial. What of the 'pros'? There are more than enough of these to restore the balance. First off, there is a comprehensive index, which goes some

way towards offsetting that rather frustrating Contents page. Thereafter the main narrative does exactly what the book's subtitle says, and it does it very well.

The story begins with the formation, training and subsequent wartime exploits of the Assyrian and Kurdish men of the Parachute Company of the Iraq Levies and goes on to embrace a variety of post-war Command-sponsored parachute-capable Medical, Mountain and Jungle Rescue and Safety Teams. After 180 pages of this, the story really begins to gain traction in 1962 when it was decided that No II (Field) Sqn should be trained as parachutists. Concerned over role-poaching, the Army was a little alarmed at this development, but the RAF stuck to its guns and II Sqn was duly re-trained. That said, I think it fair to say that there were always some reservations over this initiative, even in light blue circles, and in 1981 the squadron lost its parachute 'role', although it retained its 'capability'. In 1995 there was an attempt to withdraw even that, but this was successfully fought off and II Sqn still retains its airborne capability today.

While the RAF Regiment has never mounted an airborne operation in anger, neither has the Army since Suez in 1956. What matters is that the capability is available should it ever be needed and No II Sqn was able to demonstrate this most convincingly in 2001 when it was dropped into Sierra Leone. The aim was to reinforce the troops who were already on the ground and, as such, although the men were fully armed, it was a show of force rather an airborne assault, but its significance was not lost on what remained of the local opposition. While Sierra Leone did involve parachuting, and the squadron maintains its currency, most of its activities have been more conventional and the bulk of this book provides chapter and verse on No II Sqn's exploits since 1962. In short, that has involved deployments to wherever there was trouble, including Cyprus, Northern Ireland, Aden, Zambia, Oman, the Balkans, Belize, Iraq and Afghanistan. All of these, and more, are dealt with in considerable detail and illuminated by frequent anecdotes contributed by those who were there. Some of the accounts of active service, especially in Oman, are most impressive. But it is not all about operational activities and the squadron's participation in exercises and training events, especially its admirable record in international competitions, is also amply covered. And then there is the story of Bats Barret – but

you will have to read the book.

Finally, if you were ever a parachute-trained ‘Rock’ (no longer the derisive label of old, the Regiment now ‘owns’ that term and I use it here advisedly as a mark of respect) there is a 99% probability that your name will appear somewhere. Apart from the numerous references to individuals that crop up within the narrative and in captions to the hundreds of photographs, there are, among the appendices, annual nominal rolls of most, indeed probably all, of the units involved. Thus there is a listing of all of No II Sqn’s personnel *for each year* from 1962 to 2012, but it does not stop there and all of the various regional, specialist and display parachute ‘teams’ are dealt with in the same way, going right back to the Iraq Levies.

Written by a soldier, whose father served with II Sqn, and who spent the last four years of his own service alongside the Regiment at its Depot at Honington, *Never Not Ready* is clearly a labour of love and it is also a *tour de force* and a significant addition to the annals of the Royal Air Force. If you want to know what the RAF Regiment is capable of, and you should, you ought to buy this book. That said, I think that finding a copy on the open market may be a little tricky so I would advise prospective purchasers to go directly to the author’s website at www.nevernotready.co.uk, which is what I did. I should add that the inclusive price makes this a real bargain.

**CGJ**

## ROYAL AIR FORCE HISTORICAL SOCIETY

The Royal Air Force has been in existence for more than ninety 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 £18 per annum and further details may be obtained from the Membership Secretary, Wg Cdr Colin Cummings, October House, Yelvertoft, NN6 6LF. Tel: 01788 822124.

## THE TWO AIR FORCES AWARD

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. The British winners have been:

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## THE AIR LEAGUE GOLD MEDAL

On 11 February 1998 the Air League presented the Royal Air Force Historical Society with a Gold Medal in recognition of the Society's achievements in recording aspects of the evolution of British air power and thus realising one of the aims of the League. The Executive Committee decided that the medal should be awarded periodically to a nominal holder (it actually resides at the Royal Air Force Club, where it is on display) who was to be an individual who had made a particularly significant contribution to the conduct of the Society's affairs. Holders to date have been:

Air Marshal Sir Frederick Sowrey KCB CBE AFC
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