



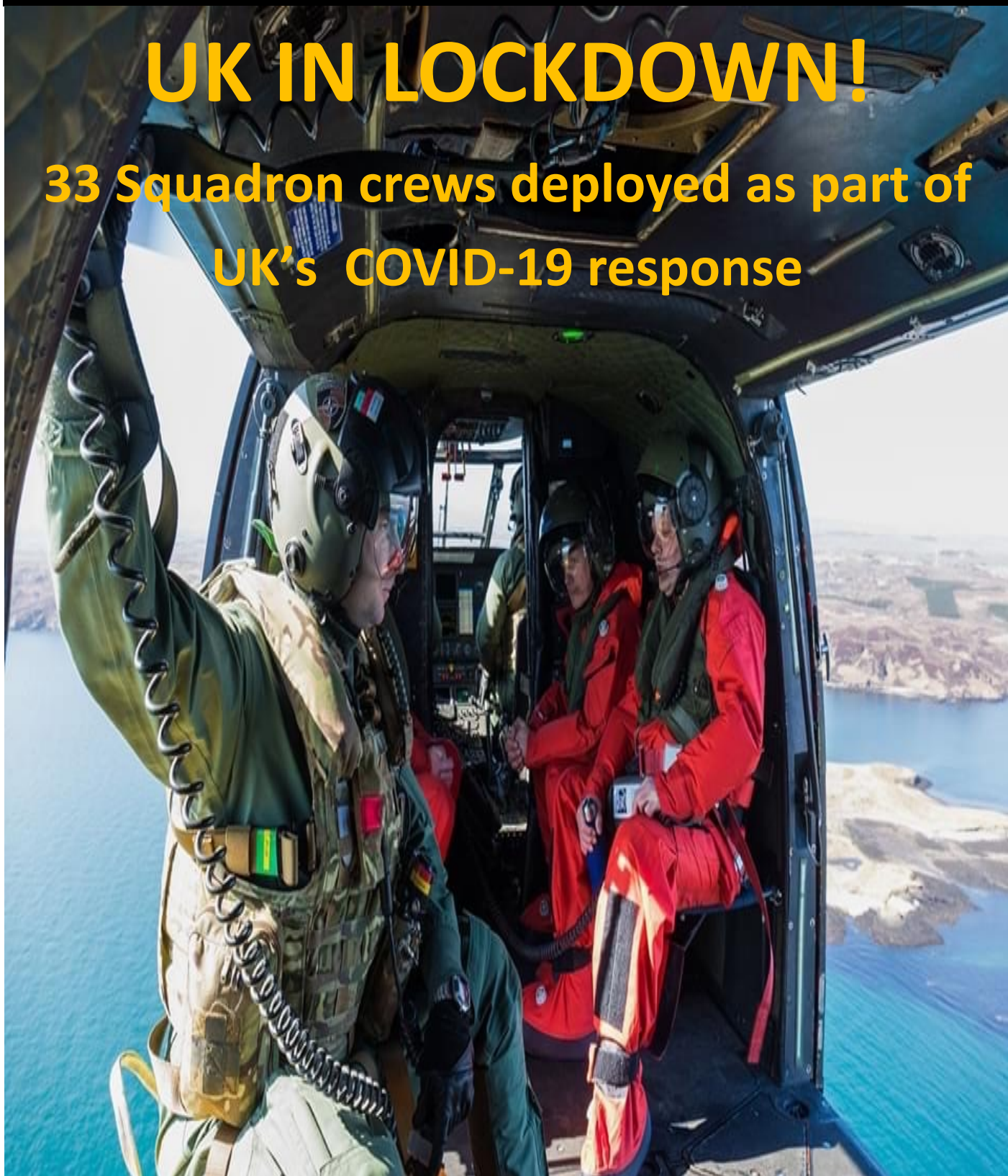
# LOYALTY

The 33 Squadron RAF Association Newsletter

Issue 12 Summer 2020

## UK IN LOCKDOWN!

33 Squadron crews deployed as part of  
UK's COVID-19 response



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Stuck at home because of COVID-19? What better opportunity to start researching your old Puma stories for the 50th anniversary 'Loyalty' editions?

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**Cover Picture:** This is just one of the images shown on the RAF Benson Facebook page on 28 April 2020. The images were taken by RAF photographers from RAF Lossiemouth who joined RAF Benson's Puma helicopters as they visited various locations around the Western Hebrides, including Stornoway, Benbecula and Barra. As the UK lockdown began, three Pumas were deployed to Kinloss Barracks on 20 April 2020 to aid Scotland and North England in the response to the COVID-19 outbreak to support MACA - Military Aid to Civilian Authorities. The Puma crews liaised closely with NHS UK and the Maritime and Coastguard Agency based in each area and carried out essential training, which included practising lifting a patient onto the aircraft and formulating the procedures to be adhered to if a medical evacuation was needed.

That training was put to good use on 22 April when a crew responded to a 0100 hrs callout to support the transfer of a critically ill patient from the Isle of Arran to a hospital in Kilmarnock. Landing at Knockenkelly they met the emergency medical care team on site, and carried out a text book medevac mission back to the mainland. For more detailed coverage of the Pumas' operation in Scotland, and information about 33 Squadron, including film clips and interviews, and up to date information about 33 Squadron, go to the official page for RAF Benson: <http://www.raf.mod.uk/rafbenson>



## From the Editor...

We had great hopes for 2020, which had started so well in the New Year with the Association gathering in RAF Benson's local, the Shepherd's Hut in Ewelme, to celebrate 33 (Home Defence) Squadron RFC being formed on 12 January 1916. In his speech to the members, Chairman Dick Brewster highlighted the plans we had for the year ahead and hoped to see plenty of members and their families supporting the social events. In Spring we were looking forward to meeting up with three members of the Roney family in the Netherlands as a new book was being published that included a chapter on George's, and 33's, role in the Air War over Zeeland in 1944. There was the AGM and Benson Families day in summer, we had another good Battlefield Tour up our sleeve, looking at the role 33 played in the crossing of the Rhine 75 years ago in March 1945, then the Cenotaph Parade and Puma Reunion, with a Tower of London visit sandwiched somewhere in between.

Four months later, I write this editorial as the UK approaches its ninth week of lockdown because of the COVID-19 pandemic that has created havoc around the world. Who knows when and where we will all be meeting together socially again? Will it be this year, or sometime in 2021? And yet, somethings have remained fairly normal. When the Spanish Flu pandemic hit the world in 1918, 33 Squadron was its infancy; 102 years later we find its personnel deployed to Scotland as part of the Joint Helicopter Command's Aviation Task Force, to assist the NHS. At the same time the Squadron is maintaining national standby and its operational commitments over in Afghanistan. Working with the NHS is home defence of a different kind, but just as important as the role it played in defending the

country from German Zeppelin air raids all those years ago.

Looking ahead 12 months, the man charged with running the Puma 50th Anniversary Committee is the same man who went off at short notice to head up the Aviation Task Force operations in Scotland, so we are still waiting to hear the Station's plan to celebrate this special occasion and where we, the 33 Squadron and the 230 Squadron Associations, can best help. The Chinook Force have had to postpone their 40th Anniversary celebrations until next year, an event which was already planned for the end of 2020, so with the Crete 80th in May, 2021 is going to a busy year - COVID-19 permitting.

Unlike the marvellous response to Captain Sir Thomas Moore's 100th birthday, what an incredible man and an even more incredible result for the NHS, I have not yet been inundated with sacks full of mail containing your stories and photographs to use in the 2021 Loyalty editions. Finding books by Philip Joubert de la Ferté, Alfred Kingsford, Marcel Comeau and Edward Howell, and articles sent in to the Squadron by Crete veterans, is like finding gold. Sadly there doesn't appear to be anything similar that has been written by former members of 33 Squadron since it reformed with Puma helicopters. Please have a go, by printing it in 'Loyalty' and saving it on the Association website, you will be helping to build up a valuable archive of information for future researchers and Squadron members.

Finally, I am aware that there is not a specific article about Crete in this edition. 33 Squadron could not attend the commemorative service there this year, and we missed out on Marcel's medals despite a fantastic crowdfunding appeal led



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by Gareth Attridge, who also did a fine piece of work by publishing daily accounts about Crete on Facebook. We also had some late information from another source showing us Luftwaffe logbook entries from the battle that we want to pursue further for the 80th anniversary next year. So watch this space, and stay safe.

*Proud to be ...33*

*Dave Stewart*

## From the Chairman...



**Chairman Dick Brewster, surrounded by serving and former colleagues in a certain drinking establishment in town. I am sure that they were all fully paid members of the Association by the end of the evening, as Dick has his ways of making people do things they didn't know they wanted to do! Right, Mr B?! Paul, please check that we have received membership forms from the following: Martin Jones, Gow Chetri, Rob 'Badger' Bates, Alex Bilverstone, John Batten, Ali Fisher and Zoe Fowler!**

Former Prime Minister Harold Wilson once said, "A week's a long time in politics." Well, to paraphrase that saying, 'A year most certainly is a long time,' and who would have ever thought that the Olympics, Wimbledon and the Munich Oktoberfest would be cancelled and what of the Puma Reunion and Cenotaph?! So along with every other Association and group in the country we are all currently in a COVID-19 'Holding Pattern' until the Government guidelines are relaxed; however, to quote Her Majesty, "We will meet again."

Until the Lockdown was imposed the Association had enjoyed another busy year since I took over the chair at our last AGM. Jez Reid organised another outstanding Association attendance at the Cenotaph and we completed another successful European 'Battlefield Tour', thanks to the organisation and research skills of Dave Stewart, ably assisted by Chris Perkins and Dave Coombes, a team now known collectively the 'Three Amigos'. The Tour culminated with a wreath laying at the Menin Gate in Ypres on Saturday evening, where we were joined by Jan and Renate Westhoeve, who continue to work tirelessly to support the Association. The following morning our convoy headed north from Belgium into the Netherlands, as Jan had organised the

formal handing over of a memorial plaque to the Alderman of Sluis at WO George Roney's crashsite, a plaque that will be attached to a permanent memorial erected on the Dekker family's land which will explain George's story to passers by and ensure that he will be forever remembered. After the handover all of the Tour members joined the townsfolk and attended a wonderful commemoration service to WO George Roney in Schoondijke church. It was indeed a humbling 24 hours in Ypres and Schoondijke and I would like to pass on my thanks again to all those who were there in some atrocious, typical SH weather.

After nearly a year in the chair, my thanks and appreciation must go out to our Committee who continue to work tirelessly on your behalf to promote the Association at every turn, whether it be Jez Reid organising our submission in regards to the Cenotaph and keeping the finances in order, or Paul Davies, the Membership Secretary who, with both Dave Stewart and Neil Scott, ensures that I am kept fully informed in regards to both 33 Squadron and Station events. I am pleased that both Dave and Neil have been co-opted onto Benson's planning committee for the proposed 'Puma 50th Anniversary' next year, which will mark the Puma coming into service with the RAF back in 1971.



Let us hope that COVID-19 won't spoil that event too.

Dave and Neil's attendance on various committees around the station resulted in me attending a rather special event in November. Wing Commander Royston-Airey had the idea to gather as many former commanding officers as possible at 33 Squadron for the day. As the Association Chairman I was formally invited to attend this inaugural event, which turned out to be both very enjoyable, in that not only was I able to bring the former COs up to date with the Association but also to update them on future events. It was made more memorable as a photograph was taken in the morning of all of the attendees, replicating a previous photo of former 33 Squadron COs gathered together at Leeming in April 1958, when the first CO, by then Air Chief Marshal Joubert de la Ferté, presented the Squadron with its Royal Standard. I hope you all caught the article about the visit on the Association's website.

All of the Committee continually strive to bring 'New blood' and Association members together and this year we started with a lunch in the 'Shepherd's Hut' to mark the standing up of 33 Squadron at Bristol Filton on 12 January 1916. It was a very successful and enjoyable afternoon, and as an invitation had been sent out to the 'Past and Present' serving members I was pleased to see some serving members there with their wives and families. My sincere hope is that when we get back to some form of normality we can replicate this regularly throughout the year, it would good to see more old friends at these events. Talking of old friends, while writing this my thoughts turned to all those who we have served with and are no longer with us. The loss of old friends was brought close to home recently when I heard about the tragic death of WO Sean Turner, who succeeded me back in 2005 as 33 Squadron's W.O Eng. I have passed the Association's condolences on to Sean's wife and family at this tragic time.

As I mentioned at the beginning, the restrictions introduced because of the COVID-19 pandemic have had a major effect on many national and international events this year. Having discussed the matter with the Committee, and having considered the various 'Skype/Zoom/Team' conference call options, it was decided to temporarily postpone this year's AGM until the 'Lock down' restrictions have been lifted sufficiently to allow us to meet and hold a proper meeting. Given the current circumstances and the Government guidelines I hope you will agree that such a decision was correct.

The recent 75th Victory in Europe celebrations served to unite the whole nation, both old and young. It is important that we, the 33 Squadron Association, must also stay united and support each other, not only during these current times but in the future. As all of

you know the Association exists for each and every one of us, and if we can help in any way please don't hesitate to contact me.

As we look forward towards the remainder of this year, firstly, and on behalf of myself and the 33 Squadron Committee, I hope you and your families all remain safe and in good health and we look forward to seeing you all in the not too distant future, starting with the AGM. Please don't forget about contributing to the 'Loyalty' magazine, and if you have any suggestions or feedback regarding the Association then please do not hesitate to contact your Association committee.

*Thank you.*

*Dick Brewster*

*Loyalty*

## From the Hart - OC 33 Squadron



In the six months since I last wrote, life on 33 Squadron has continued at pace. In January, A Flight recovered from an exceptionally successful tour in Afghanistan in support of Op TORAL. Under the command and leadership of Squadron Leader Doug Fowler, A Flight endured the hardships of the Afghan winter and all the challenges that this brings, both in the air and on the ground. On returning to the UK, Doug handed over the reins of A Flight to Squadron Leader Johnny Longland. Doug's final flight was on 15 May and in traditional fashion he was met by the Station Commander and station executives (see photo above). During his time on Puma and Chinook Doug has amassed over 6000 hours, an impressive target nowadays. After a glass of bubbly the entire Squadron gave Doug a fitting send-off at a local wine bar in Wallingford, where we also took the opportunity to say hello and goodbye to

several others joining and departing our fine Unit.

In late February, whilst a few lucky members participated in some much-deserved downtime in the form of a skiing expedition to Austria, an Aviation Short Term Training Team (STTT), consisting of 3 pilots and 2 crewmen, deployed to Hamat Air Base in Lebanon (see photo below). Led by the 2ic, Squadron Leader Max Bond, the primary focus of this iteration of Defence Engagement Activity was the professionalisation and development of No.9 Sqn's Rearcrew Cadre. Unlike the RAF, the Lebanese Armed Forces' Air Force (LAF AF) do not have a specific career stream for Crewmen, instead they rely upon *ad hoc* air and ground training for experienced engineers. The training and mentoring provided by 33 Squadron's Crewman Leader, Flight Lieutenant Niall Davidson, and Master Aircrew Jon Stone was exceptionally well received by the LAF Puma







**Above: A photo to warm the hearts of any ex-S&D Flt boys who reads this! Two of the LAF AF Pumas, sporting sponson tanks.**

crews, with the LAF AF CAS personally thanking the team prior to their departure. But the benefit was not all one way, the LAF AF have very recent experience of countering Daesh at their eastern border with Syria. Many of the 9 Sqn pilots were able to regale tales of flying Close Air Support and Air Interdiction Missions in their specially adapted Pumas.

But beyond this, anyone who has travelled to Lebanon can attest to what an exceptional country it is. With a fascinating history, a welcoming culture that spans across a plethora of religions, exquisite culinary experiences drawn from across the Middle East and the Levant, and according to Flt Lt Reynolds, some of the finest wines known to humanity! The Team even managed to get two days Skiing in on Mount Lebanon! The affiliation established between 33 Squadron and 9 Squadron LAF AF looks set to endure long beyond my tenure. The Defence Attaché now considers 33 Squadron's STTTs to be a central pillar of his annual Defence Engagement Programme and as I have alluded to, the benefits to those on 33 Squadron are immeasurable.

In early May, Squadron Leader Jez Allinson deployed with 33 Squadron's B Flt to Afghanistan. After an exceptionally successful Pre-Deployment Training period culminated in a week long Humanitarian and Disaster Relief / Non-combatant Evacuation Operation (HADR/NEO) focussed exercise based in and around South Wales. Significant and detailed planning by Flight Lieutenants Ben Wallis and Mark Stoodley provided an exceptionally rich training environment, with crews being forced to think beyond traditional SH operations. Supporting the South Wales Police, Fire Service and other civilian agencies, the deployment gained significant media attention when they landed in the middle of Cardiff Bay on a busy Monday afternoon. Squadron Leader Allinson will be providing a separate



**Above: 33 Squadron Puma in the grounds of Cardiff Castle.**

**Below: Landing in front of the Pierhead Building in Cardiff Bay, situated next to the Senedd Building, the debating chamber of the Welsh Parliament, *Senedd Cymru*.**





article focussed on 33 Squadron in Afghanistan soon. However, I highly recommend you take a look at the RAF Benson Facebook page for 15 May, where Jez's amazing fundraising exploits dressed as a Stormtrooper from 'Star Wars' were captured by BBC South Today. Benson's Facebook page provides coverage of all of the stories I have written about here, with interviews, video clips and some excellent photography.

And so to the topic on everyone's mind, COVID 19. 33 Squadron's A Flight were the first to deploy to Kinloss Barracks in Scotland in support of Op RESCRIPT, the UK Military Response to the Global Pandemic. Under the command of Squadron Leader Johnny Longland, A Flight were instrumental in working with civilian medical teams both in Aberdeen and Glasgow, to trial and clear the use of equipment to enable medical transfers from the more remote areas of the Scottish Highlands and Islands. In the 26-day deployment, personnel provided assured task-lines 24/7, and conducted several MEDEVAC Missions as well as more routine tasking and training serials.

But beyond this, the impact of the 'new ways of working' imposed by COVID-19 have changed Squadron life beyond recognition. The Squadron is manned to the absolute minimum level, with people coming into work as and when they are required. For now, and for the foreseeable future, Beer Calls in the Hart's Head are on hold, so too are Honours and Awards Ceremonies, Adventurous Training and Force Development Events and Squadron Socials. This has presented considerable challenges to the Squadron in terms of morale, cohesion, communication, sense of purpose and direction, all rely upon communication, utilising technology to achieve the same effect as face-to-face interaction has been a steep learning curve for all. But there are undoubtedly benefits too, most recently the Force Commander held a Fireside chat for Puma Aircrew, utilising Zoom, he was able to reach out to the entire Force, at Benson, in Afghanistan and Scotland.

In closing, you will be delighted but not surprised, I'm sure, to hear that the Airmen, NCOs and Officers of 33 Squadron continue to go about their business with humility, commitment, dedication, professionalism, and good humour. Despite the disruption caused by COVID-19 we have not missed a beat and, for me, the privilege of command continues to be just that.

*Yours ever*

*Wg Cdr Chris Royston-Airey*

**LOYALTY**



**Above: As if long distance running was difficult enough, this is Jez's marathon running attire!**

**Below: Training with the medical teams in Scotland.**





## 'Fred Karno's Army' - RAF Flying Clothing through the Years



When a group of RAF personnel gather together it is very unlikely that compared to their Army counterparts, who have been told what to wear in their Daily Routine Orders, and woe betide any soldier or officer caught by the RSM wearing anything to the contrary, not one airman will be dressed the same. This well known photograph of 33 Squadron pilots in Greece in 1941 illustrates the point perfectly; what a wonderful array of kit! This article came about through a letter written by the brother of one of the men above, Eric 'Chico' Woods (9th from the right).

Loyalty readers may recall the story of Eric and Steve Woods from Issue 10. Eric fought in Greece and Crete, made it back to Egypt and was part of the reformed 33 Squadron flight under Vernon Woodward. Sadly, Eric was one of the first casualties that the Flight suffered, shot down on 17 June 1941. Eric's brother, Steve, asked to go to 33 Squadron after training, served as a flight commander with Lance Wade, and was later asked to join Lance Wade's squadron - 145 Squadron - in Tunisia.

While he was based at Ben Gaden in 1943, Steve wrote home to the family and mentioned being issued G-suits that allowed them to pull 7G in a turn. That started my research, which has resulted in this article. I have to thank Dr Graham Rood at Farnborough, whose paper on Flying Clothing provided much of what you are about to read.

The cover of this edition of 'Loyalty' shows a 33 Squadron crewman wearing the latest issue of aircrew flying clothing and in many previous Loyalty editions one can see the variety of the aircrew clothing that has been worn by 33 Squadron personnel over the years. Since the founding of the Royal Flying Corps (RFC), aircrew have been tasked to provide much of the operational and tactical intelligence in wartime, maintain communications, interdict and engage the enemy, while controlling and managing the flight, the aircraft systems and its performance. We are all aware that from the start of the First World War aircraft developed rapidly, particularly during the two World Wars and into the Cold War, when greater levels of finance for research, experimentation and development were available than in times of peace, and into the Cold War.

Aircrew are relatively frail - it's official - and need to be protected against the cold, air-blast, noise, heat, noxious substances, chemical and biological weapons, nuclear flash, laser weapons, fire, the effects of altitude, bright light, instantaneous and continuous acceleration and impact, and enabled to escape from the aircraft and subsequently survive immersion in cold water. When suitably protected, aircrew have to be able to fly, communicate, calculate, maintain mental agility and see clearly at all times. Under this plethora of needs, personal protection by the use of

man-mounted equipment has, until recently, been found to be the best technical and economic solution.

This results in aircrew tending to be an expensive liability (not only in cost but also in weight and complexity of cockpit systems) and it is not from sentimentality that, for more than one hundred years, aircrew have been central to, and the focus of, the aircraft system. It is because they can do the required job better than any other option. To date, technology had been unable to match the flexibility and operational effectiveness that a well-trained pilot can bring to the job. However, in some areas, that has begun to change.

From the earliest of days, when protection was mainly against cold, weather, slipstream and, in some aircraft, oil from the engine, improving technology increased the capability of the aircraft and their combat effectiveness. The aircrew then had to be protected from the new threats to their performance and operational effectiveness. Wars not only increased the speed of aircraft development, it also led to rapid improvements in flying clothing.

#### 1904-1918

As Association members heard during the visit in 2019 to the Eastchurch Aviation Museum on the Isle of Sheppey, the first manned, controlled and powered flights were of limited altitude, speed and duration and motorists of the day could travel at faster speeds. As they travelled in the same environment, it was natural and economic to use the protection that was afforded to motorists by the larger department stores. Thus those early pilots flew often in just a tweed jacket and trousers, suitable hat and a pair of goggles. With airspeeds up to 60mph and altitudes generally below a few thousand feet, the major enemies were the cold and protection against the elements. As aircraft became more capable, pilots needed better protective clothing both for their longer duration flights and against being caught in inclement weather such as rain. The readily available motoring apparel was the norm and could be obtained at reasonable cost.

#### Specialised protective clothing up to 1914

As flying developed and engines became lighter, more powerful and more reliable, the increasing band of aviators, flying longer distances, often had their good tweed suits damaged by oil, dirt and weather and looked for something more suited to flight. When Bleriot accomplished his 37 minute flight across the English Channel in July 1909 he was wearing his tweed suit, a khaki jacket lined with wool, a blue cotton boiler-suit and a skull cap with ear-flaps. Leading European



A Tweed jacket, cap and scarf was adequate protection in the pioneering days of flying - Claude Grahame-White 1910 (FAST Archive)



Wrapping up warmer. Henri Farman (above) and Samuel Franklin Cody and his lady passenger (below) highlight the exposed conditions and lack of protection against the elements in these early flying machines. Both are wearing better protective clothing. (FAST Archive)





stores, such as Burberrys, Gamage and Rold soon noted the potential for sales in this exciting new 'sport' and rose to the occasion, producing aviators' combination suits, fleece-lined boots, more specialised goggles, rainproof gauntlets and leather coats. These were probably the first items that could be classified as 'bona-fide' flying clothing, although not yet military.

As many of flights of the period ended in a 'controlled crash' or a heavy landing, with many pilots sustaining varying levels of head injuries from coming into contact with the aircraft structure or the earth, aviators took a further leaf from motorsport and started to use hard helmets from motor-cycle racing. These were modified for the purpose of flying and establishments such as Dunhills in England and Rold in Paris began to manufacture such specialist helmets. Individuals such as Mr Warren from Hendon also produced their own design of helmet, which, with its excellent shock-absorbing qualities, was widely used by pilots. Samuel Cody also used a helmet to his own design and sold by Gamage of Holborn as the 'Farnborough'.

By this time flying was coming of age and was no longer regarded solely as an exciting sport. Shadows of war were beginning to spread across Europe and the expansion of the Royal Engineers School of Ballooning to form the Air Battalion of the Royal Engineers in 1911 at Farnborough was a step towards the formation of an air arm as a separate corps or service. The final step was taken in April/May 1912 when the Royal Flying Corps was formed. But flying clothing still generally comprised adapted motoring apparel.

### The Great War 1914 – 1918

By the start of the First World War, developments by the Royal Aircraft Factory and British industry had provided more refined aircraft in which the pilot was contained more within the fuselage, rather than perched on a wicker seat and fully exposed to the elements. At this stage there was no formal issue of clothing specifically for flying but the military, with their wide experience of Army motor transport, had a range of readily available motoring garments which they offered to the newly formed Royal Flying Corps and Royal Naval Air Service pilots. Thus, at the start of the war pilots were provided with a more formalised issue of motoring gear – weatherproof coats, goggles, gauntlets, leather boots etc. – all of which were worn over the uniform. Although pilots were able to use the military issue they were also at liberty to purchase their own clothing and commercial companies continued to develop their motoring clothing into more specialised flying clothing.

# FLYING OUTFITS



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The "SIDCOT"

## The Sidcot suit

There is a Sidcot suit on display in the small museum run by Mick Prendergast here at Benson, and many examples of the suit being worn in photographs throughout previous editions of 'Loyalty' and on the Association website. In the winter of 1916 the first significant stride was made to providing effective protection for the pilot and this arrived from the brain of Sidney Cotton, an RNAS pilot with No.8 Squadron. Cotton had been working on his own aircraft when a 'scramble' was called and he flew in his dirty overalls for an hour or so. Upon landing he found that, unlike his fellow pilots who were shivering from the cold, he was quite unaffected. Having thought through this effect, he realised that it was the oil and grease soaked into the overalls that had retained the body heat. Picking up on the idea, he took leave and travelled to London, to Robinson & Cleaver, where he had a flying suit made for him to his design. The suit had three layers, a thin lining of fur, a layer of airproof silk, and an outside layer of light Burberry material, all made into a one-piece suit, just like his overalls. Robinson & Cleaver were asked to register the design on behalf of Cotton and the flying suit took its name from the inventor and was called the Sidcot suit (SIDney COTton).

By late 1917, tests had shown that the Sidcot Flying Suit No 5 was regarded by pilots as the most suitable for operational use. Consequently the manufacturers of the suit, Robinson & Cleaver, were asked to produce 250 suits per week, just fourteen days after the order. Deliveries were later expected to reach 1,000 per week just four weeks after the initial order. By December 1917 the orders for leather flying coats, some 3,000, were cancelled in favour of the Sidcot suit. This suit met virtually every requirement for protection against the primary threat, the cold, and was in service in a number of modified and development forms right through into WW2 and only ceased being used as closed cockpits, combined sometimes with cabin heating, became the norm in aircraft design. 'Fug boots', a further layer of protection for the legs which we saw on display at the Newark Air Museum, were generally discarded with the introduction of the Sidcot suit, but they continued to be used in the 1920s in combination with the Sidcot in the Middle and Far East when the RAF were policing the protectorates, and long-endurance high-altitude flights were needed to clear the many mountain ranges.

## Flight at high altitude

By this time the altitude ceiling of the new varieties of aircraft had increased. For example, the Sopwith Pup had a ceiling of just over 17,000 ft and the Spad IV managed 18,000ft. Patrols were flying regularly at 10 to



Captain Halley and his observer sporting 'fug boots' whilst flying Handley Page V1500 bombers on the Northwest Frontier in India in 1918. (FAST Archive)



2nd Lt Hubert Philip Solomons 33 (HD) Sqn RFC, who died when his FE2b (A5656) crashed at the Gainsborough Landing Ground at 2000 hrs on 20 October 1917. At the subsequent Inquest the Board suspected that Solomon's fug boots restricted the flying controls range of movement, causing the aircraft to crash.

15,000ft and above with outside air temperatures, in the cold winters, often at  $-35^{\circ}\text{C}$  or lower. To combat the cold soak induced during long patrols at these type of altitudes, the first efforts at electrically heated clothing were introduced, and this generally marked the introduction of technology into the development of flying clothing.



Although introduced for only half of the piloting complement, each set of issued clothing comprised an electrically heated waistcoat, gloves and a pair of soles for the boots (see FE2b photo). These items were not intended as a replacement for the normal flying clothing but were meant to be worn under the existing kit. Power for the clothing was provided from a small windmill generator mounted on the wing struts or fuselage and was normally satisfactory, but, when in a dive and often with no voltage regulator incorporated, the higher voltages generated often caused burns, particularly to the hands and fingers. A number of constructional problems ensued in operational use, however, particularly in the gloves, where continuous flexing caused the wires to break and also in the boots where the mica heated sole inserts were prone to cracking. But in spite of these problems, and when they were working, the heated systems provided some respite from the cold.

By August 1918 the Air Board had issued specifications for the Mk1 flying helmet, fitted with wireless earpieces and a detachable oxygen mask. So, by the end of the First World War the Air Ministry had defined the flying clothing issue to pilots and observers and this is shown, as published in Air Ministry Weekly Orders 5 December 1918, along with the rates chargeable for lost kit. This essentially defines the official flying clothing issue at December 1918 and these formed the first of the RAF stores reference numbers (prefaced with 22C/) approximately from 22C/1 to 22C/10 (e.g.22C/5 Caps Fur-lined). Oxygen equipment has a 6D prefix and electrical equipment for clothing a 10A prefix.

### The Inter-War Years

The period 1919-1939 saw aviators filled with the yearning to be able to fly faster, higher, longer and break aviation based records. Private flying rose in popularity and flying clubs were formed to cater for the need. The aircraft, however, did not change significantly and military models were essentially no different from the WW1 concepts and this was particularly apparent in the area of flying clothing. The major threats still remained the cold and the blast of the slipstream. War surplus clothing was widely available on the market and a Sidcot suit, a leather coat or just overalls were the normal wear for civilians.

In the military, the Sidcot suit became the preferred flying suit and by 1922 the leather coat and trousers were fully withdrawn from the RAF inventory. Improvements in the basic Sidcot suit included fireproofing and the RAF 1930-pattern suit was an all-in-one rubberised linen suit of grey/green colour and this was later superseded by the 1940-pattern suit. The suits were fitted with a detachable fur collar and a large pocket on each knee and fastened with the newly



**FE2b observer wearing an electrically heated waistcoat and gloves which was worn under the RFC uniform and a leather coat. The officer on the right wears a new Sidcot Suit and both wear Mk1 mask goggles, as advertised by Dunhills. (IWM)**

In the absence of documentary evidence (eg FS Form 20 or certificate) each pilot or observer will be deemed to have received a complete outfit, and will be charged with the value of any article not forthcoming.

A complete outfit consists of the following articles:

Boots, thigh or knee .. .. .	pairs	1
Cap, fur-lined .. .. .		1
Gauntlets .. .. .	pairs	1
Gloves, silk .. .. .	"	1
Goggles, mask (without glasses) .. .. .	"	1
Glasses, triplex, tinted .. .. .	"	1
Glasses, triplex, non-tinted .. .. .	"	1
Suits, aviation; or jackets, leather .. .. .		1
Overshoes, gaitered .. .. .	pairs	1

This order will be repeated in the orders of all formations of the RAF, both at home and overseas.

The rates chargeable against individuals deficient of flying kit are as set out below:

	£	s	d	
Boots, thigh .. .. .	3	18	0	pair
" knee .. .. .	2	18	4	"
Caps, fur-lined (summer) .. .. .	12	0		each
" " (winter) .. .. .	1	8	3	"
Gauntlets, observer's, old pattern .. .. .	17	0		pair
" pilot's, old pattern .. .. .	1	2	0	"
" pilots' and observers' (new pattern) .. .. .	17	0		"
" linings, worsted .. .. .	1	9		"
Gloves, silk .. .. .	9	6		"
Goggles, mask, Mk I (without glasses) .. .. .	12	0		"
" " Mk II (without glasses) .. .. .	12	0		"
Glasses, triplex, tinted .. .. .	5	7		"
" " non-tinted .. .. .	4	7		"
Suits, aviation (Sidcot) .. .. .	7	16	6	each
Jackets, leather .. .. .	6	7	6	each
Overshoes, gaitered .. .. .	9	10		pair

Adjustment of stoppages will be made as laid down in Weekly Order No 903 of 1918, as amended by Weekly Order No 1071 of 1918.

developed technology in the form of the zip fastener. A woollen or a quilted kapok lining was available but not always popular due to its lack of adequate ventilation.

### Electrically heated clothing

As the extremities of the human frame, the hands, fingers, feet and toes, generally suffer more from cold exposure, it was these areas that needed to be adequately protected. The WW1 issue of knee or thigh boots, often worn with socks with multiple loose layers of silk and wool were superseded by the 1930-pattern boot; a knee length, light brown suede-boot lined with sheepskin with a rubberised section covering the foot. This rubberised covering prevented the lower areas of the boot absorbing water when traipsing across the apron to the aircraft and the water subsequently freezing in flight.

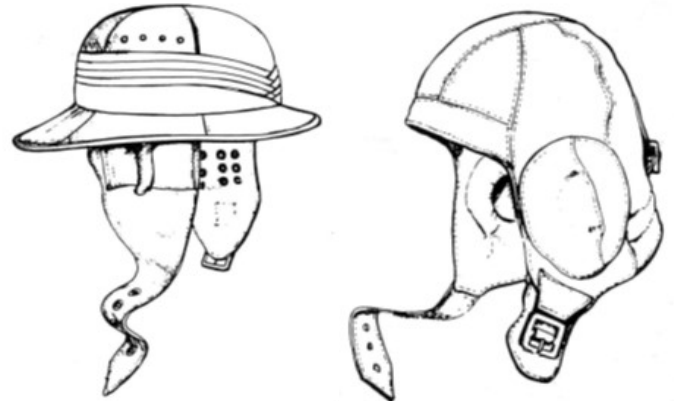
In spite of the many technical, operational and installation problems, it was recognised that electrical heating remained a prime solution to the problem of cold and, post-WW1, research and development effort continued in electrical heating of flying clothing. The distinction needs to be made between electrically heated clothing and clothing that is wired (electrically wired) to conduct the electricity to the heating clothing at the extremities i.e. generally heated gloves and boots. In the late 1920s Farnborough produced an electrically wired suit which was tested into the 1930s but was only issued to a few bomber and high-altitude meteorological observation crews. While such development continued well into WW2. It is painfully clear from the descriptions given to us by Jan Linzel of the misery the Squadron went through in inadequate clothing while escorting high level bombing formations over the Low Countries and Germany in a Spitfires designed and equipped for low-level Ground Attack and CAS that by 1944 2nd TAF squadrons had not benefitted from these specialist flying clothing developments.

### Flying helmets

The evolution of the flying helmet through these inter-war years was, like other areas in flying clothing, quite limited. The RAF was serving both in the temperate climates of Europe and on the North West Frontier of India and Iraq – a somewhat hotter and sunnier climate. Flying in the open cockpit bi-planes of the time the sun shone relentlessly on the pilot and pilots often wound light cloth around their necks to prevent serious and injurious sunburn. To combat this, the RAF supplied the specialist Type A helmet for use 'East of Malta'. It comprised the body of the traditional pith helmet complete with brim, ear flaps and secured under the chin. Constructed of lightweight cork and covered with a light khaki drill-fabric, it provided adequate protection but was limited in its use as higher



The 1930 pattern boot with the protective rubberised covering on the lower foot. (Airlife Publishing 1979)



The Type A helmet (left) was used solely 'East of Malta' and provided some respite, in open cockpits, from the blazing sun at altitude. The Type B helmet (right) was introduced around 1936 to accommodate the latest developments in radio-communications. (Airlife 1979)



As OC 33 Squadron, Wing Commander Charles Ryley DFC, leads his pilots away for a debrief, one of the few items of flying clothing they all have in common is the Type B flying helmet. (IWM)



aircraft speeds in open cockpits became more prevalent after the 1920s. It was finally superseded by the generally issued Type D helmet in 1941.

The prevalent helmet of this inter-war period, however, was either the WW1 helmet or the 1930 pattern helmet. This latter helmet was made of chestnut brown chrome leather lined with chamois leather and was elasticated at the back better to suit the wide range of head sizes. Either radio-telephones or acoustic Gosport Tubes were accommodated by ear-pads. By 1936 the Type B helmet was being introduced, similar to the 1930 pattern and designed to make the best use of the Type D oxygen mask.

### Goggles

The need for good sight and clear vision has always been paramount for pilots and protection of the eyes from air-blast through the use of goggles was generally well catered for. In WW1 the Mk I and Mk II goggles were the approved RFC issue available with clear (Mk I) or tinted (Mk II) Triplex lens and the war surplus ensured that these were utilised well into the 1930s. Identical goggles were sold commercially and simply bore the Triplex trademark. By 1933 these were superseded by the Mk III, which, unlike the flat lenses of the previous marks, had a curved plastic lens and some distortions meant that they were not universally liked or used – resulting in the continued use of the Mk II types up to, and often through, WW2.

### Protection against acceleration

As the war progressed there was a natural evolution of the basic flying clothing – sometimes to improve performance and at other times to reduce costs. In addition, in areas where the developing performance of the aircraft affected the efficiency of the pilot and crew, specialist solutions were promulgated. One of these latter areas was in the effects on the pilot of the turning performance and rate of turning in fighter aircraft.

The concerns had arisen from reports by pilots flying the Schneider Trophy flights on the tendency to 'black-out' during the necessary high-speed turns around the course. It had been decided during practice flights with the S.6B that a turn producing 4 – 4½G was the optimum rate to save the most time and which would produce a 'grey-out' with only partial loss of vision. During the practice for the 1929 contest in the S.5, the RAF pilot Richard Atcherley described his experiences:

*"I went 'out' halfway round a turn at Calshot Castle, and flew completely unconscious at about 500 ft halfway back to Cowes before regaining my senses. Even then there was a very frightening lapse of seconds when one realised one was flying and had been 'out',*

**A MESSAGE FROM THE FRONT.**

A pair of Goggles forwarded from London May 12th, returned May 19th. The Officer writes:  
"You will see I am greatly indebted to Triplex Safety Glass, as it saved my eye from being badly cut."



FEATHERWEIGHT MODEL. 17/6.

**The TRIPLEX SAFETY GLASS Co., Ltd.,**  
1, ALBEMARLE STREET, PICCADILLY, W.  
Telegrams: "Shatterlys, Piccy, London." Contractors to H.M. Government. Telephone: Regent 1346.  
N.B.—Use Triplex Safety Glass for Windscreens and Windows, Aeroplane Windshields, Observation Panels, Goggles, Night Landing Stages, etc.



(Above) Early in WW2 this fighter pilot wears the Type B helmet, the Type D fabric oxygen mask and Mk II goggles. (Greer and Harold 1979)

(Below) These goggles are the experimental Mk VIB type with the Polaroid pull-down shade. (FAST Archive)



*but still could not see or move one's hands .....’ In my lapse of consciousness, I dreamt I was sitting in the housemaster’s garden at Oundle in a deck chair ... I could see the flowers – and hear the bees – the noise of which got angrier and angrier, until I started to wonder where I had heard that noise before. Then I realised that it was the Napier engine in the S.5 and gradually came the frightening realisation that I was going like a bomb and might expect to hit the water at any second ... I was a very frightened officer!’ (Mondey, 1975).*

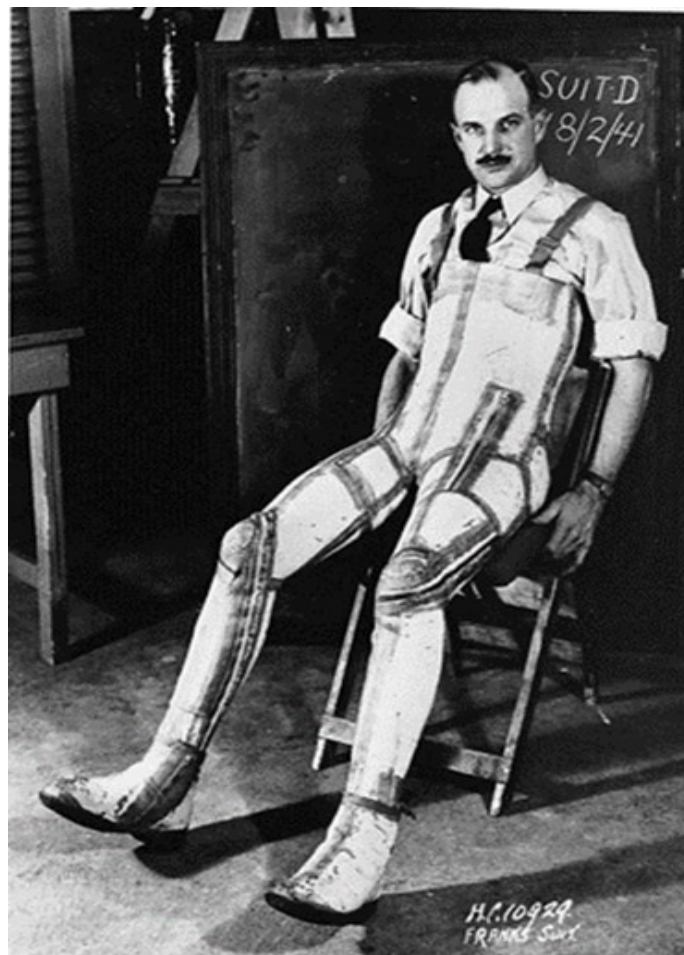
It was clear that the scale would be exacerbated during plane-to-plane combat. By 1940 considerable empirical research by the RAF Physiological Laboratory in flight trials at Farnborough had shown that the adverse effects of increased G were caused by blood pooling in vessels in-line with the G force (i.e. in the ‘z’ axis of the body).

Experiments on three types of body belt produced no significant increases in g threshold and the approach was then changed to wider lower-body coverage by the use of hydro-static leggings, where an increase in threshold of 0.5 G was attained.

This technique was never to enter RAF service as, by that time, the work of Franks in Canada was evolving. The idea of using water to provide G protection had been promulgated by him in 1938 and Canadian Government funding had been sought to carry out the work, to no avail. A private benefactor provided the funding and Franks was able to make, tailored to himself, a garment made of non-stretch fabric containing water-filled bladders which fitted over his abdomen and lower extremities (Figure 20). After similar reluctance to provide a suitable aeroplane for flight research, a vintage bi-plane was offered and trials carried out before structural engineers put an end to the high-G manoeuvring on safety grounds. But in that short time, Franks had managed to show significant increases in the raised-g threshold.

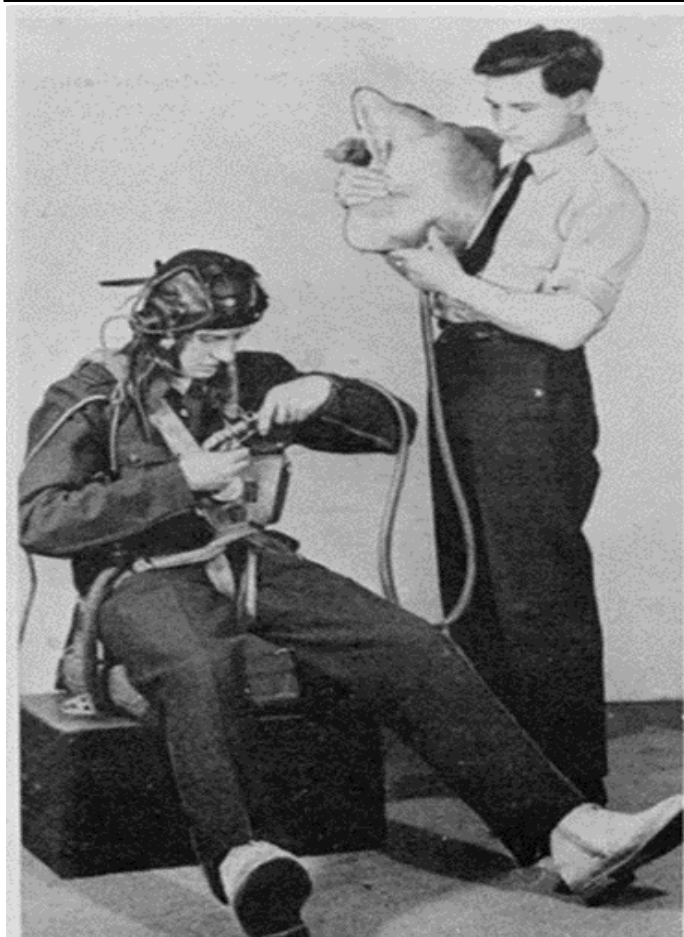
In mid-1940 the RAF agreed to supply a Spitfire to Canada for further flight trials and in early 1941 Franks came to Britain to demonstrate and develop his suit. Considerable development took place and once experimental flight reports had been completed, two operational squadrons carried out preliminary service trials. These demonstrated the raising of black-out thresholds by up to 3G and reduction of the fatigue from high-G manoeuvres.

After some further refinements, the Franks Mk III suit was produced, issued for trial to the Fleet Air Arm, and was successfully used in 1942 by Seafire pilots of 807 Sqn at Oran in French North Africa. Later in the war, on D-day+1, Seafire pilots were still using the G-suits and Mike Crosley, flying the Seafire in combat against FW190s and Me109s notes:



(Above) The prototype Franks anti-G suit in December 1941.

(Below) The same suit worn under the uniform and being filled with water. (FAST Archive)





“Thanks to my G-suit I remained conscious in the steep pull-out and regained altitude astern of their ar\*\* -end Charlie after all .....” (Delve, 2007).

The suit was little used by the RAF, partly because of worry that with such G-protection pilots might exceed the structural limitations of the aircraft, and the security limitation that aircrew were forbidden to use this secret system over enemy territory, largely because there was no evidence of G-suits in shot-down German aircraft.

As an alternative to water-pressure to inflate the suit, the use of air-pressure was promulgated in Australia by Frank Cotton, whose ‘pneumo-dynamic suit’ was a two-piece gradient pressure- garment made, like the Franks suit, from rubber and an outer layer of inextensible fabric (Gibson and Harrison, 1984). By the end of 1941 it was ready for trials with the RAAF and a suit was sent to Farnborough, to the RAF Physiological Laboratory, for evaluation. For various reasons Farnborough was unenthusiastic, possibly because the Franks suit needed no connection to the aircraft, it was in development and a production contract let. However, the good performance of the suit per se was recognised by the RAF and it was recommended that it should be pursued further – by the RAAF. The suit was developed and used by the RAAF in late 1943 by Spitfire pilots flying from Darwin against the Japanese. It was one of those anomalies of aviation history that the air-operated suit was shunted into a side-line. The Americans, however, took a different view and embraced the operational potential with vigour.

### Overalls

In many photographs of the inter-war period, particularly at air-displays, RAF flying teams are seen dashing dressed in a white overall. These were issued to RAF pilots for air-displays and were used as a ‘mark of status’ up to late 1940 for all of those who had flown in those formative days. Also, many of the newly formed RAF Auxiliary prior to 1939 often provided much of their own flying clothing and opted for the unlined white cotton overalls purchased from the many commercial suppliers. The overalls were also available in a dark blue or black cotton, so pilots had a choice of colour but although used by a few during the Battle of Britain, clothing after this period of the war became more specialised and their use fell by the wayside.

Outside the European theatre of war, the RAF were fighting on a number of fronts – North Africa, Malta, Crete and Greece – with their hotter climates. Although it was hot on the ground, at altitude it still remained bitterly cold. Aircrew were issued with the standard ground-clothing of khaki shorts, tunics and trousers but the only desert related issue of flying clothing was the D type helmet made of fabric and with a rear flap to



(Above) 33 Squadron personnel sporting a variety of flying clothing worn when flying the Hawker Hart in the desert - 1938.

(Below) 33 Squadron personnel, same location, with flying clothing for the Hawker Hurricane - 1941-42.



protect the neck against the sun. Consequently a variety of flying clothing was worn, ranging from the 1930 or 1940 pattern flying suit to flying just in tunic, shorts and desert boots.

In 1941 a new style of flying dress was introduced, initially to aircrew only, in the form of Suits, Blue/Grey, Aircrew (blouse and trousers). Known later as 'battledress', it became the standard wear for all RAF personnel. Similar in design to the Army battledress it was waist length, made of blue/grey serge wool, belted at the waist and with two breast pockets with flaps. The trousers could be buttoned tightly around the ankles allowing fitting more easily into flying boots and had a single pocket either with a flap or button closure.

It changed very little during its lifespan, the only conspicuous change being for pilots of the Tactical Air Force after D-day who were issued with an Army khaki battledress as the blue/grey colour of the Battledress could be mistaken for the German *feldgrau*. If aircrew were returning to Allied lines after being shot down, and khaki was also a better camouflage against German troops.

### The Jet Age

Although we do not have many active Association members who can regale us with their experiences flying jets, we are fortunate to be in contact with Ron Lloyd, who flew Javelins with 33 in the 1960s and was loaned to the company flying Spitfires and Me109s when the Battle of Britain film was being made. So I asked him about flying clothing and G, and this is what Ron said:

"...The G suit was just a strap on, zip up leggings and torso affair, with a pipe sticking out into the collective PEC which you clicked into place. It was pretty much unnoticeable when combined with a bulky immersion suit in the UK, or even with just a flying suit in Cyprus, plus boots, helmet, mask, gloves and, in particular, the solid harness with straps tightened to almost stop the circulation. Being young and busy the discomfort of the whole assembly just became part of the cockpit environment and you got used to it, grateful for the firm squeeze from the inflating suit under high G. 4G was OK for short periods without a suit, 5G more difficult and 6G you needed the suit after a few seconds. In the Javelin, high G was uncommon, since it was intercepts more than air to air combat most of the time.

...So in the Spitfire high G wasn't sustainable for lack of power, unless diving and pulling out, and airframe strength... for filming we agreed a 4G limit which we seldom reached; in fact, shots were mostly gentle for the cameras. In wartime I've no doubt high g was pulled occasionally and the blood draining effects felt... And the later marques did have more power..."



Battledress worn by Wg Cdr Beaumont of No 150 Tempest Wing mid-1944. (FAST Archive)



OC 33 Squadron (May 1960-Mar 1962), Wg Cdr DL Hughes DFC AFC, climbing into a Gloster Javelin FAW9. When 33 Squadron was disbanded, XH758 was given to No. 5 Squadron and was written off a year later. The aircraft crashed on 17 October 1963 near the Dutch-German border after an engine disintegrated following compressor blade failure. The crew ejected safely.



### HIGH ALTITUDE

ITEM NO.	SECTION REF. NO.	DESCRIPTION
1	20.124-101	AIR VENTILATED SUIT Mk. 2A
2	20.124-102	COMBINED PRESSURE ANTI-G SUIT
3	20.124-103	IMMERSION SUIT Mk. 8
4	20.124-104	L. WEIGHT FLYING SUIT Mk. 8
5	20.124-105	ANTI-G SUIT Mk. 5A
6	20.124-106	PARTIAL PRESSURE HELMET BWT Type E
7	20.124-107	PROTECTIVE HELMET Mk. 2A
8	20.124-108	OXYGEN MASK Type P2A or O2A
9	20.124-109	PRESSURE JERKIN HOSE ASSEMBLY Mk. 10
10	20.124-110	OXYGEN MASK HOSE ASSEMBLY Mk. 1
11	20.124-111	JACKET LIFESAVING Mk. 9B
12	20.124-112	GARTERS (leg restraint) Q.R.
13	20.124-113	GLOVES water resistant Mk. 2
14	20.124-114	BOOTS FLYING (new pattern)

**NOTES...**

1. For further details of clothing and accessories refer to the relevant chapter of AP 1182 VOL. 1 BK. 2 or LIGHTNING Mk.3 AEA schedule.

2. All aircrew must receive indoctrination training before flying with this equipment. For limitations of equipment refer to Pilot's Notes, AP 4700-P.N. pt. 1, chapter 12, para. 13

### LOW ALTITUDE

ITEM NO.	SECTION REF. NO.	DESCRIPTION
1	20.124-101	AIR VENTILATED SUIT Mk. 2A
2	20.124-102	IMMERSION SUIT Mk. 8
3	20.124-103	L. WEIGHT FLYING SUIT Mk. 8
4	20.124-104	ANTI-G SUIT Mk. 5A
5	20.124-105	ANTI-G SUIT Mk. 5A
6	20.124-106	PROTECTIVE HELMET Mk. 2A
7	20.124-107	PROTECTIVE HELMET Mk. 2A
8	20.124-108	OXYGEN MASK Type P2A or O2A
9	20.124-109	OXYGEN MASK HOSE ASSEMBLY Mk. 1
10	20.124-110	OXYGEN MASK HOSE ASSEMBLY Mk. 1
11	20.124-111	JACKET LIFESAVING Mk. 9B
12	20.124-112	GARTERS (leg restraint) Q.R.
13	20.124-113	GLOVES-water resistant Mk. 2
14	20.124-114	BOOTS FLYING (new pattern)

**AIRCREW EQUIPMENT ASSEMBLIES LIGHTNING Mk 3**

**ML AVIATION CO. LTD.**

MAINTENANCE ADDRESS: MILITARY AIRCRAFT ESTABLISHMENT, BUCKINGHAM PALACE ROAD, WINDSOR, BERKSHIRE, ENGLAND	TELEPHONE: 0753 50011
TELEGRAMS: MLAVIATION	TELEX: 250000

#### HIGH ALTITUDE

1. Air Ventilated Suit Mk.2A
2. Combined Pressure Anti-G Suit
3. Immersion Suit Mk. 8
4. Lightweight Flying Suit Mk. 8
6. Partial Pressure Helmet BWT Type E
9. Pressure Jerkin Hose Assembly Mk. 10
11. Jacket Lifesaving Mk. 9B
12. Garters (Leg Restraint) Q.R.
13. Gloves Water Resistant Mk. 2
14. Boot flying (1965 Pattern)

#### LOW ALTITUDE

1. Air Ventilated Suit Mk. 2A
3. Immersion Suit Mk. 8
4. Lightweight Flying Suit Mk. 8
5. Anti-G Suit Mk. 5A
7. Protective Helmet Mk. 2A
8. Oxygen Mask Type P2A or O2A
10. Oxygen Mask Hose Assembly Mk. 1
11. Jacket Lifesaving Mk. 9B
12. Garters (Leg Restraint) Q.R.
13. Gloves Water Resistant Mk. 2
14. Boots flying (1965 Pattern)

Aircrew Equipment Assemblies (AEA) for the English Electric Lightning pilot. The aircraft was introduced in December 1959 as an interceptor and general purpose fighter and stayed on the RAF inventory until 1988.

Ron's reply made me look at Steve's Wood's comments about Spitfires pulling 7G in turns in Tunisia in a whole new light! He had written to the family that their water-filled G-suits used to leak a lot, and the groundcrew used to rib the aircrew when they came back from a sortie, asking them if they had pee'd themselves because they had seen an enemy aircraft!

### **AEA Today**

Unlike our forebears, 33 Squadron's current batch of aircrew do not fly a particularly fast helicopter, they do not pull lots of G, they do not climb at rapid speeds to great heights to intercept enemy aircraft but they do get shot at and need protection in case of errors made due to bad weather, flying at night in marginal conditions or mechanical failures. Consequently, the amount of AEA that they now have access to is staggering compared to some of the lists shown in this article. The Air Board list in August 1918 listed a complete outfit as just 9 items, with 16 items in the complete flying clothing kit list. The Puma 2 Release to Service lists 16 pages of AEA for their use, with 5 categories: AEA, Miscellaneous Clothing and Footwear, Cleared Carry On Equipment, Cleared Armament and Cleared Medical Equipment. There are 113 items alone in the AEA section, 31 items in the Carry On and Armaments sections, 27 in the Medical section and just 7 in Clothing and Footwear—209 in all, with an incredible range of abbreviations - ACLP, BALCS, IPG, PRR, STASS, UBACS and VAMP. I was surprised not to see any references to the good old AR5 system. In the next article you will read about 33 Squadron operating in the desert, when they took everything they owned on operational sorties with them, including their fold up field bath, and stowed it in a small storage space behind the pilot's seat.

### **Conclusion**

Whilst it is always difficult to see into the future for Aircrew Equipment Assemblies (AEA), such products have usually been driven by aircraft technologies and operational requirements. As we see unmanned air vehicles being used more and more, there is a thought that future manned aircraft that need further development of specialised AEA will reduce and the current protection afforded by the below neck assemblies (G-suits, coveralls, boots, gloves, life preservers, etc.) are liable to be largely adequate in their present form, apart from probably a few minor speciality changes. Also NBC/CB protection using an AR5 type system should provide the necessary protection levels, although biological attack remains a possibility and, even then, personal protection of the AR5 provides a physical barrier but protection will depend on detection, avoidance, immunisation and treatment.

Future developments for fixed and rotary wing aircraft would appear to generally lie in the avionics systems area – computing technologies, sensor improvements and integration and visual/audio communication techniques and systems. If this is correct, it makes some sense to see any major improvements and developments largely through the helmet mounted display as the pilot, where used, remains the primary receptor and user of this information.

Information flow will remain predominantly through the primary human sensors, the eye and the ear (visual, audio and audio/visual), thus Helmet Mounted Displays (HMD) need to be reduced in mass and physical size, which future technologies should be able to accomplish, and in the balance of the HMD in terms of its centre of gravity and neck loadings. While the increasing reliability of military aircraft and their operational effectiveness might reduce the risk of ejection to a level where helmet mass and volume could be reduced without increasing the overall risk of injury to the pilot, this is not an aspect that overly concerns rotary crews. But level of risk is one of the primary deciding factors, and adequate head protection either needs to be provided or dispensed with – it is exceptionally difficult to steer a mid-course.

Discussions on Future Rotary Wing Aircraft have been ongoing for some time, and as long as military aviation continues with human aircrew in the aircraft then there will remain a need for protective clothing, utilising emerging new smart materials wherever possible. The aviation pioneers' long realised dreams of flying in a shirt-sleeve environment may eventually be realised only by those operators involved in the remote control of unmanned surveillance aircraft.

### **AEA Abbreviations**

ACLP Armour Capable Life Preservers

BALCS Body Armour Load Carriage System

IPG Immersion protection Garment

PRR Personal Role Radio

STASS Short Term Air Supply System

UBACS Under Body Armour Combat Shirt

VAMP Vented Aviators Moulded Protection

**Citation:** Dr Graham Rood 'A Brief History of Flying Clothing' (Journal of Aeronautical History Paper No 2014/01—Farnborough Air Sciences Trust (FAST))

My grateful thanks go to Gill Heighway, Eric and Steve Woods' niece, who gave me access to her Uncle Steve Woods' letters and has allowed me to reproduce so many of the family's personal photographs of her uncles in 'Loyalty'.



# *Goon In the Block - Chapters 9-11*

Continuing the serialisation of Don Edy's memoirs with 33 Squadron in the Western Desert

## Chapter 9

Very little had happened at Gerwala for the last six days. They had done a few fleet escorts and some Tac Rs but had lost no pilots or planes. For some time rumours of a big push had been floating around the desert and soon the story was confirmed. We had a visit from W/C Wickham-Barnes one afternoon and he gave us a pep talk on the job ahead. One remark he made stands out very clearly in retrospect. He said that this time we had superiority in the air and would sweep the Germans from the skies in three days. As it turned out the Germans nearly swept us from the skies and we ended up back at Alamein three months later.

Both sides were apparently resting and gathering supplies for the impending battle so the front was comparatively quiet. A move to some other sector of the desert was rumoured for our Squadron and we decided to have a party before the battle started. Two or more pilots were invited from each fighter squadron in the Western desert, plus a good number of extra friends. As the sergeants shared the mess with us they asked some buddies too.

The day before the party four of our Hurricanes flew to Alex on various pretences and arrived back the next day loaded down with supplies. One carried nothing else but cut flowers and soon the little wooden shack looked like a hot house garden. The effect was amazing when one walked in from the sand and the sun and was confronted with the sight and smell of a hundred bouquets. Another Hurricane came back loaded down with hundreds of sandwiches and a dozen large cakes. The pilot knew the chef of the Cecil Hotel very well and had persuaded him to fix up the food for the party. The other two planes carried a quantity of beer and liquor and the bottles were pyramided on all the tables and shelves.

By the time the first guests arrived the old mess was a sight for sore eyes. A sandstorm blew up that morning and kept a lot of the boys from flying in from the more distant fields, still a good eighty-five guests crowded in with us. Wally and George came over, and Doc Bird from the Dukes dropped in. Air Vice Marshal Tedder and Air Commodore Coningham also put in an appearance and their presence added a certain amount of prestige to the brawl. Just about every nation in the Commonwealth was represented at that party.

Unfortunately I got into a slight argument with Tedder.

We had heard rumours that there were Spitfires coming out to the Middle East, and he and I disagreed as to which squadron should get them. I told him we'd strafe the Bardia road by moonlight if he'd give us the Spits but it didn't impress him. The party continued well on into the morning but I got sleepy about midnight and stretched out on the dining table for a nap. Jock and Lance found me there and, presuming that I was dead, they gathered flowers from the other room and planted them all over the body. Next they got a couple of bottles of beer and watered the flowers thoroughly. For days after that I reeked. An actual count the next morning showed that five hundred quarts of beer, eight large bottles of Scotch and Rye, six of Gin and two of Brandy had been consumed.

Four new pilots joined 33 the day after the party. Their first impressions of us must have been pretty bad. They were: Mark Jewel, a F/O in the Rhodesian Air Force; John Cloete, a South African; F/O Peter Charles and F/O Charlie Dallas, both in the RAF. Two days after their arrival the Squadron was ordered to move to Giarabub, an oasis about a hundred and fifty miles south and west of the front. The ground crews and maintenance units, along with most of the Admin people and extra pilots left Gerwala several days ahead of the pilots who were to fly the planes down. They would arrive the same day as us so that the Squadron would be complete again as soon as possible. The flight down was uneventful except that we circled Siwa Oasis on the way. This is the place from where most of our dates come. It was quite a pretty spot, but Giarabub, twenty miles west, was deadly.

The British had beaten the Italians badly here, just a few weeks before our arrival, and many battles had been fought around it even before that time. As a result the plateau which we used for a landing ground was covered with shrapnel. Nobody blew a tire on the first landing but several of the Hurricanes were put out of action later on for days when they ran over sharp pieces of metal.

There wasn't a sign of anybody when we climbed down from our cockpits to look around. The ground was covered with fine dust that puffed up at every step. It was ankle deep and made it very difficult to taxi around. We pilots sat around for an hour, wondering what could have happened to the rest of the Squadron in the trucks. Just as two of us started to hike to the village, some five miles away, the lead car of the convoy



Above (L-R): Steve Woods, Fg Off Peter Charles, unknown  
Below (L-R): Fg Off John Cloete (SA), Mark Jewel, a F/O in the Rhodesian Air Force





came around a low hill.

The landing ground seemed to be the bed of an ancient lake and all around it were cliffs and gulleys. The boys drove the vehicles up one of the wadis just off the plateau and here we proceeded to make camp. I found that the wind had scooped out neat spaces about four feet deep under the cliffs and they made ideal places for our cots. We strung netting down from the overhang and soon had fly resistant bedrooms. Some of the boys were a little afraid that a stray bomb might cave in the cliff so they camped out in the open. The mess tent and the cookhouse were set up on the floor of the valley just below us and the maintenance unit set up their camp across the valley.

A truck was sent to the village for water and when it came back we were dismayed at the taste of the stuff we were supposed to drink. It was reported that the thousands of Italians who had been killed there were buried too lightly under the shifting sand and as a result there was a plague of flies that had polluted everything. The water must have tested all right as we were told that it was safe to drink but most of us couldn't stomach its brackishness. Doc mixed up a strong solution of lime juice and stuff to go with it but even that didn't help much. Within a few days everyone had an acute case of Giarabub tummy and there was always a line up for the bucket seats. This was a most uncomfortable situation and until we all got used to it there was very little flying done. Nobody could stay up in the air very long before he'd have to come down and jump for the sand.

Derek Gould was now our Squadron Leader as Marsden had left just before the move. Derek was an exceptionally good looking man, over six feet tall with blue eyes, black curly hair and classic features. He was quite young and full of fun and always joined in on any sports events or excursions. The night of our arrival at Giarabub he gathered us all together and explained the duties of 33 Squadron in the coming 'Push'. In order to make these duties clearer I'll have to digress a bit and hold a short geography lesson.

At present the battle was stagnant on the boundary line between Egypt and Libya, about three hundred miles west of Alexandria. This boundary line was visible because the Italians had built a barbed wire fence right from the sea near Bardia, straight south into the desert to Giarabub, and then about fifteen miles past that place. The 'Wire' as it was called was about ten feet wide and six or eight feet thick, with coils of barbed wire in the middle of it.

The drifting sand had covered a great deal of its depth but from the air the whole thing was plainly visible. Right from Alexandria to Bardia, and then for another two hundred miles, the land was barren and sandy with

very few water holes and no roads. As a result the coast road was the only means of communication along that whole African shore. After that, as you came to Derna and Bengasi, lush vegetation was growing and the land was fertile. This area didn't stretch very far south and once more the sandy desert took over and came right up to the sea again at Agedabia and El Aghelia.

Because of the desert waste most of the fighting took place along the coast and very little action penetrated the desert for more than a hundred miles. The Germans hardly ever ventured far into the sand, preferring to stay close to the beaten track, and this gave our boys quite a break. They often headed far south, travelling by nothing but compass and many times they pounced on Germans from the rear, only to vanish once again into the 'Blue'. You will notice on a map that from Bardia, the coast begins to turn north and continues that way right along to Tobruk, Derna and Cirene. After that it turns sharply to the south past Bengasi and then far down to El Agheila, only to go north again to Sirte, Misurata and Tripoli.

Knowing that the Huns didn't like to operate far into the desert our Allied HQ asked the Air Force to base a squadron at Giarabub so that the planes could cut across the headland and strafe the road south to Bengasi. This was the reason we had the Hurricanes with the long range tanks. This Push was going to begin on November the eighteenth and our generals were confident that within three days the Germans would be on the run. This would mean that we would have to move a hundred or so miles further west in order to strafe more and more of the retreat.

From the air Giarabub was very easy to find once you got used to the place. As the scrubby northern desert ended and the true sand sea began there was a strip of quite black land beginning at the Oasis and stretching for about two hundred miles due west before it turned south to the Gialo Oasis. It was comparatively simple to find this black strip and as the 'Wire' passed through Giarabub all we had to do, in theory, was to find the place where the wire and the black strip joined. Mostly this was easy but there were times when sandstorms or haze made it difficult to be sure where you were.

Even though we were slightly behind the enemy lines there was little or no danger of any kind of attack from their ground forces. The only thing we would have to contend with was attack from the air. The difficulties in supplying such a force as ours were considerable but Bombay aircraft flew in most of the gasoline and food and once a week a convoy of trucks made its way south with extra supplies of everything from spare parts for the aircraft to cigarettes and razor blades.

For three or four days after our arrival there wasn't much activity anywhere and we spent the time testing



**Squadron Leader Derek Gould, OC 33 Squadron  
(December 1941- May 1942)**



**Back Row (L-R): Tiny Tofield, Noel-Johnson, Newman, Green, Charlie Dallas, Steve Woods.  
Front Row (L-R) Kelsall, Bobby Price, Rusty Kierath, Don Edy, Bubbles Inglesby, Jumbo Genders, Woolett.**



the planes and getting settled. At all times there were two pilots on standby so that they could take off immediately and intercept any stray aircraft that began to get too nosy. This job was a heck of a chore. We had to sit in the open by the planes and try to beat the heat and the flies. There isn't much shade from the wing of a Hurricane and there was no protection from the flies. Those critters weren't vicious, just malicious. They didn't bite often but one would land on your nose and when you tried to brush him off he just jumped over your hand and landed in the same spot again. When a dozen or so were doing this at the same time it got on the nerves a bit. It was really hell in the cockpit until the motor started and blew them out.

Winnie Winsland and I were on patrol for an hour and a half the morning of the sixth day and after lunch I climbed up the sand hill to lie on the cot and rest. No sooner had I lain down than a white flare went up to let the boys on standby know that they were to take off and patrol for enemy planes. Two went up, but moments later a red flare from the CO's tent signalled that the rest of the flight should scramble. Apparently a larger raid was expected. All was quiet for about ten minutes when suddenly an ack ack gun let go and I jumped into the clear to see what was going on. There, at about ten thousand feet, were twelve JU 88s headed straight for our landing ground. I watched them until I could see the bombs begin to drop, then headed for the cliffs again. Lying on my stomach I could see the bombs explode across the field. Just as they went off, six twin-engined ME 110s streaked in from the opposite direction, right down on the deck, and strafed the plateau. The timing was perfect and took us all by surprise. The actual damage done in the raid was light. The bombs hit one Blenheim bomber, a visitor, and set a small gasoline dump on fire. The 110s punctured a few Hurricanes and destroyed none.

The ground defence crews were right on the ball. They had the guns trained high for the 88s but one managed to get on to the 110s and shot one down as it streaked over the field. It crashed and exploded within 10 seconds. Meanwhile things were not going so well for the six Hurricanes on patrol. They spotted the bombers just as the bombs were being released, and wheeled for the attack/ They hadn't expected an escort with the bombers because of the distance from the German bases, and as a result they were taken completely by surprise by a second flight of high flying 110s. One of our planes was hit in the first attack. He tried to get away but his tail assembly was shot up and he couldn't manoeuvre. The 110 followed him down to the ground and the Hurricane levelled off the Hun shot again. This time the Hurricane crashed and exploded. The pilot was Bobby Price and he never had a chance to get out.

Andy Anderson's plane was hit too, on the first dive, but he managed to get away and made an emergency crash landing on the field. All in all we were lucky to get away with only one pilot killed and two planes lost. The Germans were not so lucky. Sergeant Genders got one of the 88s and Lance got one of the 110s when it came down low to do some strafing. That made three all told.

Shortly after this big raid I had a bath. Normally a bath wouldn't be worth mentioning in a story like this, but water was so scarce that baths were unheard of. On this particular day the water brought in from the village was so bad that no one would drink it. It took several trips up the hill to fill the canvas tub but it was worth it. The hot water, heated over a fire of camel dung, sure felt good after weeks of no washing. Winnie took a few pictures of the proceedings and a good story developed later on from one of them. I'll tell it now before I forget.

Many months after we left Giarabub Doug Davidson sent a bunch of pictures home to his family in Australia. One of them was of my bath. The 'Man' magazine decided to run a story on the AAF in the desert and called on Doug's mother for the latest news on him. They liked the bath picture for human interest and printed it. Later, the ship carrying the edition to America was sunk and the magazines lost. The only copy to reach this side of the ocean was mailed by a man in Sydney to his brother in London. The brother recognized my name and called Dad. He went up to the house and sure enough there was my picture, the only one to get across.

## Chapter 10

'On to Tripoli' was the battle cry for this 'Push', which started early in the morning of November 18, 1941. The last time the British had been able to advance as far as Agedabia, but at that point they stopped to remuster their forces and rest for the next step. The fighting in Greece flared up at that time and many of the troops withdrawn from the Egyptian front to support that fight. The loss of men and materiel, combined with the long, long line of communication, enabled the Germans to counter-attack and push the British back to Egypt. This time, our leaders figured that we had the preponderance of men and materiel, and also that our Air Force was superior to the enemies. They were full of confidence when the battle started with our troops crashing through the wire.

We thought we could see and hear the battle all the way from Giarabub but strangely enough the rumblings we heard and the flashes we saw were from a heavy thunderstorm, something of a wonder in that part of the desert. This storm made a quagmire of parts of the desert and it didn't help our troops at all.

On the 20th of November, 33 Squadron made its first strafing raid. Winnie and I missed out on the flight



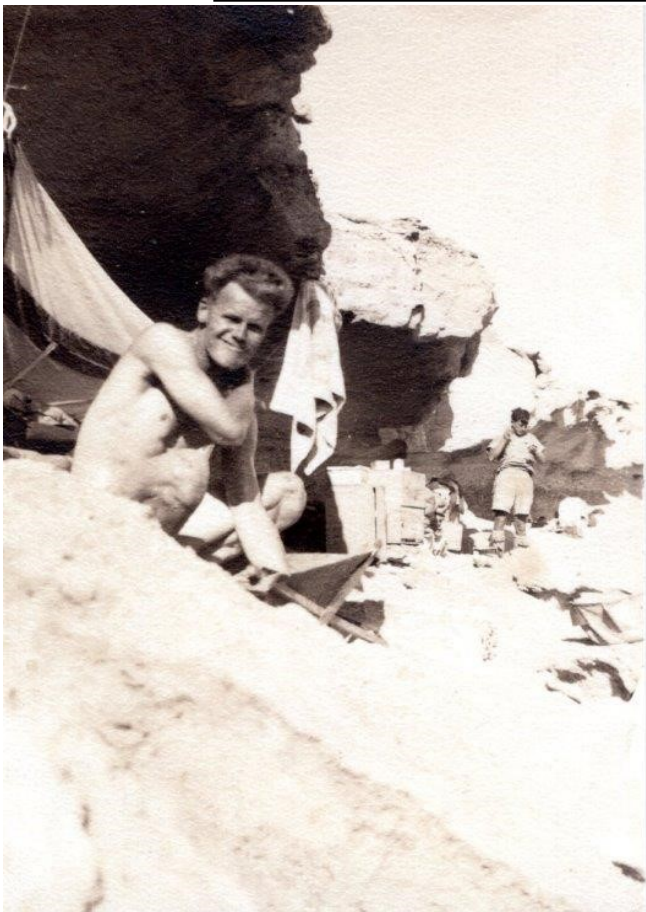
The remote Giarabub location, where 33 Squadron operated from between 8 November-20 November 1941 before deploying to LG125. Don Edy's accommodation is indicated by the arrow on the photograph above, and he can just be made out in the centre of the picture below.







Giarabub: Don Edy enjoying a luxurious soak in his canvas tub!



because it was given to B Flight. As it turned out we were lucky to have stayed at home. Six aircraft were to cut across the headland and strafe the airport at Agedabia. This meant a flight of more than five hundred miles, a long way to go in a Hurricane in those days, and it would call for some good navigation on the part of the leader, F/O Peter Charles. Lance, Mark Jewell, Charlie Dallas, Genders and Kay Stammer were picked for the job and they took off in high spirits.

Through a slight mistake in compass reading they headed a bit too far north. Instead of arriving at Agedabia they hit Benina airport, just outside of Bengasi. This was one of the biggest enemy landing grounds out there and there were dozens of aircraft lined up on the field. The Germans somehow never seemed to learn much about aircraft dispersal in the desert. The boys realized their mistake quickly enough but once they had flown so far they were not going to miss such a golden opportunity so they attacked at low level.

Their first sweep across was a complete surprise as the Huns never expected fighter planes that far behind their lines. The six British planes did a goodly amount of damage, starting three fires in the aircraft below and damaging several others. None of them were hit, but Mark Jewell, making the cardinal error of trying a second run across the field, found the ground defence ready. A shell ripped a huge hole in his wing and the resulting drag on the plane made him use up too much gas. He managed to stay up in the air until he was well past Derna but at last he had to crash land and was taken prisoner.

Meanwhile Kay Stammers developed engine trouble and he too made an emergency landing, but this time he was behind our own lines and was quickly picked up, to return to the Squadron in a few days. Charlie Dallas thought he could reach Giarabub, even though his gas was low, but about fifty miles north he had to come down. He spent the night sleeping under the wing of the Hurricane, then started to walk south and east towards the wire and Giarabub. A truck picked him up in the evening, more dead than alive. Derek Gould sent him off to Cairo for a rest but when the time came to return Charlie just refused. He ended up as an instructor in Rhodesia.

The other three pilots, Charles, Lance Wade and Genders conserved their gas well. They had to land in the desert and spend the night there as it was getting dark, but they all took off in the morning and ended up at Giarabub with a teaspoonful of gas each. The raid was considered a success despite the loss of the two Hurricanes and a pilot. It certainly shook the Germans up and they pulled a fighter squadron from the front to protect Benina.

The day after our raiders returned from Benina the Squadron was moved again, this time to Landing Ground 125 (LG125). This was a spot in the desert about a hundred and thirty miles due west of Giarabub. The maintenance section and the Admin officers were left behind so that it would not be too hard to supply the forward base.

LG125 really was just a spot in the desert. The Long Range Desert Group (LRDG) had scouted the place and established a base there. Most of the base moved off in trucks and station wagons while we pilots flew the aircraft. We had been told to fly along the black strip for about forty five minutes, then start to look for two conical shaped sand hills. From these hills the landing ground would be three minutes flying time on 010 degrees.

I didn't pay too much attention to the time on the way up, thinking that a landing ground would be easy enough to spot, but by the time the forty five minutes were up, plus several more, I was completely lost. For half an hour I flew around in circles looking for the two hills or the landing ground but they were nowhere to be seen. Two of the other boys seemed to be in the same predicament and our gas was getting low. Finally I decided to land on a smooth spot and wait for someone to find me, or try again in the morning. Just as I was gliding in to land I saw a cloud of sand a few miles ahead and knew that this was the wash from a plane taking off. Not even bothering to bring the undercarriage up I flew along and sure enough there were a couple of Hurricanes and a few trucks below.

No wonder we had missed the place. The land for miles around was flat as a pancake and only a few shrubs showed here and there. We could have flown over it a dozen times and never recognized our base. The few trucks looked like shrubs and the ground was hard enough not to show a few tracks. I landed safely enough and was soon picked up by young Mac. He said the plane we had seen taking off was the Squadron Leader coming out to shepherd us home. We told Derek later that we were just familiarizing ourselves with the district but I don't think he believed us for a minute.

Mac drove around to pick up the others as they landed, then headed back for the Mess. This proved to be nothing more than a long table with two benches, and I got my first indication of the life we were to lead for the next month or so. For 360 degrees on the horizon there was nothing but flat desert, and that line was not broken by a single hill or tree, or even a shrub more than a foot high. There was no water hole here, or any sign of previous habitation, and absolutely everything we needed had to be flown in by the old Bombay transport planes, or brought out in the weekly convoy. Our water ration was one pint of water per man, per





**LG.125: Above, Don Edy's Hurricane; below, the Mess.**



day, and out of this we were expected to wash, shave and drink. Needless to say none of us washed from one week's end to the other, and we soon sprouted a great variety of beards. Extra water was made available to the cook for soups and beverages such as teas and coffee but we got mighty thirsty at times.

The cook had already set up his kitchen by merely arranging crates of biscuits in the form of a three sided shelter about four feet high. All he had was his portable cooker and his pots and pans. We pilots all carried our own kit bags and canvas cots strapped in the fuselage of the Hurricanes, so that night we slept in the open. I have ever heard such complete silence. Not a breath of air stirred, and there wasn't anything for it to stir anyway. Not a cricket cricked, or a frog croaked, and the sky, black as only a desert sky can be black, was pinpointed with a million stars.

A blinding sun awakened the camp quite early the first morning and soon everyone was busy digging out some kind of place for his cot and personal belongings. It was safer to dig a trench affair and have your bed and body below the level of the ground to avoid shrapnel from exploding bombs. Andy Anderson and I did a cooperative job, digging two trenches close together and spreading both pup tents over them for more headroom.

Supposedly the Squadron wasn't going to be at LG 125 very long so we didn't spend too much time on the trenches. However, Doug Davidson and Rusty Kierath dug an enormous pit about five feet deep and ten feet square. Both their cots, plus all their kit fitted in nicely and still allowed lots of room for living space. They joined their two pup tents in order to cover the whole thing. While we were all digging away, a JU 88 came over on a surprise attack and dropped a few bombs. We could hear and see it clearly and immediately everyone dived for his hole. For some reason or other Woollett, who had just about finished a nice deep hole of his own, took one look at the aircraft and sprinted fifty yards across the sand to pile in on top of Doug and Rusty. He couldn't for the life of him explain afterwards why he didn't just drop down into his own hole.

Practically no damage was done to our equipment but it showed that the Germans now knew where we were and so a standby system was started. Two pilots were to sit in the cockpits of their aircraft ready to take off within seconds, two more were to have their kit in the station wagon and be within calling distance at all times, a third pair were to be within call. We took two hour stands, starting as early as four thirty in the morning at first light, and carrying on throughout the day right up to dusk. If a white verey light was fired from the CO's position it meant that a very small raid or reconnaissance was expected and that the two Hurricanes were to take off for interception. If a yellow

light went up, the second pair were also to take off as more enemy were coming in, and if a red light went up then all six were to get up as fast as they could.

Winnie Winsland and I had become firm friends by this time and we paired up as much as we could. The first morning our defence system was put into effect Winnie and I were sent up by a white light. As we circled for height we saw a red flare go up which meant that something big was expected and the rest of the boys would be up soon to join us. All six Hurricanes climbed up to ten thousand feet and formed a loose patrol formation of three pairs. For twenty minutes we flew back and forth, up sun from the landing ground, expecting almost anything.

Winnie spotted the enemy first and peeled off to attack. As I caught up to Winnie's plane I could see the first three, then six, then nine, and finally twelve JU 88s diving on our base from all four cardinal points of the compass. Their bombs were already exploding on the ground by the time we mixed with them. In seconds the air was full of wheeling and diving planes.

This was my first scrap with enemy bombers and I was really excited. I followed Winnie as closely as possible as he manoeuvred to get on the tail of an 88. He gave the thing a good burst as he shot past, and I managed to get a squirt too before we pulled up and around again. Winnie was attacking again but before I could follow him, two more 88s shot across my nose and I turned to chase them.

All this action happened within a few seconds and the next thing I knew I was alone in the air with two bombers. While trying to catch them up I looked back and could see six black pillars of smoke over the base, but no other planes. It took quite a while to get near the two Junkers and I tried to figure out the best method of attack. They were flying in close formation for mutual protection so I attempted to get above and ahead of them for a frontal attack. Each time I pulled up they just turned a bit and presented their tails so I gave up that idea and went into a dive, gaining enough speed to come up under one of them.

I gave it a good burst of bullets, with no real results, so I climbed again and this time came in from above and behind. I got one of them as he didn't fire again. By now my guns were almost empty and the gas was getting low. I pulled up in front of them and came in, head on, leaving my finger on the trigger button until all guns stopped firing. Although black smoke came from one engine I don't think much damage was done. It was most disappointing to see them both flying off merrily for home.

I was angry at myself for making such a poor showing on this first flight, and to add to the misery I didn't have the faintest idea where I was. The fight had taken us





LG.125: (above) Don Edy and Winnie Winsland on patrol;  
(below) Doug 'Davo' Davidson and and Rusty Kierath's palatial dug out. Don, smoking his pipe,  
is stood next to Doug.



quite a distance away from the base, so I headed southeast, hoping to strike either the wire or the black strip. Luckily I spotted the smoke from a burning plane on the ground and by the time I reached that there were more pillars of smoke on the horizon marking the base. The aircraft below was an 88 and the four crew members were standing forlornly in the desert nearby. We never did find out what happened to them. By the time one of our trucks got there, they were gone. Possibly a German plane came put to pick them up, or even one of our Army units from the North.

All the other boys were down by the time I got back. They thought my plane had been shot down and were just organising a search for the wreck. We had a grand time in Doug's dugout that night, discussing the fight. Winnie consoled me somewhat by saying that it had taken him at least six scraps before he got the nag of deflection shooting and could score some good hits. He had nine jerries by now,

It is a very hard thing to judge just how far ahead of an aircraft you had to shoot so that he would fly into your bullets. When he is travelling it high speed, and on a different line to yours, then you have to aim several hundred feet in front. The instinctive feeling is to aim straight at the target and then, of course, the bullets just fall far behind. We certainly should have concentrated more on deflection shooting at OTU in England.

It had been a good day for the Squadron all around. Genders had come in to help Winnie finish off that first Junkers, Lance wade knocked down the one I saw on the way home, and two of the other boys shared a third. The bombs in that first attack burned out two of our Hurricanes but luckily one of them was unserviceable anyway. They also ruined a visiting Blenheim and exploded a small gas dump. That same evening Lance and Genders were sent off from standby and knocked down an Italian Savoia 79 recce plane. The Savoia must have been lost as it circled the landing ground twice as though trying to decide just where it was. By the time the pilot realised his mistake, Lance and Genders were on it.

There is a story about Lance that should fit in here. As far as we knew he was a junior Pilot officer, even junior to me in date of commission, and just as green as the rest of us at the fighting game. Several weeks before the Push started, 33 Squadron was asked to patrol over Giarabub as our troops had just moved in. I was away that day and missed the trip but lance was one of the six. They returned that evening in high spirits as they had met eight or ten Italian CR 42s and had shot three of them down and damaged a fourth. Lance was the quietest of the group while the story was being told but it turned out that he had claimed two of them and the other boys backed him up. It wasn't until three years

later I found out that Lance had fought for the Finns before joining the RAF, and had six Russian planes to his credit. He later became a wing commander and the Middle East ace of the time, with twenty eight and a half victories to his credit. He was killed in an accident in Italy.

The Germans didn't like having a thorn in their sides such as our base was. The next day we saw more action than the day before. Early in the morning Winnie and Andy scrambled for a red light and intercepted a Messerschmidt 110 before it got near us. They attacked it several times and soon had the satisfaction of seeing it go down in flames. We could see the whole fight from the ground and it was one of the most intensely interesting spectacles I have ever seen. It isn't often that we were able to watch a show like that.

The two pilots returned in time for breakfast and shortly after that Tiny Tofield and I scrambled for another interception. We climbed to about eight thousand feet, but the Junkers came in at ground level and we didn't see it until the bombs exploded on the base. We dove on it at high speed and both fired, but we were going too fast and missed. On the second attack the pilot of the Junkers evaded us cleverly, judging his evasive action beautifully just as we fired. We were so low we could see the bullets kicking up the sand under the 88. I hate to admit it but we both made one more attack on that darned Junkers but nothing critical was hit and it flew off. All our ammunition was gone by this time so there nothing to do but return to the base. At any rate it was another good lesson in deflection shooting.

In the evening Lance and Genders, who seemed to operate well together, took off to patrol the Gialo Oasis, about a hundred miles south and west of LG 125. When they returned they claimed another Savoia 79 shared and another CR 42 for Lance.

One thing I always marvelled at is the way the ground crews and maintenance units kept the aircraft flying in the desert with all the dust and sand kicked up by the wind and planes. At times they would have a Rolls Royce Merlin engine stripped down, with dust sifting into everything, but once they put it together again it would run like clockwork. The repair business was even worse at LG 125. The crews had not been able to bring along any of the heavy equipment and spare parts were hard to get. If a prop was bent, or an undercarriage smashed, the whole aircraft was pretty well useless and the mechanics would strip it for parts for the others. In the seven weeks we were out in that God-forsaken spot in the desert, the Squadron lost forty-six Hurricanes, but only two were due to enemy action through bombing and five through operations. All the rest were because of minor accidents.





Above and below: Don Edy's dug out at LG. 125.



One time during a scramble I hit a bump in the sand before the Hurricane had gained flying speed. The plane bounced up, then landed heavily on a wheel. This gave way, the plane ground looped and the whole thing had to be written off. Another time I landed in a sandstorm, then turned off in a hurry to get out of the way of the others trying to get down. This was the toughest landing I ever made. The sand was blowing across the desert a few feet off the ground making it impossible to judge the height. Each plane had to wait till the pilot saw a hole in the storm where the ground was visible, then dive down and try to land before the storm closed in again. Once down and stopped, I raised the bucket seat so that I could see over the side, then taxied forward. The plane hadn't gone a foot before one wheel dropped into a bomb crater, went up on its nose and another Hurricane was written off.

The Germans gave us a rest after those two days of activity and we didn't do much ourselves, except patrol around the Gialo Oasis. During that time a flight from 73 Squadron came down for more or less of a rest. They were to protect our landing ground while we started on the business of strafing the Bengasi Road. Before this arrangement was put into effect the CO planned a mass strafe of the Agedabia airport with twelve Hurricanes from 33 and six from 73. We all flew at fifteen thousand feet on that raid, the highest I ever went in the desert. The leader took us out to sea, after crossing the highway and the coast, apparently hoping that the people on ground would think we were theirs. Turning back, we started down in a long, fast dive and I could see, for the first time, what the land we were to know so well looked like. At this point it was quite fertile in a ten mile strip along the coast, with the black highway winding through it.

The largest town in sight was Agedabia and we could see the airport just beyond. There were dozens of planes lined up wing tip to wing tip and they presented a wonderful target for our Hurricanes, I made a big mistake at this point by not shoving back the hood of my the cockpit. As we dove the atmosphere quickly became warmer and before I knew it the glass hood was steamed over. I had a heck of a time for a while but as we approached the town the windshield cleared a bit and I could see well enough to avoid hitting any of the buildings. 73 went over first and they did a lot of damage. We followed close behind, skimming over the roof tops and raking the planes on the ground with everything we had. Already four fires had been started and we got five more going. Surprise was complete and not a shot was fired in return. The fires only indicated immediate damage but subsequent photos showed that a great deal of damage was done and we reckoned there were at least fifteen planes destroyed.

The flight home was fun as we flew close to the ground

to avoid detection from enemy fighters. There were a great many wild camels in this area and their antics when the lanes flew over them were something to see. In their excitement and fear they bounced on their toes, like a playful kitten, but being so ugly and awkward their actions were ludicrous. After staying low for nearly an hour we climbed to two or three thousand feet, found the black strip and then it was routine to locate the two sand hills and fly home.

While we were away Winnie and John Cloete flew down to Gialo Oasis to patrol. They were unlucky and six CR 42s jumped them. John was lucky and got away without being hit but Winnie had the controls shot away and went into a spin. He jumped as soon as he realised that the Hurricane was gone, but in order to avoid being shot at he delayed pulling the rip cord. The plane was spinning too close to him and on one turn the wing actually hit him on the arm. Luckily it sheered off, Winnie pulled the chute open, and came floating down safely to be picked up by our own troops later in the day. The incident didn't seem to affect him much as he was flying the next day.

It was really pleasant at LG 125 in the evenings. We sat around the mess table in the open, listening to the radio in the CO's station wagon, and discussing the day's events. With no hydro everyone turned in early and I must say we slept soundly in the fresh air. At night the temperature dropped down to nearly freezing and we often put on our flying suits to keep warm.

## Chapter 11

From time to time aircraft had to be flown back to our bases in Egypt for major repairs or camouflage jobs, and then new aircraft brought back. This was a popular job with the pilots as it meant a few days' rest and a possible day in Alex. I got a real break when the CO finally sent me, and a job that should have taken three days stretched into more than a week. I was to pick up a Hurricane at Giarabub and fly it to back to Fuka for a new engine. If all went well there would be another one at Fuka ready to come back.

Early in the morning I hopped onto one of the Bombay supply planes and was taken back to the base at Giarabub. We were always amused at these planes because they made such quick trips. You couldn't blame them. They were so big and slow they made perfect targets but it did look funny to see one of them creep in, practically running the wheels along the sand all the way, throw the cargo off in about two minutes, and then take off before you had a chance to say hello. One had to be quick if he was planning to catch the plane.

Jock Peasant and the boys welcomed me for lunch and wanted to know all the news from the Squadron. It was then that I received the only parcel from home that caught up to me in the desert. This was a warm pair of



socks from my sister-in-law's sister. That afternoon I enjoyed the long hop to Bagush very much. I flew down to Siwa first and had a good look at the place. It was nestled in amongst the palm trees around the water hole and from the air the white Egyptian architecture looked very pretty. I passed over two lakes nearby and saw several swimmers. These lakes were as salty as the sea and Winnie and I had gone in for a swim one day earlier. The rest of the flight was interesting and I just flew along, coming down low to see anything unusual, or flying high just for the fun of it.

I had planned to spend the first night at Bagush. It was a transit camp for Air Force personnel and there was more chance of meeting some friends there than at Fuka. At supper time, in the Officers' Mess, I met a couple of RCAF boys who had just arrived from Canada to do some special radio work in the desert. One chap named Roberts said he had a brother who was a pilot and it turned out that the brother and I had trained together at Upland, Ottawa. That evening Roberts invited me to his tent to meet half a dozen Canadian sergeants who had just arrived as replacements. Two of the boys managed to scrounge a whole case of Canadian Black Label beer, quarts at that, and we had a grand sing song that lasted well into the night. After the Egyptian and the Australian beer that Canadian stuff was really potent.

The next morning, not too early, I made the short hop to Fuka in my Hurricane and reported to the officer in charge of Maintenance. He said that the aircraft I was to pick up was finished but that in a test that very morning it had shown a glycol leak and would need another new engine. I thought this was pretty good news as it would take two or three days to install a new one but then I glanced down on his desk and saw three folios, all with a large 33 marked in the corner. This meant there were three Hurricanes ready for our Squadron and I would probably have to take one of them.

The officer must have seen a look of disappointment on my face, and noticed my appearance because he slipped a piece of paper over the folios, then told me to report back there in five days. Most of these fellows were pretty good hearted and when this one saw my dirty battle dress, the long matted hair, and the four week growth of beard he must have figured that this character would appreciate a few extra days before returning to the battle. I thanked him and started to get out in a hurry but just then an NCO came in and asked if there were any pilots around that could fly a Hurricane to Alexandria for a camouflage job. The officer was really grinning when he indicated me and in a few minutes I was fixed up with four days' leave and an aircraft to fly me to Alex.

At the moment I hadn't thought about my appearance

and how it would look strolling around the city in dirty clothes like a tramp. Thinking it over on the way out to the aircraft I suddenly remembered my new friend, Roberts, in Bagush and knew that he was the solution to the problem. The mechanics probably thought I was crazy when they saw the plane heading west again, but in a few minutes I was at Bagush looking for my friend. He was there alright and cooperated beautifully when the situation was explained. Not only did his second best uniform fit perfectly, but so did his clean shirt, black socks, shoes, tie and field service cap. I was promoted to Flying Officer by the change but what the heck, and even the ten pound note he loaned me fitted the pocket. After a good hot bath and a shave I felt like a new man.

Lance Wade arrived just as I went into the Mess with Roberts and he didn't recognize me all dressed up. During the meal an announcer broke in on the radio and said that the Japanese had bombed Pearl Harbour that morning and the US was now at war. This certainly was a bit of news and cause for celebration with Lance and the other boys. By the time I left there were several beers under my belt and I felt on top of the world. A parachute seemed like an awkward thing to take along on a leave so I left it behind and put a five gallon tin can in the bucket seat to sit on. This raised me up high enough in the bucket seat to see where I was going.

All the boys had gone down to the beach for a swim so I decided to have some fun with them. After taking off I circled and soon found the bathers, then made a few dives at them, passing low over the water. This seemed rather tame so I climbed up a couple of thousand feet and peeled off to do a real beat up. Suddenly the ground seemed to be coming up too quickly and I frantically yanked back on the stick. The plane missed the ground by inches, although I'll never know how it did, but the centrifugal force from the pull out was so great that the tin can collapsed and left me sitting so far down in the cockpit that I couldn't see out. Believe me I got a scare that time and never flew again after having a few beers.

The aircraft I was flying had to go to Berg El Arab, not straight to Alex, but that was only a short distance away. When I arrived at the berg the place was in turmoil. A South African squadron was just moving out and an Australian squadron moving in. Both were there at the same time. They arranged a party that night and I was invited as a neutral observer. It was a real do, one of those spontaneous parties that are much more fun than anything arranged, and we had a wonderful time. I must admit that the ride into Alex in the morning on the ration truck was pretty rough.

This time I checked into the Cecil Hotel and was soon soaking in a hot bath, what luxury. I spent three very pleasant days, sleeping in late, swimming or lying on

the beach, and taking in a good movie at night. Always I ended up at the Anglo for steak and eggs. All my chums were up at the front so it got a bit lonely. I was quite ready to go when N-J and George Rumsey arrived at the hotel. They hadn't had much time off so I arranged to fly one of their planes back. They could hang around for a day or so, then pick up one plane at Abousir and one at Fuka.



**“ It was really pleasant at LG 125 in the evenings. We sat around the mess table in the open, listening to the radio in the CO’s station wagon, and discussing the day’s events. “ In the picture above, Lance Wade is sat on the left.**



## *The Hawker Tempest: '...a Typhoon with the bugs out!'*

Including extracts from 'Typhoon and Tempest at War', by Arthur Reed and Roland Beaumont, and 33 Squadron's Operational Record Book.



***During 33 Squadron's long and impressive history it has flown aeroplanes made by a number of famous British aircraft manufacturers, including Bristol, Avro, Gloster, de Havilland and Supermarine. But the manufacturer whose aircraft it has flown more than any other was Hawker. In 1929 the Squadron reformed as a bomber squadron at Netheravon, equipped with Hawker Horsleys, but re-equipped with the Hawker Hart shortly afterwards. At the beginning of World War Two the Squadron, having become a fighter squadron in 1938 when it received the Gloster Gladiator at Ismailia, converted to the Hawker Hurricane, an aircraft that it flew in Greece, Crete and the Western Desert until 1943 when it converted to the Spitfire. Returning back to the UK in time for D-Day the Squadron continued to operate the Spitfire until December 1944, at which point it returned to the UK to convert to another Hawker design - the Tempest.***

### **Enter the Tempest**

Sydney Camm had first considered a successor to the Typhoon when that aircraft was on its flight trials in 1940 and the snags in its basic design started to show up. By February 1941 talks between him and the Director of Technical Development were taking place, at which Camm was able to display a design study for a developed Typhoon which used a wing with a semi-

elliptical plan more akin to that of the Spitfire and, more important in view of the Typhoon's troubles with compressibility, a wing which was five inches thinner at the root.

The design at that time was known as the Typhoon II. Permission to go ahead was given to Hawkers in March 1941 under Air Ministry specification F10/41. On 18 November 1941 a contract was placed for two prototypes of a machine which was to be, as one contemporary writer put it, 'a Typhoon with the bugs out.' What emerged were three main variants, each of which was so different in design from the Typhoon that a new name was found – the Tempest. The variants were the Tempest I, with an uprated sabre engine, a four-blade propeller, and a very clean layout, with the radiators taken away from the distinctive bulky chin of the Typhoon and incorporated in the wing root leading edge; the Tempest II, with a Centaurus sleeve-valve radial engine; and the Tempest V, with the uprated Sabre, a longer nose, and an extended radiator back in the traditional position under the nose.

The Hawker test pilot, Philip Lucas, made the first flight in the prototype Mark V on 2 September 1942, the Mark I making its maiden flight on 24 February 1943. The Hawker test pilots at Langley felt that they had in their hands a livelier, more precise, and more aggressive fighter than the Typhoon. In performance



tests carried out at the end of 1943 Bill Humble, the Hawker senior experimental test pilot, and Roland Beaumont, seconded from the RAF, were alternately exceeding the world speed record of 464 mph which had been set in 1939 by a German in a Messerschmitt. A top speed of 472 mph was eventually attained, a very high performance for a propeller-driven aircraft at that stage of aviation development; but this potential of the Tempest was never realized in combat, as the sleek Mark I version was passed over in favour of the Mark V, with its lower performance.

Two major considerations dictated this choice. These were the limited development of the Sabre IV engine and Air Staff concerns that Tempest I radiators would be vulnerable to ground fire, as they were spread out along the underside of the wing roots. Delays in the engine development programme, in perfecting the new radiator layout and the fact that the new, thinner Mark I wing left insufficient room for fuel tanks after it had accommodated the radiators meant that the Mark V was flying before the Mark I, and production contracts were issued for the former version.

The first Tempest V in the first batch of 100 on order was flown by Bill Humble from Langley on 21 June 1943. These early aircraft were armed with long Mark II Hispano cannon, but the Tempest V Series II which followed was equipped with shorter Hispano Mark V guns buried inside the wings, so enhancing the performance of the aircraft. Roland Beaumont summed his early experience with the new fighter-bomber as follows: 'In the Tempest we had a direct successor to the Typhoon with most of the critical aspects of the latter eliminated, or much improved.

'Each flight brought greater enjoyment of and confidence in the crisp ailerons, firm though responsive elevator, good directional stability and damping giving high promise of superior gun-aiming capability, exhilarating performance and, with all this, magnificent combat vision with windscreen forward frame members thinned down to a bare minimum, and superb unobstructed vision aft of the windscreen arch though a fully-transparent canopy.

'On every convenient occasion on the way back from tests I would zoom-climb, wing-over and rack the Tempests around in stall-boundary turns, simulating combat, looking over my shoulder down the fuselage and under my tailplane for the first time in my experience. What a fighter this would have made for the Battle of Britain, but what a fighter it was going to make for the invasion!

Commanded by Beaumont, the first Tempest wing, 150 Wing, was formed at Newchurch, Kent in April 1944, the month that 33 Squadron arrived back in the UK from Egypt. Nos 3 and 486 (NZ) Squadrons were

equipped first, followed by 56 Squadron in July. Although the Tempests were now in business, there was trouble behind the scenes. Three Tempest squadrons should have been formed by D-Day, but production had dropped due to a strike at the Hawker assembly shops over pay. Boscombe Down also had reservations about the Tempest and had sent a report back to Hawkers at Langley saying that, in their view, the aircraft was not fit for operational use until a long list of modifications had been carried out, a list that would have delayed the introduction of the Tempest by nine months to a year. Subsequently, a meeting between Boscombe Down, Hawkers and the Air Ministry resulted in the Boscombe report being overruled. Soon after the meeting the German V-1 flying bomb attacks began, against which the Tempests proved invaluable.

### **Tempest Air Combat**

Although they had none of the major snags of the early Typhoons, the early Tempests were not faultless. The pilots liked the performance improvements, but cited problems with failure of a seal in the constant-speed propeller hydraulics, which tended to blow under pressure. This caused the propeller to run away, resulting in bits of metal coming out through the exhaust ports as things broke up inside. The engine also vibrated and overheated badly. But after several weeks of striking against transport and airfield targets with considerable success and no losses, there was a rapid increase in confidence in the new aircraft and a considerable rise in morale and aggressive spirit. The squadrons really wanted to get at the Luftwaffe's Messerschmitts and Focke-Wulfs, and on 8 June 1944, during an air superiority patrol from Le Havre to south of the beachhead at Caen and round to Cherbourg, the first air combat took place around the Rouen area and 150 Wing bagged three Me-109s. Beaumont wrote: "The performance, manoeuvrability and gun-aiming accuracy of our aircraft had all proved, just as we expected, to be superior against the 109s. The Tempest had arrived and now we were in business!"

### **33 Squadron converts to the Tempest**

The Squadron flew 16 aircraft back from Maldegem to Lasham on 15 December 1944, and flew down to Predannack in Cornwall to commence their conversion from Spitfire to Tempest V, the first arriving on 20 December. Flying Officer R.C. Stockburn had been attached to 33 from a Tempest squadron to assist with the conversion training. The squadron suffered one fatality during the conversion period, W/O NEM MacDonald RNZAF crashed on 28 December. We are very lucky to have the recollections of one of our pilots from that time, Jan Linzel, who wrote about his time flying Tempest Vs with 33 Squadron in his book

'Oorlogsvlieger', and I have included translated portions below that cover the conversion period down at Predannack in Cornwall:

*"On 24 December I had my first flight in a Tempest V. The plane was fitted with a 24 cylinder Napier Sabre engine with a very high compression. The engine weighed approximately 2 500 kg and the power was around 2 500 hp, really fantastic for the time. The octane content was also high. We had to wear an oxygen mask when taxiing. The engine had to run at at least 1 000 rpm. However, you could not taxi at 1 000 rpm, unless you wanted to burn your brakes out. While taxiing the engine often started spluttering, so you had to sit on the runway at an angle for about 30 seconds and let the engine turn over at 1 000 rpm. Then all of the muck came out! You then taxied on a little more, and the spluttering might start again. That was definitely a disadvantage of the Tempest but apart from that it turned out to be a fantastic machine, faster indeed than the Spitfire and nice to fly in."*

### **33 Goes Back to Europe**

By 16 February 1945 the Squadron was ready to return to the Continent, but poor weather delayed the departure from Predannack until the afternoon of 20 February. The ground crew were supposed to fly but ended up travelling by rail and sea, leaving on 19 February and arriving at their new base on 22 February.

The bad weather resulted in the air party having to night stop at Manston, and it was 11:45 on 21 February before the CO, Squadron Leader IGS Matthew DFC, was able to lead 17 aircraft back to rejoin No.135 Wing at ALG B.77 Gilze Rijen, all aircraft landing at 12:30. Flying operations began the following afternoon, shortly after the sea party arrived from Blankenberge. 122 Wing finally lost its status as 2nd TAF's sole Tempest Wing.

With 33 and 222's arrival, Nos 349 and 485 Squadrons flew back to Predannack to commence their conversion to the Tempest, but their courses were eventually abandoned owing to a shortage of aircraft. Due to the high attrition rate in 2nd TAF, a shortfall of Tempest pilots had been foreseen and the newly formed Typhoon / Tempest training unit at Milfield in Northumberland - No56 O.T.U. - had priority for equipment.

### **135 Wing's Tempests meet the Luftwaffe**

33 Squadron began flying operations the following day, patrolling the area between Arnhem and Rees to counter any enemy aircraft trying to attack the Allied forces involved in Operation VERITABLE, advancing slowly in awful conditions around and through the Reichswald towards their start positions to cross the Rhine into Germany.

While bad weather prevented flying on the 23rd, both

squadrons were airborne on 24 March. The ORB reports 'an excellent day's flying, 22 sorties and 40 hrs 10 mins flying', consisting of an uneventful two-hour, two ship battle area patrol, sweeps around the Apeldoorn-Zwolle and Rheine-Munster area, a couple of air tests and an aircraft delivery from Brussels.

It was 'Treble Two' who drew German blood first, at Plantlünne airfield, north-west of Osnabruck. Catching a formation of nine Fw 109D-9s with their engine running and about to take off, they claimed two destroyed, three probables and three damaged.

Four days later, on 25 February, 33 Squadron had its first encounter with the Luftwaffe. Squadron Leader Matthew led an early morning 8-ship sweep of the Rheine-Munster area, where they encountered 15+ Me 109s, destroying four and damaging four; Flight Lieutenant Leslie 'Lucky' Luckhoff bagged two and Squadron Leader Matthew got one, while Lieutenant Edgar 'Tommy' Thompson (SAAF) and Flight Sergeant Fraser damaged two and one respectively. Flight Lieutenant Luckhoff's Tempest was badly damaged by flak but he landed safely at ALG B.80 Volkel.

While 33 bagged its first doodlebug on 28 February, with FS C.P. Nisbet shooting one down near Apeldoorn, February was a relatively bad month for the Tempest squadrons. Although they were credited with 30 enemy aircraft destroyed in the air, they had lost 31 Tempests in action. Seven were lost to enemy fighters, seventeen had been brought down by flak and seven were victims of engine failure. Fortunately, no fewer than 21 of the pilots survived, 16 as PoWs and five evaded capture and returned through the lines.

2nd TAF's response to these incidents, and the growing number of encounters in which the Tempests were heavily outnumbered, was to issue an edict banning ground attack and to only allow Tempest formations of 16 or more into enemy territory. That particular restriction did not last more than a few days, but the point had been made.



**Messerschmitt 109**

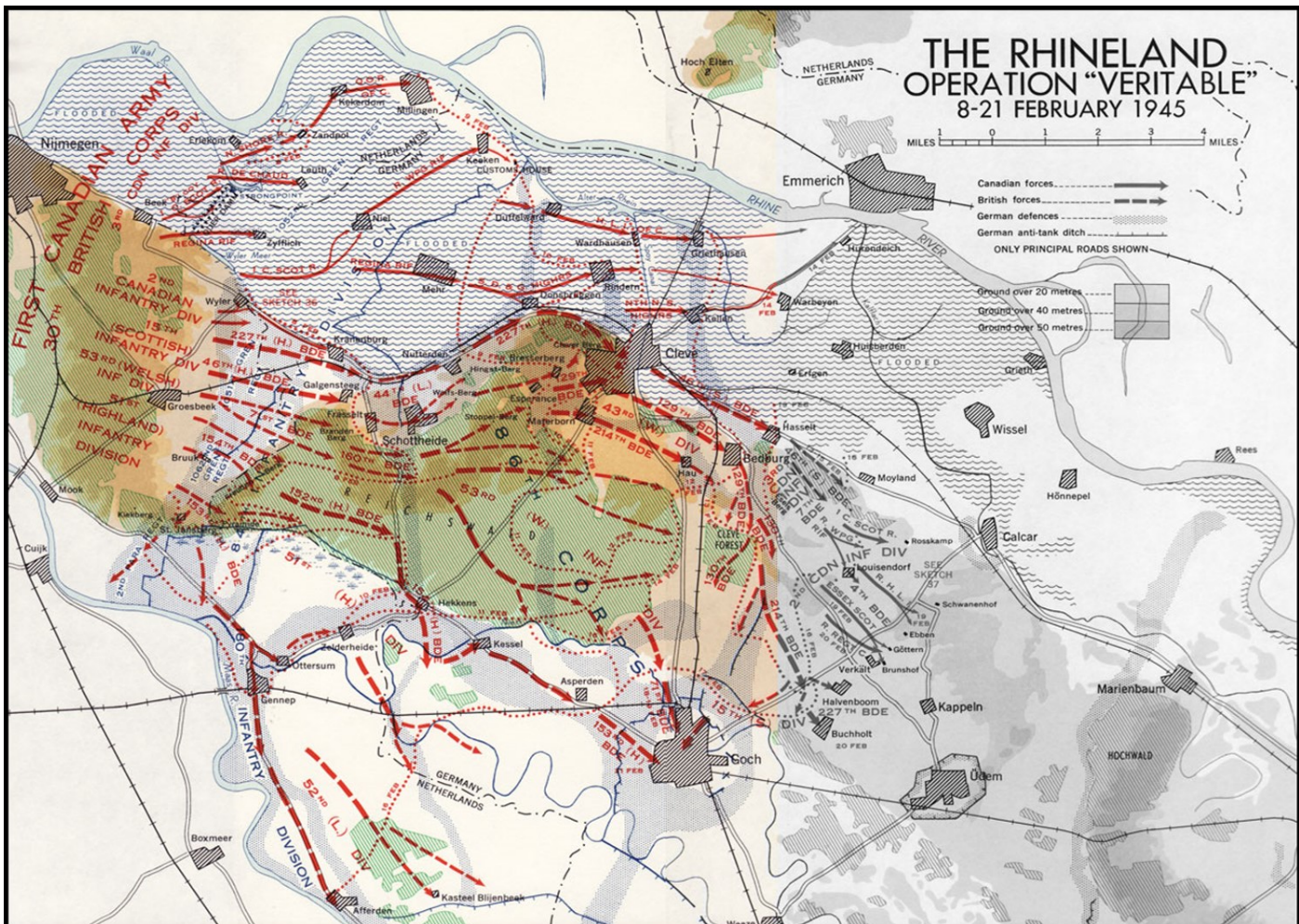


Flight Lieutenant Leslie 'Lucky' Luckhoff in the cockpit of his Tempest Mk V, 5R-R (EJ1880)



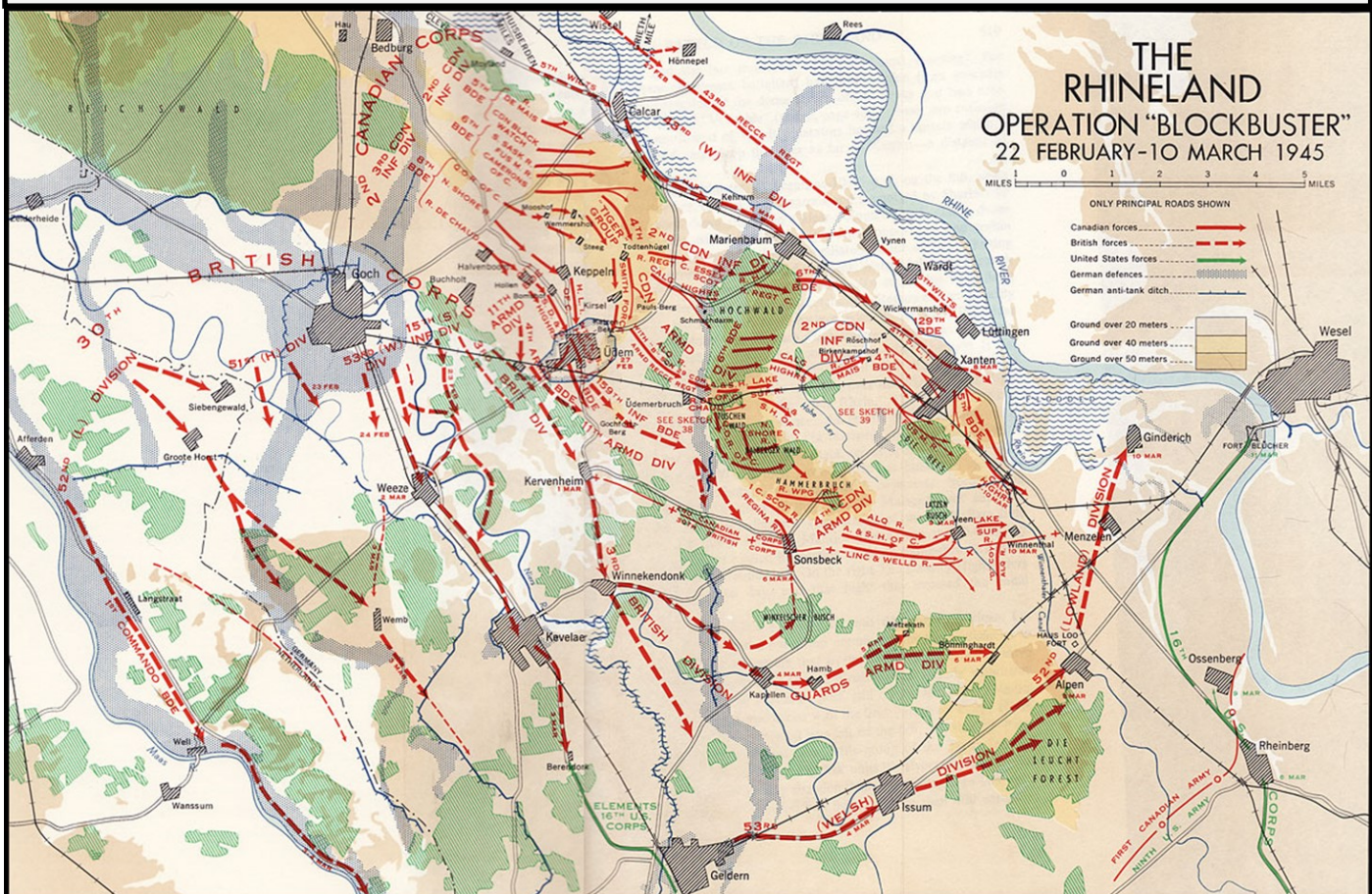
In February 1945 this was the entrance to the Gilze Rijen airbase. For security reasons, individual squadrons were not signposted but No 135 Wing, of which 33 was a part, was clearly indicated. For those in the know, the clue that 33 was there was the 'Sharia El Berka' sign, which was used as an official 33 Squadron signpost throughout the war. Originally it was one of the signs marking the Cairo 'Red Light' area! As the desert equivalent of the song about 'Eskimo Nell' went....  
"There is a street of sin and shame,  
Sharia-El-Berka is its name!"





Above: The situation on the ground prior to 33 Squadron arriving at Gilze Rijen on 21 February 1945.

Below: The heavily opposed British and Canadian advance through the Rhineland towards their forming up and departure points for the Rhine Crossing in March 1945.





On 2 March 2nd TAF sent out a message to all Wings preventing them from strafing west of the Rhine – an indication that the west bank was about to be cleared of the Wehrmacht:

*'Latest Group order says that no more ground targets are to be attacked until further notice, reason being that Tempest must be conserved as replacements are few and far between.'*

(33 Sqn ORB 2 Mar 45)

The way was now clear for an assault on Germany itself, which would commence three weeks later. Meanwhile the weather deteriorated once again, curtailing or prohibiting flying and restricting further air combat successes to just three days in the next three weeks of March. 33 Squadron had a change of command on 9 March:

*'S/Ldr I.G.S. Matthew D.F.C. posted to No. 84 G.S.U. , F/Lt. A.W. Bower promoted to A/S/L. and now commands. Lt. E.D.Thompson (SAAF sec) promoted to A/Capt. and now commands 'B' Flight.'*

(33 Sqn ORB 9 Mar 45)

Despite cloud cover being given as 10/10 at 4 500 feet at times, 33 flew several bomber escort missions and sweeps with 222 Squadron between 9-17 Mar and on Monday 12 March two German launches were added to 33's German propeller 'scoreboard', courtesy of 'Black Section':

*'Black section (F/Lt. L.C. Luckhoff & F/O J. Linzel (Dutch) were airborne at 11.00 hours to escort one Swordfish detailed to bomb 3 enemy launches off WESTHOOFD. One of the launches ran aground and the Swordfish attacked the remaining two without success. Our 2 a/c obtained permission to strafe the launches and after being attacked twice both enemy vessels blew up! One survivor was seen in the sea. Flak was met from shore installations, but only damage to our aircraft was a small hole in Black 2's mainplane.'*

(33 Sqn ORB 12 Mar 45)

33 encountered their first Me 262s on 13 March, with a total of seven 262s seen during the day, but they were unable to catch them. On 17 March the Tempest wings were reorganised, with 274 Squadron being transferred from 122 Wing to 135 Wing, moving from B.80 Volkel to B.91 Kluis. The Wing's remaining two Spitfire units - 349 (Belgium) Sqn and 485 (NZ) Sqn – had flown back to Cornwall for their Tempest conversion, but due to shortages they would return to the continent in April with new Spitfires. The news of the transfer was well received:

*'No. 274 Sqn joined the wing from 83 Group. Readiness every three days now!'*

(33 Sqn ORB 17 Mar 45)



**Messerschmitt 262**

There are references to patrols being flown behind the previous VERITABLE / BLOCKBUSTER battle area from Nijmegen – Goch – Xanten on 18 March, and early take-offs to intercept the Luftwaffe moving forward to their ALGs near the American bridgehead at Remagen on the 19th.

The smoke screen obscuring the Rhine in preparation for Operation PLUNDER was mentioned on 21 March by the Battle Area patrols, along with numerous fires burning in villages behind enemy lines. The following day pilots reported more fires and huge clouds of brown smoke covering the area up to 11 000 feet "... due to Bomber Command's work in the RUHR during the afternoon." As the Allied armies approached the Rhine, the Luftwaffe fighter units withdrew to operate from airfields deeper in Germany. When they ventured aloft they were now faced by overwhelming air power. No 122 Wing's diarist wrote:

*"Once again the chief difficulty experienced by our squadrons was finding their right places in the vast queue of Allied aircraft filing into the Reich."*

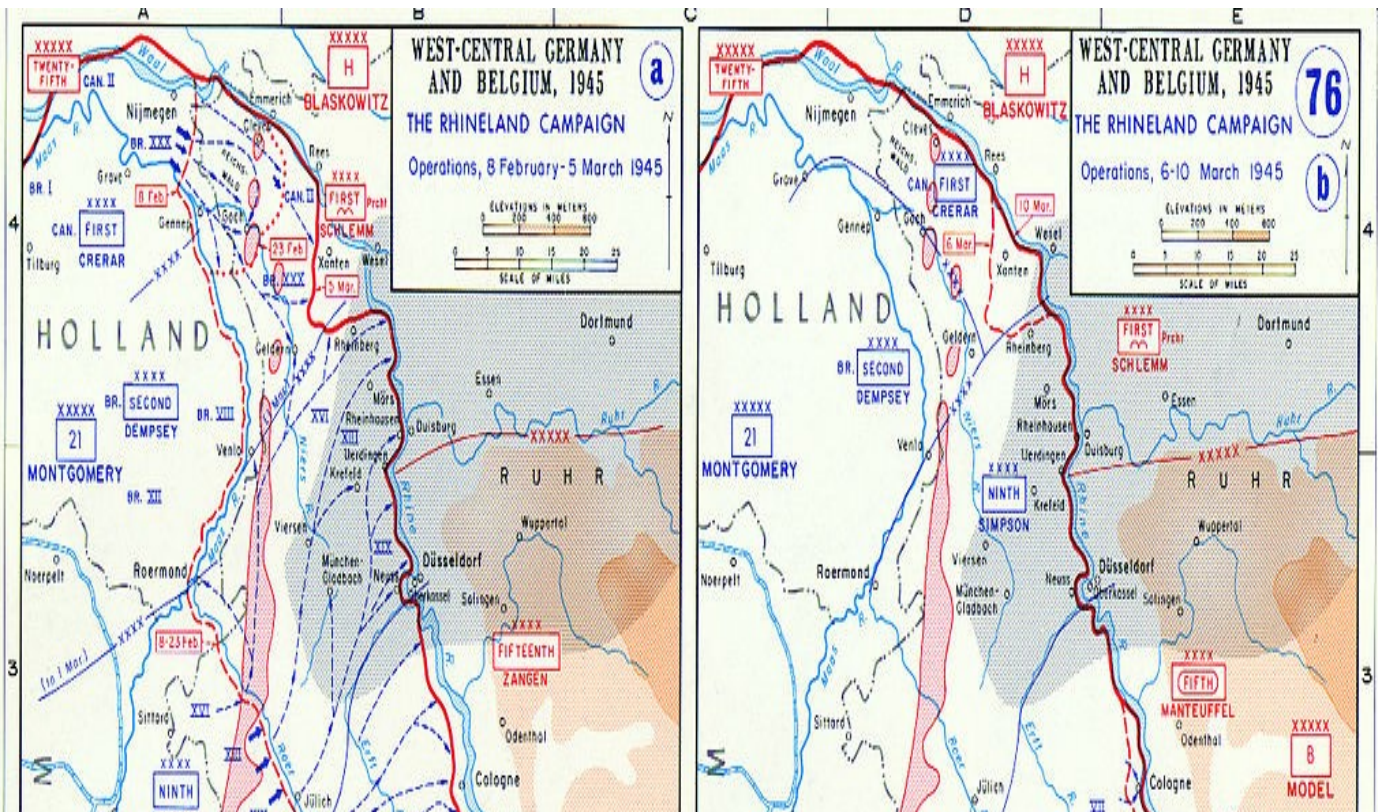
### **Crossing the Rhine**

At 1000 hrs on 23 March - D-1 - 33 Squadron launched eight aircraft to sweep the airfields around the Nordhorn and Quackenbrück areas, then returned to base to have their overload tanks removed in preparation for an afternoon attack on Plantlünne airfield near Wesel, where intense flak was encountered during the strafing runs.

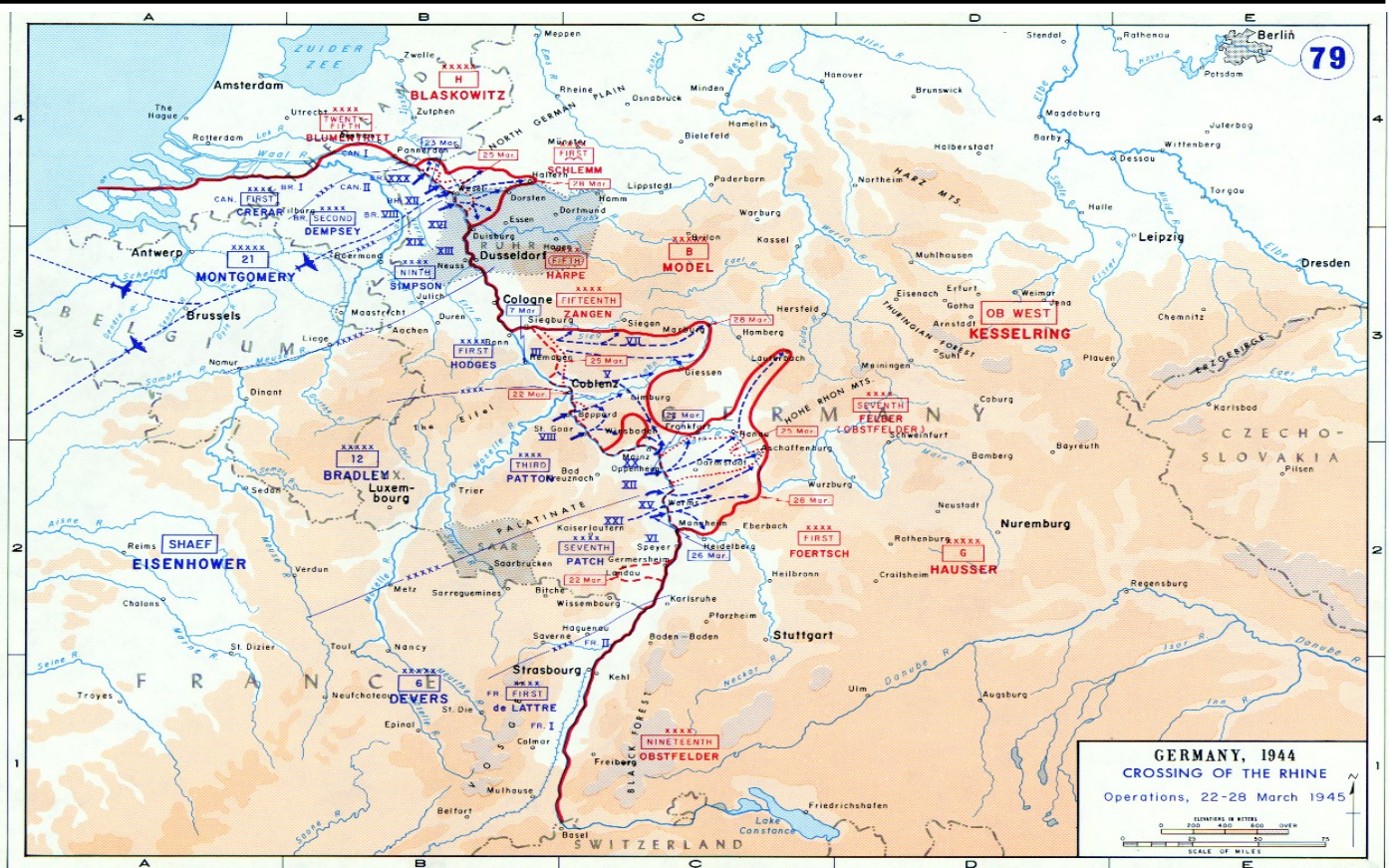
The following day Operation PLUNDER was launched, a massive land and airborne assault to cross the Rhine, involving 4 000 transport planes and gliders, and some 1 200 fighters. 122 and 135 Wing's Tempests carried out patrols throughout the day, mounted patrols and visited northern Luftwaffe airfields:

*"D DAY" over the RHEIN.*





33 Squadron was based at B.77 Gilze Rijen, west of Tilburg (A4, top) from 21 Feb 45 until 7 April 45. It moved forward to B.91 Kluis, south of Nijmegen (D4, top) until 15 April, at which point it moved into Germany. From 15 April until June 1945 33 was based on the North German Plain at B.109 Quackenbrück, north of Osnabrück (C4, below) on the River Hase, supporting 21 Group's drive up into Northern Germany towards the Baltic Sea.





*A composite squadron of 8 a/c of 33 Squadron, 4 of 274 Sqn and 4 of 222 Sqn, led by S/L E.B. Lyons (O.C. 222 Sqn) were airborne at 06.15 to sweep TWENTE-VECHTA-OSNABRUCK-MUNSTER area, to intercept anything that may react to the river crossings. Our a/c were led by F/Lt. W.J. Cleverly. The whole area was swept numerous times entirely wholly without incident, nothing ever being reported airborne and all a/c (except one returning early due to fuel shortage) landed base at 08.40 hrs. Eight a/c were called to readiness at 12.30 and stood by on the runway in case of a scramble, 7 a/c (Yellow 2 F/Sgt McNee, J, non-starter) were off at 13.10 led by Capt. Thompson to patrol the river from ARNHEM to REES at 8,000 ft. Except for some mysterious 'flak' that some of our aircraft 'encountered' the patrol was entirely uneventful, all a/c landing base at 14.55. WHY doesn't the Hun show up?*

*Non-op flying consisted of 3 air tests and a cannon test. 20 sorties, 34.10 hrs.*

(33 Sqn ORB 24 March 1945)

274 Squadron attacked Plantlünne the next day and lost two experienced pilots to intense flak during their strafing passes as they attacked two Fw 190s - Flt Lts WJB Stark (OC A Flt) and RC Kennedy. Despite the setback, numerous Luftwaffe bases would be attacked in the coming weeks. On 26 March Sqn Ldr Bower led nine aircraft to escort Marauder bombers bombing Vlotho. Ten miles SE of Munster Blue Section was bounced by four FW190s, during which two Fw190s were destroyed but WO Ligtenstein was shot down, baling out after transmitting that he had been hit. The last days of March and the first week of April brought little in the way of air combat, partially due to poor or bad weather, but the ORB reports a good deal of Motorised Enemy Transport (MET) being destroyed as the pilots pursued and strafed ground targets inside Germany. In terms of personnel movement April was a busy month for 33., with five new pilots posted in:

Flight Lieutenant RJ 'Bluey' Dall RNZAF  
 WO AP Batchelor RNZAF  
 Sgt J Staines  
 Sgt DH Simpson  
 Sgt Walker

As part of 2TAF's plan to move air support closer to the front line, 135 Wing's squadrons moved forward from Gilze Rijen on 7 April 1945, landing at B.91 Kluis, south of Nijmegen, on completion of the day's sorties:

*At 07.55 twelve a/c (& 1 spare) were airborne, led by S/Ldr A. W. Bower (C.O.) to patrol the front line and area between OSNABRUCK and MINDEN. An uneventful trip altogether and our a/c maintained patrol until relieved, landing at B.91 at 10.10 hrs. Orderly Room & kit moved by road to B.91 during afternoon, echelon*



**Focke-Wulf 190**

*and kit moved in two sections, 'A' on 6th and 'B' on 8th April, accommodation is now canvas.*

*A 'quick turn round' allowed 8 more a/c to be airborne at 11.40, led by F/Lt L.C. Luckhoff, to patrol the same area until relieved. Also totally uneventful & all a/c landed at 13.40 hrs. A third patrol of 8 a/c, led by F/Lt W.J. Cleverly, were airborne at 14.30 to relieve the 'GRETA' patrol. Except for practice 'turn abouts' and 'crossovers' the whole trip was uneventful and our a/c landed base at 16.30 hrs. Yet a fourth patrol - 6 a/c this time, led by F/L G.L. Starkey RCAF, maintained the patrolling of the area, and again no events. All 6 a/c landed at 19.25. Black section were scrambled, and*



**Above: The Ops Area, B.91 Kluis**

**Below: Tempest Vs take off from B.91's temporary strip.**







**11 April 1945 - Squadron Leader E B Lyons (222 Sqn) parked in dispersal at Kluis after an attack on Fassberg airfield. The aircraft was hit by flak during a strafing pass, breaking off armour plating attached to the seat which in turn struck the pilot on the back of the head. With most of his canopy gone, and semi-conscious, Lyons managed to pull up and fly 200 miles back to base. (via J B Scutts)**

*ended up patrolling the BRUSSELS-ANTWERP area, being airborne from 15.40 to 17.00 hrs. Five a/c were flown from B.77 to B.91 to complete the day's flying, a truly magnificent effort considering the circumstances. 78.05 hrs for 42 sorties.*

(33 Sqn ORB 7 April 1945)

Two days later the Tempest expert attached to 33 at Predannack, now Flight Lieutenant Stockburn, left to take up a flight commander position with 274 Squadron; the following day the pace of progress, and the direction of movement being made by the land forces, led to the following ORB comment:

*Pilots are having great difficulty these days in keeping their maps up to date. The 'bomb line' advances every few hours! Latest rumours say that we are going to Norway!!!*

(33 Sqn ORB 10 April 1945)

Having been concentrating mainly on ground targets since Op PLUNDER, a section of four Tempests from 33 tangled with 12 Fw 190D-9s on 12 April. The Fw190s were led by Oberleutnant Hans Dortenmann, who recorded 18 victories in a 'Dora' and became the most successful 190D pilot in combat. Dortenmann attacked before the top cover – two of the four Tempests – could react and he recorded 'seven of the eight' Tempests being shot down and one, badly damaged,

managing to escape. The pilot who escaped was South African Captain E D Thompson, in SN180 / 5R-V, who claimed an 'Me109' when he got back. Dutch pilot Fg Off Dick ter Beek also claimed one 'Me109' destroyed and one damaged. In the dogfight two of 33's Tempest's were shot down. Flight Sergeant P C Watton, who had joined 33 at Maldegem in November 1944 and had flown 40hrs operationally, managed to bail out successfully and evaded capture. His colleague, Sergeant J Staines, on only his second operational flight. The 'Me 109s' were subsequently identified as Fw190s from the cine-gun film.

On 15 April, the day that experienced pilots Captain ED Thompson SAAF and Flight Lieutenant G L Starkey RCAF became tourex, the Squadron was put on standby to move to B.109 Quackenbrück in Germany, with the 'A' Party ground staff departing on 17 April. It would take them two days to reach Quackenbrück, having to travel via Twente. During the move forward from Kluis on 19 April, Squadron Leader Bower led eight aircraft on a sortie to recce German airfields in the Hamburg area. On the way to the new base they attacked a train and Flying Officer R A McPhie was hit by flak. He was forced to crash land and several civilians were seen running towards him after he left his aircraft.

On 22 April the Squadron received a signal stating that Flight Sergeant Watton was in hospital in Brussels,

waiting to be returned to a hospital in England. He had been burned on his hands, face and legs. On 23 April the Squadron had a very successful day attacking airfields at Schleswig and Husum - 8 ac destroyed and 9 damaged, two hangars set on fire. Flight Sergeant Peters was shot down but seen to leave his aircraft after a force landing.

The following day 33 was tasked to strafe Tarnowitz airfield, and Flight Lieutenant R J Hetherington, Flying Officer D J ter Beek and Flight Sergeant Fraser failed to return. There was some good news about Warrant Officer Ligtenstein though, who had been missing since 26 March - he was safe in England. The next day, 25 April, Warrant Officer Thomas was hit by flak and force landed at Krautsand near Hamburg.

In the final few days of the war, as flying operations continued, good news was received about one of the pilots lost in the previous month. On 1 May the Squadron was informed that Flight Lieutenant R J Hetherington was safe and in a hospital in Brussels. Three days later, after General Montgomery took the German surrender at Lüneberg Heath, Flying Officer Dick ter Beek walked back into the Mess at Quackenbrück that afternoon, having been a POW for 8 days. The ORB records:

*The whole evening was given over to celebration, and revolvers, very pistols, sten guns and Bofors were used with good effect. A spot of champagne was drunk in the Mess too! When the group Captain requested from Group that a few guns should be fired to 'celebrate', the reply he obtained was, "Fire all the f\*\*\*\*\* guns you've got". We did!*

The German surrender that encompassed all of the German armed forces facing 21st Army Group in the Netherlands, Denmark and northwest Germany came into effect on Saturday 5 May 1945, a day that saw Flying Officer McPhie and Flight Sergeant Peters arrive back at Quackenbrück from their POW camps. In the hours leading up to VE Day on 8 May 1945 the Squadron participated in another 12-aircraft 'Balbo' around the Groningen-Wilhemshaven-Bremen area and was back by lunchtime. But it would be a few more years yet before 33 Squadron would be heading home to Blighty. History had more in store for 'Double Three' and her Tempest Vs, and Chris Thomas' book on the Hawker Tempest summarises our activities very well.

### **Hawker Tempest: Cold War Fighter-Bomber**

Peace in Europe arrived and left all the RAF's Tempest squadrons, seven in all, in Germany. 84 Group's No.135 Wing, with 33, 222 and 274 Squadrons were at B.109 Quackenbrück, while 83 Group's No.122 Wing, with 3, 56, 80 and 486 Squadrons were at B.152 Fassberg. As with most of 2nd TAF's other units, they enjoyed a few days of celebration before settling down to a routine of

training flights, patrols, flag-waving sorties and the occasional massive flypast.

For 2nd TAF, reorganization was the priority, and although many squadrons were disbanded or returned to the UK, the Tempest units were untouched. No 486 Squadron was posted a day after VE Day to No 125 Wing at B.160 Kastrup, in Denmark. This was about as good as it got in the post-war 2nd TAF, as it meant exchanging war-torn Germany, struggling with food resources and a population trying to come to terms with defeat and their ravaged homeland, for a comparative land of 'milk and honey' with enthusiastic, welcoming citizens. Most importantly for the young airmen there was no curb on fraternization!

In mid-June No 135 Wing left Quackenbrück for B155 Dedelstorf, where 33 Squadron would suffer a distressing loss. Flt Lt RJ 'Bluey' Dall, an Australian who had joined the RNZAF, was A Flt commander and a veteran of a previous tour flying Typhoons in Fighter Command, had received a posting notice to Burma and flew over to R.16 Hildesheim on 4 July to visit old friends before his departure the next day. As he left Hildesheim he performed a slow roll in his Tempest. When inverted the nose dropped, the Tempest flicked, recovered, flicked again and crashed onto the airfield. 'Bluey' was killed instantly.

As the summer progressed more moves took place following the formation of the British Air Force of Occupation (BAFO), as 2nd TAF had been renamed on 15 July. Burma remained the subject of many rumours at this time, and they proved to be of some substance when two Typhoon squadrons flew back to the UK for conversion to Tempest IIs and a probable destination in the Far East. The dropping of two atomic bombs in August, and the Japanese surrender shortly thereafter, put an end to any such moves. However, more changes were afoot for the Tempest squadrons in September 1945 and by the end of the month the wings of 2nd TAF had been reshaped. No 84 Group became the main Tempest user, with No 135 Wing, still at Dedelstorf, consisting Nos 3, 33, 56 and 174 Squadrons. No 83 Group's 124 Wing, with just two Tempest squadrons – Nos 41 and 80 Squadrons – were based at B.158 Lübeck. In October 1945 No 135 Wing moved from Dedelstorf to B.152 Fassberg.

All the Typhoon squadrons had left Germany and the Tempest squadrons had to take on their predecessors' fighter-bomber role, in particular the rocket firing capability which, although available in the Tempest since late 1944, had not yet been exploited. Although "zero-length" RP launchers were now available, due to post-war economies the BAFO squadrons soon found themselves flying Tempests equipped with Mk IIIa lightweight rails that had been fitted to Typhoons since the end of 1944.





(Above) 33 Squadron Officers and Aircrew, Quackenbrück, Germany 18 May 1945. Sitting either side of Squadron Leader A W Bower is Flight Lieutenant LC Luckhoff (B Flight commander, wearing his forage cap) and Flight Lieutenant W J Cleverly (A Flight commander, wearing his SD cap).

Below: Tempest V at Fassberg 1946.







Above: Tempest V SN215 at Dedelstorf. This was one of the first aircraft in BAFO to be stripped of its wartime camouflage paint scheme. Having arrived at Dedelstorf on 19 August 1945, 33 Squadron moved to B.152 Fassberg on 23 October 1945.

Below: The 'Silver Tempest' in Gatow. 33 was detached three times to Gatow in 1946: 2 January-17 February, 18 June-18 July and 27 August-24 September. After converting to the Tempest F.2 they were back in Gatow from 12-29 September 1947 and 30 April-5 June 1948.

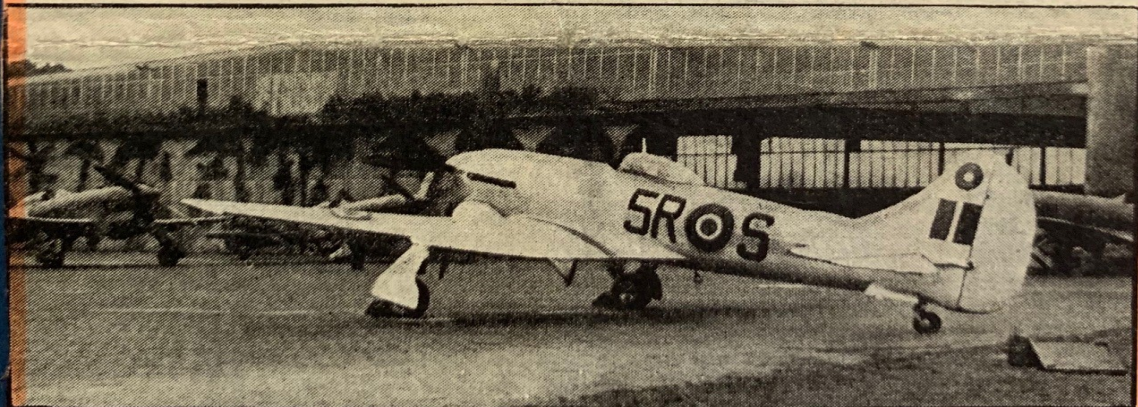
## 33 Are Back From Gatow — With A Silver Tempest

No. 33 Squadron's visit to Gatow will be remembered with pleasure by all concerned — with the possible exception of the Station staff.

While life has not been entirely that round of joy and gaiety fondly imagined

Alexandria and Cairo.

Over the weekend, when the Russian sector is open, the more energetic make an expedition to the former Reichskanzlei and the Reichstag. Round the battered ruins of the latter flourishes



*The apple of S/Ldr. Bower's eye — B.A.F.O.'s first silver Tempest, stripped of its camouflage paint and with the Squadron badge on the tailplane. As Engineering Officer, F/O Holdstock is not so happy — he's got the job of keeping it spick and span!*

*The shining aircraft makes a big contrast with the drab grey of the others. Contrary to expectation, the speed may be decreased, as the more exposed rivets will cause more drag.*



In October 1945 No 56 Sqn received a visit from a Tempest II for demonstration purposes. It was the shape of things to come, but not for 10 months, by which time No 56 Sqn had changed its number. As the German winter set in the opportunities for flying dwindled, with no less than 19 days deemed unsuitable in November. The reorganisation continued in January 1946, with No 3 Squadron moving over to No 123 Wing at Wunstorf. The last changes followed, for the time being, on 1 April 1946 when 174 Sqn was disbanded and Fighter Command reclaimed two of its famous number plates – 41 and 56 – renumbering them Nos 26 and 16 Sqs respectively. 33 Squadron was on Sylt, formerly B.170 Westerland, at the time.

The BAFO squadrons began to settle in to the routine of peacetime flying – the full range of flying exercises, weapons training, joint exercises with the Army and practice at the APCs, established first at Sylt and then Lübeck. As well as the latter two stations, the Tempest squadrons had started rotating through Gatow, Berlin's airfield in the British sector; 33 Squadron commenced its first detachment there on 2 January 1946 and would complete a total of five detachments there before it headed out to the Far East with Tempest F2s, having converted from Tempest Vs in October 1946.

BAFO found that operating around Berlin brought its own problems. Allied airspace was strictly limited, and intrusions into Soviet territory, accidental or not, brought dispute. For example, on 16 March 1947, WO Angus Mackay was on a GCA into Gatow when his Tempest - PR 667 EG-S - had engine problems and his windscreen was totally obscured with oil. Fortunately, he managed to carry out a success wheels-up forced landing in a large field. Unfortunately, the large field was in Soviet territory, and the watching RAF groundcrew had to dash quickly to the crash site to retrieve the pilot and the post-war gyro gunsight before the Russians got there. The aircraft was assessed as repairable but after two months it was written off, as it had not been returned. Two months after that the Russians returned the aircraft; however, it was never repaired.

Although the Tempest squadrons changed bases, albeit temporarily, every few months and were well practiced in doing so, HQ BAFO decided a more mobile reserve force that could be directed to any location required was desirable, rather like the 2TAF wings in 1944-45. In order to test the procedures and give experience to the units, on 8 May 1947 No 135 Wing was directed to Ahlhorn, a former Luftwaffe airfield disused since shortly after the war. Realistically, No 135 Wing's three squadrons were accommodated under canvas, and after 11 full days in which more than 500 hours of intensive flying were clocked up, including 'Tac Rs' and 'cab ranks', they returned to Fassberg.

The 'mobile reserve' plan had proved its worth, and just in time as trouble was brewing on the Yugoslavia/Italian border. Accordingly, Op DIAGRAM was launched which, for No 135 Wing, meant demonstrating their mobility prowess by operating from Zeltweg in Austria – a little over 30 minutes' flying time from Trieste, the centre of the unrest. In order to demonstrate their presence in no uncertain way, four Tempests led by No 26 Sqn's Flight Lieutenant Jack Frost flew southwest, then down the Adriatic, to come streaking in at very low level, just clearing the rooftop of President Josep Tito's HQ. After a month of operating from Zeltweg, No 135 Wing returned to Fassberg, but not for long, as the Wing was relocated to Gutersloh at the end of November 1947.

The New Year brought the beginning of the end of the Tempest's service as a fighter-bomber in Germany. In January 1948 No 80 Squadron exchanged its ageing Mk Vs for Spitfire F24s, while No 3 Squadron continued for a few months with its Tempests until April, when the unit received three Vampire F 1s for evaluation, soon followed by complete re-equipment with the type. The fighter-bomber variant of the Vampire, the FB 5, was not available until December when No 16 Squadron exchanged its Tempest F 2s for the new jets. No 26 Squadron soldiered on until May 1949, when it too converted to the Vampire FB 5. No 33 Squadron was destined to be the last operational Tempest squadron in the RAF, flying its final sorties on 6 June 1951, but they would not be in Germany.

## **Chapter Seven – FIREDOG and Farewell**

By 1949 Communist forces in Malaya had become a significant and increasing problem, and Op FIREDOG was launched to provide air support for British ground forces attempting to counter the communist terrorists, or MNLA (Malayan National Liberation Army) as they styled themselves. The latter had bases hidden in the huge areas of jungle to the north of the Malayan mainland, from which they conducted classic guerrilla warfare, attacking isolated forces or communities and then melting away into the seemingly endless wilderness.

As part of FIREDOG, No 33 Squadron was withdrawn from Germany to reinforce the operation and replace Spitfire-equipped No 28 Squadron. The unit left Gutersloh on 2 July 1949 and flew via Manston to Renfrew, from where it boarded HMS Ocean for passage to Singapore. The squadron's Tempests were deck cargo for the month-long voyage. After preparation and test flights at Changi, in Singapore, in mid-August. No 33 Squadron flew to its new base at Butterworth in Malaya on 10 September 1949. By the end of the year the unit was fully operational, being tasked with maintaining four Tempests at four-hour readiness for strikes against the communist terrorists.





Above: Three 33 Squadron C.O.s in Germany in 1946, probably Fassberg. From left to right: Squadron Leader R N G Allen DFC, Squadron Leader I G S Matthew DFC and Squadron Leader A W Bower DFC. Squadron Leader Allen took over command from Squadron Leader Bower in January 1946. He was promoted to wing commander in July 1955 and group captain on 4 July 1961.

Below: Tempest F2 at Thorney Island, February 1948. 33 Squadron flew over for a demonstration at the School of Land Warfare of Old Sarum.





During the next 21 months many sorties were flown with rocket and cannon in support of Army operations, with the aim of driving back the communist terrorists. Rarely were the latter's camps or villages visible, and the Tempests launched their rockets at map references supplied by the ground forces. The commanding officer, Squadron Leader A K Furse, who had brought the squadron out from Germany, and led their operations for more than a year, was awarded the DFC in March 1951.

No 33 Squadron had taken out a full complement of Tempests with it on *HMS Ocean* and there had since been further deliveries, but attrition was quite high, mainly due to engine failures and landing accidents. The first full loss was in the former category on 30 September 1949, when PR853/5R-K suffered piston and connecting rod failure during a dive bombing exercise. This caused the propeller fly off and Plt Off D T Parfitt was forced to land in a paddy field. Deemed unrecoverable, the Tempest was destroyed in situ. Parfitt was unhurt, but on 24 July 1950 WO P1 H E A Hearn was killed when he bailed out too low following engine failure. There was a further fatality on 16

November 1950 when Fg Off G J Swindells, who had flown Tempest Vs with No 56 Squadron in the last weeks of the war, overshot the runway into soft sand and his Tempest overturned.

Lack of spares became a problem too, and the end of frontline flying for the Tempest loomed. In March 1951 a Mosquito T3 was delivered to the squadron to give the pilots some twin-engined experience, but the aircraft that was due to replace the Tempest, the de Havilland Hornet, was slow to arrive in any numbers. Indeed, although B Flight began conversion in April 1951, the Tempests remained in use for a further two months, flying the type's last operational sorties in the RAF on 6 June 1951. Ten of the Tempests were flown to Seletar, in Singapore, and after refurbishment were sold to the Pakistani Air Force. 33 Squadron remained in Malaya until 31 March 1955, at which point it was disbanded, to be reformed at Driffield with Venom NF 2As on 1 October 1955. The circle had turned, and 33 was back to its first ever role with the RFC - operating a two-seat night fighter defending Britain's airspace from attack.



Above: 33 Squadron's Tempest F2's on HMS Ocean, for the month-long journey to Malaya (14 July—9 August 1949).





Above: Tempest F2, Malaya 1949, with an all-aircraft aluminium finish and red spinner, denoting A Flight. B Flight had blue spinners.

Below: Tempest F2 in Malaya August 1950-June 1951

