

Aviation group Events

Next Meeting

Wednesday November 26th

Start 10-30 at The Tythings

Winkle Brown Remembers the Me 262

And more

December no meeting as it will be Christmas Day -1

January 28th 2026

**My Experiences as a Vulcan Pilot
By Bob Duncan a former Vulcan Pilot**

February 25th 2026

Bats to Red Arrows

A Talk by David Hassard from the Hawker Association

In Snipits this month

(Where applicable links are left in place)

Local events/Meetings

Airlander 10 Defence Role

The Short Scion Story

RAF's Future Aircraft – Tempest

Westland Whirlwind Restoration Project

Tornado ADV

History of RAF Odiham – Part 3

If you have stories, pictures or information you think may be of interest to Aviation Group Members

Please contact our leader Paul Cutting

The contents of our extensive library can be accessed on our webpage. We also have a number of aviation related DVDs for loan

There is also information how to borrow a book.

<http://www.yateleyu3a.org.uk/cgi-bin/u3agroups.cgi?name=Aviation>

What's on [See websites for more information](#)

FAST Simon Jarvis Lecture Theatre, Farnborough 6th Form College

Tuesday 24 Feb 2026, 7.30pm No 51 Squadron and Airborne Signals Intelligence

Presented by Air Commodore Bill Tyack CBE FRAeS

The talk describes the capability and operations of the Nimrod R SIGINT aircraft, the development of the capability from 1940 throughout the Second World War. He then covers and the history of 192 and 51 Squadrons in the Cold War and his experience in command of 51 Squadron in the 1980s.

Admission to this popular talk will be by ADVANCE BOOKING ONLY To get your Booking Reference, please email distribution@airsciences.org.uk or phone 01252 679898 / 07746 957498

Blackbushe Heritage Trust Thursday 20 November 2025 19:00 21:30

Heathrow Jet Airliners and Bizjets in the 60's, 70's and 80's, with Dave Payne

Join us for another walk down aviation memory lane with our Trustee Dave Payne as he takes us through another amazing photographic collection of Jet Airliners and Executive Jets at Heathrow in the 60's, 70's and 80's. Expect to see Comets, Caravelles, VC-10's, 707's, DC-8's, 1-11's,

Boscombe Down Aviation Collection At BDAC



**18th November The Last year of Military SAR
Stuart Pike - CO HMS Gannet, Prestwick**

Stuart served for 10 years with his first and last tour on 819 Sqn based at Prestwick, latterly as a SAR Commander. As a Naval Reservist he then stayed current on the Sea King for 15 years and had the unique pleasure of being an A320 captain and SAR Commander for the last 3 years of military operations. The talk is a brief recount of the handover process to HMCG and a canter through the last year of his operations covering aspects of routine training and some of the missions the unit was tasked with.

Army Flying Museum Online Lectures | The Army Flying Museum

There is an archive of talks you can watch Online for a fee.

Monday 17th November 7pm - In the Museum

The Shy Assassin

That Cyril Babbage survived two of the Second World War's most momentous events unscathed – the Battle of Britain and the Normandy invasion – is testament not just to his skill as a pilot, but also to his extraordinary good fortune. Shot down three times, once by a Luftwaffe *Experten* and Knight's Cross holder, he went on to claim the first Fw 190 lost in aerial combat, disposing of another holder of the *Ritterkreuz* in the process.

**Royal Aeronautical Society – Farnborough College of Technology Lecture 19:30 - 21:00
Tuesday 11th November 2025**

The Extraordinary Life of Air Commodore E Howard-Williams MC

He was the first person to fly east to west (and back again) across Africa, and during WWII had appointments as number two to Dowding at Bentley Priory in 1939, with subsequent postings at Halton (where Anthony was born) and Blackpool. There are scandals, murders and intrigue in this story, as he battled to try and persuade others of his vision of aviation and war.

Source: Aerospace Manufacturing

HAV reserves three Airlander for aircraft for defence roles



Hybrid Air Vehicles (HAV), the designer of Airlander, a fuel-efficient hybrid aircraft with dual-use applications, has announced the reservation of a further three aircraft, representing the first Airlander 10 aircraft destined for defence use. The three aircraft have been reserved by an innovative defence contractor looking to deliver the unique capabilities of Airlander to its customers.

Airlander 10 has been designed and will initially be certified for civil use, but its versatile nature means it can be modified to meet customer needs, with its large, rapidly reconfigurable cabin perfectly suited to meeting the fast-paced and ever-changing needs of the military market.

Whether equipped with multispectral sensor suites for ISR roles, using the space to transport personnel, materiel, and equipment to austere environments, or to hold, release, and recover drone swarms, Airlander offers new possibilities in defence.

Airlander's robust survivability and low vulnerability, coupled with its ability to remain in the air unrefuelled for up to five days, and operate from any relatively flat surface including water, makes it a platform capable of roles not currently possible with today's aircraft. This news comes as the defence landscape is changing across the globe. New threats require new solutions, and Airlander will directly respond to current and emerging threats.

Elevated sensing: Missile defences need to be bolstered to counter increased threat – Airlander lifts a sensing payload of over three tonnes enabling high powered radars to remain aloft for days on end, as opposed to hours at present.

Drone and counter-drone warfare: Extensive, sophisticated, and persistent airborne surveillance is needed, together with the ability to host, deploy, and recover swarms or sensor networks – Airlander can remain on station for up to five days providing a common operating picture.

Maritime patrol and surveillance: Countering submarine activity and surface threats places great demands on today's limited air and maritime assets – Airlander can cost-effectively survey large areas, distributing and monitoring anti-submarine warfare sensors and can form a key node in the collection and distribution of threat information.

George Land, executive director - sales, Hybrid Air Vehicles, commented: "Its versatility, high payload, and endurance have always given Airlander 10 obvious advantages over other aircraft in C4ISR.

As warfare evolves to meet current threats this capability is ever more valuable, and we have worked hard to showcase the aircraft's capabilities. We are pleased to be working with an undisclosed customer to provide three aircraft for further customisation. We expect other military reservations to follow and look forward to providing more detail in the future."

www.hybridairvehicles.com

Aerospace Manufacturing 13 October 2025

The scion soars again!



MAPSL's managing director, Phil Cole

Presented as a free family engineering activity by The Rochester Bridge Trust, based in Kent throughout August, a newly restored Short Scion floatplane was a centrepiece not to be missed for an aircraft enthusiast like me.

Mike Richardson reports.

As a young boy, I first came across the Short Brothers company when I built an Airfix Short Sunderland III flying boat. I also used to live a short distance from the old factory on Rochester Esplanade. So you can imagine that my interest was piqued when it was

announced that Rochester Cathedral in Kent would be displaying a Short Scion floatplane in the cathedral nave itself.

As a celebration of my hometown Medway's aviation history, the newly restored Short Scion floatplane was displayed alongside free family activities and a 'Pioneers of Flight: Made in Medway' exhibition about the Short Brothers.

The Short Scion Floatplane G-AEZF has been rebuilt by Medway Aircraft Preservation Society Limited (MAPSL). The aircraft was built in the Short Brothers factory, just a short walk from the Cathedral.

"We heard that the Short Scion was in a hangar at Redhill Aerodrome in 2013," begins MAPSL's managing director, Phil Cole. "It was either on offer for sale - or it was going to be scrapped because the aerodrome simply wanted it out of the hangar. We didn't have too many projects on the go at the time, so we decided to buy it. It has taken over eleven years of work to restore it. Source:



MAPSL used the same techniques to produce formers for the construction of the trailing edge ribs

"However, we endured a few peaks and troughs throughout the Scion's restoration project because at the same time we engaged in a two and a half year-long project restoring a Spitfire at the Stoke Pottery Museum. We were already working to a tight deadline, because Stoke Pottery Museum was in the midst of undertaking a huge extension to its museum - and this was where the Spitfire was going to be located.

Unfortunately, to meet this deadline, the Scion - to a certain extent - took a back seat and became delayed. We then had to endure the lockdown during Covid, and we also moved to new premises too. So there wasn't much work done on Scion for about a year while we were building the infrastructure and moving, etc."

Restore and preserve

Constructed in 1937, the plane saw service in the Second World War before becoming a civilian aircraft. After years of disuse it had deteriorated significantly. Thanks to an initial grant from The Rochester Bridge Trust, (TRBT) volunteers from MAPSL have painstakingly restored it.

“It was originally used as a tender,” continues Cole. “We’ve fitted it out as a five-seater; Short did offer it as a six-seater, so there would have been a seat right inside the door, but it would have been collapsible to enter and exit the aircraft. Most people used it as a five-seater; it was also used for freight purposes too. “A single pilot was positioned at the front.

We’ve also restored the cabin interior fabric – which I believe came from Gravesend market! One of our members was very handy with a sewing machine, so we bought dark brown leather cloth to make all the upholstery.”

As good as new

Most of the fuselage metal frame survived, although lower tubes were damaged – some previously replaced in the 1990s. The upper section, including the wing box and mounts was in better shape.



MAPSL aim is the restoration and preservation of historic aircraft and artefacts for public display

Repairs included new bracing wires to realign the frame, new upper and lower fairings, a wooden cabin floor, refurbished door with a new lock, and wooden cabin sides with Perspex windows. Inside, the cabin was fully fitted out with seats, upholstery, and lighting. MAPSL decided to use the same techniques to produce formers for the construction of the trailing edge ribs. “We had many of these ribs already and they gave us the shape and the dimensions because we didn’t have any drawings - quite likely destroyed after Short moved from Rochester to Belfast post-war. Plus, it gave us the size and shape of all the little trailing edge rib brackets with hollow rivets going through them. We replicated them – and as you can see, we had to make hundreds of them for both wings.”

The port wing has more of the original components including what Cole describes as ‘Spar jointing plates.’ MAPS volunteers used a bead blaster to give the parts a good clean and then an etch primer to stop any further corrosion and to make it easier for us to handle the parts.

“One of the floats is original and we have it on a long-term loan from the Ulster Folk & Transport museum in Northern Ireland. One of our members made detailed drawings of each float. The frames were laser cut and then we used the traditional methods of metalworking cladding to build it up.

We then had to make all the walkways with anti-slip on them. We also have a stainless steel float strut which came from Australia. Acquiring this meant that we knew what the ends of the floats looked like. We could then machine them and clad them up with mild steel, which was then welded and painted.



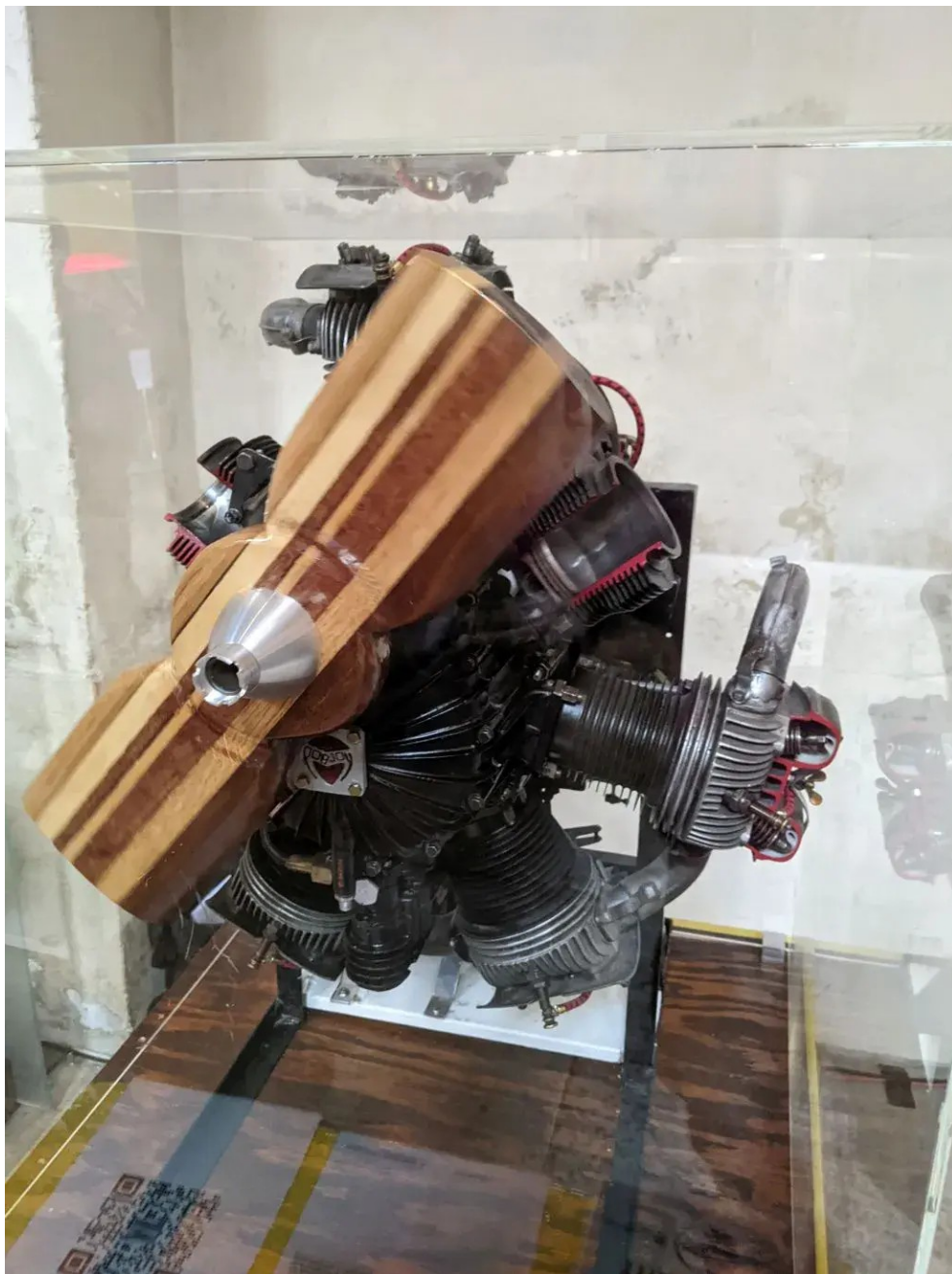
The newly restored Short Scion floatplane on display at Rochester Cathedral

“The starboard wing was in an extremely poor condition. It had gradually been dismantled and was left lying in the grass outside a hangar at Southend Airport. We had no tail at all, so the fin, rudder and elevator all had to be made from scratch.

The only dimensions we could see were where it fitted on the fuselage were the original mounts. We were able to obtain some superior quality Short photographs from the 1930s to help us.”

So, will Short Scion Floatplane G-AEZF ever fly again?

“No, it was made as close as we could get to traditional or period standards. If we wanted this to fly, everything we have done would need to have been certified and we would have needed to use prep-grade materials, which we haven’t got. We don’t have the engines – they are as rare as hen’s teeth! There weren’t that many Scions made, and when the Second World war started, small aero engine manufacture wasn’t really required, so they stopped making them.



“The history of this engine exhibit is that it was built two years before our Scion,” concludes Cole. “The engine was then exported to the University of Delft in the Netherlands who used it to power a two-seater aircraft that the students had built.

When Nazi Germany occupied the country in 1940, anything with an engine had to be handed over to the authorities. So, the University scrapped the aircraft and sectioned the engine. That way, they were allowed to keep it and use it as a visual aid in their workshop. It is how this particular engine exhibit has survived.”

Based at Rochester Airport, MAPSL comprises volunteers, all of which are members of the Medway Branch of The Royal Aeronautical Society whose aim is the restoration and preservation of historic aircraft and artefacts for public display.

Source: bsbs Forces News 1 October 2025

Tempest: The RAF fighter designed to meet threats we don't even know about



This Tempest mock-up was on display at DSEI 2025

The Royal Air Force is expecting to see the Tempest – its next-generation combat aircraft – enter service from 2035.

The sixth-generation multi-role fighter is being delivered under the Global Combat Air Programme (GCAP) to replace the capabilities provided by the 4.5-generation Typhoon.

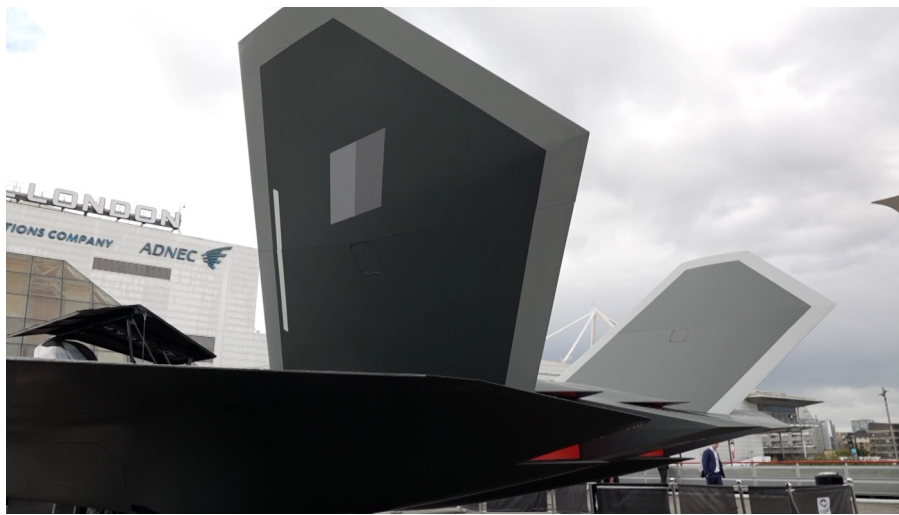
Like the Typhoon – and the Tornado that came before it – the Tempest is a collaborative effort, this time seeing the UK team up with Italy and Japan, with other countries also expressing an interest in joining the project.

Industry partners BAE Systems, Rolls-Royce, Leonardo and MBDA are working with the Ministry of Defence to develop the technologies needed for the new jet.

It is not yet clear whether the design has been finalised, with the latest mock-up seen at the recent DSEI defence industry fair looking different to the original model.

However, the Tempest may well turn out to be the most advanced combat aircraft the world has ever seen.

The RAF explained: "To meet threats we don't even yet know about, we must create a next-generation air combat system which is agile, flexible, connected, rapid to update and affordable."



While this mock-up was sporting RAF markings, the Tempest will also be operated by Italy and Japan

Plug and play

The Tempest can be configured for different missions using what the RAF refers to as a "plug and play" approach.

It said software and hardware can be easily swapped in and out to meet the needs of the operation – such as weapons, sensors or even fuel tanks.

The Tempest can operate alongside other piloted aircraft, but can also fly with unmanned and optionally manned platforms.

It will have a range of onboard and offboard data processing and pilot decision aids when manned flight is being conducted.

This is referred to as "scalable autonomy", something the RAF says will be vital in the future as operating environments become more complex and threats become more sophisticated.

Speed, manoeuvrability and payload will also be of paramount importance.

GCAP aerodynamicists and engineers are optimising the aerodynamic performance of the Tempest concepts to achieve what they call a "balanced survivability design".

Because the aircraft will have high power demands, much effort is being expended to develop electrical generation technology and intelligent integrated power management.

This is required to power the Tempest's advanced sensors and some of its weapons, particularly those which are laser-based, as they will need far more electrical power than previous generations of combat aircraft.

In addition to propulsion, the Tempest's numerous systems will demand a high amount of electrical power

A heads-up cockpit

Another advanced concept is the desire to create a cockpit with no physical dials or screens.

The idea is for the pilot to wear a helmet projecting interactive cockpit displays and controls directly in front of their eyes. Other pilot support concepts, such as virtual assistants, are also being developed and tested.

The RAF points out how this work is continuing, and flight trials are being planned to test some of these innovations in a real environment.



This mock-up may have been equipped with a screen, but the ultimate aim is for the pilot to receive information using only augmented and virtual reality

Sensors and comms

Tempest pilots will be able to utilise an array of advanced sensors and communications systems, potentially giving them a massive advantage over an enemy in a combat scenario.

This huge advantage will allow them to take the fight to the enemy and deliver a range of missions, including team defence and surveillance.

While current fighter jets tend to have separate pieces of equipment, such as radar and electro-optics, the Tempest's systems are designed to work together.

The RAF says this will give the pilot the ability to make decisions with more confidence because they are not relying on a single sensor.

Instead, multiple types of sensors will work together, gathering information which is automatically cross-checked and cross-referenced by the Tempest system.

It can also coordinate data from multiple sources, such as other aircraft, to provide reliable and usable information.

This can then be shared with other aircraft in what the RAF terms a "combat cloud".



Tempest will be able to generate, receive and share data

Offence and defence

The Tempest is being designed to support existing weapons, planned weapons – and those of the future.

These include the Meteor, an active radar-guided beyond-visual-range air-to-air missile, and the Spear family of network-enabled precision surface attack missiles.

The Tempest will also be able to assess and evaluate incoming threats and then manage the deployment of an appropriate means to neutralise that threat.

Weapons will be carried internally rather than being attached externally to help maintain stealth as well as its aerodynamic profile.

Pilots will be able to select different payloads, such as fuel tanks and camera pods, to adapt the jet to take on a range of combat and surveillance roles.

The F-35 carries its weapons internally, but can also go into "beast mode" with external hardpoints, while the Tempest is expected to rely on its internal bays only

The aircraft will be able to engage a threat with a number of non-kinetic responses, such as directed energy weapons and electronic warfare.

The weapons of the future could include directed energy, hypersonic missiles and swarming technology assisted by artificial intelligence and machine learning.

Meanwhile, its flexible payload bays will let the Tempest carry an improved weapon load while maintaining low observability at supersonic speeds.

Source: Key Aero

Westland Whirlwind fighter gets a tail

During the weekend of 20-21 September the Westland Whirlwind Fighter Project's chief engineer, Lancashire-based Peter Smith, transported south and supervised the fitting of the newly completed tail section for the project's Whirlwind replica at the Kent Battle of Britain Museum at Hawkinge.



Something we never thought we'd ever see: a Westland Whirlwind fuselage, now complete with tail, at Hawkinge on 21 September. *DAVE BROCKLEHURST*

The rear fuselage, tail strut, tailwheel bay and retractable tailwheel are now in place, so, for the first time since Whirlwind P7048/G-AGOI was scrapped during 1947, the full side profile of [Westland's](#) formidable cannon-armed fighter can be seen in the flesh.

[Westland Whirlwind Fighter Project](#)

Vintage Aviation News 30 August 2020

Westland Whirlwind Mk.I P7056 'Pride of Yeovil'. The Whirlwind Fighter Project is working hard to build an accurate replica of this now-extinct aircraft type, and is well on the way to rebuilding the rear fuselage. They could use our help! (image by Richard J. Caruana via Whirlwind Fighter Project)

The Westland Whirlwind was a remarkable twin-engined fighter which served Britain's Royal Air Force during the early stages of WWII. The type had great promise, being one of the fastest fighters of its day when it flew for the first time in October, 1938. With a top speed of 360mph at 15,000 ft, it had a potent armament suite as well, wielding four 20mm cannon in the nose. Unfortunately, the type fell victim to teething problems, especially with its Rolls-Royce Peregrine engines; other aircraft types eventually superseded the Whirlwind in its intended roles. Production ceased in January, 1942, with the RAF retiring their fleet in December, 1943. Just over a hundred Whirlwinds served in the RAF, which fielded three squadrons of the type (Nos.25, 137 and 263), largely in ground and maritime attack roles. Sadly the type is now extinct, with the last complete airframe going to the

scrappers during the late 1940s. Even so, the Whirlwind maintains a cult following within the historical aviation community, and its absence in any museum represents an important gap with respect to telling the complete history of the air war in Britain during WWII. The [Whirlwind Fighter Project](#) hopes to address this issue, and is already well on the way with the construction of a brand new fuselage. They have started a fund-raising effort to help them reach fruition, so please do click [HERE](#) to help if you can. To fill us in on the details with the project's progress so far, the British-based team's Chris Hayward picks up the story here...



Chief test pilot of Westland, Harald Penrose flying one of the last production Whirlwinds P7110. (image via Wikipedia)

The Whirlwind Fighter Project

by Chris Hayward

Back in the mid-fifties my Dad decided that I should have a hobby of some kind, so he went into Woolworths in Clapham and brought one of those plastic kits that you could get in a plastic bag and if I remember rightly cost about '2 bob' or just 20 pence to younger readers born after currency decimalization in 1970. My dad also brought a tube of polystyrene glue – which if inhaled a little too much over the period of construction, often made one light headed!

This model kit turned out to be the Supermarine Spitfire Mk.I. Many a young lad at the time started on this aircraft. All went well under my dad's guidance, until we got to the bit of card with all the markings on it. A great deal of head scratching ensued at this point until he decided that the best way to apply the markings was to cut them out with scissors and glue them to the model! It was some time before I learnt that that was not the way to do it. But this is irrelevant, because from this point on, I got hooked by plastic kits and that enthusiasm has never gone away. I remember one day going into "Woolies" and "obtaining" a model of a small twin engine RAF fighter... one which I soon became utterly fascinated with. This turned out to be remarkably charismatic, though largely unknown Westland Whirlwind Mk.I.

Sadly, the very last Whirlwind was dismantled at Westland's factory in Yeovil, Somerset during 1947 after serving a short time as the Company hack. Rumor had it that it somehow still survived, buried under the perimeter track at the airfield, however, this is now believed

untrue, as several eye witnesses remember seeing it towed down to a scrap yard a short distance away. A very sad end to what was an advanced aircraft for its time.



The last of the line, Westland Whirlwind G-AGOI on its way to the scrap yard at Yeovil in the late 1940s. (image via Whirlwind Fighter Project)

The Project

About eight years ago, there was a discussion on the Flypast forum between Stuart Hawkins, Mike Eastman, Gunnar Olsen and Matt Bearman, as to whether it was possible to build another Whirlwind. Some had tried in the past, but due to the lack of design drawings, many of which had been destroyed during a severe flood at the Yeovil factory, most considered it a nearly impossible task.

However, it turned out that Gunnar Olsen, based in Norway, had been working on a set of CAD drawings for the framework using photographs of crashed Whirlwinds. These photographs had enabled him to follow frame lines and rivet lines so that he could build up the plans in a methodical manner.



Gunnar Olsen's efforts to create an accurate CAD representation of the Westland Whirlwind have made remarkable progress, as seen in this image here. (image via Whirlwind Fighter Project)

We approached the original manufacturer, Westland, to see if they would let the project have the surviving plans so that the full layout could be completed. They agreed, but only on the stipulation that the aircraft would never fly. We felt that a Whirlwind on the ground would be better than no Whirlwind at all... so we said "Yes please!"

Next we began to collect any surviving parts. However, other than some items recovered from a crash site in Scotland, there was very little remaining apart from a couple of windscreens, and various cockpit instruments common to many aircraft at the time of manufacture. There was also a small selection of parts on display at the [Kent Battle of Britain Museum in Hawkinge](#).

The crash-remains of Whirlwind P6966 did offer up both Rolls-Royce Peregrine engines though. For those who may not have heard of this engine, Peregrines were the ultimate offshoot of the Rolls-Royce Kestrel V-12. They are exceedingly rare, however, as the Whirlwind was the only production aircraft ever to use them. Both of P6966's Peregrines were badly damaged in the wartime crash though; furthermore, they are now in the [Rolls-Royce Heritage Trust museum in Derby](#).



The Peregrine engines, covered in mud and clay, following their recovery from P696's crash site during the 1970s. (image via Whirlwind Fighter Project)

I was asked if I was prepared to do some research for the project, but soon found out that it was not one of my better ideas. I did visit the Public records office at Kew several times over several years, but when we decided to become a more formal organization, I became secretary, which I am happier about. We have progressed well, and are now in the situation of having a fuselage, partly constructed by the world-renowned [Airframe Assemblies](#) restoration shop on the Isle of Wight. Steve Vizard founded this amazing company, one which has been involved in practically every airworthy Spitfire or Bf 109 restoration in the world. It was Vizard who carried out the original dig on P6966 in Scotland back in the 1970s, he still has a passion for the Whirlwind.

Our ultimate goal is to build a full-scale, accurate reproduction of Whirlwind Mk.I P7056 *Pride of Yeovil*, and the completed airframe will go on display at the Kent Battle of Museum Trust in Hawkinge. Towards that noble end, please do visit our website at www.whirlwindfighterproject.co.uk to see progress and to find out how you can help us preserve the history of this remarkable fighter aircraft.



This is how the Whirlwind Fighter Project hopes their restored aircraft will look when they complete her in the coming years. (image via Whirlwind Fighter Project)

Classic Warbirds

Westland Whirlwind

The twin-engined Whirlwind showed potential with its performance and cannon armament. However, the aircraft suffered due to production delays and reliability issues with its Rolls-Royce Peregrine engine, which led to the engine being cancelled. Only two squadrons would be equipped with the Westland Whirlwind before it was phased out of frontline service in 1943.

Issued by the Air Ministry in 1935, Specification F.37/35 called for a single-seater fighter with armament of four cannons. Westland's design team, led by William Petter, worked on the company's submission, the Whirlwind, with an order for two prototypes placed in February 1937.

With Harald Penrose at the controls the prototype flew for the first time on the 11th October 1938, followed by an order for 200 aircraft in January 1939. No. 25 Squadron would receive the first two production aircraft, which they undertook trials with in May and June 1940.

The Whirlwind Mk I, which would be the first twin-engined fighter of the Royal Air Force, was powered by a pair of 885-hp Rolls-Royce Peregrine I engines giving the aircraft a top speed of 387 mph, range of 800 miles and a service ceiling of 30,300 ft. Armament was

four 20mm cannons and 1,000lb bombs. No. 263 Squadron based at RAF Grangemouth received their first production version on the 6th July 1940. As they began the task of eliminating bugs in both the airframe and Rolls-Royce Peregrine engine.

No. 263 Squadron used the Whirlwind alongside their [Hawker Hurricanes](#) and after moving to RAF Exeter became operational with the aircraft on the 7th December 1940 when they flew a patrol over Plymouth. They would have their remaining Hurricanes replaced, and on the 20th January 1941 would become the first squadron to only operate the Whirlwind. The squadron would claim its first success on the 8th February 1941 when an Arado Ar 196 was shot down.

Due to a shortage of engines, deliveries of the Whirlwind were slow with the Royal Air Force receiving only eight of the type by the close of 1940, in fact only one other squadron would be equipped with the Whirlwind. This was No. 137 Squadron which was formed on the 20th September 1941 at RAF Charmy Down.

Despite the positive performance and armament of the aircraft, its dogfighting abilities at higher altitude was called into question, and it could only be used at a limited number of airfields due to its high landing speed, leading to a second order that had been placed for 200 more aircraft to be cancelled and the initial contract for 200 aircraft cut to just 112. By the end of 1943 the Whirlwind had been replaced by the Hawker Hurricane which re-equipped No. 137 Squadron with [Hawker Typhoons](#) re-equipping No. 263 Squadron.

During its service with the Royal Air Force the Whirlwind undertook escort duties and ground attack sorties over Europe. It would be No. 263 Squadron who undertook the Whirlwind's final operational [sortie](#) on the 29th November 1943.

January 1942 would see the last of the 116 Westland Whirlwinds leave the production line.

Technical Details and comparison with De Havilland Mosquito

Type	First Flight/ In service date	Top Speed mph	Range miles	Service Ceiling ft	Weapons
Short Whirlwind	Oct 1938/ Dec 1940	387 maximum	800	30300	4 20 mm canon 1000 lb bomb load
de Havilland Mosquito	Nov 1940 / July 1941	380 cruise	1300 PR version 2180	35000	4 0.303 machine gun 4 20 mm canon 2000 lb bomb load

Source: Vintage Aviation News 27 October 2025

Today In Aviation History: First Flight of the Panavia Tornado ADV

Forty-six years ago today, the Panavia Tornado ADV made its first flight, marking the debut of Europe's formidable long-range interceptor. Developed by Panavia Aircraft GmbH as a specialized variant of the Tornado multi-role fighter, the ADV was built to defend the United Kingdom and NATO airspace from Soviet bombers during the Cold War. With its powerful radar, Mach 2.2 top speed, and ability to carry advanced air-to-air missiles, the Tornado F3 became a cornerstone of RAF air defense until its retirement in the early 2010s.



Royal Air Force (RAF) Panavia Tornado F3 of No. 111 Squadron RAF. Image via Wikipedia

On this day in aviation history, 46 years ago (October 27, 1979), the Panavia *Tornado ADV* flew for the first time. The *Tornado ADV* (short for *Air Defence Variant*) is a long-range interceptor that was developed in Europe by the Panavia Aircraft GmbH association. This twin-engined, swing-wing fighter was a derivative of the Panavia *Tornado* multi-role fighter. Development of the aircraft began in 1976 with the intent to develop an interceptor to handle Soviet bombers. At the time, these bombers were flying over the North Sea, leaving the United Kingdom vulnerable to possible Nuclear strikes.



Tornado F.2 prototype ZA254 at Farnborough 7th September 1980. Photo Alan Hopgood

The Tornado ADV was upgraded to meet the needs of the interceptor mission. These modifications included a more powerful radar and also the capacity to carry beyond-visual-

range missiles – a “must-have” to hit the enemy with little warning. Being that the *ADV* was directly developed from the *Tornado IDS*, the turnaround time for design and construction was efficient. The United Kingdom was the first nation to pursue the *ADV*. Four years after the aircraft’s maiden flight, the *Tornado F2* entered Royal Air Force service in 1986.

The Panavia *Tornado F3* model was powered by two Turbo-Union RB199-34R turbofan engines, each with 9,100 pounds of thrust dry and 16,500 pounds with afterburner engaged. The *F3*’s maximum speed was Mach 2.2, or 1,500 miles per hour. A combat range of 1,001 nautical miles, service ceiling of 50,000 feet, and 2 hours of combat patrol endurance gave this *Tornado* variant a wide envelope within which to intercept Soviet bombers. *Tornado F3s* were armed with a 27 millimeter Mauser BK-27 revolver cannon that had 180 rounds. Additionally, the *F3* could be loaded with four AIM-9 *Sidewinder* or ASRAAMs and four more British Aerospace *Skyflash* or AIM-120 AMRAAMs.



A Tornado F.2 of No. 229 OCU flying at a high climb angle while making a turn to port; air-to-air missiles are on the underside of the fuselage, and two missile rails under the wings. RAF photo

Panavia built a total of 194 *Tornado ADVs* during the aircraft’s production run. In addition to the Royal Air Force, the aircraft would go on to serve with the Royal Saudi and Italian Air Forces. The Italian Air Force ceased flying the *Tornado* in 2004, after a fairly unreliable service record. The RAF and RSAF both retired their *ADVs* in the early 2010s.

Wikipedia

Tornado F2

Two-seat all-weather interceptor fighter aircraft, powered by two Turbo-Union RB.199-34R Mk 103 turbofan engines. Initial production version, 18 built.

Tornado F2A

F2 upgrade to F3 standard, but retaining F2 engines, one converted.

Tornado F3

Improved version, powered by two Turbo-Union RB.199-34R Mk 104 engines, with automatic wing sweep control, increased AIM-9 carriage and avionics upgrades.^[16] 171 built for the [Royal Air force](#) (RAF) and [Royal Saudi Air Force](#) (RSAF).

Tornado EF3

Unofficial designation for F3 aircraft modified with ALARM missile capability.^[23]

General characteristics

Crew: 2

Length: 18.68 m (61 ft 3 in)

Wingspan: 13.91 m (45 ft 8 in) at 25° sweep 8.6 m (28 ft) at 67° sweep

● **Height:** 5.95 m (19 ft 6 in) **Wing area:** 26.6 m² (286 sq ft)

● **Empty weight:** 14,500 kg (31,967 lb)

● **Max takeoff weight:** 27,986 kg (61,699 lb)

● **Powerplant:** 2 × [Turbo-Union RB199-34R](#) afterburning 3-spool [turbofan](#), 40.5 kN (9,100 lbf) thrust each dry, 73.5 kN (16,500 lbf) with afterburner

Performance

● **Maximum speed:** 2,400 km/h (1,500 mph, 1,300 kn) / M2.2 at 9,000 m (30,000 ft)
1,482 km/h (921 mph; 800 kn) near sea level

● **Combat range:** 1,853 km (1,151 mi, 1,001 nmi) subsonic
>556 km (345 mi) supersonic

● **Ferry range:** 4,265 km (2,650 mi, 2,303 nmi) with four external tanks^[71]

● **Endurance:** Two hour combat air patrol at 560–740 km (348–460 mi) from base

● **Service ceiling:** 15,240 m (50,000 ft) ^[72]

Armament

● Guns

● 1 × 27 mm (1.063 in) [Mauser BK-27](#) revolver cannon with 180 rounds

● **Hardpoints:** 10 total (4× semi-recessed under-fuselage, 2× under-wing, 4× under-wing shoulder rail)

● 4× [AIM-9 Sidewinder](#) or [ASRAAM](#) (mounted on shoulder rail hardpoints)

● 4× [British Aerospace Skyflash](#) or [AIM-120 AMRAAM](#) (mounted on 4 semi-recessed under-fuselage hardpoints)

● Others:

● Up to 2× [drop tanks](#) for extended range/loitering time. Up to 4 drop tanks for ferry role (at the expense of 4 Skyflash/AMRAAM).

Avionics

● [GEC-Marconi/Ferranti Al.24 Foxhunter](#) radar

RAF Odiham **From Biplanes to Helicopters**

Part 3

Operation Jubilee

As the summer of 1942 progressed, more squadrons arrived at Odiham with No. 171 flying in from Gatwick with its Tomahawks on 12 July and No. 614 (County Of Glamorgan) coming soon after with Blenheim IVs. Both Nos. 171 and 400 Squadrons flew 'Rhubarb' low-level strike missions from Odiham to France, where they began softening up German defences before a planned operation code-named Jubilee.

The year of 1942 had been bad for the Allies, with great pressure exerted on the Russians on the Eastern Front. In addition, with the earlier attack on Pearl Harbour, the Americans were reeling from material losses and Japanese advances in the Far East, the effects of which were also being felt by the British. There was also the situation in North Africa where Rommel and the Africa Corps were driving back British and Commonwealth troops, all in all, a pretty bleak picture.

For some time, Churchill and the British Chiefs of Staff had been under pressure from the Russians to open a front in the West to stop the Germans from moving further resources to the East. The Americans, whose resources were somewhat stretched, were also making noises that unless there was a second front in the West, they would concentrate their efforts against the Japanese. There was also agitation in Britain and the United States from the public to open a second front to assist the hard-pressed Russians. Rallies were held in both Trafalgar Square and Madison Square Gardens in support of these demands.

From all this and despite some cancellations due to training and weather, Operation Jubilee was planned and executed on 19 August 1942. It was hoped that the operation would either compel the Germans to move forces west to counter the threat of a renewed Allied offensive; and so relieve pressure on the Russians or to keep troops tied up in France and negate the threat of them moving east.

The plan for the operation was for British and Canadian troops, with a small number of US Rangers, to seize and hold the port of Dieppe for two tides, cause as much damage to enemy facilities and defences before withdrawing. This would be the first time the Allies had had a go at attacking Hitler's Atlantic Wall. It was hoped the raid would give valuable experience before any large scale attempt at liberating Europe was attempted.

Over 230 ships and craft made up the assault force, but due to a number of factors, not least running into a German convoy, the defenders were fully aware and prepared for the attack. As a result, the Allied troops went ashore in the face of withering machine gun and artillery fire and were cut down without reaching their pre-planned objectives. Nevertheless, there was success in some quarters with 4 Commando executing a flawless neutralisation of a gun battery on the western flank. A Victoria Cross was awarded to Captain Pat Porteous.

With the first assault wave effectively defeated, the next waves were dealt with in a similar

manner by the Germans, and the invaders made little in the way of gain. It took a while for commanders to realise the situation was so dire, and further forces were sent into the ensuing carnage. Finally, at 9.40 am, the signal was given to withdraw, with further losses incurred to naval personnel and the surviving assault troops as they retreated to their landing craft.

The raid was, in all essence, a failure that resulted in 4,000 Canadian and British forces being either killed, wounded or taken prisoner. However, the operation gave a valuable insight into what was to be expected in a full assault on occupied Europe. How many Allied military personnel were saved through the sacrifices of those at Dieppe?

In July 1942, Odiham's No. 400 Squadron had converted to the North American Mustang Is and, along with No. 13 Squadron's Blenheims, had taken part in the air battle above Dieppe.



**North American Mustang I similar to those flown by No. 400 Squadron
Image - Charles E Brown**

Flying on detachment from Gatwick, the Mustangs flew 20 reconnaissance missions monitoring German troop movements in the rear of the battle area, losing one of their number in the process. No. 13 Squadron's Blenheims detached to Thrupton, where they flew to Dieppe to carry out smoke laying duties.

After Dieppe

After the Squadrons returned from Dieppe, No. 171 moved back to Gatwick and No. 13 converted to Blenheim Vs in preparation to leave with 614 Squadron in November 1942 for the planned Operation Torch, the invasion of North Africa.

The opening of 1943 saw the Allies in conference at Casablanca with Churchill, Roosevelt and their advisers discussing the way forwards regarding the War's course. At the meeting, it was decided that 'unconditional surrender' was the Allies stated aim for the conflict's conclusion against the Axis powers, and nothing less would suffice. On the Eastern Front, the German 6th Army surrendered at Stalingrad, and Montgomery was taking on Rommel

in Libya and was winning. Things were looking up for the Allies.

In Lincolnshire, one of the War's most outstanding feats was launched from RAF Scampton. On the night of 16/17 May, No. 617 Squadron led by Guy Gibson attacked German Dams, breaching two of them, the Mohne and the Eder. Once again, Bomber Command was taking the war to the enemies heartland, a trend that continued until the conflict's end.

The two Hurricane squadrons recently arrived at Odiham stayed but for a brief time, and more Mustangs came, with those of Nos. 170, 268 and elements of No. 2 Squadron arriving during May/June 1943. Odiham became an all Mustang airfield and transferred to Fighter Command with 123 Airfield Headquarters established in tented accommodation within the old bomb dump. The Mustangs ranged far and wide over Northern France, carrying out the task of tactical reconnaissance, seeking out radar stations, enemy HQs and supply bases.

The Allies military planners were now considering their options for an invasion of Europe, which was expected to take place sometime in 1944. As part of the plans, Allied air power was reorganised, with the Army Co-operation Command being disbanded and the formation of the Second Tactical Air Force (2nd TAF). The TAF also took units from Fighter and Bomber Command and began training to support the Allied Armies in the field. Fighter Command itself was renamed the Air Defence of Great Britain, a title it kept until reverting back later in 1943.



North American Mustang I AP247 of No. 4 Squadron - Image IWM

Changes continued at Odiham with the arrival of No. 4 Squadron in August and No. 268 Squadron leaving for Funtington in Sussex on 15 September. Also departing the same month were Nos. 168 and 170 Squadrons, with Nos. 2 and 4 Squadrons on 15 November.

The departure of Odiham's Squadrons left the airfield deserted until the arrival of No. 511 Forward Repair Unit (FRU) in December, which brought a number of aircraft that required maintenance and repair.

Vengeance Weapons



Hawker Typhoon IB MN235 - Image Richard Hall

The end of 1943 saw Italy declaring War on Germany, the Anzio landings and the arrival at Odiham of two Hawker Typhoon squadrons. In early 1944, Nos. 181 and 274 carried out attacks on 'Noball' sites, which was the name given to Hitler's V weapon launch locations in France. As early as May 1943, the Allies had become aware of the existence of construction sites in Northern France to launch V1 flying bombs and V2 rockets. The plans Hitler had to use these weapons became a priority for the Allies to defeat, and a number of operations were put in place.

Operation Hydra took place over the night of 17/18 August 1943 with Bomber Command attacking the Peenemunde Army Research Centre, with the aim of destroying the research facilities and killing the scientists. This was the opening of Crossbow, the Allies strategic bombing campaign against the Nazi V weapon programme. The raid on Peenemunde resulted in a seven-week delay in V weapon production but came at a loss of 40 Bomber Command aircraft, 215 crew and many foreign workers in a nearby concentration camp.

The Noball attacks by Odiham's Typhoons, who had flown in from Merston in Sussex, were part of an intensive assault on the V1 launch sites, and their contribution lasted for two weeks before they departed back to their home airfield. The Typhoon was intended to be a high altitude interceptor and successor to the Hurricane. However, the aircraft never excelled in its intended role but became a formidable low-level fighter bomber; its strengths exploited to the full in the invasion of Europe.

The Build-Up to D-Day

With their sights firmly set on liberating Europe, the Allies stepped up their aerial campaign. The south of England became a land-based aircraft carrier to launch operations, designed to soften up the Nazi Occupiers, especially for fighters, tactical support and transport. As a result, airfields sprung up all over the south, many of a very temporary nature.

On 18 February 1944, No. 400 Squadron returned to Odiham with their Spitfire PR MK.IXs and Mosquito PR XVIs, they were then joined briefly by No. 184 Squadron, flying Typhoons.



Supermarine Spitfire PR IX PL965 similar to as used by No. 400 Squadron - Image Richard Hall.

The build-up continued at Odiham with the arrival of Nos. 168, 414 (Swordfish) and 430 (City Of Sudbury) Squadrons, flying a mix of Spitfires, Typhoons and Mustangs, the two Canadian squadrons forming 128 Airfield, of 128 (Fighter) RCAF Wing, No. 83 Group, 2nd TAF. Operations were undertaken both day and night with Odiham and the surrounding area, resounding to the sound of Rolls Royce Merlin, Napier Sabre and Allison V-1710 aero engines.

D-Day

The role of No. 511 FRU increased during 1944 with detachments of personnel working off-site in readiness for D-Day. The airfield was filled with aircraft, and two additional T.2 hangars were built to give a measure of protection to the maintenance crews. Odiham's location was high on a plateau, even in summer the weather could be inclement, which did not afford the best working conditions for those tasked with aircraft repairs. As D-Day approached, the airfield was sealed off from outside contact, and all guessed that the invasion was imminent.

The date originally set for D-Day (Operation Overlord) was 4 June 1944, but as ever, bad weather in the Channel brought a 24-hour postponement.

A series of deceptions had fooled the Germans into thinking that the assault would occur in the Pas-de-Calais area, so when the invasion came on the 6th June in Normandy, the enemy was unprepared and caught off guard.

A period of being brought to readiness only to be stood down was causing frustration at Odiham. Finally, however, the signal was given that the invasion was on and 128 Wing was ready and waiting to fly in support of those on the ground. No. 168 Squadron flew 36 tactical reconnaissance missions on the day, with the loss of one Mustang I, AM225 flown by Fg Off. S. H. Barnard, hit by gunfire from Allied shipping with the pilot's loss. No. 430 Squadron lost a Mustang I AG465 flown by Fg Off. L. R. Allman when it was shot down by an FW190 near Evreux, again with the loss of the pilot who is buried in Bretteville-sur-Laize Canadian War Cemetery.

A further No. 168 Squadron Mustang was lost on 7 June when AM128 flown by Fg Off. J C Low was shot down by JG26 east of Argentan with the loss of the pilot, who is buried in Evreux Cemetery. However, No. 414 Squadron appeared to have been very lucky during the invasion air war and did not lose an aircraft until 14 June, when Mustang I AP205 flown by Fg Off. R C Brown was hit by flak near Le Beny-Bocage, with the pilot bailing out and becoming a POW.

With progress being made in Normandy, airstrips were built to allow squadrons to operate closer to their support area. On 28 June, No. 430 Squadron left Odiham for B-8, a dusty strip near Sommervieu, Bayeaux, followed by Nos. 168 and 400 Squadron's Spitfire PR IXs. The Mosquitos of No. 400 Squadron stayed until 14 August before leaving with No. 414 Squadron to catch up with No. 39 (Reconnaissance) Wing as it was now known.

Activity at Odiham did not diminish with No. 511 FRU continuing to carry out works on an ever-increasing number of aircraft and with the arrival of No. 130 Wing from Gatwick on 27 June. Nos. 2 and 268 Squadrons operated their Mustang Ia aircraft in the tactical reconnaissance role, while No. 4 Squadron flew Spitfire PR IXs. The HQ unit was renamed No. 35 (Reconnaissance) Wing and was flying 50 to 60 sorties a day, searching for signs of enemy troop movements, bunkers and transport hubs.

At the end of July, No. 2 Squadron departed to B-10 Plumetot, with No. 268 Squadron following in August. Hot on their heels, No. 4 Squadron moved its Spitfires to the Continent along with part of No. 511 FRU.

Odiham was now somewhat deserted following the move of the squadrons to Europe, with No. 1516 Blind/Beam Approach/Radio Aids Training Flight (BAT) arriving on 17 September 1944, flying Airspeed Oxford aircraft.



Airspeed AS.10 Oxford MP425 similar to those used by No. 1516 BAT Flight - Image Richard Hall

As the European bombing campaign was stepped up by Bomber Command and the US 8th Air Force, increasing numbers of aircraft were damaged by fighters, flak and maybe with wounded aboard, would be looking for a safe haven to land.

Many airfields in the south of England would have had unexpected visitors, not least Odiham. How many stood on the ground willing the pilots to get the aircraft down in one piece, we can only imagine. The relief of the crews to be back on terra firma, well only they can tell that story.

A New Menace

In response to the invasion of Europe, Hitler retaliated by sending over scores of V1 flying bombs, with the first falling on London on 13 June 1944, one week after the start of Overlord. Hundreds were targeted at south-east England, with most crossing over Sussex and Kent, but with some entering Hampshire's airspace.



V1 Flying Bomb - Image Richard Hall

The weapon was a very unnerving as it had a unique sound created by its Argus pulse jet engine. Furthermore, it was highly inaccurate, indiscriminate and could do a lot of damage when it came to earth.

The V1 would be launched from its sites in Northern France and fly on a predetermined course controlled by onboard gyros. The craft's sound gave it nicknames such as Doodlebug and Buzz Bomb and became feared by the populace of Southern England for its erratic and unpredictable nature. When the engine stopped, it would go into a terminal dive, after which the warhead would detonate upon impact.

To counter the threat, scores of anti-aircraft guns were used to shoot down the V1s as flying in a straight, predictable line, they could easily be tracked but were a very small target. Many were brought down, but some still got through. Air interception was also implemented, and the day's fastest aircraft were sent up to bring the V-1s down. Tempests, Spitfires, Mosquitos and even Meteors all had a go at anti Diver operations, the name given to the air interception of V1s. Odiham participated in the operations with No. 96 Squadron equipped with Mosquito NF VIII aircraft moving to the airfield from Ford in mid-September 1944.



De Havilland Mosquito NF.VIII - Image - commons.wikimedia.org

Interception of the V1s was a hazardous occupation as attacking from the rear often resulted in the warhead detonating in the face of the attacking fighter. Another way to counter the bomb was to if you could catch it, fly alongside, slide your wing under the bomb's wing and tip it over where it would plummet to the ground. Unfortunately, trade was sparse for No. 96 Squadron, and they disbanded on 12 December 1944.

Another more sinister threat came to earth in Chiswick on 8 September 1944 with no warning or sound. The V2 rocket, the second of Hitler's Vengeance weapons, was the World's first intercontinental ballistic missile and would continue to fall on the UK until the end of March 1945.

Towards Wars End

The war was drawing near to ending, but Hitler still had some surprises up his sleeve. In December 1944, the Germans launched their last offensive in the west with an attack through the Ardennes, which caught the Allies completely off guard. The plan was to drive an attack through to the port of Antwerp, thus cutting off the Allied supply route. Bad weather hampered Allied air operations, and in what was to become known as the Battle of the Bulge, initial advances were made, but the Allies prevailed and pushed the offensive back. The Germans capacity to fight was now severely depleted, and they were unable to replace their losses.

The last major attack by the Luftwaffe took place on 1 January 1945 and was in support of the Battle of the Bulge. Operation Bodenplatt was planned to catch the Allies aircraft off guard and gain air superiority to allow the stalled advance of the German Army and Waffen SS on the battlefield. The attack was a surprise, and many Allied aircraft were lost on the ground. However, the operation was ultimately a failure, with the Luftwaffe losing many machines and, more crucially, pilots, which could not be replaced at this stage of the war.

Back at Odiham, No. 511 FRU had disbanded, and No. 604 Squadron, flying Mosquito NF XIIs, arrived in December 1944 from Predannack in Cornwall. By mid-December, No. 147 Wing unit, No. 264 Squadron, flew in with their Mosquito NF VIIIs. Both Nos. 604 and 264 Squadrons had left by the year's end, leaving Odiham with only the Oxfords of No. 1516 BAT flight in residence.

In January 1945, Dunsfold was taken over as satellite to Odiham, with activity at the latter being very sparse.

This changed in April when scores of Douglas C-47 Dakotas started repatriating POWs from the Continent to the airfield for medical checkups, re-kitting and documentation before being sent on leave.

The sight of a C-47 to many POWs would have been one of the most welcome. Some would have been in captivity since Dunkirk in May 1940, with others longer than that.

On 7 June 1945, Odiham transferred from Fighter (No. 11 Group) to Transport Command (No. 46 Group) with station HQ staff arriving from RAF Blakehill Farm. Soon after, Dakotas of No. 233 Squadron arrived and began scheduled flights to the continent, joined in August by a detachment of C-47s from No. 437 Squadron RCAF.



Douglas Dakota C.3 ZA947 - Image Richard Hall

The Dakotas ferried fuel, medical supplies and food to the Continent, bringing back troops and rumour has it, William Joyce, the infamous Lord Haw-Haw, who kept the Allies entertained with his propaganda broadcasts from Germany throughout the war.

Wars End

The war in Europe ended on 8 May 1945 with Churchill broadcasting from the Cabinet Room that a ceasefire had been signed at the American Headquarters Rheims at 02.41 hrs. Huge celebrations took place to mark VE day as those of all nations danced, sang and drank to the end of the European War, a conflict that had cost the lives of millions, both military and civilian.

With the war in Europe won, there was still the question of Japan to settle. Tiger Force (Very Long Range Bomber Force) was planned as the Commonwealth air contribution to the invasion of mainland Japan. Tiger Force was proposed to be composed of Avro Lancasters, Lincolns, and Consolidated Liberators with escorts provided by Hawker Tempest IIs of Nos. 183 and 247 Squadrons who were at the time working up at RAF Chilbolton. However, the dropping of the two atomic bombs on Hiroshima and Nagasaki brought the war in the East to an end, and the need for Tiger Force was negated.

Japan surrendered to the Allies on 15th August 1945 with an official signing of the documents on 2 September aboard the American battleship, USS Missouri bringing World War Two to its conclusion after six years of bitter fighting.

On 23 August, No. 233 Squadron left Odiham for the Far East, with No. 271 Squadron taking their place at the end of the month, with the scheduled flights continuing.

Post War - To be continued