

**ROYAL AIR FORCE  
HISTORICAL SOCIETY**



**JOURNAL**

**39**

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## SELECTED ABBREVIATIONS

ACAS(Pol)	Assistant Chief of the Air Staff (Policy)
ACSSU	Air Combat Service Support Units
AHB	Air Historical Branch
AOA	Air Officer in charge of Administration
BGS	Brigadier General Staff
CAS	Chief of the Air Staff
CFS	Central Flying School
CIGS	Chief of the Imperial General Staff
CONOPS	Concept of Operations
DASB	Director of Air Staff Briefing
DCAS	Deputy Chief of the Air Staff
DOB	Deployed Operations Base
DS	Directing Staff
FCO	Foreign and Commonwealth Office
FFI	Freedom From Infection
FGA	Fighter/Ground Attack
IDC	Imperial Defence College
JIC	Joint Intelligence Committee
JSSC	Joint Services Staff College (at Latimer)
NAS	Naval Air Squadron
ORB	Operations Record Book
PRCU	Powered Flying Control Unit
QFI	Qualified Flying Instructor
RAFFC	RAF Flying College (at Manby)
SASO	Senior Air Staff Officer
SCU	Servicing Commando Unit
VCAS	Vice Chief of the Air Staff

## THE EARLY DEVELOPMENT OF THE TURBOJET

by Ian Whittle

I probably ought not to be the person addressing this meeting today. It really should be someone with an interest in the history of turbojet development but who is not a member of the Whittle family!

In the mid-1980s my father took me along to see the exhibits at the National Air and Space Museum in Washington DC. He drew my attention to the way that history has been manipulated in the USA and let me understand his deep unease about the evolving situation.

At the time, I was living in Hong Kong and busy with my career. I was sympathetic and somewhat horrified by what he was showing me. It all seemed so petty and such an insult to him and to the British in general. However, it did not occur to me that I might ever feel constrained to take up the cause. It was only shortly before he died that it began to dawn on me that there was very little evidence of any concern about the matter from within the RAF or amongst aeronautical journalists.

Recently published documents in this country now indicate that the American version of the history has migrated. Many publications and exhibits here seem now to reflect the fictional version of the history. As for websites...! I never made any particular commitment to Father, but I think he really did hope that I would try to put the record straight as best I could. Hence, my presence here today.

The invention of the turbojet (arguably) led to the greatest step-change in aeronautics since the Wright brother's adventures in 1903. The development of the turbojet in Britain was RAF business and is therefore RAF Historical Society business. The closeness of the connection between the RAF and the early development of this technology is often ignored, or not appreciated. There were other factors, but, without the training Frank Whittle received during his apprenticeship and cadetship there would have been no turbojet. Attendance at the Officer's Engineering School and his RAF-sponsored engineering course at Cambridge University gave him the ability to tackle the engineering challenge. This education was followed by essential RAF support during the nine-year period 1936 to 1945 when practical development was underway.

But - a problem has arisen. The accuracy of the history surrounding

the genesis of the jet engine has been tinkered with. History has been fictionalised – as it so often is for one reason or another. The usual reasons for the manipulation of history are to ease national, political or religious sensibilities. In this instance, political sensibilities have influenced the history in Britain and national sensibilities have influenced the history in the United States. The misconceptions that have evolved generally marginalise Frank Whittle and reduce the impact of what was achieved during his service with the Royal Air Force – and therefore marginalise a British, and an RAF, achievement.

It is now generally believed that a German, coincidentally and independently, invented the turbojet. Modern documentation usually states that the German prototype engine first ran a month before Whittle began testing his unit. And that, as the German engine propelled an aeroplane twenty months before the British flew a jet-propelled machine, it must have been a successful aero-propulsion unit.

Quite understandably, because a German is thought to have invented the jet engine and pioneered its use, it is assumed he must be the man responsible for kick-starting turbojet development in his country. He must, therefore, be of heroic stature. This hero is Hans von Ohain – one of the German technocrats who moved to live in the USA with the other ‘paperclip scientists’ after the end of WW II.

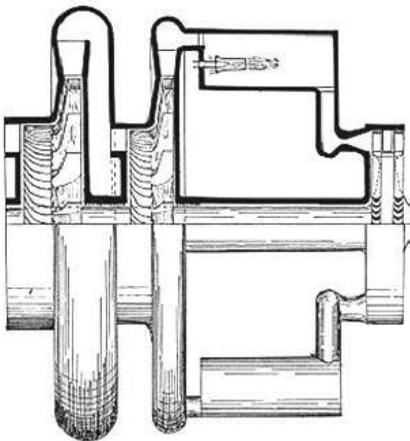
Von Ohain became an American citizen and lived in that country until his death in 1998. His elevation to an exalted position in this history has relieved our optimistic American friends of any distasteful notions about the turbojet NOT being invented in their backyard.

Where does this leave Britain, the RAF and Frank Whittle? It pretty well relegates early British turbojet development to a state of irrelevance. The impression created is that, had Whittle done nothing, the jet engine would have emerged in Germany in exactly the same time frame as it did. The development of Whittle’s centrifugal engine is considered by many to have been simply an interlude before the emergence of the ‘real thing’ – the axial turbojet. Disregarding von Ohain, the Germans were concentrating on axial jets, the Royal Aircraft Establishment was concentrating on an axial jet ... why make a fuss about Whittle?

We need to take a careful look at the individual misconceptions and decide if anything might be done to stop the rot. Was von Ohain a



*Above: Fg Off Frank Whittle, at about the time that he presented his proposals to the Air Ministry. Below, Whittle's design of 1929.*



co-inventor? Did he start his engine before Whittle started his? Was the Ohain engine a successful turbojet? Did this man kick-start turbojet development in Germany?

Let us have a look at the invention first. Pilot Officer Whittle – five foot seven inches short – twenty-two years young – was sent by his CO to the Air Ministry to show them his design for a jet engine in October 1929. We know what happened – nothing! Nothing happened because the chosen consultant from within the RAE chose to advise his mentors that the idea was of insufficient merit to warrant further attention.

By the way, our very own Science Museum, in its excruciatingly inadequate display, excuses this debacle by stating that it was due to a paucity of funds and a lack of suitable materials. Hardly an excuse for rejecting the idea outright and making absolutely no attempt to undertake research or protect the concept with a cloak of secrecy.

A friend encouraged Whittle to patent the idea without delay. The application went through in January 1930. The patent details entered the public



*Dr Hans von Ohain*

domain after April 1931. They became available, not only to the British public, but, as is entirely normal, to the Trade Commissioners of all foreign embassies resident in London at the time. The intelligence spread. It certainly went to Sweden, France and Germany. It must have been acquired by the USSR and the USA as well. In the event, because Whittle had been unable to get any reaction from his own mentors or the engineering firms he contacted, nothing would happen in Britain until some civilian entrepreneurs encouraged him to take up development in 1936. A firm named Power Jets was formed. The idea

was rescued from oblivion in Britain.

The first evidence of turbojet development occurred in Sweden in about 1933; then Germany, and then, at much the same time, the USSR. For reasons I cannot explain, the intelligence escaped serious notice in the USA until some years later.

Let us now have a look at what happened in Germany. Von Ohain was a schoolboy when the turbojet was invented. He entered Göttingen University in 1930 as a student of physics. In 1932, he was studying at the Aerodynamics Research Division – one of the several German recipients of the Whittle patent. It is hardly likely that his tutors were unaware of the concept. It is highly unlikely that no mention would be made of the two possible ways in which the gas turbine might be applied to aeronautics – as a means of driving the aeroplane propeller or as a means of providing propulsion by reaction.

In 1934, still at Göttingen, Ohain was working on providing propulsion by reaction. By 1935, he had designed an interesting form of gas turbine that he believed could be applied to aeronautics as a jet engine. He tried to patent his device, but this was denied – due to the existing Whittle patent. In 1936, at about the same time that Power

Jets was formed in Britain, von Ohain was employed by an ever-optimistic Ernst Heinkel. Heinkel was one of the top German aircraft designers (another recipient of the British patent) who hoped to enter the field of jet propulsion with the Ohain unit. He was ill-advised to do so. Ohain's unique gas turbine was not suitable for its intended purpose and would cost Heinkel dearly in money and time spent. The proposed engine employed a single-sided centrifugal compressor back-to-back with a radial inflow turbine – an arrangement that would prove inadequate.

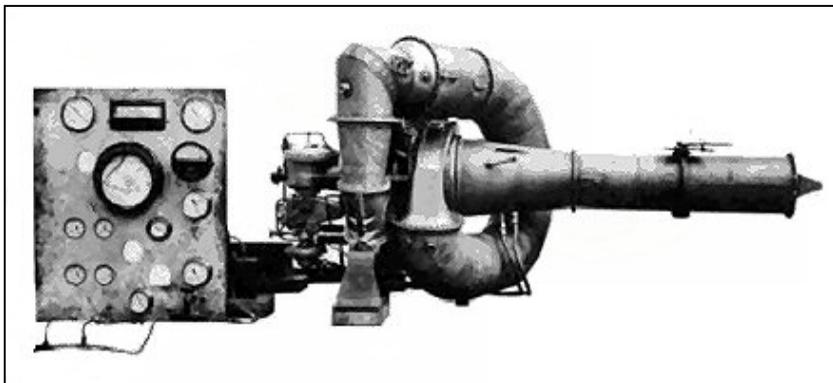
So – was von Ohain a jet engine inventor? If you still think he might have been – consider this. During 1935, at the Junkers Company (yet another recipient of the patent), Dr Herbert Wagner was assessing the gas turbine as a means of driving the aeroplane propeller or as a jet engine. He settled for the latter in 1936 and began development of a turbojet with an axial compressor and axial turbine. The Wagner/Junkers jet engine project was secret – so was the Ohain/Heinkel project – each secret from the other. Was Wagner an additional inventor of the jet engine? What about the Swede – Lysholm – apparently developing a jet engine at the Milo Steam Turbine Company even before Wagner or Ohain came onstage?

There seems no evidence that Ohain was elevated to 'co-inventor' until at least twenty years after the end of WW II. I suspect that Ohain wore his crown uneasily. A hole had been dug for him by his enthusiastic American admirers and it became so deep he was unable to climb out. My father knew and liked him – as did I. He radiated charm, modesty and self-effacement.

Whatever is said here, unless there is a concerted effort, the idea that there was a co-inventor will become 'writ in stone' – and no amount of protest will shift it into the realms of make-believe where it belongs.

Now for von Ohain's claim that he first started his engine in March 1937 – one month before Frank Whittle first ran his. In Heinkel's autobiography, *Stormy Life*<sup>1</sup>, he states quite clearly that a scale-model mock-up of the Ohain unit was first started in September 1937 (fuelled by gaseous hydrogen) and that the actual jet engine (fuelled by petrol) was first started six months later – about March 1938. Whittle first started his engine (fuelled by diesel oil) in April 1937.

Apart from Heinkel's book, there is no documentary evidence. But,



*The Whittle unit as it was when it was first run in 1937.*

in the United States, and elsewhere (including our own Science Museum) the Ohain assertion is preferred, as it beats Whittle by a month. Nevertheless, I have to say that Ohain always admitted that the version of his engine that ran in 1937 was not a liquid-fuelled unit. And, to give him his due, he was always very careful to credit Whittle with being the first to run a liquid-fuelled jet engine. However, his attempt to give himself a bit more credit than was his due with respect to the bench-test, proof-of-concept unit, is mischievous.

Now we should look at the usefulness or otherwise of the Ohain jet engine. The single-sided centrifugal compressor had a relatively low compression ratio for a unit that had to provide at least a reasonable level of thrust for the small airframe it was to propel. The radial inflow turbine inlet temperature would, of a necessity, be very high indeed. The overall efficiencies of the main components were at a questionable level. The engine was evidently plagued by a very short lifetime due to turbine burn out. It was installed in Heinkel's He 178 but it made only two six-minute flights with that particular engine, the first in August 1939 the second in November. One assumes the turbine unit was discarded after each flight. It was certainly the first turbojet aeroplane to fly – and Heinkel had understandable reasons for forcing the engine into early use in this way. He urgently needed to create an impression of being well and truly established as a player in the development of this technology to impress the German Air Ministry. He needed their approval, and he needed funding and contracts. It was little more than an expensive circus act. It failed to impress the



*The Heinkel He 178. For the initial flight, the undercarriage was left down with the wheel wells plated over.*

ministry hierarchy.

The engine was modified in an effort to make it suitable for installation in Heinkel's twin-engine jet fighter design – the He 280. But, although it propelled the '280 on at least one brief occasion, it was abandoned as dead-end technology thereafter. Heinkel had to wait for the Junkers and BMW jet engines to become available.

Documents seldom mention that the Ohain engine was abandoned in 1941. However, to bolster his reputation, it is claimed that he went on to design an engine that was, if not the most powerful jet engine in the world, then certainly the most powerful under development in Germany. In reality, Ohain had no part in the design of this unit (the 109-011 *aka* the HeS 11). His duties were supervisory – although one would assume he made some useful input. Incidentally, the 109-011 had a thrust that was far below that of the Rolls-Royce Nene and the General Electric I-40 – both of which were under test in the same timeframe.

The Wagner engine, although very promising, was not chosen by the German Air Ministry to become their mainstay jet engine. The Junkers engine under the direction of Anselm Franz took the stage as the prime German turbojet during the war. This was the Jumo 004. The BMW jet engine (the 003) was developing into a close second.

From what has been said, I hope that I have established that Frank Whittle was the inventor of, and the first to run, the jet engine.

In the USA, and now almost universally, von Ohain is credited with kick-starting turbojet development in Germany. If one believes



*The Meteor F.1 became operational with No 616 Sqn in July 1944.*

he was the inventor as well as the first to run a turbojet, it is quite easy to believe that he was responsible for the blossoming of the technology in his country. However, this ignores the work of Herbert Wagner and also ignores the fact that the German Air Ministry was calling upon aero-engine firms to take up the challenge *before* Heinkel revealed to them that he was already a player.

Had von Ohain never entered the fray, it would not have made the slightest difference to the progress of turbojet development in Germany.

Most publications focusing on this history claim that the German turbojets – the Jumo 004 and the BMW 003 – were more advanced than British jet engines under development in the same timeframe. In reality, the reliability and the overall performance of the British centrifugal engine exceeded that of the Jumo 004. (The BMW 003 did not see sufficient service for an assessment of its performance to be made.) The RAE/Metrovick axial turbojet, the F2, was a far more promising engine than the Jumo 004.

It must be said that the war situation in Germany was so grim by 1944 that they were bound to put their jet engines into production when they were at a stage of development that would not have been considered sufficiently advanced by the Allies. Which leads me to another misconception. It is claimed that the Messerschmitt jet fighter, the Me 262, went into operational service before the British jet fighter, the Gloster Meteor.

The Meteor became operational when the first of No 616 Sqn's pilots was checked out on type and ready to take the aeroplane into

combat. This was in mid-July 1944.

The air war had passed to occupied France and Germany by the time the Meteor began its work up to operational readiness. There were, therefore, no enemy targets available. Whereas, when the development unit was flying the Me 262 in July 1944, numerous Allied aircraft were available as targets. A Mosquito photo reconnaissance aircraft presented itself and was fired on in that month. This event has led to the belief that the Me 262 was operational. It was not. It did not become operational until early October after it had been delivered to the *Luftwaffe* wing under the command of General Adolf Galland.

The Me 262 was a seriously fast aeroplane. It evolved from designs that went onto the drawing board as early as 1938. It incorporated the most advanced aerodynamic principles. The futuristic nature of this aeroplane has made it an almost mythical object. It catches the imagination. Whereas the Meteor seems all too pedestrian. Yet the Me 262 killed more *Luftwaffe* pilots than Allied pilots who were inconvenienced by it. It was propelled by a thoroughly dangerous form of turbojet engine with a remarkably under-developed axial compressor. It was incapable of high-energy manoeuvres for fear of a flameout. It had a wing-loading that was nearly three times that of the Meteor. This was fine for a high Mach number, but not entirely suitable for the job the aeroplane was designed to accomplish – to intercept and destroy relatively slow-moving targets.

Herein lies the truth. But will anybody join me in a thorough review of the documentary evidence and help with an effort to defend what is undoubtedly a piece of RAF history? Museums in this country need to be monitored so that our public are not misled. Museums in the United States, the National Air and Space Museum in particular, should be provided with material that will make it difficult for them to justify presentation of this history in a way that can only be described as semi-fictional.

I earnestly recommend that this Society make it their business to see that the facts are rightfully expressed and encourage the learned societies to lend a hand.

1. Heinkel, Ernst. *Stormy Life: Memoirs of a Pioneer of the Air Age* (New York; 1956).

## DISCUSSION

**Wg Cdr David Robertson.** You clearly have a firm grasp on the American perspective on your father's work; could I ask whether you have a view on the German perspective?

**Ian Whittle.** Surprisingly, no one has ever asked me that before and I have to say that I don't really know. That said, I have spoken to people at the Deutsches Museum in Munich and, it may be my imagination, but I get the impression that, while they do actually know the truth, they are not prepared to say what they really think and are content to go along with the version constructed by the Americans. On the other hand I think that they do have some sympathy for my position because they too are concerned for their other unsung pioneers in this field, like Herbert Wagner of Junkers who is almost totally ignored. Indeed I had never heard of Wagner myself until I began to dig deeper into this business. I did make an attempt at doing some research in Germany, at Göttingen, but I don't speak German so the boxes full of papers that they were quite happy to make available were quite meaningless to me. So, in short, I don't really know where the Germans stand.

**Gp Capt Jock Heron.** I understand that, in conversation in Washington, von Ohain once told your father that, had the British Government provided the level of support that von Ohain had received from the German authorities, the RAF could have had the Meteor in time for the Battle of Britain.

**Whittle.** Yes, von Ohain did say that, and he was absolutely right. Had the necessary support been provided, it would not have been unreasonable to expect to have had a jet fighter in production by mid-1939 – after all, that would have been ten years since the idea had first been presented to the Air Ministry.

**AVM Nigel Baldwin.** While I was serving in the USA, I attended a couple of dinners at which both Sir Frank and von Ohain were present. On one occasion I was in a corner talking to Ohain and I observed that it must have been very rewarding to have been the man who put the engine into the first jet aircraft to fly. He admitted that it was and then practically took me by the lapels and said, 'Listen to me! Frank Whittle is the father of the jet engine and don't you forget it. If you

people had given Frank the sort of support I got in Germany you could have had a jet fighter in 1936 and we might not have had World War Two.’ He was quite incensed over the lack of official support – almost made me feel it was all *my* fault!

**Whittle.** Yes, I have heard a similar tale from someone else. Nevertheless, it is odd that von Ohain would say that while he was still quite content, when presented with the flyleaf of somebody’s book to autograph, to sign himself off as ‘Hans von Ohain, German inventor of the turbojet’. He did know Father quite well and perhaps he was prepared to give him his due when in his company, but he does seem to have been somewhat selective about it....

**AVM Andy Vallance.** When you are able to identify an historical distortion, a good question to ask is *cui bono?* – who benefits? You pointed out that the Americans have devised a very specific interpretation of the origins of the jet engine, but you also noted that, quite independently, General Electric came up with an American turbojet at about the same time that the RAF began flying its early jets. So why do you think that it is in America’s interests to promote their particular view of history rather than your version?

**Whittle.** I think it is probably to do with national sensibilities. I think that they feel a little annoyed with themselves, disappointed that *they* had not solved the problem. In June 1940 their National Academy of Sciences issued a report condemning the gas turbine concept as being completely inappropriate for aero propulsion. It just couldn’t be done – it would be too big, too heavy, too fuel-greedy – much the same conclusion as had been arrived at by the RAE in 1920. When the Americans then learned that the British, and the Germans, both had practical jet engines, I suspect that they just felt a bit silly. But I cannot really explain why they are being so obtuse about this. After all, there is ample documentary evidence to establish the facts, so there is little justification for over-promoting von Ohain’s contribution to the extent that the Americans do. It is not, of course, my intention to denigrate von Ohain or to undermine his reputation, but it is important to establish the truth because, if you accept the view that von Ohain kick-started the whole thing in Germany, then it follows that what Frank Whittle did in this country was more or less irrelevant – and that is, most decidedly, *not* the case.

**Wg Cdr Colin Cummings.** Could you say a little more about your father's involvement with Power Jets during the war, and after, and what led him to leave that organisation?

**Whittle.** Well, in short, Sir Stafford Cripps nationalised it in January 1944 and things began to go rather pear-shaped soon after that. The established 'captains of industry' began pressing the Government to intervene directly to prevent Power Jets from developing any more new technologies. For example, Whittle was already working on a turbofan engine, with an axial compressor, called the LR1, a project which the Government cancelled. Why? After all, the turbofan is now more or less the 'industry standard'. Then again, there was his aft-fan, afterburning W2/700, under development for the Miles M52. But we cancelled the M52, for very obscure reasons, and then told George Miles to send all the designs to the United States. The W2/700 was also cancelled at much the same time, although it could have had many other potential applications; it was not necessarily exclusive to the supersonic M52.

After the war Father tried to hang on with Power Jets in the hope of doing something useful, but he was a very sick man by then. He spent six months in and out of hospital in 1945; as a child, I can remember going to visit him and eating his tea because he used to get nice cakes, which were very hard to come by in those days! It was all very sad, but he eventually resigned from Power Jets in 1946. By that time most of his original team had already gone, got fed up and left. It was a kind of winding down after 1945, with a rather sick man at the helm. He spent a couple more years in the Royal Air Force, basically doing lecture tours, but he finally lost his flying category in 1948 and after that he resigned his commission.

**Gp Capt Neville Parton.** I have an observation and a question. The observation is related to 1929 when your father first submitted his design to the Air Ministry. If you consider the contemporary RAF, and the kinds of aircraft that it was operating – fabric-covered biplanes – it is, perhaps, understandable that it felt unable to assess the feasibility of such a concept itself and chose to refer it to the RAE who concluded, perhaps equally understandably at the time, that the idea just wasn't practical. We do see things rather differently today, of course, and the last Chief of the Air Staff, Sir Jock Stirrup, used the

example of your father last year in, I think, the Sopwith Lecture, when he pointed out, as many spokesmen have done before him, that if Whittle had enjoyed the same level of support from the Government as he had received from the Royal Air Force, we could have had a jet fighter a lot sooner than we did.

My question concerns your father's relationship with Lord Hives of Rolls-Royce. Could you say something about that?

**Whittle.** Ernest Hives – well I never knew him myself, of course, but Father never spoke ill of him to me and my impression was that they had got on pretty well. They did, of course, have very different outlooks. Hives was quite a tricky character, who represented Rolls-Royce and all of his decisions needed to be taken in the interests of the shareholders; it was – it had to be – all about profit. Frank Whittle was a 'nice guy' running a little engineering firm called Power Jets but Hives was a businessman and for him to be interested in Whittle's product, he had to be able to make money out of it. The upshot was that, in some respects, Hives' influence was negative and not in the interests of Power Jets. You would think that Father might have felt a degree of resentment over this, but this does not appear to have been the case and Ernest Hives was always very popular with him. After all, Power Jets had been in a terrible state with Rovers trying to handle production and, after Rolls-Royce had rescued the firm, things did begin to improve, so there may well have been an element of gratitude involved. So, my answer to your question is that it was a good working relationship.

**Wg Cdr Andy Brookes.** When you mentioned your father's patents going everywhere, including the USSR, it reminded me of an interview I did with Arthur Harris. We got into a debate over why Bomber Command had never received the respect it deserved after the Second World War and he put it firmly down to Lytton Strachey, the Under Secretary of State for Air, and he was very bitter about it. It was also Strachey who gave your father's jet engine to the Soviet Union in 1947 on the grounds that, giving it away, would be a peace-generating mechanism. Did Sir Frank ever express a view concerning this very magnanimous gesture?

**Whittle.** The engines weren't actually given away; they were sold. I

forget the precise details but it was something like £80,000 for twenty-five Nenes and thirty Derwents. What did Father think of that? Well, he just thought that it was the sort of thing that Socialists *would* do! The Russians were already into the turbojet business in their own right, of course. Lyulka was the Russian pioneer; he was working in the field by 1937, some say even earlier, and he had a specific project underway by 1939. But the Russians certainly did very well out of the Rolls-Royce technology, mainly with respect to the turbine, and particularly the alloys from which it was made. There is a story about a team of Soviet engineers, including the engine designer Klimov, visiting Rolls-Royce – this was probably before we had given them any engines – and having a shuffle around the Derby factory. Literally ‘a shuffle’, because they all wore ‘brothel creepers’ with crêpe rubber soles that could pick up bits of swarf for subsequent analysis. Klimov has said that he spotted a bucketful of whole turbine blades so, when nobody was looking, he actually pinched one! – so they probably didn’t need the swarf after all.

To sum up – by now you must all have got my drift. My ambition is to get the story straight – that is to say, the presentation of the story to the British public. Most of you will have visited the Science Museum in Kensington. It is a wonderful place, but their display relating to Frank Whittle and his achievements in the field of jet technology – for Britain – is, frankly, pathetic. It comprises a small picture of my father followed by three very misleading paragraphs and a photograph of an Me 262! It really is desperately inadequate. To cite just three of the inaccuracies:

The exploitation of Whittle’s concept was delayed *not* because ‘development would be too costly’ or a lack of suitable materials but because Griffiths (of the RAE) had failed to appreciate its merit.

‘Rearmament in the 1930s’ did *not* provide ‘the spur’ which led to the realisation of Whittle’s project; the spur was provided by private enterprise – officialdom played little part until as late as 1939.

The Me 262 did *not* become ‘the first jet aircraft to enter service (*in*) the autumn of 1944’; Meteors of No 616 Sqn had been

flying operationally against V-1s since late July, shooting down the first of thirteen on 4 August.

I have approached the Museum authorities but they seem disinclined to take any corrective action and, I suspect that they probably see me as a fond son simply trying to raise further the profile of an already famous father. That really is not the case; my concern is simply to have the facts presented *correctly* and without distortion. What is currently on display at Kensington simply will not do and I appeal to anyone, especially members of this Society, who might be able to assist in redressing this situation to do so.



*Seen here in 1943, the first, of two, Gloster G.40s, W4041/G, made its maiden flight on 15 May 1941. Although not specifically mentioned at the AGM, in some ways, this aeroplane lies at the core of the debate.*

*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 2006. Ed*

## **ARE THE EXPERIENCES OF THE RAF SERVICING COMMANDOS DURING WORLD WAR TWO RELEVANT TO THE SUPPORT OF CURRENT RAF EXPEDITIONARY OPERATIONS?**

**Wg Cdr S D Ellard**

### **INTRODUCTION**

The application of air power has always been dependent upon effective support on the ground. Whilst the dependence of military operations on logistic support is not unique to the air environment, ground support to air power nevertheless has some unique characteristics; it can be highly technical in nature and remote from the air battle and must therefore comprise personnel with the necessary skills and be responsive to the nature of air operations being undertaken. However, the true value of logistical support to air operations is often only appreciated when it fails to deliver, an example of which was the poor level of ground support provided to Royal Air Force operations during the Battle of France in 1940. During this phase of the war, the RAF was so short of fighter aircraft that an operational strategy was devised that would allow aircraft to be either operated in France or on the UK mainland.<sup>1</sup> The UK element of this strategy was provided by regular squadron ground crew, whilst the element in France was provided by Wing Servicing Echelons (sometimes termed Wing Servicing Flights), who were tasked with providing a forward refuelling and rearming capability.<sup>2</sup> However, the Wing Servicing Echelons were criticised for failing to deliver effective support under these operating conditions and could therefore not be relied upon in the future, where similar operational environments were envisaged. The result of post-operational analysis

was the recommendation that formed units should be established to provide this support capability, which would need to possess strong *esprit de corps*, self sufficiency, be multi-skilled and be capable of operating under challenging operational conditions. Under the sponsorship of influential figures such as Mountbatten, Commodore Combined Operations, these units were subsequently formed and named the Servicing Commandos.

Drawing on archived documentation, unit histories and personal recollections, this paper explains the background to the formation of the Servicing Commandos and the role they were required to perform. The original Concept of Operations (CONOPS) for providing this capability is then described as well as detailing the training they received to meet this task. Their actual performance in subsequent operations is illustrated by accounts of their actions in support of action in North Africa during Operation TORCH and landings in Normandy during Operation OVERLORD. In contrast, evidence of criticism of their title, CONOPS and utility at the operational level is also provided. Contemporary strategic analysis tools are then applied to gauge the effectiveness of their operations and assess the degree of strategic fit between their CONOPS and the operating environment. The product of this analysis is a list of enduring key success factors that remain relevant to the support of expeditionary air operations. The current RAF CONOPS for the support of expeditionary operations is then measured against these enduring key success factors in order to assess the strengths and weaknesses of the current system and identify measures that could enhance current or future performance.

The conclusion is reached that the Servicing Commandos supremely filled their primary role of supporting operations in the environment for which they were created. However, they were less successful when the operating environment did not match that envisaged; they did not fit within the regular RAF CONOPS and they failed to retain the support of senior RAF leaders. As a result, as soon as the requirement for their particular skills within the RAF no longer existed, they were promptly disbanded. Whilst the modern RAF CONOPS for expeditionary operational support embraces many of the key success factors identified by the experiences of the Servicing Commandos, there remains a doctrinally unfulfilled requirement to provide a forward arming and refuelling capability similar to that

provided during WW II. Indeed, attempts to provide this capability on an *ad hoc* basis during recent operations have failed due to deficiencies in ground crew force protection skills, which were the core capabilities of the Servicing Commandos. It is not proposed to reproduce a modern-day formed unit equivalent to the Servicing Commandos. However, the skills, capabilities and key success factors relevant during WW II can be applied to current first-line squadron ground crew units to provide an equivalent capability that embraces the strengths of the Servicing Commandos while avoiding the structural weaknesses that led to their swift disbandment. Therefore, the experiences of the Servicing Commandos are very relevant to current RAF expeditionary operations. Almost sixty years after the disbandment of the Servicing Commandos, the importance of *esprit de corps*, flexibility, training, self-sufficiency and the support of senior leadership remain enduring key success factors in support to modern expeditionary air operations.

### THE SERVICING COMMANDOS

The RAF quickly discovered during the early stages of WW II that conventional aircraft maintenance strategies provided by dedicated squadron ground crew were not optimised for the full spectrum of air operations. In particular, during the battle for France in the spring of 1940, the need for efficient logistical and engineering support to maximise aircraft availability was acute. At this time, the RAF was ‘so desperately short of fighters that a system had to be devised under which it was hoped that aircraft could be used alternatively in France or at Home’.<sup>3</sup> The CONOPS devised was for the fighters to be maintained at their home base in the UK, whilst specially formed Wing Servicing Flights/Echelons were established to provide a forward refuelling, re-armament and repair capability for aircraft in France. These CONOPS allowed aircraft to be used effectively in operations over France, yet their UK-basing meant that they were less vulnerable to German attack. However, the Wing Servicing Flights were ill prepared, ill trained and ill equipped and proved to be unsuccessful, due to flaws in their organisation.<sup>4</sup> AOCinC Fighter Command, Air Chf Mshl Sir Hugh Dowding, later wrote that these units were not very efficient<sup>5</sup> and Commodore Combined Operations, Mountbatten, expanded on this comment by noting that ‘the



*Servicing Commandos refuelling a Spitfire during Operation OVERLORD.*

difficulties of these servicing parties in the past has been a lack of esprit de corps, lack of training and lack of co-ordination'.<sup>6</sup> The RAF was not able to accept this state of affairs as future operations in North Africa, Sicily, Italy, Normandy and the Far East envisaged similar forward maintenance of aircraft, away from their main operating bases and organic squadron ground crew. A more robust support solution was therefore sought. The RAF was quick to devise an improved strategy and worked closely with the Combined Operations Headquarters. In his letter to DCAS, Director Fighter Operations proposed a more effective solution.<sup>7</sup> Key to his plans was the early operation from captured enemy airfields. This would involve:

'Installing the essential minimum of communications, refuelling and re-arming equipment and personnel ... It must be a very highly trained organisation, having high morale and esprit de corps ... The desired result can probably be obtained by forming a number of Flight Servicing Units as permanent

entities on the establishments of Fighter Groups. Because they have a permanent entity, they can be highly trained both in servicing aircraft and in the business of going in over the beaches or perhaps airborne to an advanced aerodrome. They obtain RAF esprit de corps by their association with the Group. They should obtain 'Combined Operations' esprit de corps by their thorough training, which they must inevitably be given for the purposes of going in over the beaches. (They should be "RAF Commandos.")<sup>8</sup>

In a letter to CAS, Mountbatten gave his strong support to these proposals, highlighting that 'although they would not do any direct fighting if all went well, the very nature of their duties may involve them in tight corners and they will have to be taught to fight with a tommy-gun like the military commandos'.<sup>9</sup> He therefore also agreed that it would be 'best to call them "Servicing Commandos" even if the title were slightly inappropriate'.<sup>10</sup> His strong support to the formation of these units led to his subsequent adoption of the title 'founder of the Servicing Commandos'.<sup>11</sup>

However, even at this early stage there was resistance among some senior RAF officers towards these units. Early criticism concentrated as much on the title 'Servicing Commando' as on the role they were to play or the type of training they would receive. Air Chf Mshl Dowding expressed his concern that a number of men with valuable technical skills were to be lost to 'Commando' work.<sup>12</sup> CAS, Air Chf Mshl Portal replied that the members of these units would 'need to be tough and able to hold their own in an emergency' and therefore needed to be trained in combined operations.<sup>13</sup> However, even Portal's support was not unlimited and he acknowledged Dowding's concern about 'locking up skilled men in these Servicing Commandos' and had 'made it clear that they are not necessarily a permanent feature of the RAF organisation, and may have to be disbanded when we find our temporary surplus of ground tradesmen disappearing'.<sup>14</sup> ACAS(Pol), AVM Slessor had similar reservations, commenting that:

'I don't like the term 'Commando' in this connection; they are mobile servicing flights and no more. It's ridiculous if everyone who may ever be landed on the Continent has got to call himself a Commando. The RAF should be, and are, ready to serve

anywhere in any circumstances without giving themselves fancy titles.<sup>15</sup>

Mountbatten would ultimately prevail with his view that ‘to call them “Commandos” will go a long way to further their esprit de corps’ and the first Servicing Commando Units (SCU) were subsequently formed.<sup>16</sup> However, the resistance towards the Servicing Commandos would continue to haunt the units and ultimately lead to their eventual disbandment.

As plans progressed, the CONOPS of the Servicing Commandos became more clearly defined. Operations would take place in five stages.<sup>17</sup> In the first stage, aircraft would be flown from their home bases, perhaps with a forward station in the beach area. The second stage would follow as soon as the Army had seized an enemy airfield and its surface had been made fit for use by the Airfield Construction Branch.<sup>18</sup> Possibly concurrent with the second stage, the third stage would involve Servicing Commandos, their equipment and transport disembarking from landing craft and being put ashore on the beaches. They would then ‘install the essential minimum of communications, set up fuel and ammunition dumps and sufficient equipment for refuelling, rearming, between flights and daily inspections, minor repairs and replacements and the necessary gear for aircraft pickets, ground marking, entrenching and cooking’.<sup>19</sup> The Servicing Commandos would not be expected to fight for the airfields, but in the circumstances under which they would be operating, opposition could be expected and they would have to be prepared to defend themselves and their aircraft.<sup>20</sup> No elements of the RAF Regiment were envisaged for force protection at this stage, as the Army would initially remain responsible for protection of the airfield once captured.<sup>21</sup> During the fourth stage, Servicing Commandos would support operations by servicing, rearming and refuelling aircraft at the forward aerodrome, while aircraft would remain based at their main airfield. This stage would continue until lines of communication had been established and the forward echelon of a squadron’s personnel and equipment had arrived at the airfield.<sup>22</sup> The fifth stage would begin once all of the squadron’s equipment, ground and flying personnel and aircraft had arrived and started full operations from the forward airfield. At this stage, the Servicing Commandos would withdraw and prepare to

‘leapfrog’ onto the next forward airfield.<sup>23</sup>

It was soon realised that not all RAF ground crew would be suitable for the type of missions envisaged for the Servicing Commandos. Commandos would need to be willing, motivated volunteers and fit enough to withstand the demanding environment of their operations. In order to attract suitable recruits, SECRET memos were distributed to units requesting volunteers for the Servicing Commandos.<sup>24</sup> Notices appeared in station orders stating ‘volunteers required for a dangerous task’.<sup>25</sup> Candidates were to be ‘of A1 physique, of not more than 35 years’ and of specified trades.<sup>26</sup> Commanding Officers were to interview candidates and only if they fulfilled all necessary criteria were they told of the duties they were likely to perform. Volunteers briefed on the role of the Servicing Commandos were warned not to discuss or pass on the information to service personnel or anyone else. In addition, due to the importance of the role they would undertake, Commanding Officers were told that they were not permitted to reject volunteers on the grounds that their loss could impair the smooth running of the unit.<sup>27</sup> This latter caveat was strictly observed and one volunteer recalls that even his Station Warrant Officer, dismayed that he was about to lose a valuable armourer, was unsuccessful in preventing his posting to the Servicing Commandos.<sup>28</sup> Many airmen, frustrated and bored with routine RAF support operations in the UK and seeking adventure, volunteered for the Commandos and the first units soon began their training.

AVM Slessor had complained that the ‘RAF should be, and are, capable of serving anywhere in any circumstances’.<sup>29</sup> His sentiment closely matched that of Winston Churchill, who stated that ‘it must be clearly understood by all ranks that they are expected to fight and die in the defence of their airfields’.<sup>30</sup> However, Slessor’s vision of a RAF that was already capable of conducting operational support in testing conditions did not match the reality of the time. A former Servicing Commando recalls that during his basic training, RAF ground Commodore Combined Operations, crew received a great deal of training in performing parade drill with .303 rifles, but spent little practice actually firing them and undertook practically no training in forming an effective defence against an airfield attack. They received no training in firing automatic weapons and were completely unprepared for participating in amphibious landings.<sup>31</sup> A training

programme for the Servicing Commandos was therefore designed to dramatically reverse this shortfall. In order to foster cohesion and *esprit de corps* at the earliest opportunity, members of SCUs started their training together as a formed unit as soon as they had been formed. One early change for Servicing Commandos during training was that their RAF blue tunics and trousers were replaced with Army-style khaki uniform, the only items that distinguished them from the Army were a RAF blue side cap, blue shoulder flashes and chevrons combined with a blue shirt.<sup>32</sup> Personal weapons included a mixture of rifles with bayonets, Sten guns, anti-tank rifles, revolvers, Tommy guns, Bren guns and grenades.<sup>33</sup> Initial instruction included infantry-style training from Army, RAF and RAF Regiment officers and SNCOs and comprised weapons drill, marching, physical training, living in field conditions and swimming fully clothed with equipment and weapons. To reinforce this training, they camped in tents in nearby fields instead of living in standard RAF barrack rooms. All unit members were taught to drive by teams of civilian driving instructors, which encompassed instruction on all of the unit's vehicle types. Driver training was supplemented by practising driving in military convoy formation, which on occasions included convoy defence and mock air attacks.<sup>34</sup>

Technical instruction was given on a variety of aircraft including Spitfires, Hurricanes, Typhoons, Kittyhawks, Tomahawks, Mosquitos and Whirlwinds. Technicians were taught to be multi-skilled and engine and airframe fitters were expected to assist each other as one trade. While armourers were given instruction in various weapons, fitters and riggers were trained on these systems as well so that they could assist in weapon loading. Armourers were also trained in mine detection and mine and bomb disarming and disposal. All unit members received training in refuelling and rearming and even non-tradesmen (such as cooks and medics) were encouraged to help by transporting fuel, ammunition, etc. In addition, the Signals Officer and signals staff received specialist training in VHF radios at RAF Digby. The next stage of their training took place at the Combined Operations Training Centre at Inverary and included lectures and demonstrations of weapons, army movements and naval vessels. They practised loading vehicles into various types of landing craft and rehearsed several beach landings. Numerous weapons firing sessions took place,



*The Combined Operations  
Badge.*

during which all personnel fired each of the unit's various weapons, and included live firing exercises at night.<sup>35</sup>

Upon successful graduation from the course at Inverary, Servicing Commandos were awarded the Combined Operations Badge. This resulted from a recommendation made by a Wg Cdr Williams, who had been sent by the Senior Engineering Officer of Army Co-operation Command to observe Servicing Commando training

at Inverary in March 1943; he was 'struck by the tremendous morale effect a "badge" would have.'<sup>36</sup> Further observations from his visit included a recommendation to supplement the establishment with an administrative officer, as the size of each SCU had risen following the addition of further armament personnel and ground signals airmen. He also considered that the scales in arms, equipment and vehicles be increased to meet their task.<sup>37</sup> As a result, a typical SCU at full strength rose to 187 men, 3 warrant officers and 3 officers supported by one 5-cwt Hillman Van, two 15-cwt Commer Trucks and twelve 3-ton trucks. Vehicles were specially fitted with equipment, tools and spares in waterproof steel bins for amphibious working, which could be removed and set up in airfields for operations.<sup>38</sup> Whilst their establishment may initially appear to have been excessive, it must be remembered that their task was large and on occasions, SCUs supported up to 184 sorties in a single day.

Having been trained and prepared for operations, there was an inevitable pause for Servicing Commandos between completion of their training and their actual employment on operational duties. There was no clear role for personnel trained to Commando status within routine RAF CONOPS, and Servicing Commandos were normally attached to regular RAF units that operated the aircraft types that they were expected to support. For example, many members of No 3210 SCU spent the period between October 1943 and June 1944 at RAF Friston (after completion of their Commando training at Inverary, and prior to their operational deployment to Normandy). Here, they

continued to hone their technical aircraft skills, while at the same time maintaining their personal fitness and practising infantry skills.<sup>39</sup> Although strikingly different from regular RAF ground crew due to their khaki uniforms, they were soon appreciated by the squadrons that received their extra support. Indeed, Squadron Commanders noticed significant rises in serviceability when supported by the Servicing Commandos, in one case rising from 80-85% up to 95-98%.<sup>40</sup> As a result, respect between the squadron aircrew and Servicing Commandos grew and their readiness for operations increased.

During WW II, SCUs were employed in a variety of operational theatres including North Africa, Sicily, Italy, Normandy and the Far East. To describe representatively their performance on operations, two campaigns have been chosen: North Africa and Normandy. These have been selected as they illustrate one example where the Servicing Commandos were utilised effectively, and earned great praise, and a further example where, despite performing extremely well, their CONOPS were criticised for being less relevant. Accounts of their actions in both campaigns are described, followed by the post-operational assessment of their contributions by senior officers.

The first use of the Servicing Commandos took place in November 1942 in support of the invasion of North Africa under Operation TORCH.<sup>41</sup> Two RAF SCUs, Nos 3201 and 3202, sailed with the Eastern Task Force with the aim of taking over and defending key airfields immediately after capture by the army and to service aircraft as soon as possible. Despite being machine-gunned and strafed by enemy aircraft during the landing, Nos 3201 and 3202 were able to disembark successfully and complete the twelve-mile march to their initial airfield at Maison Blanche.<sup>42</sup>

The advance parties found the Hurricanes of No 43 Sqn waiting for them and they immediately set to work removing long-range petrol tanks and preparing them for operations. They were joined later that day by Spitfires from Nos 93, 111 and 242 Sqn. By late afternoon, they were at full strength and supported operations until late that night.<sup>43</sup> The first RAF amphibious landing had been carried out successfully and support to operations was in place. Over the next few days, the Servicing Commandos continued to rearm, refuel and repair aircraft despite daily *Luftwaffe* bombing and strafing attacks. Anti-personnel devices and delayed actions bombs were dealt with by the

units' armourers as there was no dedicated bomb disposal unit.<sup>44</sup> The SCUs undertook the maintenance of more squadrons for a far longer period than intended, as there were difficulties in assembling the regular fighter squadron ground crew and equipment and moving them to the forward area to join their aircraft.<sup>45</sup> In the opinion of the AOA at HQ Eastern Air Command, 'the success achieved by the fighter squadrons during this period was undoubtedly due very largely to the loyal and extremely hard work of the Servicing Commandos who have certainly proved their value in a campaign of this nature'.<sup>46</sup> As the operation progressed, the Servicing Commandos moved from Maison Blanche to support subsequent operations at Djidjelli, Souk el Arba, Bone and other airfields under very challenging conditions. The weather was poor; living conditions were basic; airfield and road surfaces were bad; supply was problematic and the servicing workload was high.

During the advance, they serviced Spitfires, Hurricanes, Wellingtons and US Mitchells, often under enemy attack.<sup>47</sup> For example, having travelled the 400 miles to Souk el Arba to service aircraft of Nos 72 and 93 Sqns in support of the advance on Tunis and Bizerta, No 3201 SCU was observed by two enemy Bf109s. Putting their training into practice, they dug slit trenches and dispersed aircraft in anticipation of an attack, which followed shortly afterwards when the airfield came under attack from a dozen Bf109s and FW190s. The attacks caused fires in petrol, oil and ammunition dumps, destroyed one aircraft and damaged six others. Two Servicing Commandos were killed, two badly wounded and four received slight wounds. One hour later, a formation of ten *Stukas* attacked the base, followed by another wave of *Stukas* with fighter escort. Throughout these raids, servicing of aircraft continued and repairs to fuel and ammunition dumps were carried out.<sup>48</sup> By the end of April 1943, Commando personnel had moved to a new airfield under construction near Medjez al Bab, less than eight miles from the front line. Here, in the last major effort in North Africa, the Servicing Commandos serviced 184 aircraft on 8 May alone. Both units were then given refresher courses prior to subsequent action in Sicily in July.<sup>49</sup>

The work of the Servicing Commandos during this operation was held in extremely high regard. A report on the early stages of the operations in North Africa stated that 'the work performed by the

Servicing Commandos was magnificent. Commanders of all units who came into contact with them were unstinted in their praise ... They are the ideal maintenance organisation for forward airfields.<sup>50</sup> Further praise came from a report by the Middle East News Service, which described their operations as follows:

‘This campaign was notable for the first employment of our Servicing Commandos. They are composed of highly skilled mechanics trained to fight – men with a spanner in one hand and a tommy gun in the other. One particular Commando maintained four fighter squadrons at a high rate of operations for approximately three weeks. The squadron and maintenance personnel working in the early stages on aerodromes deep in mud, in extremely primitive conditions, and with meagre supplies reaching them along slender lines of communication, showed infinite resource.’<sup>51</sup>

The Servicing Commandos therefore seemed to have fulfilled Mountbatten’s expectations when utilised in the role for which they had been formed and when the pace of operations matched the scenario for which their CONOPS had been devised. However, when employed in Normandy in support of Operation OVERLORD, the pace of operations did not match those expected and the degree of strategic fit with the operating environment was achieved to a far lesser degree.

Operation OVERLORD was the establishment of a foothold on the European mainland in Normandy. Six SCUs were involved in the operation, four of which went ashore on D+1. Royal Engineer Airfield Construction Units prepared forward airfields straight away and these were immediately manned by Servicing Commandos.<sup>52</sup> The experience of No 3210 SCU is typical of the events encountered by other units during this operation.<sup>53</sup> Landing in France at 1100 hrs on D+1, they immediately set off for their first objective, airfield B3 at Ste-Croix-sur-Mer. Despite having lost two vehicles and the equipment within them to enemy fire, they were able to ‘dig in’ and set up operations. No members of the unit were lost during the landing. Operations began immediately, and they had the honour of receiving the first Allied aircraft to land in Normandy on 9 June. (*But see note on page 52. Ed*) At this stage, one member of the unit, LAC



*Servicing Commandos relaxing during Operation OVERLORD, while others bomb-up the Mustang in the background.*

Warren, was mentioned in despatches for his conduct during the landing.<sup>54</sup> The following week was intense. During the day, they continued to refuel, re-arm and repair aircraft, mainly Typhoons. Although not directly attacked by German ground forces, they were subjected to occasional air attacks by *Luftwaffe* aircraft and experienced artillery bombardments during the night. Ground crew learned to protect themselves by digging foxholes inside their tents and only one injury was sustained during this phase.<sup>55</sup>

One unexpected disappointment for the Servicing Commandos was that just prior to the invasion, they were told to hand in their khaki uniforms and ordered to wear their RAF blue-grey uniforms. This would later cause trouble as, after a few days working in dirty, dusty conditions, their uniforms bore a striking resemblance to German uniforms and generated hostility amongst the local French population. With the resourcefulness for which RAF ground crew are renowned, they were soon able to ‘acquire’ replacement khaki uniforms and a

more favourable dress situation was restored.<sup>56</sup>

On 15 June, the unit moved to another airfield B4 at Beny-sur-Mer, where flying operations continued despite being only several hundred yards from a German strong point being attacked by Allied ground forces. Relieved a few days later by regular squadron ground crew, No 3210 SCU then moved to their next forward landing strip, B9 at Lantheuil, before moving forward once again on 30 June to B7 at Martragny. The unit received a commendatory letter from Air Cdre Montgomery and won praise from Squadron Commanders, yet the unit was disappointed that they had not worked to the intensity that they had expected.<sup>57</sup> As regular maintenance units had now 'caught up' with the progress of the invasion, No 3210 SCU had effectively been rendered redundant and it was soon diverted onto more mundane work. It was subsequently employed in the repair and salvage of damaged aircraft at various airfields and the cannibalisation of gliders in the Benouville district.<sup>58</sup> On 16 July, the unit moved forward to B12 at Ellon where they serviced Spitfires and Mustangs, initially under heavy shelling. However, the airfield became gradually quieter as the invasion stalled and on 28 July, the unit was given 48 hours notice to return to the UK.<sup>59</sup> OC 3210 SCU reported that 'it can be said that the men carried out duties expected of them in a manner which does credit to the Unit, but it must be recorded that they could have coped with at least three times the work and were disappointed that more could not be found for them.'<sup>60</sup> He added that 'the general feeling of the unit was of pride in having operated the first airfield on the continent, and of regret that they were unable to see the conclusion of the campaign.'<sup>61</sup>

The assessment of the performance of the Servicing Commandos in Normandy by senior engineering officers and operational commanders echoed these sentiments. In his report on the use of the Servicing Commandos in Operation OVERLORD, the Chief Engineer Officer at HQ 2nd TAF, Gp Capt Oisbury, stated his belief that the high technical qualifications of the Servicing Commandos were invaluable and that their contribution was absolutely essential during the early stages of the assault operations.<sup>62</sup> 'A large number of aircraft were made serviceable at the beachhead advanced landing grounds by the exchange of propellers, carburettors, constant speed units, flaps, rudders and many other such components, thus enabling aircraft to fly



*Servicing the inner Commando – a chow line in Normandy, June 1944; the first and third men in the queue are wearing the Combined Operations Badge.*

back to base and assisting the high rate of serviceability which existed during the assault period.<sup>63</sup> However he summed up with the conclusion that, although the Servicing Commandos were ‘essential for the assault phase of the waterborne invasion’, it was unnecessary to retain them once the wing personnel had landed and taken over the maintenance of their aircraft.<sup>64</sup>

In a covering letter on behalf of his AOCinC, AVM Elmhirst (AOA 2nd TAF), suggested that ‘the provision of 6 Servicing Commandos was extravagant and that 3 such units would have met the need of the Tactical Air Force.’<sup>65</sup> He considered that such tactical groups should be provided with refuelling and rearming parties, as they were ‘a cheaper unit being less specialised’.<sup>66</sup> He had concerns about the over-emphasis of the assault aspect in the training of Servicing Commando personnel as, despite being ‘subject to shell fire and sniping, Servicing Commando personnel have, in both the Sicily and OVERLORD operations, walked ashore ... training in boat work, cliff scaling, skill at arms, etc, should be secondary.’<sup>67</sup> This latter

criticism seems unfair, as it was only good fortune that conditions in Normandy were more benign than anticipated, a situation that could easily have been reversed. Nevertheless, Elmhirst's comments were much more negative than those of the Chief Engineer and would impact on the future employment of the Servicing Commandos.

Therefore the reservations about the concept of the Servicing Commandos raised prior to their formation did not recede during the war. Despite the praise received after their initial engagement in North Africa, concerns continued to be voiced about their utility and senior officers queried whether the optimum organisation for supporting forward operations had been found. Even before Operation OVERLORD, on 27 August 1943, a meeting was held by VCAS, AOCinC Fighter Command, AOC North West African Tactical Air Force, ACAS(Pol), the Director of War Organisation and the Director General of Organisation to discuss the future of the Servicing Commandos.<sup>68</sup> They agreed that the policy of Servicing Commandos was outmoded and should be abandoned. They did not criticise their performance on operations, but considered it more important that personnel with their training should be part of a recognised unit such as a squadron, a wing or an airfield headquarters.<sup>69</sup> The Director of War Organisation was tasked to see how this could be reconciled with Operation OVERLORD's requirements and he subsequently convened a meeting on 29 September 1943.<sup>70</sup> At this meeting it was suggested that the name 'Commando' and the Combined Operations Badge were undesirable, as they led to separatism, especially as all units in 2nd TAF were by then receiving field and assault training. However, it was concluded that there was insufficient time to disband the Servicing Commandos and transfer their vital function to squadron and wings in time for OVERLORD. Furthermore, they realised that the effect of removing the 'Commando' name and Combined Operations Badge would be detrimental.<sup>71</sup> As a result, the Servicing Commandos continued in their existing form and were able to deploy during Operation OVERLORD.

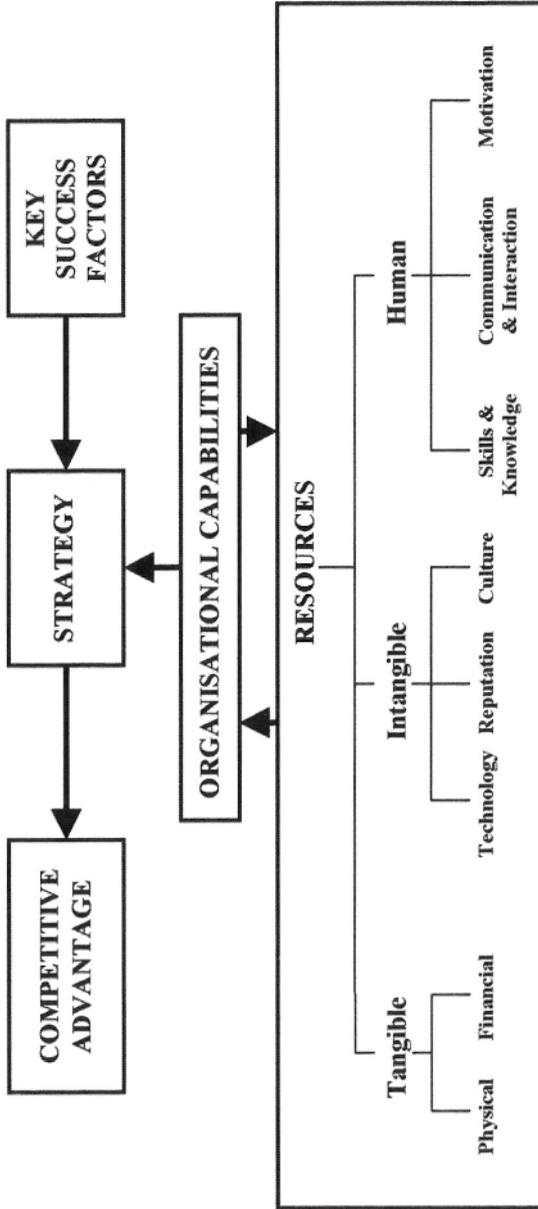
These previous exchanges explain the negative tone expressed by AOA 2nd TAF when he commented on the performance of the Servicing Commandos during Operation OVERLORD. Indeed, his recommendation at that stage could have led to the disbandment of the Servicing Commandos, had it not been for the paper written by the

Director of War Organisation on 8 August 1944 highlighting the requirement to 'retain surplus Servicing Commando Units intact in the UK for future use in the war against Japan.'<sup>72</sup> However, upon their return from the Far East, the final Servicing Commando Units were disbanded as no future roles for their capabilities were envisaged.

### **ANALYSIS OF THE PERFORMANCE OF THE SERVICING COMMANDOS**

The effectiveness of the Servicing Commandos will now be analysed using contemporary strategic analysis techniques. A model by Grant is chosen as it links resources, capabilities and key success factors as well as emphasising the importance of strategic fit to the operating environment and promoting the significance of competitive advantage; the goal of any successful strategy.<sup>73</sup> The aim of this section is to identify enduring key success factors that remain relevant to the support of modern RAF expeditionary air operations.

Grant identifies organisational capabilities as being made up of tangible resources, intangible resources and human resources.<sup>74</sup> In terms of tangible resources, the Servicing Commandos were equipped with sufficient tools, vehicles, radios and armaments for their task and were well provisioned in consumables such as spares, fuel, bombs, ammunitions and food. Their role was vital and was therefore financed for the scenarios they were likely to encounter. Amongst intangible resources, the Servicing Commandos possessed outstanding *esprit de corps*. Having completed their training together and prepared themselves for operations they were a close-knit, highly bonded unit, with a strong sense of identity. They were the fittest, most capable and most highly trained technicians within the RAF and were justifiably proud of their role and reputation. The early success of Servicing Commandos enhanced their sense of identity and reputation for providing high quality support in the most demanding environments. The simple measure of their Combined Operations Badge and 'Commando' status further embedded this culture. When analysing human resources, it is notable that the Servicing Commandos were drawn exclusively from volunteers, were highly motivated and hungry for success. They received intensive training in all essential disciplines ranging from infantry skills to technical maintenance skills. As they were a relatively small-sized, self-contained unit, they knew each



*Resources, Capabilities and Competitive Advantage. (After Grant, 1995)*

other intimately and were therefore able to communicate well, avoiding communication barriers of hierarchy. All necessary resource and capability requirements were therefore in place.

Grant defines Key Success Factors as the prerequisites for success.<sup>75</sup> For the Servicing Commandos technical and infantry skills and the right kit were clear success factors, achieved by their intense training programme and equipment establishment. Their numbers had to be as low as possible, realised by multi-skilling and self-sufficiency. In addition, *esprit de corps* and cohesion were vital to their success, attained by their formed unit identity and collective training. They were flexible and mobile and thus able to support operations in unfamiliar and demanding environments. Finally, their strategy could be realised as they had the support and backing of senior leadership figures, initially provided by the sponsorship of Commodore Combined Operations, Mountbatten.

The ultimate aim of any strategy is to achieve competitive advantage. Competitive advantage in this context is the superiority of the Servicing Commando strategy over alternative strategies available to provide the forward refuelling and rearming capability under demanding operational conditions. In this case, the alternatives were the use of the 1940 Servicing Echelons model or the employment of regular squadron ground crew. In comparison to the Servicing Echelons, the Servicing Commandos had a clear competitive advantage due to their sense of identity, cohesion and *esprit de corps*. Similarly, they possessed a competitive advantage over regular squadron ground crew as they had far superior technical and infantry skills, which were essential to be effective and self-sufficient in a hostile environment. The resources and capabilities of the Servicing Commandos therefore gave them a clear competitive advantage over the alternative support models proposed at the time. Achievement of competitive advantage, however, is a necessary but not sufficient prerequisite for a winning strategy. Grant also identifies the achievement of strategic fit as critical for strategic success.<sup>76</sup> The concept of strategic fit describes the compatibility between a strategy and the strategic environment; a strategy may be well-formulated, but will nevertheless fail if it fails to take into account the environment in which it is intended to operate. The Servicing Commando strategy assumed the strategic environment of a fast-tempo operation where

airfields were regularly captured as ground forces rapidly advanced. This strategic environment was present in North Africa, where the Servicing Commandos were able to advance to new airfields after only a short period as soon as regular squadron ground crew caught up with them. Strategic fit was therefore achieved and their performance deemed a total success. However, the strategic environment during the Normandy invasion was very different. After initial success during the first few weeks, the ground advance stalled; regular squadron ground crew caught up with the Servicing Commandos and there were no further airfields to which the Servicing Commandos could 'leapfrog'. The Servicing Commandos were then redundant and (mis)employed on 'odd jobs' before being repatriated with a sense of disappointment. Strategic fit was therefore not achieved in this case and their performance criticised. The Servicing Commandos were trained and equipped for a specific task within a specific environment; when the actual strategic environment did not match the anticipated strategic environment, their value was greatly reduced. Furthermore, the transfer of Mountbatten from Chief of Combined Operations to Supreme Allied Commander, South East Asia in 1943 meant that a key success factor had been lost. When analysed from the viewpoint of strategic fit and loss of key success factors, the rapid disbandment of the SCUs was inevitable.

The preceding analysis identifies five key success factors that are relevant not only to the operational environment of WW II, but have enduring value. Of prime importance is the continued importance of *esprit de corps*, cohesion and sense of identity to a military unit expected to operate under hostile conditions. Secondly, units need to be agile and flexible and be able to respond to changes in the strategic environment and thus achieve strategic fit; units that can only perform specific tasks under specific circumstances are inherently weak. Thirdly, the importance of proper training and equipment is vital. Fourthly, personnel need to be multi-skilled and self-sufficient in order to ensure that the size of the unit is reduced to the minimum possible. Finally, support from senior leadership figures is fundamental, for without it even the most successful strategy will be undermined. The degree to which these enduring key success factors are applied today is now analysed by assessing current technical support to modern RAF expeditionary air operations.

## **THE RELEVANCE OF THE SERVICING COMMANDOS TO CURRENT RAF CONOPS FOR SUPPORT TO EXPEDITIONARY AIR OPERATIONS**

Throughout the Cold War, maintenance support for fast-jet aircraft was primarily centred on fixed bases utilising hardened aircraft shelters. During this period, there were few operations that necessitated the type of support offered by the RAF Servicing Commandos during WW II. However, since 1989, the RAF has been increasingly engaged in expeditionary operations, where operations are conducted from unfamiliar airfields, in remote locations, far from organic support structures and under enemy attack. This shift in strategic context has demanded a corresponding change in the support strategy for this demanding type of operation. Guidance for the Air Operations Logistic Doctrine and the Air Logistic Concept of Operations is contained within Air Publication 100C-72. This publication explains that Deployed Operations Bases (DOB) are supported by transferring into the operational theatre the minimum amount of maintenance support, manpower and equipment necessary to sustain the operation. To supplement squadron ground crew, Air Combat Service Support Units (ACSSU) have been formed in order to provide specialist skills beyond those of formed unit support staff. ACSSUs offer a variety of functions. For example, Tactical Armament Squadron provides a specialist expeditionary armament capability, whilst Tactical Communications Wing provides communication and information systems and the tactical air traffic control services necessary to support deployed air operations.<sup>77</sup> While a forward rotors-turning refuelling capability is provided to the helicopter force by Tactical Supply Wing, there is no doctrinal provision for a similar function for fast-jet aircraft detached from their DOB.<sup>78</sup>

The majority of recent expeditionary air operations have relied on fast-jet aircraft being able to reach their objectives by utilising air-to-air refuelling and have therefore rarely demanded a forward arming or refuelling capability. Nevertheless, the Commanding Officer of the Joint Force Air Component Headquarters identifies the support of vertical/short take off and landing aircraft from aircraft carriers as a relevant operational scenario that could require the provision of a fast-jet forward rearming and refuelling capability.<sup>79</sup> A landing weight



*A technician repairing a damaged engine compressor during Operation TELIC, 2003.*

restriction on this type of aircraft means that aircraft laden with heavy weapons are unable to land back on the aircraft carrier. Operations are thus far more flexible if aircraft support can be supplemented by a shore-based, forward arming and refuelling facility, whilst maintenance and deeper organic support take place afloat. He further claims that the availability of sufficient air-to-air refuelling assets cannot be guaranteed for all future expeditionary air operations.<sup>80</sup> One recent operational example supports his reservations. The Senior Engineering Officer of the RAF Harrier Force operating from Kuwait during Operation TELIC in 2003, recalls a period of operations when insufficient air-to-air refuelling assets forced aircraft to return to base for refuelling and turn-round maintenance, often before they had had the opportunity to expend their weapons.<sup>81</sup> To enhance operational effectiveness, it was proposed to establish a forward first-line maintenance and refuelling facility at a recently captured Iraqi airbase at Talil in southern Iraq. Here, the minimum number of ground crew, tools and equipment required would have deployed to Talil and utilised a C-130 Hercules as a refuelling platform in order to return Harrier aircraft to operations in the shortest time possible, therefore avoiding the requirement to return to the DOB in Kuwait. Although the CONOPS were considered viable and sufficient technicians, tools and equipment were available, the proposed deployment to Talil did not take place because of concerns regarding the level of force protection that could be provided. The ground crew had the right technical skills, but were not self-sufficient enough to defend themselves and their aircraft. They were, therefore, reliant upon specialist force protection skills from the RAF Regiment that could not be made available in time.<sup>82</sup>

This recent scenario is very similar to the circumstances for which the Servicing Commandos were formed during WW II, yet because of



*A Tornado GR4 being serviced during Operation TELIC, 2003.*

inadequate skills and a lack of self-sufficiency, the potential operational advantage could not be realised. On this occasion, RAF ground crew were once again unable to meet Slessor's vision of the RAF being 'capable of serving anywhere in any circumstances.'<sup>83</sup>

The experience from Operation TELIC and the potential operational scenarios envisaged by the Commanding Officer of the Joint Force Air Component Headquarters therefore suggest that future expeditionary air operations could require the same type of support capability provided by the RAF Servicing Commandos during WW II.

A capability similar to that provided to the helicopter force by Tactical Supply Wing is thus required for fast-jet aircraft. The RAF has provided this function in peacetime. During the 1990s, a Tornado Turn Round Flight was established in Scotland to refuel Germany-based Tornados conducting low-level flying training in Scotland. However, there currently exists no formal doctrine to support these scenarios under demanding operational conditions and exercises are not regularly carried out to practise these skills. In order to fill this capability gap, an appropriate manning structure and the necessary skills need to be identified.

Three potential manning structures are available to meet this task. One solution would be to form an *ad hoc* unformed unit made up of

engineering personnel from various RAF units whenever the capability is required. However, such a unit would not possess the vital *esprit de corps*, cohesion and sense of identity, identified in the preceding analysis as a necessary key success factor. A second option would be to create an additional ACSSU, specifically trained to provide this capability. Such an ACSSU would be very similar to the solution adopted by the Servicing Commandos, would be an ideal unit to meet the demand when required, and would possess the necessary capabilities, *esprit de corps*, cohesion and sense of identity. Unfortunately, such a solution would also share the same structural weaknesses that generated resistance to the Servicing Commandos and led to their disbandment; they would be tailored to provide support only under specific operational circumstances, would offer little utility when not engaged in such narrowly defined operations and would be an expensive overhead to maintain during peacetime operations. Perhaps the most pragmatic option would be similar to that proposed by the Director General of Organisation in 1943, ie providing a forward arming and refuelling capability within a recognised formed unit such as first line squadron ground crew.<sup>84</sup> This solution offers the most appropriate skill set, yet retains the formed unit *esprit de corps* and offers the advantage of offering full utility during peacetime and when not engaged on this particular type of support to operations. All of the advantages of the Servicing Commandos would be potentially retained, the weaknesses that led to their rapid disbandment would be avoided, and the key success factors of *esprit de corps* and flexibility would be achieved. The need for ‘fancy titles’, that aroused so much hostility during WW II, would also be avoided.

However, the lesson from the attempt by the Harrier Force to operate from Talil in 2003 has shown that if the first line squadron ground crew structure is adopted to provide this capability, then additional skills would be required in order to fulfil the enduring key success factors of training and self-sufficiency. In contrast to the majority of RAF ground crew during WW II, all current ground crew in the modern RAF are volunteers, physically fit and possess highly capable technical skills. Ground crew are now multi-skilled by technical trade, enabling a reduction in the size of the logistical footprint required on operations. In addition, all ground crew personnel receive annual training in basic field skills and weapons



*An ALARM missile being loaded, Operation TELIC, 2003.*

firing drill. However, the field and weapons skills possessed by current RAF ground crew are insufficient for them to be totally self-reliant in terms of self defence. In contrast to the Servicing Commandos, they are unable to defend forward operations on an airfield effectively without specialist force protection support from the RAF Regiment. Determining the level of force protection required is a function of risk. Whilst Servicing Commandos in WW II were able to take the risk of defending themselves and their aircraft with relatively small numbers, the operational context of modern operations has now changed.

Due to greater media exposure and a reduced domestic tolerance of casualties, the strategic consequences of losing aircraft and personnel to the enemy on the ground are far greater today than during WW II and a higher priority is now placed on force protection. However, experience in Talil has also shown that total reliance on the full support of specialist force protection offered by the RAF Regiment cannot be guaranteed and, even if such support were to be available, the ground footprint would be excessive. Enhanced force protection skills for first line ground crew would reduce this dilemma. If, however, supplementary support from the RAF Regiment is assessed as necessary, then reductions in the manning footprint could be

achieved by training RAF Regiment personnel in ground crew activities that require little technical skills such as assisting squadron armourers in the manual aspects of weapon loading. The addition of an RAF Regiment SNCO to the squadron manning would provide the means for delivering the enhanced training necessary, co-ordinating force protection during operations and liaising with any RAF Regiment staff assigned to assist.

The additional skills identified above would impose a significant training burden. However, not all squadron ground crew would require this level of training. Experience suggests that only up to 15-20% of first line ground crew would need to be involved, resulting in the formation of a cadre of personnel actually needed to perform this task. The maintenance of such a capability would require regular practice. As a result of their experiences in Talil, the Harrier Force is currently leading the way in preparation for such operations, and other aircraft platforms could learn much from their experience and from the support provided to the helicopter force by Tactical Supply Wing. The provision of logistic support to air operations is currently undergoing a transformation as a result of a recent 'End-to-End' logistics review, resulting in a focus on the forward elements of logistical support. The provision of a fast-jet forward arming and refuelling capability may well be an area that officers commanding forward support wings in the future will wish to consider, thus meeting the final key success factor of senior leadership support.

## **CONCLUSION**

This paper has therefore shown that just as air operations must be flexible, agile and able to react quickly to changing operational environments, so must the ground support structure that is put in place to facilitate these operations. The RAF was ill prepared to support the type of operations that took place during the Battle of France in 1940, but quickly remedied this deficiency by the formation of the Servicing Commandos. The capability offered by the Servicing Commandos was tailored to solve a precise set of circumstances, and when these situations were reproduced, the results were outstanding. All essential elements of the strategy were identified: high quality, motivated servicemen were recruited; suitable and effective training was identified and delivered; fit for purpose tools and equipment were

provided; and incredible *esprit de corps*, cohesion and sense of identity were established. Despite the opposition of those who disliked their name and function, the Servicing Commandos became established and adopted an influential figurehead as their founding father in Mountbatten as Commodore Combined Operations. The rationale for the formation of the Servicing Commandos seemed to have been proved during their successful use in operations in North Africa. The value of their training and formed unit identity was demonstrated under demanding conditions and they justifiably received great praise for their work. However, the Servicing Commandos were able to operate with such apparent success only because the operational context so closely matched the anticipated environment for which they had been formed and trained. As campaigns progressed, despite performing magnificently, the value of their efforts at the operational level was diminished, because the operational environment did not offer them the opportunity to demonstrate their full capabilities. This was typified by the experience in Normandy where, having quickly and effectively established support to air operations on the European mainland, Servicing Commandos were quickly caught up by regular squadron ground crew and became redundant. No doubt, had British forces been able to maintain the anticipated fast pace across Northern Europe, and the requirement to regularly 'leapfrog' to forward air bases continued, then the Servicing Commandos would have been able to prove their worth. Criticism of the Servicing Commando's CONOPS and separatist identity followed and as soon as the war in the Far East was over, led to their prompt disbandment.

More suited to the RAF Servicing Commandos' CONOPS was the rapid progress made by American forces following the Normandy invasion, which must have required an equivalent means of ground support to air operations. Whilst this paper has focused on an historical RAF example of support to expeditionary air operations and contrasted it with current RAF support strategies, further research could include studies of how ground technical and logistical support was provided to US air forces as they advanced through France and Germany and contrasting this with current US CONOPS. Other relevant areas of research could include analysis of the methods adopted by the *Luftwaffe* to support rapid advances into France and

Russia during the earlier stages of WW II.

During the Cold War, there was little requirement for the type of support offered by the Servicing Commandos. However, it has been shown that there is now a potential requirement for the provision of forward arming and refuelling capability, currently doctrinally unfulfilled and practically highlighted during the failed attempt to operate Harriers from Talil during Operation TELIC in 2003. It does not follow that the Servicing Commandos should be reformed to meet this need; it is the provision of the capability that is required, not the duplication of a unit structure and CONOPS. Fundamental to the provision of this capability are five key success factors that are common to both the experiences of the Servicing Commandos and the current technical and logistical requirements of the RAF. The importance of *esprit de corps*, operational agility, training, self-sufficiency and senior leadership support link current RAF ground crew with the Servicing Commandos of WW II. Whilst this paper has offered the opinion that training a suitable proportion of first line squadron ground crew presents the most suitable solution to meeting this capability gap, the challenge for those who may be called upon to meet this requirement will be the need to secure the resources necessary for training and exercises and ensure that the five key success factors are met. The experiences of the Servicing Commandos in WW II have led the way in providing this form of support and their experiences are therefore most relevant to the support of current RAF expeditionary operations.

**Notes:** AP = Air Publication; AHB = Air Historical Branch; documents identified as AIR are held by The National Archives.

<sup>1</sup> AIR 2/8193, Air Chf Mshl Sir Hugh Dowding to Air Chf Mshl Sir Charles Portal dated 28 February 1942.

<sup>2</sup> AP3397, p.56.

<sup>3</sup> AIR 2/8193, Air Chf Mshl Sir Hugh Dowding to Air Chf Mshl Sir Charles Portal dated 28 February 1942.

<sup>4</sup> AP3397, p.57.

<sup>5</sup> AIR 2/8193, Air Chf Mshl Sir Hugh Dowding to Air Chf Mshl Sir Charles Portal dated 28 February 1942.

<sup>6</sup> AHB, A 2/101 Commodore Combined Operations to Chief of the Air Staff dated 25 January 1942.

<sup>7</sup> AIR 2/8193, DFOPs to ACAS 15 January 1942.

- 8 *Ibid.*  
9 AHB, A 2/101 Commodore Combined Operations to Chief of the Air Staff dated  
25 January 1942.  
10 *Ibid.*  
11 Kellet & Davies (1989), p.iv.  
12 AIR 2/8193, Air Chf Mshl Sir Hugh Dowding to Air Chf Mshl Sir Charles Portal  
dated 28 February 1942.  
13 AIR 2/8193, Air Chf Mshl Sir Charles Portal to Air Chf Mshl Sir Hugh Dowding  
dated 13 March 1942.  
14 *Ibid.*  
15 AIR 2/7706, M10 ACAS(P) to DMC dated 2 May 1942.  
16 AHB, A 2/101 Commodore Combined Operations to Chief of the Air Staff dated  
25 January 1942.  
17 AIR 2/8193, DFOPs to ACAS dated 15 January 1942.  
18 *Ibid.*  
19 AP3397, p.516.  
20 *Ibid.*  
21 AIR 2/7706, M12 DFOPs to ACAS(P) dated 4 May 1942.  
22 AIR 2/8193, DFOPs to ACAS dated 15 January 1942.  
23 *Ibid.*  
24 AIR39/72, Volunteers for Servicing Commandos dated 30 June 1942.  
25 Atkinson (2004), p.56.  
26 AIR39/72, Volunteers for Servicing Commandos dated 30 June 1942.  
27 *Ibid.*  
28 LAC McQuillan, in an interview with the author on 17 December 2004.  
29 AIR 2/7706, M10 ACAS(P) to DMC dated 2 May 1942.  
30 Quoted in AP 3000, p.2.9.1.  
31 LAC McQuillan, in an interview with the author on 17 December 2004.  
32 Grainger (1995), p.12.  
33 *Ibid.*, p.13.  
34 *Ibid.*, pp.13-18.  
35 *Ibid.*  
36 AIR 39/119, Loose Minute dated 4 April 1943.  
37 AIR 39/119, Report on Servicing Commando Course dated 3 April 1943.  
38 Grainger (1995), p.14.  
39 LAC McQuillan, in an interview with the author on 17 December 2004.  
40 Grainger (1995), p.25.  
41 AP 3397, p.517.  
42 White (2002), p.28.  
43 Kellet & Davies (1989), p.11.  
44 White (2002), p.28.  
45 AP3397, p.517.  
46 *Ibid.*  
47 *Ibid.*  
48 Kellet & Davies (1989), p.14.

- <sup>49</sup> AP3397, p.517.
- <sup>50</sup> Quoted in AIR 20/4372, E105A The Servicing Commando.
- <sup>51</sup> AIR 20/4372, RAF Middle East News Service Air Ministry Bulletin No 9507 dated 22 January 1943.
- <sup>52</sup> White (2000), p.28.
- <sup>53</sup> Kellet & Davies (1989), pp.93-97.
- <sup>54</sup> *Ibid.*, pp.93-94.
- <sup>55</sup> LAC McQuillan, in an interview with the author on 17 December 2004.
- <sup>56</sup> *Ibid.*
- <sup>57</sup> Kellet & Davies (1989), p.94.
- <sup>58</sup> *Ibid.*, p. 95.
- <sup>59</sup> *Ibid.*, pp. 95-96.
- <sup>60</sup> Quoted in Atkinson (2004), p. 164.
- <sup>61</sup> Kellet & Davies (1989), p. 97.
- <sup>62</sup> AIR 20/4372, Report by Chief Engineer 2nd TAF on Servicing Commandos used in Operation OVERLORD dated 29 October 1944.
- <sup>63</sup> *Ibid.*
- <sup>64</sup> *Ibid.*
- <sup>65</sup> AIR 20/4372, RAF Servicing Commandos Policy dated 4 December 1944.
- <sup>66</sup> *Ibid.*
- <sup>67</sup> *Ibid.*
- <sup>68</sup> AIR 20/4602, Record of Meeting to discuss Servicing Commandos dated 28 August 1943.
- <sup>69</sup> *Ibid.*
- <sup>70</sup> AIR 2/7706, Memorandum on Servicing Commandos in Tactical Air Force dated 1 October 1943.
- <sup>71</sup> *Ibid.*
- <sup>72</sup> Air 20/4372, Future of Servicing Commandos dated 8 August 1944.
- <sup>73</sup> Grant (2002), p.97.
- <sup>74</sup> *Ibid.*
- <sup>75</sup> *Ibid.*
- <sup>76</sup> *Ibid.*, p.16.
- <sup>77</sup> AP100C-72, pp.1-26 – 1-27.
- <sup>78</sup> *Ibid.*, p.1-28.
- <sup>79</sup> Gp Capt Teakle, in an interview with the author on 20 January 2005.
- <sup>80</sup> *Ibid.*
- <sup>81</sup> Wg Cdr Wilcock, in an interview with the author 8 March 2005.
- <sup>82</sup> *Ibid.*
- <sup>83</sup> AIR 2/7706, M10 ACAS(P) to DMC dated 2 May 1942.
- <sup>84</sup> AIR 20/4602, Record of Meeting to discuss Servicing Commandos dated 28 August 1943.

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Gp Capt I D Teakle, Officer Commanding Joint Force Air Component Headquarters, interviewed on 20 January 2005.

Wg Cdr S J Wilcock, Senior Engineering Officer Harrier Deployment Kuwait during Operation TELIC 2003, interviewed on 8 March 2005.

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## THE FIRST AEROPLANE TO LAND IN FRANCE AFTER D-DAY

Although, as Wg Cdr Ellard notes, Kellett and Davies do state that No 3210 SCU handled its first aeroplanes on 9 June, this was not actually the case. This misinformation was presumably extracted from the unit's F540 but its ORB was not a particularly well-maintained example and it is quite plain that the events of June 1944 were reconstructed, and very sketchily at that, from memory, in arrears. In fact the weather was such that it precluded much productive flying on 9 June. In particular, it frustrated a publicity stunt that would have seen AVM Harry Broadhurst (AOC 83 Gp) becoming the first allied pilot to land within the beachhead. Having been postponed by the weather on 9 June, Broadhurst's 'photo opportunity' was rearranged for the 10th, but this time the AOC's ambition was to be frustrated by a Typhoon pilot, as recorded in No 245 Sqn's ORB:

9.6.44 Bad weather restricted operations and no operations took place. A few air tests took place.

10.6.44 At 0520 hrs eight aircraft with RP and two fighters airborne to attack reported position of HQ Panzer Division. Intense flak of all types was encountered but despite this and much cloud the target was located and successfully attacked. F/O W Smith was hit by flak and reported excessive vibration and much oil on the windscreen. He was instructed by W/Cdr Green (who was leading) to put down on the ALG at Banville east of Bayeux (*actually B3. Ed*). This he did successfully. He was met by a swarm of photographers and high officers who informed him that he was the first pilot to make a wheels down landing in France since D-Day. Apparently this honour was being reserved for AVM Broadhurst who arrived some time later in a Spitfire. F/O Smith had breakfast in the French village, collected a helmet from a dead German and brought back the first trophy to the squadron. A rough examination of the aircraft was made and F/O Smith was detailed to return to base which he did at 0935hrs.....

No 3205 SCUs ORB, which was kept far more conscientiously than No 3210's, notes that Smith landed at 0620hrs (followed by the AOC at 0845hrs) and departed at 0900hrs. During the day the SCUs rearmed and refuelled another thirty-six Spitfires belonging to Nos 349, 401 and 442 Sqns, turned around a pair of Hurricanes acting as high-speed couriers and observed the arrival of the first three Dakota ambulances to land in France, although the latter required no technical assistance.

**CGJ**

**SUMMARY OF THE MINUTES OF THE TWENTIETH  
ANNUAL GENERAL MEETING HELD IN THE ROYAL  
AIR FORCE CLUB ON 21 JUNE 2006**

**Chairman's Report.**

AVM Baldwin noted that the Society had held two seminars since the last AGM. At the first of these, in October 2005, the RAF Museum had hosted a seminar on Flight Safety in the RAF and in April 2006, again at Hendon, we examined the RAF's post-war activities around the Mediterranean. The latter event was particularly well supported, with 122 attendees, and confirmed that mid-week events, rather than weekends, should be the norm. The next seminar, to be held yet again at Hendon, on 11 October 2006, would concentrate on Search & Rescue.

The Chairman observed that, with the passage of time, the choice of subjects for seminars was becoming increasingly limited if we were to avoid repetition. Members were urged to consider the implications of this situation. The Committee had yet to confirm a topic for early 2007 but the opening of the National Cold War Exhibition at Cosford in the spring seemed to offer an appropriate event and a change of venue. The Chairman acknowledged, once again, the generous help that the Society had received from Dr Michael Fopp and his colleagues at the RAF Museum.

Three journals had been published during the previous twelve months. Of these, the hardback on the Harrier had been particularly successful and stocks had been exhausted; a further short print run had been arranged.

The Treasurer and Membership Secretary had been trying to resolve a number of anomalies regarding the effective size of the society, arising from such issues as lapsed members, un-notified changes of address, and those who were still paying their subscriptions at the old £15 rate. This rationalisation process was not yet complete, but it appeared likely that the actual membership could well be closer to 750 rather than the 900 that had previously been thought. Nevertheless, the finances remained in good shape, not least because of a 40% increase in income from the Gift Aid scheme.

In terms of publicity, the content of the Society's page on the RAF website had been revised, and now included brief details of the next

event and a downloadable membership application form.

In conclusion, the Chairman thanked the Committee for their continued hard work on behalf of the Society. He also registered his appreciation of the advice and encouragement received from the President, Marshal of the Royal Air Force Sir Michael Beetham, and the Vice-President, Air Marshal Sir Frederick Sowrey.

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

Gp Capt Dearman reported a steady flow of correspondence that indicated continued outside interest in the Society. While the total numbers remained to be resolved, the Membership Secretary (who had tendered his apologies for his inability to attend) had recorded fifty-nine new members joining since the last AGM, thirteen of whom were still in the Service. Twenty-one members had died; twenty-six had resigned, and no fewer than seventy-four had to be regarded as non-effective because they had failed to increase their subscriptions. The sale of journals had raised £896.

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

Mr Boyes tabled the annual accounts for 2005 which showed a surplus of £5,863 with £28,160 in reserves. The seminar at Bristol had attracted donations from BAE Systems, Rolls-Royce and Cobham plc which had been most welcome. The Society had made a grant of £900 to Atoll Productions to help defray the cost of producing a film of the wartime activities of No 151 Wing in Russia. A small surplus was forecast for 2006 and the reserves were satisfactory and in keeping with the Constitution of the Society. The Committee had agreed to make a donation of £500 to the new RAF memorial in Chichester Cathedral. The Committee had also decided that members who continued to pay only £15 subscription, despite repeated reminders, would cease to receive journals.

A proposal by Wg Cdr Walters, seconded by Wg Cdr Cummings, that the accounts be accepted and that Messrs Pridie-Brewster of 29/39 London Road, Twickenham TW1 3SZ be re-appointed independent examiners, was carried.

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

The chairman noted that all the executive committee members had offered themselves for re-election. Wg Cdr Robertson, an ex-officio

member resigned on change of appointment, but his successor, Wg Cdr A J C Walters had agreed to take his place. Proposed by Mr D Goch and seconded by AVM Vallance, the motion was carried. The executive committee 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 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 A J C Walters BSc MA FRAeS	JSCSC
RAF	

### **Discussion.**

The chairman announced that Wg Cdr Simon Ellard 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*.

The President took the opportunity to express his thanks for the work of the Life Vice-President, Air Mshl Sir Frederick Sowrey and that of the current Chairman and his Committee on the 20th Anniversary of the founding of the society.

There being no further business, the meeting closed at 1815 hrs.

## **ERRATUM**

Journal 38, page 31. Dennis Burles apologises for an error in his article; Archbishop Makarios left Cyprus in a Hastings, not a Valetta.

## **A SEMINAR ON THE AIR ASPECTS OF THE SUEZ CAMPAIGN OF 1956**

Held at the Royal United Services Institute in London on 26 October 1987, this event was reflected in the Society's third publication, which appeared in January 1988. When the spring 2006 seminar, dealing with RAF activities in and around the Mediterranean since WW II, was being planned, the Committee decided to strike Suez only a glancing blow and to fill this significant gap by republishing the report of the earlier event. What follows is 99% the same as the original, only the lightest of editorial touches having been applied along with addition of a few photographs.

### **OPENING REMARKS**

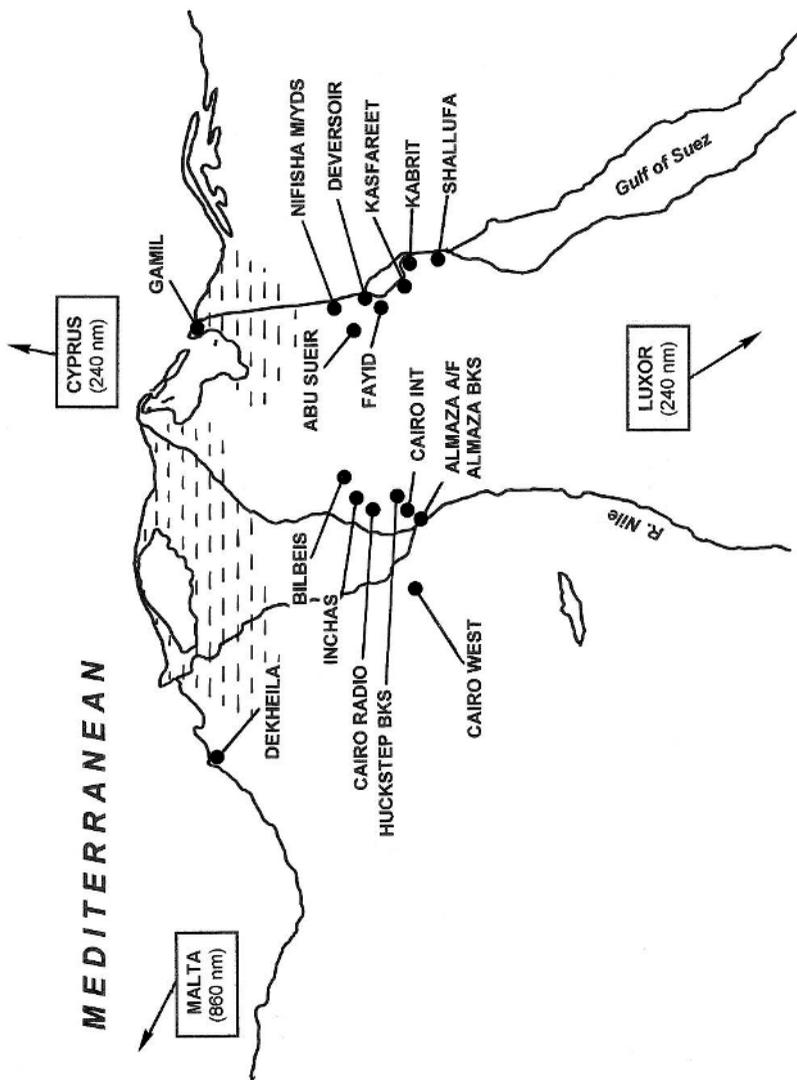
#### **Air Marshal Sir Frederick Sowrey**

Welcome, Ladies and Gentlemen, to the first Seminar of the Royal Air Force Historical Society. The Society was formed a year ago to study, in the main, the policy, operations and personalities of the Royal Air Force. We now have approximately 500 members, and it is splendid to see so many here today. Numbers do count; they give us clout, and cash, to organise functions such as this, and hopefully to do more. If you think you can persuade someone to join, I hope you will do so. We particularly need the young serving officer, and we have to convince him that the study of air power in the past will help his career now, and in the future.

In addition to the printed programme, a video of the BBC programme on Suez will be shown during the lunch period. It is right to emphasise that the seminar will concentrate on the Air aspects of the Suez campaign, but to stress the joint-Service and international nature of the operations we are fortunate to have with us the naval historian, David Brown, Head of the Naval Historical Branch, and the French historian, General Robineau, *Chef de la Service Historique de l'Armée de l'Air*.

We are doubly fortunate in having Keith Kyle to chair this seminar; a one-time presenter of the BBC Television's current affairs programme, *Panorama*, he is now (ie in 1987) with the Royal Institute of International Affairs. The direction of the seminar now passes to him.

# AREA OF OPERATIONS SHOWING PRINCIPAL TARGETS



<p><u>BRITISH NAVAL</u></p> <p>AIRCRAFT CARRIER TASK GROUP</p> <p>SUPPORT FORCES GROUP, INCLUDING: CRUISERS, DARING, DESTROYERS AND FRIGATES</p> <p>MINESWEEPING GROUP</p> <p>AMPHIBIOUS WARFARE SQUADRON</p>	<p><u>BRITISH LAND</u></p> <p>16 INDEPENDENT PARACHUTE BRIGADE GROUP</p> <p>3 COMMANDO BRIGADE, ROYAL MARINES</p> <p>10 ARMoured DIVISION</p> <p>3 INFANTRY DIVISION</p>	<p><u>BRITISH AIR</u></p> <p>MEDIUM AND LIGHT BOMBER FORCE</p> <p>FIGHTER/GROUND ATTACK FORCE, SHORE-BASED AND CARRIER-BORNE</p> <p>RECONNAISSANCE FORCE</p> <p>TRANSPORT AND HELICOPTER FORCES</p>
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<p><u>FRENCH NAVAL</u></p> <p>AIRCRAFT CARRIER TASK GROUP</p> <p>SUPPORT FORCES GROUP, INCLUDING: A BATTLESHIP, CRUISERS, DESTROYERS AND FRIGATES</p> <p>MINESWEEPING GROUP</p>	<p><u>FRENCH LAND</u></p> <p>10 DIVISION AEROPORTÉE</p> <p>7 DIVISION MECANIQUE RAPIDE</p>	<p><u>FRENCH AIR</u></p> <p>FIGHTER/GROUND ATTACK FORCE, SHORE-BASED AND CARRIER-BORNE</p> <p>RECONNAISSANCE FORCE</p> <p>TRANSPORT AND HELICOPTER FORCES</p>
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OPERATION MUSKETEER – OVERALL BRITISH AND FRENCH FORCES

## SETTING THE SCENE

**Keith Kyle**

You have done me great honour by asking me to preside over this conference of the Royal Air Force Historical Society on Suez. I suspect that the choice of a civilian for this position was not unconnected with the wish that the operation, and above all its outcome, should be firmly placed in its political context. I am required to see that political alibis are in place, and in the short time at my disposal I shall do my best to oblige.

During the months that preceded the abrupt nationalisation of the Suez Canal Company, Anthony Eden had been forming the impression that, as he put it, 'Nasser was determined to wreck us.' This was because of events in Jordan, Cairo Radio propaganda throughout the Middle East, and a series of MI6 intelligence reports indicating that the Egyptian ruler was a wholly-dominated agent of the Soviet Union. This interpretation, by the way, was contested by the CIA and the American Government. On the night of the seizure of the Canal Company, 26 July, a gathering of Ministers and Service Chiefs decided that it was not possible to retaliate instantly. The following day there was a meeting of the Cabinet. The Minutes show that:

'The Cabinet agreed that we should be on weak ground basing our resistance on the narrow ground that Colonel Nasser had acted illegally. The Suez Canal Company was registered as an Egyptian company under Egyptian law and Colonel Nasser had indicated that he intended to compensate its shareholders at ruling market prices. From a narrow legal point of view its action amounted to no more than a decision to buy out the shareholders. Our case must be presented on wider international grounds. Our argument must be that the Canal was an important international asset and facility, and that Egypt could not be allowed to exploit it for a purely internal purpose. The Egyptians had not the technical ability to manage it effectively.'

This last, I may say, was a crucial threshold which Egypt passed on 15 September, when she proved that she was capable of running the canal effectively. The Cabinet minutes of 27 July go on:

'It was evident that the Egyptians would not yield to economic

pressures alone. They must be subjected to political pressure and, in the last resort, this political pressure must be backed by the threat, and if need be the use, of force.'

This unanimous decision dominated much of the discussion of the subsequent weeks, because those members of the Cabinet who became doubtful, like the Minister of Defence, Walter Monckton, had themselves acquiesced in that initial reaction. Objections to particular action had therefore to be cast in the context of the acceptance of the objective and of the initial analysis. The Cabinet set up a fairly small group of Ministers, who with the Chiefs of Staff, should manage the crisis. It was called the Egypt Committee and at a meeting on 30 July, the Egypt Committee reached important decisions. I quote:

'While our ultimate purpose was to place the Canal under international control, our immediate purpose was to bring about the downfall of the present Egyptian Government. This might, perhaps, be achieved by a less elaborate operation than those required to secure physical possession of the Canal itself.'

The Egypt Committee had decided that a conference of maritime powers would have to be held but it stated specifically:

'The purpose of the maritime conference was to be limited to the approval of a declaration of policy which had formed the basis of a note to the Egyptian Government, which we would be prepared, if necessary, to despatch on our own responsibility, and which would be a virtual ultimatum. If Colonel Nasser refused to accept it, military operations would then proceed.'

You will notice that the Cabinet was not in the least coy about the use of phrases like 'ultimatum'. Subsequently, the Minutes show that the Cabinet, and often the Prime Minister himself, was the first person to use terms like 'pretext' and 'collusion'. The French, at the earliest stage, decided that they wanted to take part and that they were prepared to put their forces under British leadership.

I will not go into the whole planning process, because this is a subject you are far more competent to discuss than I, and will be the subject of the morning part of the conference. Just to say that the records show that from the outset there was considerable discussion of the question of whether:

‘.... the aim could be achieved by unseating the present Egyptian Government, by bombing alone. If so, the operation could start relatively quickly. The bomber force could be in position in a fortnight and could start full bombing operations in a further week.’

This was rejected as not ensuring that the full objectives of the operation would be achieved. The idea of a landing at Port Said was switched to a concept that was based on a landing at Alexandria. Working back from an earliest D-Day of 15 September, it was reckoned that the very latest that the Government could decide to mount the operation was 30 August. From being frustrated in his military decision by the length of the military lead-time, Eden soon found his diplomatic timetable in danger of being squeezed by the tightness of the military requirement. Sir Norman Brooke, the Secretary of the Cabinet, actually worked out a timetable which fitted all the pieces together; the political and diplomatic pieces, with the military. So many days for conference, so many days for the Egyptians to reject its conclusions, so many days for recall of Parliament, so many days for a debate in the United Nations to prove the impotence of the Security Council. The expedition would need to be ordered out five days after the despatch of the note to the Egyptian Government and one day after Parliament had completed its two-day special session. Thus, for example, vessels would have to be requisitioned as Tank Landing Ships on 17 August, the second day of the conference; the tactical loading of the transports would take place on 21 August which was before it ended. So there would be a lot of military ‘clanking’ in the very period in which the Government was demonstrating to the world its preference for a peaceful solution. The United States, which in some respects were being quite helpful at this time, was insisting on a proper maritime conference and a conciliatory atmosphere in which to pursue the option for peace.

On 22 August, came the first postponement, for four days, of the military programme, because, if the initial timetable were to be adhered to, violations of Egyptian airspace for photo-reconnaissance would have to be authorised at once. Eden thought this was not a good idea while the conference was still on. On 24 August, in the Egypt Committee, there was an outburst from the Minister of Defence,

Walter Monckton, following some rather cynical comments by Harold MacMillan, the Chancellor of the Exchequer, and it became obvious that there was no longer unity in this inner group. One of its members, Lord Home, wrote a letter to Eden in which he said:

‘I see a definite wavering in the attitude of some of our colleagues towards the use of force. The anxieties of some, Rab (*Butler*) for instance, might be removed if we didn’t have to go on thinking in terms of button-pushing and dates and had plenty of time for diplomatic manoeuvre.’

That, of course, was death to the elaborate type of scheduling laid down in the MUSKETEER plan. Ministers were becoming subjected to political and diplomatic requirements that they could not altogether control and which were, in practice, not responsive to military planning. You will all be familiar with the switch to MUSKETEER REVISE which, as is apparent from a series of notes written by General Keightley, was advocated by him as being a more suitable instrument for use by a political leadership that was uncertain about the timing of so many of the political factors involved, and which needed to be able to put the operation on ‘hold’. This switch, which involved the concept of a long aero-psychological phase before the eventual landing, which would take place at Port Said only when organised resistance was largely at an end, reflected, to a considerable degree, earlier contentions about the sufficiency of air power.

Another advantage claimed for the new plan was that it would inflict many fewer civilian casualties than if the Alexandria landing had been carried out, which though no doubt true, might not have been the standard of comparison critics would have had in mind if the Egyptian Army and the economy were to be really crippled from the air once total air superiority was achieved. There would need to be a fair amount of damage. Admiral Grantham, the Commander-in-Chief, Mediterranean, in a letter to Mountbatten, described in some alarm a conversation he’d had with Keightley towards the end of September:

‘When I asked him what would happen if all the tanks, guns and transport were hidden in the towns and villages, he said they would go for them there and that the civilian population would have to take it. He added “This would form part of the breaking

of the will to resist. I understood,” Admiral Grantham went on “that the Chiefs of Staff or anyway, you, did not consider that the MUSKETEER plan was to bomb civilians.””

American diplomacy under John Foster Dulles was now involving Eden and the French in further delays. Dulles insisted on a second conference to discuss his idea of a Suez Canal Users Association (SCUA), which would be able to bargain collectively with the Egyptians. Eden went along with the idea because he thought that, in practice, it would result in involving the Americans in action against Nasser. But instead, it imposed additional delays and Eden, and even more so the French, felt that they had been badly let down by the Americans. At this point a French Air Force officer, General Maurice Challe, produced the suggested scenario that led directly to collusion with Israel. The act of collusion, known as the Protocol of Sèvres, was signed in deepest secrecy in that suburb of Paris on 24 October. The Israeli attack was to take place on 29 October, and the British and French would subsequently intervene as self-appointed peace-keepers to separate the combatants. The Israelis were going to accept their ultimatum, which did not require them to go back to their starting-point, only to stop ten miles short of the canal. It was assumed that Nasser would reject his and the Israelis were given the impression that Egypt would then start being bombed at first light on 31 October.

Eden hoped and expected that the secret of this collusion would never be revealed and would be for ever buried with him and the few people immediately involved. He was furious at the discovery that an actual piece of paper had been drawn up. All copies of the British version were destroyed, but we know that the Israeli version is preserved in the Ben-Gurion archives. There *is* a smoking gun, but it is very important to stress that all operational orders were conditioned by the political need for them to be consistent with the cover story, not merely at the time, but retrospectively in the eyes of history. That is why, despite the fact that the date of the Israeli attack was known in advance, it was impossible to have the armada just over the horizon. But although the British and the French were now coming to Egypt, not to punish the Suez coup, but as impartial peace-keepers, the only military plan on hand was MUSKETEER REVISE, which was used in a speeded-up version, with various pieces left out.

One of the hardest things to reconstruct is exactly who knew how much, and when. Was anybody in the Services, including the Chief of the Air Staff, told that the Israelis had been given to expect that the first bombs were to fall on the morning of the 31st? When this failed to happen, Ben-Gurion was anxious and furious. He denounced Britain as 'the old whore' and wanted to withdraw the Israeli Paras from their exposed position by the Mitla Pass. The political restrictions imposed on the bombing meant that it was insufficient to disintegrate the Egyptian State, but that it was more than enough to scandalise world, including United States, opinion. Although, by the standards of MUSKETEER REVISE, the expedition arrived extraordinarily fast, by the standards of an instant coup, which alone might have succeeded, it came far too slowly.

On the night of 3/4 November, Israel, having by then occupied most of Sinai and being subjected to tremendous world pressure, told the United Nations that it had accepted the demand for a cease-fire. Egypt had already done so. The Egypt Committee and the full Cabinet were faced, therefore on the 4th, with the proposition that both sides in the war that Britain and France were supposed to be stopping, had already given up fighting. What therefore was the purpose of the intervention? The situation was all the more serious in that the policy of intervention was being challenged in unmistakable terms, not only by our most powerful ally, the United States, but by the domestic opposition at home. The Cabinet was divided three ways about whether to go ahead with paratroop landings the next day, the 5th. Everything finally depended upon whether the French could persuade the Israelis to withdraw their acceptance of the cease-fire. The final Israeli decision, which was to make acceptance of the cease-fire dependent on a whole string of conditions, was not known in London until around midnight. The Paras landed on 5 November. The assault landing followed on the 6th, which was also Presidential Election day in the United States. Overnight on 5/6 November, the Russians sent threatening messages to Britain, France and Israel. The United Nations worked frenziedly at creating the Emergency Force. The United States turned thumbs down on the desperate British request for help to prevent the rapid draining of the currency reserves. Port Said was cleared but the cease-fire operated from midnight Zulu (2 o'clock local time).

## **THE VIEW FROM WHITEHALL**

**Air Chief Marshal Sir David Lee**

**(Secretary to the Chiefs of Staff Committee at the time.)**

Mr Chairman, you have set the scene on a real cock-up, if I may say so! My task is primarily to try to give you the views, opinions and reactions of the Chiefs of Staff; I was their Secretary throughout the episode. I must, however, be careful because we have Sir Edmund Hudleston here who was Vice-Chief of the Air Staff at the time, and I hope he will comment or correct me if I fail to do justice to the Chiefs' views.

We were told at the Staff College never to start a talk with an apology and as an ex-Commandant I'm starting with two. First, it is obviously over thirty-one years since the Suez episode, and memory becomes a little dim. Second, and most important, as Secretary, I was forbidden to attend No 10 Downing Street with the Chiefs of Staff. This was most unusual; the Secretary normally went to No 10 with the Chiefs, took a note and produced a brief record for the Chiefs to use afterwards, but on this occasion an absolute clamp was put on me. Not only that, but the Chiefs of Staff were sworn to secrecy by the Prime Minister – even told that they were not to communicate what went on in No 10 to their Staffs and their Vice-Chiefs. This was quite ridiculous; you could not plan or run an operation on that basis, and so it was largely ignored. As you know, Nasser nationalised the canal on 26 July, and there is no mention of that, or the possibility of that, in the Chiefs of Staffs Minutes right up to, and including, that day; I have been through the Minutes since to make quite sure. The first mention of this episode was on Friday, 27 July. Of course, as you know, the fury in Government and French circles was intense, and from that day on the Prime Minister developed an almost neurotic determination to overthrow Nasser. I think we have seen, from what Mr Kyle said, that this pervaded the whole of the operational phase.

The Chiefs of Staff were instructed immediately to prepare plans for an operation to seize the canal and hopefully to overthrow Nasser. The French were our partners in the Suez Canal Company and they were equally furious at this act of piracy. The concern of the Chiefs of Staff on the action to be taken was very considerable. You have to recall that we had only left Egypt in May; the last British troops left

the Canal Zone on 17 May and this was the end of July. Our forces had run down very rapidly since the end of the Second World War and the bulk of those forces were devoted to the support of NATO. Many will say that they had been reduced much too fast, considering our peace-time commitments, and I certainly feel that myself. The Soviets were, of course, at that time the main threat to our security. The Chiefs were in no way fearful that an operation would not succeed, particularly given their alliance with the French, and they did not rate the fighting value of the Egyptians very highly. I particularly remember General Templar (CIGS) saying ‘They will not fight. I have stood on a bridge at Alexandria and I have watched them and I tell you they will not fight.’ But of course General Templar was a fine soldier and not the sort of man who would expect an operation to be planned on the basis that your enemy would not react and would not fight, so a proper operation had to be planned. The Chiefs of Staff collectively had another great concern, namely that, having just left Egypt, we would go back, seize the canal, and then get bogged down there again. Bearing in mind that we had treaties with many other Arab countries, notably Jordan and Iraq, that the Soviets were looking over their shoulders from the direction of Syria and would be watching their weapons, their aircraft, their tanks, their guns being destroyed in Egypt, this was the main worry of the Chiefs of Staff collectively.

So much for that collective view; I would now like to say something about their individual opinions. I must digress for a moment to explain the organisation. There were three Chiefs of Staff, Earl Mountbatten, Templar and Dermot Boyle with Sir William Dickson as their chairman, and Dickson’s view is important. To give you his opinion, and he was opposed to this operation, I want to quote from *The Fringes of Power*, the diaries of Sir John Colville, who was an eminent civil servant at the time and Private Secretary to a number of Prime Ministers. On one occasion he was returning from Washington by air, sitting with Sir William Dickson, and this was the conversation:

‘Anthony Eden’s personal rage and animosity against Nasser was acute; this made him beside himself on many occasions and Dickson said he had never been spoken to in his life in the way



*Anthony Eden, the Prime Minister, was so determined to 'bring about the downfall' of President Nasser that regime change was actually the primary, if unspoken, aim of Operation MUSKETEER, not the repossession of the canal.*

the PM several times spoke to him during those tempestuous days.'

I think you'll agree that says quite a lot about the atmosphere at the time and about Sir William Dickson's point of view.

Of the others, Mountbatten was particularly hotly opposed to the operation; he said so on many occasions and he finally wrote a strong letter to the Prime Minister requesting him to call the operation off. But he did it four days after the assault forces had left Malta on their way; it was quite ridiculous to have left it so long if he wished to do this, and it was impossible to stop it. The air forces were in action anyway, and the assault force was four days into its six-to-ten-day voyage.

Sir Gerald Templer and Sir Dermot Boyle were also opposed to it, but not perhaps to the same extent as Mountbatten. However, being good military men in the service of the Government they went along with the instructions and carried on with the planning. The first plan, called MUSKETEER, was not satisfactory; Montgomery wanted the Chiefs to go in at Mersa Matruh and go along the coast to Alexandria and so on, and Dickie Dickson said that was ridiculous, so that didn't take place. To cut a long story short, that plan was scrapped and we then came to MUSKETEER REVISE (the 'Revise' was dropped afterwards) which aimed at crippling the Egyptian Air Force, getting to the head of the canal through Port Said and going on down the canal. I won't say much about this but the Chiefs decided that a separate task force needed to be created. General Sir Giles Keightley, then Commander-in-Chief, Middle East Land Forces, was appointed Commander-in-Chief; Air Marshal Barnett (whom I am glad to see here today) was the Air Task Force Commander, and the IDC was

stripped of its finest brains in order to form the staff who all went out to Cyprus and planned the operation. Of course there was a Commander-in-Chief, Middle East Air Force, who was Air Marshal Sir Hubert Patch, and you might well ask why he was not put in charge. You have to look at the situation; Cyprus was in the middle of the EOKA troubles and the air defence of Cyprus was a considerable responsibility. Air Marshal Barnett had only recently come out of Egypt, knew the country well and was obviously very well acquainted with all aspects of it so he was appointed, and Air Marshal Patch continued maintaining the security of Cyprus in the face of the EOKA campaign.

I do not think that I need say anything more about the Chiefs of Staffs' attitudes because, having made their points of view, they then carried on with the operation. I am going to wind up with another quotation from Sir John Colville's diary which I think is very revealing:

'Eden, during the final days was like a prophet inspired and he swept the Cabinet and the Chiefs of Staff along with him brushing aside any counter-arguments and carrying all by his exhortations.'

**Keith Kyle – Chairman.** We now turn to the civilian side. Sir Frank Cooper, who has had a most distinguished career on the civilian side of the Ministry of Defence, a former Permanent Secretary. At that time he was head of the Air Staff Secretariat. He will now discuss the scene at the Air Ministry.

## THE SCENE AT THE AIR MINISTRY

**Sir Frank Cooper**

**(Head of the Air Staff Secretariat at the time)**

Like Sir David Lee, I too will start with an apology because when you look back it is remarkable how little you can remember and how few things come back with any clarity to you. Moreover, I suspect one has a roseate view of what was happening at the time which has become romanticised as the years have gone by. I would just like to set the scene in the Air Ministry. The atmosphere was very different thirty-odd years ago compared with what it is today. Everybody who had any authority in the Air Ministry had taken part in World War II. Everyone was very used to overseas affairs, the attachment to NATO was skin deep at best, and we had really a very large RAF by today's standards. It was a time when there was very great pride in the achievements that had taken place since 1948 or thereabouts with the building-up of the V-force and the re-creation of Bomber Command. As against that, we had been going through a period of retreat and re-organisation in the Middle East. One forgets how much people were pre-occupied with the Middle East. It wasn't simply Egypt, or the fact that in 1954 we had agreed that we would withdraw from the Canal Zone. We were really quite friendly with Egypt, indeed we had been the principal arms supplier to Egypt until the Czechoslovaks started to do it in 1955. Israel was becoming an increasing problem, with punitive raids; the question of what happened to Jordan's future was very much in everybody's minds and Iraq was a very important power, with Nuri-as-Said, actually the last of the great Pashas I suppose, being very pro-British and also trying to bring down Syria at the same time. Some may say that nothing changes very much over the years! The Saudis were not very friendly. How many of us remember the incident at Buraimi Oasis where the Saudis, encouraged by the Americans, did their best to do us all down as far as they possibly could?

When we moved over to Cyprus the one thing that was clear was that it would never be a base in the sense that the Canal Zone had been a base, and that became only too clear during Suez. There is no doubt at all that the nationalisation of the Suez Canal on 26 July came absolutely out of the blue. I think I am right in saying that there was

some great dinner which Anthony Eden was giving to King Feisal and to Nuri-as-Said when the news came in, and after that he had a little meeting with, I think, CAS who was at the dinner, and I remember CAS saying to us next morning that Eden had gone bananas and that we might have to mount some kind of invasion of the Canal Zone at some stage.

I won't go over the political background to the extent that it has already been covered. I would just like to stress two points very strongly. Firstly, throughout the next few months there was much confusion as to whether we were more worried about Israel and Jordan or Jordan and Israel, rather than Israel and Egypt which really only grew in intensity in the latter part of the period we are talking about today. Secondly, we had a Foreign Office which was virtually one hundred per cent pro-Arab and also pro-American. Under the circumstances as they developed it was impossible to reconcile the two. These things ran throughout the whole period.

From the end of July there followed three months of high and confused activity enveloped in great mists of obscurity. We had several Air Ministries. There were what I call 'the troglodytes', who though not strictly part of the Air Ministry, were good healthy airmen living in the basement and emerging into the light of day bearing plans of various kinds, on which they asked sometimes for comment, and rarely received any constructive advice. There was a limited number of people on the Air Staff and in one or two other places who were reasonably privy to the military planning, and there were one or two people in the outer parts of the Air Ministry who were bullied by Whitehall to do things which they didn't know anything about, and weren't supposed to know anything about, and were asked to do things like marshal stores or move them from here to there, or if they could requisition some aircraft or do something of that kind – without any legal backing of any kind whatsoever. Then there was the great majority of the Air Ministry who knew absolutely sweet FA of what was going on.

Behind all this, the other stream that ran through everything was that nobody in the Air Ministry had a real idea of what the political aim was. As the months went by it became clearer and clearer that somehow or other the Prime Minister, supported at least partially by some members of his Cabinet, wanted to knock Nasser off his perch.

But nobody really knew what the aim was. Were we supposed to go and capture the whole of Egypt? Were we supposed to hold the Canal Zone? It was all very obscurantist. Normally, officials in Whitehall knew what was going on, but there were only two officials in Whitehall who were actually fully privy to the whole of the Suez operation; one was Norman Brook and the other was Pat Dean. Norman Brook was Secretary of the Cabinet Office and Pat Dean Deputy Under-Secretary of State in the Foreign Office in charge of defence and intelligence. No one else was ever allowed to know what was happening.

When MUSKETEER was born and the first plans emerged the feeling in the Air Ministry was one of quiet pride (to use a well-known Air Ministry phrase of the day), because the RAF had been given a very leading role in the operation, making use of air power in a very full way. However, straight away two things worried everybody. Firstly we had the bizarre episode on which everybody had concentrated for several weeks; could you navigate the Suez Canal without the British pilots? Everybody got frightfully excited about it. I don't think many people in the Air Ministry believed the stories that were coming out from other quarters that no one but the British Canal pilots could steer a ship down the Suez Canal. So that made a certain degree of cynicism apparent. The next point was aero-psychological warfare. Everyone thought that was rather nutty, as indeed it was, but behind that was the bizarre business where the Navy and the landing ships were going to set out from Malta (and some from Southampton and Algiers) to sail quietly along the Mediterranean for periods which varied from five to ten days. Everyone wondered what was going to happen while this leisurely progress was being made. Could you actually live in the political environment while that happened? But nobody was talking in any kind of political terms.

Let me just mention a few snapshots of the time. Our communications with the Foreign Office got more and more distant, but they were actually very important. You will all recall I think how important it was to get overflying rights, so as to be able to make sure that all the aircraft moving out of the UK could actually get there in days long before flight-refuelling was of any importance at all. Could you use Libya? How much could you use Libya? Were the airfields sufficiently stocked with fuel to cope with the amount of traffic that

was going through? There was a mass of similar activity. There was the whole question about what you should do about the civilian population. There were about fourteen or fifteen thousand British civilians living in Egypt but there was an absolute ban on talking about this. Then there was the whole question of whether there was any help or guidance that Ministers could give. The Secretary of State for Air knew absolutely nothing about the whole subject, and he used to send for everybody day by day to see if he could collect any information about what was happening. He usually started with Dermot Boyle and worked his way downwards as the day passed on. He was never really in the picture other than being confused. I well remember just after operations had started (either on the Saturday or the Sunday) Nigel Patch asked Tom Prickett and me to go tea at the Ritz. We walked in a gentlemanly fashion across the park and had tea at the Ritz only to find that when it came to paying Nigel had no money in his pocket. If I remember rightly, Tom had a few coppers which was all that was needed in those days!

As we moved into the operational phase there was a whole series of bizarre incidents, of which I suspect the most bizarre was when the Valiants en route for Cairo West Airport were diverted with great panic in mid-air to the secondary target which was, I think, the radio station outside Cairo, simply because the Americans had rung everybody in sight to say they were actually using Cairo West at the time to evacuate some of their citizens and the rest were on the road between Cairo and the airfield. Of course, communications in those days were very, very erratic! Garbled messages came in, sunspots blanked-out teleprinters, etc, etc.

There was also one of the most curious episodes which I can recall, which I have never seen reported. After the operation started Whitehall began to clank into action: in the War Book there was, and I think probably still is, something called 'The Defence Transition to War Committee' and a meeting of this was called. I was instructed by Maurice Dean, who was then Permanent Secretary of the Air Ministry, to attend with him. I was rather worried about this because I staggered over to the other side of Whitehall and there were all these august men, who looked terribly old to me but were at least five years younger than I now am, who knew absolutely nothing about anything, and after about forty-five minutes the meeting broke up in very

considerable confusion so that we might re-group. It met, I think, once more before giving up the struggle. The abysmal ignorance was almost total – not unnaturally, given the circumstances of the whole operation.

The other thing that was very important at the time, and eventually hit the Air Ministry very hard, was that when the bombing operation started we got a marvellously good press and we were being told to tone it down. Our PR people were filling up the *Evening Standard* with headlines like ‘RAF BOMBS POUND GIPPIES’. But, after the first 48 hours or so, during which everyone had been in favour of taking strong action, the situation steadily deteriorated, with the papers and public opinion inexorably moving further and further away. Everybody started saying, ‘What is this all about?’ Largely this was because of the nature of the ultimatum, which was, after all, issued when the Israelis had already stopped fighting, because they had achieved all their objectives, and the Egyptians had actually withdrawn to Cairo, and sent their air force away. I think that the blow to morale of discovering such a deceitful, evasive way of doing things was very serious. I personally believe it hit the Air Ministry quite hard at that time. If we had simply been going on a straight ticket the story might have been different. Then, in the first few days of November, with everybody wondering how far Tubby Butler might get with his armoured column, the whole operation collapsed. The Cabinet brought the whole thing to an end without, as I recall, seeking any military advice. The truth of the matter was that Eden had lost his Cabinet, including I think, crucially, Harold MacMillan, and it was not, in my view, simply for financial reasons, which were of convenient use at the time.

What conclusion can we take from all this? First, I think the Air Ministry stood up amazingly well, because it was, in those days, a very cohesive organisation; people knew each other, and they worked together well. Secondly, it showed me that you cannot run an operation of this kind without very clear political strategic guidance and without continuing political direction as to what is needed. Thirdly, you have got to have some aims, and the aims were not clear. Fascinatingly enough, when we came to the Falklands in 1982 the aim there was confused, in the sense that, until people actually got onto the beach at San Carlos, they were not clear about marching across to Port

Stanley. This really has some quite curious parallels with Suez.

I think the reaction of the Air Ministry and its planning team was remarkably good, and gave great credit to everybody concerned with the operational end and getting the thing together. Mind you, I remember Ronnie Lees walking into my office one day and saying 'Will you knock off some Rules of Engagement for Malta, because we haven't got any.' This was just after it had started! So with that I will finish. To sum up, for the Air Ministry it was a period of time out of time; a confused period to which people reacted with great *élan* and great skill to a situation which was a political shambles.

**Keith Kyle – Chairman.** Thank you very much Sir Frank. You were reminding us of the other things that were going on in the Middle East at the time. One thing we should perhaps remember is that right up until the eve of the operation itself, right up until the last part of October, there was a serious possibility of Britain finding herself at war with Israel, on account of Jordan. There was an operation called CORDAGE which was intended to neutralise the Israeli Air Force in the event of Israeli aggression against Jordan, whereas MUSKETEER was waiting to neutralise the Egyptian Air Force. There was a signal sent on 25 October by Air Marshal Patch, the Air Commander in the Middle East, saying that the states of readiness were 'half at six hours and half at twelve hours. I would like guidance as to what operation this state of readiness is related to. Continued high states of readiness will soon reduce efficiency and lower morale.' To which the reply was, 'All will soon be clear because Hudleston is on the way.'

## THE PLANNERS' PERSPECTIVE

**Air Chief Marshal Sir Denis Smallwood  
(Group Captain (Plans), Air Task Force)**

The first two speakers have very clearly explained the very sound basis on which we, the planners, had to start and continue in the Suez campaign; that is, one of monumental political cock-up. As far as the planners' perspective was concerned, I would liken this to one of Roald Dahl's *Tales of the Unexpected*. It certainly had all the ingredients – intrigue, high drama, difficulties of all sorts – and this is exactly how the planning started for me. I got as far as Wales on leave and received a telegram at about 5 pm telling me to report to the Air Ministry immediately and giving a telephone number, but when I rang up at once there was nobody there to reply! Of course, I rang again on Saturday and Sunday, but there was no reply then either! Finally, I did get through on Monday, and they said 'How quickly can you get back?' As I had a couple of horses that I wanted to bring back with me, I said 'I can get back by Tuesday morning'. They said 'Report to the Thames side entrance of the Air Ministry', which I had never heard of, and this set the scene for the peculiarities of the whole campaign. There was this remarkable entrance through a builder's yard, and you went three or four floors underground. I was told that I would be met there by somebody, who turned out to be Air Mshl Sir Edward Gordon Jones (then a group captain) who is here today. His opening words to me were, 'You're late!' I said, 'What's this all about, Tap?' and he said, 'You'll soon find out' and disappeared rather like the White Rabbit down this hole, and I had difficulty in following. Thinking of the White Rabbit, the whole Suez campaign was, for the planners, very much like *Alice in Wonderland* allied to *Tales of the Unexpected*.

Anyhow, we got to the first floor underground and I was ushered into what turned out to be a kind of conference room full of people and a very strong smell of *Gauloise* cigarettes, which I thought was odd. At the end was a man with a pointer, pointing at a map of Egypt, and his opening words which I locked onto were 'And so, gentlemen, it's settled then. It'll be a combined assault on Alexandria, with a break-out on the road to Cairo. We shall then swing east across the Delta and occupy the whole of the Canal.' I felt a slight feeling of

nausea! Had there been a bar down there (which there wasn't – another oversight in the planning) I would immediately have taken a double brandy. So that was the setting in which one started, and almost on which one finished.

So what was it all about from the planners' point of view? In the short time available I'll try to give you some sort of idea, but in case it is totally incoherent, may I recommend a book to be published in 1989 by Sir David Lee about the history of the Royal Air Force in the Mediterranean, in which there are three superb and very coherent chapters about what the Royal Air Force actually did. I think it is important to give you an idea of the organisation of the planning set-up down in this hole, although Tom Prickett will go into the Command organisation in greater detail later. Then I will outline the actual Air Plan itself in a little more detail and elaborate on some of the more important aspects of the Air side, and finally see if I can draw a few conclusions.

The speaker at the presentation that I mentioned was Lt-Gen Hughie Stockwell, the Land Task Force Commander. This was the main conference room and the bodies in there, all in plain clothes, were officers from the combined French and British Task Force Headquarters. The plan we were talking about was the first MUSKETEER, which, thank God, was actually changed. As far as the Air planning was concerned, this was conducted by Denis Barnett, through Tom Prickett as the Chief of Staff, and then down to Tap Jones as Group Captain (Ops), and myself as Group Captain (Plans). Nearly all the detailed planning for the main part of MUSKETEER REVISE was done down that hole in Whitehall. Very little was done later when we moved out to Cyprus in the latter part of October. What was done there was mainly fine tuning and amendment, which continued right up to the end.

The three of us shared an office; we worked very closely together. Tap's job was to develop the air operational planning, whereas mine was to represent the air side in the joint planning with the Army and Navy. Opposite me I had a British Army colonel and a Royal Navy commander. Each of us reported back separately to our respective Chiefs of Staff and Task Force Commander. Equally important, in each of the single-service staffs there were French officers and specialists, all completely integrated. This applied to the command

structure as a whole. For example, the Deputy Air Task Force Commander was a French General (General Brohon); I had a French opposite number to me (Colonel Maurice Perdrizet), who, incidentally, had hoped to be here today. Tap Jones had a number of operational cells in fairly orthodox style but, more importantly, each one of them had one or more French specialists attached. Equally there were, on the operational side, Fleet Air Arm and Army fire-support representatives.

Two things readily became apparent at this stage. Firstly, the co-operation and goodwill, not only between the British service staffs but also with their French counterparts, was outstanding. Secondly, a point applying particularly to the Air side, the calibre and efficiency of the *L'Armee de l'Air* representatives, and indeed their modern equipment, was of a very high order. It is true to say that all of us formed a very high opinion of our French counterparts and of the performance of their squadrons. In many respects they outshone the performance of some of the RAF squadrons. These factors turned out to form a very considerable asset (one of the few assets in the whole thing) and led in very large part to the operation being a great success militarily, which it undoubtedly was, in spite of the appalling political background and the many changes, expedients and safeguards that had to be incorporated at short notice. It so happens that Henry Probert, Head of the Air Historical Branch, had a tape made by Sir William Dickson in 1980 in which there is a short passage in which he describes what he thought of the military side of this operation. Perhaps Henry, you could just quote that?

**Probert.** Sir William, who considered that the essential aim was to topple Nasser, told me that MUSKETEER was, from the Chiefs of Staff point of view, a complete military success, with the bombing operations particularly successful in that they did neutralise the Egyptian Air Force.

**Smallwood.** I remember an incident at that time, towards the end of August, which summed up the close relationship which had developed and also the beginning of what the planners observed to be the dreaded word 'collusion'. I go back to Colonel Maurice Perdrizet who was sent for one morning by his boss, General Brohon. After a short time he returned looking

very pale. When I asked him what the problem was he said he had to leave immediately. 'Where to', I asked. 'I cannot say.' 'For how long?' He couldn't tell me. 'When will you return?' 'To this place, never.' We learnt later that Maurice had been posted to command an F-84 Wing which he was to deploy 'soonest' to Tel Aviv in Israel. When we had eventually moved out to Cyprus in October, I was rung up by the Wing Commander (Ops) at Akrotiri, one Johnny Button. He said that a French F-84 Wing had just landed to refuel and after a rapid turn-around they had taken off and disappeared off the radar to the east. What was he to do about it? All I could think of was 'Just keep your bloody mouth shut!'

Now to the plan itself. The detailed planning took place mostly in Whitehall and lasted about two-and-a-half months, before we moved out to Cyprus on 23 October, when I went out with Sir Denis Barnett. Just a little story about this, because the unexpected always happens. We were flying out in a VIP Comet and at roughly 45,000 feet over Crete the aeroplane went quite astonishingly silent. The first thing I noticed was a chief technician rushing down to the flight deck. Within two or three minutes the Captain appeared, dressed in his best blue, to report to Sir Denis. Sir Denis was reading a novel at the time, with a rather gory end to it; he was on the last chapter and was reluctant to be disturbed, but he said, 'What is it?' 'We have a slight problem with the engines, Sir.' 'What sort of problem?' 'Well, we've lost four!' 'Well tell me how you get on.' It turned out to be a problem with waxing of the fuel at very low temperature, so that when we got lower down we were able to re-start engines and landed at El Adem, not in Cyprus.

Now, let us look at MUSKETEER REVISE in a bit more detail. There were three phases:

Phase I. The neutralisation of the Egyptian Air Force (Counter Air).

Phase II. Air attacks against selected key points, allied to psychological warfare, designed to reduce the Egyptian will to attack, and to include interdiction targets.

Phase III. A joint assault on Port Said, followed by a build-up and



*A Canberra B6 of No 12 Sqn wearing a rather restrained interpretation of 'Suez stripes' – or perhaps they had been partially removed after the operation. (B A Forward).*

break-out down the length of the Canal to Suez itself, involving direct support of the Army.

Other plans were written to deal with contingencies which might arise if the operation did not take place, such as holding the forces at readiness throughout the winter.

Now let us have a look at the overall forces allocated. In addition to the considerable forces assigned to the operation, the US 6th Fleet was also in the vicinity and presented something of a hazard to the conduct of operations, but fortunately there were no incidents. There were some 540 Allied aircraft pitted against 216 (on 31 October) Egyptian aircraft comprising 110 MiG-15s, 14 Meteors, 44 Vampires and 48 Il-28s. The Egyptian aircraft were based on airfields around the Delta and at Luxor in the south; note that only a few Egyptian pilots were operational on MiGs, and Luxor was out of range of the FGA force (except for those in Israel which we were not supposed to know existed!) The Valiants and Canberras were mostly based in Malta, with the remaining forces in Cyprus at Akrotiri, Nicosia and Tymbou. The two carrier forces operated to the south and west of Cyprus, being careful to avoid the US 6th Fleet. The combined operations rooms were based initially in Episkopi but when the Task Force set sail for Port Said, the Joint Task Force Commanders, together with some of their staffs, were based in the HQ ship HMS *Tyne*, where a subsidiary Ops Centre was set up. These dispositions placed a heavy

## OPERATION MUSKETEER – ALLIED AIR FORCES

<u>FORCE</u>	<u>A/C TYPE</u>	<u>NO OF SQNS</u>	<u>NO OF A/C</u>	<u>OPERATOR</u>
BOMBER	VALIANT	3	24	RAF
	CANBERRA B 2	6	40	RAF
	CANBERRA B 6	4	32	RAF
	CANBERRA B 6 (Markers)	1	20	RAF
RECONNAISSANCE	CANBERRA PR 7	1	7	RAF
	METEOR FR 9	1	16	RAF
	RF-84F THUNDERFLASH	1	15	Fr AF
GROUND ATTACK	VENOM FB 4	3	48	RAF
	F-84F THUNDERSTREAK	2	36 <sup>1</sup>	Fr AF
	WYVERN S 4	1	9	RN
	F4U CORSAIR	2	36	Fr Navy
	SEA HAWK FB 3 & FGA 4/6	7	73	RN
GRD ATTACK/AWF	SEA VENOM FAW 21	3	25	RN
AEW	SKYRAIDER AEW 1	2 Flts	8	RN
MARITIME	SHACKLETON MR 2	2	16	RAF
	TBM AVENGER	1	10	Fr Navy
TRANSPORT	HASTINGS C 1/2		12	RAF
	VALETTA C 1/2		20	RAF
	NORATLAS		40	Fr AF
	HELICOPTERS <sup>2</sup>		12	RAF/RN
	HELICOPTERS <sup>3</sup>		11	RN/Fr Navy
AIR DEFENCE	HUNTER F 5	2	25	RAF
	METEOR NF 13	1	8	RAF
	HUNTER F 4		4	RAF
<b>TOTAL</b>			<b>548</b>	

1 Plus 6 from 31 Oct 56.

2 Sycamore HR 14s and Whirlwind HAR 2s of the Joint Experimental Helicopter Unit.

3 RN Whirlwind HAS 22s and Piasecki HUP-2s of the French Navy.

burden on communications, which sometimes proved to be inadequate, particularly between Cyprus and Malta.

Israeli forces invaded Egypt on 28/29 October. In relation to our plan we had arrived at D-3, without any knowledge that the Air Task Force was at anything but the ten day's notice which had been in force for the last six weeks. We had, therefore, been unable to start the photographic reconnaissance, originally destined for D-8 and this led to a flood of high priority demands from the start. Things went reasonably well, however, and PR sorties were flown on 29 and 30 October, and all bombers were bombed-up at six hour's readiness from 0700 hrs on 30 October.

Now for what actually transpired. The air offensive was ordered to commence from 1500 hrs on 31 October, the timing being related to the ultimatum issued to Israel and Egypt. The Israelis agreed but the Egyptians did not, and the game was on. The air offensive proper started with bombing attacks on all the principal Egyptian Air Force airfields. Illustrative of the way that politics continually interfered with the detailed conduct of operations was the planned raid on Cairo West. That morning, the Prime Minister was approached by the US Ambassador in London regarding US citizens being evacuated from Cairo to Alexandria by road. As their route passed very close to Cairo West airport, he hoped that nothing would happen to endanger their safety. This caused panic in Whitehall and a red-hot signal was sent to General Keightley in Cyprus instructing him to cancel the raid on Cairo West. The signal was not sent to the Air Task Force, which was controlling the operation, and by the time it got through the aircraft from Malta were well on their way and those from Cyprus were just airborne. The aircraft from Malta were recalled, while those from Cyprus were diverted to bomb Almaza. Subsequently, it was discovered that the Prime Minister's map was out of date, and that the main road to Alexandria had been reconstructed to move it some 10 miles or so from the airfield.

From first light on 1 November the air attacks on the airfields continued by shore- and carrier-based ground attack aircraft, meeting little opposition. The aim of demolishing the Egyptian Air Force was achieved in 36 hours (rather than 48 hours, as planned) by a composite force that had never operated together before and had come under the control of the Air Task Force Commander only two-and-a-half days

before the operation began. It has to be said that we had a great deal of luck, with the lack of experience of the Egyptian Air Force and Nasser's reluctance to commit his aircraft to battle, not to mention the good weather which prevailed throughout.

The second phase, attacks on Egyptian military targets, with the emphasis on interdiction, started shortly after first light on 2 November. This phase could not proceed as planned because the increasing world-wide political antipathy to the operation had led to instructions from London to attack only strictly military targets. The airfield attacks continued, mainly to ensure that nothing moved or had been missed and to keep up the psychological pressure. Attacks were also made on important military key points such as Almaza Barracks, Cairo Radio, Nfisha railway marshalling yards and Huckstep Barracks, all with considerable success. By D+3, world opinion was such that it was difficult to justify the full continuance of the air offensive until the assault forces were able to land on D+6 as planned. This was a fundamental weakness in the plan and one that had been continually stressed during the planning stage. To mitigate the situation, it was decided to bring forward the airborne assault to D+5, and so we moved into Phase 3, the assault on Port Said.

The airborne assault consisted of 668 British paratroops operating from Nicosia and dropped on El Gamil airfield, east of Port Said, and 492 French paratroops operating from Tymbou and dropped on the basin just south of Port Said. These drops were preceded by anti-*Flak* strikes from the carriers and Cyprus, together with Hunters providing fighter cover. Later there was a further drop of 522 French paratroops on the Port Fuad area. There was little or no opposition to any of these attacks and all of our aircraft returned safely. By D+6, the world political scene was such that instructions were issued from London for all bombing to cease, except for some ground attack sorties in support of the landings by sea at Port Fuad and Port Said. After the initial seaborne assault, a force of 330 men from 3 Commando Brigade was ferried by choppers from two carriers to advanced positions south of Port Said. Close support, in the form of attacks on Egyptian defences, went very well and contributed largely to the assault being made without a full-scale naval bombardment, as had originally been planned.

The occupation of Port Said was largely achieved during D+6 and



*The British parachute assault was delivered by Hastings and Valettas. This Valetta was actually on charge to No 240 OCU at the time, and is not thought to have participated in the operation directly, although it had obviously acquired ‘Suez-stripes’, perhaps as a seamanlike precaution while being used to ferry men or supplies out from the UK. (BA Forward)*

the advanced forces were already some fifteen miles down the canal, where they got as far as El Cap; they would certainly have broken out into the Great Bitter Lakes area next day. It was General Keightley’s plan to reach Ismailia by 8 November and Suez by the 11th. This would undoubtedly have been achieved, but world-wide political difficulties, including heavy pressure from the UN, had reached such a state towards the end of 6 November that a cease-fire was ordered for 2359 hrs on that day.

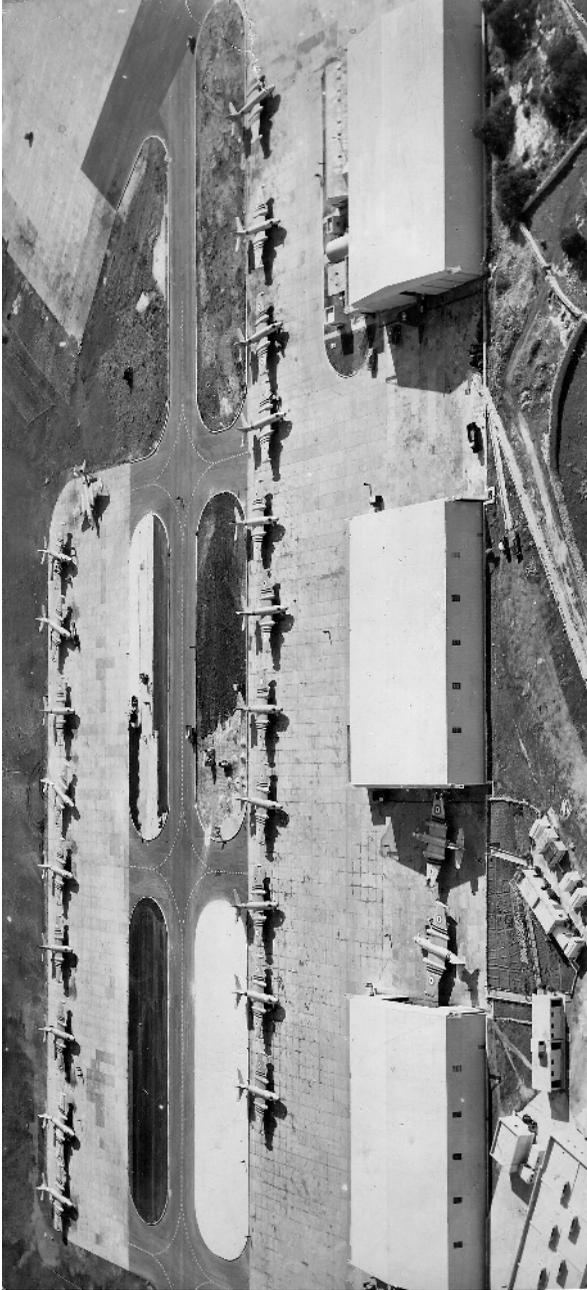
I must give you a little anecdote about the ‘surrender’ of Port Said. During the early part of D+6 it looked as though all opposition had ceased and that the Egyptian garrison commander wished to make a formal surrender at the Italian Consulate. Accordingly, the joint Task Force Commanders, in their best uniforms and accompanied by their planners, set off from HMS *Tyne* in a naval launch. We were just passing the statue of de Lesseps at the north end of the mole when the bridge of the launch was struck by a ricochet. We all flung ourselves to the deck and, looking through the canvas awnings, we could just see British tanks firing down the mole. I asked who was involved and was told ‘6RTR’ – a unit that had appeared regularly in the planning

talks, but which I had never believed existed! The increased Egyptian resistance stemmed from rumours circulating among the population to the effect that the Russians had already come out on their side and that rocket attacks had been made on London and Paris. Totally untrue, of course, but this, coupled with some reinforcement, and orders from Cairo to fight on, stiffened the Egyptian reaction, and quite a bloody battle took place in Port Said rather than an early surrender.

Another story of the situation at that time concerns our understanding that the Egyptian Air Force was so certain that we were going to break out through the Great Bitter Lakes southwards that one of the Station Commanders in the Canal Zone had laid on a cocktail party for the night of 8 June (*sic*), but unfortunately we never made it!

In attempting a few conclusions, I should first mention that General Keightley's final despatches included the statement that 'it is dangerous to draw military conclusions from start to finish'. Furthermore, there was little or no opposition from the Egyptian Air Force from start to finish: had we been up against an enemy, with even a modicum of fighting quality and with more modern aircraft and equipment, things could have turned out very differently. These factors would have applied in particular to the severe overcrowding of our airfields – 25 aircraft at Luqa, 47 at Hal Far and 20 at Ta Kali – 92 in all on Malta – plus 112 at Akrotiri, 127 at Nicosia and 46 at Tymbou – a total of 289 on Cyprus. Furthermore, the weather, which can sometimes turn very nasty in that part of the world in late October, was uniformly excellent. Visual identification of targets was relatively easy, which was just as well in view of the fact that the Canberras had only GEE-H and there was no GEE-H chain over Egypt, and the Valiants had only just been fitted with a new, and at that time unreliable, radar bombing/navigation system.

Although the bombing was accurate, the weight of bombs dropped was quite inadequate to make the airfields permanently unserviceable, and most of the destruction of the Egyptian Air Force was achieved by the ground attack force. Indeed, subsequent Operational Research has shown that even the total weight of bombs which could be carried by the entire Air Task Force would have been insufficient to neutralise one airfield. The percentages of Egyptian aircraft destroyed were estimated to be: MiGs 83%, Meteors 85%, Vampires 70%, Il-28s 96%. As the Il-28s were based out of range of our FGA force, at



*The vulnerability of overcrowded airfields was recognised but, in view of the assessed capability of the Egyptian Air Force, the risk was considered to be acceptable. The problem is illustrated by this picture of Canberra B6s lined up at Hal Far, Nos 9 and 101 Sqns in the foreground, No 12 Sqn to the rear.*

Luxor, the high percentage of destruction is interesting. We were in the Ops Room, considering how best to destroy the Il-28s at Luxor, when General Brohon looked in and offered his help. He disappeared, and returned a few hours later to say that it had been done, and produced French photographs to prove it! Our old friend, Maurice, from Tel Aviv perhaps?

The ordering of the cease-fire virtually concluded the air operations for MUSKETEER REVISE, as we had planned them. I should, however, mention that the setting-up of No 215 Wing at El Gamil, shortly after the paratroop assault, led to the re-opening of the airfield and the establishment of regular air transport schedules from Cyprus until the withdrawal just before Christmas.

**Keith Kyle – Chairman.** Thank you very much, Sir Denis. You said that when you arrived at the planners' headquarters, deep under the soil, you were greeted with a cry, 'You're late!' Well, it does seem that you were late, because by the time you'd arrived perfect co-operation between the British and French was going forward. A little time before that, it was not quite so easy, because when the French planners arrived there was tremendous panic about French security. Brigadier Dowling tells the story of how, for several days, the British officers had to pretend to their French colleagues that the first plan, with Port Said as the objective, was going forward, whereas they knew that a switch had already been made to Alexandria. General Stockwell said in his report that he disliked this operation; not only was it not very efficient, but also it wasn't very British.

## FIRST DISCUSSION PERIOD

**Air Chf Mshl Sir Michael Armitage.** I'd like to ask Air Chf Mshl Smallwood to expand on one point. You talked about the gross overcrowding on our airfields. How important did this seem to be at the time, and what steps were you able to take during planning for the contingency that the Egyptians might attack your airfields?

**Air Chf Mshl Sir Dennis Smallwood.** The intelligence, backed by PR, we received was so good, outstanding in fact, that we felt at the time that the risk of the over-crowded airfields being attacked was minimal and acceptable.

**Air Chf Mshl Sir Denis Barnett.** It always surprised me that the Russians who had come with the MiGs that they had supplied to Egypt could bear to see them being defeated without themselves volunteering to come and have a go at us.

**Air Chf Mshl Sir Thomas Prickett.** The air defence of the airfields in Cyprus I will try to cover briefly after lunch, but it was not the responsibility of the Air Task Force. It was the responsibility of AOC Levant. This is another illustration of the absolute balls-up that was going on in the command set-up. I'm quite sure that AOC Levant was not at all happy about it.

**R J Penny.** I was Sir Dermot Boyle's Private Secretary throughout the whole of the Suez operation. I have with me two distinguished civil servants who at that time were the Private Secretary to the Secretary of State, Nigel Birch, and the Private Secretary to Sir Maurice Dean. It was very late in the planning when their masters were told anything officially about the operation. We were in the position at the Air Ministry where operational matters were going on, squadrons were being moved, equipment was being ordered, expenditure was being incurred, and it was all on the basis that it was quite clear that this was what the Prime Minister wanted; it was all word of mouth. Looking back these days on 'Irangate' and Watergate, it's rather amusing to think where some of us would have stood if there'd been some enormous enquiry afterwards because the whole thing had gone wrong.

It hasn't been mentioned yet, but the Prime Minister, for very obvious reasons, regarded it as absolutely vital that he should be told

by our own reconnaissance aircraft that the Israelis had in fact moved across the frontier and were doing what they had, or had not, previously agreed. He obviously didn't want to look totally surprised about the Israelis doing something that hadn't in fact happened. So, there was a very elaborate organisation whereby the Task Force were to carry out a reconnaissance, and the result was to be sent back to the Air Ministry with a FLASH signal. As two speakers have said, communications then were nothing like communications now and in fact it was all very slow. Sir Dermot Boyle had said that the moment this FLASH signal arrived in the Air Ministry saying that the Israelis were on the move he was to be told so that he could 'phone the Prime Minister personally. Because things got slower and slower, approximately every quarter of an hour during an awful morning the Prime Minister telephoned Sir Dermot asking him why he hadn't told him what had happened on this reconnaissance. I will only add that being a Private Secretary I was able to listen to these conversations and I can only confirm what Sir William Dickson said – that it was rather surprising to hear a Prime Minister talking to one of the Chiefs of Staff the way he sometimes did.

**Sir Ewen Broadbent.** I was Nigel Birch's Private Secretary. He had become Secretary of State about seven months earlier. He was an acerbic man in some ways, but he was a clear thinker; he had a deep historical understanding, and he wanted to be an effective Chairman of the Air Council. He found that period from July onwards the most frustrating he'd ever experienced because he knew nothing and it didn't improve his temper at all. He sent for anybody he could to try to find things out. I recall, I think, Monday 28 October, when the Israelis took military action and that was the first time that he was summoned to a ministerial meeting. Obviously the three Service Ministers were then told what was happening. He came back from that looking very pensive and said, 'The Israelis have taken military action.' I think it's a comment on what you yourself said, that I said, 'Oh! Against Jordan?' He said, 'Don't be such a bloody fool.' So I disappeared outside; five minutes later the bell rang furiously and I went back in and he said, 'I'm sorry – forget what I just said to you.'

On the following Sunday Nigel Birch was, unusually, in London and he came into the Air Ministry during the morning. He told me to

dismiss all the staff and I got down to arranging 'phone calls. I remember getting calls to Monckton, Boyle, Nutting, etc. I mention this because, at that stage, Ministers were no longer interested in the military aspects of the business at all; they were interested in the political situation within the Cabinet, and the future of the Government.

**Air Chf Mshl Sir David Lee.** I'd like to raise a point which I think one of the many civil servants with us today can probably help to elucidate. In all the research I've done, and papers that I've studied, I find no reference to the Minister of Defence, which seems quite extraordinary when you see what went on later when Duncan Sandys, for example, was Minister of Defence. I think I'm right in saying that Sir Walter Monckton was Minister of Defence at the time but he nowhere appears to have taken any part in this episode. I wonder if anyone can elucidate on that to any degree?

**Sir Frank Cooper.** Let me try! This was one of the bizarre parts of it, because *de facto* the Minister in charge was Head who was at that time Secretary of State for War. Monckton's heart was never in it and he resigned in the middle of all this. I think sometime in September. He told the Prime Minister that he was going to resign and then it was put off, and then somewhat obscurely he stayed as a member of the Cabinet, as Paymaster-General, at the same time being a sort of consultant to those Ministers who were pretty well opposed to the whole thing. He was technically part of the ministerial team, but that team really did very little; it was a two-man operation between Eden and Selwyn Lloyd, assisted by Norman Brook and by Pat Dean in the FCO. Contrary to what Keith Kyle suggests, there wasn't a 'War Cabinet' at all; there was an Egypt Committee. But the whole process was carried forward, particularly as far as military planning was concerned, by this very small group of two Ministers, supported by two officials. Monckton just sat on the sidelines. The Ministry of Defence in those days was really not a very significant Department; it didn't really exist in any great detail, whereas the relationship between the Chiefs of Staff and the Prime Minister got back to something approaching what it had been during World War II. The Minister of Defence, himself, wasn't a particularly relevant person.

**Keith Kyle.** I find that very interesting, because on the 24 August, in the Egypt Committee, there took place (what was described by Lord Salisbury in a subsequent letter as) an outburst from Monckton, which was both painful and rather disturbing, in which he was stirred up, apparently by MacMillan's extreme cynicism when talking about how he could fit in the recall of the House of Commons *and* the debate which was going to take place in the Security Council, which was intended (by Eden) to demonstrate the impotence of the Security Council. MacMillan was talking about sliding a couple of day's Parliamentary debate, and a couple of day's Security Council debate, into the timetable of a military operation. Apparently Monckton wrote out his objection and gave it to members of the Egypt Committee and subsequently wrote letters to Eden about the scene that had then taken place. One of them, Lord Home, wrote, 'I see a definite wavering in the attitude of some of my colleagues towards the use of force. The anxieties of some, Rab (Butler) for instance, might be removed if we didn't have to go on thinking in terms of button-pushing and dates, and had plenty of time for diplomatic manoeuvre.' This is the first sign, really, of ministerial second thoughts on the subject. It does seem to be extraordinary, even though, as you said, Frank, the Ministry of Defence did not have all that much influence, that Eden kept Monckton on as Minister of Defence. Nevertheless, despite having discovered, from his outburst of 24 August, the extent to which he was out of sympathy with what was going on, he kept him, very unwillingly towards the end, in that central position until 18 October.

**Air Chf Mshl Sir Lewis Hodges.** I was the Station Commander at Marham in the early spring of 1956 when the Valiant force was starting to build up, and the first inkling that something was developing was when we started a big programme using our remaining Canberras to fly 1,000 lb bombs from the UK to Malta. It seemed a rather extraordinary thing to be doing, but this was the task we were given, and a large number of the Canberra squadrons in the Command were used for that purpose in the months of August and September, 1956.

When we came to be deployed to Malta, in October 1956, we had a fairly considerable force. We had four squadrons of Valiants in Malta, and one must remember that the airfield at Luqa was the garrison

airfield for two Shackleton squadrons, and in addition was the main civil airport, so there was a considerable amount of routine traffic. We had a single main runway, just over 2,000 yards, so the airfield was extremely congested for the operations envisaged. Much has been made of the confusion as to the objectives and we certainly didn't know up until 24 hours before operations commenced whether we were going to bomb the Egyptians or the Israelis. It was only at the eleventh hour that the plans were unveiled and we discovered that we were going to bomb the Egyptians.

Mention has been made of the urgent recall, due to the fact that the American civilians were moving out of Cairo, and I well remember this occasion – the first night of the operations, when the first wave of Valiants had taken off to attack Cairo West airfield. One of the speakers said that instructions were sent from London to General Keightley that this operation was not to take place because of the risk of American casualties. Well, we never received any instructions at all through the normal command chain from Cyprus, but I received a personal signal direct from the Chief of the Air Staff, Sir Dermot Boyle, saying that on no account was Cairo West airfield to be bombed that night. The first wave of Valiants was on its way to Cairo; this created enormous problems, because, of course, there were four or five subsequent waves due to take off immediately afterwards. I initiated an immediate recall of the first wave on W/T, but, in addition, the routing of the aircraft was very near to El Adem and we were in communication with El Adem to give a verbal instruction by R/T in plain language to recall these aircraft to Luqa. This was successful and the aircraft were recalled, but we had a situation where eight Valiants were returning to Luqa with full bomb loads and further waves were taking off to go to Cairo. We had to have the bombs jettisoned, and you can imagine the problems of landing these aircraft, with the others taking off, on a single runway. It was a very difficult operation but Air Traffic Control at Luqa, which was RAF, but working with the Malta Civil Aviation Authority, did a marvellous job.

Mention was also made of the worries we had about opposition from the Egyptian Air Force. We certainly never contemplated any threat to the airfield but we did consider the question of night fighters and from my recollection there was only one sighting of an Egyptian Meteor throughout the whole of the campaign; we saw no other sign



*One of the Valiants of No 207 Sqn which took part in the operation.  
(MAP)*

of any activity. We carried out our part of the plan, the neutralisation of the Egyptian Air Force, and then there was this horrible gap of days before the seaborne invasion was able to be launched and this seemed to us to be a desperate problem because it enabled world opinion to build up against the whole operation. If it had only been possible to have launched the follow-up more quickly it would have been quite different.

**Air Chf Mshl Sir Kenneth Cross.** I was AOC 3 Group, which provided the Valiants, and Bob Hodges was our man in charge. Quite by chance I happened to be at Luqa on the night the operation started. We were standing on the balcony of the control tower watching the second wave of Canberras go off, when Bob got the signal direct from CAS about Cairo West. I don't think I have ever seen anybody go down the stairs quicker; he went at about four at a time to get the signal going, and we thought, knowing the unreliability of W/T communications, that it was quite remarkable that we managed to get them all back.

**Air Mshl Sir Patrick Dunn.** I have often wondered whether sufficient weight was given to the possibility that the Russian pilots would operate the Russian aeroplanes, when both were there in considerable numbers. Had a small force of Russians decided to beat up the airfields in Cyprus, or our airborne assault, I think that there would have been a considerable tragedy, which would have needed

some explaining. I've never heard this possible threat talked about. I wonder if we considered it and whether we dismissed it?

**Air Chf Mshl Sir Thomas Prickett.** I think we did consider this, but with the pressure that was put on, one had to take certain risks. As it never materialised, I think the risk was justified, but there was one occasion, after we had got an airfield going at Gamil, where the airfield was beaten up by one lone MiG. That could well have been a Russian pilot and we were lucky, that's all.

**Keith Kyle.** The possibility was referred to in the documents. For example, on 10 September: 'To CAS from ACAS(Pol). Consider use of Suez airfields by Egyptian aircraft totally unacceptable.'

As the CAS had said, 'the risk of only one attack was unacceptable, especially now there is an even greater concentration of aircraft in Cyprus. The essential point is that once one attack, which might indeed be flown by volunteer pilots, had been mounted, the damage would have been done.' And so he was insisting on that very close photo reconnaissance of the Syrian airfields and the greatest amount of pressure had been placed on Damascus. The matter had certainly been considered.

**Air Chf Mshl Sir Harry Broadhurst.** My comments will be somewhat irreverent, I think. I was sent for by the Secretary of State who asked whether I knew about the plan. I said it wasn't a Commander-in-Chief's job to know plans; that I merely supplied the bombers. He then said, 'But they'll all be shot down, won't they?' and I said, 'What by?'; and he said 'Well, the Russians are there, you know; they've got instructors.' I said, 'Yes, but they haven't got any night fighters, and we're not going by day, but by night.' He then said, 'Well, they've got very good radar.' And I said, 'I know. It was installed by Marconi, and I have had a personal briefing which said that there are no technicians left and there are no spares. I doubt if the radar will be working.' He then said, 'Do you know the plan?' I said, 'No.' So he took me across to the blackboard and showed me the plan and I started to laugh. He said, 'What are you laughing at?' 'The plan,' I said! He said, 'What's the matter with it?' I said, 'It's a typical Army plan! I reckon you can wipe that lot out with an airborne set-up and good tactical air force support.' He then threatened to put me

under arrest! I couldn't believe it; I thought, 'Well, he hasn't got a witness.' But as I turned to walk out, in a fairly indignant manner, I found the Under-Secretary of State, Soames, had come into the room without my knowing. Anyway, I brushed out of the room and went along to see the CAS and said, 'What the hell's going on in this place? He's threatened to put me under arrest.' He said, 'Not to worry. It happens to me before breakfast every morning!' I was rather confused when I got back to my Headquarters, and when the operation started I asked 'Bing' Cross to go out to Malta to make sure that there weren't any lunatics out there as well!

The whole feeling that I got out of it, since confirmed, was that the political side was in complete disarray. To go back a bit, when the Secretary of State took over his job he came to visit Bomber Command, in about May or June, and the only thing he really wanted to talk about was the fact that dropping iron bombs on the ranges on the East Coast was making the air force very unpopular, driving the geese and swans and ducks away. I said, 'Well, we were there long before the geese and swans and ducks; we've been bombing those ranges for years.' He said, 'Why do you want to drop iron bombs, anyway?' I said, 'Well, it's in your brief to me, Sir, that my force should be efficient in dropping iron bombs.' So he started to get a bit sniffy about it, and the next time I met him, we were setting off to drop iron bombs which, as Air Marshal Cross indicated, we hadn't got anyway, because Malta wasn't stocked up with them. If you read Max Hastings' book on the Falklands and look at the political direction there, if we had had Maggie Thatcher in charge of this expedition we'd have gone through the Suez Canal like a dose of salts!

**Air Mshl Sir Frederick Sowrey.** We are now going to hear from those who commanded the operation – those who commanded units in the operation. In the discussion we are particularly looking to hear from those who took part in the operation, whether aircrew, groundcrew or in any support capacity whatever.

## COMMAND OF THE OPERATION

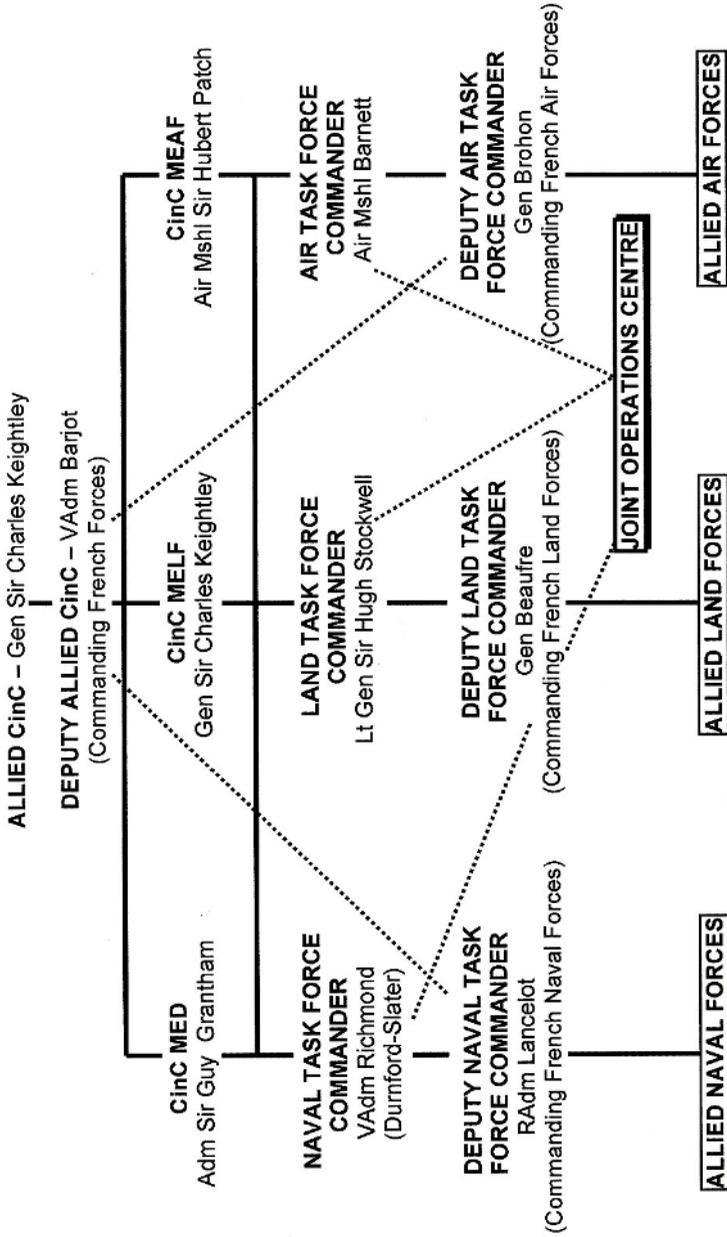
### **Air Chief Marshal Sir Thomas Prickett (Chief of Staff, Air Task Force)**

I was really asked to talk about the command set-up, but I feel slightly hesitant about that because we have the Commander of the Air Task Force sitting right down there and he told me what to do and what not to do during Suez, and I'm sure that if I say things he doesn't agree with he will get up and say so. We've also got Air Chief Marshal Huddlestone sitting down there, who was General Keightley's Chief of Staff, and was also breathing down my neck during the operation.

Before we get into it properly, I have a chart which shows you the command set-up. 'Splinters' (ie Air Chf Mshl Smallwood) has talked about *Alice-in-Wonderland*; well, this continues into the command set-up. Maybe I can give you a few of my own views as to how this evolved. You will remember that this was before the time when there was a unified command set-up overseas, and there was a CinC Land Forces Middle East, and a CinC Air Forces who happened to be Air Marshal Patch. So, when General Keightley was appointed Commander-in-Chief this upset Air Marshal Patch – who felt he was being entirely short-circuited – because, although the chart shows a direct line from CinC to Air Marshal Barnett, it didn't in fact exist. It was a dotted line with more spaces than dots.

It was decided to set up the Task Force Base in Whitehall, which had advantages for the politicians in that they could control the 'troglydites' referred to by Sir Frank Cooper, and also there was the Anglo-French aspect of the thing which could have made things embarrassing if it had all been set up in Cyprus. Unfortunately, it had many disadvantages, not least from the personality point of view. Here was the Task Force down in London preparing plans and it wasn't until quite late-on that the wretched people in the Middle East were brought in. There was AOC Levant, who was responsible for the air defence of the island, and AOC Malta, who was responsible for the maritime side. The whole thing was designed so that it wouldn't work, although it did in fact work. It worked because the personalities involved decided that it had to.

If you go back to the Joint Task Force, it's worth thinking about



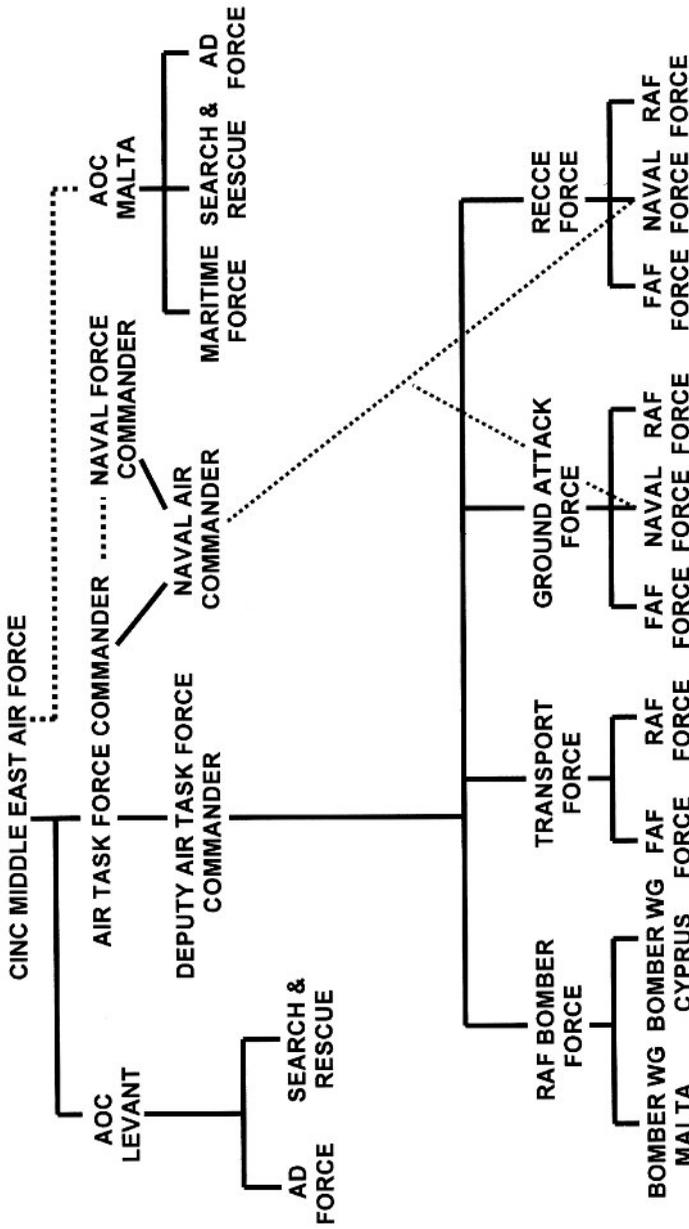
**OPERATION MUSKETEER – ALLIED COMMAND STRUCTURE**

how the Navy formed their Task Force, which came from Flag Officer Mediterranean, with all his own staff. General Stockwell came from Germany with the whole of his staff, who had all been working together for a year or more. They had ready-made staff, but the air force had to be individual and, after Air Marshal Barnett had been appointed, they decided to strip some of the students from the IDC and we started off with Air Marshal Barnett, Sam Elworthy, Group Captain (Ops) and Group Captain (Plans). ‘Splinters’ talked about his arrival in the basement; I got a fairly similar telegram, and when I went down there I saw poor old Sam Elworthy sitting as white as a sheet, surrounded by milk bottles and those things you take for indigestion, looking ghastly ill. He was taken off to hospital and operated on, and I took his job and ‘Splinters’ came along and took mine.

The Air Ministry was extremely helpful to the Task Force; Air Marshal Barnett and the rest of us had never been in this position before. They said, ‘Who you want? What you want, you will have.’ So we were able to pick the rest of the staff. We’ve got one here, Kit North-Lewis, who we picked off when he was on his way to Spain, and I doubt if he’s ever forgiven us for bringing him in. That’s how the Air Task Force was formed and we had integrated with the French all the way down, with first class people from the French Air Force. General Brohon couldn’t have been more helpful, and couldn’t have been more forthcoming within the constraints placed upon him. So you can see what a cumbersome set-up it was, and how, after the Task Force had started its raid against Cairo West, everyone from the Prime Minister down was ringing up Malta to cancel it; it’s amazing that there wasn’t a bigger shambles than there was.

Now the next thing to look at is how the Air Commander organised the control of the operation. The poor Task Force Commander actually didn’t *command* anything. He had operational *control* from 29 October, but the only thing he did control in the end was the RAF airfield at Gamil for a very short while. To control this force there was an Air Operations Centre which was set up at Episkopi and organised in the usual way with the three Services integrated.

During Phase I, the air operations were controlled from the Air Operations Centre at Episkopi. Phase II was also controlled from there, but in Phase III, the joint assault, the Force Commanders moved



**OPERATION MUSKETEER – CHAIN OF COMMAND – ALLIED AIR FORCES**



*HMS Tyne.*

onto the Headquarters ship, *Tyne*, together with a small staff, and the AOC then issued their tasks for the following day to the Air Operations Centre at Episkopi, which controlled the RAF, and to the Carrier Task Force Commander at the same time.

The Task Force Commanders held a conference at about three o'clock in the afternoon when they decided what they wanted programmed by the air forces next day. By the time the staffs got out of that, it was getting on and those signals didn't go out until quite late in the evening, which left very little time for the Squadron Commanders to do their jobs. So you can see, really, when all those conflicting instructions come from the Prime Minister, the Air Ministry and everywhere else, about Cairo West, how they got garbled when they got to the wretched chap sitting in the cockpit.

After the Army got ashore, the Task Force Commanders then set up their Headquarters ashore at Port Said. I must mention how the Force Commanders actually were notified, or *weren't* notified, of the cease-fire. They were sitting either on *Tyne* or ashore and heard it on the BBC before any signal came from General Keightley's Headquarters. That typifies the sort of difficulties that the Commanders were up against. When it came to the withdrawal, and the imposition of the United Nations Force, I can't help but quote what General Stockwell is alleged to have said to his staff, 'At last, gentlemen, it seems that we have achieved what I had always believed to be impossible – an operation going in two directions at the same

time.’ That was followed by the United Nations Force coming into Port Said and I can’t tell you the sort of shambles they were when they arrived – they were polyglot; they had no equipment, no logistics, nothing at all – and so the United Nations Force, as usual, was supplied militarily and logistically by the existing force.

I think our Chairman was talking about who knew what, and Sir Denis Smallwood indicated this morning that we in the Task Force didn’t *know* anything but had a *feeling* that something was about to take place. So that enabled some of us to arrive in Cyprus on the 21st and the Air Commander arrived on the 23rd. After Air Marshal Barnett had left Cyprus I received a signal from Air Marshal Hudleston to remove Page 3 from Barnett’s official report. When I told him that a number had already gone out, he said, ‘Get them back.’ Well I got all but one back, but General Brohon had taken his to Paris with him, so I was told to go to Paris after Christmas and collect that page, by which time, if he’d wanted to, General Brohon could have taken photocopies of it. The only reason I can think of, and I’m speaking entirely for myself (and ‘Splinters’ and ‘Tap’ will agree) was that it included a sentence indicating that the signal to implement MUSKETEER had been sent *before* the expiry of the ultimatum. To my mind it was quite clear that whatever the answer was from the Israelis and Egyptians, the British Government was determined to go ahead.

The only other point I would like to make is that militarily the operation achieved exactly what the plans said it would; you can criticise the plan but it was dictated by political limitations. The big mistake was to try to use a plan to seize the canal in order to separate two conflicting forces. How in the world anybody could ever believe that was a mystery to all of us in the Task Force; Army, Navy and Air Force. Before the operation started, before Air Marshal Barnett was in operational control of the forces, we were asked to fly a reconnaissance, which in view of what we’ve heard today was obviously to see what the Israelis were up to. I wasn’t terribly keen on this and asked Air Marshal Hudleston if he would put it in writing. Rather like Air Marshal Broadhurst, he then threatened to put me under arrest! So we did what he asked us to do and whether that gave the right answer to the Prime Minister I’m not really sure.

## A SQUADRON COMMANDER'S VIEWPOINT

**Air Vice-Marshal Paul Mallorie  
(OC 139 Sqn at the time)**

This is, essentially, a personal, narrow view of events, from one who was at the time at the bottom of the ant-heap. I was blissfully unaware of what most of you have heard so far. In that I was apparently at one with my commanders, but I can claim a significantly greater depth of ignorance!

Events leading up to the Suez affair for No 139 Sqn began in October 1955, some ten-and-a-half months before the event. In that month, the Canberra B6 was cleared for the first time to drop 4.5" parachute flares. The aircraft was already cleared to drop 250 lb target indicators, and the role of the squadron at Suez was to be target marking – providing the aiming point for main force Canberra and Valiant crews and, in the event, indicating the dropping zone for parachute forces near Port Said.

In December 1955, the squadron was a main force Canberra unit. In the face of the current threat at that time we were trained for high-level bombing using GEE-H as a navigating and aiming system. Unlike the rest of the Canberra force, except for No 109 Sqn, we had no visual bombing capability; the bomb-aimer's position had been taken out and replaced by a sideways-looking radar called BLUE SHADOW, which gave the navigator a print-out of radar returns at 90° to the right of the aircraft up to a distance, I think, of about 60 miles, depending on the height. We had no operational directives on the use of this equipment, but presumed that all would be revealed when necessary, and we used the equipment partly because we had ground crew who were trained to service it and partly because it was quite fun to use.

No 139 Sqn had inherited, from its wartime Mosquito forebears, a low-level, shallow-dive target-marking role. That had regressed over the years since the war to occasional visits to the range at Wainfleet by day, and occasionally by night. At night it was well lit and we dropped details of practice bombs from the theoretical 30° dive. In practice we found that the steeper you went, the better the results and we had no bombsights and were just fortunate there were no casualties. The navigation problem was one of distinguishing between the lights of



*WT369, one of the Canberra B6s of No 139 Sqn which flew on Op MUSKETEER; note the prominent BLUE SHADOW aerial. (MAP)*

the range, and those of *The Prussian Queen*, which was a nearby pub which had unwisely invested in a set of floodlights!

In the first months of 1956, the main task for the squadron was to improve its GEE-H results and to qualify crews at increasing altitude. In March, 1956, a detachment was flown to Libya to devise a low-level target-illumination and marking technique. On our own initiative we tried out low-level BLUE SHADOW navigation as a means of reaching targets and, as I recall, we had no operational or intelligence staff guidance and were left entirely to our own devices. Fortunately, we had a supernumerary squadron leader, Terry Kearns, who had wartime marking experience. But years had passed since the end of the war, and I don't think it was realised how operationally naïve we were. For the short trial we had, we were more concerned with the technical problems of lighting a target in sufficient time to lay down markers, than with problems of our own vulnerability. Our trials were curtailed (they unfortunately interrupted the Easter weekend) but we did develop a procedure for a technique involving two illuminating and two marking aircraft, and that technique was modified in August when mixed loads of flares and target indicators were approved and four aircraft in the marking team then each carried eight flares and two target indicators.

Navigation was a problem, and it was decided by higher authority to add a third crew member to assist with low-level navigation – essentially map-reading – and to improve our flexibility the bomb-

sight was reinstalled and some training was done in visual bombing at medium altitude. The third crew member had to sit on the jump seat alongside the pilot, wearing one of those harnesses and, somewhere down in the rubbish, there was a parachute that he was supposed to clip on. In the meantime, life on the squadron continued. In April we took part in a massed fly-past for the benefit of Messrs Bulganin and Khrushchev, and in July a similar exercise on the occasion of Her Majesty the Queen's visit to the Royal Air Force at Marham. In August, there was a full-scale exercise when we acted as markers for the main force, hence the complaints that we were disturbing the ducks. We were assisted by a single marker, dropped from high altitude by a Valiant using its 'highly sophisticated equipment', but found that the lack of this equipment made this more of a distraction than an assistance.

About this time, we provided training for No 18 Sqn, which was then under Squadron Leader Alan Chamberlain, which converted to the marker role for the Suez operation. In October, as the political tension was building up, half of the squadron and all of its ground crew were in Malta on exercises which included taking-off with full bomb loads and fuel, as training as a main force squadron. At the end of this detachment we were on our way home when we were ordered to Cyprus. At Cyprus, we were finally brought up to full strength with twelve-aircraft and fourteen three-man crews, compared to the nine aircraft and a dozen two-man crews that we had been a year before. In Cyprus, during the twelve days before operations began, the last aircrew members joined the squadron and the ground crew was brought up from our normal sixty to 145. So we had a 75% increase in aircrew and 140% increase in groundcrew. We then had aircrews who had been drafted in from five squadrons and a supporting groundcrew hurriedly assembled from four different stations. As Squadron Commander, I was concerned about the lack of training for the newly-formed aircrews and the unknown capability of many of the groundcrew.

On 29 or 30 October we received our first intelligence briefing. I would like to emphasise that we had no briefing or consideration of defences when we were developing the marking technique which was about to be put to the test. Intelligence material, certainly at our level, was surprisingly sparse; we had very dim, rather foggy, pictures of

airfields. The initial operations were planned, and then delayed one day. The following night, as the lead aircraft (and for that particular target it was Flight Lieutenant John Slater) was about to leave dispersal when there was a hammering on his aircraft door, which was opened and he was informed that his target had been changed, as you've already heard. He was told then to attack Almaza, rather than Cairo West. It was just fortunate that Almaza was marked on his map, as the main force was already en route from Malta to Cyprus. Curiously, the markers would take off from Cyprus after the main force had gone, partly because we were flying low level and we didn't have to climb up and form up; hence the motto, 'I must hurry and catch up with them, for I am their leader!' On that occasion, the revised target was attacked successfully and, fortunately, air-to-air communications worked well – and there was no opposition.

The squadron operated between 31 October and 5 November. A number of airfields were marked for night attack, and on one occasion, the second attack on Luxor, at last light. On that occasion the marker aircraft carried a mixed load of target indicators and 1,000 lb bombs which were proximity fused. I'm sure that Boscombe knew nothing about that. Having dive-bombed with TIs in the last light, we were supposed then to see the raid through and add our contribution of straight and level attacks with the thousand pounders. By that time, the gyros were completely toppled, the navigators confused and the bomb sights useless. So we made dive-bombing attacks on the parked 'Beagle' aircraft (ie Il-28s) which were there, with high-explosives.

There had been some over-provision of marker capability so the squadron provided crews and aircraft from time to time to augment the main force. The last squadron operation was marking the Suez dropping zone near Port Said on 5 November. Thereafter we flew on local training at low intensity until we returned to base on 23 December, just in time for Christmas. During this period one aircraft, which had collected a bullet hole during the operation, was to be flown home by a ferry crew. Shortly after taking off it returned to Nicosia on one engine and crashed on landing; regrettably there were no survivors.

By way of comment. The experience that I relate, of No 139 Sqn, was far from typical. Most squadrons maintained their personnel and performed, more or less, in the role for which they had been trained,

apart from No 18 Sqn which retained its personnel but learnt the new technique of marking in a fairly short time. At the time I was, and in retrospect I remain, astonished at the rather casual way we were left to develop the marking system which was suitable for Canberra aircraft but without any high-level guidance which I can recall, apart from clearance to drop armaments. I remain surprised at the way in which the squadron was able to absorb, without serious difficulty, new crew members and groundcrew to within a few days of flying operational sorties. Indeed the development of the technique and the re-organisation of the squadron appeared to me then as slightly haphazard. Yet there must have been sound long-range contingency planning to clear the aircraft to drop flares in the first place ten-and-a-half months *before* Suez, and to ship the flares and markers needed for the trial experiments in North Africa nine months before the event.

A note on morale. Morale rose with the pace of work and the opportunity which came to exercise initiative. It then fell with the uncertainty and apparent pointlessness of the long delay between the end of operations and the return home. To a few, certainly, and perhaps to many more within the squadron, the Suez affair appeared at the time as being politically questionable, but this was not generally discussed, not often mentioned in the normal way, as we had the deeply ingrained tradition that we were part of an apolitical Service. It was assumed that there were intelligent and national considerations of which we were not aware. The sight of the Soviet military aircraft and the other equipment which was to be seen in Egypt once the operation began seemed to confirm that view. That, then, was the Suez operation from this Squadron Commander's point of view.

## SECOND DISCUSSION PERIOD

**Paul Lamboit.** I had nothing whatsoever to do with the Suez campaign and I've been fascinated to hear all about this extraordinary venture, and none of what I've heard surprises me a bit. I have two questions for Sir Denis Smallwood and for Air Vice-Marshal Mallorie. I was concerned with intelligence, through photographic interpretation through WW II, and I would greatly like to know how the intelligence between the French and British was co-ordinated. It so happens I am half French myself and I know how difficult the French can be when it comes to discussing anything of major content. In addition to that, I presume that the photographic reconnaissance was carried out by Canberras from Wyton; we unfortunately didn't have Spitfires and Mosquitos at that time. I would like to know where the photographic processing was carried out and whether the results were submitted also to the French.

**Keith Kyle.** As far as I know, the French photographic reconnaissance worked much more efficiently than ours.

**Air Chf Mshl Sir Denis Smallwood.** There were two levels of intelligence; firstly that which was co-ordinated at the Whitehall level in the Joint Intelligence Committee and exactly what they did with the French in the early days I do not know. At the detailed planning level we had been led to believe, rightly, that the risks of the Egyptians attacking us, despite our having so many aeroplanes concentrated on a small number of airfields, were calculated as acceptable; local intelligence also told us that the operation against Port Said was unlikely to be heavily contested. The photographic interpretation was done predominantly at Episkopi to begin with, and a great deal of PR came in starting from the delayed start on 31 October. The PR was quite excellent and it did give us a great deal of up-to-date information.

**Air Chf Mshl Sir David Lee.** There was an RAF problem with processing and interpretation, in that No 13 Sqn, which was MEAF's Canberra PR unit, did not have its processing and interpretation equipment with it. Its photographs had to go to Episkopi, after landing some distance away, to be processed and then brought back again, whereas the French RF-84s were complete with their processing

equipment. They could produce results immediately, whereas the RAF might take three or four hours. The Canberras were often given quite large areas to photograph, and they carried as many as seven different cameras, whereas the French RF-84s carried only three cameras. That again meant that their results were available rather more rapidly than the RAF ones.

**Air Chf Mshl Sir Thomas Prickett.** The questioner asked what was the co-operation like between the French and the British. It was excellent. The French did not withhold any information whatsoever.

**Keith Kyle.** To return to the JIC aspect, at the beginning, in early August, the British were extremely anxious at France's notoriously poor security, and, initially, we were not prepared to reveal to the French the nature of our planning until they had conformed to our system of security. Guy Mollet, the French Prime Minister, agreed to this and Patrick Dean was sent over to Paris, as the Prime Minister's personal representative, to brief the French on methods of security which were to prevail during the joint operation. His aim was that only two French politicians should be aware of what was going on, the Prime Minister and the Minister of Defence. Guy Mollet succeeded in persuading him that he should also admit one more, Christian Pinot, in his personal capacity, but not his department. Then a system of security was established, especially the conveyance of military plans from London to Paris, which apparently worked with great success.

The only other thing was that, while co-operation was evidently very satisfactory – everyone has spoken well of it – except, of course, during the actual operation, when the French had their own arrangements with the Israelis. In a sense, they were fighting a different sort of war, in that they were operating as the open ally of the Israelis, and this was not at all to the taste of the British. In fact Eden sent a very stern telegram to Mollet on 1 November.

**AVM Mallorie.** I did say that, from the squadron point of view, the intelligence was very sparse. What I meant by that was that when we came to study our targets what we had to look at were old pages torn out of pilots' handbooks from the time when the British were there. We did not see, in the whole of the operation, a single current photograph of the airfields and defences that we were going against,

although we did see photographs of our raid results afterwards.

**Keith Kyle.** I think we should point out that not everything went exactly to plan. Cairo Radio, for example, although it was attacked and went off the air for a period, was not damaged at all.

**AVM Mallorie.** I can shed some light on that. From a Squadron Commander's point of view the raid on Cairo Radio was indeed a fiasco. This was largely because we were briefed to attack at low level and high speed – something we were not trained for – and at speed the target was simply not visible in the bombsight. So far as the Il-28s at Luxor are concerned, I think there is a parallel here with the Argentineans in the Falklands, where they kept the main part of their air assets well back on the mainland after the Vulcan raids.

**AVM George Black.** I was an RAF exchange officer and flew twenty-four sorties with No 802 Sqn, FAA. As far as operations are concerned, the co-ordination between the RAF strike departing from Almaza and the Royal Navy Sea Hawk strike arriving could not have been better. Our intelligence, however, was not good. We had been led to expect lines of aircraft and full hangars, but there were no neat lines and the hangar doors were wide open with no aircraft visible inside. The accuracy of the bombing was not good – there was only one crater at the end of the runway, the rest having missed.

On the Cairo West incident, I was sent to Cairo West on the second sortie of the day, and I saw PanAm DC-4s where I had expected to see Egyptian Air Force aircraft. I therefore flew to the secondary, which was Almaza. As far as Cairo Radio was concerned, the target was very heavily defended by *Flak*, but fortunately it was very inaccurate – as was the bombing – and there was a greater danger of collision. We did, on one occasion, see an Egyptian Meteor, but he made no attempt to attack us.

One or two other points to mention. Anglo-French co-operation was excellent, and we were always well briefed on the position of the French carrier. The US 6th Fleet, on the other hand, was a menace. It was not uncommon for aircraft to be scrambled to intercept US aircraft coming to look at what was going on. This hampered operations because the carriers had to keep turning into wind to launch the intercepting aircraft, often at the most inconvenient time.

**Air Cdre Kit North-Lewis (Air Task Force HQ).** My understanding was that the high-level bombing was totally ineffective and that all the damage was done by low-level ground attack aircraft.

**Air Chf Mshl Sir Harry Broadhurst.** We didn't get it *all* wrong – for example the Canberras blew off the wall of Cairo Prison and released most of the inmates, who may well have caused the authorities in Egypt a few problems. We also got the opportunity to demonstrate the effectiveness of the new bombing radar in the Valiant. A very alert operator on a night flight along the Mediterranean took a photograph of something unusual on his radar 'scope, and it so happened that he had photographed the 6th Fleet. I sent a copy of this photo to my opposite number at SAC and he took great delight in showing it to the US Navy, who refused to believe it. So, at the end of the operation we left a few Valiants in Malta and they took up British and US naval personnel to show them what could be seen at sea by radar at night.

**Philip Saxon.** Were the Ilyushin Il-28s moved to Syria, and if so did they pose a threat?

**Air Chf Mshl Sir David Lee.** Our intelligence was that there were forty-eight Il-28s, and that they had moved to Luxor. When the RAF, and the French F-84s from Israel, attacked them there appeared to be only twenty-four aircraft. The inference was, therefore, that some had been sent elsewhere, probably to Syria.

**Air Chf Mshl Sir Thomas Prickett.** If that was so, the intelligence was never passed to the Task Force.

**General Lucien Robineau (Head of the French Air Force Historical Service).** From the air point of view it was a successful campaign, but one where great risks were taken, for example in the deployment of so many aircraft on so few airfields in the face of a well-armed enemy. It would also perhaps have been better to concentrate the high-altitude attacks with conventional bombs on one airfield – possibly Luxor where so much of the Egyptian Air Force was concentrated.

With reference to Israel, there were thirty-six Mystères and F-84s deployed on Israeli airfields. At Sèvres, the Israelis had agreed to attack twenty-four hours ahead of the Anglo-French forces, but they

were fearful of the Egyptian Air Force and demanded some form of air cover as part of the bargain. This was the reason behind the deployment of these aircraft, with the Mystères flying air cover from 29 October, and the F-84s from the 30th. They flew these missions until 1 November, when they were switched to providing close air support in Sinai. On 4 November, it was F-84s from Israel, equipped with cannon and drop tanks which attacked Luxor. There was one strike of eight aircraft and one of twelve, and French intelligence indicated that eighteen Il-28s were present and that all were destroyed.

So far as reconnaissance RF-84s were concerned, they were deployed with the necessary back-up, and the first report was usually telephoned through one-and-a-half hours after the aircraft had landed.

**Denis Richards.** I had the rare opportunity of spending a day with Eden, and although I did not press him on collusion, I did ask why he had started the affair. His reply was, 'To nip another dictator in the bud.' I then asked him why he had stopped; was it because of Russian rocket-rattling? He said that it was not; that the reason was the hostility of the USA. He believed that he had cleared the operation through the US Ambassador on a nod and a wink.

**David Taylor.** On the point of groundcrew morale. I was a sergeant with No 101 Sqn and our morale was high throughout the operation. The only problem was the unco-operative attitude of the permanent staff at RAF Luqa.

**MRAF Sir Michael Beetham.** If I may pick up the point about high-level bombing and the Vulcan operations in the Falklands. We were well aware of the limitations of high-level bombing. The Air Staff were keen to do the attack on the airfield with Sea Harriers, but the Royal Navy were anxious to preserve the Sea Harriers for the air defence of the carriers – hence the Vulcan raids.

**AVM Mallorie.** Our attacks were essentially aimed at destroying aircraft, not airfields, which is why we used proximity-fused bombs.

**Keith Kyle.** What we are going to do now is to ask Sir David Lee to make an appraisal of the air campaign and then the other speakers will form a panel and deal with any questions about the Suez operation, whether political or technical; and then we shall wind up.

## AN APPRAISAL OF THE AIR CAMPAIGN

**Air Chief Marshal Sir David Lee**  
**(Secretary, Chiefs of Staff Committee at the time)**

Mr Chairman, Ladies and Gentlemen, here beginneth the last lesson! I think the question really is: ‘Was this air campaign a success or not?’ It is not an easy question to answer, because it was a success in that it achieved the object of eliminating the Egyptian Air Force, but the campaign then came to an end in an astonishing and most unsatisfactory way. However, the air forces, the Royal Air Force, Fleet Air Arm and the French Air Force, had done their stuff, and done it very well. But there is a great danger here in saying that this was a splendidly successful campaign. You really must apply it to the conditions under which it was fought. Knowing that there was virtually no opposition and that we had an overwhelming force, and there are certain aspects of it that make one feel that it wasn’t quite as successful as one would like to feel.

Let me turn to one aspect that has already been talked about, the bombing of airfields. I’m not going to go over it again, but 1,962 bombs were dropped, mostly 1,000-pounders, in eighteen raids on thirteen targets. We know, from the Bomber Command Operational Research studies, that they certainly were not successful in destroying the runways. Under WW II conditions that number of bombs would be applied to one airfield only. But, are we really concerned with that? You can’t tell me that the experienced commanders, many of whom are here this afternoon, didn’t know that it took that number of bombs to destroy the runways of an airfield; of course they did. It is quite clear that the object of the bombing was not to destroy the airfields – Air Vice-Marshal Mallorie pointed out that they were not even using the right bombs in many cases – but to shock the Egyptian Air Force by doing a great deal of widespread damage over their main airfields in the hope that they would be really discouraged and put off and present excellent targets for the fighter-bombers which were due to follow-up immediately afterwards. So I think this is a point for discussion and I’ll leave it there.

The second point I want to make is about obsolescent fighters. Now in a way this campaign caught the Royal Air Force at a slightly difficult period. Mind you, every period is difficult, isn’t it? One is



*Despite being encumbered by drop tanks and having only 20mm Hispanos, rather than 30mm ADENs, the Venoms 'did their stuff extremely well.' This one belonged to No 249 Sqn. (Bruce Robertson)*

always about to re-equip or in the middle of re-equipping. In this instance, the Middle East Air Force had Venoms and Meteors; the latter, No 208 Sqn, were the fighter-reconnaissance version, the FR 9. Now the Meteor FR 9s were really no good at all; they did not have the range to do any worthwhile photographic or visual reconnaissance work over Egypt, and they were banished to Malta. All the fighter-reconnaissance work was done by the RF-84s of the French Air Force which had better performance and longer range, and did the job extremely well. The Venoms were alright, but were getting long in the tooth, and were being superseded at home by the generation of swept-wing fighters of which the Hunter was the most successful at the time.

The Venom's 20 mm Hispanos were not as good as the 30 mm ADEN guns of the Hunters, but nevertheless the Venoms did their stuff extremely well. They were a bit short on range, so they had to carry pylon tanks and that meant that they certainly could not seek or engage in combat on the way to a target. On the way back they might have been able to, but the opportunity never arose. The Tangmere Wing of Hunters came out to take over the air defence role. So that's another point for discussion, because it does show that, in a limited war, you need to have a fighter force which has good range, hitting power and endurance. After WW II, when we had had the Mustangs and the P-47 Thunderbolts with long range, we tended to go back



*Represented here by this Hastings of No 70 Sqn, 'The transport force did a splendid job of work'. (Air Britain)*

again to the short-range fighter which, in limited war and in overseas commands, undoubtedly has very many limitations.

We've talked about photographic reconnaissance and of No 13 Sqn's problems in processing and interpreting its Canberras' pictures quickly; these would have been overcome in a very short time, but the operation got ahead of the squadron and they weren't quite ready.

The other thing, which really hasn't been mentioned at all today, is the transport force. The Hastings and Valettas of the transport force did a splendid job of work; in fact the only award for gallantry was given to a Hastings pilot. They had been working hard in the build-up, they took the airborne forces and dropped them on Gamil airfield and kept them re-supplied, but on top of that they had their routine theatre tasks, which included things like taking spare engines to Habbaniya, going on at the same time. There were a lot of acts of courage and gallantry amongst the transport force. One Hastings pilot, who had a full load, sixteen troops, a jeep and trailer, and a lot of canisters, fell far behind the main force on his way to Gamil, because he had one engine out. By very skilful stopping and starting his other engines as they overheated (and he only had three knots above his critical speed) he got them there and dropped them in the middle of the airfield satisfactorily.

We heard mention of No 215 Wg which took over command of Gamil airfield with No 48 Sqn of the RAF Regiment to help secure it,

and that was a very tricky operation because No 215 Wg was only established to handle five aircraft a day, but in the short period of the operation it handled over three hundred aircraft, and had to make all sorts of provisional arrangements for goose-neck flares and things like that. The result, at the end of it, was that the CO put in a very good report and said that he thought that the RAF ought to earmark suitably experienced tradesmen to form a mobile wing at any time, to be called together and used for this sort of operation, because he found that the majority of his men had been thrown together from all over the UK and were not very experienced, although their spirit was fine.

Finally, we had a word about Royal Air Force morale, which was absolutely first class during this operation. Mind you, the weather was fine; the troops were working hard, admittedly in difficult, overcrowded conditions, and there was an enthusiasm for what was the first operation since the end of the war and they really knuckled to. The Venom aircrew constantly found their airman sneaking back to work having been sent off to have some sleep. In particular, the armourers on Malta had a tremendous task. They bombed-up, unbombed and re-bombed solidly for three days and nights and then operations were suspended for one brief period, more to give the armourers a rest than anything else. But morale was absolutely first-class throughout.

I am not going to say any more now. I've thrown out a number of points for discussion; my colleagues on the panel are here and I'll leave it to you, Mr Chairman, to carry on with the discussion session.

### THIRD DISCUSSION PERIOD

**Keith Kyle.** Now we are going to open up the panel for discussion. You are all familiar with the members – Air Chief Marshal Sir Denis Smallwood, Air Chief Marshal Sir Thomas Pickett, and Air Vice-Marshal Paul Mallorie. They, and I, will deal with any questions you wish to raise from the floor.

**Air Chf Mshl Sir Alasdair Steedman.** At what stage ought the Chiefs of Staff to take a formal position against a Prime Minister who has gone bonkers (as somebody is reputed to have said)?

**Air Chf Mshl Sir David Lee.** I'll deal with you tomorrow, Alasdair! I thought somebody might ask the question, 'Why did not the Chiefs of Staff resign over this?' It would have been wrong for them as military men to have taken up a position whereby they might well have been sacked, because the attitude of Anthony Eden was that this thing was going through at all costs. Had they, for example, handed in their resignations or put up such a fight that he decided to dismiss them, they would only have been replaced by three others who were less experienced and probably less able to see the operation through. I don't know what other people feel, but I think this is not like the situation facing individual politicians. In the case of the Chiefs of Staff Committee, they must stand absolutely together and it would be quite wrong for them individually, or together, to reach a point where they felt that they had to throw their hands in and resign.

**MRAF Sir Michael Beetham.** I agree with what Sir David said about resigning because you're only passing the responsibility onto someone else. I don't think we've had the situation before with the Prime Minister being considered bonkers, but I think the Chiefs of Staff have always had the right to walk across the street and represent their views to the Prime Minister. Of course, when they do that formally it is known in the media – it's one of the weapons one uses in a sense, to make sure the media do know because it gives strength to your case. In a case like this the only thing one can do is to have private words with other Ministers. After all, it's up to the Cabinet as a whole, concerned in the political direction of the country, to intervene at this stage. As I understand from listening to all this, the military operation was a success; the Chiefs of Staff were more concerned about what we

were doing politically rather than their ability as to whether or not we could do it militarily. If you can do it militarily, then it really has become a political question as to whether it is politically sensible. I would have thought that Ministers should have been tackling this in our democratic society – unless we were going to have a military take-over of the Government. It really is the getting of other Ministers of the Government to realise that the Prime Minister is behaving in this way and for *them* to take the action.

**Keith Kyle.** I really think that is right. One can imagine extreme circumstances in which the Prime Minister would need to be restrained physically. It seems to me that Lord Mountbatten was rather criticised by Robert Rhodes James in his recent biography, *Eden*, because he didn't actually resign. It is said that he put in his statement too late in the day. Well, he made known his dissatisfaction, fairly early on, to Eden personally. It's also recorded in the Chiefs of Staff Committee Minutes, the number of times that he said that there must be a policy in the Middle East, that there must be aims and objectives and that he must be told them before he could plan properly. Then, right at the end, on 2 November, he wrote to the Prime Minister. Again, on 4 November, he offered Lord Hailsham his resignation. He said, 'The honour of the Navy is involved.' He put it to the First Sea Lord that he could not resign, with the Navy just going into action, but he felt that the honour of the Navy was involved, and, in a way, he was saying to Lord Hailsham, 'Perhaps *you* should do something.' That really is the constitutional position, that the politicians are there to take the final responsibility. It seems to me that Lord Mountbatten made his political chiefs aware of his views in sufficient time; he certainly made Lord Monckton aware of them because he and Monckton had a long conference on the subject just before the 24 August outburst to which I referred.

**Farrell.** Was there ever any thought of the commanders 'not hearing' the political instructions, with Suez, the objective, virtually in sight, and just going for it?

**Keith Kyle.** Brigadier Butler was in command of the advanced forces which got as far as El Cap. The moment he received the instructions that the cease-fire would be at midnight GMT (2 am local time), he

tried to get as far down the road as he could; he hoped to get to Kantara, but didn't quite make it. I think it occurred to some of the French, but I don't think it occurred to Brigadier Butler. Having received the order there was never any question of his not obeying it.

**Air Chf Mshl Sir Denis Smallwood.** The Joint Task Force Commanders first heard about the cease-fire on the public radio. I can remember them considering whether there was any way of pretending they had not heard about it or, perhaps, hoping that the signal wouldn't come through. One certainly remembers Tubby Butler coming back from El Cap and asking whether there was any way round it, but it was decided it was a *fait accompli*, so that was that.

**Keith Kyle.** The cease-fire was to have taken place earlier in the day, and the French declined to make up their minds about the matter because the French Prime Minister was entertaining Conrad Adenauer, as it happened, for discussions about the European Common Market. He used that as an excuse for putting it off for a few hours.

**John Peachey.** I just wanted to raise the US dimension which we have rather skated over. It's clear that Dulles and Eisenhower were strongly against the operation from Day One, but this didn't quite communicate itself to Eden or Selwyn Lloyd, for some reason. This misjudged the American reaction. Was there any 'behind-the-scenes' operation with the Americans? I'm thinking particularly of signals intelligence.

**Air Chf Mshl Sir Thomas Prickett.** As far as the Task Force was concerned, absolutely none.

**Keith Kyle.** The only co-operation that I'm aware of (as Amery – head of overt operations at the CIA – told me in 1976, when I was making a programme about Suez) was that the process of certain intelligence exchanges between America and Britain and France continued throughout the period of Suez. That was the only one of the normal links which operated between the three allies which continued unimpeded throughout the Suez period. That included the handing-over of some U-2 photographs.

Talking of Dulles and Eisenhower generally, it is the case that Eisenhower was completely against the use of force at Suez, from the beginning. Dulles, however, was more ambiguous. He co-operated to

a very considerable extent in the British and French presentation of the case at the London conference for international management of the canal, and subsequently the Suez Canal Users Association. He went so far in presenting the diplomatic case for the Western Powers in general that Eden assumed, when it came to the point, that America would look the other way. He had concluded that Dulles was the effective author of American foreign policy, and not Eisenhower. In this, he was wrong. I'll tell you one thing indicative of this. When Dulles arrived for the first London conference he brought with him a message from Eisenhower. Unlike most British Prime Ministers, Eisenhower usually wrote the first draft of his messages, and they were subsequently edited and tidied up because Eisenhower tended to be a little irregular in his use of syntax, but was nevertheless quite expressive. This message arrived and Dulles handed it over (it had reached Dulles just he boarded the aeroplane) saying, 'You must forgive me, I didn't have time to edit this message.' To Eden this confirmed his belief that Dulles was really the man who made foreign policy, because no message need really be taken seriously until Dulles had edited it. Dulles, of course, meant it in a literal way, that he had not been able to tidy up the grammatical errors.

**Wing Commander Dove.** May I ask our distinguished panel, appreciating that this campaign was very short, if there are any air power lessons that they remembered and were able to use later in their own senior commands.

**Air Chf Mshl Sir Thomas Prickett.** I think the questioner was asking a slightly personal question as to whether 'Splinters' or I or David Lee had learnt any air power lessons from it. Personally, I don't think I did, because the whole thing was *Alice-in-Wonderland* to start off with and it was highly unlikely that anything like this was ever going to take place again. The whole thing was constrained by political considerations; every time we wrote a plan the politicians altered it and said it wasn't possible. I don't think that being in the jobs that I had afterwards, it had any influence on me at all. The only influence it had was to mistrust all politicians!

**Air Chf Mshl Sir Denis Smallwood.** I think also General Keightley summed it all up very aptly by saying that no conclusions should be

drawn from this operation because of the most extraordinary political influence from start to finish. On the other hand, many of the operational speakers have mentioned quite a number of tactical lessons that were learnt from this and subsequently applied right across the board. Those did have quite an influence on the way detailed operations took place afterwards. As far as my own personal experience was concerned, my attitude is the same as Tom's; I can't recall any particular influence which played its part thereafter other than also to distrust politicians even more.

**AVM Mallorie.** For me the lesson is that you ignore the principles at your peril. Elementary things which should be food and drink to you, like the selection and maintenance of the aim, were forgotten, and the conclusion that one comes to is that perhaps the Cabinet should go first to Staff College!

**Air Chf Mshl Sir Thomas Prickett.** One lesson that I learnt out of this – and I think we perhaps haven't paid enough attention to it – is that the co-operation between the three Services and the French was absolutely outstanding. I learnt more from this association with the others than I would have learnt on the IDC afterwards.

**Air Chf Mshl Sir David Lee.** One thing occurs to me. If you remember, we were just on the verge of setting-up the first unified command in Aden. It was set up in 1959. I think there were certain lessons learned in this organisation. Mountbatten was the great champion of the unified command, and this operation may have hastened slightly its setting-up. It's interesting in a way that, whereas a separate task force was organised for the Suez operation, the next operation of any importance was Kuwait in 1961. There was no fighting but in fact it was a tremendous movement order in which we moved over 5,000 troops to Kuwait in about four or five days, and the Commander-in-Chief in the theatre, and the theatre staff, were left entirely to run it. So you have the separate Task Force for Suez, you have the Theatre Commander being put in charge for Kuwait, and then you come back to 1982 when you have a Task Force for the Falklands. There was nothing there on which to base a command. The lesson one has to learn from all this is that you take the fullest advantage of the experience that exists *in the theatre*, whatever the situation may be.

**Air Mshl Sir Frederick Sowrey.** I was one of David Lee's very junior officers in the Chiefs of Staff Secretariat at that time and was sent out in 1958 as the Secretary, bag-carrier and recorder, of the joint-Service working party under Air Commodore Gordon-Finlayson to make recommendations to the Secretary of State, Duncan Sandys, for the command arrangements in the Arabian peninsula. The lesson which had been learned from Suez was that an integrated command was absolutely essential. This was a command which we recommended which had to fit into the existing accommodation; it had to have no more staff and it had to cost no more. We approached it on the basis of looking to see who was the primary user of information, or operations, or intelligence, or logistics, at any particular stage. Who could do it best of all, and was it necessary for *each* Service to have an officer at *each* equivalent rank on *all* of the committees? For example, in the Intelligence Committee it was reckoned that the army had the greatest need, so they had a full colonel; the air force had a wing commander and the navy had a lieutenant-commander. This fined-down the staffs which were involved, but it did mean that you had a fully integrated command *and* a fully integrated command and operations structure. The BGS and the SASO (a post I was filling myself when we eventually came to withdraw from Aden) shared an office, with their staffs on either side of them on a verandah. It was, I think, the greatest example historically of a tri-Service command being able to operate in a theatre (and this stretched from Kuwait to Swaziland, as it was then, and from Uganda to the Malagasy Republic) – a fairly extensive geographic command which could be run by the theatre force themselves under a unified Commander-in-Chief. That, I would have thought, was one of the influences which Suez had on our future command structure.

**Keith Kyle.** One point I would like to make about air power is that there was some discussion at the very outset of this problem of resolving the whole thing by the use of air power – whether the bomber force could be got together in a fortnight and the attack launched in a further week after the seizure of the Suez Canal Company. Presumably some people had urged that this itself would be sufficient. It's a view that did not prevail, but was obviously quite strongly held. For example, as late as 22 August Air Marshal Patch

signalled VCAS saying, 'I understand from Keightley that consideration is being given to planning for a longer period of air action, for example, seven to ten days, than has hitherto been contemplated, with the idea of softening up the enemy to a point where he either gives in or where an assault would be relatively easy.' This was turned down. CAS replied, 'The Keightley plan was dropped because we consider it impractical with the resources available to achieve the complete immobilisation and destruction of the Egyptian forces.'

There was also involved here the factor of public opinion. After the adoption of MUSKETEER REVISE, which bore some of the characteristics of General Keightley's previous intervention, the joint planners put in a paper in which they argued extremely strongly that the plans that had been adopted for such a prolonged period – it was called 'aero-psychological warfare' – would require a degree of robustness and resilience from the Government against public criticism that they doubted it would last that long. They put in quite a strong paper to that effect. Was it possible to achieve, by air power alone, a political result of the kind that was required, and, even if it was physically possible, was it psychologically possible because of the strength of public opinion? After all, when you have the number of permissible targets so reduced, in order to avoid civilian casualties, you very soon run out of targets. How can you keep up an air bombardment of a country for ten days when you aren't allowed to engage civilian targets? In order to bring a civilian economy to its knees one surely has to engage in some sort of *Blitz*. That was the real dilemma of air power, to my mind.

**Cecil James.** My point takes this last discussion a step or two further. You are saying, in effect, that the political objective of bringing down Nasser, could not have been secured by the use of air power alone.

**Keith Kyle.** Only by doing a Rotterdam on Cairo.

**Cecil James.** Quite so. This was not on. Indeed, Ministers had been quite clear for some time that perhaps the most dramatic way in which to use air power was simply not on at all, that was to do a demonstration with a nuclear weapon. So, you had to use conventional weapons, if you were going to use any weapons at all. The more

important point, going beyond the use of air power alone, is, 'Why was the risk of the mismatch between the political aim and the military expedition not brought out more clearly by somebody or other?' An attack on the canal on that north-south axis quite a long way to the east of Cairo was not necessarily going to bring down the Government. An individual is brought down when he perishes by his own hand in a bunker. Nasser was way off the scene of the action; there's clear evidence that his position with his own public was very strong; the Egyptian revolution had taken place and was popular. Why was it thought that this type of operation would *ever* bring him down? Was anybody saying to Eden, the Foreign Office or the Chiefs of Staff, this is not the way to achieve the political objective?

**Air Chf Mshl Sir Thomas Prickett.** I think Air Marshal Barnett will correct me if I'm wrong, but I don't think the Task Force Commanders were ever told of the political aim. *We* were told that the aim was to secure the canal – nothing about 'toppling Nasser'. It might have been the gossip around the Cabinet offices but it never reached the Task Force.

**Keith Kyle.** As I said at the beginning, it was the defined objective of the Egypt Committee that objective No 1 was to topple Nasser. Objective No 2 was to establish international management of the canal. For public reasons, the second objective was to be proclaimed. If there are no further comments, I will call with very great pleasure on Air Commodore Henry Probert to say a few words.

## CONCLUSION

### **Air Commodore Henry Probert Head of the Air Historical Branch (RAF)**

It's a little difficult to know how to round off an occasion of this kind. Perhaps I might be pardoned two very brief general reflections before saying a very warm thank you to all concerned.

We had a question a few moments ago about the lessons for air power and it did occur to me that one which was not mentioned by the distinguished panel, but really applied to Suez, was that the air planner, or indeed the naval planner or the army planner, must always be prepared for the unthinkable. That is a lesson that came out of Suez; it was equally a lesson that came out of the Falklands. I think we, as historians, need always to be reminding those who are concerned with looking after our affairs today or being concerned with the future, that being prepared for the unthinkable is what we are about. It's usually that which happens.

Now for a very general point. Over-laying this whole subject is of course the shadow of Anthony Eden. We have heard very clearly, and I certainly got it from Sir William Dickson when he was talking to me, that the political aim was Eden's determination to topple Nasser. Possibly the key to his obsession can be found twenty years before when Hitler marched into the Rhineland, because Eden, as Foreign Secretary in those days, was among those who believed that had we stood up to Hitler in the middle of the 1930s, when we were strong enough to have stopped him, or at least while he was far too weak to have pushed his campaign further, then WW II might never have happened. I think that Eden in 1956 equated Nasser in some strange way with Hitler and Mussolini, and saw it as his divine mission to make sure that Nasser would not be able to start off something similar to what they had done. That's taken the subject beyond our main theme of today but it does seem to me that perhaps here is a key to an understanding of this very, very strange episode.

The word 'fascinating' is over-worked but when I reflect on a session like this I really do think that today we have had a fascinating few hours. It has given us the chance to look, as an historical society, at the RAF's first major post-war campaign, and clearly we are going to need to look at a good many more of our post-war activities in the

years to come, as well as going back into WW II and, indeed before. But in running today's session, and chancing our arm at a format where we bring together a number of those who were closely involved in the events and get them to tell us how they felt at the time, I hope that perhaps we've found a worthwhile formula. Certainly, although several of them have now had to leave, I know how much they've put into it. Sir Denis Smallwood and Sir Thomas Prickett, Air Vice-Marshal Mallorie, and of course Sir David Lee, who has been working with us at the AHB for many years, have all devoted a considerable amount of time trying to make sure that what they've told us today is firmly based in the documentary evidence. So we've had the benefit of not just their recollections but also a lot of hard work. So, I would like to thank them very, very much indeed for all they've done. We have had the benefit of the company of a number of others who were closely involved and have also reflected on what went on; we've learnt a lot from them. 'Thank you' to them all and to you, the audience.

Finally, a very warm thank you to our Chairman, Keith Kyle. He is deeply involved in research into this topic and we have had the benefit, not just of somebody who knows his subject, and has been able to contribute enormously to our understanding, but someone who has also dealt with us all with a firm hand. So, Keith and your colleagues, thank you very much.

## BOOK REVIEWS

**The Fire: The Bombing of Germany, 1940-1945** by Jörg Friedrich. Columbia University Press; 2006. £21.95.

Jörg Friedrich caused something of a firestorm with *Der Brand* when it was first published in Germany in 2002. Previous authors had examined the WW II strategic bombing offensive from the German perspective, but they had tended to be from the victor nations. The Japanese, having never tried to destroy New York or even Honolulu, felt able to examine the flattening of Tokyo and Hiroshima but German historians steered clear of the topic. Perhaps with the *Luftwaffe* having set the pace from Guernica to Coventry, they felt uncomfortable about critically examining what was unleashed thereafter from Lübeck to Dresden.

Friedrich, born in 1944, is of the post-war generation that rightly feels unencumbered by the old taboos. As the title of the book implies, he is fascinated by incendiary bombing and the consequent firestorms that ravaged cities such as Hamburg. There was much scientific basis to all this. Cities were too large to close down by high explosive but they could be channelled into destroying themselves if the half-timbered old town centres were used as firelighters. My geography professor, who made his name with *The Towns and Cities of Germany* before the war, was co-opted into the allied war machine to identify those parts of his beloved cities that would burn. This was not confined to the allies though. The aiming point for German V-2 rockets was the fire station on Southwark Bridge Road, based on the impeccable logic that if the firefighters were killed they could not stop any conflagration from taking hold.

The rather portentous PR blurb says that *The Fire* draws on ‘a wide range of eyewitness accounts as well as official reports from both sides... This is the definitive account of how and why half a million German civilians died and millions were made homeless... But above all it is an elegy for the human beings who suffer in a total war.’ Being prepared for another ‘Churchill and Arthur Harris were no better than Hitler’ polemic, I was pleasantly surprised to find otherwise. The first half of the 532-page book covers the politics, doctrine and mechanics of the strategic air offensive. The author comes up with no new insights on the Bomber Command and USAAF air effort, relying, as

he does, on landmark works by Webster and Frankland, Craven and Cate, John Terraine, Roger Freeman and Martin Middlebrook. But Friedrich synthesises and condenses their findings in exemplary fashion, even if he doesn't really understand the mechanics of 'precision' bombing back then. During WW II, the USAAF's 8th Air Force found that it took two full combat wings, a force of 108 B-17 bombers crewed by 1,080 airmen flying in six combat 'boxes' dropping 648 1,000lb bombs, to guarantee a 96% chance of scoring just two hits (the minimum necessary) to disable a single power generating plant measuring 400ft × 500ft. During *Desert Storm*, one F-117 dropping two precision-guided bombs achieved the same effect. For all the fine claims made for Norden bombsights, the USAAF engaged in area bombing of precise targets. Five times as many Dutch citizens were killed by allied bombing as by their German occupiers. Democracies caught on the hop are forced to fight wars as they must, not as they would like.

It would have helped if Friedrich had interviewed some bomber veterans. I found it slightly surreal that the index had ten entries for Charlemagne, four for Charles V but none for the greatest RAF master bomber and post-war wrestler with the morality of it all, Leonard Cheshire. But in general, the first half of the book is as good a summary of the strategic bombing strategy and weaponry as you are likely to find.

The second half of *The Fire* is devoted to the impact of the strategic bombing campaign on Germany. Friedrich devotes separate sections to the regional geography and the impact on major cities, society, infrastructure and the individual. The historical aspect is overlong, largely because it keeps harking back to the Middle Ages as if to show that Germany was really a great cultural centre apart from a temporary aberration between 1933 and 1945. There is a very good section on civilian air raid protection and the 1943 shift in propaganda emphasis as civilian workers were elevated into warriors and Dr Goebbels was double-hatted as *Reich* inspector for civil air-raid defence. Once again, I found it strange that Friedrich could talk about German responses in the face of mass allied bombing without examining the motivation of night fighter aces such as Heinz-Wolfgang Schnauffer, or the thoughts of *Luftwaffe* Inspector General of Fighters Adolf Galland. There are six index references to Goethe

but none for resourceful *Gauleiters*, such as Hildebrandt of Mecklenberg, who were sustained by loyalty to the *Führer* and the brave new Third Reich rather than any atavistic attachment to medieval stonework and heritage. We still await a serious German explanation of how Hitler and Nazism inspired aerial warfighters and ground defenders alike.

Friedrich has been accused of using emotive language and statistics to imply that the Germans were right to defend Hitler's regime and that the bomber barons were wrong to attack it in the way they did. I don't read the book that way. Many on the allied side are in denial about the nature of the bomber offensive. The Casablanca Directive made it quite clear that, in addition to the list of war industries to be crushed, the mission was 'the undermining of the morale of the German people to a point where their capacity for armed resistance is fatally weakened.' There was nothing to be ashamed of in that Directive. I attended a symposium in 1994 where the chairman proclaimed that Bomber Command had never gone deliberately for civilian targets. 'Rubbish,' said a former bomber leader sat next to me *sotto voce*, 'one of my targets was a post office.' Fudging the targeting issue has hindered efforts to accord RAF bomber crews the credit and campaign medal that their nightly bravery richly deserved.

Strategic bombing was the only means of taking the battle to the enemy in the dark days of 1942 and 1943, and the evocative drone of Lancasters, Halifaxes and Stirlings climbing to height sustained British civilian morale when it could so easily have succumbed to despair over Singapore or Tobruk. If Britons were uplifted by the Thousand Bomber Raid on Cologne, it was because the Germans totally destroyed 225,000 British homes in the war and severely damaged another 550,000. One hole in Friedrich's analysis is the implied assumption that the allies knew the war would be over in 1945. They might have believed this by the autumn of 1944, but before that it was vital to crush the holistic German war effort between the twin mangles of the Soviet Army on the Eastern Front and the strategic bomber offensive. The greatest density of bombs was dropped from autumn 1944 onwards, but that was only because the mass of Germans continued to believe in Hitler and his wonder weapons and they had to be convinced otherwise to get the whole beastly business over with as quickly as possible.

*The Fire* forces us to stop hiding behind Churchill's dictum that 'They that sow the wind shall reap the whirlwind.' Those who sowed the wind – Hitler, who loved to watch film of the 1939 bombardment of Warsaw, or Göring – copped out before getting their just desserts. Field Marshal Hugo Sperrle, who as commander of *Luftflotte III* led the bombing of Coventry and London that killed thousands of British citizens, was never tried for the offence after the war. Friedrich shows us that it was the common people who reaped what their leaders had sowed.

In sum, this is a well-written and diligently researched book. It lays the blame for Germany's ruin firmly on Hitler. It includes a mass of fascinating information, such as that twenty million helpers reported to fight the damages of the air war. That amounted to a quarter of the population, which were otherwise prevented from maximising the output of new U-boats or Junkers bombers. The best part of the book is the second half, where Friedrich's outline of the impact of the bombing campaign on Germany's history, culture and society breaks new ground. But while *The Fire* reveals that individual Germans were willing to see their first sweetheart sent to the gallows for saying that their society was responsible for the bombs raining down, it does not explain the extent to which Hitler and National Socialism inspired awesome sacrifice and loyalty under constant bombardment long after the German cause was lost. There is still much German ground to be covered on the more sensitive aspects of strategic bombing now that Friedrich has shown the way.

**Wg Cdr Andrew Brookes** (First published in the RUSI Journal.)

**Spitfire Pilot. A Personal Account of the Battle of Britain** by Flt Lt D M Crook, DFC. Greenhill Books; 2006. £19.99.

*Spitfire Pilot* was first published in 1942 and has been re-printed by Greenhill Books. It now has a short Prologue written by Air Mshl The Lord Garden; a Preface by Rosemary Loyd, the author's daughter; a brief history of No 609 (West Riding) Sqn by AVM Sandy Hunter, the squadron's Hon Air Commodore, and an Introduction by Professor Richard Overy of King's College, London – I'll start with the text!

After leaving The Leys School at Cambridge – there is no mention here of Cambridge University which does crop up in other sources – the author joined the family firm of sports goods manufacturers in

Huddersfield and in August 1938 entered the AAF via No 609 Sqn at Yeadon. He willingly gave up the time he had devoted to rugby, tennis, golf and rock climbing for the greater joy of flying. After mobilisation of the AAF in August 1939 he went to an SFTS. That was something of a culture shock for him at first, it seems, but he ended up with unstinting admiration for the quality of the training he received there. His book is based on his diaries and provides a lively Ripping Yarns account of a young man's progression from a comfortable civilian existence to a maturity which came from the almost daily contacts with death and the loss of comrades he experienced in the Battle of Britain. I am not using 'Ripping Yarns' in a pejorative sense. Richard Overy comments that the Battle was expressed in the language of the school playing field by the young men who fought in it and that, I think, neatly encapsulates the author's style. No 609 Sqn was in No 10 Gp throughout the Battle, being drawn into No 11 Gp's territory on some days, following the *Luftwaffe's* switch of targets from the airfields to London. Hence most of its actions took place over the south coast and western counties. I am not going to comment on the 'kills' reported in the text. The numbers Crook quotes are those known to him at the time and it is right that they should simply stand here.

He was an excellent pilot and ended the Battle as an Ace. The Spitfire I which he flew has a quoted maximum speed of 355 mph at 19,000ft in the reference books but he records touching 400, 500 and even 600 mph in his, admittedly damaging its wings on one such occasion. Former Spitfire pilots will know how to judge that. His account shows how important the camaraderie on the ground between the squadron's pilots was to their morale and hence to their performance in the air, but a Sgt F seems to be absent from that scene. He is referred to as Sgt F, or simply as F, on several occasions – shooting down German aircraft, flying with Crook in the station's Magister and dying in action on 17 October, having achieved the status of an Ace by then. At that point there is a brief tribute paid to his courage and competence with the squadron. He was Alan Feary, and Frank Ziegler the Intelligence Officer of No 609 Sqn, says this about him in *Under the White Rose*, his history of the squadron; '*For months the squadron's only NCO pilot, he must at times have felt dreadfully lonely, yet he had fought right through the summer with*

*distinction that should have earned him a decoration.*' That tells us something about attitudes in an AAF squadron in those days, but similar attitudes could also prevail in the RAF.

The squadron's losses during the Battle were made good by RAF, RAFVR, American and Polish pilots. Crook regretted the departure of the Americans to the Eagle Squadron after six weeks with No 609 Sqn and formed very good relationships with the Poles. An important factor which he highlights was the confidence which pilots could have in their aircraft and he pays a generous tribute to the quality of No 609 Sqn's ground crews – his Spitfire 'never missed a beat' he says. He also tells us a lot about his off duty time – the parties where the Champagne and the Pimms flowed freely and the good dinners which were enjoyed, locally, in London and on visits to his wife. These things illustrate the stark contrasts experienced by fighter pilots between the adrenaline rushes and terrors of conflict and the normalities of life in the mess, the pub or in the arms of wives or girlfriends. Sadly, Crook didn't survive the war, dying in an accident on a training flight with a high altitude photo-reconnaissance unit in December 1944. His aircraft plunged into the sea near Aberdeen and his body was never recovered.

The value of this book does not lie solely in the quality of its narrative but also in the sort of question which that and some of its introductory material can prompt about Service history. Let us start with a few statistics. No 609 Sqn began the Battle with ten AAF pilots, six RAFVR pilots (one of whom was Sgt F), and five RAF pilots, one of whom was the CO. By 16 August four of the AAF pilots had been posted away and three killed in action. On that day another AAF pilot joined the squadron but he was killed on 15 September. Only three AAF officers, including the author, served for the entire period of the Battle, as did three RAF and three RAFVR officers. So, during the Battle No 609 Sqn was already on that track, common to all Auxiliary fighter squadrons, which led, as the war progressed, to their remaining 'Auxiliary' in their number plates, but not in their pilots. In contrast, the presence on those squadrons of their pre-war ground crews tended to persist. AVM Hunter notes this and comments on its importance for maintaining an Auxiliary identity. But, given the evident lack of recognition afforded to an NCO pilot as competent as Sgt F, one wonders to what extent a unit's non-commissioned AAF

airmen would really have been able to make their presence felt. There is a lacuna in Service history waiting to be filled by an account which tells us how this was done – and it will have to be written by an insider with experience of squadron life and not by a commentator from the sidelines. It is the privilege of the latter to ask the question but of the former to provide the answer.

Many books have been written about combat in the Battle of Britain. In my opinion the benchmark remains Richard Hillary's *The Last Enemy* – but Crook's book is up there with the best of the rest. So, should you buy it? Yes, even if you are simply looking for well written reports of actions in the skies. I'm also glad to have a copy because of what it can tell us about life and attitudes in a squadron with an AAF number plate in Fighter Command, at the time of the latter's greatest test. Buy it for that reason as well and you will not be disappointed.

**Dr Tony Mansell**

**Bomber Losses in the Middle East and Mediterranean, Vol 1, 1939-42** by David Gunby and Pelham Temple. Midland; 2006. £14.99.

If I say that the format of this book mirrors closely that of Bill Chorley's monumental eight-volume series detailing Bomber Command's WW II losses, members who are familiar with the latter will know what its authors set out to do. Their aim was to identify, in chronological order, by serial number, every bomber aircraft lost while serving with, or in transit to, a squadron (ie not a training unit) within their chosen theatre (which includes East Africa and even as far west as Takoradi) along with a brief account of what happened and the names and fates of the crew. While Chorley's work was massive, he was at least able to work from relatively comprehensive sources. By contrast, the Gunby/Temple effort is on a much smaller scale (a projected second volume, to include Italy, will complete their task), but this is offset by its complexity.

As David Gunby points out in his Introduction, it appeared that, so far as the maintenance of ORBs and the like was concerned, 'the further from the Air Ministry, the worse the record keeping'. How true! When it comes to tracing losses in the Middle East, I have 'been there, done that' for just *one* Blenheim squadron – and it took me

years. Furthermore, I succeeded only because I was enthusiastically assisted by large numbers of ex-squadron members. But I completed my project thirteen years ago and, because the ranks of wartime veterans have been considerably thinned since then, it would be impossible to repeat the exercise today.

While home-based units suffered heavy losses, they generally operated from proper airfields with reasonably robust accommodation, providing a stable environment supported by a relatively sophisticated infrastructure – conditions under which ‘book-keeping’ was a practical proposition. It was very different overseas where an airfield was often no more than an ill-defined stretch of gravel, with business being conducted from tents and dug-outs; where communications were primitive and where changes of base were frequent, and often at short notice, in order to avoid being engulfed by the tide of war as it ebbed and flowed along the North African littoral – in short, conditions under which ‘book-keeping’ was, all too often, *not* a practical proposition. In extreme cases, the fall of Greece, for instance, some locally-based units lost all of their records, while others, who had managed to hang on to theirs at the time, subsequently lost them when they were sent further east in an unsuccessful attempt to prevent the Japanese taking Burma, Singapore and the East Indies.

That is not to say that there are no worthwhile ORBs, and there are other sources which can be consulted, the Aircraft Movement Cards, for instance, although they are only as good as the information from which they were compiled. If a unit failed to submit the appropriate return (because it was a bit busy at the time, scrambling across Cyrenaica in order to avoid becoming victims of Rommel’s latest offensive) then the card will be of little help – and this was all too often the case. The Commonwealth War Graves Commission provides very useful, and pretty reliable (but not infallible), information on all fatalities, of course, but Gunby and Temple wanted to nail *every* bomber that had to be written off, even if the crew had walked away.

In view of the handicaps under which they had to work, the authors have done remarkably well. They make no bones about the inevitable gaps in the record and I would urge anyone using this book to read the Introduction, because it imposes, and rationalises, a number of necessary caveats and constraints. Errors? – in a work of this nature there are bound to be some. I did spot one; Blenheim Z6156 of No 45

Sqn was lost on 29 August 1941, not 1942, so it appears 96 pages and one year out of synch.

The plan is to publish the second volume in about two years, and this will also correct and/or add to information appearing in Vol 1. These potential corrections aside, when it comes to providing a reliable reference work on bomber losses in and around the Mediterranean, this 222-page A5 softback is as good as we are ever going to get. The authors, and the publisher, are to be congratulated on unearthing all of this data and on making it accessible. It is almost too obvious to say but, if you need this sort of information, then you just have to have this book.

## CGJ

**Farnborough: 100 Years of British Aviation** by Peter J Cooper. Midland; 2006. £24.99

If one place is synonymous with British aviation, it is Farnborough. Home to the now biennial Air Show, the airfield and its surrounding facilities have played a crucial role in the history of flying ever since the Army moved its Balloon School to the eastern edge of what was known as Farnborough Common a century ago.

*Farnborough: 100 Years of British Aviation* is written by Peter Cooper, a local chap and a stalwart of the Farnborough Air Sciences Trust (FAST) whose passionate enthusiasm for his subject comes shining through. In this book, Peter takes us chronologically through from 1905 to 2006, with chapters periodically devoted to Farnborough lodger units such as the Empire Test Pilots School, the Institute of Aviation Medicine and the Air Accidents Investigation Branch.

Those of us with piles of 1950s and '60s editions of *Aeroplane* and *RAF Flying Review* in the attic, with their seemingly never-ending parade of prototype aircraft, will warm to all the super illustrations in this book. They all come from the FAST archives and many excellent and unique photos abound. The book is full of fascinating information and lists, such as the fighter types that were undergoing trials at RAE in late 1945 or examples of V-bomber trials. The text is rather laboured and in places the prose is of the 'war clouds were now overhead' variety. I mean no disrespect to Peter Cooper when I say that he is an A1 'anorak' who has produced a classic anorak's book. *Farnborough: 100 Years of British Aviation* is a first rate piece of

work when it comes to production standards and cracking, well reproduced photographs. However, it falls down badly in the true enthusiast stakes because such a work cries out for an index. If you want to refer to the 'Black Sheds' or John Derry, you are on your own.

Test flying ceased at Farnborough in 1994, and it is rather sad to note that this once great aeronautical nation has had eight Chinook HC3s sitting in the shed for years at Boscombe Down after millions were spent on software modifications that made the huge support helicopters virtually unflyable. Whoever was responsible for this travesty should read how it was done properly in the good old days; otherwise they should be hanged from Cody's Tree, one of the Farnborough landmarks that Peter Cooper captures so well.

In sum, *Farnborough: 100 Years of British Aviation* is an obvious labour of love. It does not come cheap but the finish, illustrations and overall production standard are of the highest Midland quality. This is a classic historical work for dipping into. As a unique and much needed contribution to the history of British aeronautical greatness, this book is well recommended.

**Wg Cdr Andrew Brookes**

**Wings over Suez** by Brian Cull with David Nicolle and Shlomo Aloni. Grub Street; 2006. £20.

On successive anniversaries following the seizure and nationalisation of the Suez Canal by President Nasser in July 1956, extensive media coverage has examined both the political and military aspects of a damaging crisis which ultimately led to the ill-fated attack on Egypt by British and French forces in November of that year. Few, if any, books have been written which cover the historical background to the formative years of the air forces of Israel, Egypt and its Arab neighbours prior to the outbreak of hostilities in 1956; this one does. Clearly, a major blunder in British foreign policy, 'Suez' contributed to what would prove to be a watershed in Britain's global influence and one which most would prefer to forget.

Brian Cull's book was reprinted last year, as a paperback, to coincide with the fiftieth anniversary of the Suez Crisis. In the intervening ten years the author and his co-authors have accumulated a considerable amount of additional information – much of it drawn from previously untapped sources and personal recollections of

specific events – all of which has been included in the revised edition. Unfortunately, the new material is in a separate section at the beginning of the book and the reader would be well advised to mark those pages to which the new information relates before starting to read the book.

The early chapters contain a wealth of interesting information about the nascent post-WW II air forces of Egypt, Syria, Jordan and Israel, whose equipment for the most part consisted of a mixed collection of airframes left behind following the cessation of hostilities in 1945. The Arab air forces suffered from inadequate training and were poorly supported in logistic terms, although that of Israel possessed more skilled and experienced pilots, as was clearly reflected in combat. The book covers the problems encountered in attempting to overcome these deficiencies which resulted, in part, from the stated policy of Western Governments, which was to limit the acquisition of the modern jet aircraft which were much in demand by both sides.

These limitations began to be lifted in the early 1950s which led to relatively frequent clashes between the air forces of the two main rivals, Egypt and Israel, over the Sinai Desert. Losses occurred on both sides and the authors have included many interesting and graphic accounts of aerial combat, some by those directly involved in the air battles. Aircraft capabilities and performance is meticulously covered and illustrated with a collection of previously unseen photographs. As air operations intensified, the search for more capable aircraft continued and the reader is provided with an insight into the events which eventually caused Egypt and Syria to turn to the Soviet Bloc for new equipment. Meanwhile, the Israeli Air Force acquired new aircraft from France and these were to prove more effective in combat as a result of better training standards.

A large section of the book is devoted to the massive military build-up prior to the commencement of air operations against Egypt on 1 November 1956. The coverage of this particular aspect is commendable and is well illustrated with many personal accounts of sorties flown together with frequent tables providing details of the operational effort contributed by British and French naval and air forces, plus that of Israeli pilots. For those, like myself, who flew in the operation this is of immense interest. But in my opinion the large amount of fine detail has little relevance to other than aviation

historians. Total destruction of the Egyptian Air Force was successfully achieved in 48 hours by overwhelming air superiority, only to be followed by a sudden and unexpected cease-fire on D+5, before all of the operation's aims could be achieved.

Whilst air power had clearly won the day it was not without a number of allied losses of aircraft and aircrew. Previously untold stories of clandestine operations by PR Canberras based in Cyprus also make interesting reading. In the aftermath, when summarising the outcome, the focus is directed at many weaknesses highlighted in the operation. Most notable are the concerns expressed about the serious shortcomings in command and control. The author has included many personal recollections from all levels of command together with those at the sharp end to amplify these important issues. Clearly, many were of fundamental importance for achieving success in war, and in different circumstances, against a more determined enemy, would have had a profound effect on the outcome.

In sum, this book gives a unique insight into one of the most damaging and infamous conflicts in British military history. The detailed coverage of significant events leading up to the Suez Crisis is excellent throughout. However, this is a book for readers who aspire to a detailed knowledge of recent conflicts involving the use of air power. For those, like myself, who took part in the air operation it provides an interesting insight into many previously unrecorded activities which took place during hostilities. For many of us this was our first experience of combat and the honing of training skills was an invaluable experience. In the wider context the outcome was a turning point for Britain and the action finely balanced to avoid increasing threats from a Soviet Union possibly prepared to embark on nuclear war.

Not a book for every day reading, unless you have a special interest in the subject, but if you do, then it is a must for the wealth of information it contains.

**AVM George Black**

**Wings On My Sleeve** by Captain Eric Brown CBE DSC AFC RN. Weidenfeld & Nicolson; 2006. £20.00.

Few people really warrant the accolade 'legend in their own time', but one who certainly does is Captain Eric 'Winkle' Brown who has

spent most of the last seven decades working in aviation, much of it as a military test pilot or consultant. In the words of one of his contemporaries, Bill Humble of Hawkers, 'in an era of outstanding test pilots, Winkle was simply the best.'

Brown published the first edition of his autobiography over 45 years ago and this reviewer – then but a callow youth – found it a fascinating account and a breath-taking read as I followed his exploits. In 2005 I was fortunate enough to hear Eric Brown address the RAFHS and later to listen to him at dinner as he told further stories about his flying career. Despite his advancing years, Captain Brown's memory is clear and his delivery quite remarkable. To now have the chance to read and review his greatly expanded and rewritten book is, for me, a bonus.

He tells his story chronologically and, after a short summary of his childhood, he describes early meetings with Ernst Udet, to whom he credits his aspiration to become a fighter pilot. Brown was in Germany when war was declared but was allowed to return to the UK via Switzerland. His early service included witnessing the first flight of the Gloster E28/39 and a tour on a carrier during which he shot down Focke-Wulf Condors, was torpedoed and awarded a DSC.

Brown's test flying career began at about this point and continued for the rest of the war and beyond. The book describes the most remarkable flying and naval episodes, covering a diverse range of activities, including catapult development, flying captured enemy aircraft and interrogating of some of the surviving movers and shakers of German military and civil aviation at the end of the war. Brown goes on to describe his transition to permanent naval officer and the general service aspects of his life in the post-war Royal Navy. His career comes full circle when he assisted the German Navy to reform its aviation arm and subsequently served as British Naval Attaché in Bonn.

No summary of mine can do justice to this autobiography, for it is a fascinating story of the heyday of test flying and development as aviation moved into the jet age. As a taster, it is worth noting that the Appendix which records the aircraft types Brown has flown runs to four pages and, as is pointed out, that merely covers the 487 basic types; Brown has, for example, flown fourteen different Spitfire variants but the Spitfire merits only one entry in the list!

*Wings On My Sleeve* is the stuff that boys' annuals used to be made of, but Eric Brown tells his story in a dry and matter of fact style, with no exaggeration or attempt to jazz things up – for that there is simply no need. Over the years I had forgotten much of what I had read in the first version of this autobiography; I am extremely glad to have had the opportunity to read the second account by this truly remarkable aviator and man.

### **Wg Cdr Colin Cummings**

**Tedder – Quietly In Command** by Vincent Orange. Cass; 2006. £19.99

I have come, rather late in the day, to reviewing Vincent Orange's biography of Lord Tedder, first published expensively (*in hardback at £65 – Ed*) in 2004. Given that Tedder had originally been written up by Roderick Owen and had later, in 1966, told his own wartime story in *With Prejudice*, I wondered at first how much new there might be to say. In addition Orange himself had already written several biographies about other key personalities in the Mediterranean war. So what I really hoped was that this new book would also include a full account and appraisal of Tedder's contribution in the closing stages of the war and – most importantly – his work as Chief of Air Staff over the next four years, when the RAF had to cope with so many new challenges. Here, I must confess, I was disappointed.

This book is therefore something of a curate's egg. Tedder's earlier years, up to 1944, are covered in detail and reflect assiduous research of family papers, including the copious personal letters which he exchanged with Rosalinde, his first wife. A good picture is painted of his undergraduate years reading history at Cambridge before the First World War and then of his, not specially distinguished, flying career during that war and subsequently. More significantly, from the mid-1920s onwards, his academic talents came to be largely channelled into various appointments connected largely with flying and staff training. As the author points out, this was an unusual route towards the top of the RAF tree. Yet his limited operational experience turned out to be counterbalanced by his growing understanding of the development of air power, by his qualities as a thinker and analyst, and by his ability to establish rapport with the countless people he had to deal with at all levels. It was those qualities that enabled him to play

his critical roles in high command – and not least among the Americans – both during and after the war.

The coverage of the main wartime years is, as one would expect, comprehensive but it leaves a mere fifth of the text for what followed – ie the immediate aftermath, Tedder's four-year stint as CAS, and his year or more in Washington as head of the Joint Service Mission at the time of the Korean War. These were very important years which saw Tedder working at the heart of the nation's defence affairs and they deserve a more fully considered treatment. Certainly many of the major issues are touched upon but in a somewhat disconnected and confusing way, and there are surprising omissions.

Whereas, for example, the implications of events in the Mediterranean and Middle East are discussed in some detail, there are no references to the rapidly changing scene in India or to conflicts in South-East Asia, particularly the start of the Malayan Emergency in 1948. In another sphere the various moves leading to the signing of the North Atlantic Treaty in 1949 certainly involved the Chiefs of Staff, of whom Tedder was Chairman. I get the feeling that, by the time Vincent Orange reached this part of the story, he was working against the clock – a great pity when one considers the merits of what he had so far written. The writer of the Foreword, Williamson Murray, does not help matters by concentrating his remarks on Tedder's wartime roles entirely to the exclusion of what came afterwards. It takes Sebastian Cox, the Series Editor, to remind readers in his invaluable commentary that Tedder actually did very important things afterwards.

Nevertheless, the book as a whole has much to commend it. It is a comprehensive source of reference, as the highly detailed endnotes and index demonstrate, and it is accompanied by a superb bibliography – but why are there no maps to enable the untutored to follow the stories of the main campaigns, particularly those in the Mediterranean? A particular virtue of the book is the extent to which Vincent offers his opinions on so many of the key personalities who feature in the story, and in so doing brings out one of Tedder's most special qualities: his remarkable perceptiveness. Now available in paperback at a much reduced price, this biography fully deserves a permanent place on members' bookshelves.

**Air Cdre Henry Probert**

**Blackburn Buccaneer** by Kev Darling. Crowood; 2006. £29.95.

My suspicions about the quality and value of this book were aroused on the first page. In the list of abbreviations, the instrument that sits at the heart of the Buccaneer's OR946 Integrated Flight Instrument System (IFIS) and weapon system – the Master Reference Gyro (MRG) – is described as the 'Maximum Rate Gyro'. A closer study of the abbreviations revealed other mistakes. Unfortunately, these initial concerns and doubts were soon reinforced as I worked through the book. Throughout there is a catalogue of errors, incorrect photograph captions and mistakes in the appendices. Such errors are a surprise, since the dust jacket indicates that the author was a one-time Buccaneer engineer.

The book is very much about the design, manufacture and development of the aircraft – topics that the designer, Roy Boot, discussed in his exemplary book *From Spitfire to Eurofighter*. The author describes the aircraft's components in detail and provides a history of each aircraft as it was built, modified and allocated to various units. He also describes the aircraft systems by making extensive use of official RAF manuals and ground servicing notes, including considerable use of the line drawings and diagrams contained in those publications. At times I was convinced that I was simply re-reading pages of the aircrew manual (AP101B-1202-15A).

The appendices contain some basic errors, many of the dates for the formation and disbandment of both Fleet Air Arm and RAF squadrons being incorrect. For example, No 800 NAS was in the Far East in June 1966 operating Mark 1s when the author claims it was being re-equipped with the Mark 2. This came after disembarkation leave in the following September. He claims that No 208 Sqn ceased to exist at Honington in July 1983. In fact, having moved to Lossiemouth, it was the last Buccaneer squadron to disband eleven years later in March 1994.

The book contains many photographs, the majority attributed to private collections, although many are well-known official photographs. Some of the captions verge on the banal. For example, 'aiming at the deck', 'streaking fast and low', '*Ark Royal* smashes its way through a rough sea – the waves are strong enough to wet the deck', 'a Buccaneer shoots past the camera'. There are others and one could live with them but not the numerous mistakes in the captions,

far too many to list in a short review.

In some of the captions the author frequently offers an opinion, which Buccaneer operators would certainly question. He states that some aircraft fits were 'unique', when in fact they were standard, or he makes statements about the aircraft's capability that are simply wrong. For example, he claims under one photograph that 'the Royal Navy did not often use rocket pods'. This is simply untrue – in my three years with the Fleet Air Arm I fired almost as many rockets as I dropped bombs. He contradicts his own statement by including a number of other photographs of RN aircraft carrying rocket pods. In another photograph he identifies the photo flash crate as a transit pod and later, under a picture of the aircraft and its various weapons, he states that 'the only things missing are the various nuclear weapons carried'. Staring the reader in the face in the centre of the photograph is a dummy RED BEARD nuclear weapon! Later he claims that XX901 served with No 216 Sqn. This was not the case, although, in order to participate in the final flypast when all Buccaneer squadrons were represented, it did have that unit's emblem applied for a few days at the end of its career. He identifies another aeroplane as XN974 but a careful look at the photograph clearly shows that the serial is actually XN975. The photograph of a line-up of thirty Buccaneers on page 179 was not taken as the aircraft was about to be retired in 1994 but six years earlier, at Lossiemouth on 30 April 1988, to celebrate the thirtieth anniversary of the aircraft's first flight. The Victor tanker force was based at Marham not Wyton. I could go on and quote from a list of other errors that fills three pages of foolscap.

Notwithstanding the above criticisms, the Buccaneer fraternity, both aircrew and groundcrew, will be particularly irritated by the author's explanations for the losses of some aircraft.

- The loss of XN979 was not due to an 'incorrectly wired aileron PFCU'.
- XV153 was not lost 'trailing a non-standard underwing load'.
- Both crew did eject from XV343; the navigator died in the fireball.
- When XV351 crashed, neither crew member ejected but both seats fired on impact and only the observer survived.
- The pilot did not lose control of XW531; after an engine fire,

the crew diverted to Andoya airfield in Norway and were forced to eject as they made a GCA approach.

- XV345 was not carrying out ‘a violent manoeuvre’ when it crashed killing the crew; it was making a turn whilst flying in battle formation en-route to the weapons training area.
- XW528 and XW536 collided over the Romo Weapons Range in Denmark, not over the North Sea.
- XX890 was not ‘badly damaged on landing’, it became many thousands of bits after the crew ejected on finals.
- The engine of XV347 exploded as it started its take off run, not during taxiing.

There are others but the sample quoted is sufficient to illustrate the point.

There are numerous other factual and editorial errors, which could have been avoided by careful research and reference to other publications on the *Buccaneer* (the bibliography and acknowledgements are scant). It is a pity that the author appears to have made no attempt to contact former *Buccaneer* aircrew or to invite someone experienced on the aircraft to proof read the script.

This is a very well produced book with high quality photographs thus giving it a sense of authority, but therein lies the danger. To an unsuspecting reader, or a future researcher who is less than diligent, many incorrect facts, wrong assessments, wild judgements and immature opinions will almost certainly be repeated and the risk is that they will become accepted as fact. The aircraft, and those who flew and maintained it, deserve a great deal better.

### **Air Cdre Graham Pitchfork**

**White Knees; Brown Knees** by Douglas J Findlay. Originally published by Discover Press in 2003, now available directly from the author at Glenesk, Canonbie, DG14 0SZ; Tel 01387 371739) at £15.99 (inc p&p).

The author had two aims in writing *White Knees; Brown Knees*. First he wished to remind or, in an increasing number of cases, inform his readers of what life was like for a young man undergoing the universal rite of passage of National Service in the early 1950s. This he does by recounting his own experiences covering his induction, his training as an RAF equipment accountant and his subsequent ‘active’

service in the Egyptian Canal Zone, mostly stationed at Deversoir. He writes fluently with an easy style and some of the yarns he spins are of the laugh-out-loud variety. I would single out, for instance: the tale of 'the phantom crapper of Kinloss'; the account of the 'Battle of Deversoir', when various adjacent guard posts engaged each other, each believing that they were under attack from insurgents; the stories of the 'woolly bug farm' and of the illicit disposal of a £6,000 generator to a local entrepreneur – just one example of the magic that could be worked by the ingenious use of Conversion Vouchers; and the description of the ritual humiliation of the periodic FFI.

The Battle of Deversoir had occurred, because guarding was a serious business, conducted by nervous nineteen-year-olds, alone in the dark with 'one up the spout'. This was a reflection of the prevailing political tension in Egypt, although it was not classified as active service at the time (hence the inverted commas above), and Findlay's second aim in writing his book was to draw attention to the magnitude of this crisis – and to HMG's prolonged refusal to recognise the realities of the situation. The facts were that, by the turn of the century, there had been sixteen post-war conflicts in which British servicemen had died and for which a campaign medal had been awarded, and in nine of those incidents fewer lives had been lost due to enemy action than the 54 that were acknowledged to have died in Egypt in the early 1950s. Yet it was not until as late as 2003, after years of lobbying, that a General Service Medal was finally awarded to veterans who had served in the Suez Canal Zone between 1951 and 1954. The story does not end there, however, because, even now, Findlay (along with many others) still disputes the official casualty figures, believing that many of those who are still listed as having died in, for instance, road traffic accidents had actually been killed in ambushes by Egyptian nationalists. I will not go into this in any greater depth here but the book does provide persuasive evidence to justify the contention that the long-standing official total of 54 dead, but belatedly revised in 2001 to 613, is probably even higher.

There are a few slightly wobbly bits, eg the RAF's Nursing Service was named after Princess Mary (not Princess Marina); I am pretty sure that 'Wharton' should have been Warton; the photograph of a 'Dragonfly' helicopter on page 123 is of a Whirlwind, and there are one or two typos, but, in general, this 288-page hardback has the

production values of a mainstream publisher. I would particularly commend the 125 photographs, mostly contributed by some of the many conscripts who assisted the author in his research. These, and some of the descriptive passages vividly evoke the sights and sounds of the Egypt of that time, and I write from personal experience as one who attended school at Moascar, Fanara and Abyad for two years in the late 1940s.

Findlay aimed at two targets and he hit both, fair and square. This book offers an interesting commentary on official recalcitrance while providing a walk down memory lane for anyone, especially any airman, as distinct from an officer, who served in Egypt in the early 1950s.

**CGJ**

**Some of the People all the Time** by Alastair Mackie. Book Guild Publishing; 2006. £17.99.

If you are just one of the lads, the only way you are going to get your story told is to do it yourself, but if one has been a mover and shaker someone else will eventually decide that your achievements are (or perhaps were) worth recording and will write your biography. So what is it that motivates a prominent individual to do it himself? Is it simply a narcissistic ‘ego-trip’, a final attempt to grasp ‘the bubble reputation’ (Mackie’s story comes with a generous top-dressing of literary references) or, merely the hope that sufficient people will shell out to turn a modest profit? Or, if one had picked a few fights in one’s time, might it be a pre-emptive strike – to get one’s retaliation in first? Only the author knows for sure, but this one certainly picked a few fights.

Born in 1922, Alastair Mackie had a comfortable middle-class upbringing (nanny, tutor, prep school, Charterhouse) but, in 1940, he deferred the offer of a place at Cambridge to enlist in the RAF. Trained as a pilot, he flew Wellingtons and Liberators in the Middle East with Nos 108 and 160 Sqns. He returned to the UK in 1943 where, after a spell instructing, he joined No 233 Sqn (Dakotas) to drop troops and supplies over Normandy, Arnhem and the crossing of the Rhine, adding a bar to the DFC that he had won flying bombers.

Staff College and the RAFFC course aside, the salient features of Mackie’s post-war career were: CFS; a QFI tour at Cranwell; a stint

with the CFS Examining Wing, circa 1950-51 (Mackie is annoyingly vague about dates); a ground tour in Singapore; OC 101 Sqn, the first in its Vulcan days; DS at the JSSC; Deputy Secretary to the JIC; Station Commander at Colerne (Hastings); and, by now an air commodore, DASB.

Too senior to fly (at least not productively), frustrated by the office routine at the Air Ministry, disenchanted with inter-Service squabbles and disillusioned, ever since his time on Vulcans, with Britain's policy on nuclear weapons, Mackie decided to leave the Service. At the time, 1968, he was only 46 years old and, with his track record and a fair wind, he surely had every chance of climbing at least two more rungs up the promotion ladder, but the energetic Mackie needed a new outlet for his enthusiasm. Having devoted a good deal of time to studying for an external law degree while still in uniform (he passed his intermediate exam circa 1967, although he never took his finals), he parlayed this into a job at the Middle Temple, moving from there to the Architects Registration Council of the UK and then the British Dental Association, having, by his own account (and that's a problem with autobiography, of course, although I do not doubt that it actually was the case) left significant administrative improvements in his wake. Then came Mackie's most important, and most personally fulfilling, contributions to society when (the timeframe is even less clear here but it would have been the later 1970s-early '80s), as Director General of the Health Education Council, he launched head-on assaults against, among others, the food, tobacco, drink, drugs and sweet industries.

On his final 'retirement' Mackie lost no time in joining CND, soon becoming its Vice-President, and later Generals For Peace. Since then he has been an indefatigable campaigner, arguing tirelessly for the abolition of all nuclear weapons, and British ones in particular. He has often acted as spokesman for his cause, broadcasting, addressing meetings and debating publicly all over the UK, including the Oxford and Cambridge Unions, and abroad at venues as far afield as Washington, Berlin, Moscow and Athens, while contributing copiously to the correspondence columns of the broadsheets.

So – a remarkably full and productive life, with no apparent regrets, other than frustration at the constraints imposed by failing health in later years, and a sadness at being snubbed by the military as

a result of his anti-nuclear stance. Mackie is, most emphatically, *not* anti-military, and especially not in the case of his beloved RAF; he is *only* anti-nuclear.

So, what of the book? It is a 325-page hardback which contains a surprising number of factual errors, none of them critical, but disturbing just the same. For instance, the Wellington's turrets were courtesy of Frazer-Nash (not Boulton Paul); Gayford made his record flight in a purpose-built Fairey Monoplane (not an 'adapted Wellesley'); No 70 Sqn never flew Bombays (that was No 216 Sqn); the architect with prime responsibility for the design of pre-war RAF stations was Lutyens (not Rothenstein, an artist whose sketch of Lutyens is in the National Portrait Gallery); Odiham was not a grass airfield in 1945 (as early as 1939 it had been one of the first to be provided with a hard runway and this had been relaid and lengthened, and a second provided, both with concrete surfaces, in 1941); the Harvard was powered by a Wasp (not a Twin Wasp) and the Sea Fury by a Centaurus (not a Gryphon (*sic*)); Blackbushe was not 'later famous as Greenham Common'; the last two Canberra units at Waddington were Nos 21 and 27 (not 37 and 38) Sqns; the first front line Vulcan outfit was No 83 (not 617) Sqn; Embakasi airfield is about 5,300 (not 600) feet above sea level; a VC10 has four (not three) engines; No 101 Sqn was joined at Finningley by No 18 (not 83) Sqn; when, circa 1959, Mackie was jousting in his Vulcan with Wg Cdr Mike Beetham, the latter would have been driving a Valiant (not a Victor); and did Vulcans really drop 11 lb practice bombs? I could go on.

A competent biographer does the research necessary to establish the facts associated with his subject. All too often, the DIY chronicler believes that his memory is infallible; sadly, as here, it rarely is. Does it matter? Yes, because, while I was able to spot many errors in the air force section of the book, I found none at all in the later chapters – but was that because there are none, or because I was now on unfamiliar ground? It's a confidence thing, which inevitably leads one to question the validity of some of the points Mackie introduces when presenting his anti-nuclear case.

While I came to admire Mackie immensely, and would definitely want him on my side in any argument, I did find his book a bit heavy going at times. That is, of course, a personal problem, but towards the

end I really felt that I was being hectoring over the nuclear question. He writes fluently, although his prose is a little too florid for my taste, the narrative being interrupted by an overindulgence in bits of poetry and literary asides, and towards the end he quotes so extensively from his own letters to the press that he eventually begins to repeat himself, eg pages 271/330, 273/328 and 283/329. He writes with wit, is often amusing (although not laugh-out-loud) and leaves us in no doubt as to his opinion of some of the folk who crossed his path, for example: the ‘frightful’ Wg Cdr Russell Bell; the ‘tantrum-prone’ Norman Bottomley; Sir Francis Fressanges, who is described as boorish and bullying; Gus Walker, who is deftly skewered as a self-promoter; Foxley-Norris who displayed ‘phenomenal vanity’ and the ‘odious’ Julian Amery. It’s all good rambunctious stuff.

The last twenty or so pages are given over to a prolonged *Grumpy Old Men*-style harangue about the bomb (we don’t need it); Europe (we need to be in it); the American Religious Right (dangerous); the BBC (dumbed down); the English language (it’s being debased); the ‘red tops’ (appalling) and so on. Perhaps this is the answer to my opening question. Is Mackie’s book really about having a final say, a ‘rage against the dying of the light’? – probably, because he trots out Dylan Thomas in line 1. Read his story for yourself and see what you think, because, despite my observations, I have no hesitation in recommending this one. While Mackie’s early retirement was almost certainly a significant loss to the RAF, unless you actually read this book, few of you will appreciate the extent to which his later work in the field of health education has been of permanent benefit *to us all*. Irascible he may have been, but a ‘good thing’ for all that.

**CGJ**

**Gloster Javelin** by Richard A Franks. Dalrymple & Verdun; 2006. £16.95.

This is the second in an emerging series of perfect-bound A4 softbacks (the first one dealt with the Shackleton, the third, the Sea Vixen, and the Attacker should be available by the time that this appears in print). The target market embraces both the enthusiast historian and the modeller. For the former there is an account of the evolution of the Javelin project, going right back to rather bizarre Lippisch-like concepts and variations on the Meteor theme, followed

by an account of test flying, including the trials and tribulations involved in sorting out the aeroplane's rather idiosyncratic behaviour when stalled and/or spun. This is rounded off by descriptions of the differences between the nine production models and of their use by the RAF.

For the modeller, Richard Caruana has contributed excellent side-view colour profiles of no fewer than fifty-three individual aeroplanes, thus illustrating most of the markings worn by virtually every Javelin unit, and three more offering top and bottom views as well, one of the latter is a standard RAF machine (a Mk 9 of No 25 Sqn), the other two are of aeroplanes sporting startlingly garish colour schemes sponsored by the A&AEE for trials and calibration work. These are supported by close to 100 photographs, all of them well-reproduced on the coated paper used throughout. The content is rounded off by appendices offering: general arrangement drawings of some of the pre-Javelin projects and of potential post-Javelin developments; a random selection of drawings extracted from various Service publications; summarised histories of the Javelin-eras of all units which operated the type; and a listing, by serial number, of all Javelin airframes.

Criticisms? There was evidentially some uncertainty as to whether a Vickers Valetta had one '1' or two, so both options have been used – it has only one. The Javelin Mobile Conversion Unit (JMCU) morphs into the Javelin Mobile Training Unit (JMTU), but I am not convinced that this redesignation actually occurred, and I am equally doubtful about a statement to the effect that, when the post-Javelin No 3 Sqn was re-established with Canberra B(I)8s at Geilenkirchen, it was as a Bomber Command unit. But these are mere cavils. The real problem is that, apart from the handful of extracts from Service manuals, there is little, if anything, really new here. The Javelin is a well-documented aeroplane and has already been the subject of a number of books and booklets, so there is a re-cycled feeling to this one. Where the author missed a trick, I think, is in not expanding the serial listing. As presented, we are told only which units used each of the 427 aeroplanes that were built, information that is available elsewhere, but the Javelin's service covered only twelve years (1956-68) so it should not, I would have thought, have been too difficult to have established the dates on which each one was initially delivered, of each subsequent change of ownership and of their eventual fates – that

would have been something new.

None of which is to say that this book is ‘bad’. It isn’t; it’s just that it is a retelling of an old story. That said, of course, if you are not already familiar with that story, this 112-page book, which has very high production values, will probably tell you pretty much everything that you need to know – and those Caruana profiles alone are well worth the price.

**CGJ**



**PS** On page 16 there is a really interesting photograph of the fourth prototype, WT830 (albeit captioned as the third, WT827,) which illustrates a previously unrecorded step in the evolutionary process that led to the cranked wing leading edge that was eventually sported by production Javelins. Or does it? It is actually an illusion created by the image’s having been distorted when the original photograph was moved laterally while being scanned prior to reproduction. Easy to spot once you know – look at that elongated canopy – but it really had me going for while...

## **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:

1996	Sqn Ldr P C Emmett PhD MSc BSc CEng MIEE
1997	Wg Cdr M P Brzezicki MPhil MIL
1998	Wg Cdr P J Daybell MBE MA BA
1999	Sqn Ldr S P Harpum MSc BSc MILT
2000	Sqn Ldr A W Riches MA
2001	Sqn Ldr C H Goss MA
2002	Sqn Ldr S I Richards BSc
2003	Wg Cdr T M Webster MB BS MRCGP MRACs
2004	Sqn Ldr S Gardner MA MPhil
2005	Wg Cdr S D Ellard MSc BSc CEng MRACs MBCS

### **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  
Air Commodore H A Probert MBE MA

**SECRETARY**

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