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SELECTED ABBREVIATIONS

A&AEE	Aircraft & Armament Experimental Establishment
ACC	Air Contingent/Component Command(er)*
ACHQ	Air Component Headquarters
ADGB	Air Defence of Great Britain
AR	Air Refuelling
BFC	British Forces Cyprus
CDS LO	Chief of Defence Staff Liaison Officer
CENTCOM	US Central Command HQ (Tampa, Florida)
CIS	Communications and Information System
CJF	Commander Joint Forces,
CJO	Chief Joint Operations
CONOPS	Concept of Operations
DCA	Defensive Counter-Air
EUCOM	US European Command HQ (Stuttgart, Germany)
HCDC	House of Commons Defence Select Committee
ISR	Information, Surveillance and Reconnaissance
JFSFCC	Joint Force Special Forces Component Command(er)
LCC	Land Contingent/Component Command(er)*
LFA	<i>Luft Forschungs Anstalt</i> (Aviation Research Institute)
MCC	Maritime Contingent/Component Command(er)*
NCC	National Contingent/Component Command(er)*
OPCOM (or CON)	Operational Command (or Control)
PJHQ	Permanent Joint HQ (Northwood)
RP	Rocket Projectiles
SAP	Semi-Armour Piercing
SBMA	Senior British Military Advisor
SIPRNET	Secret Internet Protocol Router Network
SOC	Special Operations Command(er)
TACOM (or CON)	Tactical Command (or Control)
TLAM	Tomahawk Land Attack Missile
377 TSC	Theatre Support Command(er)
UNSCR	United Nations Security Council Resolution
VTC	Video Tele Conference

* Use of 'Contingent' (UK) or 'Component' (USA) depends on nationality of the formation.

GERMAN AVIATION TECHNOLOGY IN WW II

Capt Eric 'Winkle' Brown CBE DSC AFC

Guest Speaker at the 2005 AGM

Having joined the FAA in 1939, Eric Brown claimed two Fw 200s while flying Martlets of No 802 Sqn from HMS Audacity in 1941. Following a period on trials work involving Sea Hurricanes and Seafires and a stint as a Deck Landing Instructor, he was posted to the A&AEE, subsequently flying practically all types of allied naval aircraft and those captured from the Luftwaffe. Post-war he resumed Service flying with No 802 Sqn (Sea Furies), spent two years with the US Navy Test Centre at Patuxent River, commanded No 804 Sqn (Sea Hawks), was Commander Air at Brawdy, led the British Naval Air Mission to Germany in 1958-60, served at the Admiralty and commanded NAS Lossiemouth before retiring in 1970 to begin a second career in which he filled a number of executive appointments in the field of helicopter aviation.

The defeat of the Germans in 1945 revealed the extent of their technological advances in aerodynamics, rocketry, engines and weaponry as well as ancillary equipment.

The months immediately following the German capitulation were a period of frantic activity as captured enemy aircraft were examined and flight tested, and their design engineers and test pilots were interrogated by the Allies. As the CO of the Enemy Aircraft Flight at RAE Farnborough I was heavily involved in all of this activity, and I was advantaged by the fact I was German-speaking.

Aerodynamics

The German scientists were greatly aided in their work by their advanced wind tunnels, especially by their unique supersonic model, and this gave them the opportunity to test sweptback and forward-swept wings, all-wing and delta shapes, which were translated into hardware in such aircraft as the Me 262 (sweptback), Me 163 (all-wing/vertical tail), Ju 287 (swept-forward), Horten IX (all-wing), and Lippisch DM-1 (delta).

Professor Busemann, the leading authority on sweepback, gave an open lecture in Rome in 1935, describing its advantages in delaying

the effects of compressibility at transonic speeds, but, although it had been attended by international scientists, the idea went virtually unheeded by them, leaving the Germans to enjoy the sole benefits.

In the key area of stability and control the Germans concentrated on giving to their fighter aircraft a high rate of roll, and excellent examples of this were the Fw 190 and the He 162, the latter having the lightest and most effective aerodynamically balanced controls I have ever encountered. On the larger tandem layout Do 335 fighter they introduced powered ailerons, and in the huge Bv 222 flying boat they used servo-tab controls on all three axes which, in my opinion, made them almost dangerously light for that particular aircraft.

Rocketry

The Germans had experimented with solid fuel rockets for propulsion in aircraft as early as the 1920s, and liquid fuel rockets in unmanned vehicles, but the breakthrough came in the early 1940s with the use of liquid fuel rockets which were throttleable and so gave the pilot a much needed degree of flexibility, whilst doing nothing to remove the highly dangerous volatility of the fuels used.

The liquid fuel A4 (V2) rocket, the brainchild of Wernher von Braun, was a potent weapon in the later stages of World War II, and eventually led the way to space travel.

Engines

The whole range of German supercharged piston engines could have power boosting systems installed, providing either methanol/water injection (MW) or nitrous oxide injection (GM1) into the supercharger. These systems gave speed increases of some 20 to 30 mph.

Compression ignition (diesel) engines were developed for long endurance operations, and were fitted mainly to flying boats with successful results. I flew such engines on the twin-engined Do 18, the three-engined Bv 138, the four-engined Do 26 and the six-engined Bv 222 and found them very quiet but dirty and smelly – not by any stretch eco-friendly.

Although Britain had an initial lead in jet propulsion technology, this was dissipated by bureaucratic inertia, allowing Germany to overtake us and build the world's first single- and twin-turbojet-engined aircraft. Initially both nations favoured the centrifugal-flow

jet engine layout for simplicity and reliability, but Germany rapidly changed to the axial-flow layout because of the reduced aerodynamic drag of the nacelle shape and superior specific fuel consumption offered for a given amount of thrust. However, the complexity of the axial-flow engine caused production problems for the Germans, and the lack of the strategic metals to withstand the inherent heat stresses meant that their early operational turbojets had a scrap life of only 25 hours. Nevertheless the first two jet aircraft to become operational in 1944 were the twin-axial-flow-engined Ar 234B unarmed photo-reconnaissance bomber, which depended on its speed for survival, and the twin-axial-flow-engined Me 262 fighter-bomber, which was the most formidable aircraft of World War II, being at least 100 mph faster than any contemporary aircraft. Finally the nippy little single-axial-flow-engined He 162 appeared in some numbers at the end of the war, but too late to get operationally involved. It was remarkable, however, in being produced in less than three full months from issue of specification to first flight.

A variation on the turbojet was the pulse-jet engine of the pilotless V1 'flying bomb' which harassed the south of England in the summer of 1944. The device was ramp launched, using hydrogen peroxide and calcium permanganate for initial acceleration until it left under its own power.

Weaponry

The Germans used a wide range of varying calibre weapons as both fixed and free aircraft guns throughout World War II but, in the later stages, they introduced 30 mm cannon on their jet and rocket fighters as a low velocity, high capacity weapon. They also used heavy calibre (50 and 55 mm) anti-tank guns in some of their aircraft specialising in ground attack.

The most devastating air weapon to be used by the Me 262 in the final stages of the war was the R4M air-to-air rocket missile carried under the wings in racks of twelve or extended racks of twenty-four. A strike on an enemy aircraft meant its total annihilation.

Another successful development was that of the *Schräge Musik* (inclined organ pipes) fitted to night fighters, and consisting of a pair of 30 mm cannon slanted forward at 60° and located between the tandem cockpits. These were fired into the underside of a bomber

once the crew had identified it in silhouette as an enemy target. On the first operational sortie of an He 219 using the system, it shot down six Lancasters.

Ancillary Equipment

i. Ejection seats were in use by the Germans at the outset of World War II, and indeed the first ejection in anger was made in January 1943 from an He 280 twin-jet which got into icing difficulties. Their seats were propelled by compressed air and, besides being fired by pulling the seat face blind, they had a secondary trigger fitted to the side of the seat at thigh level to deal with high 'g' emergencies. The first production aircraft fitted with ejection seats was the He 219 two-seat night fighter.

ii. Piloting prone position in the cockpit had been tried out by the Germans before World War II in the Berlin B.2 research aircraft and in the Ho IV high aspect ratio sailplane. The former had a completely prone layout, but the latter had the less tiring 'praying mantis' position.

iii. Auto dive recovery was fitted in the German Ju 87, Ju 88 and He 177 bombers. It was activated by opening the dive brakes and initiated the pull-out when the bombs were dropped at a preset release height. It was an effective and reliable system on both the Ju 87 and Ju 88 but never used on the four-engined He 177.

iv. Electronics were widely used in German aircraft in place of hydraulics, which were considered more vulnerable to combat damage. One of the more interesting applications of electronics was the *Kommandogerät*, which was intended to free fighter pilots in combat from the demands of controlling engine boost, propeller pitch and engine rpm by having these automatically controlled through a single throttle lever.

v. Propeller reverse thrust was fitted to the Bv 222 flying boat's middle engine on each wing of this six-engined giant to facilitate water manoeuvring during taxiing. It was also fitted to the very aerodynamically clean tricycle-undercarriage Do 335, which had a very long landing run. Use of reverse thrust on the front tractor propeller reduced the landing run by 25 per cent.

vi. A skid undercarriage was fitted experimentally to the Ar 234,

and as standard to the Me 163B. The advantage of such a layout is reduced weight and drag, because it is easier to house than a wheeled arrangement. However, a skid can only be landed on a grass surface, and after landing retrieval of the aircraft is slow.

Mention should be made of the considerable progress made in Germany in rotary-wing development, and some types reached the production stage and then operational status, though in very small numbers because of Allied bombing of their manufacturing facilities.

The advance state of German aviation technology reflected their lengthy preparation for war by building up a large number of technical high schools, aeronautical departments in key universities such as Brunswick and Göttingen, and particularly well equipped research establishments such as Völkenrode, Darmstadt and the LFA Vienna.

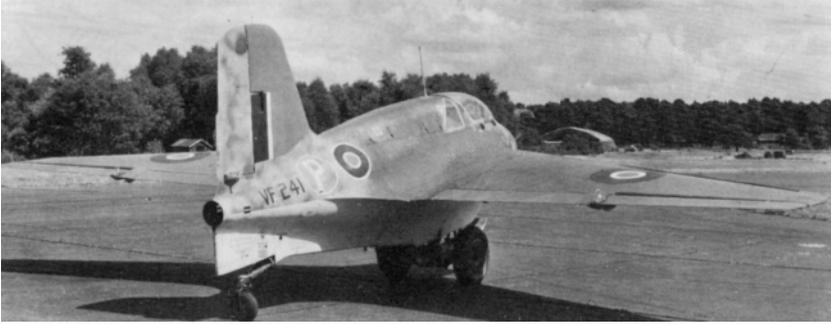
The proliferation of new aviation projects which abounded in Germany from the late 1930s up to virtually the last days of the war in Europe (there were, for instance, no fewer than 138 separate schemes for guided missiles alone under investigation in May 1945) can be seen as a weakness in controlling the conduct of its war, for it was draining resources away from the vital necessity to concentrate on development and mass production of key elements such as the Fw 190 and Me 262 for daylight defence, and the He 219 and upgrading of the Bf 110 night fighter in defence of the hard pressed Third Reich. Of course much of this argument holds good only if those measures would have largely prevented intruder interference with pilot training, the bombing of oil refineries and aircraft and engine manufacturing plants – a very big IF indeed.

In the final analysis, the Germans had undoubtedly made significant advances in aeronautical technology, which in turn made a huge impact on the post-war aviation world and heavily influenced the new design philosophies in Britain (DH 108), the United States (F-86 Sabre) and the Soviet Union (MiG-15).

DISCUSSION

Michael Fopp. I wonder whether you registered the quality of German workmanship? I ask, because the RAF Museum has recently restored an Me 163, an A4 and an Me 262, all of which were built under slave labour conditions. When we took them apart, however, we were surprised to find that each one had been virtually hand-built and that the standard of workmanship had been astonishingly high under the circumstances, although many parts had rather sad messages scratched inside them by the men who had had to build them. The downside to high quality, hand-building, of course, is that components were tailor made so that a part made for one Me 163 wouldn't fit another. That must have given the Germans a significant problem, especially when they were under pressure in the later stages of the war – one from which we did not seem to suffer.

Brown. You are absolutely right. You could make some sort of analogy to modern Japanese cars – they are mass produced but employing the highest standards of quality control. But how can you foster that sort of ethos using slave labour? These prisoners can't have been skilled technicians, although they were controlled by people who would have been constantly inspecting the manufacturing process in an attempt to maintain standards. That said, it is significant that quality control was governed by the SS, not the *Luftwaffe*. I don't think that the extent to which the SS influenced German aviation, including aircraft manufacturing, is widely appreciated. Himmler was ultimately responsible for quality control and he gave them a pretty tough time. For example, when I was permitted to interrogate him (I was restricted to the field of aviation; political issues were off limits to me) I asked him why he had once arrested Wernher von Braun, who was the top man in the rocketry business. He said that it was because he had not been convinced that he was really doing all that he could for Germany in the context of prosecuting the war, that he was actually pursuing his personal ambition, his ultimate aim being to make space travel a reality. So there you have a specific instance of quality control being imposed at the very highest level. Down at the coal face, of course, more brutal measures would have been employed but it was all part of the pervasive influence exercised by the SS.



The Me 163 flown (as a glider) by Eric Brown in the UK in 1946-7.

John Maynard. I believe that the Me 163 was flown as a glider from Wittering. Was it ever flown under power?

Brown. I did fly it once under power, but not in Britain. We captured a whole wing of Me 163s at Husum, in Schleswig-Holstein, and we decided to take the whole lot back to the UK, but, because of its instability, we were prohibited from transporting the fuel so we decided to make one or two flights in Germany. I did a short training course and flew it once. We actually had to do it more or less clandestinely because Harry Broadhurst, who was in the chair in Germany at the time, had imposed a total ban on the use of the fuels. I make no criticism of his decision, because hydrogen peroxide and hydrazine hydrate in methanol, are extremely volatile and highly dangerous. That said, my impression of flying the '163 was that it was like being in charge of a runaway train and it was always a fraction ahead of me. For example, the rate of climb of contemporary allied fighters was of the order of 3,000 to 3,500 feet per minute, whereas the Me 163's initial rate of climb was 16,000 feet per minute – and at an angle of about 45°! I found that one had to fly on instruments because you simply couldn't see the horizon in that attitude. When I levelled off I was at 32,000 feet and I immediately had to throttle back, remember it was a throttleable engine, to avoid running into compressibility problems – it really was that fast. There is no doubt that the overall operational losses, not just combat losses, were extremely high. Its combat record was not very good really, amounting to sixteen kills and ten losses, so not a very good ratio. I would describe it as a tool of desperation.

Wg Cdr Colin Cummings. I have two questions. First, I understand that Hannah Reitsch once flew a powered V1; do you have any comment on that? And, secondly, I recently read about a chap called Gersenhauer who made the first helicopter flight across the Channel; did you ever come across him, and could you tell us a little more about German helicopters in general?

Brown. Yes, Hannah Reitsch did fly the V1, because initially the V1 had a problem. When it came off its launch ramp, instead of going straight ahead, it tended to roll over and crash inverted. It was decided that the quickest way to find out what was happening would be to install some controls and put a pilot in one. They needed someone pretty competent, of course, and Hannah Reitsch got the job, largely because of her stature, although she was undoubtedly a very good pilot – a terrible woman, but a very good pilot! She flew it twice, but with no control over power, of course, because the engine was a pulse jet which was either on or off, so they simply limited her duration by giving her only so much fuel. Her first flight ended on a beach on the Dutch coast and had been successful in that she had been able to identify the lateral control problem but she insisted that she be allowed to carry out a second flight to confirm her diagnosis. This time she wasn't so lucky and, instead of landing on smooth sand, she came down among dunes; she was not too badly hurt, although she had sustained some injuries – but she had satisfied her curiosity and confirmed her initial impression. She later suggested that piloted V1s should be put into production and employed on *Kamikaze*-style operations. She actually flew a prototype of this aeroplane, the Fi 103, and urged Hitler to authorise the necessary suicide tactics, but he would not agree to it – perhaps there was a compassionate side to him after all!

As to helicopters, I knew of Gersenhauer, but I never met him. But I did see Hannah Reitsch fly the Focke Achgelis 61 inside Berlin's *Deutschlandhalle* in 1938. I had actually met her previously, back in 1936, the Olympic year. The Fa 61 was not a classic tail-rotor design; it had twin rotors on outriggers mounted on an ordinary aircraft fuselage which had been borrowed from a Fw 44 trainer. When she came to Berlin to display the thing, she practised her routine in the open air, successfully hovering and manoeuvring at about 50 feet.



The Fa 61 flown by Hanna Reitsch in the Deutschlandhalle in 1938.

Interestingly, however, when she tried to do it in front of the public inside the hall the damned thing wouldn't rise more than a foot off the ground. Everyone was nonplussed until some bright spark pointed out that the hall was full of people who were sucking so much oxygen out of the air that there might not be enough left to permit the machine's normally aspirated engine to produce its advertised power. They opened the hangar-like doors and, sure enough, the little helicopter was able to do its stuff.

But she was a remarkable woman, probably the finest sailplane pilot in the world at the beginning of the war, but she was not an accredited test pilot and she used her woman's wiles to get her way in this respect. As a result, she often flew aircraft that she was not really competent to fly, but you certainly could not fault her courage.

Tony Richardson. I recall a lecture by R V Jones in which he said that the captured German radar equipment that he was able to examine was always so beautifully made that he never felt able to throw it away, whereas he had been cobbling things together out of old soup cans and scrap metal. Our British equipment worked, of course, but he greatly admired the German devices, although he reckoned that they were actually too well made. Do you have any thoughts on that?

Brown. I think that the answer probably lies in the excellence of the pre-war German apprentice schemes which created an extremely capable labour force, a huge pool of highly skilled men, particularly

carpenters and metalworkers. It was a two-pronged approach, because the Germans also ran technical high schools, which produced scientists and technicians, in addition to the apprentice schools which turned out the workers. The result was high production standards and I think that Prof Jones was right – the quality was certainly high, perhaps too high for what were, essentially, disposable short-life pieces of equipment.

James Pettigrew. Back in 1970 I attended a formal function with a German industrial delegation and, in the course of conversation with my dinner companion, I learned that he had been trained as a glider pilot in the Hitler Youth movement. He also spoke of his personal experience of the pressure that could be exerted on society by the *Gestapo* which resulted in his becoming a ‘boy soldier’ at very short notice later in the war until he was glad (his word) to be captured on D-Day. My point is that his story serves to verify much of what you have been saying. It illustrates the way in which the Germans invested in their young people by, for instance, training them as glider pilots, during the run up to war and the way in which terror could be used to control the local population, let alone slave labourers.

Brown. Which brings me back to the influence exerted by the SS in areas in which you probably wouldn’t have expected to find it. After the war, when I interrogated Hannah Reitsch she was too frightened to say much and she kept repeating that she was afraid of the reaction of *Stahlhelm*. *Stahlhelm*, which means steel helmet, was an undercover SS group set up after the war with the aim of dealing with anyone who, in their opinion, had been guilty of treachery. It eventually evolved into an even more sinister organisation, *Odessa*, which survived until the 1990s when it finally came out in the open because it considered that it had dealt with most of the offenders. But I can assure you that it had a tremendous influence. When I made that powered flight in the Me 163, one of my problems was that I could not do it without German assistance. I needed the help of experienced groundcrew; the Germans called them *Schwarz männer*, black men, because their one-piece working overalls were made of black drill material – which was just as well because they also tended to be covered in oil and grease. These chaps were most reluctant to volunteer and I had to interrogate them individually until I was able to



Recently 'retired' Luftwaffe personnel were used to assist with servicing war booty aeroplanes. In this instance, while British officers look on, an Ar 234 is being refuelled at Grove to permit it to be flown to the UK for assessment.

form the three-man team that I required. This involved a substantial carrot, in the shape of a promise of early release as a prisoner-of-war, and an undertaking that their names would never be revealed, because they were terrified that *Odessa* would find out and take its revenge, either on them personally or on their families. And that threat prevailed for something like fifty years – quite frightening!

Anthony Furse. Just to tidy up that last point, did you not once tell me that you had to promise them that you would not disclose that you had had a 'sharp start' in the Me 163 until the last one had died?

Brown. That is quite correct, and the last of them died three years ago. I had kept in touch with him right to the end. When I was writing my book on the subject, I consulted our own security people as to how I should handle the problem, and they said that I simply had to honour my promise because the threat really was genuine.

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 2005. Ed

OPERATION IRAQI FREEDOM – COALITION OPERATIONS

Sqn Ldr Sophy Gardner

(At the time of writing....) It is just twenty-two months since the US-led coalition entered the final planning phase in the run-up to Operation IRAQI FREEDOM. At the time, the debate was raging about whether the United States was going to be forced to ‘go it alone’.¹ In a press briefing on 11 March 2003, Donald Rumsfeld said that the US had alternative plans to invade Iraq if Britain decided not to take part in military actions, adding: ‘To the extent they (*Britain*) are not able to participate, there are works around and they would not be involved’.² In the UK, the Prime Minister was facing significant opposition from within the Labour Party and from the general public, with demonstrations in London in mid-February 2003 drawing an estimated (and record) one million people. These political problems created a febrile atmosphere in the run-up to a potential operation (and gave US military planners a task that, to say the least, was extremely challenging). Nevertheless, it was widely recognised that the US would attract greater international legitimacy if it could form a coalition, particularly if this could be garnered under UN auspices.³ Also, the UK military contribution on the table, though small in relative numbers, provided some capabilities which were particularly valuable and included key top-up forces in areas where the US was stretched.⁴ Going-it-alone was certainly not the preferred course for the US.⁵

Introduction

Of course, Operation IRAQI FREEDOM was ultimately conducted as a coalition operation, with troops from the UK and Australia in combat alongside the US military. But no UN mandate was

forthcoming. In the aftermath of combat operations, military commentators lined up to analyse the operation, its perceived successes and failures, and the lessons that could be learnt for the future (not least in the context of the operation as a coalition enterprise). As the British Chief of the Defence Staff (CDS) said, ‘As an example of a coalition operation in modern times, it (the operation in Iraq) has just about everything for the analysts to scrutinise and the arm-chair generals to comment about’.⁶ The aim of this analysis is to identify the issues and challenges that coalition operations presented during Operation IRAQI FREEDOM Phase 3 and extrapolate from these the wider lessons which we need to identify if we are to move forward in order to prepare ourselves for future coalition operations. But firstly, five caveats. I intend to concentrate on the UK/US relationship, despite the fact that there was also a considerable Australian presence – around 2,000 personnel, comprising elements such as special forces, commando units, F/A-18s, frigates and a diving team, as well as a national headquarters similar to, though smaller than, the UK National Contingent Headquarters (NCHQ) at Camp As Saliyah in Qatar (alongside CENTCOM Forward). The Australians will have their own perspective, although they may well have similar observations on the challenges of participation in this coalition endeavour. Indeed, there were many more layers of complexity to the ‘coalition’ context of this operation, given the dozens of other nations that were involved in some way (whether in providing overflight rights, basing rights or logistic support).⁷ Secondly, in order to address the subject holistically, I will look at the operation from the Joint perspective. But, where possible, I will tease out some air-specific issues and examples, and later consider the evolving USAF/RAF relationship in the aftermath of IRAQI FREEDOM. Thirdly, I will focus specifically on lessons from Phase 3 (the combat phase that culminated in the overthrow of Saddam Hussein’s regime – ‘the conventional combat portion’⁸). At the time of writing, it is plain that Phase 4 – still ongoing – has many further lessons for us, but, nevertheless, there is still much to be gained by analysing Phase 3, and the preparations for it, as a discrete package. Fourthly, it is also important to acknowledge the implications that the refusal of Turkish support had for the UK experience. Apart from the obvious time-critical challenges of the late decision to abandon possible use of

Turkey and the necessary redirection of significant quantities of troops and equipment, the demise of the 'Turkey option' took EUCOM out of the C2 equation. Having both CENTCOM and EUCOM in the operation would have added an extra dimension and an already complex situation would have been even more so. Thus the investigation of coalition operations here, by definition, considers co-ordination and co-operation with only a single US Command HQ. Finally, it is important, to recognise that 'what you see depends on where you sit' (here I quote the UK NCC⁹), and my perspective will no doubt be shaped in part by my experience at the NCHQ.

Why is it important for us to understand and progress our thinking on coalition operations? The conflicts we now face, post Cold War and 9/11, are very different to those for which our senior commanders were trained when they began their service. Now, in the early 21st century, the untethering of states from their Cold War allegiances has brought benefits for some, but uncertainty (economically and politically) for many as well. 9/11 was the most violent of the shocks which confirmed the arrival of the era of asymmetric conflict – we now live in a world where asymmetric weapons are increasingly effective, have a potentially huge destructive impact, yet are increasingly accessible to non-state aggressors for use worldwide. And we have also entered an era where wars (for potential coalition partners in the West, at least) are increasingly engagements of choice, ideally fought in coalitions of 'willing' participants. From the UK perspective, the likelihood of 'going it alone' for high intensity combat operations is now remote – we envisage fighting in an alliance of coalition partners which, for larger operations, will invariably be alongside the US. In December 2003, the MOD's White Paper stated that: 'The most demanding expeditionary operations, including intervention against state adversaries, can only be plausibly conducted if US forces are engaged, either leading a coalition or in NATO'.¹⁰ In this context, the cohesion of a coalition, particularly in the asymmetric environment, will be fundamental to the success of an operation – and a competent enemy will recognise that as our potential Centre of Gravity. Even an opposed, but non-hostile, third party can disrupt a prospective operation by attacking potential fault-lines between different coalition members – in 'wars of choice' there are many obstacles facing a coalition even before they reach the enemy. So, the

better our understanding of the dynamics and challenges of coalition operations, the better our preparations for the future. From the perspective of understanding the UK/US military relationship, I would opine that we are at a critical point in our development. Having spent twelve years policing the skies over Iraq, working alongside the US for more than 4,000 days of continuous operations, we now face a period of potentially limited operational contact. Indeed, progress in Iraq may lead to that contact reducing further. Thus we must now identify what work we need to do to prepare for future challenges – particularly as the only certainty is that there will be more.

The Lead-up to the Operation

As just mentioned, the preparation and planning for Operation IRAQI FREEDOM took place against a back-drop of continued coalition enforcement of the Iraqi no-fly zones (mandated under UN Resolution 687) with the USAF and RAF operating alongside each other, both in the Northern and Southern Combined Air Operations Centres (CAOCs) and in the air. Planning, operating and living side-by-side for twelve years ensured a level of integration between the USAF and the RAF that was to prove invaluable. Although UK involvement in planning for a potential Iraqi operation only started in mid-2002, all three Services had had staff embedded alongside their US counterparts in US Headquarters since 9/11, and Operation ENDURING FREEDOM had US and UK personnel planning and operating alongside each other from late 2001. The UK staff at CENTCOM, based at Tampa, was lead by a 3-star initially and then by a 2-star from May 2002. In the autumn of 2002, Air Mshl Burrige¹¹ was designated National Contingent Commander (NCC) and began strengthening already established relationships at the highest levels. Below him, the UK Contingent Commanders were also working alongside their counterparts. This early planning work allowed the UK visibility of, and increasing involvement and influence in, US planning, with the UK planning teams (the ‘embedded’ staff¹²) gaining credibility with their US counterparts and superiors, such that they were later to form the core of the UK embedded staff within the deployed US Headquarters.¹³ As time moved on, personal relationships developed, trust was established and

staffs increasingly appreciated the fundamental concept of shared risk in a coalition operation. Of course, with the political difficulties in the UK in late-2002 (and into the New Year of 2003), the embedded UK planning staffs faced the challenge of maintaining momentum in the planning process, against a backdrop of uncertainty about any UK involvement. Established links, through these embedded staff, were essential in keeping UK military planners alongside their counterparts through these difficult times. Widely acknowledged by US and UK commanders as critical to the development of the campaign plans were the exercises and rehearsals that took place in the last few months of preparations. ‘Rock drills’ and ‘chair flies’ (depending on the colour of one’s cloth), including Exercise INTERNAL LOOK in December 2002, were vital in shaking down planning and C2 issues.

The UK force structure was announced by the Secretary of State in January and February 2003, with the final announcements taking place just a month before the operation eventually began. The UK contribution was to consist of over 100 fixed wing aircraft and 120 helicopters, an army division comprising three brigades and over 100 Challengers, and an Amphibious Task Group, along with mine clearance vessels, TLAM shooters and a hospital ship. The MOD’s *First Reflections* report stated that ‘The UK contribution was taken into the US plan where it could best complement and enhance US capabilities, both political and military’.¹⁴ The RAF deployed over 8,000 personnel with air assets tailored to US requirements (fielding, for example, precision weapons, ISR and C2 platforms, DCA and AR). ‘The Plan’ had gone through many iterations¹⁵ and as possible conflict drew closer, and with No Fly Zone operations still ongoing, it became apparent that events would have to be synchronised in a number of areas. Here, coalition relationships at the higher military levels were critical, as the commanders tailored and reworked plans to accommodate the shifting realities of the final critical weeks. The prospect of particular enemy actions – use of Western Desert Scuds, potential actions in the Kurdish Autonomous Zone, and the threat of sabotage to the southern oilfields – coalesced into an imperative to compress the ‘shaping’ phase to the bare minimum. The integration of the coalition staffs ensured that the coalition moved together ‘as one’ in these final planning stages.

Issues and Challenges

So, within the context of the coalition, what were the issues and challenges we faced – what worked and what didn't?

C2

First of all, although subject to ongoing debate, I believe coalition military C2 relationships worked well. The facing diagram shows how C2 was delegated within the UK military and how that aligned with the US military construct. Within the UK, planning and oversight of the operation was led by MOD and the Permanent Joint Headquarters (PJHQ), which jointly form the Defence Crisis Management Organisation. CDS appointed Chief Joint Operations (CJO) at the PJHQ as the Joint Commander, with OPCOM of deployed forces. With some exceptions (such as special forces), OPCOM of committed forces was delegated by CJO to the NCC, who in turn sub-delegated TACOM to UK Environmental Contingent Commanders (who could then in turn delegate TACON to their US counterparts).¹⁶ The NCC sat alongside General Franks, CENTCOM Commander, at Camp As-Saliyah in Qatar. At the national and environmental levels in theatre, the UK commanders were responsible for harmonising coalition activity with national political intent and legal requirements, and ensuring the effective employment of UK assets. They also held a national 'red card'. However, the use of that red card was avoided, on more than one occasion, because the trust that existed at all levels of command allowed informal dialogue to pre-empt any potential formal action. This approach was absolutely pivotal in minimising friction. The way in which the different national contingents integrated into their components was determined both by the nature of their environments and by their contributions. Both the UK air and maritime elements were fully integrated into their US contingent; indeed for air, the very nature of the environment demands full integration. The land environment is somewhat different. From early on, the challenges of integrating UK land forces into a US digitised land formation were recognised. Although a surmountable technological problem – just – it would have been testing. However, the change of plan following Turkey's decision not to grant basing rights meant that the UK land contingent plan changed to having a UK division operating with 1st Marine Expeditionary Force within a

Notes:

- 1. CBF: Cyprus is a Commander and is given priorities in support of Op TELIC by NCC.

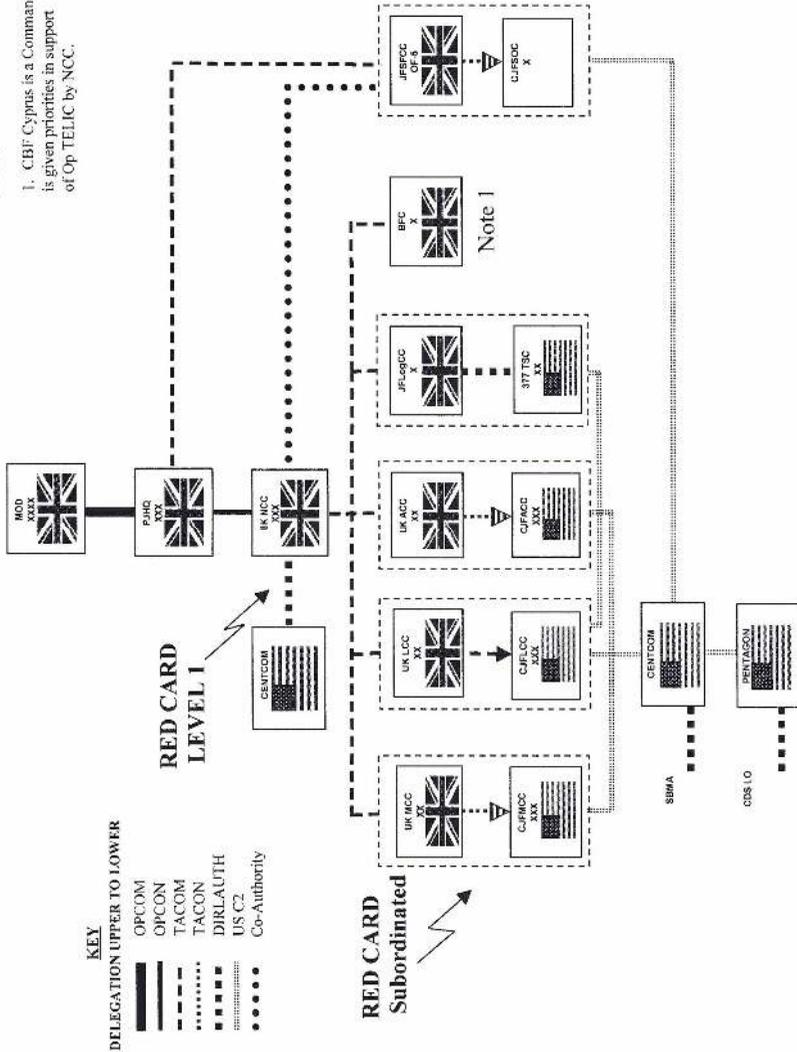


Diagram showing the delegation of C2 within the British military hierarchy and the way in which these arrangements were integrated with equivalent US formations. ('X's denote the star-rating/rank of the appointment.)

discrete geographical area in the south of Iraq, reducing reliance on integrated C2 technological capability.

In terms of linkages between the deployed commander and the UK, the NCC worked through CJO to the Defence Staff, with CJO and the PJHQ acting as a buffer between London and the NCC in theatre, allowing the NCC to concentrate on coalition military issues and his relationships with the US military and his national environmental contingent commanders. If CJO, as Joint Commander, had deployed forward, as had been mooted, the combined tasks of CJO and the NCC (looking up to London, across and up to CENTCOM, and looking after national interests at the Command Headquarters level) would all have been vested in a single individual/location; considering the workload required solely for the NCC to stay alongside General Franks and the CENTCOM battle rhythm, it seems certain that other, vital, linkages would have suffered. During the operation, the NCC was reported in the *Daily Telegraph* as having made ‘the surprising revelation’ that he had never spoken to the Prime Minister.¹⁷ “I have never spoken to Tony Blair”, he said, “I answer to the Chief of the Defence Staff and the Secretary of State.”¹⁸ Journalists may have found this surprising, but the NCC – and indeed the Prime Minister – had no need for direct contact, relying instead on the C2 chains which were already well defined in UK doctrine – and with communication routes up the levels of command to the MOD already well-trodden during recent operations. The US military had a different and more fluid construct, with direct communication regularly taking place between CENTCOM and the Defense Department (Donald Rumsfeld and General Franks were in daily direct contact – often via VTC with the NCC alongside General Franks – and the Joint Chiefs of Staff in the Pentagon made direct calls to the US Component Commanders).¹⁹ The differences between the US and UK C2 constructs, particularly the political-military interface aspect, were debated by the House of Commons Defence Select Committee (HCDC) which, in its Third Report, recommended that ‘... the MOD considers whether the highest levels of British command structures might be made more adaptable so as to be able to operate more closely in parallel with their American counterparts, when UK and US forces are operating together’.²⁰ They expanded by saying ‘it might be argued that the British system should be able to adapt to deal with the more direct

political-military interface practised by the Americans'.²¹ However, in its response to the HCDC's observations on differing UK/US structures, the government firmly stated: 'We do not agree. The Coalition command structures were closely integrated'.²² In reality, relationships in-theatre were excellent and the NCC was able to provide comprehensive feedback daily to CJO. It is worth noting that our experience with US C2 during Kosovo was very different, with direction to senior US military commanders in-theatre filtering down a more traditional chain (more similar to the UK construct). These differences are driven as much by the personalities involved as by the mission and environment and it is, therefore, likely that the personalities involved will have a significant bearing on future US command relationships. We cannot, obviously, predict the nature of future US administrations and the characteristics that might pertain during future conflicts (or, indeed, UK government working practices which are, perhaps to a lesser extent but more so than in the past, also personality driven), but our C2 construct is robust and, whilst clearly defined, has proved itself flexible enough to accommodate such nuances.

Burden-Sharing

The UK view that participating in a coalition operation meant sharing the burden in terms of commitment of troops and assets and sharing the responsibility for the operation and sharing the risk – to our forces and to the outcome – formed the central tenet of mutual understanding between the UK and US commanders. Our willingness to commit to training and planning together, and US trust in placing UK military personnel in key positions within the US organisation, also contributed to our strong stance as we, as a coalition (bearing in mind the Centre of Gravity issue), 'crossed the line' together. It was not long before this was put to the test when a US Patriot battery shot down a UK Tornado GR4, with the tragic loss of the crew. Although the ultimate causes of the accident were established later on, it was known almost immediately that a US Patriot had brought down the aircraft. At the National Headquarters in Qatar and in the Air Component Headquarters (ACHQ) in Saudi Arabia, the senior US and UK commanders understood that this incident was an important test of our relationship. Both in the National and Air Headquarters, the US

commanders contacted their UK equivalents to offer apologies and condolences. The morning after the shutdown, at a prescheduled interview, the NCC vowed that, following the tragedy, relations with the US were as strong as ever: 'A military campaign is probably the most intimate alliance you can implement. We have two nations who share the risks, share the dangers and share the rewards. You develop a bond of trust because you are taking responsibility for each other's lives'.²³ On the same day, General Franks, in an interview with George Pascoe Watson of *The Sun* was asked about his views on the accident and insisted that any suggestion that friendly-fire incidents would drive the US and the UK apart was misguided, 'I disagree in the strongest terms. When there are friendly-fire incidents across coalition boundaries it brings allies closer together'.²⁴ These were not empty words – in private, the commanders expressed identical views.

Media Operations

One of the first hurdles to face us was the synchronisation of the use of information in the campaign, particularly given the multi-faceted nature of the 'audiences' that we were communicating with.²⁵ In theatre, the approach of our militaries to the media was a case in point. In the run-up to the operation, coalition staffs worked hard to align our media strategies and define the daily rhythm (with important audiences spread across the world's time zones), but the different national approaches were more difficult to co-ordinate. For the ACHQ, journalists were banned from Saudi Arabia and so the focus for journalists following the air campaign turned away from there and dispersed to the press centre and bases in Kuwait. At the National Contingent level, there was a Combined Press Information Centre in Qatar (with a conference 'set' described as having 'a passing resemblance to the deck of Starship Enterprise' and designed by a Hollywood art director²⁶) and the cultural challenges of working side-by-side with our coalition partners and the various media outlets were soon obvious. Even before we 'stood up' in Qatar, the stated concept of 'shock and awe' had sat uncomfortably with the UK's emphasis on the future rebuilding of Iraq.²⁷ Although the phrase 'shock and awe' was studiously avoided by our US colleagues in theatre²⁸, General Franks' first news conference after the conflict commenced referred to a campaign 'characterised by shock', delivery of 'decisive precision



General Franks handles a news conference – ‘The tall, imposing, jug-eared Texan seemed just the man to inflict a dose of shock and awe on Iraq...’

shock’ and ‘the introduction of shock air forces’ in his initial preamble.²⁹ But this was as much due to a cultural, rather than doctrinal, difference in presentation. As Paul Adams (BBC correspondent) put it: ‘The tall, imposing, jug-eared Texan seemed just the man to inflict a dose of shock and awe on Iraq, while his shorter, bespectacled British counterpart appeared to embody something a little more nuanced. But while it was tempting to draw distinctions between the two major coalition partners, ‘shock and awe’ and ‘effects-based warfare’ were essentially the same thing ‘There are other ways of doing shock and awe than by breaking things’ Burrige said.³⁰ In any case, as an *Air Force Magazine* article put it: ‘It was not the job of the Department of Defense (in the context of ‘shock and awe’) to correct expectations generated by others. Indeed, not doing so may have been a form of passive disinformation.’³¹

This was, however, the first and only coalition conference in Qatar. While General Franks and his media spokesman, General Brooks, presented to the media, the UK, Australian, Danish and Dutch national

commanders stood in attendance on the podium. None was given a speaking part in a conference that lasted well over an hour, and the impression given was not the one that we wanted to project. Nor did it reflect reality, for the NCC had anything but a solely 'walk-on part', and it was decided after this that unilateral media handling was likely to be the better option. No doubt, the differing attitudes of our national press had a great deal to do with the way that we viewed media handling – the US military were certainly surprised at the relatively hostile treatment we received from the UK media³², while the patient and sometimes supine attitude of the US press to some fairly poor treatment (in comparison to what we knew our UK press would expect) by the US military media handlers was a source of some surprise to us.³³ Perhaps Paul Adams' description of our differences seems harsh, but it also sums up the perceptions of the press with which both militaries were attempting to grapple: 'Reporters desperate for facts swarmed every time a clean-cut, polite American military spokesman ventured into the crowded corridors. But the constraints imposed by 'operational security' or, just as often, a reluctance to speak out of turn, meant we always came away disappointed ... A small team of British media handlers worked hard to fill the void ... It was an adult way of doing things, and one that the Americans could not, or would not, emulate'.³⁴ In terms of information, there was also an issue of marrying our military objectives for the operation. The published UK government military campaign objectives for the operation cited the prime objective as 'to rid Iraq of its weapons of mass destruction and their associated weapons programmes and means of delivery'.³⁵ For the US, the prime objective was to 'end the regime of Saddam Hussein'.³⁶ The US objectives referred to terrorism in their third and fourth objectives, yet the UK referred to terrorism only under 'wider political objectives in support of the military campaign'.³⁷ The key to marrying these two perspectives under one coalition banner was, of course, our united attitude to Saddam Hussein's regime. As the UK government articulated it: 'The obstacle to Iraq's compliance with its disarmament obligations under relevant UNSCRs is the current Iraqi regime ... it is therefore necessary that the current Iraqi regime be removed from power'.³⁸ The two perspectives were as one on that aim, but it still required a careful approach by the US and the UK national commands to ensure that that

fact was fully understood.

Basing

An early (pre-campaign) issue, which has crystallised into a 'lesson-learnt' for coalition operations, was that of basing of assets. The UK and the US agreed that the US would lead in negotiating Host Nation (HN) Support for coalition assets. In the early stages of planning this seemed a pragmatic approach, but as time passed and HN views hardened, it became apparent that, at least from the HN's view, one country's aspiration for HN Support would be considered in isolation from any others, regardless of how the request had been submitted. This may seem an obvious strategy from the HN with hindsight, but at the time a united coalition approach seemed to be the most appropriate course. As it turned out, it probably did neither the US nor the UK any favours. At short notice, the flipside of the coalition equation came into play, with the US's assistance and flexibility enabling our deployment by accommodating our changing plans (due to the HN issue) for air and land basing within their own plan.

Rules of Engagement and National Delegation

Another challenge, which benefited from much thought and application before the campaign started, was the issue of national rules of engagement and delegation given to commanders in theatre. During Kosovo, General Clark had expressed his frustration with laborious coalition approval processes.³⁹ Both the NCC and the ACC agreed after Operation IRAQI FREEDOM that, for this operation, the final delegations were infinitely more flexible and coherence across the coalition in terms of delegations was critical to UK credibility in a high tempo campaign with an air effort so vast that up to 1,700 sorties a day were being launched.⁴⁰ Of course, there were occasions when our UK viewpoint on how an 'effect' would be interpreted differed from the US viewpoint. In the case of IRAQI FREEDOM, where the UK saw the potential for disagreement over the national acceptability of a particular course of action, resort to 'red cards' was not the preferred option and, at the NCHQ level, differences of opinion were routinely resolved through debate and discussion. In fact, the UK was able to offer – and the US was comfortable being offered – British advice even when the UK was not directly involved. As Air Mshl

Burridge said in evidence to the HCDC: ‘Where I believe the interesting bit occurs – and I think this is where we added considerable value – was in saying, yes, okay, this is an American target, American platform, no British involvement, but actually let me just say how this might look viewed in Paris, Berlin or wherever’.⁴¹

Information Sharing

Sharing of information and interoperability of information systems were among the greatest challenges facing the coalition. Thankfully, the limited extent of the IRAQI FREEDOM coalition made information and intelligence sharing easier than it would have been in a larger coalition. However, the sharing of information is at the centre of the relationship of trust that is needed in a coalition and during IRAQI FREEDOM, the frustration came in translating the trust engendered at the highest levels into sensible information sharing at the lower levels. The issue was not one of releasability *per se*; more that each individual in the chain felt beholden to check the releasability of the information before actioning any requests. The system was therefore slow and cumbersome, rather than responsive and agile. CIS systems were also a problem, with the US operating on their infinitely superior SIPRNET system, which was not releasable to UK eyes without US supervision, while the UK operated its myriad CIS systems, and had access to CENTRIX; a US CIS system, with AUS/UK access, onto which AUS/UK releasable SIPRNET information could be transferred. However, the process was ‘mandraulic’ rather than automatic, requiring our US counterparts to find the time (in a high tempo operational environment) to decide on and implement the transfer of information. Again, these challenges tended to be overcome through face-to-face dialogue and the development of good working relationships, although not without costs to efficiency.

Lessons for the Future

So where do our experiences during Phase 3 leave us twenty-two months on? Notwithstanding ongoing events in Iraq, there are some important lessons from IRAQI FREEDOM for the UK and the US, just as there is a recognition that our operational interoperability (both in terms of how we think we fight and how we technically fight) must be maintained or we may suffer for it next time. There are no



While relatively small, the UK's armed forces can enhance their value to any future coalition by contributing the scarce, sometimes even unique, operational capabilities epitomised by JP233 in Operation GRANBY/DESERT STORM and, as here, Storm Shadow in Operation TELIC/IRAQI FREEDOM.

guarantees, if there is a next time, that we will have as much planning time (even though the political will to allow us to engage in planning, even if future intent is uncertain, can give us crucial influence at the earliest stage possible⁴²) and it is almost a given that we will not have just spent twelve years side-by-side in theatre in the run-up to a large scale operation. In fact, recognition that things will not be the same 'next time' is a key lesson in itself.

Importantly, we must offer capabilities which are of utility and influence, and which can fill gaps in and complement US capability. Tactical Recce and Storm Shadow are good examples from the air contingent of capabilities that the UK alone could offer, while tankers and E-3s are examples of assets which we could offer which were in short supply. If the UK can perform valued tasks that the US requires (and other allies may not be able to field), our influence will be felt: 'The significant military contribution the UK is able to make ... means that we secure an effective place in the political and military decision-making processes'.⁴³ Sharing contentious and dangerous activities, not just those which are 'niche' or in short supply, is another vital way that our military contribution can demonstrate commitment and determine the value in which we are held (and the

influence which we can bring to bear).

We must also recognise the value that sensible delegations had in the trust that the US put in the UK. These delegations allowed us to participate in some high importance time critical targeting decisions and ensured that we were included fully in decision-making. The marriage of political ends is a similarly critical but extremely sensitive area of coalition co-operation, and we will always need to be alive to the need to ensure that coalition members' political ends (if different or differently prioritised) are understood, enmeshed and met. These political coalition issues will always be sensitive and challenging to planners, but they are critical to the successful execution of a coalition operation.

Most pressingly important to the UK and the US is the challenge of replacing the operational linkages which already existed (particularly between our navies and air forces) as a result of the twelve years of coalition work leading up to IRAQI FREEDOM. We need to stay alongside each other by training and exercising together, developing doctrinally together and wargaming as a coalition. From the RAF's and the USAF's perspective, this has been a priority since Phase 3 of IRAQI FREEDOM finished. The two forces have established an Engagement Initiative designed as a forum to take forward work on interoperability issues under the RAF Chief of the Air Staff and the USAF Chief to ensure that we are working and training together to prepare for the future. Some of this is practical – ensuring that our exchange programmes develop over time and ensuring that we maximise opportunities to exercise together – and some is technical – and in this area equipment procurement and development is central. As CDS outlined: 'Whilst there are real opportunities for interoperability as forces modernise, there is equally the risk that this very modernisation could undermine the unity of effort in any coalition. The technological gap between digitised and analogue contingents will impact severely on the principal advantage of digitisation – that of a force's ability to rely on tempo as a major ingredient of combat power – and in warfighting this could impact to a point where two elements become operationally irreconcilable.'⁴⁴ In the USAF, 'Plug and Play' is becoming (quite understandably) the mantra. Commanders are not interested in new equipment which cannot integrate into the battlespace and, importantly, cannot talk

without ‘a man in the loop’ to the next piece of equipment. As Lieutenant General Keys⁴⁵ states: ‘Whatever is on the inside of your widget or gadget can be proprietary, but what comes out of the little plug in the front or back of it must speak the language of Airmen, and must work with my other equipment or systems without any third party translation or integrators needed. This is the rule for the 21st century USAF and if you can’t abide by it ... we won’t buy it.’⁴⁶ The RAF has to maximise its presence alongside the USAF as they develop interoperability priorities and policies. It is also recognised by the USAF/RAF initiative that the cultural and intellectual aspects of fighting together are fundamental to progress. As well as interaction at senior levels (in meetings, at conferences, at wargames, etc), it is important to develop closer links further down the chain of command. There are several initiatives now in their developmental stages which aim, across the ranks, to develop our understanding of each other’s cultural ways of doing business and grow a new generation of airmen who see their US counterparts as natural and familiar partners.⁴⁷ This approach should compliment our commitment to the policy of embedding UK staffs in US Command staffs for future operations; a policy which will remain absolutely key to successful co-operation in the future.

Summary/And Finally

We, the US and UK militaries, left the end of Operation IRAQI FREEDOM Phase 3 having worked successfully as a coalition and having faced practical challenges along the way. We can see that these were largely overcome through a combination of fortuitous timing (an extended planning period), strong personal relationships, particularly at the senior levels, mutual dependence and burden-sharing (in terms of the UK providing capabilities which were of unique value to the coalition effort and the recognition, on both sides, that this was a journey we would travel together as a coalition ‘for better or for worse’) and a motivation to find common ground and to engineer solutions to any problems that threatened the coalition’s integrity. Most importantly, trust was established at all levels. For the future, whether we consider mindset, doctrine and culture, or equipment, CONOPS and interoperability – it is mutual co-operation and contact which will provide us with the best chance of staying in step. This will

allow us to understand what we can offer each other, how we can best move forward together and in which areas we need to concentrate our efforts in order to maintain momentum. Most importantly, a strong and close professional relationship will be the key – as it was for Operation IRAQI FREEDOM. As the MOD concluded in its *First Reflections* report: ‘Working in a coalition brings political, diplomatic and military advantages, including the aggregation of capabilities, flexible war-fighting options and the sharing of intelligence and risk... At the operational and tactical levels, the planning and conduct of the operation was facilitated by the close professional relationship that has grown up between the UK and the US.’⁴⁸ We must ensure it is maintained – future coalition operations will depend on it.

Notes:

¹ E MacAskill, R Norton-Taylor and J Borger, ‘US may go it alone as Blair is caught in diplomatic deadlock’, *The Guardian*, 12 March 2004.

² ‘US willing to go it alone’, <http://www.aljazeera.info/Newsarchives>, 12 March 2003.

³ Cordesman (2003), pp 487-491.

⁴ Murray and Scales (2003), p 132.

⁵ General Franks: ‘I would honestly say to the people of Great Britain, thanks for committing this magnificent UK force to be part of this coalition. It’s powerful, it’s effective and I’m glad to march forward beside the Brits’, George Pascoe Watson, ‘I’m proud to march with Brits says General Tommy Franks’, *The Sun*, 24 March 2003, similar sentiments also witnessed personally in conversation.

⁶ ‘The Military Challenges in Coalition Operations’, CDS’ address to the UK Defence Systems and Equipment International Trade Show (DSEI) Conference, 11 September 2003 at www.deso.mod.uk/archive accessed 29 May 2004.

⁷ President Bush confirmed on 18 March that more than 35 countries were supporting the coalition, www.whitehouse.gov/news/releases/2003/03/20030319-17.html, 18 March 2003.

⁸ Dudman (2004), p 2.

⁹ Air Marshal Burridge: ‘I should preface all my remarks with ‘What you see depends on where you sit’’, Oral Evidence to HCDC, 11 June 2003, Q. 225.

¹⁰ *Delivering Security in a Changing World: Defence White Paper* (2003), para. 3.5.

¹¹ Now Air Chief Marshal, Commander-in-Chief, Strike Command.

¹² Air Marshal Burridge: ‘(The UK embedded staff) were members of General Franks’ staff, so instead of an American officer doing a particular job, there would be a British officer. That gave us linkage and connectivity between our two headquarters’, Oral Evidence to HCDC, 11 June 2003, Q. 217.

¹³ ‘...we were able to work closely with the US and influence the campaign from initial planning to execution through high-level political contacts ... as well as by the

presence of a significant number of embedded UK officers in key US headquarters.’ *Operations in Iraq: First Reflections* (2003), para. 6.2.

¹⁴ *Ibid.*, p 19.

¹⁵ ‘Too many to list!’ as General Moseley commented, General T M Moseley speech to Royal Air Force Air Power Conference, 11 May 04.

¹⁶ Air Marshal Burridge: ‘I sat below (CJO) and I had operational control, so I was given the tasks and the forces and then I just had to match them into the American plan. Tactical command, in other words executing the individual tasks, was held by the UK 2* officers who were contingent commanders within each environment, air, land, maritime. They handed tactical control to their opposite number who was in all cases a 3* American, who would actually be the person who owned that part of the plan’, Oral Evidence to HCDC, 11 June 2003, Q. 220.

¹⁷ N Tweedie and M Smith, ‘There’s no hiding place, say Allied military chiefs’, *The Telegraph*, 15 March 03.

¹⁸ *Ibid.*

¹⁹ General T M Moseley speech to Royal Air Force Air Power Conference, 11 May 04.

²⁰ *Lessons of Iraq – Third Report of Session 2003-04* (2004), para 84.

²¹ *Ibid.*

²² *First Special Report: Lessons of Iraq – Government Response to the Committee’s Third Report of Session 2003-04* (2004), para 25.

²³ Witnessed personally during television interviews with the NCC, 23 March 2004; subsequently widely quoted.

²⁴ George Pascoe Watson, ‘I’m proud to march with Brits says General Tommy Franks’, *The Sun*, 24 March 2003.

²⁵ Not just the UK and the US, but the Arab Street, other nations, the Iraqi people and, of course, the Iraqi regime.

²⁶ ‘Iraq War: Franks enters the fray of ‘Hollywood’ briefing room’, *Birmingham Post*, 24 March 2003.

²⁷ Harlan K Ullman, principal architect of the ‘Shock and Awe’ concept said: ‘The phrase ‘Shock and Awe’, as used by the Pentagon now, has not been helpful – it has created a doomsday approach – the idea of terrorizing everyone. In fact, that’s not the approach. The British have a much better phrase for it: effects-based operations’, Correll (2003), p 55.

²⁸ ‘The Department of Defense did not officially or explicitly endorse Shock and Awe, but traces of it could be discerned in statements by top leaders’, *ibid*, p 52.

²⁹ CENTCOM Press Briefing at:

www.centcom.mil/CENTCOMNews/news_release.asp?NewsRelease=20030344.txt, 22 March 2003.

³⁰ Adams (2003), pp 106-8.

³¹ Correll, p 57.

³² At a CENTCOM press conference, after another aggressive question from a BBC reporter, General Franks commented ‘Boy, there’s a lot of you BBC guys’ (witnessed personally on 23 March 2003).

³³ Adams, pp 106-8.

³⁴ Adams, p110.

³⁵ 'Iraq: the military campaign objectives' at <http://www.number-10.gov.uk> 17 March 2003 (visited 30 May 2004).

³⁶ CENTCOM Press Briefing at www.centcom.mil/CENTCOMNews/news_release.asp?NewsRelease=20030344.txt, 22 March 2003.

³⁷ 'Iraq: the military campaign objectives' at <http://www.number-10.gov.uk> (visited 30 May 2004).

³⁸ *Ibid.*

³⁹ 'A brief assessment of the political-military interactions that took place during Operation Allied Force shows an existing 'delta' between the technologically inspired greater operational speed capabilities that were offered and used by NATO and the tortuously slow political decision-making mechanisms of the North Atlantic Council ... In consequence, General Clarke was unable to unleash more sophisticated capabilities and thereby obtain a greater degree of operational speed', Young (2003), p 2.

⁴⁰ Air Mshl Torpy, UK Air Contingent Commander: 'What was different was that we were given greater delegation on this occasion because we knew that the tempo of the operation would demand decisions to be taken quickly and I could not go right the way back through the process, back to the PJHQ and MOD, which we could do when we had the luxury of time for our southern no-fly zone operations', Oral Evidence to HCDC, 5 November 2003, Q 1256.

⁴¹ Air Mshl Burrige, Oral Evidence to HCDC, 11 June 2003, Q. 251.

⁴² 'Come early and a nation can influence the plan as we did with CENTCOM albeit with no commitment to military action. Come late, and the plan is in concrete.', Air Chf Mshl Burrige address to DSEI Conference, 11 Sep 03 at www.deso.mod.uk/archive accessed 29 May 2004.

⁴³ *Delivering Security in a Changing World: Defence White Paper*, p 8.

⁴⁴ 'The Military Challenges in Coalition Operations', CDS address to DSEI Conference, 11 Sep 03 at www.deso.mod.uk/archive accessed 29 May 2004.

⁴⁵ Deputy Chief of Staff, Air and Space Operations, USAF.

⁴⁶ Lieutenant General Keys interview, 23 Jun 2004.

⁴⁷ Cultural visits, mini-exchange tours and an overhaul of the exchange programme are just some of the projects established under USAF/RAF Engagement.

⁴⁸ *Operations in Iraq: First Reflections* (2003), para. 7.

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SUMMARY OF THE MINUTES OF THE NINETEENTH ANNUAL GENERAL MEETING HELD IN THE ROYAL AIR FORCE CLUB ON 8 JUNE 2005

Chairman's Report.

AVM Baldwin noted that the Society had held two seminars during the past year. At the first of these, in October 2004, the RAF Museum had hosted a seminar on Supply and Logistic Support in the RAF, ably masterminded by Wg Cdr Colin Cummings. In March 2005, the history of the Harrier was covered at the Bristol Aerospace Welfare Association (BAWA) in Bristol. The supply seminar was held on a Saturday, and members have encouraged further Saturday events. Accordingly, the next seminar, which will discuss the history of flight safety, will be held at Hendon on Saturday 15 October. The Harrier seminar was a particular success and its eventual hardback record should turn out to be one of the Society's more important achievements. The chairman was particularly grateful to Gp Capt Jock Heron for putting so much effort into mounting the day, and to the Editor, Wg Cdr Jeff Jefford, who is now engaged in producing a clear and well-illustrated record.

On 11 September 2004, some members were able to attend the unveiling of the WW I British Air Services Memorial at St Omer. This project had been masterminded by Society colleague AVM Peter Dye and the Society is proud to be associated with, and to have supported, this fine memorial.

The subject for the spring 2006 seminar was not yet decided, and this illustrated the dilemma that the Society faced in choosing subjects which had not been covered before. The chairman invited members to propose subjects and to help organise future seminars.

The membership had now risen to a little over 900 and the finances were in good shape, especially after the subscription increase to £18. Some members, however, had still to amend their standing orders and the Treasurer, John Boyes, would be chasing the forgetful. It would be helpful if members would action the change and so avoid additional expenditure to the Society. The response to the appeal for completion of Gift Aid forms had been very successful, and this had contributed to a worthwhile increase in income. In addition, Rolls-Royce, BAE Systems and Cobham had contributed to the costs of the Harrier day.

The Society continued to advertise where sensible and had recently been the subject of a full-page feature in *Aeroplane Monthly*. The Society's page on the official RAF website was also being refined.

In conclusion, the Chairman thanked the committee for their continued hard work on behalf of the Society. He also appreciated very much the helpful advice and encouragement which the President, Marshal of the Royal Air Force Sir Michael Beetham, and the Vice-President, Air Marshal Sir Frederick Sowrey gave to the committee.

Secretary's Report.

Gp Capt Dearman noted that, since the 2004 AGM, forty-three new members had joined, of whom seven were serving members, while twenty-four had resigned and seven had died. Current membership was 916. Sales of journals had realised £347 since the previous AGM. A steady flow of correspondence, including many letters from overseas, reflected the widespread interest in the Society and its journals.

Treasurer's Report.

Mr Boyes tabled the annual accounts for 2004 which showed a loss of £2,950 with £22,300 in reserves.

The Society had made grants totalling £1,750 in favour of the Assault Glider Association, the Malta Museum appeal and the St Omer memorial. Seminars had shown a loss of some £2,000 and the audit fee had risen to £325. On the other hand, subscription income, especially the tax benefit from Gift Aid had improved and costs of publications had reduced. A small surplus was forecast for 2005 and the reserves were satisfactory and in keeping with the constitution of the Society.

A proposal by Desmond Goch, seconded by Sir Reginald Harland, that the accounts be accepted and that Messrs Pridie-Brewster of 29/39 London Road, Twickenham, TW1 3SZ be re-appointed as independent examiners was carried.

Appointment of Executive Committee.

The chairman noted that all the executive committee members had offered themselves for re-election, together with the existing ex-officio members. Proposed by Sqn Ldr Blanche and seconded by Sir Reginald Harland, the motion was carried. The members so elected were:

AVM N B Baldwin CB CBE FRAeS	Chairman
Gp Capt J D Heron OBE	Vice-Chairman
Gp Capt K J Dearman	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 H A Probert MBE MA	
Wg Cdr C J Cummings	

The ex-officio members of the committee elected were:

J S Cox BA MA	Head of AHB
Dr M Fopp MA PhD FMA FIMgt	Director RAF Museum
Gp Capt N Parton BSc MA MDA MPhil	DDefS(RAF)
CEng FRAeS RAF	
Wg Cdr D Robertson RAF	JSCSC

Discussion.

The chairman announced that Sqn Ldr Sophy Gardner had won the Two Air Forces Award, sponsored jointly by the Society and its counterpart, the (US) Air Force Historical Foundation. The president, MRAF Sir Michael Beetham, presented the trophy and an inscribed copy of *Sagittarius Rising*.

In answer to a question from Sir Reginald Harland, the Editor undertook to update the index of subjects in a forthcoming journal.

James Pettigrew suggested apprentice training as a future subject. Sir Reginald Harland noted that apprentices had reached very high standards and had been a key aspect of the RAF's rapid expansion in the 1930s, one in six ultimately being commissioned.

Alan Pollock suggested that the *Haltonian* magazine might be a good vehicle for advertisement. The editor undertook to investigate.

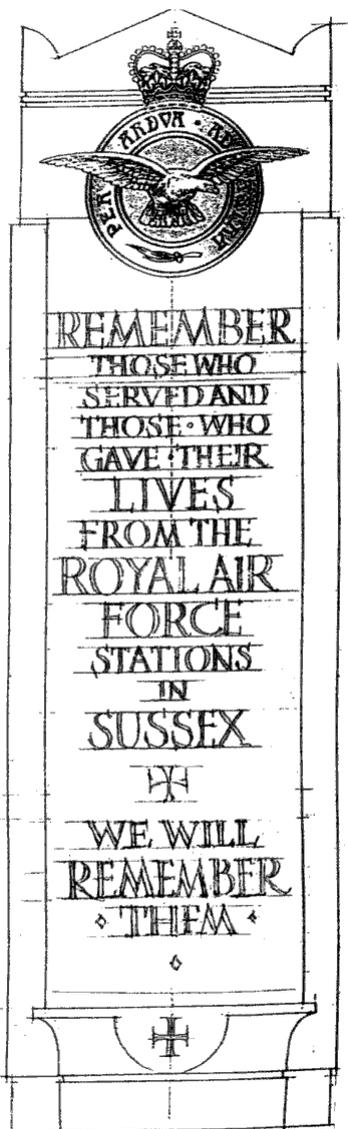
The Vice-President, Air Mshl Sir Frederick Sowrey expressed his thanks and appreciation to the chairman and committee. In particular, he commended the editor, Wg Cdr Jeff Jefford, for the excellence of the journals.

There being no further business, the meeting closed at 1820 hrs.

A ROYAL AIR FORCE MEMORIAL FOR SUSSEX

The Dean and Chapter of Chichester Cathedral have agreed that a memorial to those who served at Royal Air Force Stations in Sussex may be placed in the St Clement Chapel. It will be in the form of a fine wall-mounted stone panel designed by Donald Buttress, Surveyor of the Fabric of Chichester Cathedral and Surveyor Emeritus of Westminster Abbey. It is to be formally dedicated on Battle of Britain Day, 15 September 2006.

The memorial is expected to cost around £12,500. An appeal has been launched, under the patronage of this Society's Vice-President, Air Mshl Sir Freddie Sowrey, to enable members of the public to contribute towards this permanent record of the service and dedication of members of the Royal Air Force in Sussex now that its presence within the county is no longer so noticeable. If you would like more information or have any queries please contact the Cathedral Office on 01243 782595 or via e-mail at info@chichestercathedral.org.uk



THE RAF IN NORTH DEVON DURING WW II

At Appledore (near Barnstaple) in 2005 the North Devon Maritime Trust mounted a three-day exhibition to celebrate the Battle of Trafalgar. Events included: a computer animation of the battle; a database of the 21,000 men involved, permitting one to search for a relative; an exhibition of figurehead carving; a display of contemporary uniforms, and so on. Among the many topics addressed by lecturers were: 'The Weather at Trafalgar', 'Navigational Instruments of the Period', 'Aspects of the Battle' and '19th Century Shipbuilding in North Devon'.

The Trust is planning to mount an event on similar lines in 2007 to cover Royal Air Force activities in North Devon during WW II, with particular emphasis on Coastal Command and the histories of the regional airfields. That would seem to limit the scope to Chivenor, with Winkleigh and Okehampton as makeweights. If anyone would like to become involved or is able to contribute information, anecdotes, photographs or any other artefacts, they are invited to contact Bernard Smith of 24 Taw Meadow Cres, Fremington, Barnstaple, EX31 2QA. Tel 01271 327645.



The first operational Coastal Command unit to be equipped with Beaufighters was the Chivenor-based No 252 Sqn. This is one of its early Mk Is (R2198, PNB), flying over a frosty North Devon landscape in the winter of 1940-41.

THE POLISH APPRENTICES AT HALTON

Air Chf Mshl Sir Michael Armitage

Trenchard's scheme to train Aircraft Apprentices for the Royal Air Force produced well over 40,000 skilled tradesmen over the years, though quite a number of them did not go on to serve in the ranks of the RAF. Some apprentices found themselves, because of wartime exigencies, transferred to the Royal Navy; other groups of boys came to this country from abroad after the war to train as apprentices. These included lads from the air forces of Ceylon, Venezuela, Burma and Pakistan, who returned to their own Service at the end of their training. But because of their background, the most remarkable group of non-RAF apprentices ever to complete their apprenticeship was surely that made up of several hundred boys from Poland who arrived in the middle of the war.

Their story begins with the German invasion of Poland in September 1939, and the cynical treaty signed by Molotov and Ribbentrop later that month, a treaty that divided Poland between Germany and the Soviet Union. Both parts of the country were to suffer very severe hardships in the years that followed, but in the Soviet occupied eastern half, three waves of arrests and deportations started as early as February 1940 in which the professional classes of the population were rounded up. Families of judges, doctors, teachers, soldiers, policemen and others were selected for deportation or worse, and these families were never heard of again, though in April 1943 the discovery by German forces in the forest at Katyn of over 4,000 Polish officers murdered by the Soviets, gave an chilling indication of what probably happened to the rest of them.

Meanwhile, the families were marched to railway stations, destination somewhere in the Soviet Union. Cattle trucks were loaded to the brim with children, mothers, old men and the meagre baggage that they brought with them, and the overcrowded trains then trundled off eastwards. One survivor's account describes how many of the deportees succumbed to the bitterly cold weather of that winter, as their train made its slow progress through Minsk, Smolensk and Moscow, ending up seven days later at a settlement in the endless wastes of Siberia.

Here, the deportees found themselves housed in overcrowded wooden barracks, and they were put to work in the surrounding forest. The men in the groups cut down trees and sawed them into lengths before stacking them, while the young Polish boys, many of them only around eleven years old, had the task of clearing the woods afterwards, pulling out tree-stumps and burning the off-cuts. Food was very short, and even these meagre rations were cut if the work 'norms' laid down by the Soviet overseers were not met. There was a doctor in the particular camp described, but there were no medical facilities nor medicines with which to treat even routine illnesses. In these circumstances, the hard work and the hunger exhausted even the stronger ones among the inmates, leading to many deaths, and a subsequent typhus epidemic carried off more than a few of the others. During a twenty-month stay in the camp described, 600 people died out of the 1,700 or so who had originally arrived.

Then, in June 1941, wider events on the international stage intervened; Hitler's Germany invaded the Soviet Union. Soviet Russia thus became an ally of Britain, and perforce an ally of the governments in exile of France, Belgium, Holland, Denmark, Norway and, of course, of Poland. Among some of the senior members of the defeated Polish Army who had been imprisoned in the Soviet Union, was General Anders, and together with several other military leaders he was now released and authorised to form a Polish Army in exile, which would then join the Allied forces.

Overcoming immense difficulties, Anders managed not only to form the nucleus of an army, but also to move many of his men right across Russia and then through Persia to Iraq. One result of this unexpected change of fortunes was that from the autumn of 1941 onwards, many of the deported families were also able to start off from their scattered camps on the same kind of journey to the south and east. They may have been free to move at last, but the records show that they endured the most horrendous hardships on the way. Once again, these bedraggled refugees travelled by cattle truck on journeys that could take as much as two months to cover the 4,000 kilometres or so from Siberia to the south-eastern borders of Russia. Their trains had no priority, and their journey was constantly held up by troop trains carrying reinforcements going west, and other trains going east carrying wounded soldiers. Food was very scarce indeed,

and many more of these Poles died of hunger on the journey, weakened as they were by the bitter cold as winter set in.

Despite the chaos caused across the Soviet Union as the German advance towards Moscow continued and refugees flooded back, Polish officers, newly released from Soviet prison camps, managed among other things to set up collection points along the way for many of the families, and in particular for the many orphaned children who were making their painful way towards Persia. Gradually, the masses of Polish prisoners were organised into camps run by the nascent Polish Army, and in some cases it was even possible to open primitive schools for the many hundreds of children. Not all were so fortunate. Many boys found themselves instead dispersed to collective farms in the south of the Soviet Union, where in some cases they had no choice but to stay put for many more months. Food was always a problem. Survival often meant begging from nearby farms or stealing from local gardens. Even when Polish Centres were eventually opened in these remote areas of Russia, the only rations available were meagre portions of flour and fat.

Meanwhile, with remarkable energy, General Anders was forming cadet schools for some of the boys, and in these rudimentary establishments they were issued with uniforms, often several sizes too large, and given basic military training. Eventually, there were at least five such schools, between them holding hundreds of boys. The largest one, at Narpaj, held about 1,200 boys and, like all the others, it was staffed by Polish officers who had survived the Soviet purges.

By the summer of 1942, General Anders had managed to make arrangements for the Polish refugees to start leaving the Soviet Union. Travelling by truck and train, but often on foot, the mass of Polish families gradually filtered down to the southern borders of Russia. Conditions were still wretched in the extreme, but these survivors at last had the prospect of putting the Soviet Union behind them. In the southern Soviet town of Kagan, all the Polish orphanages were gradually brought together, and in due course the boys were assembled at the port of Krasnovodsk on the eastern shore of the Caspian Sea. Most of the refugees were then put on board the tanker *Molotow* and sailed in primitive conditions down to Pahlavi on the Iranian south shore of the Caspian. Here they disembarked, to be housed in tents and huts on the beach.

At this time, the autumn of 1942, Iran had in effect been under Anglo-Soviet occupation since August of the previous year, an occupation designed to facilitate rail traffic from the Gulf through to the Soviet Union. Many of the Polish families and orphans thus found themselves in the hands of the British Army. They were quarantined for six weeks at Pahlavi, where the boys were issued with clean underwear and a variety of British uniforms, and at last they were no longer prisoners of the Soviets.

Arrangements were now made to move them to Palestine, at that time a British mandated territory under the League of Nations. They were taken by road across the mountains of northern Iran to Tehran, and after a short stay in a military camp there, they moved across the frontier to Iraq where they arrived in the middle of September. Their route now took them through Baghdad and the deserts of Transjordan to cross the river Jordan and so enter Palestine where, on 10 November, they were housed at Qastina. Here a Polish military school had been set up under a Polish Army commandant. This was only one of several Polish military training camps being formed at this time in the Middle East. In Palestine alone these schools held, at their peak in August 1943, about 3,000 boys and 670 girls. Taking care of all these unexpected refugees in the middle of a war must have presented the authorities with a major administrative burden, with the result that other camps had to be set up for them, some for example at Tel-el-Kebir and Heliopolis in Egypt, while others were even further afield. Some of the families found themselves scattered as far away as Mombassa in what is now Tanzania and Kampala in Uganda, while yet others were dispatched to Karachi in what was then British India.

May 1943 saw the arrival at these various camps of a Polish Air Force mission, which had been formed to select and recruit candidates for training by the RAF at No 1 School of Technical Training (SofTT), Halton. During this process of selection it became quite clear to the Polish authorities that very many of the boys being interviewed were much younger than the 15½ year-old lower age limit for acceptance. But since none of them held any documentation, quite a number of the boys 'adjusted' their recorded age, sometimes by as much as two or almost three years! The often modest height and slight build of these boys was no doubt attributed by the authorities to the extremes of hardship they had suffered while prisoners in the Soviet



Gen Kazimierz Sosnkowski, CinC Polish Armed Forces in the West, meets the youngest Polish Air Force apprentice, Stefan Petruszewicz, during a visit to Halton in September 1943.

Union. Eventually, 264 boys were selected for Halton, and then brought together at Al Hamra transit camp on the Suez Canal from their various scattered locations. From Al Hamra they travelled first to Fayid, and then on to Suez where they boarded the liner *Mauretania*, at that time serving as a troopship, to sail round Africa to Liverpool, arriving in August 1943. Other boys would follow in December 1943, this time aboard the troopship *Stratsmore*, sailing from Suez direct through the Mediterranean to Liverpool. From Liverpool all the boys in both parties were taken by train to Wendover and thus to Halton, where the first group arrived on 14 August 1943.

They were each given their first RAF pay of ten shillings, and all housed in Block No 10 of Henderson Barracks. Once attested, the boys were allocated RAF serial numbers between 709001 and 709307, and three days later they were all issued with RAF uniforms. This was a process that led to quite a few difficulties, since even the very smallest of the RAF standard sizes of fit were far too large for some of

the Polish boys. Although the uniforms themselves were the RAF blue serge worn by all home-based airmen at that time, they carried Polish Air Force brass buttons, while both the SD cap and the side hat sported the Polish Air Force eagle badge. Just below the sleeve seam at the top of each arm, the uniform carried the word 'POLAND', while the brass apprentice badge of a four-blade aircraft propeller set in an annulus was worn in its traditional position on the left sleeve, between the shoulder seam and the elbow. The whole outfit was completed with the red cap-band worn by all the other apprentices of No 1 Wing.

The number of Polish boys at Halton fluctuated in the early days, for example one hundred of them left on 4 January 1944 to take up training at No 1 Radio School, Cranwell, and meanwhile more boys arrived from the Middle East, a party of twenty-nine arriving for example just two days later. The numbers in the Polish Squadron, as it became, eventually settled down to 207 boys, divided into two flights and housed in Blocks 9 and 10, each flight being allocated one block. On the right-hand side of the road up to the main parade ground, a flag-pole for the Polish ensign was erected, standing on a large base made up of the red and white chequered squares of the Polish Air Force emblem, still seen on Polish military aircraft today. Colour-hoisting and lowering took the same place in the routine of the Polish boys as it did then with the RAF apprentices of No 1 SofTT. There were other similarities. Good Conduct stripes in miniature were awarded after 12, 20 and 28 months service, all to be worn, as with their British counterparts, on the lower left sleeve, and promotions to the ranks of leading apprentice, corporal and sergeant were eventually made, all indicated by miniature chevrons worn on both sleeves.

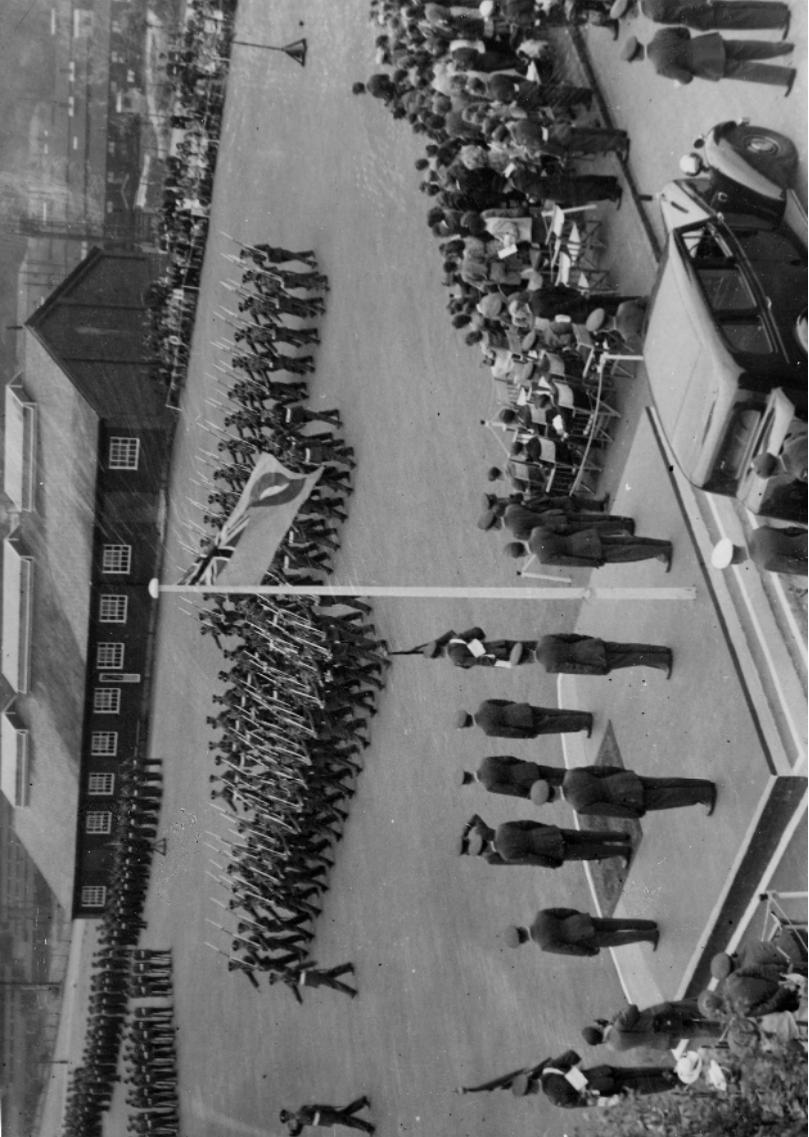
There was one very obvious difference on parades. Right up to the end of the war, the Polish Squadron used their own drill movements. Photographs show the boys swinging their arms, continental fashion, across the body, rather than fore-and-aft. They also paraded without arms. It is not entirely clear whether this was because some of the Polish apprentices were too small in stature to manipulate the Short Magazine Lee Enfield rifle with its 14" bayonet!

One serious problem for the Polish boys was that of language. As far as the administration and training was concerned, Polish Air Force officers and NCOs were soon drafted in, and Polish instructors were

found both for workshops and for schools. These arrangements were all complete by early 1944, and work could then begin in earnest in the five trades embraced by No 1 SofTT at that time: airframe fitter; engine fitter; armourer; electrician and instrument maker. In a sense, however, this creation of special Polish facilities had the effect of further isolating the Polish apprentices from their British counterparts, though it is difficult to see how any other solution would have made sense. Another potential problem was that the whole apprentice school closed down for block leave at Christmas, and in mid-summer. The British apprentices of course went home; but what to do with the Polish boys? Fortunately, even before the first Polish boys arrived at Halton, Lady Jersey had accepted an invitation to become the Honorary Guardian of these apprentices, and she, together with other public figures and the wife of the editor of a London newspaper, put out an appeal for help. The result was that 300 English families agreed to entertain Polish boys for the Christmas holiday. Similar arrangements were made for the subsequent leave periods, though for the summer leave of 1944 there was an added opportunity when the Irish Red Cross invited a party of apprentices across to the Irish Republic, with the result that 156 Polish boys were hosted by the Irish Army and by catholic families from towns all over the country.

Training soon settled down to a routine, in which, by early 1945, the boys had been issued with training manuals in their own language and a full Polish staff had been installed. This staff was made up of twenty-four officers, fifty-four NCOs, forty workshop instructors and thirteen academic staff who were engaged in the academic school.

The ending of the Second World War in August 1945 did not mean the end of training for the Polish aircraft apprentices. If their qualifications were to mean anything, then their three-year course had to continue. It was thus not until July 1947 that the first group of Polish apprentices passed out from Halton, doing so with the 49th Entry of RAF apprentices. For that occasion, there were three Polish flights on parade, two of them armed (they had been issued rifles in the February), while those apprentices who had not yet completed their training were lined up at the edge of the parade ground. Seven of those on parade passed out as LACs, sixty-nine as AC1s and the remaining sixty as AC2s – a total of 136. The remaining thirty-three boys, who, because they had arrived at Halton well after the main



July 1947 – the passing out parade of the first group of Polish apprentices.

body, now continued with their training, formed the Polish Flight of 'A' Squadron, No 1 Wing and were housed in Block 9. All but one of these apprentices eventually passed out with the 50th Entry on 10 March 1948.

Of the total of 207 boys who had been admitted to Halton, eighteen had been transferred to Polish military units on reaching conscription age, eighteen failed the course and two were discharged on medical grounds. That left the 169 who completed the course with the 49th and 50th Entries. Of these 102 stayed in uniform to serve with the regular post-war RAF, sixty remained in the UK as civilians, being assisted to find employment by the Polish Resettlement Corps, and five returned to Poland leaving just two unaccounted for, although there is some evidence to suggest that at least one of them may have left Halton to go to university.

On 21 June 1947, in the presence of Polish officers, NCOs and apprentices, together with many RAF representatives including the Commandant, Air Cdre Titmass, a Polish memorial plaque was unveiled in No 1 Wing. The plaque is still there today, fixed on the end wall of Block 14 (at the time it was Number 9 Block). It reads:

'Polish Avenue – These birch trees were planted by the Polish Aircraft Apprentices to express their gratitude to the British people for the hospitality, care and training that they received in the RAF at Halton in the years 1943-1947.'

The Halton training seems to have been a good foundation for later careers for the Polish boys. Most of them settled in this country. About fifty of them later gained higher educational qualifications such as HNC, BSc, and MPhil, while no fewer than three gained a PhD. About twenty became chartered engineers, and many of them later started their own successful businesses in a variety of fields. Several still turn up for the reunions of the Halton or Cranwell Aircraft Apprentice Associations.

Acknowledgement: I am greatly obliged to Eugene Borysiuk (709020) of the 49th Entry, who provided the material on which this article is based.

THE ORIGINS OF FIGHTER SQUADRON HERALDRY

Wg Cdr 'Jeff' Jefford

For the last half-century or so, ever since the days of Meteor night fighters, No 29 Sqn's marking has been the familiar triple-X 'brewer's cross'. It is said that this came about because, back in the dim and distant past, the CO had decided to paint the unit's identity on its aeroplanes in Roman numerals. The job was given to an aircrafthand whose classical education had evidently left something to be desired so he was obliged to ask how a legionnaire would have written 29. The response was 'X-X-One-X'. Our intellectually challenged airman interpreted this as a pair of Xs followed by another X, which he duly applied, leaving the aeroplanes adorned with a Roman 30. If this story sounds a bit far-fetched, that would be because it is. This essay will discuss the real origins of No 29 Sqn's marking, and of those of the other fighter squadrons whose traditions embrace the 1920s.

The first point to make is that, while today's squadron markings are merely decorative, they were originally introduced for a specific purpose. In 1914 there were so few aeroplanes that it sufficed to be able to tell whether they were simply friend or foe so national markings alone were adequate. Two years later, however, the skies were relatively crowded and it was becoming increasingly common for aeroplanes to operate in formation for mutual protection. This created a need to be able to identify one's colleagues in combat, especially as most RFC squadrons flew the same type – the ubiquitous BE2c. In April 1916, therefore, official markings, a selection of geometric shapes and various combinations of vertical and horizontal bars, were allocated to Nos 2 to 16 Sqs inclusive, apart from Nos 1, 3 and 11 which were omitted because they flew types other than the BE, and No 14 because it was in Egypt. These markings were applied in black on the natural linen finish of the then still uncamouflaged aeroplanes. No 2 Sqn's triangle, which was restored to use in 1927 and is still reflected in that unit's marking today, is the only surviving remnant of this initial allocation.

As additional units joined the RFC in the Field, more markings were devised and assigned. But there was a limit to what could be achieved with crescents, squares, zig-zags, discs, dumb-bells and yet more combinations of vertical, horizontal and diagonal bars. By the

summer of 1917, by which time all aeroplanes were finished in brown dope and marking were being applied in white, there were some fifty squadrons in France, making duplication inevitable. Thus, for instance, No 2 Sqn had lost its triangle which was now being sported by Nos 23, 43 and 55 Sqns which were soon to be joined by No 64 Sqn. There was no confusion, however, because these units all flew different types, SPADs, Camels, DH 4s and DH 5s respectively, and were assigned to different brigades, which meant that they operated over different sectors of the Front.

On 21 March 1918 Ludendorff launched the last major German offensive, Operation MICHAEL, and the BEF, and with it the RFC, began to withdraw to the west. The very next day HQ RFC announced that it had been:

‘... decided to discontinue squadron markings in the case of all squadrons except single-seater fighters. The markings of the latter will be changed at irregular intervals on orders from HQ RFC.’

Apart from requiring all two-seat units to obliterate their markings, this order also involved a reallocation of the emblems assigned to each fighter squadron, so every unit will have been obliged to break out the paintbrushes. HQ RFC expected its edict to have been implemented ‘within two or three days’ and the fact that it was prepared to impose such a demand when its squadrons were under considerable pressure, carrying out frequent changes of base while simultaneously sustaining high-intensity flying operations, probably indicated concern that prominently displayed identification devices would reveal deployment patterns to the enemy. That aside, was it logical to delete the unit markings that had previously been regarded as being essential? Yes, because the tactical situation had changed and much of the rationale that had underpinned the introduction of markings two years earlier had evaporated; they were now being allocated largely as an automatic bureaucratic process rather than because they were actually necessary.

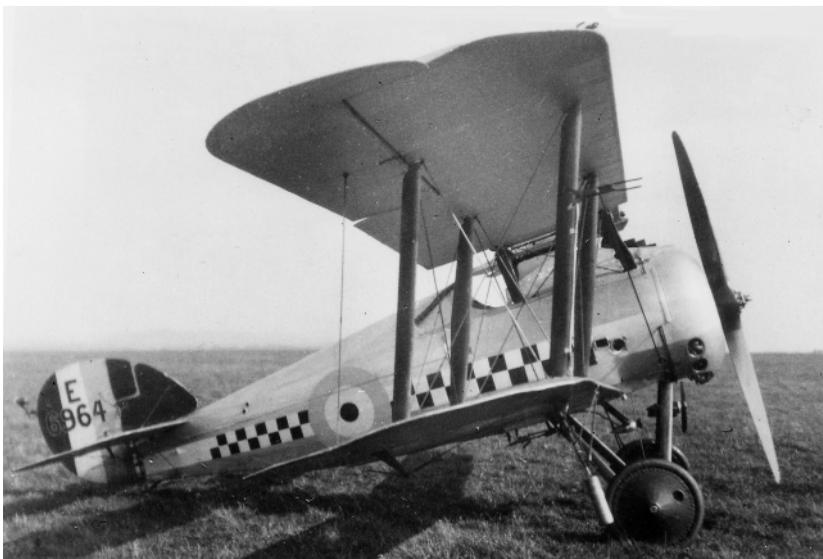
By the spring of 1918 air operations in France had crystallised into five broad types: fighting patrols; artillery observation; reconnaissance; and day and night bombing. Fighters generally flew in formation until joined in combat after which they needed to be able to regroup, which justified the retention of unit markings. On the other



Having previously been worn by at least five other units, by the time of the Armistice, the triangle had been reassigned to No 91 Sqn, which was still working up in the UK.

hand, aircraft working with the guns and/or flying reconnaissance missions tended to operate alone and thus had little need to be able to identify other aeroplanes. By contrast, day bombers were supposed to fly in, and maintain, close formation at all times in order to create a defensive cross-fire, so, since their crews were never supposed to find themselves isolated, they too had little need for identification markings. Night bomber crews flew alone, so unit markings were of little use to them either, especially as they could not be seen in the dark. Thus it was that, when the unified air service was created in April 1918, only its fighter squadrons were entitled to display any form of heraldry.

In the event, and contrary to HQ RFC's stated intention, HQ RAF never did direct any significant changes in markings following the major reallocation in March. Thus, taking as an example the three fighter squadrons that had been sporting triangles in 1917, when the fighting ended No 23 Sqn's new Dolphins were wearing a disc, No 43 Sqn's Snipes had an opposed inclined bar either side of the roundel while No 64 Sqn's Camels had a single vertical bar aft of the roundel. The triangle was still in play, however, having been reassigned to No 91 Sqn which was working up with Dolphins in the UK when the



A Snipe of No 56 Sqn, sporting the original 1924-style narrow marking running (almost) the entire length of the fuselage and, in this case, tapered.

Armistice was signed.

Mass demobilisation in 1919 meant that the RAF all but disappeared and by March 1920 it had dwindled to just twenty-nine squadrons, few of which were at full strength. Of these only ten were stationed in the British Isles and, since none of them were fighter squadrons, the need for unit markings had disappeared altogether.

The nucleus of an air defence force began to emerge with the re-formation of No 25 Sqn in April 1920 but it was not until November 1922, when it was joined by No 56 Sqn, that there was even a remote possibility of units becoming mixed up. Five more squadrons, Nos 19, 29, 32, 41 and 111, had been re-formed by the end of 1923, however, and unit identification began to become a real problem again. Following air exercises held in the summer of 1924, by which time Nos 3 and 17 Sqns had joined the throng, HQ 6 Gp reported that:

‘Squadrons when flying in formation had difficulty in picking up their own formations after encountering formations in the air (*and that*) when the Group Commander was witnessing

formation flying of various Squadrons in close proximity to each other it was difficult to criticise their work.'

As a result, a series of experiments had been conducted from which a variety of markings had been selected as being the most appropriate. All were essentially longitudinal devices (as illustrated at Figure 1) which were intended to run, more or less, the whole length of the fuselage. AOC 6 Gp, Air Cdre Charles Samson, urged that his recommended markings should be officially recognised and that the use of red, yellow and blue should be adopted as flight colours. To anyone familiar with post-WW II markings, No 6 Gp's submission had featured only two real oddities. First, there was No 19 Sqn's design, although there are at least four photographs which prove that it, and variations on the theme, were worn by both Snipes and Grebes. Secondly, we can see that, as originally conceived, No 29 Sqn's marking did not really consist of red Xs at all; it was supposed to be two zig-zags in anti-phase, and in black, not red.

At HQ Inland Area, Air Cdre Webb-Bowen endorsed the change in flight colours (from red, white and blue) but was not persuaded of the necessity for Samson's new-fangled coloured markings. Webb-Bowen considered that the markings used in WW I had been 'admirable' and that these should simply be reinstated, and applied to bomber and army co-operation aircraft in addition to fighters, which, he pointed out, would have had the added advantage of fostering tradition. Inland Area had two other reservations over the proposal. First, in adopting coloured designs, it was clear that HQ 6 Gp had taken it for granted that aeroplanes would continue to be painted in bright silver in wartime; Area HQ thought it far more likely that they would all be painted in some dark colour in the event of hostilities. Secondly, it was considered that the proposal had failed to address the problem of visibility in the dark.

As an interim measure, the Air Ministry published a Weekly Order (AMWO 895 of 18 December 1924) which formally sanctioned the use of red, yellow and blue, for A, B and C Flights respectively, and announced that the standardisation of squadron markings was under consideration but went on to state that:

'Pending a decision on this subject, any squadron which has already adopted a system may be permitted to retain the



No 17 Sqn – black double zig-zag.



No 19 Sqn – blue diagonals with narrow blue outline.



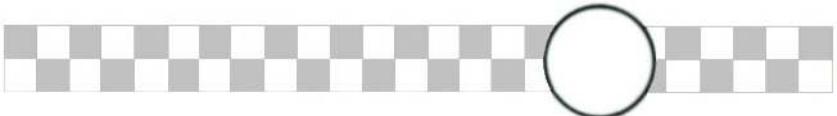
No 25 Sqn – black 'box'.



No 29 Sqn – interlocking black zig-zags with narrow black outline.



No 32 Sqn – blue with white diagonals.



No 56 Sqn – red and white chequers.



Nos 3, 41 and 111 Sqns in green, red and black, respectively.

Fig 1. *The squadron markings as proposed by AOC 6 Gp in September 1924. Already in use on a trial basis, it was envisaged that they would run more or less the whole length of the fuselage and be applied in 6- to 8-inch strokes.*

distinguishing mark provided that it does not obscure the national marking and is approved by the AOC.'

The matter was evidently not regarded as pressing, however, and it was January 1926 before the Ministry decided to refer the question to HQ ADGB who were invited to 'evolve a solution as and when opportunities arise'. Another year slipped by before, in January 1927, ADGB sought the advice of its subordinate HQs at Andover and Uxbridge. In January 1928, the Air Ministry finally received the recommendations it had requested two years previously. As well as fighters, these addressed the perceived requirements of day bombers which, it was proposed, should employ combinations of black fuselage bands, with Auxiliary Air Force and Special Reserve units embellishing these with additional bands in red, green or yellow.

All of these markings were illustrated in colour in an annex providing details of dimensions. There had been some significant changes to the proposals submitted in September 1924 (those at Fig 1), notably that they were now being displayed between the roundels of the upper wing as well as on the fuselages sides. By this time No 19 Sqn had abandoned its original design in favour of a series of chequers *à la* No 56 Sqn, but in blue and white. In addition, three new units had been formed, Nos 1, 23 and 43 Sqns. The first of these had adopted a red-outlined 'box', something like No 25 Sqn's marking, the second was using alternating red and blue squares, while No 43 Sqn had opted for black and white chequers.

There had also been a lot of tinkering with the presentation of some of the other markings, for instance, while Nos 3 and 111 Sqns' green and black bars were still centred on the roundel, the former's was still only 8 inches deep, whereas the latter's was now (supposed to be) 18½ inches deep; No 41 Sqn's red bar had also grown, but to only 12½ inches, but it had also moved upwards so that its upper edge was aligned with the top of the roundel. No 25 Sqn's marking had also evolved in that it had shed its vertical bars, leaving just two long horizontal stripes. Another interesting development was that only Nos 1, 3, 17, 23, 32, 41 and 111 Sqns still wore their markings along the whole length of the fuselage, Nos 19, 25, 43 and 56 restricting theirs to the portion forward of the roundel. No 29 Sqn's marking had undergone a major process of evolution and by early 1928 it had



A Grebe of No 32 Sqn wearing the later, deeper, style of marking that had become fashionable by 1928.

become (was officially portrayed as being) a single red X, flanked by horizontal red bars above and below, and notionally applied only *aft* of the roundel – more of this anon.

The conditional qualifications that crop up in the preceding paragraph are intentional, because photographic evidence indicates that the actual application of markings did not always conform to a standard pattern, indeed, since the whole concept of markings was still being conducted on a trial basis, a degree of ‘free expression’ may well have been tolerated, perhaps even encouraged, in the interests of establishing the best solution – or solutions, because what may have been good for a Gamecock may not have worked so well on a Siskin. It would seem, therefore, that HQ ADGB’s letter of January 1928 may have been the first serious attempt to specify the precise size and shape of squadron markings.

Nevertheless, by this time, despite sundry variations on themes, most of the, still technically provisional, fighter markings had actually been in use for approaching four years and were now sufficiently well-established to have become regarded as ‘traditional’. This was unfortunate, because the Air Ministry, blatantly ignoring the permission that it had actually granted in December 1924, now took the view that any markings applied in the interim should have been on

a limited scale and confined to a few trials aeroplanes.

The Ministry's initial reaction was to reject ADGB's recommendations and advocate instead a systematic, but very complex, arrangement of its own devising. This used one or two symbols (square, triangle, heart, club, diamond, spade, star, etc) combined with one, two or three bars arranged vertically, horizontally or diagonally. Since these devices were to be grouped in logical patterns they would amount to coded combinations permitting anyone who understood the system to decipher the unit's numerical identity. It was envisaged that this scheme would be applied universally so that every squadron would be embraced, irrespective of role.

This proposal found little favour elsewhere, however, and in November 1928 the Ministry finally backed down and accepted that unit markings were only required for single-seat fighters, day bombers and, for good measure, the two University Air Squadrons. Furthermore, it withdrew its reservations over the existing fighter markings and formally approved the permanent adoption of the markings that had been submitted by HQ ADGB at the beginning of the year. That still left the problem of what system to adopt for bombers and in April 1929 ADGB offered up a proposal which was, in essence, merely a variation on its earlier theme of multi-coloured fuselage bands.

Once again the Air Ministry objected, but this time with some justification. Someone finally seems to have taken a fresh look at the problem. His conclusion appears to have been that, while highly manoeuvrable fighters may have needed to carry distinctive markings, the argument was less convincing in the case of bombers. But, if bomber crews did need to be able to identify other aircraft of their unit, since their aeroplanes were large enough to carry legible characters, why not simply paint the squadron number on each side of the fuselage? Common sense prevailed and in June 1929 the Air Ministry ruled that day bombers were simply to carry the squadron number painted in the appropriate flight colours and that no unit markings were to be applied to night bombers.

It had taken five years but the question of unit markings had finally been settled, at least in principle. In the meantime, in anticipation of the re-formation of No 54 Sqn in 1930, the Air Ministry had agreed that its marking should be a yellow bar aft of the roundel. This was a



Above - Illustrating the standard means of identifying day bomber units in the 1930s, a Hart of No 15 Sqn with its squadron number boldly displayed in A Flight red. Most units were content to use Arabic numerals.

Below - A Bulldog wearing No 54 Sqn's short-lived yellow bar marking, which was originally intended to be applied only aft of the roundel. (MAP)



singularly inappropriate colour for a fighter squadron, of course, and it was soon changed for red and white diagonal stripes. Apart from this there were no further significant changes to existing fighter markings, although the creation of further new squadrons during the Expansion Schemes of the 1930s meant that yet more markings had to be devised and introduced. Having said that, however, an examination of photographs taken during the 1930s will show that the individualism of fighter squadrons made it virtually impossible to police the system and, while the colours and the basic patterns (chequers, bars, stripes, etc) were always respected, this still left ample scope for units to vary the ways in which they were presented.

Towards the end of the 1930s the introduction of practical air-to-air radio communication began to render unit markings increasingly superfluous and some squadrons had actually begun to abandon them as their importance waned and their significance began to have more to do with tradition than tactics. Furthermore, by this time the Air Ministry had lost interest in the whole business and had delegated responsibility to HQ Fighter Command. The last new marking to be formally endorsed at Ministry level was that of No 64 Sqn in September 1936, the associated letter stating that in future:

‘... the approval of the Air Ministry for any alterations to the markings of existing squadrons or for markings for newly formed squadrons need not be applied for.’

The Munich crisis of 1938 finally obliterated the brightly coloured peacetime plumage under a coat of camouflage paint – just as Webb-Bowen had forecast back in 1924. A system of unit code letters was introduced early in 1939 to reinstate a means of visual air-to-air identification, although, with hindsight, it is doubtful whether this was still really necessary. Interestingly, in 1951, when the Air Ministry announced that the use of code letters was to be abandoned, it did so because:

‘... the use of these markings in the last war is now known to have given the enemy a great deal of gratuitous information about our order of battle ...’

This policy decision had been complemented by another which had re-instated coloured bar markings for fighters. Many of the patterns

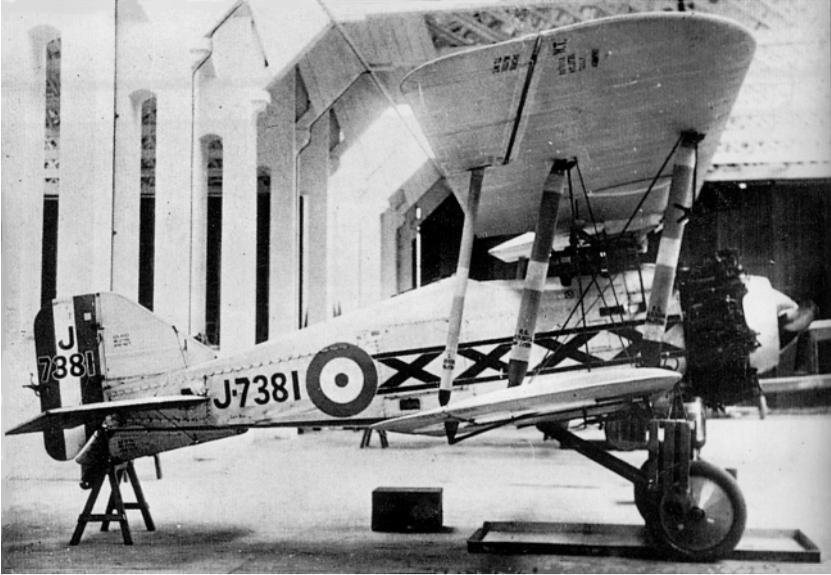


Above, a Bulldog displaying No 41 Sqn's plain red bar, which dated back to 1924 and, below, the red bar being worn by a latter day Lightning of No 5 Sqn. (MAP)



which were authorised were based on those that had been approved before the war but there were a number of curious inconsistencies. Why, for instance, was No 54 Sqn allocated blue and yellow chequers in place of its pre-war marking, and why was No 41 Sqn's traditional red bar transferred to No 5 Sqn?

Furthermore, the considerable expansion in the strength of Fighter Command, in response to the Korean War, involved the adoption of an air defence role by many units which had either not existed before the war or had not previously been fighter squadrons, which meant that many additional markings had to be approved. By this time, however, such markings were purely decorative and, as in the past, virtually



It can be difficult to differentiate between red, blue and black on some photographs but an original print of this one shows that the Xs match the black serial number and not the red of the roundel.

impossible to police. Despite explicit regulations as to how they should be displayed, one can detect a repeated pattern over the last half century or so, especially during the Lightning era, in which markings tended to grow and/or be modified and/or applied in inappropriately garish styles until authority clamped down only for the trend to reappear a few years later.

Since this essay began with an apocryphal tale concerning the origins of No 29 Sqn's triple-X, it may be of some interest to summarise how it really came about. It is plain that No 29 Sqn's marking had not been designed as red Xs at all, having initially been conceived as a pair of interlocking, continuous shallow black zig-zags (*see Fig 1*). This writer is unaware of any photographic evidence to indicate that this marking was ever applied in its intended style. There are, however, photographs that show that Grebes wore something very similar, although the zig-zags have become separated so that they appear as four close-coupled Xs, with a substantial horizontal line above and below. Because of the emulsions used, it is often difficult to

distinguish between red, blue and black (and sometimes even yellow) on contemporary photographs but there is at least one excellent shot of a Grebe (J7381) that leaves little doubt that its four Xs were applied in black, and it is surmised that this would have been an early application, reflecting the colour as initially specified under Samson's scheme. While other photographs show that four Xs were commonly applied, there is at least one picture of another Grebe (J7532) wearing only three Xs and before the type had been withdrawn they were almost certainly being painted in red. Although it is now taken for granted that No 29 Sqn's marking has to have three Xs, this number appears to have been selected arbitrarily when the staffs were specifying the post-war patterns in 1950. In practice, the number of Xs (and indeed the size, shape and style of the markings of other units) was decided by such factors as geometry, ie the size and shape of the fuselages of different aircraft types, the location of the roundel, the need to preserve the presentation of the serial number, any interference caused by such items as exhaust pipes and, ultimately (as can be seen by the preceding photographs of Bulldogs) a growing tendency to confine markings to fabric-covered, as distinct from ply- or metal-panelled, sections of the fuselage.

In the case of No 29 Sqn, once the zig-zags had morphed into Xs and acquired upper and lower flanking bars, the critical factors governing the number of Xs displayed were the space available between the bars tempered by aesthetic considerations. Thus, with the early tendency to have long narrow markings, the Grebe could initially accommodate four. With time, however, markings tended to become larger (deeper) and the Siskin settled on three, painted ahead of the roundel, and now definitely in red. The final stage in this evolutionary process, as formally proposed by ADGB in January 1928, would have allowed for only a single X, applied aft of the roundel. There does not appear to be any photographic evidence to indicate that No 29 Sqn ever wore just one X, however, and it seems that aesthetics demanded a symmetrical arrangement with a single large X either side of the roundel, ie a total of two, and there are certainly pictures of both Bulldogs and Demons marked in this fashion.

So, since No 29 Sqn had worn four, three and two Xs during the inter-war years, why did the Ministry settle on three in 1950? It is suspected that the staffs were probably unaware of the evolutionary



Above: No 29 Sqn's Demons wore just two Xs, as had the Bulldogs that they had replaced..(MAP) Below: A Siskin of No 29 Sqn at Hendon in 1929. Could the availability of this picture, and others like it, have been why it was decided, in 1950, to standardise on three red Xs for this unit's marking, rather than the two or four which had also been used between the wars? (A Thomas)



processes of the 1920s and based their decision on available photographic evidence. Since pictures of No 29 Sqn's triple-Xed Siskins were relatively commonplace at the time, whereas photographs of its Grebes, Bulldogs and Demons did not emerge until much later, three Xs would have been the obvious conclusion. This might also explain why No 54 Sqn's red and white stripes were not reinstated, because they were worn only briefly, by Bulldogs and Gauntlets, and photographic evidence of this was, and indeed still is, relatively scarce.

THE ORIGINS OF AIRCREW WHO FOUGHT IN THE BATTLE OF BRITAIN

Dr Tony Mansell

In 1977 I read Len Deighton's rather provocative book, *Fighter, The True Story of the Battle of Britain*, (London; 1977). It was clear that the pilots at least were drawn from a pretty wide spectrum of the society of the 1920s and '30s and that was something which interested me as an educational historian. Education influences access to elite groups, and airmen certainly qualify in that respect. Here was a cohort of men whose routes into the Battle must reflect both the Service's needs and the ability of Britain to come up with the goods. The matter was certainly worth looking into. The starting point had to be a list of the names of participants and that was to be found in the Master List held by the Battle of Britain Fighter Association (BBFA).

Membership of the Association depends upon entitlement to wear the Battle of Britain Clasp to the 1939-1945 Star (hereinafter the Clasp) denoted by a silver-gilt rosette when the medal ribbon is worn alone. The award of the Clasp required aircrew to have flown at least one operational sortie between the relevant dates and times in fighter aircraft. These conditions, together with a list of eligible squadrons, were set out in Air Ministry Order (AMO) A.741/1945 issued in July of that year. However, Nos 3, 232, 245, 247 and 263 Sqns, Nos 421 and 422 Flts and the Fighter Interception Unit (FIU), all of which had been flying fighter aircraft, were omitted. Conversely, Nos 53 and 59 were listed, but clearly in error, as they had been flying the bomber version of the Blenheim IV and had actually been transferred from Fighter to Coastal Command a few days prior to the commencement of the Battle. AMO A.544/1946 added the FIU to the list and removed Nos 53 and 59 Sqns but there the matter rested for fourteen years until the Air Ministry were finally persuaded to include the missing units and this was done in AMO N.850/1960. If the letter of AMOs A.741/1945 and A.544/1946 was strictly adhered to sixty-five men who had served exclusively in the missing units had to wait for fifteen years before they got their Clasps. In that time some may have died and some may have failed to claim the Clasp anyway when AMO N.850/1960 was published. Nos 804 and 808 Sqns of the Fleet Air Arm (FAA) operated under Fighter Command control during the

Battle along with a further twenty-five naval pilots who flew on loan to RAF squadrons. The Navy, being a law unto itself; dealt with the issue of Clasp in Admiralty Fleet Orders (AFO) 2686 and 3115 of 1945. The Admiralty were not subject to an AMO for permission to do that but should have taken note of the RAF squadrons which the relevant AMOs had accredited.

So, during the 1980s I had a lot of correspondence with Gp Capt Tom Gleave, who had fought in the Battle with No 253 Sqn, suffering severe burns in the process and becoming one of Archibald McIndoe's original band of 'Guinea Pigs'. Following his retirement in 1953 he became the official Historian of the BBFA. The list held by the Association originated in the work done by Flt Lt John Holloway who had been with No 615 Sqn as a wireless mechanic during the Battle. In 1955, he got the idea of making a collection of the signatures of men who had flown in the Battle. It soon became obvious that a complete list of those eligible for his collection was needed and, with help from the Air Ministry, he set about his self-imposed task of compiling it.

From his labours over many years the Master List emerged. Can we be certain that this list can now be thought of as complete? In Tom Gleave's opinion such an ideal state of affairs was possibly unattainable and my own experience over the twenty years or so that I have been interested in the origins of Battle of Britain aircrew suggests that he may well have been right. Men have been both added to or removed from the Master List as a result of later research and/or through approaches made to the BBFA by veterans themselves or by members of their families. John Holloway originally came up with a figure of 2,946 qualifiers and the Monument to the Battle which stands on the Embankment in London, sponsored by the Battle of Britain Historical Society and unveiled by HRH The Prince of Wales in September 2005 has 2,936 names, cast in bronze. The Battle of Britain Memorial Trust has placed 2,939 names on its panels listing the names of The Few at Capel le Ferne and the figure which I have arrived at from my own research is 2,934.

Clearly the Embankment Monument compiler's total and mine are close but they do differ slightly in composition. They have five names which I do not accept and I have three which do not figure on their list. There is, however, no need to lose much sleep over this. In every list I have seen over the last twenty years, including my own, the

claims for inclusion of, at most, ten men (0.3% of the total) are somewhat ambiguous. Since it is important that the names of those who took part in such a major event in this country's history should be recorded for posterity, the benefit of the doubt is, I think, justified in a few cases. That said, the marginal nature of these numerical discrepancies is not sufficient to invalidate the overall picture of the men who fought the Battle which emerges from my tables.

The most important primary source for identifying *bona fide* Battle of Britain aircrew is not the Master List but Form 541, supplemented by Form 540. Together these constitute the Operations Record Book (ORB) which every unit is required to maintain. On Form 541 *should* be recorded the names of aircrew, preferably with initials and rank, together with details of the sorties they were flying, covering all of the operational (and occasionally non-operational) activities in which a squadron was involved on an hour by hour, day by day basis. Form 540, which tended to be compiled in arrears, provided a monthly narrative, generally in diary form, summarising all significant events. In Form 540 the historian may find such invaluable information as dates of postings in and out with the names and Service Numbers of the individuals concerned. The Service Number is vital because it invariably points to the man's mode of entry to the Service. Finding a man's Number is not always easy, however, and tracking it down may involve forays into other sources, eg the *Air Force List*, the *London Gazette* and the records of such places as Cranwell, Halton and the University Air Squadrons. The important thing to realise about Forms 540 and 541, and especially the latter, is that they were being compiled on airfields which could be in the thick of the fighting, including being bombed, and their compilers had other things on their minds than the convenience of future historians.

Amongst many things I am indebted to Tom Gleave for is the following impression of the way in which a typical Form 541 would have been compiled. The process began with the Flight Authorisation Book – copies of which do not appear to have survived in the public records. This would list the aircrew detailed for sorties but during stressful periods this information may have been written straight onto a blackboard in the Flight Office, possibly accompanied by the omission of ranks or initials and, of course, by spelling mistakes. On some occasions this data was not copied into the Flight Authorisation

Book and when it was a further opportunity arose for mistakes. Take offs and landings were recorded by a timekeeper, usually an airman, out on the airfield or maybe standing in the doorway of an air-raid shelter. Data from the Authorisation Book, or blackboard, plus that supplied by the timekeeper was then used by the adjutant's office to compile Form 541 and, with so many links in the chain, some of them rather fragile, it is not surprising to find errors and omissions. The quality of the adjutant is another component of the mix which needs to be taken into account. Some ORBs are immaculate; most can be classed as satisfactory but some leave quite a lot to be desired. Furthermore, individual squadrons tended to have idiosyncratic variations on the general theme and particular airfield layouts could also impose their own restrictions on, for instance, timekeeping procedures. All of this is in the specific context of fighter squadrons where the Flight Commander's authorisation for sorties may have been in response to scramble orders arriving without warning. The number of aircraft needed may not have been known until after the receipt of that order and, although next-in-line pilots would have been forewarned and ready to go, the exact composition of a scrambled formation may have been something of a last-minute affair.

As primary sources the squadron ORBs are supplemented by a variety of others, eg combat reports, casualty reports, aircraft loss data and individual pilot's log books. The latter are very rarely in the public domain but, from the BBFA's point of view they can be crucial in establishing the validity of a claim for membership of that organisation. The Commonwealth War Graves Commission and the staff of the Personnel Management Agency at RAF Innsworth are invariably helpful in hunting down details of both officers and airmen and their locations during the Battle period. Many individuals have spent hundreds of hours trawling the archives to check the validity of names on the Master List and the work of the late Bruce Burton in that respect is noteworthy. Secondary sources, such as Wood and Dempster's *The Narrow Margin* (London; 1961) in which the Master List first appeared in print; Francis Mason's *Battle Over Britain* (Bourne End; 1990) and Ken Wynn's compilation *Men of the Battle of Britain* (South Croydon; 1999) are all thoroughly researched and valuable, although none are entirely flawless. Biographies and autobiographies of individual pilots can also be very useful as can the

information volunteered to researchers by Battle of Britain veterans.

I am primarily interested in the way in which a man entered the Service and became a pilot because that is a pretty clear indicator of his educational background. Hence Table 1 classifies men accordingly. For example, a man may have entered as an aircraft apprentice, gone on to become a pilot and to be commissioned. He is different in kind to a pilot of the same rank who got his short service commission after leaving school – and he would no doubt have agreed! For similar reasons I differentiate between a man who became a pilot via Cranwell from one holding a permanent commission who entered direct from his university. Of course there are problems with any scheme and some may argue with particular classifications in a few individual cases. For example, was Fg Off ‘X’ really an RAF Volunteer Reserve (RAFVR) entrant or should he have been listed as a short service commission man because he had originally been one but was cashiered and joined the VR in the late 1930s? Similarly should Plt Off ‘Y’, who spent two years learning to fly with the RAFVR but then joined the Auxiliary Air Force (AAF) three months before the war, be classed as belonging to the latter or the former? In short it is sometimes difficult to avoid a degree of subjectivity in deciding where an individual should fit within the pattern. In the few such tricky cases, which involved reservists moving from one class of reserve to another or taking up regular commissions, my solution was to go for the category in which the man actually appeared when the Battle commenced on 10 July 1940. Subjectivity also comes into play when considering the credentials of borderline cases for inclusion or exclusion on lists – and this has certainly played a part in those variations concerning total numbers I have mentioned above

Pilots

To have taken part a pilot must have entered the AAF, the RAF or one of its Direct Entry Reserves prior to the outbreak of the war or, in a small number of cases, in its opening months. Ten months elapsed between the outbreak of the war and the commencement of the Battle – barely enough time in which to train a pilot to operational standard, hence the overwhelming majority of those who took part were pre-war entrants. It should be noted that some of them had not been trained for the fighter role; there were, for example, a number of ex-Lysander and

Fairey Battle pilots who volunteered to be transferred to Fighter Command during the Battle.

Most of the participating pilots were British but there were also men from the Empire who had enlisted in the RAF or its reserves, or who came to fight alongside them. Before and after the fall of France pilots arrived who had served in European air forces, Belgians, Czechs, French and Poles. Americans and Irishmen also took part. The statistics and comments which follow show the contributions of the various portals of entry to the Service and hence to the Battle itself.

Entry Category (Regulars)

	Number in Battle	Killed in Action	% Killed in Action
Cranwell ¹	88	24	27
Direct Entry Permanent Commissions ²	18	4	22
Short Service Commissions ³	665	142	21
Apprentices ⁴	116	22	19
Other Airmen ⁵	48	9	19
Direct Entrant Airmen Pilots ⁶	30	3	10
Total Regulars	965	204	21

Entry Categories (Reserves)

Auxiliary Air Force ⁷	152	28	18
University Air Squadrons ⁸	99	23	23
Auxiliary Air Force Airmen ⁹	30	8	27
Royal Air Force Volunteer Reserve ¹⁰	797	136	17
Total Reserves	979	172	18

Other Categories

European Air Forces ¹¹	271	42	16
Dominion Air Forces ¹²	66	4	6
Fleet Air Arm ¹³	59	9	15
Total Pilots	2340	431	18

Table 1. Entry Categories of Pilots who participated in the Battle of Britain.

Notes on Table 1.

1. Cranwell was the portal of entry to the RAF which, via its cadetships, was intended to produce men holding Permanent Commissions, ie those destined for a full career in the Service.

2. Direct Entry Permanent Commissions were awarded to men who could, without passing through Cranwell, offer the Service some valuable expertise or qualifications. A scheme was in force to attract university graduates to such commissions.

3. The majority of RAF officers held Short Service Commissions, which could be extended by mutual agreement or even converted to Permanent Commissions. They attracted young men who wanted to fly for a few years and then return to civilian life.

4. Aircraft Apprentices entered the Service at around 16 years of age to become its most highly skilled tradesmen. Those destined to become engineers (Group I), typically engine and/or airframe fitters, were trained at Halton (and later Cosford), while those earmarked for wireless and electrical trades (also Group I) were trained at Cranwell. There was a parallel scheme for Apprentice Clerks (Group IV) who were trained at Ruislip. After serving in their trades for a number of years any ex-apprentice could apply for training as a pilot. If successful, they flew for a notional five years (although this could be extended) before resuming their original duties. The majority of the men shown here came from Halton (103) but small numbers of those from Cranwell (8) and Ruislip (5) are included in the total. Each year a number of the best Halton or Cranwell apprentices who had completed their courses were commissioned via the award of Cranwell cadetships. Eight of the 88 Cranwell graduates who flew in the Battle were former apprentices, 7 of them from Halton and 1 from Cranwell. Their route to pilot status was different from their tradesmen colleagues and I have classified them as normal Cranwell entrants. Of the 116 apprentice entry, 29 flew as officers, 28 as flight sergeants and 59 as sergeants.

5. Some tradesmen enlisted in the RAF as boy entrants or as aircraftmen and received their training without passing through one of the apprenticeship schemes referred to in Note 4. Like their apprentice colleagues, however, they too were entitled to apply for pilot training. Of the 48 listed above, 7 flew as officers, one as a warrant officer, 3 as flight sergeants and 37 as sergeants.

6. A scheme to recruit Direct Entrant Airmen Pilots (DEAP) operated for a short period in the mid 1930s. The scheme foundered because it was unpopular, especially among the tradesmen who had hoped to fill the pilot vacancies taken up by such men. They also resented the immediate award of sergeant rank to the newcomers, a rank which had taken them many years of service to attain. Of the 30 DEAP men, 12 flew as officers and 18 as sergeant pilots.

7. The AAF was similar to the Territorial Army and the Royal Naval Volunteer Reserve in providing a civilian-based force which could be drawn upon in time of war. It was an extremely elitist organisation, admission to which relied heavily on wealth and social position, consequently it was never up to its established strength. Initially all of its pilots were officers – but see also Note 9 below. Originally intended as bomber and army co-operation units, the majority of AAF squadrons were converted to the fighter role in the mid-1930s. In the Battle its squadrons, by then operationally indistinguishable from those of the RAF, were manned by men from virtually every category of entry represented in Table 1.

8. University Air Squadrons (UAS) were established at Cambridge and Oxford in 1925 and at London in 1935. Up to September 1938 members were not under any obligation to enter either the RAF or any of its Direct Entry Reserves but many did so voluntarily. Class AA of the Reserve of Air Force Officers (RAFO) – see also Note 10 – provided a useful source of income for an undergraduate whilst he continued with his studies and after graduating members of UASs often took up commissions of one kind or another. Of the 99 former UAS men who fought in the Battle 11 had entered the Service via the AAF, 74 via the RAFVR whilst 9 were serving on permanent and 5 on short service commissions (and they are listed in those categories).

9. The AAF having previously declined to co-operate in the training of the (largely non-commissioned) RAFVR, in 1938 the Air Ministry finally insisted that it start training some of its own airmen as pilots. On gaining their flying badges these men initially became sergeants but 9 had been commissioned by the time of the Battle.

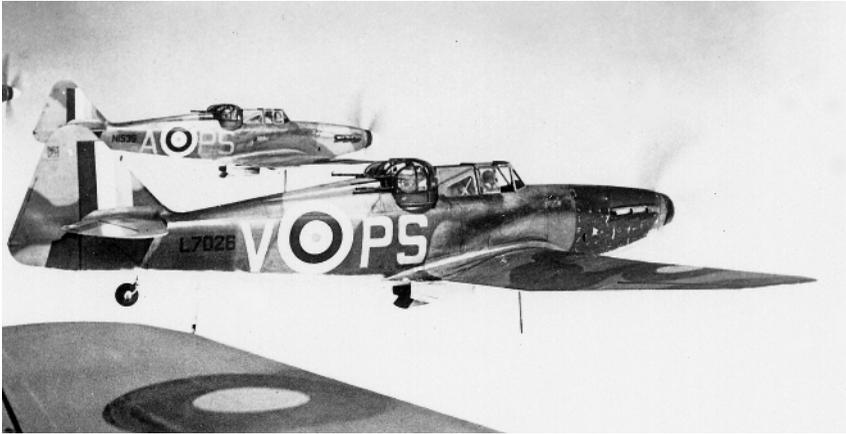
10. The RAFVR which was set up in 1936 became the major Direct Entry Reserve. It aimed to recruit men from the widest possible spectrum of society and was referred to by the Air Ministry as a 'democratic reserve'. Its recruits were initially enrolled as potential

sergeant pilots but commissions were available for men having the required attributes, eg former UAS and RAFO Class AA men, and also for those who demonstrated their worth whilst serving. The RAFO had two classes for pilots. Class A contained men who had previously served as such in the RAF. Class AA, with which we are concerned here, was composed of men who had not seen full-time service with the RAF and who may or may not have had flying experience gained elsewhere. A total of 52 Battle of Britain pilots held RAFO Class AA commissions at some stage of their flying careers but subsequently entered the AAF (6), RAFVR (22) or took short service (20) or permanent commissions (4). On the formation of the RAFVR Class AA men were invited to transfer their commissions to those of the RAFVR and this has been allowed for in Table 1. Also included in the 797 RAFVR pilots shown in Table 1 are some who had been in Class F, a Direct Entry Reserve which for a short period pre-dated the RAFVR, and a number of men who volunteered for flying duties after conscription. Of the 797 men, 330 flew as officers and 467 as sergeants, 770 of them were pre-war entrants. All men entering the air force after the outbreak of war did so as members of the RAFVR.

11. European air forces, eg the Polish Air Force, supplied 271 pilots who flew in the Battle. Some of the Poles and Czechs had RAF squadrons formed specifically for them. Such men were experienced pilots, often rather older than their RAF counterparts, who made an invaluable contribution to the Battle. The nationalities were as follows, Belgian (24) Czech (88) French (13) and Polish (146).

12. Australia, Canada, Jamaica, New Zealand, Newfoundland and South Africa/Rhodesia contributed at least 254 pilots, mainly through men who had taken RAF commissions during the 1930s, with the majority coming from Canada and New Zealand. However, 66 of them, principally Canadians and New Zealanders, flew with RAF squadrons whilst remaining members of their national air forces. Included in those 66 are the pilots of the independently constituted No 1 Sqn of the RCAF.

There are some difficulties in determining the nationality of a few pilots coming from the autonomous Dominions. By one rule of international law a person born within a state's territory acquires its nationality whilst another convention makes nationality dependent upon that of one or other of the parents. Since states – and individuals



Defiants of No 264 Sqn, one of the types in which aircrew other than pilots fought in the Battle of Britain.

– vary in the application of these rules it can be difficult in a few cases to be definitive which is why I have not chosen to specify nationality in Table 1.

13. The Fleet Air Arm loaned 25 pilots to fly in 14 RAF squadrons and placed two of its own squadrons, Nos 804 and 808, under Fighter Command control.

Non-Pilot Aircrew

Other men flew in the Battle, not as pilots but as members of the crews of Blenheim and Defiant squadrons and of the FIU. The Battle of Britain as experienced by them, and of course their pilots, was different from that of the Hurricane and Spitfire men but the contribution which they made was a vital one.

Although Hurricane and Spitfire pilots come most readily to mind when considering ‘The Few’ 594 non-pilot aircrew flew under Fighter Command control during the Battle and 62 of them lost their lives in aircraft which were no match for the *Luftwaffe’s* Bf 109s. Defiant crews, who account for 17 of the 31 air gunners killed, were at great risk once that aircraft had lost its initial element of surprise. Blenheims flew as escorts for bombing raids on the French coast, for minelayers and for Channel convoys. They carried out reconnaissance missions and played a vital role in the development of Air Interception (AI) Radio Direction Finding (RDF) techniques which were Fighter

Command's only hope of dealing with the coming German night offensive. The operational effectiveness of the Blenheim squadrons was enhanced from late August as they began to be gradually re-equipped with Beaufighters.

While some early AI operators had previously flown as wireless operators and/or air gunners, others were ground wireless tradesmen who had volunteered to fly and were employed without regard to rank, many of them flying as aircraftmen. To recognise their skill and expertise the aircrew category of radio operator (air) was created to cater for them in January 1941 but their dedicated 'RO' flying badge did not materialise until May of that year. The term RADAR (Radio Direction And Range) began to appear in 1942, under American influences, and was formally recognised by the RAF in AMO A.863/1943. It has been used here for convenience in Table 2.

Category/ Rank	Airmen*	NCOs	Officers	Total	Killed in Action
Air Gunner	2	226	67	295	31
WOp/Air Gunner	-	96	-	96	11
Radar Operator	75	24	2	101	9
Observer	-	67	35	102	11

* 'Airmen' is used here to denote ranks below that of corporal.

Table 2. Contemporary Status of non-pilot aircrew who participated in the Battle of Britain.

Pre-War RAF¹	Pre-War AAF²	Pre-War RAFVR³	War Entry RAFVR⁴	Total
134	55	168	234	594*

*This figure includes three men whose mode of entry has not been established.

Table 3. Modes of Entry for non-pilot aircrew who participated in the Battle of Britain

Notes on Table 3.

1. Some pre-war RAF men entered as apprentices, eg via Halton. Others enlisted under less demanding arrangements or as boy entrants;

11 of the 134 listed were later commissioned.

2. The AAF recruited and trained its own airmen, some of whom flew as part-time wireless operators or air gunners until 1939 when the concept of full-time non-pilot aircrew was introduced.

3. From late 1938 the pre-war RAFVR began recruiting non-commissioned observers and air gunners.

4. Whether volunteers or conscripts, wartime RAFVR entrants could volunteer for flying duties. Among them are 32 men (one of them an Australian) who had volunteered in New Zealand. Most remained members of the RNZAF whilst flying with RAF squadrons. Four others came from Belgium, one from Ireland and one from Canada.

Conclusion.

So, who were the men who fought the Battle and does the question matter anyway? In what follows I focus on those who were members of the RAF, RAFVR and the pre-war AAF, which I have lumped together for convenience here under the term RAF. It has been said that the Battle was won by ‘a narrow margin’ – which refers to the number of operational pilots available. In fact, Fighter Command had numerically more such pilots at the end of the Battle than it did at the start although, of course, many of its most experienced men had been either killed or disabled. This is not the place to discuss that issue but rather to deal with overall numbers. A total of 2,340 pilots and 594 other aircrew took part. Of those, 604 pilots came from the Empire, occupied Europe, America, Eire and the FAA, whilst 38 crewmen came from similar sources. In wartime a contribution from the Empire could have been anticipated but that from occupied Europe and elsewhere can only be classed as an unexpected ‘bonus’. The peacetime influx of men from such places as Australia, Canada and New Zealand reflected the RAF’s reputation as the ‘best flying club in the world’ and was a tribute to the Service’s achievements in its ‘teenage’ years.

Britain therefore was the source of 1,736 RAF pilots and 556 aircrew. Knowing who they were tells us things about the nature of the Service which was, like many of the men themselves, only around 20 years old and faced with an onerous task. It needed men of high personal quality who were capable of dealing with the state-of-the-art technologies of their day. They came from the most prestigious of the

UK's universities and public schools – as witness the officer pilots of the AAF, the majority of the Cranwell Cadets and Direct Entry Permanent Commission men, UAS members and many of those holding Short Service Commissions. But they also came, pilots, other aircrew and ground staff, from the Grammar Schools, the Continuation Schools and the night school classes of the Technical Colleges. This can be seen among the Cranwell entry and the Short Service Commission men, in the Aircraft Apprentices, the aircraftmen entry, the Direct Entrant Airmen Pilots, the AAF ground and aircrew selected for pilot training after 1938 and, above all, in the RAFVR which contained men from every possible sector of the educational spectrum who could meet the Service's demands for personal and technical standards.

Although this article has been concerned with aircrew they would not have been able to operate without the men and women who served them on the ground. It is certainly the case that good basic standards of at least secondary level education were required among them as well. I think the question – who were the men? – does matter because war, as Corelli Barnett has pointed out, is a very stern auditor. In Battle of Britain men we see that the often-maligned society of 1930s Britain was able – with a little help from its friends – to meet such an audit with credit. But could it have done so without that little help? That question raises issues concerned with the Air Ministry's priorities in the allocation of its aircrew between the various Commands, both in the pre-war and phoney war periods. It is a question which I am not qualified to answer but it is certainly worth asking, for consideration by those who are.

Acknowledgements

My article, *Who Were the Few*, on which the format of this one is based, appeared in 2001 in Issue No 1 of *1940*, the magazine of Friends of the Few, published by the Battle of Britain Memorial Trust. This one updates the original and the tables which appeared on pages 37 and 38 of this Society's 2003 publication, *Royal Air Force Reserve and Auxiliary Forces*. I have acknowledged my indebtedness to Tom Gleave within the text and I would like to add that due to Air Cdre Henry Probert and his successors at AHB, to Wg Cdr John Young, who succeeded Tom Gleave at the BBFA, and to the Battle of Britain pilots who have helped me over the years. The Editor's constructive comments and criticisms have also been most helpful.

BOMBS ON VENICE

Air Cdre Graham Pitchfork

Following the invasion of North West Europe in June 1944, the role of the Allies in Italy was to advance north and keep the German forces fully occupied and thus prevent their withdrawal to reinforce Normandy. Ground and air operations successfully achieved this aim but, with the onset of a severe Italian winter in the early days of 1945, it became evident that holding operations were all that was feasible until the arrival of spring when the offensive in Italy could be resumed. As a result, General Alexander halted the allied advance on the River Senio, some miles south of the strategic line of the River Po.

Throughout the autumn advance, the Mediterranean Allied Air Forces (MAAF) had provided continuous close support to the ground forces as they advanced north. However, with the winter halt, the tasking of squadrons concentrated on denying the enemy freedom of movement and access to sources of supply thus reducing his fighting capacity. It was also important to cut off and isolate the enemy's remaining divisions in Italy ensuring that they could not reinforce each other or mount a major operation.

Throughout the Italian campaign interdicting the German lines of communication had always featured prominently in the tasking of air assets, the most notable being Operation STRANGLE during the summer of 1944. During the stalemate on the ground in early January 1945, air interdiction took on increased importance if the commander's plan was to be achieved and so it took precedence over all other air operations. In particular, a major bombing offensive was mounted against the railway system throughout northern Italy and these intensive operations created havoc for the German Army endeavouring to re-supply its ground formations. By mid-February, Field Marshal Kesselring, the Commander-in-Chief of the German forces in Italy, signalled Berlin that his stocks of ammunition and fuel were sufficient only for ten days. Three weeks later he again complained that the heavy air strikes, allied to a Swiss ban on the movement of coal, had reduced supplies to his theatre 'below a tolerable level.' As the allied bombing campaign intensified, Kesselring's position became even more difficult and his ability to withstand an anticipated allied offensive was 'limited to a degree

hardly endurable.'

During this period, the crucial rail link through the Brenner Pass was virtually destroyed by bombing and the Swiss embargo on the passage of war materials through their country to Italy made the blockade of northern Italy virtually complete. The situation was particularly bad for the German forces stationed in the north-east of Italy with almost every marshalling yard out of commission and the railway system brought to a virtual standstill. As the first three months of the year drew to a close, the onslaught intensified when enemy supply dumps and installations with stockpiles of fuel and ammunition were specifically targeted. Vessels plying along the stretches of the Adriatic coast still under German control were also bombed.

As early as mid-January, operations staff at Tactical Air Force (TAF) had evidence that enemy vessels were using Venice as a base to bring in supplies for the German Tenth Army. The steady destruction of rail communications had resulted in the greater use of coastal traffic and intelligence analysis revealed that Venice harbour was the focal point for this traffic. In addition, coal was in very short supply in the Venice area and coasters had started to cross the Adriatic to deliver this important cargo. Much of it was transferred to barges using the River Po for re-distribution to the industrial areas. The need to prevent the use of Venice as a re-supply port became a priority and permission was sought from MAAF to lift the ruling that had up until that time prevented bombing of the historic and ancient city. The request was approved but the reply stated that bombing must be within a very closely defined area around the docks and, as far as possible, no bombs must drop outside the target area. To minimise this risk, all bombing attacks had to be visual and flown by experienced and specially selected crews. TAF then advised Desert Air Force to prepare an attack plan using their fighter-bomber squadrons against the shipping and barge concentrations in the Venetian lagoon and the initial plan was completed by early February.

The plan re-emphasised the crucial importance of not bombing outside the dock boundary, which was a mere 650 by 950 yards. Within a few yards of the boundary were churches and housing, and beyond lay the historic dwellings of many centuries, a large population and many noble and beautiful buildings and works of art. These areas had to be avoided at all costs. The operation was given the

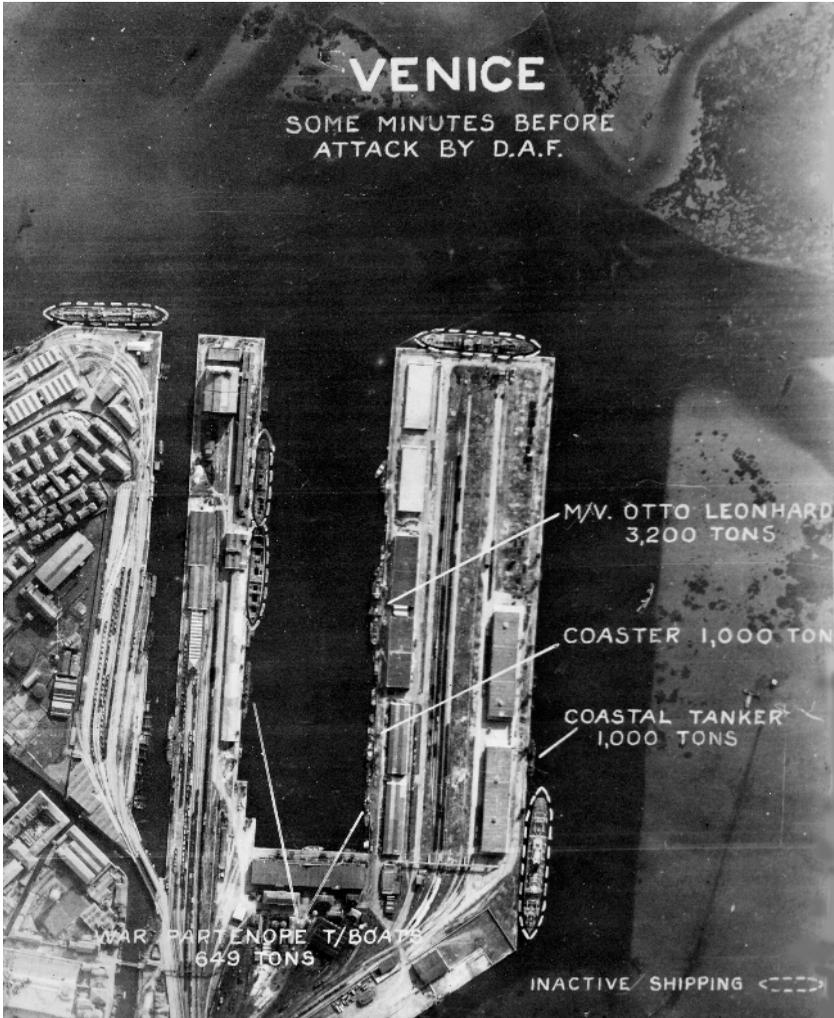
name 'Bowler' by AVM 'Pussy' Foster, the Air Officer Commanding Desert Air Force, who explained after the raid that he had chosen the name because he expected to be bowler-hatted if the operation failed!

The main part of Venice is built on a compact group of islands in the middle of the large, shallow Laguna di Venezia. The lagoon is separated from the Gulf of Venice by a chain of long, low, narrow sandy islands and spits. The city of Venice extends over 120 islands, which owe their origin to thirteen centuries of human ingenuity, most of the houses being built on wooden or concrete piles. The main industrial area during the war, including the station and docks, was situated on the western edge of the historic city.

No 239 Wing, equipped with Kittyhawk IV and Mustang III and IV aircraft, and specialists in close support dive-bombing, was detailed for the attack with support provided by the 79th Fighter Wing USAAF and No 3 (SAAF) Wing, who were to provide defence suppression. The plan called for continuous photographic reconnaissance sorties to be flown with immediate effect so that the attack could be mounted when worthwhile shipping was in Venice main docks. In the meantime, eight Liberators of No 205 Group successfully laid forty-two mines, from low level, immediately outside the main Venice harbour entrance and six in the entrance itself.

The daily watch over Venice was maintained and by mid-March shipping activity had increased, with numerous merchant and naval vessels and tankers gathering outside the Venice sanctuary. Activity intensified and on 18 March 1945, the 3,500-ton SS *Otto Leonhardt* started unloading at the Western Quay. Two *Partenope* torpedo boats, a coaster, a coastal tanker and some barges had assembled in the dock and photographic reconnaissance showed much activity. The wings were alerted and placed on standby but poor weather on the 20th prevented an attack. Twenty-four hours later, the weather had improved and reconnaissance showed that the coaster had moved closer to the *Otto Leonhardt*, which was still unloading. A weather reconnaissance sortie was flown every two hours until conditions were considered suitable. Finally, the attack was authorised with the dive-bombers tasked to attack at 1530 hrs on the 21st.

Wg Cdr George Westlake DFC, Wing Commander Flying of No 239 Wg, was appointed to lead the attack with No 250 Sqn. The attacking force against the shipping and dock installations consisted of



Venice harbour immediately prior to the attack.

forty-eight Mustangs and Kittyhawks with sixteen Mustangs and twenty-four P-47 Thunderbolts of the 79th Fighter Group acting in the anti-*Flak* role. Twelve Spitfire VIIIs of No 244 Wg provided fighter cover over the target. One of No 285 Wg's photographic reconnaissance Spitfires was overhead the target at 20,000 feet to record the event. One Warwick, equipped with an airborne lifeboat

and Lindholme rescue apparatus, and one air-sea rescue Walrus patrolled twenty miles to the east of Venice throughout the attack – they were escorted by Spitfires of No 7 (SAAF) Wg.

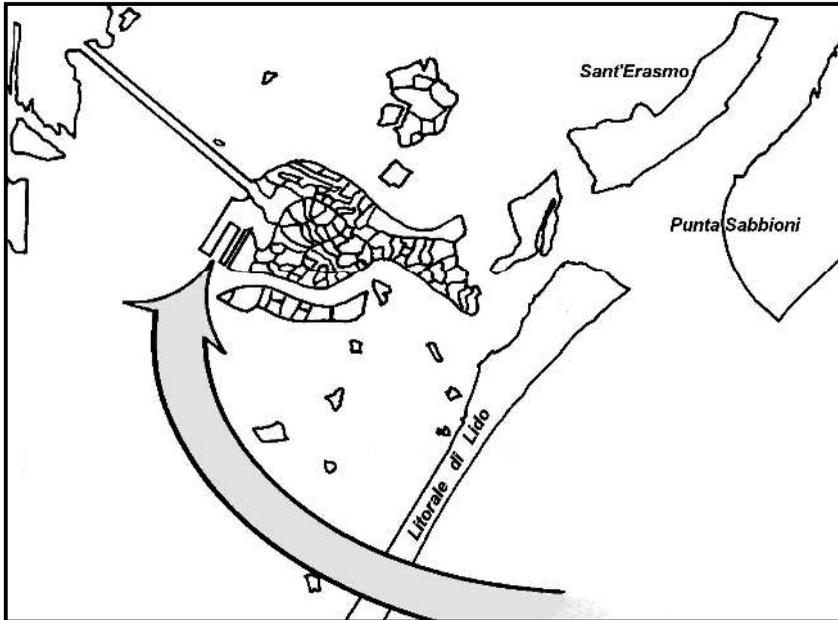
The sixty aircraft forming the attack force were based at Cervia and take off commenced at 1420 hrs when Maj H Odendaal DFC led off with the Mustang-equipped No 5 Sqn SAAF with the other squadrons following immediately. The order of take off was:

Unit	No & Type	Weapon load
No 5 Sqn SAAF	12 Mustangs	24 × 1,000 lb bombs
No 112 Sqn	12 Mustangs	24 × 1,000 lb bombs
No 250 Sqn	12 Kittyhawks	12 × 1,000 lb bombs
No 450 Sqn RAAF	12 Kittyhawks	12 × 1,000 lb bombs
No 3 Sqn RAAF	12 Mustangs	24 × 500 lb bombs
No 260 Sqn	4 Mustangs	32 × 60 lb SAP RPs
Of the 72 1,000 lb bombs, 24 were impact fused, 36 had 1/40 sec delays and 12 had 1/10 sec delays. All 24 500 lb bombs had 1/40 sec delays.		

An excellent take off was made with only one early return from No 5 Sqn SAAF. The wing formed up over base and climbed to 12,000 feet orbiting off Ravenna where the twenty-four Thunderbolts of the 79th Fighter Group based at Fano joined up. One aircraft of No 3 Sqn RAAF and one of No 250 Sqn's returned with engine trouble having jettisoned their bombs.

The attack formation arrived to the east of the target to find the top-cover Spitfires in position. The weather was suitable and Wg Cdr Westlake ordered the anti-*Flak* squadrons to commence their attacks against the many gun positions situated on the numerous islands and forts surrounding Venice. The USAAF Thunderbolts attacked the eight heavy and twenty light guns mounted on the Litorale di Lido, which guarded the southern approaches to the docks, with rockets and anti-personnel fragmentation bombs

Simultaneously, eight Mustangs of No 3 Sqn RAAF, led by Flt Lt K Richards DFC, dived from 8,500 feet on the six heavy and three light anti-aircraft guns on Punta Sabbioni to the north-east. They attacked out of the sun, bombing and strafing down to 1,500 feet meeting slight, inaccurate 20 mm flak, which soon stopped. The other three aircraft of No 3 Sqn went to four heavy guns on the island of



Venice lagoon showing the approach flown by the attacking force. Some briefly troublesome anti-aircraft gun sites on the Litorale di Lido, at Punta Sabbioni and on the island of Sant'Erasmus were summarily silenced by USAAF P-47s and RAAF Mustangs.

Sant'Erasmus to the east of Venice and scored a direct hit and a near miss with their 500 lb bombs, strafing and silencing the guns as they pulled out of the dive. The squadron reformed to the east of the target and watched the gun emplacements ready to strafe any that opened up on the attack squadrons forming overhead.

Capt R Rogers DFC, leading No 260 Sqn, detailed Red 3 and 4 to attack four heavy guns on an island very close to the south-eastern end of the main docks. The two aircraft attacked with four rockets each and made a second run, firing the remaining rockets, as the first of the attack squadrons started their dive-bombing attack.

Wg Cdr Westlake, leading No 250 Sqn, started the attack by rolling into a 60° dive at 7,000 feet, releasing his 1,000 lb bomb before pulling out of the dive at 1,500 feet. The ten other Kittyhawks followed him down on to their primary target with two direct hits registered on the *Otto Leonhardt*, as well as a very near miss, resulting



Wg Cdr George Westlake DFC led the attack flying one of No 250 Sqn's Kittyhawks.

in a serious fire. Direct hits were also achieved on nearby warehouses creating large columns of smoke. A near miss on one of the torpedo boats sent debris hurtling into the air. At first, the *Flak* was light but it developed into an intense barrage and one of the Kittyhawks was hit.

As the last of No 250 Sqn's pilots pulled clear of the target, Flt Lt E H Strom DFC led the twelve Kittyhawks of No 450 Sqn RAAF into the attack against a coastal tanker, which had been nominated as the Squadron's primary target. Diving from 9,000 feet, they found smoke partly obscuring the target area but two direct hits were scored on the tanker moored in the western quay. Barges moored nearby were set on fire and more warehouses were hit. Flying his regular Kittyhawk IV, 'D for Doris' (FT 881), FSgt Marsh Walters recalls his attack:

'This was my twenty-seventh bombing sortie; by far the biggest I flew on and the only time we operated as a wing with all five squadrons together. At briefing, the Boss told us that we had a special target and that no bombs must go astray under any circumstances. If we were unsure, we had to drop the bombs in the water. He also said that it had to be a complete success because there was no way we wanted to go back for a second attack with all the defences alerted. He then unrolled the map and we saw that the target was Venice, which came as a surprise so we immediately understood why it was essential to be accurate. Each squadron was given a specific aiming point and our target was a 700-ton coaster but, if it was already hit as we dived down, we were free to select another target in the same area. Before taking off we studied a detailed map of the dock area and the layout of the docks was imprinted on our minds.

We carried a single 1,000 lb bomb on the fuselage pylon. The American P-47s and the Australian Mustangs went in first



*FSgt Marsh Walters about to fire up the Allison of one of
No 450 Sqn's Kittyhawk IVs.*

to attack the gun emplacements on the many small islands surrounding the city. We were the second to attack and gave top cover to 250 Squadron as they dived down. Then it was our turn and we dived at sixty degrees pulling out at 1,500 feet. I was firing my six cannons all the way down as the flak was intense but you just had to ignore it. Firing away probably didn't do much damage but it was good for my morale and I had a good view of the target and released my bomb and then pulled hard as I turned away.

We cleared the target to join up over the sea where the air-sea-rescue aircraft were waiting with a Spitfire top cover. All four attack squadrons got through the target in a few minutes and as the last team went in, we started to head back to base. We were very pleased with ourselves when we got back and were soon told that the raid had been a success and there would be no need to go back, which was a relief. I flew another twenty operations later but this was certainly the most important and satisfying raid I flew on and one to remember. Even better, no



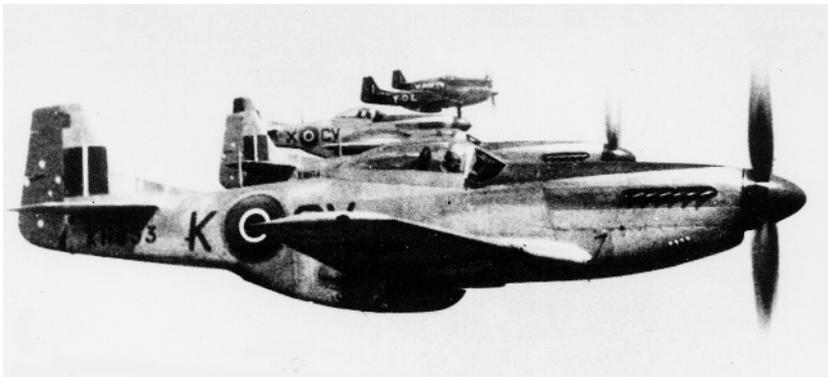
The engine of Marsh Walter's Kittyhawk, OKD (for Doris), being worked on at Cervia, April 1945.

one was bowler hatted!

Following Marsh Walter's Australian Kittyhawk squadron were No 5 Sqn SAAF, led by Maj Odendaal. Strafing as they dived, the Mustangs dropped their bombs and scored direct hits on an escort vessel, barges and a long warehouse on the western quay. As Nos 450 and 5 Sqn's bombed, Red 1 and 2 of No 260 Sqn attacked the heavy guns on the island close to the target. On their first attack each fired four semi-armour piercing rockets and they followed this up with two more rocket and cannon attacks.

Finally, baring their shark's teeth, the Mustangs of No 112 Sqn, led by Flt Lt P Forster, dived into the attack. The *Otto Leonhardt* was on fire and clouds of smoke and dust obscured the docks. Bombs were dropped in the target area causing a massive explosion on the Palazzo quay, the force of which was felt by the photographic reconnaissance Spitfire flying overhead at 20,000 feet. Further explosions followed as the aircraft cleared the target area.

The local Italians were so impressed by the accuracy of the twenty-

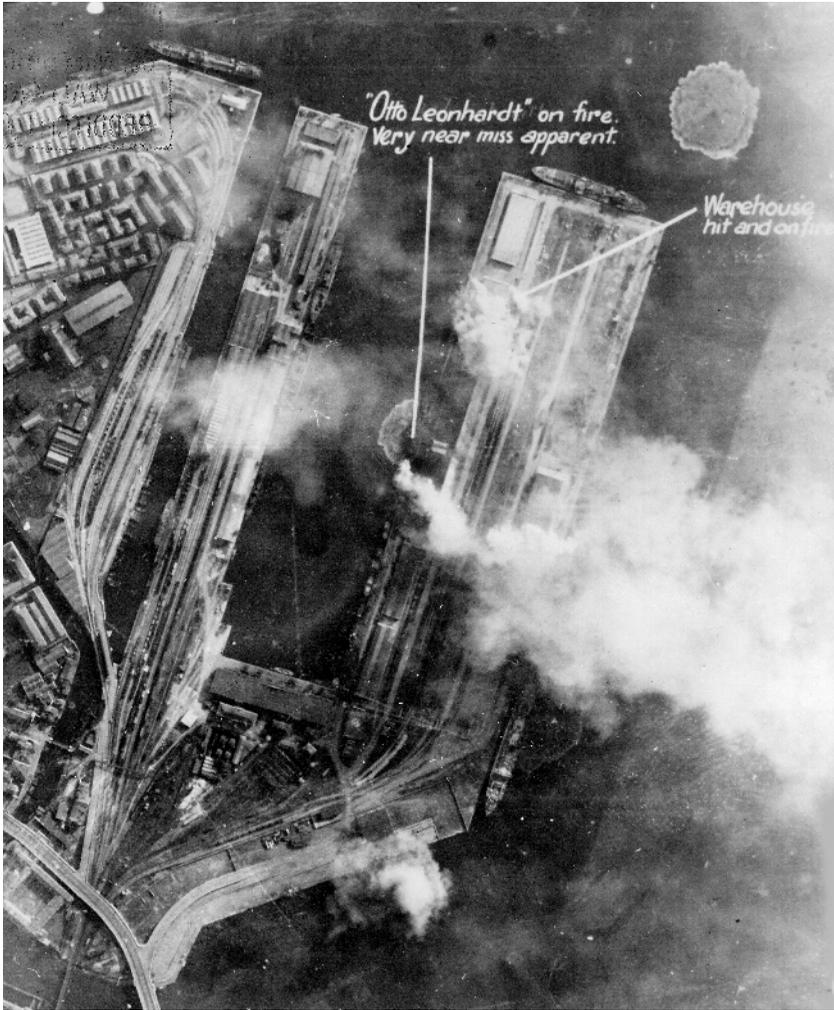


Mustangs, of No 3 Sqn RAAF, sporting the Southern Cross on their blue-painted rudders. The nearest aircraft, KH853, was being flown by Flt Lt Ken Richards who led the squadron's contribution to the strike.

minute attack that they stood on nearby rooftops just outside the target area and watched the *spettacolo* with great enthusiasm and admiration.

Throughout the attack, the aircraft were subjected to heavy light flak and one Kittyhawk was lost. During the first attack, Lt B Senior SAAF of No 250 Sqn suffered a hit in the engine of his aircraft FX855. Losing glycol, and with a soaring oil temperature, he immediately headed out over the sea and baled out from 3,500 feet ten miles east of Venice. The Squadron Commander, Maj F Weingartz DFC, and two other pilots orbited overhead the dinghy until relieved by one of the top-cover Spitfires. A Warwick and a Walrus No 293 Sqn soon appeared on the scene, along with an American Catalina. Shore batteries shelled them but the Catalina landed on the sea in poor visibility. Senior was struggling to get aboard his dinghy and the freezing temperatures of the sea made his hands useless. Seeing he was in difficulties, a crew member from the Catalina jumped into the sea to give assistance and the rescue was completed; just thirty minutes after he had baled out. Two Mustangs were also hit by anti-aircraft fire during the attack but managed to return safely. Operation 'Bowler' had been carried out for the loss of one aircraft, but the pilot had returned.

The following day, a photographic reconnaissance Spitfire returned with evidence of the success of the operation. The *Otto Leonhardt* had



Venice during the attack showing the Otto Leonhardt and a quayside warehouse already on fire.

been severely damaged and was listing heavily to port – it sank two days later. A coaster and a torpedo boat had been sunk and an escort vessel had been damaged. Severe damage had been inflicted on the surrounding warehouses and storage sheds with a number burnt out and others destroyed. The spectacular explosion that had rocked the

reconnaissance Spitfire had hit a store of sea mines and blown a huge crater 170 feet wide in the quay. There had also been numerous hits on the railway sidings damaging lines and wagons. Incredibly, just one bomb landed outside the target area causing minor damage to an uninhabited building. An official post-war report on war damage in Venice confirmed the accuracy of the attack with no damage caused to works of art and archives.

Congratulations to those who had taken part were soon being passed. The Air Officer Commanding Desert Air Force, signalled his praise to the participating Wings:

‘The results achieved are excellent and the maximum damage has been done by a comparatively small force. Bombing was most accurate and no apparent damage has been done to any of the cultural monuments in close proximity to the target. My best congratulations to all those who took part in this neatly executed operation.’

The AOC might have added that the skill of the pilots had prevented him from being given a premature ‘bowler hat’! Within a few weeks, decorations were announced for Wg Cdr Westlake, who had led the operation, and the leaders of the squadrons. Westlake was awarded the Distinguished Service Order to add to his Distinguished Flying Cross awarded for earlier operations. Maj Odendaal (OC 5 Sqn SAAF), Maj Weingartz (OC 250 Sqn), Flt Lt Richards (No 3 Sqn RAAF) and Flt Lt Strom (No 450 Sqn RAAF) received Bars to their Distinguished Flying Crosses and there was a DFC for Flt Lt Forster who had led No 112 Sqn.

Operation ‘Bowler’ set the seal on a range of attacks against the enemy’s sea supply in the Adriatic, which never recovered and hastened the spring advance of the allied armies and thus the end of the war in Italy.

1941 – THE ROYAL AIR FORCE IN NORTH RUSSIA

Air Cdre Phil Wilkinson

On 9 May 2005 – the 60th anniversary of the Russian acceptance of the German surrender at the end of the war in Europe – a handful of RAF veterans of No 151 Wing were in Murmansk. There, in a cemetery on the outskirts of the town and inside the major Russian naval garrison complex known as Severomorsk, they could pay tribute to their former comrades, fallen in the few weeks of the wing's operations over North Russia in 1941. Those few weeks represent a mere fraction of one per cent of the RAF's activities during the war in Europe. Nevertheless, the episode deserves setting firmly into the record.

I regret that it should seem necessary to tell the story again. There have been many accounts of the deployment: in the 1954 official history of the RAF in World War II; in the 1942 account of the wing's successful activity written by Hubert Griffith, the Wing Adjutant; in the autobiographies of two of the wing's pilots – Marshal of the Royal Air Force Lord Cameron (a freshly-minted pilot officer on No 134 Sqn at the time) and Ray Holmes (a slightly more senior pilot officer on the other unit, No 81 Sqn); as a vignette by Freddie Crewe (a sergeant pilot, also on No 81 Sqn) in the compilation history of the RAF edited by Tony Ross; and finally in the full-length book by John Golley.¹ There have also been many articles in the professional aviation press. And yet.....?

Indeed. For as the 60th anniversary of VE-Day was approaching, and a reception was planned in 10 Downing Street for 'veterans of the Arctic Convoys', the guest list had a significant omission. The Ministry of Defence did not think to include any RAF veterans when suggesting a guest list to the staff at No 10. The situation was recovered, and the Prime Minister was able to greet a couple of former members of No 151 Wing on 7 March. But once again, it seemed that their activities had slipped out of the collective memory of even the Ministry of Defence.

The Arctic Convoys were initiated by Operation DERVISH, when a group of seven commercial vessels sailed from Liverpool on 12 August 1941, with the Convoy Commodore aboard the *Llanstephan Castle*. Also on board that Union Castle liner were 550 or so men of

No 151 Wing. Elsewhere in the group was the principal cargo – the twenty-four crated Hurricanes that would be operated by the wing once on shore after landfall at Archangel. Also at sea that August was a Royal Navy group of eleven warships, centred on the fleet carrier HMS *Argus*. On board were sixteen further Hurricanes. These were to be flown off, by the, no doubt slightly quizzical, pilots of the wing's two squadrons, to land at a Soviet naval aviation airfield outside Murmansk - Vaenga.

The plan that had been so rapidly put together was duly executed so that once again the RAF was operational over the inhospitable terrain of North Russia. Almost exactly twenty-two years before, the last of the British forces, including RAF, who had been involved in the Intervention of 1918-19, had embarked at Archangel and Murmansk for their journeys back to Britain. Now, once again, the cemeteries at both places would be the last resting places of British servicemen. What was it that brought them to Russia this time?

The simple answer is Stalin's call for help following the German invasion of the USSR on 22 June 1941 – Operation BARBAROSSA. Churchill's immediate reaction to the news of the German attack was to compose and broadcast a speech on the BBC at 9 o'clock that same evening. With the Soviet Union's much unloved regime as his intended audience, he did not disguise his distaste for Communism, but saved his most florid style for his description of the new common enemy:

‘I see advancing upon all this (*the Russian homeland and people*) in hideous onslaught the Nazi war machine, with its clanking, heel-clicking, dandified Prussian officers, its crafty expert agents fresh from the cowing and tying down of a dozen countries. I see also the dull, drilled, docile, brutish masses of the Hun soldiery plodding on like a swarm of crawling locusts. I see the German bombers and fighters in the sky, still smarting from many a British whipping, delighted to find what they believe is an easier and a safer prey.’²

He then stressed that there was ‘...but one aim and one single, irrevocable purpose.’ ‘Any man or state’ he continued ‘who fights on against Nazidom will have our aid.... It follows therefore that we shall give whatever help we can to Russia and the Russian people.’³

It was disappointing, but perhaps understandable in the critical situation that the USSR faced, that there was initially very little response to this stirring rhetoric. A few extracts from the speech were published in the newspaper *Pravda* and the British Government was asked to receive a Russian Military Mission. In return, a similar Mission was sent to Moscow to reinforce the Service attaché team already in place in the Embassy. That Mission – composed of eleven officers, led by Lt Gen F N Mason McFarlane CB DSO MC – had been very rapidly assembled and dispatched, arriving in Moscow on 27 June. The senior air member of the Mission was AVM A C Collier CBE, with Gp Capt I C Bird as his ‘wingman’. A further batch of ten officers and senior NCOs arrived on 5 July.

It was not until 18 July that Stalin made a direct response to Churchill’s initial and follow-up messages of support. In a theme he returned to endlessly, Stalin suggested that the best help Britain could provide would be the opening of a Second Front, in fact two Fronts, one in Northern France and one in the North – the Arctic. This approach was noted by Churchill to be the first example of Stalin’s ‘monotonous disregard for physical facts.’⁴

Nevertheless, on 20 July Churchill replied in detail and said, in particular:

‘We are also studying as a further development the basing of some British fighter air squadrons on Murmansk...some (*aircraft*) of which could be flown off carriers and others crated.’⁵

That same day, 20 July, staffs in the Air Ministry were studying two documents. The first, a long report of a reconnaissance visit to North Russia by a Gp Capt F L Pearce, gave comprehensive details of infrastructure, logistic support, and airfield characteristics for potential bases in and around both Archangel and Murmansk. A shorter note – signed off, also on 20 July 1941, by Gp Capt A D Davies (‘for DWO’) – provided the planning assumptions for the movement of an ‘air force contingent’ (at that time expected to comprise both a Beaufighter and a Blenheim squadron as well as two Hurricane squadrons). The plan, at that stage, had all the Hurricanes being flown off a carrier. The others would be assembled at Archangel after transit as crated cargo. Gp Capt Davies estimated that ‘from the time the executive order is



One on No 81 Sqn's Hurricanes (Z3768/FK.49) at Vaenga in 1941.

given' the squadrons would be ready to operate in forty-one days. By his reckoning, therefore, the wing could have been in action – assuming instantaneous executive action – by 1 September. In the event, the crated Hurricanes arrived in Archangel that very day. Their assembly, air testing and ferrying to the airfield at Vaenga took up the next ten days. *Argus* had launched her Hurricanes to Vaenga on 7 September, but they could not operate at any significant rate until essential supplies of spares and ammunition had also been transported from Archangel, by both sea and rail.

Thus, the first full-scale operational day was 11 September. Both squadrons carried out front-line patrols – and the Germans were only 60 or so kilometres away from Murmansk, so contact was likely to be made early on in any sortie. But the short daily report stated simply 'Nil combats; nil casualties.' The next day was different and six sorties resulted in three *Luftwaffe* aircraft confirmed destroyed (two Bf 109s and one Hs 126), one probably destroyed (Bf 109), and one damaged (Bf 110). Sgt Smith of No 81 Sqn was unable to escape from his damaged Hurricane after combat with a Bf 109 and was killed in the ensuing crash. He was buried in the Vaenga cemetery on 14 September. Given the close proximity of the front line and the

Luftwaffe bases, it is remarkable that Smith's loss was the only fatal combat casualty of the deployment. Other aircraft were, of course, damaged in combat or suffered from the difficulties of the poor airfield conditions and the steadily deteriorating weather conditions as the deployment continued.

There were two other fatalities, and these were among the groundcrew. Flt Lt Berg of No 134 Sqn was at cockpit readiness when a reconnaissance Ju 88 was spotted approaching the airfield. Because of poor ground conditions, groundcrew airmen were required to lie over the rear fuselage and tailplane while aircraft taxied, to stop the aircraft nosing over in the puddles and ruts. Berg was eager to get airborne and misunderstood signals from his crew chief that he still had two men on the tail. He accelerated away from dispersal and managed to climb to perhaps a hundred feet before the load on his tail caused the aircraft to rear up and stall. It came to earth, killing the two airmen, and seriously injuring the pilot. Young Ridley and Thomas were also laid to rest in the Vaenga cemetery. But those were the only losses of the whole time in Russia. Against that can be set the confirmed tally of fifteen *Luftwaffe* aircraft destroyed and several more probables and damaged.

But as well as direct combat in defence of the airfield and the adjacent industrial and port facilities of Murmansk, the wing's mission – indeed its principal task – was to train a nucleus of Russian pilots to operate the Hurricane. So, in between the sorties to engage incoming *Luftwaffe* raids, and also to escort Russian bombers attacking German targets further up the Kola peninsula, the wing's pilots were very busy on a task of even greater importance. More than 3,000 Hurricanes would eventually be delivered to the USSR during the course of the war. Thanks to No 151 Wing's efforts, the first Soviet unit was ready to take over the remaining Hurricanes as the wing withdrew. The first Russian unit formed at Vaenga under the command of a man already decorated for his prowess during the first weeks of the German attack – Captain Safonov, of the Russian Naval Aviation's 72nd Air Regiment.

This squadron was one of a group of squadrons – bomber and fighter – already based at Vaenga when the RAF arrived. Safonov was later to be further decorated as a Hero of the Soviet Union, but was killed in combat before the end of 1943. The Russian naval air station

at Severomorsk – the name now given to what had been Vaenga – is named after him. The local museum has much material on his exploits, but is also richly equipped with memorabilia of No 151 Wing's short stay in the region. In May last year, it was a delight for those few returning veterans to be able to present some more mementoes of the wing, and also to surprise the museum curators with the first sight of people who had previously been only figures in photographs.

There is no space in this article to go into the detail that is available to the reader of the books already cited. But there are some details that – to my knowledge – have not before been put widely on record. Most accounts of the deployment include the fact that, as well as military cargo and passengers, there were other people on that first convoy. These included a group of expatriate Polish diplomats and officials who were going to Moscow to establish a formal Mission to the USSR, and a similar group from Czechoslovakia. The politician Vernon Bartlett was on board, as was also Mrs Charlotte Haldane, who gave the RAF contingent a lecture or two on 'Domestic Life in Russia'. Some of the wing's officers had lived and worked in Russia before, and they, too, were able to provide some basic education in the language and customs of the people that were awaiting their arrival.

Another passenger was the Polish artist Feliks Topolski, travelling as an accredited War Artist for both the Polish and British Governments but also on contract to *Picture Post* which published many of his drawings of 'Russia in War' after his return. The episode is covered in his autobiography⁶ and a number of the drawings of his time on the *Llanstephan Castle* appear in his book⁷, with the caveat that 'The Soviet authorities were as helpful as they could be, but in wartime it is not always easy to get complete freedom to draw, and a great part of my work was done later from memory.'⁸

It is thus a very good thing that his shipboard drawings were not reliant on memory: there is a lively sketch of 'An improvised concert on the after-well-deck.'⁹ In it, there is a vigorous foreground figure, wearing the badges of a flight sergeant and energetically playing the spoons, or something very like them. One of the wing's pilots – then Sergeant, eventually Group Captain, Peter Knapton – recalls that concert in his own notes of the voyage: 'Topolski made a series of sketches of RAF personnel and one was a brilliant impression of Flight Sergeant 'Doughie' Baker who played two bone clappers in one



Reproduced here by kind permission of The Estate of Feliks Topolski, one of the drawings executed by the artist while en route to Russia – ‘an improvised concert on the after-well deck.’

hand while dancing down the deck.’¹⁰ Topolski’s *Fourteen Letters* makes it pretty clear – it was a pair of spoons. As the evening of 29 August drew on, but before ‘....climbing up into our bunks – no-one has forgotten that we are just now heading into the narrowness of the White Sea, that we have been tracked down, that at dawn we shall be attacked.’ – before that moment there was the first of a number of farewell parties. Quoting again from Topolski’s diary,¹¹ we find:

‘The charms of soldiers’ chorals (‘Swing it!’); the spun-out song by a lance-corporal to an old Scots tune touches:

It is of the Air Force I’m going to sing
 Not of their exploits but a different thing,
 Of 81 Squadron and 151 Wing
 And 134 Squadron to finish the string.
 They’re bound for a place, the name I don’t know,

From what I have heard it is covered in snow,
 They'll keep the flag flying I bet you'll agree
 Where the Northlands of Russia jut out to the sea

A Cockney sergeant dances a wooden puppet, plays on spoons – the heights of charm, of the comic's gestures; little legs – twisty/mincing, rhythmical; the bunched shoulderblades the wittiest; pursed lips narrowed/twisted cutely – a miracle of East End style.'

Teresa, Topolski's daughter, tells me that the editor of *Picture Post* had a phone call from a lady immediately after the picture of the spoons-playing flight sergeant had appeared. 'Thank you' she said, 'I knew my husband was off somewhere but he wouldn't say where – now I know and I'm ever so pleased he's all right.'

The convoy cargo that was the RAF also had some fine cuisine to reinforce them against the rigours to come. Menus for the wardroom dinners on 21 and 30 August 1941 are still in existence and reflect the fact that the *Llanstephan Castle* had re-victualled in Cape Town before her convoy started. As Hubert Griffith recalls: '....delicacies scarce or unknown in England for a year or more, grapefruit, jam, butter, eggs, the choice of half a dozen dishes for breakfast, remained on her menus.'¹² Sqn Ldr Jackson's menu card for dinner on 30 August, signed by members of the Polish and Czech Missions and bearing his portrait sketched and signed by Topolski, tells that after the varied *hors d'oeuvres*, the *consommé*, and the *suprême of turbot*, diners could choose from three main meat courses, have two sorts of potatoes, green beans and salad before either *Pouding Soufflé Orléans* or *Chartreuse of Green Figs*. An unusual way to go to war, and good luck to all of them!

The reality of what was awaiting them was already in the hands of the wing's executives, led by the New Zealand rugby player Wg Cdr H N G Ramsbottom-Isherwood AFC. Hubert Griffith sums him up thus: '...thirty-sixish, grey-haired, with a mouth that shuts like a steel trap. He is a test-pilot of long standing, and has probably forgotten more about flying than many young RAF pilots have yet learnt. Also, he seems to like a joke.'¹³ Just as well, for as the convoy left British shores a secret cypher message (Air 378 of 13/8) was arriving in the Air Ministry at 0345 hrs on 14 August. Sent by AVM Collier from the



Hurricanes of No 134 Sqn at their dispersal at Vaenga, 1941.

Mission in Moscow it opened with the following discouraging words:

Para One. Your X722 8/8. Russian Naval Staff confirm that 24 Hurricanes can land at Vojenga repeat Vojenga (*sic: a transliteration of Vaenga*) ex-carrier and that whole British force will be based at this aerodrome only. Russians state categorically that direct new railway from Archangel to Murmansk is not yet working. They strongly recommend erection of 16 cased aircraft at Archangel and flight thence to Vojenga. Vojenga under air bombardment daily and unsuitable for large scale erection. Naval staff will make all preparations for work to be done by RAF party at Archangel.

Para Two. Russians recommend that ground personnel equipment supplies and MT shall be transhipped at Archangel and moved by sea to Kem thence by rail to Murmansk and Vojenga. Journey from Archangel to Vojenga should take about five days.'

No doubt this all came up in the briefings that would have occupied the long hours at sea. It would certainly have got the attention of the pilots waiting on the *Argus* for their first ever carrier

take-off. Plt Off Tim Elkington, of No 134 Sqn, kept a copy of the take-off brief, and it is worth reproducing in full:

HURRICANE PILOTS – INSTRUCTIONS FOR FLYING OFF HMS ARGUS INTO RUSSIA

Information

1. Aircraft will be flown off in flights of 6. The first 6 aircraft will be erected on the flight deck & it is anticipated that the succeeding 3 flights will be ranged from the hangar & flown off at 40 minute intervals after the first flight has left the deck.

Take-off

2. All spectators are to be in the starboard netting. Pilots are to run up their own aircraft when ranged & are to indicate that their aircraft is in all respects ready to take off by raising the left thumb.

3. All movements of aircraft on the flight deck are controlled by the flight deck officer who will stand on the port side of the aircraft he is controlling. The executive signal for take-off is the lowering of a green flag.

4. On receipt of the executive signal pilots are to release the brakes & carry out a normal runway take-off under high wind conditions but sitting up as high as possible to obtain a good view of the deck immediately on opening the throttle & thereby ensure a take-off run with wheels either side of the centre line.

5. For best take-off from a carrier deck the following settings are required:

- a. Flap setting 25 degrees
- b. Engine RPM 3000
- c. Mixture RICH
- d. Engine boost +12

6. Air Ministry figures for deck take-off with Hurricane II are:

<u>Distance to Unstick</u>	<u>Wind over Deck</u>
287 feet	30 knots
356 feet	25 knots
396 feet	22 knots

All aircraft in the range will be given a take-off run of at least 400 feet before reaching the accelerator ramp. Should for any reason an aircraft not be sufficiently airborne to clear the ramp, the pilot is to ease back the stick until over the ramp & then

level off until the remaining 32 feet of the deck run has been completed. On no account is a turn to be commenced until the aircraft is 50 feet above flight deck level & past the bows of the ship.

Flight Ashore

7. On taking off, aircraft are to turn to port, proceed to the waiting position, one mile astern of the ship at 2000 feet or below cloud, & carry out a left-hand circuit. Departure is to be taken from over Argus as soon as all aircraft are in formation on their leader.

8. If weather conditions are not at all favourable, flights are to take departure over Argus & set course to pass over a destroyer which will have been previously stationed inshore of the carrier & on the correct bearing.

9. Aircraft should normally be flown at economical cruising speed, namely:

- a. Engine RPM 2000
- b. Mixture WEAK
- c. Blower Medium Gear

R/T Communications (Instructions not retained)

Aerodrome

There are only a few buildings and tents in the vicinity of the aerodrome. There is a damaged wooden hangar on the aerodrome boundary. Offices & other accommodation are in caves in the hills in the vicinity. There are a number of aircraft pens partially underground & camouflaged around the boundary of the aerodrome. Care should be exercised near the aerodrome boundaries to avoid soft patches.

A landing 'T' will be exhibited. Aircraft should land as close as possible to the 'T'. A WHITE flag will be waved near the 'T' to give permission to land. A RED flag will be waved if for any reason a landing should not be made.

Topography

The country north & west of Murmansk is low hills, dark green in colour with many scattered lakes. The River Tulmola & all lakes are brown in colour. The approach to the aerodrome should be made down the river. A single line railway runs from Murmansk north to the east of the aerodrome.

HMS Argus
4 Sept 1941

T O Bulteel
Captain

In the event, the launch was pretty much a success. A couple of the first six made firm contact with the accelerator ramp (intended for the gunnery target Tiger Moth-derivative, the Queen Bee) and left a bit of propeller in one case and most of the undercarriage in the second. Thus the second batch – containing the new Plt Off Cameron – arrived over the airfield to see ‘...two Hurricanes lying on their bellies as a result of the earlier carrier accidents.’¹⁴ And, as described above, the wing was soon in action with a full complement of aircraft. Six weeks later the Russian pilots had been converted to the aircraft, and the handover had started so that on 20 October a signal could go back to Air Ministry saying ‘All aircraft handed over to Soviet pilots.’¹⁵ Tim Elkington had the Russian taking his aircraft sign in his log book, noting alongside Sergeant Romanov’s signature that ‘The undersigned, namely Sergeant Peter Daniel Romanoff, is now the proud possessor of a very fine ‘fighter craft’.

With a combat kill ratio of 15 to 1, and with not a single Soviet bomber lost while under escort from No 151 Wing’s Hurricanes, the air and ground crews could return to the UK with a justified feeling of pride in a job well done. The Soviet authorities also thought so and the Wing Commander, the two Squadron Commanders (Sqn Ldrs A H Rook and A G Miller), and Flt Sgt C (‘Wag’) Haw – who was top scorer of the wing with three confirmed kills – were all awarded the Order of Lenin. The Russians also insisted that the standard rate of 1,000 roubles be paid to each pilot for an enemy aircraft shot down. At the going rate of exchange that would have been a total of some £300. The money was gratefully accepted, of course, but the Wing Commander thought that – to preserve their ‘amateur status’ – the money should go to the RAF Benevolent Fund. And so it did. The return journeys all had their moments too, but these are best researched in the surviving records already cited. With one or two specialist technicians left behind in Russia – in Archangel and Moscow – to manage communications systems, the men of No 151 Wing were all back in Britain in time for Christmas and their next postings. A short but successful exploitation of air power.

Given the age of most of the veterans of that deployment, there will be few if any opportunities for there to be any more visits to the site of their 1941 exploits. The chance to pay their last respects to Aircraftmen Ridley and Thomas and Sergeant Smith, side-by-side in



Vic Bashford in 1940, a few months before joining No 134 Sqn for its expedition to Russia, and at Severomorsk on 10 May 2005 about to place a Remembrance Cross on the grave of AC1 James Ridley (1079575) who had died on 27 September 1941.

the Vaenga cemetery, was gratefully taken by their squadron comrades last year. Eric Carter, who had been one of No 81 Sqn's sergeant pilots, hopes to be there in May 2006. And that will be that.

But there is a terrific feeling of 'togetherness' among the veterans: they have retained contact within the framework of an RAF Russia Association. Their personal memoirs are being carefully collected and recorded. A professional film company has been making a documentary film over the last fifteen months and the finished product is to be shown at the Imperial War Museum on 9 May this year (2006). The showing will follow a remembrance ceremony and wreath laying outside the Museum, at the Soviet Memorial. Ambassadors and attachés from the Embassies of the former Soviet Republics are expected to attend, together with representatives from the Missions in

London of the Czech and Slovak Republics, Poland, France, Belgium, Canada, Australia, New Zealand and the USA.

With a bit of luck, and with the same sense of urgency that sent No 151 Wing through Arctic waters to Russia, those last few veterans will be able, on 9 May, to wear the newly-agreed Arctic Campaign emblem – something that has been sought for 65 years. That would be a fitting tribute to the men of the Royal Air Force in Russia in 1941.

Notes:

- ¹ Richards, Denis & Saunders, Hilary St George, *Royal Air Force 1939 - 1945, Vol II, The Fight Avails*. (London: HMSO, 1954), pp78-80.
Griffith, Hubert, *RAF in Russia*. (London: Hammond Hammond & Co, 1942).
Cameron of Balhousie, Lord, *In the Midst of Things*. (London: Hodder & Stoughton, 1986) pp30-50.
Holmes, Ray, *Sky Spy*. (Shrewsbury: Airlife, 1997 - paperback edition) pp167-230.
Ross, A E (ed), *Through Eyes of Blue*. (Shrewsbury: Airlife, 2002) pp116-118.
Golley, John, *Hurricanes over Murmansk*. (Wellingborough: Patrick Stephens, 1987).
- ² Churchill, Winston, *The Second World War, Vol III, The Grand Alliance*. (London: Cassell, 1950) p332.
- ³ *Ibid*.
- ⁴ Churchill: *op cit*, p343.
- ⁵ Churchill: *op cit*, p345.
- ⁶ Topolski, Feliks, *Fourteen Letters*. (London: Faber & Faber, 1988).
- ⁷ Topolski, Feliks, *Russia in War*. (London: Methuen, 1942).
- ⁸ *Russia in War*, p9.
- ⁹ *Russia in War*, p18.
- ¹⁰ Knapton, Peter, *It was all Teddy's Fault or how I got to Moscow*. Unpublished memoir.
- ¹¹ *Fourteen Letters*. The cited edition has no page numbers , but manual count puts this quote at p75.
- ¹² Griffith: *op cit*, p21.
- ¹³ Griffith: *op cit*, p15.
- ¹⁴ Cameron: *op cit*, p38.
- ¹⁵ Griffith: *op cit*, p87.

BOOK REVIEWS

Malta and British Strategic Policy 1925-1943 by Douglas Austin. Taylor & Francis Group (2 Park Square, Milton Park, Abingdon, OX14 4RN); 2004. £65.

As an historian of the RAF's role in the Far Eastern War the last thing I had expected to find in a book about Malta were various references to pre-war defence policy for Singapore. Yet here they are, demonstrating the interplay of strategic issues in vastly different parts of the world for which the United Kingdom was responsible. I should have known better; after all, the main route to South-East Asia lay through the Mediterranean, where Malta was critical. On the other hand, Italy was not considered as great a danger to Malta as was Japan to Singapore. This is just one theme that Douglas Austin explores in his fascinating and thorough exploration of Malta's pre-war story, in which he goes far towards explaining why so few ships and aircraft were located there when Italy entered the war in 1940. On the other hand, much had by then been done to develop the base installations which the reinforcements would need once it became possible to send them.

To begin with, however, Malta was never going to receive priority for either surface ships or aircraft, for which the demands elsewhere in 1940-41 were far greater. Nevertheless, as Austin is at pains to stress, Churchill was from the beginning determined to extract the maximum advantage from Britain's investment in the island. So it not only had to be defended and kept supplied but also used as a base for offensive action against Axis supply lines in the Mediterranean conflict – especially those leading to North Africa. Austin discusses the way these underlying factors were considered by the responsible politicians, the intelligence staffs and the high military commanders as the war developed. He also sets their assessments and decisions alongside those of their Italian and German opposite numbers, drawing extensively on their documentary records in order to analyse their intentions at the critical times. The naval and air operations themselves are discussed only insofar as readers need to be reminded of the context in which the various high authorities were working.

Nevertheless Austin certainly brings out the extent of Britain's wartime debt to the island base and the local population. This debt

included its importance as an aircraft staging post to the Middle and Far East, its value for air reconnaissance, its diversion of considerable enemy forces from operations elsewhere and, of course, its offensive operations against enemy supply lines. In Austin's considered judgement, well supported by statistics, critics who assert that the damage caused by Malta's forces did not justify the grievous losses incurred in sustaining the island are mistaken. On the other hand, he does not go so far as to accept others' views that Malta's attacks on the enemy convoys were actually decisive in causing the Axis defeat in North Africa.

In summary this is a most thought-provoking book, based on wide research. The well written narrative is accompanied by extensive references, an excellent bibliography and a thorough index. It deserves to be read and carefully studied by all who are interested in the wartime history of the George Cross Island.

Air Cdre Henry Probert

The Royal Air Force – An Encyclopaedia of the Inter-War Years, Volume I – ‘The Trenchard Years’ 1918-1929 by Wing Commander Ian M Philpott. Pen & Sword; 2005. £35.00

Embarking on the writing of what purports to be a major work of reference can only be described as a high-risk venture, not least when it is likely to fall into the hands of a bunch of reviewers as notoriously picky as those who contribute to this Society's Journal. Almost inevitably, readers of Ian Philpott's volume on the Royal Air Force in the Trenchard years will react critically to his publisher's claim that it is 'the most detailed work to be published on the subject'. More modestly and closer to the truth, the author describes his 492-page hardback as '(a) compendium (*which*) will be a handy work of reference (*and*) if, it doesn't provide all the answers, will point the way for the student of air power'. By contrast, the publisher's assertion that it 'will become a Bible for anyone interested in the history of the RAF' serves only to heighten interest in its accuracy and in the provenance of the material presented in it.

The author's use of the word 'compendium' is clearly appropriate to describe a book, the contents of which are both wide-ranging in scope and eclectic in origin. They draw on a variety of largely secondary sources. Ian Philpott acknowledges his reliance on these

and the critical reader will identify near-verbatim ‘lifts’ from the other publications involved. That some of these have been condensed and have suffered occasional lapses in consistency and accuracy is regrettable. The chapters containing his own original essays contain comment and judgements that are occasionally superficial but offer useful insights into the period. However, it is undeniable that this book contains an amazing amount of detail, in which regard it will almost certainly trigger interest in corners of the Service’s history hitherto generally ignored.

Sadly, the quality of many of the illustrations in this book is by no means uniformly high. The reproduction of photographs and drawings, some of which have been inexpertly selected, is suspect. For example, the frontispiece portrait of Lord Trenchard is a poor affair and manuscript annotations may be seen, partially erased, on at least one map. More generally, the maps are a ragbag of differing styles and legibility. These are matters reflecting more on the publisher than on the author.

Ian Philpott himself has produced a massive piece of work which, if not quite a Bible, will be of interest to many who seek detailed information about the early days of the Royal Air Force. Provided that such readers accept the largely secondary provenance of much of its content and a risk of perpetuated inaccuracy, they will find it a useful source of reference material. Whether it will persuade many to part with £35 for the privilege of owning a copy, is quite another matter!

AVM Sandy Hunter

Shot Down And In The Drink by Air Cdre Graham Pitchfork. The National Archives; 2005. £19.99.

Graham Pitchfork has based his work on the framework provided by *Air-Sea Rescue*, one of the series of Air Historical Branch narratives dealing with WW II. Although copies of that publication can still be found, it was never widely available and, having appeared over fifty years ago, a revision was timely. The result is a 276-page hardback which begins by summarising the establishment of the makeshift early wartime rescue facilities and then goes on to deal with the introduction of aircrew training and the provision of survival equipment and location aids, most of which had to be developed more or less from scratch.

The rest of the book builds on this foundation by examining the evolution of the air-sea rescue organisation on a regional basis – North West Europe; the Mediterranean and West Africa; and India and the Far East. In each case the local problems and their solutions are summarised to present a picture of a service which, despite recurrent difficulties with the provision of adequate numbers of marine craft and appropriate aeroplanes, became increasingly sophisticated and capable as the war progressed. Along the way the contributions made by the RN and RNLI are acknowledged and some space is also devoted to the development of air-sea rescue facilities within the USAAF. The American system, which was given a head start by being able to capitalise on the lessons that had already been learned by the RAF, ran in parallel with its British counterpart and there were many instances of mutual support.

Each of the regional sections is amplified by case histories, some of them representing remarkable examples of tenacity on the part of the rescuers, who would persevere until all hope had evaporated, and the stoicism of survivors who were sometimes obliged to endure prolonged periods in a cold wet dinghy, often in rough seas. In many instances the actions of the crew have been analysed and lessons are drawn which are still valid today. After all, once one is committed to abandoning one's aeroplane or ditching, it makes little difference whether the type involved was/is a 1945-style Typhoon or one of the more up-to-date 2006 models – either way you have always needed to follow certain drills and you still do, so, apart from informing aviation historians, this book contains many lessons for current aviators.

Some of the statistics are impressive. During the first ten days of Operation OVERLORD, for instance, the Air-Sea Rescue Services plucked a remarkable 163 Allied and two enemy aircrew from the sea along with fifty-eight others. Then again, the rescue of a Beaufighter crew, down in the Mediterranean near Crete in 1944, took four days and involved the participation of five marine craft and no fewer than forty-four aircraft, one of which was lost – see what I mean about perseverance? It almost goes without saying that the individual accounts include such notable cases as Lt Veitch's three dunkings in the Adriatic within four weeks and the celebrated capture of an Italian CANT Z.506 seaplane.

The narrative, which is easy to read, is supported by more than 100

illustrations and an index. Excellent value.

CGJ

A Suitcase Full of Dreams by David Taylor. Delta Tango Publications (direct from: 35 Lower Darnborough St, Clementhorpe, York, YO23 1AR); 1998. £7.00.

This is a book written by a man with a life-long obsession with aeroplanes who never seemed completely happy unless in some sort of physical contact with one. It started when he was growing up in Yorkshire during the war, in an area surrounded by Bomber Command and USAAF bases but it really took off with the arrival of the jet age in the late '40s and during the early '50s. In 1953 it led him, via his local ATC squadron, into RAF Cosford as a Boy Entrant to learn his trade as an Instrument Mechanic (Nav). He seems to have had no ambition to become a pilot but took every opportunity Service life offered to get aloft, earning a name for himself as a volunteer in the process, and scrounging flights with good-natured aircrew whenever he could. He was determined to experience as many types as possible, an ambition he carried over into civilian life as a passenger in the airliners and light transport aircraft of the day. A passion for foreign travel was allied to that for aeroplanes and he relished his overseas postings. He served in Malaya – still being referred to as such in 1997 – here during the Emergency, an experience which brought helicopters into his sphere of fascination with flying machines. His final posting, to RAF Lyneham, saw him in the Mobile Servicing Flight which gave him access to a variety of aircraft and also called for extensive travel to get at some of them. On leaving the Service he used the technical skills he had acquired there in a variety of jobs which took him to America and to Africa.

I think that the value of this book to members of the Society lies in the view of Service life which it presents. Those who entered via the officers mess will find a perspective which will differ from theirs in many respects; those who went in via the ranks will recognise a lot, probably with a mixture of pleasure and pride, and for the civvies it tells stories which will not normally be found in autobiographies written by men who wore rings on their sleeves. The book is packed with detail, of Service life and aircraft of course, but also of the author's personal life and the places and people he encountered in it.

He writes fluently enough but the structure of the book would have benefited from the attentions of an editor and an index would have been useful. The author's general style is reflected in a comment by Air Cdre Tom Bennett, his old CO in Malaya, who says in his Introduction that it contains 'tales that are usually confined to the annual reunion or the bar at the local branch of the RAFA or ACA.' If the air commodore is referring to the relaxed and chatty style associated with the telling of such tales then I think he has hit the right button here. Should you buy the book? Well, at the price, that is certainly worth considering.

Dr Tony Mansell

Three's Company by Jack T C Long. Pen & Sword; 2005. £25.00

In his Foreword, Sir Richard Johns describes this 224-page hardback as being 'a true labour of love (*that is*) unique in its style and presentation.' For a squadron history it is certainly unconventional, since it does not offer the usual annexes that serve as the factual skeleton which normally supports the body of the narrative. Here, however, there are no lists of COs, of honours and awards or of combat claims, no record of movements, no Roll of Honour and no attempt to identify the individual aeroplanes flown by the squadron. To be fair, the author does acknowledge that this is something of a 'cop out' and he advises readers seeking an 'alphabetical or chronological list' that these are available elsewhere.

Unfortunately, while he neglects to tell us where to find this information, he does express some reservations over the accuracy of previously published accounts of the first decade of No 3 Sqn's story, so one would expect his own to be definitive. Sadly, it too is flawed. For instance, all monoplanes were not grounded in 1912; the ban applied to the pilots of only the RFC's Military Wing and it was imposed in September, not 'mid-April' (page 30). Then again, the two aeroplanes illustrated on page 25 are the first and second examples of Farnborough's BE-series. As such, they bore the identities 'BE1' and 'BE2' on their rudders. This is a little difficult to read in the first instance – because the photograph has been printed back to front. The caption to the second picture states that 'BE2' later acquired the military serial '205', which was not the case; '205' was the fifth example – aka the BE5.

Another problem crops up on page 51 where reference is made to the well-known error in Walter Raleigh's *The War in the Air, Vol 1* which identifies the two-seater lost by No 3 Sqn on 26 August 1914 as '387', actually a *single-seat* Tabloid. The author ponders the possibilities and tentatively suggests that it might have been '397', which was an Avro, but eventually plumps for '367', which was a Farman. There is no mystery here; the RFC's daily aircraft returns for the 27th tell us that a Blériot XI-2, '389', which had been on No 3 Sqn's strength the previous day, had been 'wrecked and burnt'. Similarly, the author notes that Raleigh identifies the air mechanic killed in the accidental loss of another Blériot on 12 August as R K Barlow while another source says he was R N Barlow. There is no mystery here either; he was Raymond Keith. My point is that, while the writer has spent forty years accumulating information on No 3 Sqn, he seems to have made little use of primary sources in compiling his book, which may well account for the absence of those annexes.

What we have instead is, in essence, a cut and paste job consisting of extracts from other published works and sundry correspondence plus numerous anecdotes culled from the squadron association's magazine, *Three's Company*. The result is a book in which about 90% of the text is italicised, the chronicler contributing only the linking passages in which he sometimes offers his personal comments, occasionally allowing his pen to run away with him. For example, I think that his contention that the cancellation of the Miles M.52 and the sale of British jet engines to the USSR 'helped in no small part to trigger the Korean War' is something of an overstatement.

Thus far my comments have had a rather negative slant, so I do need to redress the balance. On the plus side there are more than 150 photographs. The reproduction is not all that it might have been but the subject matter sometimes makes up for this, notably the pictures of the rarely illustrated, and unique to No 3 Sqn, DH 9A three-seaters and Westland Walruses. But it is the anecdotes that really make the enterprise worthwhile. They cover all manner of tales, from Willie Read's diaries, providing first-hand recollections of activities in France in 1914, through the account of the measures to which Tempest pilot 'Lefty' Whitman (an American citizen holding an RAF commission) had to resort in order to 'avoid' the US draft in 1944, to some amusing tales from the Harrier era. Of the latter, I was especially

taken by two, both contributed by airmen, one describing what life was *really* like during a field deployment exercise in Germany, the other the problems involved in recovering an aeroplane operating from Belize that had managed to get itself stranded on a coral island a short distance off shore.

Telling stories such as these, and many, many more, is all about people, and people is what this book is really about. While a badge and a number plate may serve to identify a unit, it also needs to develop a distinctive identity of its own and that can be done only by its personnel. *Three's Company* leaves the reader in no doubt as to the strength of No 3 Sqn's 'personality' and of the affection with which it is regarded by those who have served with it. Since it was that sense of a 'squadron spirit' that the author clearly set out to convey, he certainly succeeded in his endeavours. On the other hand, if you are after hard facts – if you want to know the date on which Maj McClintock assumed command in 1918 or how many DFCs the squadron won in WW II or when it took up residence at Gütersloh (for the first time – in 1948) – you are going to have to look elsewhere, and I do have a problem with that.

CGJ

Filming The Dam Busters by Jonathon Falconer. Sutton Publishing; 2005. £20.

At just over 150 pages, filled with relatively large text in an easily-readable font and numerous photographs, this is a classic 'coffee table' book that provides a light read and one that can be 'flicked through' with ease. However, by investing a little time to read it, the book is actually quite absorbing. As the title suggests, this is an account of how the film was made and it was written primarily as a dedication to the RAF aircrew who flew the Lancasters in the film sequences whilst maintaining their operational currency on Lincolns.

The first chapter provides an authentic account of the raid and its preliminaries. Although true historians would recognise a couple of factual errors, it nevertheless does not detract from a reasonably good, concise background to the ends, ways and means of the raid itself and its strategic effect. The book then moves on to look at the film and its cast. It explains how the film was inspired by Paul Brickhill's book of the same name, which was written after a request from Air Chf Mshl

Sir Ralph Cochrane to write the wartime history of No 617 Sqn. The Associated British film company bought the film rights so that Richard Todd could play the part of Guy Gibson and commissioned the English playwright R C Sherriff as the screenplay writer. It explains how the relatively low budget film (£200,000, equating to approximately £3.2 million today) was directed by Michael Anderson and why it was deliberately filmed in monochrome. In addition to Todd, a number of now-famous actors were given the opportunity to 'cut their teeth' on this film and their relationships with each other and serving RAF personnel on location at RAF Hemswell are explored in an interesting manner.

The book then concentrates on the making of the film and specifically the aircraft, the pilots who flew them and how the aerial sequences were produced. Some of the difficulties that the director had to overcome initially were that the Lancaster had been largely withdrawn from service and current aircrews were continually being deployed on operations to the Far East. In the end, four Lancasters were taken out of storage at RAF Aston Down, modified to B III (Type 464 Provisioning) configuration, and four Lincoln crews selected to fly them. Some of the details of filming, such as the costs incurred by the film company in 'leasing' the aircraft, and the fact that the bomb was still classified as 'secret', which meant that its size and shape were not known and therefore had to be guessed at, were fascinating as were the 'cheats' employed by the company to overcome the differences between the wartime and post-war environments. Furthermore, the difficulties that had to be conquered and the extraordinary skills that the Lincoln pilots needed to employ to fly the Lancasters during the aerial sequences were well described. Apparently, the 60 feet at which the original Lancasters actually flew over the Ruhr dams in 1942, appeared a lot higher on film in 1954, so much of the low level filming had to take place at 40 feet.

The book is full of anecdotes and individual recollections by those who took part in the filming. Whilst true historians would probably be a little irritated by its 'general and anecdotal attitude', the book contains a variety of interesting facts and overall, was an interesting and enjoyable read. Definitely one for the coffee table.

Wg Cdr David Robertson

Achieve Your Aim by Kevin Bending. Woodfield Publishing; 2005. £15.00.

Having no direct connection with the RAF, Kevin Bending's interest was simply aroused by reading about the bomber offensive. Inspired by the 'extraordinary courage displayed by ordinary men' who flew repeated missions knowing that their chances of survival were slim, he began to dig deeper and he eventually decided to fill a significant gap in the published record by compiling a history of one of Bomber Command's more notable, but largely unsung, Pathfinder units, No 97 Sqn. With the help of the Squadron Association, he has succeeded admirably.

His book finished up as a reasonably priced 375-page softback. The narrative is, as one would expect, based primarily on the material relating to No 97 Sqn held in the AIR27 and AIR50 series at the National Archives, amplified by personal accounts contributed by veterans. The text is supported by about seventy photographs. The quality of some of these does leave something to be desired. While accepting that the originals will not always have been in mint condition, I suspect that some of the pictures may have lost something in the process of being scanned. Even so, they are deeply evocative. The albums of every heavy bomber squadron are full of informal 'crew pictures', typically seven or eight men, often wearing Mae Wests and parachute harnesses, stood in front of a Lancaster or Halifax. Sadly, the nature of Bomber Command's war means that there are so many of these pictures that the men that they portray tend to anonymity, their individual personalities being subordinated to the corporate identity of the group, the groups themselves being almost indistinguishable one from another. Bending reproduces more than a dozen of these generic crew photographs and, in the process of telling the squadron's story, he provides us with an impression of who, at least some of, these men were.

There are three substantial annexes, one reflecting honours and awards, the second a Roll of Honour (name, rank, Service Number, date) and the third tabulating the operational record (date, target, numbers despatched, returned early and lost with running totals of sorties flown and losses). Interestingly, the latter finish up with totals of 123 aircraft lost in the course of flying 4,066 sorties, these figures differing slightly from 109 (plus 26 in accidents) in the course of

3,934 sorties reflected by Middlebrook and Everitt in *The Bomber Command War Diaries*, a book to which Bending makes frequent reference. Since both sets of figures will presumably have been derived from the same primary sources, the moral would seem to be that the only statistics that one can ever really trust are those which one has compiled oneself.

The major defect with this book is that it focuses almost exclusively on the period 1941-45; less than two pages is devoted to No 97 Sqn's previous service and the post-war era is disposed of in just half a page. Fair enough, I suppose, since the sub-title does specify '... in the Second World War' but it still leaves that gap that the author set out to fill half empty. That said, perhaps the author was wise not to attempt to bite off more than he could chew, because he is clearly less familiar with earlier periods. For instance, during WW I, No 97 Sqn flew the Handley Page O/400 (not O/400) from Xafféwillers (not Xaffer-Villiers) and it could not have 'arrived at Allahabad' aboard the troopship *Mandala* in 1919 because Allahabad is about 400 miles inland – the ship actually docked at Bombay. By contrast, I found very little to carp about in the account of WW II apart from the fact that there is no final 'e' to Sir John Steel's name (page 11) and a note on page 146 concerning Cliff Alabaster is in error. Having retrained as a pilot, this remarkable erstwhile navigator did fly Lancasters with No 582 Sqn, but not as CO, as stated – although having first converted to Mosquitos he did subsequently command No 608 Sqn.

Because Bomber Command operations were conducted on such a large scale and so relentlessly it is difficult to avoid repetition and in attempting to describe these events it takes a certain facility with words to sustain the reader's interest. Bending has this gift and his telling of No 97 Sqn's story is as accessible an account of the exploits of a heavy bomber squadron as any that I have read.

CGJ

Spitfires Over Malta by Brian Cull with Frederick Galea. Grub Street; 2005. £25.00

This 402-page hardback invokes a definite sense of *déjà vu*, or, to be more precise, *déjà lu*, because Brian Cull has ploughed the Malta furrow before. If you have previously read, for instance, his 249 *at*

War or Malta: the Spitfire Year, which he co-wrote with Shores and Malizia, then you will already be very familiar with the bulk of *Spitfires Over Malta*. This new title amounts to a cut and paste job using large quantities of material drawn from the other books, much of it reproduced verbatim, as the basis. That is not to say that the book is a rip off. It does introduce new information and it corrects errors that have come to light since the earlier books were published. Thus, for example: many of the aircraft serial numbers have been corrected; gaps in the lists of pilots who flew Spitfires into Malta from aircraft carriers have been filled in; additional who-shot-down-whom links have been established and so on. I am assuming, of course, that where there are differences, as in a batch of replacement pilots arriving from Gibraltar on 18 May, rather than the 17th as previously reported, the more recent volume does contain the more accurate information. The book is rounded off by several very comprehensive appendices. These include, confined to Malta-based Spitfires in 1942 in each case: a Roll of Honour; a list of ‘aces’; details of contemporary combat claims; and a record of every aircraft known to have been involved including, where known, their dates of arrival on the island and their fates. The author acknowledges that some of this information may still be flawed and/or incomplete but I suspect that it will be only marginally so and that it may well be as good as we are ever going to get.

As is almost invariably the case with books that attempt to provide a narrative account of an air campaign, this one is quite difficult to read. The problem is that there are only so many ways that one can describe a clash between Spitfires and Messerschmitts and, even when these are amplified by the personal recollections of participants, as they often are here, there is little to distinguish one scramble, or engagement, or bale out, or forced landing from another and after twenty or thirty pages the eyelids do start to droop – or, at least, mine do. Having said that, I could not fault the syntax, or the spelling and I would not presume to dispute any of the facts being presented by an acknowledged expert in the field who has researched his topic in great depth. The only errors I picked up concerned a couple of footnotes: 118 is missing (although one can easily tell where it ought to be); 119 is numbered as 118; and 128 appears twice, the second time masquerading as 129. I was also intrigued by the frequent references to naval pilots and aeroplanes belonging to the RNAS, which should

surely have been to the FAA.

The book has the usual Grub Street-style photographic insert in the middle which provides more than sixty images of aeroplanes and pilots, the latter ranging from studio portraits in 'best blue' to snapshots in crumpled KD. The quality is variable, which is inevitable in view of the conditions under which some of the pictures were taken, but they all exude atmosphere. One cuckoo appears to have crept into the Malta-in-1942 nest; the photograph of a pair of Spitfire Vs reproduced opposite page 195 was, I am pretty sure, actually taken in Egypt in 1943.

So should you buy it? Difficult. If you are already fairly familiar with the Malta campaign, unless it really matters to you to know that Plt Off Round actually died in Spitfire EN976, and not BP976 as reported elsewhere, I am not convinced that *Spitfires Over Malta* would be a sound investment. On the other hand, if you need, and do not already have, an authoritative blow-by-blow account of the air defence of Malta in 1942, then I unhesitatingly recommend this book as being the latest, and possibly the last, word on the subject.

CGJ

'128' The Story of the RAF Club by Air Cdre Henry Probert and Wg Cdr Michael Gilbert. Published by, and available from, The Royal Air Force Club (128 Piccadilly, London, W1J 7PY); 2004. £12.50.

In the mid-1960s, I eschewed membership of the RAF Club, believing it to be for senior officers and fuddy-duddies only. I turned instead to the Brevet Flying Club, in Shepherds Market, which I thought might be more in line with my tastes. I was convinced of the wisdom of this decision when my membership document turned up. It was called a 'Drinking Licence' and was almost indistinguishable from the small red booklet in which driving licences of the period were contained. I did, however, have cause to wonder if I had done the right thing, as the first time I stayed at the club, the room next to mine was occupied by a lady of the night whose boisterous bedroom gymnastics disturbed my slumbers.

My departure for several consecutive appointments overseas removed any real interest in London Clubs until 1967-68 when a major recruiting campaign for members – which in FEAF meant Station Commanders being allocated quotas to meet – led to my

joining the RAF Club, a move I have never regretted and often blessed. It was the background to the circumstances of the recruiting drive that drew me immediately to Chapter 7 of '128' – *The Story of the RAF Club* – when I picked up the book for this review.

Henry Probert, that stalwart of the RAF Historical Society and the RAF Club, and Michael Gilbert are the authors of this 144-page hardback which is published by the Club itself. In his Preface Air Cdre Probert outlines some of the problems associated with writing the history, the main one being the lack of a comprehensive archive. This gap in the records has not hindered the authors from documenting a comprehensive and very readable account of the Club from its early days as The Royal Flying Corps Club. The story of the involvement of Lord Cowdray, the struggles to find a building and create a suitable club for the new Royal Air Force are probably reasonably well known, as is the long and pivotal involvement of Col Walter Bersey in the Club's affairs. However, both for anyone not associated with the Club and for those who are, the trials and tribulations that have been experienced over much of the last eighty-five years or so may come as a surprise. The book tracks most facets of the Club's life but tends to concentrate on its financial affairs which appear to this layman, to have been in a more or less permanent state of crisis.

The book deals with the very difficult years of the immediate post-war period, leading to the 'Colonels' Revolt' which would ultimately result in the creation of the Club as it is today; one of the best appointed places to meet in London, oozing tradition while offering up-to-date facilities and a high standard of service.

The volume is well illustrated, although I would have preferred to see more photographs of the Club past and present and less of the artwork collection which resides within it. There are several appendices, detailing the principal officers of the Club and plans of the layout at various times.

As is to be expected from Henry Probert, this is a well written account and it will appeal to members of the RAF Club and anybody with an interest in one of the less obvious pieces of RAF history.

Wg Cdr Colin Cummings

Auster by Barry Ketley. Flight Recorder Publications (Ashtree House, Station Rd, Ottringham, HU12 0BJ); 2005. £12.99.

The humble Auster is unlikely to figure on many people's lists of 'top ten military aeroplanes'. The author of this nicely produced, 96-page, A4 softback sets out to focus the spotlight on this relatively obscure type by providing, as his sub-title explains, 'a brief history of the Auster aircraft in British military service'. He actually does rather more than that as his story encompasses the transatlantic origins of C G Taylor's classic design whose ancestry can be traced back as far as 1927, with much of its DNA being very apparent in the ubiquitous Piper Cub. In 1939 production of an anglicised version began under the auspices of Taylorcraft Aeroplanes (England) Ltd and twenty-five of the thirty-three machines completed prior to the war were eventually impressed into the RAF.

Meanwhile, as Ketley explains, an increasingly vociferous group of Army officers had been expressing concern at the lack of attention being paid to one of the RFC's original function, which had been to use aeroplanes as 'the eyes of the gunners', and he goes on to provide a succinct account of the trials and tribulations that would eventually lead to the creation of D Flight, the first, and largely Taylorcraft-equipped, 'Air Observation Post' unit in 1940. The concise narrative describes how a Taylorcraft Plus D was later modified to become the prototype Auster I and to trace the subsequent evolution of the line until the 1960s when the last of the breed, the AOP Mk 9, was finally rendered redundant by the helicopter. Along the way the exploits of the, eventually, sixteen wartime AOP squadrons are summarised, including their participation in post-war campaigns. All of this is lavishly illustrated with close to 200 photographs, those of a restored Mk V being in colour, reproduced to a very high standard on coated paper throughout.

Errors? Very few, because, as both a well-established aviation publisher and a meticulous researcher, Ketley simply would not tolerate typos and is unlikely to make mistakes – although, having taken off from Ismailia, when Capt Sargent was forced to land his AOP 6 on a beach alongside the Gulf of Aqaba in 1954 (an incident illustrated on page 59) he can hardly have been flying 'near Amman'.

A worthy tribute to an unremarkable, and thus somewhat overlooked, aeroplane which did some quite remarkable things, and at a bargain price. Recommended.

CGJ

Air War for Burma: the Allied Air Forces Fight Back in South-East Asia 1942-1945 by Christopher Shores. Grub Street; 2005. £30.00

Hitherto the air war in the Far East during WW II has been as relatively forgotten as the Fourteenth Army when it comes to written history. In recent years though, Chris Shores has addressed the issue with his Burma trilogy under the broad heading *Bloody Shambles*. That this third and final volume omits the epithet is a reflection of the fact that in the period in question the Allies were often on the offensive and recovering lost ground.

By June 1942 the British had been pushed back through Burma to India and most of the Chinese 5th Army had withdrawn to Yunnan Province. The naval base at Ceylon was also under constant threat of attack. For three years, until the Japanese surrender, the Allied forces in the region were committed first to securing India and south-western China and then to recovering Burma and hopefully, in due course, Thailand, Malaya, Indo-China and Indonesia.

At the start of the monsoon season in June 1942 Allied air assets through the whole of India and Ceylon comprised just twenty-six squadrons, many equipped with obsolete aircraft. Three Hurricane squadrons protected Ceylon and a further six plus a Mohawk squadron were available for the defence of Bengal. Tellingly, there was only one transport unit.

The period to December 1942 was confined to allied bombing, typically of ports at Akyab and Rangoon, and Japanese attacks on Calcutta plus reconnaissance sorties. During this period Blenheims suffered considerable losses. From mid-December the British launched an offensive in the Arakan, well supported by air, but resulting in withdrawal by April. In the meantime, the first Chindit operations had begun in February 1943, heavily supplied by air and the arrival of the first Beaufighters. By the end of that year the first Spitfires had arrived and some 275 airfields had been constructed.

The second Arakan battle started in February 1944, followed closely by major Japanese assaults on Imphal and Kohima, which were bravely resisted. At the same time the second, and much larger, Chindit campaign began. By June the airfield at Myitkyina had been captured while the Imphal and Kohima sieges ended, and from this time the Allies pushed south through Burma, taking Mandalay in

March 1945 and Rangoon in May.

In this meticulously researched book Chris Shores has documented in great detail the day-by-day activities of the Allied and Japanese air forces. The book works well as a diary, with overviews for each month, good maps and numerous appendices, including periodic Orders of Battle and summarised unit histories. A number of quotes helps to bring life to otherwise necessarily economic writing.

Here, then, are described the finer points of every fighter and bomber mission, with losses on both sides recorded, and in this respect the author has added flesh to those campaign outlines covered in other volumes. How many readers, I wonder, knew that RAF Tiger Moths and impressed Fox Moths were involved in casevac duties at Imphal? The Allied losses through accidents highlight the extent to which the weather was perhaps at least as great an enemy as the Japanese, both in terms of maintenance and navigation.

At 450 pages and weighing over 2 lb *Air War for Burma* is no lightweight and herein is probably the answer to the several criticisms I have. Although making general reference in each monthly synopsis to coastal and transport operations, the book misses out on the detail which is generally reserved for the fighters and bombers. This is a pity, because from 1944 the Army's ability to move was enabled through a level of air supply hitherto undreamed of. Further, most books on operations over 'the Hump' are American and tend to give a one-sided view of transport operations in northern Burma.

A second criticism is in relation to the overall feel of the Burma campaign. The descriptions are primarily of the 'what' rather than the 'how', and in this respect I found it useful to read concurrently chapters XIV to XVI of Volume III of the official history of the RAF. This gave me a much better feel for the politics, conditions and overall achievements of the air and land forces. Finally, in the quality of photographic reproduction the publishers have done the author no great service. The 224 photos deserve much better treatment both in terms of size and contrast, given their rarity and importance.

My few criticisms should not in any way detract from this most important and comprehensive addition to the growing but still small catalogue of reliable histories of a near-forgotten campaign. Highly recommended.

Vic Flintham

Sabre – the Canadair Sabre in RAF Service by Duncan Curtis. Sutton; 2005. £25.00.

The author is an ex-RAF technician who has made a particular study of the F-86. This 276-page hardback is his sixth essay on the Sabre and his familiarity with his subject is evident throughout. The core of the book is represented by chapters devoted to each of the front line squadrons that were equipped with the type during its relatively brief period of service with the RAF. These are based on the individual unit F540s but re-expressed in a flowing narrative, amplified by the personal recollections of some of those involved, groundcrew as well as pilots. All twelve squadrons did pretty much the same things, of course – participated in the same exercises, did their stints on Battle Flight, mounted fly-pasts for assorted VIPs, carried out live-firing at Sylt or Acklington and bent the occasional aeroplane – so it is only to be expected that each of these chapters will be very similar. That is true, up to a point, but they are all worth reading because there are some interesting tales embedded within the basic pattern. For instance, when No 67 Sqn flew its aeroplanes into Duxford prior to the Coronation Review flypast at Odiham in 1953, many of them had contraband cigarettes hidden in the nosewheel bays, resulting in some prosecutions. Then again, who knew that despite its being in harness for only three years, RAF Sabres could be seen on occasion as far afield as Amman, Habbaniya and Abu Sueir?

There is more to the story than what the squadrons got up to, of course, and the book begins by reviewing the diplomatic negotiations that eventually led to the RAF's acquiring its first swept wing aeroplanes. This is amplified by an account of the remarkable Operation BECHERS BROOK which ferried more than 370 Sabres across the Atlantic with only a marginal loss rate. The final chapter deals with the disposal of the surviving airframes, most of which were passed on to the air forces of Italy and Yugoslavia after overhaul by various industrial contractors in the UK. To complete the picture, the author also summarises the experiences of the twenty-seven RAF pilots who were seconded to the USAF to fly the F-86 in Korea. All of this is rounded off by an index.

Errors? There are a few, but all are superficial. For instance: Air Mshl Boothman was with the Ministry of Supply (not Defence) in 1950; an APS was an Armament Practice Station (not School); there is

an unexplained mention of an ‘MSQ’ (on page 135) which, from the context, may be a typo for an MSU – Mobile Signals Unit.

Cold War paranoia was at its height in the mid-1950s and informal photography on the flight line was not encouraged. As a result, pictures of RAF Sabres are relatively hard to come by so the author has done well to provide us with about 170 images, sixteen of them in colour. All are well reproduced, although the one on page 218 has been printed upside down, which is a shame, as it rather short-changes No 234 Sqn’s aerobatic team by portraying them simply stooing along in level flight, rather than inverted, which they were at the time.

Sabres aside, the book also provides an interesting insight into the RAF of half-a-century ago. The group photographs of pilots provide a mute comment on what has happened to the rank structure in the interim, as they show that a typical Sabre squadron, with an established strength of no fewer than twenty-two aircraft, was run by a mere squadron leader. He was assisted by a couple of flight lieutenant Flight Commanders (all three as often as not wearing WW II medal ribbons), the bulk of the rank and file being first tourist flying officers, stiffened by a handful of experienced NCOs plus the occasional very green pilot officer – how long is it since we last had pilot officers on squadrons? While perhaps not careless, there was certainly something carefree about flying in those days, exemplified by the widespread practice of deliberately aiming sonic ‘booms’ at people and places in pursuit of acquiring the must-have fashion accessory of the day – a Machbuster tie pin. Another sign of the contemporary times was the accident rate and it is interesting to observe that in a mere three years the RAF managed to write off no fewer than seventy-three of its Sabres, No 66 Sqn alone managing to dispose of thirteen of its aeroplanes between May 1954 and January 1956, although ‘only’ four of its pilots lost their lives.

This book will tell you most things that you are ever likely to want to know about the RAF’s Sabres. Recommended.

CGJ

Bomber Command 1936-1968 – An Operational & Historical Record by Ken Delve. Pen & Sword; 2006. £19.99.

Books dealing with Bomber Command must surely fill many shelves, their authors constituting a virtual Who’s Who of historians.

Most of them deal with specific aspects of the subject – it is, after all, something of a challenge to attempt to address *all* of the Command's functions in one go. Sir Arthur's *Despatch* is probably as concise an overall narrative account as any, while Middlebrook and Everitt's *War Diaries* are a particularly useful example of a specific aspect presented in the form of easily assimilated chronological lists.

Here we have yet another Bomber Command book in which Ken Delve sets out to present many facets of the subject between one set of covers, the dates included in the title indicating that he attempts to cover the whole history of the organisation from its formation to its demise – although, in fact, after April 1968, No 1 Group within the new Strike Command carried on as if nothing much had happened.

The book is structured as five Chapters supported by numerous Annexes. Chapter One is an introduction and overview; the other four summarise operations and the activities of the various Groups, provide a description of aircrew training and discuss the types of aircraft used. Annexes A through R, provide assorted lists and statistics. The narrative is amply supported by illustrations (including some interesting drawings from contemporary German sources showing the vulnerable areas of representative RAF bombers) and further embedded tables and lists of data.

The first Chapter contains, I think, rather more than its title suggests, although it has to be read because that is where one will find a discussion of the rationale behind the V-Force and its deterrent role. As an 'introduction', however, it is far too long; many of the operational observations and personal accounts that it contains relating specifically to WW II would, for instance, have sat far more comfortably in Chapter Two.

Chapter Two is the core of the book and is, quite rightly, largely devoted to the events of WW II. Since Bomber Command mounted some 380,000 sorties, it was clearly impossible to deal with all of them in a mere 306 pages and Delve has settled for considering those which can be conveniently grouped under such headings as the Early Days, 1,000-bomber efforts, the Ruhr, Hamburg, the Dams, Berlin, D-Day support and Finale. These summarised campaigns are amplified by a selection of accounts of some of the more extraordinary exploits of individuals. Chapter Two runs on into the post-war era to end in 1956 with operations relating to Malaya, the Mau Mau and Suez.

It is arguable that Chapters Three, Four and Five should have been labelled as Appendices. In fact, I chose to read the book in a different order from that intended, but, having read an account of the Command's activities and achievements, the sections examining the organisation of its eight (at maximum) operational Groups, dealing with the way in which it trained its 125,000 aircrew graduates of the Empire Air Training Scheme and providing lots of facts about the Command's twenty-seven different aircraft types (and the Thor missile) felt like an afterthought.

The Annexes contain extensive lists of tabulated data relating to squadrons, aircraft, attack accuracy, Orders of Battle on seven representative dates, assorted maps, numbers of sorties flown, casualties sustained, target destruction and so on. In amongst these, but neither labelled as Annexes nor noted in the Contents, are additional pages providing data on bomb tonnages and aircraft losses plus a (British) map of German targets, the utility of the latter being somewhat compromised by the regrettable lack of a legend.

In short, a young newcomer to the study of Bomber Command could do worse than start with this book, if only to gauge the magnitude of the enterprise. But there are many other authors whose works merit closer attention if he is to acquire an appreciation of such critical topics as, for instance: command and control; the ever-changing development of aids to navigation and bombing; the evolution of tactics and countermeasures; political issues; morale; the balance between effort and effectiveness and so on. I have already referred to *The Despatch* and the *War Diaries*, to which one could add Webster and Frankland's four-volume *Strategic Air Offensive Against Germany* and, for the V-Force, Humphrey Wynn's *RAF Nuclear Deterrent Forces*. When compared to works such as these, and others, this latest effort is clearly relatively superficial, but, that said, it does constitute an adequate primer.

AVM Jack Furner

The Rock And The Royal Air Force by Henry Probert. Gibraltar Books; 2005. Available from Gp Capt John Platt at 'Fairfield', 44 Hastings Road, Battle, TN13 0TE at £12 (inc p&p).

Surprising as it may seem, relatively little has been published on the RAF's presence at Gibraltar. There are extensive incidental

references to it in official histories, books dealing with aspects of the Battle of the Atlantic and the war in the Mediterranean, and in personal memoirs, of course, and there is Tony Fairbairn's photographic essay (Tempus, 2002), but there has never been a book devoted to providing a chronicle of the air force's activities on The Rock. At the invitation of the Maritime Air Trust (who will benefit from the proceeds of all sales), Air Cdre Probert has filled this gap and his lean prose has enabled him to do this with considerable success in a slim hardback which presents a comprehensive and balanced account of events and leaves one feeling satisfied that pretty much everything of consequence has been covered.

That is not to say that there is not more to be written about the exploits of crews flying from RAF North Front and, for those operating flying boats, RAF New Camp, but this is not that sort of book. There are, nevertheless, sufficient mentions of U-boat sinkings (Gibraltar's tally of twenty-four was exceeded, by a margin of two, only by that of Reykjavik), rescue missions and the like to maintain an awareness of the importance of The Rock's contribution to the maritime war. But until 1943 its function as a staging post was probably of equal significance, as Gibraltar represented both a critical link in the supply chain that sustained Malta and the jumping off point for many of the squadrons, particularly of fighters, that participated in the invasion of North Africa. In the context of the latter operation the astonishing feats accomplished by the rigging parties which prepared literally hundreds of Spitfires and Hurricanes delivered by sea in knocked-down form are of particular note.

While the author pays due regard to the practical problems of flying from the Rock, with its curious, and despite repeated extensions, never quite long enough for comfort, aircraft-carrier-like runway and its even more curious winds, where he really scores is in setting the story against the practical problems of operating an airfield a matter of yards from a neighbour who, if not overtly hostile, could often be extremely inhospitable. Since this meant that flying activities always involved a risk of diplomatic incidents, the evolving political situation is frequently referred to throughout the narrative which continues to the end of the century. Indeed almost half of the book is devoted to the post-war era – a period that has previously been afforded even less attention than that of the wartime years. Thus the

story embraces Gibraltar's role in the Cold War, keeping track of Soviet submarines and surface vessels and participating in numerous exercises, often hosting aeroplanes of other NATO nations, and the part that it played in the Falklands campaign.

The only adverse observations that I would raise are to point out that there are some anachronistic WW II references to the long defunct RNAS, rather than to the FAA, and a number of aircraft types have been spelled incorrectly, eg Goéland, Curtiss, Airacobra and Aviocar. I think that it might also have been worth specifically mentioning that a 'Gib trip' probably features in the log book of a substantial majority of (what we used to call) navigators and AEOs, because, along with Luqa, it was the usual destination for those end-of-course overseas exercises, which were a kind of rite of passage for back seaters, so a week-end line up of Varsities or Dominies was a common sight from the mid-1950s on. Flying as student and/or instructor, I managed to get there on that basis four times myself; on the first occasion the border was still open and the fleshpots of La Linea were, well – pretty fleshy – but I digress.

The book has been printed on coated paper, so that the forty or more illustrations are well reproduced. Do *not* be misled by the fact that it runs to only 112 pages, including an index, because the text is informative, economically written, easy to read and does exactly what it sets out to do. Something of a quart within a pint pot, had I not been fortunate enough to have secured the review copy, I would certainly have invested in one myself.

CGJ

Afterthought. While it is in no way a criticism of Air Cdre Probert's book, I think that a quotation that it contains is worth a comment. It is taken from Churchill's wartime memoirs¹ in which he observes favourably on the accuracy of the conduct of navigation on a flight that he made from Cairo to Gibraltar in 1942; the PM notes that, 'After three or four hour's flying in mist Vanderkloot had been exact.'

A 24-year old American civilian, William 'Bill' Vanderkloot was an experienced commercial pilot, who had been earning a tax free \$1,000 per month working for the Atlantic Ferry Organisation and, later, Ferry Command when he had been selected to captain the crew of the VIP(ish) Liberator *Commando*. Four other members of the crew



Four members of the six-man crew of the Liberator 'Commando' for Churchill's flight to Moscow in 1942 – William Vanderkloot (captain), Jack Ruggles (co-pilot), Sqn Ldr Charles Kimber (navigator) and Ronald Williams (flight engineer); the others were Russell Holmes (radio operator) and John Affleck (a second flight engineer). Note the early 'FC' Ferry Command cap badges.

were American or Canadian civilians but the sixth man was Sqn Ldr Charles Kimber DFC who, evidently unbeknown to the PM, had been the chap who had actually been responsible for the notably accurate navigation.

In fact Kimber had been the navigator on every stage of a 15,000 nautical mile trip from the UK via Gibraltar, Cairo and Tehran to Moscow and back. In practical terms this had meant that, while the pilots had been taking turns to watch the autopilot, Kimber alone had actually worked throughout the entire 75 flying hours. He had had to contend with many problems, not least the fact that (apparently for security reasons) he was kept in the dark about their destination(s). On the outbound leg from Gibraltar, for instance, he did not learn that their next stop was to be in Egypt until the engines had been started – he had half expected that they were going to South Africa. This meant that he was often unable to prepare a flight plan or even to acquire appropriate mapping. Suffice to say that, in the course of playing his

part in this remarkable excursion, Kimber took no fewer than 307 astro shots most of which he had been obliged, in the absence of the necessary charts, to plot on a self-constructed grid.

Shortly after the expedition Vanderkloot was admitted to the Order of the British Empire (three other civilian members of the crew would eventually be similarly honoured); Kimber's efforts were afforded no formal recognition whatsoever. Furthermore, and quite astonishingly, Vanderkloot's biography² makes absolutely no mention of Kimber. In effect, the combined efforts of the PM and his personal pilot, had almost managed to write the navigator's crucial contribution to the success of this critical mission out of the historical record. Indeed they would have succeeded had Kimber not written a privately published (and very interesting, but, I suspect, little read) autobiography in which he sets the record straight by providing a detailed account of the enterprise.³

As an erstwhile nav myself, I can't help feeling that there is probably a moral here somewhere, but I can't quite put my finger on it. *Ed*

¹ W S Churchill, *The Second World War, Vol IV, The Hinge of Fate*. (Cassell, London, 1951).

² Bruce West, *The Man Who Flew Churchill*. (McGraw-Hill Ryerson, Toronto, 1975).

³ Charles Kimber, *Son of Halton*. (Thorley Publications, London, 1977).

Previous Topics

Titles below in **bold** are hardbacks. An entry in the right hand column indicates that copies are still available. Back issues may be ordered from the Membership Secretary, Dr Jack Dunham, at Silverhill House, Coombe, Wotton-under-Edge, Glos, GL12 7ND.

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ROYAL AIR FORCE HISTORICAL SOCIETY

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

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

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

Membership of the Society costs £18 per annum and further details may be obtained from the Membership Secretary, Dr Jack Dunham, Silverhill House, Coombe, Wotton-under-Edge, Gloucestershire. GL12 7ND. (Tel 01453-843362)

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 RAF winners have been:

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- 2001 Sqn Ldr C H Goss MA
- 2002 Sqn Ldr S I Richards BSc
- 2003 Wg Cdr T M Webster MB BS MRCGP MRAeS
- 2004 Sqn Ldr S Gardner MA MPhil

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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