

The

# *Spirit* of

# North Weald

The North Weald Airfield History Series | Booklet 4



**North Weald's role during  
World War 2**

Hawker Hurricane P2970 was flown by Geoffrey Page of 56 Squadron when he was shot down into the Channel and badly burned on 12 August 1940. It was named 'Little Willie' and had a hand making a 'V' sign below the cockpit



## North Weald at war 1939-45

### A multinational effort led to the ultimate victory...

On the day war was declared – 3 September 1939 – North Weald had two Hurricane squadrons on its strength. These were 56 and 151 Squadrons, 17 Squadron having departed for Debden the day before. They were joined by 604 (County of Middlesex) Squadron's Blenheim IF twin engined fighters which flew in from RAF Hendon to take up their war station.

On 6 September tragedy struck when what was thought to be a raid was picked up by the local radar station at Canewdon. Fighters were scrambled and further raiders were plotted. In the resulting confusion two 56 Squadron Hurricanes from North Weald were shot down by 74 Squadron Spitfires from Hornchurch. Pilot Officer Montague Hulton-Harrop was killed and is buried in St Andrew's Churchyard.

A filter screen on the radar had failed, so that plots were received all around rather than just seawards, and the scrambled fighters were picked up as further raids. The *Battle of Barking Creek*, as the incident came to be known, proved to be a valuable lesson before the air fighting began in earnest the following year.

Both 56 and 151 Squadrons had detachments of aircraft in France when the Germans struck west on 10 May 1940. They were soon in action, with 151 Squadron accounting for six aircraft shot down and three damaged on 17 May. The evacuation of the BEF from Dunkirk and the deteriorating situation in France led to the return of the Hurricanes to North Weald. They had gained valuable combat experience.

From July, both squadrons became embroiled in the *Luftwaffe* attacks during the Battle of Britain. Some idea of the intensity can be judged from the fact that approximately 25% of the Airfield's wartime fatalities (41 aircrew and 17

North Weald Airfield Museum



groundcrew) occurred during the four month period from July to October 1940. North Weald was bombed four times and suffered heavy damage, with houses in the village being destroyed as well.

The first unit to operate clandestinely into France after its fall – 419 Flight – was set up at North Weald in August, flying Lysanders.

At the beginning of September a decimated 56 Squadron was moved to Boscombe Down, exchanging its Hurricanes with 249 Squadron. This marked the end of its unbroken association with North Weald, although the Squadron returned for a further six months in December, re-equipping with Hurricane Mark IIs in February 1941.

In June 1941 the first of the volunteer American Eagle Squadrons – No 71 – arrived at North Weald. This received Spitfire Mark IIs to replace its Hurricanes in August. At the end of the month P/O William Dunn became the first US ace. In December, they were replaced by 121 (Eagle) Squadron. The two units were later incorporated into the USAAF in September 1942, based at Debden.

In May and June 1942 the second of the Allied contingents arrived in the form of 331 (Norwegian) Squadron and 332 (Norwegian) Squadron. The Norwegians took part in many successful sweeps and bomber escort sorties as well as the raid on Dieppe in August 1943, *Operation Jubilee*, that ended badly for its participants. Their Spitfires had previously

Place	Date	Time	Summary of Events	References to Appendices
<u>North Weald</u>	28/10/40		<i>Weather</i> - overcast with fog, some at times, coming from W. Surface calm. E-NE light to moderate. <span style="float: right;">occasional rain, 21.6</span>	
-do-	24/10/40		<i>Weather</i> - along beam fine at night. Vis. generally mod. good. In the night E-NE moderate.	
-do-	25/10/40		In today's combat P/O Pattullo (46) damaged a ME 109 but was killed later in the day. P/O Worrall (249) destroyed a ME 109, & P/O Millington (249) & P/O Neill (249) each probably destroyed a ME 109. Sgt. Beard (247) was missing but subsequently reported injured in hospital while Sgt. Bouguereau was seriously wounded. 257 had their most successful day, S/L Tuck destroyed a ME 109 & damaging two more, & P/O Hall & P/O Birk each probably destroying a ME 109; their losses were nil. W/C Beaumont, flying with them, accounted for a ME 109 probable & another damaged.	
-do-	26/10/40		<i>Weather</i> - sun to cloudy, Vis. mod. to very good. Shows 1005-1100. Surface wind NE by fresh.	
-do-	27/10/40		<i>Weather</i> - bright, however fine at night. Vis. mod. to good. Surface wind NE-NNE generally slight.	
			P/O Neill, who had just taken off with 249 Sqdn, chased a Dornier 215 which had just dropped its bombs on N. Weald, & probably destroyed it over the Thames Estuary. Only one bomb fell on the camp, doing no damage, the rest falling near the Wireless Station.	
-do-	28/10/40		<i>Weather</i> - mainly cloudy, visibility moderate. Surface wind NE backing NW mainly slight.	
			In combat today, 249 Sqdn. damaged a Dornier 17 (P/O Millington) & destroyed a Junkers 88 (P/O Millington, P/O Neill, P/O Thompson & P/O T. Connell) 257 Sqdn. accounted for a Heinkel III probable (P/O Surman), two ME 109's probable (S/L Tuck) & one damaged (Sgt. Henson)	
-do-	29/10/40	16:40	<i>Weather</i> - sun at first but cloudy, by for a fine evening, otherwise vis. just to mod. Surface wind light variable.	
			4th Sqdn. accounted for a ME 109 destroyed (P/Lt. Rabagliati) & a ME 109 probable (P/O Reid), Sgt. Black being wounded in a leg & suffering facial burns just as 249 & 257 Sqdns. were taking off a surprise attack on the airbase was made by a formation of ME 109's carrying	5

The Station Operations Record Book for the end of October 1940 where the last entry at the bottom of the page starts to describe the surprise attack on the Airfield by a formation of Messerschmitt Bf109s, which resulted in one pilot, four ground crew and a civilian being killed

been painted with white recognition stripes on their noses and tailplanes for the original raid planned for July. These were not retained for the actual operation.

The Norwegian Wing was destined to stay until March 1944, when it joined the 2nd Tactical Air Force and moved to the Continent after D-Day as Europe was gradually liberated. The two squadrons maintain close links with the local community to the present day.

North Weald had many other squadrons visiting on detachment including Typhoon ground attack aircraft and six operating Mustang tactical reconnaissance aircraft in the lead-up to D-Day.

Supermarine Spitfire Vb, BM579, was operated by 331 (Norwegian) Squadron at North Weald. It is wearing the recognition stripes for Operation Rutter, the original planned raid on Dieppe in July 1943. This Spitfire was shot down over Dieppe during Operation Jubilee in August



# North Weald's secret war

The earliest flights into occupied France started at RAF North Weald in 1940



**419 Flight was formed at North Weald on the orders of Winston Churchill in August 1940 for secret operations into occupied France. The Flight was equipped with Westland Lysander army co-operation aircraft, which were robust and ideal for clandestine work, as well as Whitley bombers. Based in huts on the north east corner of the airfield, the pilots flew agents to and from France to help build the nascent resistance movement.**

In October the unit moved to RAF Stradishall and was renumbered 1419 Flight. In 1941, the core of the Flight was reformed as 138 (Special Duties) Squadron. After moving to Tempsford near Biggleswade, the squadron stopped flying Lysanders in 1942, concentrating instead on four-engine Halifax and Sterling bombers used to parachute arms, supplies and agents all over Europe. The unit joined Bomber Command in 1945, serving with 3 Group, and equipped with Lancasters.

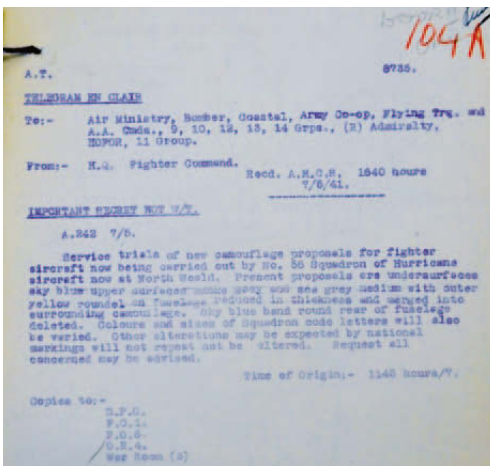
## They flew by moonlight

The Lysander operations were taken over by a flight of 161 (Special Duties) Squadron, which became legendary for its string of successful sorties during the full moon period each month. With nothing more than a map, compass and watch, the pilots had to navigate over blacked-out terrain to find the small fields used as landing grounds, avoiding enemy anti-aircraft defences and night fighters. They used RAF Tangmere as a forward base, and the Lysanders were specially modified with a long-range fuel tank and external access ladder to the rear cockpit.

The landing area was only 150 yards long and marked by three small torches in the shape of an 'L'. Despite the tremendous risks, the operations were very successful. Lysanders made 279 trips to France, of which 186 went according to plan. 293 passengers were flown out and 410 brought back, sometimes with as many as four people crammed into the rear cockpit.

A total of 13 Lysanders were lost on these missions: four were shot down, two got bogged in muddy fields and were burnt by their pilots, four suffered landing accidents and three crashed due to fog when they got back to Britain. Six pilots were killed and seven recovered from France on later sorties.

This is a truly amazing story of heroism and skill, which had its origins at North Weald. ■



Fighter Command telegram about the trials involving 56 Squadron

# Camouflage trials

## How 56 Squadron at North Weald tested the new Day Fighter Scheme

With the introduction of fast new monoplane fighters and bombers in the mid 1930s, the RAF introduced the Temperate Land Scheme of camouflage, which was painted in Dark Green and Dark Earth on the upper surfaces, the undersides remaining in silver. This was later modified with the lower port wing being painted in Night (a mixture of carbon black and ultramarine blue).

Subsequently fighters were painted in Night and White on the undersides, split down the middle of the fuselage. The idea was that this would provide improved recognition by other friendly aircraft and ground defences – British and French – when the RAF moved squadrons to France with the British Expeditionary Force at the start of World War 2. The tricolour fin flash was also reintroduced.

As a result of combat experiences in France, the lower Night and White scheme was replaced with Sky in time for the Battle of Britain. The black port wing was reintroduced again in November 1940 and remained in use until April 1941.

From October 1940 onwards, RAF fighter pilots started reporting that the Temperate Land Scheme was too dark for the altitudes at which they were now flying and fighting. This Scheme had been developed for use at altitudes of 10,000 feet or lower. With fighting now taking place at up to 30,000 feet, and the RAF moving on to the offensive in the spring of 1941, effective camouflage at higher altitudes became more important.

On 26 March 1941, Fighter Command requested that trials be carried out by the Air Fighting Development Unit (AFDU), which was based at Duxford, with the help of the Royal Aircraft Establishment at Farnborough. The aim was to find a compromise scheme suitable for day fighters at all altitudes, as well as when dispersed on the ground.

Four different schemes were applied to the AFDU's Spitfires. Initially, a two colour scheme was tried using a light grey. One Spitfire was painted in Sky Grey with an Olive Grey mottle similar to the *Luftwaffe's* fighters (Scheme A). The underside was in Sky Blue. A second Spitfire was finished using a new colour for the undersides – half way between Sky and Sky Blue. The top surfaces were in the existing brown and green (Scheme B).

Neither of these proved to be satisfactory. The light grey was too light and provided too much contrast. So a third scheme was devised, which used Medium Sea Grey with Olive Grey on the upper surfaces and Sky Blue undersides and narrower yellow bands to the fuselage roundels (Scheme C). A fourth scheme was also applied to one of these Spitfires – Medium Sea Grey and Dark Sea Grey with the under surfaces finished in Sky Grey (Scheme D). Both of the latter schemes were much more effective at altitude.

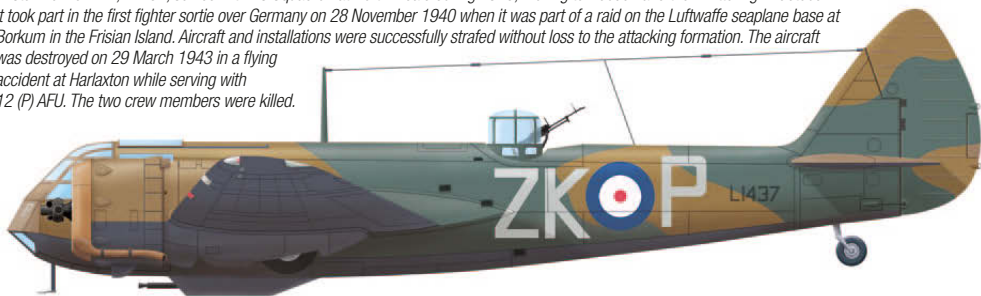
During May, three 56 Squadron Hurricanes were flown to Duxford from North Weald to take part in further experiments – Z2697, Z2586/P and Z2767/W. A larger trial was then arranged using a further eight Hurricanes from the Squadron – Z2585, Z2697, Z2702, Z2992/K, Z3169, Z3324/F, Z3329 (shot down into Channel on 17 June when flown by Sergeant Richard Carvill, who was killed) and Z3352. These were painted in the C Scheme, and took part in a number of cross-Channel operations.

When the Squadron moved to Duxford on 26 June they were still using this experimental scheme. In mid-July, some of the Hurricanes had the Dark Sea Grey repainted in Dark Green, so trials continued to take place until the definitive scheme was settled upon.

On 8 August the Air Ministry finally distributed the new camouflage and markings regulations, which would be introduced from 15 August. These were known as the Day Fighter Scheme, and featured upper surfaces of Dark Green and Ocean Grey, which had a blue cast developed for these higher altitudes and was most probably Olive Grey renamed, along with Medium Sea Grey undersides. Sky codes, spinner and tail band were also specified, and yellow leading edges to the wings introduced for recognition purposes.

It remained in use for the rest of the war, and formed the basis of post-war camouflage until the introduction of the low visibility air superiority grey scheme in the 1970s. ■

Bristol Blenheim 1F, L1437, served with 25 Squadron at North Weald during 1940, moving to Debden and then Wittering in October. It took part in the first fighter sortie over Germany on 28 November 1940 when it was part of a raid on the Luftwaffe seaplane base at Borkum in the Frisian Island. Aircraft and installations were successfully strafed without loss to the attacking formation. The aircraft was destroyed on 29 March 1943 in a flying accident at Harlaxton while serving with 12 (P) AFU. The two crew members were killed.



# Night fighters!

## 25 Squadron flew Blenheims and Beaufighters at North Weald

One of the nightfighter squadrons based at North Weald in the lead-up to the Battle of Britain was 25 Squadron, flying Blenheim IFs with an early form of airborne radar.

It had been formed at Montrose in Scotland on 25 September 1915 from No 6 Reserve Squadron, crossing to France in February 1916, where it flew FE2bs on fighter and reconnaissance duties. The Squadron was re-equipped with DH4 bombers in 1917.

After the war it converted to DH9 bombers. The unit was disbanded on 31 January 1920 at RAF Scopwick (Digby) in Lincolnshire. It was reformed the next day at Hawkinge in Kent flying Sopwith Snipe single seat fighters.

The Snipes were subsequently replaced by Gloster Grebes and later Armstrong Whitworth Siskins. From 1932 it flew the Hawker Fury Mk I, and in December 1936 it became the first unit to receive the Fury Mk II. Then came the two-seat Hawker Demons when the Squadron was given a nightfighter role. The Blenheims followed in February 1939.

At the end of November 1939, its first offensive operations were long-range fighter attacks against shipping and the seaplane base at Borkum. The Squadron operated Blenheim nightfighters at North Weald from January to June 1940.

It also carried out the first trials with one of the new Westland Whirlwind twin-engine fighter prototypes in May 1940, with the first two production models being delivered in June. The Squadron's experience was to be short-lived as the decision had already been taken to re-equip it with Beaufighters. So, it became the first unit to fly this new nightfighter, which carried a formidable armament and had a much improved performance over the Blenheim.

The Squadron moved back to North Weald from Martlesham

North Weald Airfield Museum

*A Blenheim nightfighter at North Weald*



North Weald Airfield Museum

*Beaufighters began to replace the Blenheims in September 1940*



Heath, one of E Sector's satellite stations, in September 1940. P/O Michael Herrick, from New Zealand, destroyed two bombers – a Heinkel He 111 and a Dornier Do 17 – on 4 September 1940, followed by a further He 111 on the following day.

The first flight of Beaufighters was starting to become operational in October 1940 when it moved on again to Debden and then Wittering. By October 1942 the squadron was beginning to convert onto Mosquito nightfighters, which were also used in the bomber support and intruder roles.

After the war No. 25 Squadron continued to operate the Mosquito NF30 night fighter from their base at West Malling until November 1951, when they were replaced by jet powered de Havilland Vampire NF10s. These were then replaced by the Gloster Meteor NF12 and 14 in March 1954.

In 1957 the Squadron moved to Tangmere in Sussex, where it disbanded on 23 June 1958. On 1 July 1958, 153 Squadron was renumbered as 25 Squadron flying Meteors until they were replaced by Gloster Javelin FAW 7s in 1959.

25 Squadron disbanded again on 30 November 1962, reforming a year later as the RAF's first Bristol Bloodhound surface-to-air missile unit, serving in the UK and Germany. In 1989 the Squadron converted on to Tornado F3 fighters, finally disbanding in 2008 at RAF Leeming. ■



Junkers JU 86 high level bomber

© IWM (CH 18083)



Spitfire Mark VI, AB200, was a trials aircraft at Supermarine's Eastleigh works, Southampton, after being fitted with wide span wings. Following tests at the Aeroplane and Armament Experimental Establishment at Boscombe Down, AB200 joined 124 Squadron for operations at North Weald.

© IWM (ATP 10749B)



Spitfire Mark VI, BR579 ON-H, of 124 Squadron, parked in a dispersal revetment at North Weald.

© IWM (ATP 10976C)



Spitfire Mark VI, BS142, at Eastleigh after modification by Cunliffe Owen, shortly before joining the High Altitude Flight (later renamed the Sub Stratosphere Flight) at Northolt. The compressor intake is visible under the exhausts. BS142 transferred to 124 Squadron at North Weald in January 1943. It subsequently also served with 331 (Norwegian) Squadron at the Airfield.

## The pressure is on!

### The RAF used high-level fighters to stop Luftwaffe reconnaissance and nuisance raids...

The Special Service or High Altitude Flight was formed at Northolt as a unit to counter the German pressurised high-altitude Junkers Ju 86Rs which carried a single 550lb bomb or three reconnaissance cameras, and had begun to operate over Britain during 1942. It was later renamed the Sub Stratosphere Flight. There were six pilots on its strength.

The existing Spitfire Mark VIs – a pressurised version of the Mark V fighter with a four bladed propeller, a Merlin 47 engine, extended wing tips and a sealed canopy bolted shut from the outside – had an inadequate ceiling to stop the Germans operating at altitudes over 40,000 feet, and the improved high-altitude Spitfire Mark VII was not yet in production, so the unit received a pair of the new Spitfire Mark IXs specially converted by Rolls Royce at Hucknall.

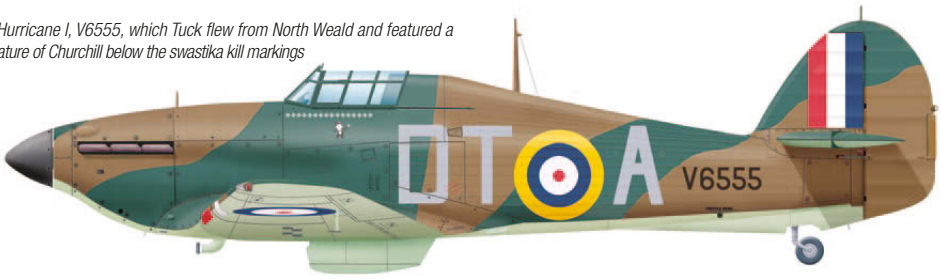
These aircraft did not have pressurised cockpits, but the Merlin 61 had a superior performance, so it was decided to adapt them for high-altitude duties. The aircraft were stripped of everything not needed for high-level interception, making them 450lb lighter. They only carried a pair of 20mm cannon.

On 12 September 1942, one of these Spitfires, BS273, flown by F/O Prince Emanuel Galitzine successfully intercepted a Ju 86R, T5+PM, piloted by *Feldwebel* Horst Götz and commanded by *Leutnant* Erich Sommer above Southampton at 41,000 feet on its way to Cardiff. The ensuing battle went up to 43,000 feet and was the highest recorded air combat of the war. The bomb was jettisoned and did no damage.

Unfortunately, Galitzine's port cannon froze solid and, when he fired the starboard cannon, the aircraft fell away or became engulfed in vapour trails, which obscured the target. The Ju 86R escaped with a single hit to its port wing, but now they could be intercepted at such high altitudes, the *Luftwaffe* attempted no more attacks like this against England.

In January 1943 Galitzine joined 124 (Baroda) Squadron at North Weald when the Sub Stratosphere Flight amalgamated onto its combat roster. The Squadron was at the Airfield for periods between November 1942 and July 1943, operating the Spitfire Mark VI on high level interception duties as well as providing top cover for the North Weald Wing's two Norwegian squadrons. It also flew the improved Mark VII Spitfires with the two-stage supercharged Merlin 64 or 71. These were fitted with double-glazed sliding canopies, which the pilots preferred, and could operate up to 45,000 feet. Although the Junker Ju 86s were withdrawn in early 1943, there were still nuisance raids. 124 Squadron placed many Spitfires on temporary detachment along the South Coast to intercept Focke Wulf FW 190s. Its first success was on 15 May when one was shot down by Spitfire VII, BS142 (pictured above). The Squadron suffered six fatalities during these nine months, but its expertise helped to deny the Germans valuable strategic reconnaissance, which they so badly needed, as well as propaganda from the raids. ■

The Hurricane I, V6555, which Tuck flew from North Weald and featured a caricature of Churchill below the swastika kill markings



## Burma Squadron

### 257 Squadron and its famous ace Robert 'Bob' Stanford Tuck...

No. 257 Squadron was formed at Dundee on 18 August 1918 from 318 and 319 Flights, where it flew on anti-submarine patrols with seaplanes and flying boats until the end of the World War 1. It was disbanded in June 1919.

The Squadron was re-formed in May 1940 at Hendon and initially received Spitfires. It then moved to Northolt and was declared operational after re-equipping with Hurricanes, with which it fought the Battle of Britain. It was also designated as the Burma gift squadron. The *chinthé* in its logo is a Burmese leoglyph, often seen at the entrance to pagodas and temples.

From September it was commanded by the famous ace Robert 'Bob' Stanford Tuck, and moved from Martlesham Heath to North Weald during October and November, after several previous short detachments at the Airfield. Its personnel and equipment were moved by a section of the No 2 Motor Transport Company based at Cambridge.

In March 1941 the Squadron began taking part in sweeps over France, now based at Coltishall. On 28 January 1942, Tuck was hit by flak over France and taken prisoner. By the time he was captured he had destroyed 29 enemy aircraft, along with two shared destroyed, six probably destroyed, six damaged and one shared damaged.

Night patrols were also flown, and in July 1942 the Squadron converted from Spitfires to Typhoons and began low-level patrols from Exeter in September to intercept nuisance raids by Focke Wulf FW 190s. From July 1943 it began offensive operations from Warmwell and then Gravesend.

The Squadron then started sorties against French targets in the run up to D-Day from January 1944, based first at Beaulieu and then Tangmere. As part of 146 Wing, Second Tactical Air Force, it moved to France in July. By October it was based in Belgium. The Squadron disbanded in March 1945.

In September 1946 the Squadron was re-formed flying Gloster Meteors until January 1955. It then converted to

Hawker Hunters. At the end of March 1957 the Squadron was disbanded for the third time as part of the Duncan Sandys defence cuts.

The Squadron re-emerged in July 1960 at RAF Warboys as an air defence unit equipped with Bristol Bloodhound missiles until the end of December 1963, when it was disbanded for the last time. ■

High Laveyn



## A poignant loss

### Hurricane P3175 flew from here with 257 Squadron twice during its short service life...

Hawker Hurricane P3175 was built by Glosters. It was taken on charge by 10 MU at Hullavington on 29 June 1940, and issued to 257 Squadron at Northolt on 9 August.

On 14 and 15 August the Hurricane was flown to North Weald from Northolt on temporary detachment for convoy patrols along the east coast.

Scrambled from Martlesham Heath on 31 August, it was shot down intercepting a Dornier Do 17 raid on Debden and Duxford. The pilot, P/O Maffett, baled out at low level and was killed when his parachute failed to deploy in time. The aircraft came down at Walton-on-the-Naze.

During 1972-73 the aircraft's cockpit, centre section and engine were excavated. These were on display in the Battle of Britain Hall at the RAF Museum, Hendon for many years until the building was refurbished. ■



Ground crew refuelling and rearming a Spitfire Vb on the south western side of the Airfield



IWM

## Natal Squadron

### A rare glimpse of 222 Squadron's North Weald air war in colour...

The Squadron was created from A Squadron of 2 Wing, RNAS on the Greek island of Thasos at the beginning of April 1918 when the Royal Air Force was formed. Later Z Squadron of the same Wing was also incorporated onto its strength. Renumbered as 62 Wing and consisting of 478, 479 and 480 Flights, the Squadron was tasked with raiding Turkish targets in Macedonia and Thrace. It operated from islands in the Northern Aegean, officially taking up the 222 Squadron numberplate in mid-September 1918. It continued with attacks on targets in the Balkans until the end of the war, and was disbanded at the end of February 1919.

In early October 1939, 222 Squadron was reformed once again at Duxford, flying Blenheim IFs on convoy protection duties. These Blenheims also came to North Weald for a brief detachment in February 1940. During March the Squadron was re-equipped with Spitfires, and fought during the Battle of Britain from Hornchurch and Southend.

From 18 August 1941 until 30 May 1942, the Squadron was based at North Weald, before departing to Manston. It returned again on 7 July, remaining until 1 August, when it flew to Winfield, East Berwickshire in Scotland.

© IWM (COL 188)

The Squadron Commander's Spitfire Vb AD233



It also took part in *Operation Jubilee*, the Dieppe raid on 19 August 1942. The Squadron subsequently joined the 2nd Tactical Air Force. In December 1944 it converted onto Hawker Tempests, which it flew until it was recalled back to the UK to re-equip with Gloster Meteors in October 1945.

The Squadron flew these jet fighters for nine years, and then converted onto Hawker Hunters in December 1954. On 1 November 1957 it was yet another victim of the Government's defence cuts.

It reformed once again on 1 May 1960, as an anti-aircraft unit at RAF Woodhall Spa with Bristol Bloodhound surface-to-air missiles. After four years in this role, it was finally disbanded on 30 June 1964.

Its famous Messerschmitt wartime 'score board' is now in the Manston Battle of Britain Museum. ■

This fabric-winged Hurricane Mark 1, L1814, took part in the Norwegian Campaign of 1940. It is fitted with a de Havilland propeller. The undersides are split black and white as seen in the photograph below.



## 46 Squadron

### The tragic Norwegian connection

No. 46 Squadron was formed at Wyton in June 1916, initially equipped with Nieuport two seaters for artillery co-operation and reconnaissance. In 1917 it converted to Sopwith Pups and then Camels for scouting and ground attack duties. The Squadron was disbanded in 1919.

In 1936 at Kenley, B Flight of 17 Squadron became the basis of the newly-formed squadron flying Gloster Gauntlets. It was then re-equipped with Hawker Hurricanes and began World War 2 at Digby in Lincolnshire on convoy patrols.

When the Germans invaded Norway in April 1940, the Squadron was one of those selected to be part of the British Expeditionary Force. Eighteen Hurricanes were lifted aboard *HMS Glorious*, successfully taking off from the aircraft carrier for Bardufoss in northern Norway on 26 May.

During the brief campaign, 46 Squadron shot down 14 aircraft with a number of others probably destroyed. It was ordered to withdraw from Norway on 7 June. The surviving Hurricanes were successfully landed on *HMS Glorious* – no mean feat as they were not equipped with arrestor hooks! One, L1980, had previously served with 56 Squadron and was part of the pair of Hurricanes shot down by Spitfires during the *Battle of Barking Creek* on 6 September 1939.

Then tragedy struck. The carrier was intercepted by the German battlecruisers *Scharnhorst* and *Gneisenau* and sunk by their 11-inch gunfire. Only two of the pilots survived along with a handful of the ship's crew. The Squadron's ground crews and some of the pilots were successfully evacuated back to Britain on other ships.

The Squadron was reformed once again at Digby, and then moved into 11 Group first to the North Weald Sector's satellite station at Stapleford, and then to North Weald itself. It was during this time that the Squadron was part of a sortie with 249 Squadron that intercepted a major raid by the Italian Air Force (the so-called *Chianti Raiders*), which was decimated.

In May 1941, the Squadron moved to the Middle East, operating in the defence of Malta, where it was amalgamated

Crown Copyright



Hurricanes being loaded onto *HMS Glorious*

North Weald Airfield Museum



A downed Italian bomber

with 126 Squadron. In May 1942 it was reformed, flying Bristol Beaufighters from Egypt as nightfighters, intruders and on anti-shipping patrols. It later converted to Mosquitoes.

In January 1945 the Squadron arrived back in the UK tasked with transport duties at Stoney Cross in Hampshire, flying Short Stirlings. It later took part in the Berlin Airlift in 1948, and was disbanded in 1950, now flying Dakotas.

It was stood up again in August 1954 at Odiham equipped with Gloster Meteor NF 12 and 14 nightfighters. In early 1956 these aircraft were replaced by Gloster Javelins all-weather fighters until another disbandment in June 1961.

It was reactivated for the last time at Abingdon in 1966 as a transport squadron operating Andovers. In October 1969, it was presented with its standard by King Olav V of Norway in commemoration of 46 Squadron's Norwegian operations in May and June 1940. It was finally disbanded in 1975. ■

## The Griffon powered Spitfires

The Supermarine Spitfire Mark XIV was the most powerful variant to serve at North Weald, although only for a few days. This Spitfire was based on the Mark VIII airframe, and introduced at short notice to take advantage of the greater power available from the Griffon engine, while a major redesign, which resulted in the Mark 21, was still being developed.

The 37 litre V-12 Griffon 61 engine had a maximum output of 2,050 hp with a two-stage supercharger, giving the fighter a top speed of 446 mph at 29,500 feet. A five bladed propeller was needed to harness the additional power. It rotated in the opposite direction to the Merlin.

Six squadrons used the aircraft operationally from mid-1944, including 130 Squadron. Initially their superior performance meant they were used for anti-V1 flying bomb duties after D-Day.

Once this threat receded they were used as air superiority fighters on the Continent. They were able to outfight any of the Luftwaffe's piston-engine aircraft, and also had some success against the Me 262 jet fighters.

130 Squadron was at Fassburg when the war ended, and returned to the UK on 10 May, to be based at North Weald. Over the next two weeks it swapped its Spitfire Mark XIVs for Spitfire Mark IXs from the Canadian 411 (Grizzly Bear) Squadron.

It then moved to Dyce in Scotland and from there to Norway on 20 June to assist with that country's security following its liberation as part of *Operation Doomsday* (see *Issue 25*), returning to the UK in November.

## The convoluted comings and goings of 130 Squadron

Right from its inception, 130 Squadron had been renumbered several times. It was originally formed on 1 March 1918 at Wyton and disbanded four months later in July at Hucknall, with its pilots being assigned to units in France

Reformed again in June 1941 as 130 (Punjab) Squadron following the donation of a squadron of Spitfires by that Indian state, it was disbanded in February 1944.

In order to maintain the tradition of a Punjab squadron, 186 Squadron was then renumbered as 130 Squadron on 5 April 1944. (186 Squadron was itself subsequently reformed as a bomber unit flying Lancasters.)

The Squadron later converted to the new Vampire jet fighters at Odiham. It was subsequently renumbered as 72 Squadron in 1947, and in this guise returned to North Weald in 1950, where it remained until May 1953. It then moved up to Church Fenton.

This renumbering did not mean the end of 130 Squadron, however. It was reformed once again as part of RAF Germany in 1953, first flying Vampires, then Sabres and finally Hawker Hunters until April 1957, when it became one of the many victims of the Duncan Sandys' defence cuts.

Its final incarnation came in 1959, when it stood up as a Thor intermediate-range ballistic missile squadron at RAF Polebrook, operating three of these nuclear-armed missiles. When the programme came to an end in 1963 and the missiles were returned to the USA, the Squadron was disbanded for the last time. ■

# North Weald's most powerful Spitfires

## Griffon powered, fast, deadly and flown by 130 (Punjab) Squadron

*Spitfire XIV RM693 lined up with other 130 Squadron aircraft. It later served with 41 Squadron, then 416 Squadron RCAF*





Left: A North American Mustang Mk I of No. 168 Squadron banking over Pierrefitte-en-Cinglais in Normandy, as tanks and vehicles of the 4th Armoured Brigade head eastwards out of the village towards Falaise. © IWM (C 4559)

Right: Oblique low-level aerial photograph taken by one of three North American Mustang Mark Is of No. 268 Squadron flying on a ground attack sortie over Holland. A Mustang dives over a canal, leaving a trail of smoke from its machine guns as it attacks a railway train 50 miles east of the Zuyder Zee. © IWM (C 5810)

## RAF Mustangs in the TacR role

### Way down in the weeds and causing mayhem!

The North American P-51 Mustang was designed to an RAF specification in 1940. Initially fitted with an Allison engine, the aircraft did not have a great performance at altitude and so was used to replace P-40 Tomahawks in army co-operation squadrons rather than being used purely in the fighter role.

During 1942 the Mustang I became the first Allied single-seat fighter to enter German air space since 1940. It was later developed to take advantage of the increased altitude performance of the two-stage supercharged Rolls Royce Merlin engine, and became a superb long range escort fighter with the USAAF as well as the RAF.

Six RAF squadrons (2, 4, 26, 168, 234, and 268) operated Mustangs from North Weald on tactical reconnaissance (TacR), ground attack and bomber escort duties from November 1943 until April 1945.

In the lead up to D-Day they carried out photographic missions and attacked transport targets across France, Belgium and Holland. They were also instrumental in locating the 'Diver' V1 flying bomb launch sites. They had a long range and were very fast at low level, making them ideal for this type of sortie.

The RAF Mustang IA differed from their US counterparts by carrying four 20mm Hispano cannon instead of six



Mustang Mark Is, AG550 XV-U and AM112 XV-X, of No. 2 Squadron in flight over Cambridgeshire. AG550 is being flown by Wing Commander A J W Geddes, the squadron commander. © IWM (CH 7064)

0.5-inch machine guns. The Mustang II and III carried four 0.5-inch machine guns, while the latter was powered by the Rolls Royce Merlin engine and was used more in the long range bomber escort role like the USAAF squadrons.

The later versions were fitted with the Malcolm hood, which was bulged to give a better view from the cockpit. The Mustang IV, which was the equivalent of the P-51D with a teardrop canopy, was not flown by squadrons based at North Weald. ■



Mustang IIIs of 234 Squadron were used for long range bomber escort duties.

# Fighter tactics

## How the RAF developed the way it fought over the course of World War 2 in Europe...

In the 1930s, the RAF's fighter strength was concentrated in the southern part of the country known as the Fighting Area. It was a purely defensive force aimed at tackling bombers because the perceived threat from Germany meant that it was too distant for *Luftwaffe* fighters to be able to escort bomber formations across the North Sea.

Squadron Flights were organised into Vics of three aircraft each, which required careful formation flying. These assiduously practised a series of manoeuvres known as Fighting Area Attacks. There were six specified for attacking bomber formations from different directions. These were quite elaborate and slow to carry out and were still used at the outbreak of war.

The Germans had by then gained considerable combat experience in Spain and Poland. They had developed a far more flexible formation based on pairs of aircraft – the *Rotte* – which were combined into larger formations of four – the *Schwarm*. These were able to manoeuvre more readily and could keep a better lookout, the wingman being responsible for protecting the leader's tail.

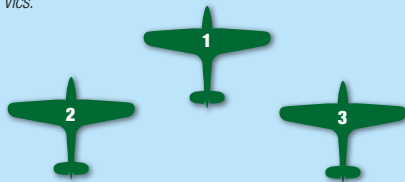
During the Battle of Britain, the RAF's dated tactics were swept away by the pace of operations and the real threat posed by hordes escorting fighters now based on the French coast. There just was not time to set up a Fighting Area Attack before the Messerschmitts dived into the attack.

Line astern formations and weavers at the back of a formation were tried with varying success. But the pilots at the rear always had problems keeping up when manoeuvring, and stragglers were quickly picked off by the enemy fighters. Astute fighter leaders quickly realised the benefit of the German system, and so the Finger Four was developed, made up of two pairs of fighters.

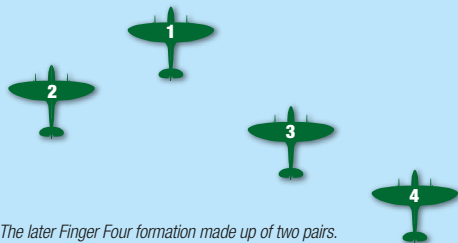
The so-called Big Wing of up to five squadrons had been experimented with by 12 Group during the Battle of Britain, as its airfields were further away from the action, which allowed the squadrons to assemble and climb on their way south, though often arriving too late to stop the bombing.

Even with the help of the chain Home radar stations the squadrons of 11 Group at the forefront of the action rarely had the luxury of sufficient time to climb to meet the raiders, let alone assemble formations larger than two

The three-ship Vic formation. Squadrons would normally operate in four Vics.



The basic RAF fighter formations at the start of the war and later



The later Finger Four formation made up of two pairs. Squadrons would normally operate three of these sections.

squadrons until the attacks on London began.

There was also the problem of how many squadrons a commander could handle effectively in combat. Large formations proved to be unwieldy to manoeuvre.

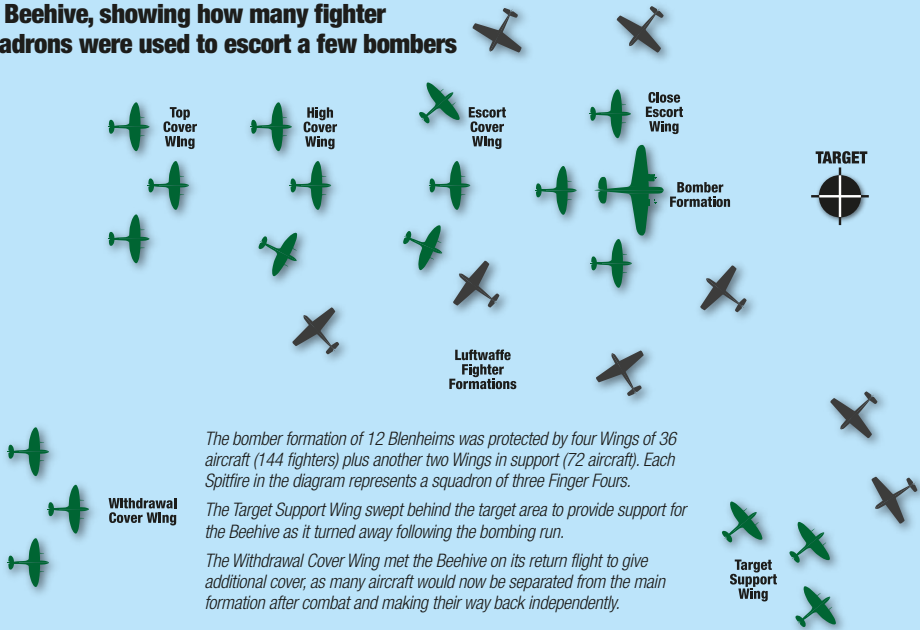
This was the dilemma facing the RAF when it went on to the offensive in 1941, using raids by small formations of bombers from 2 Group to provoke a reaction from the *Luftwaffe*, which were escorted by several Wings of fighters, with others in support. These initially used similar tactics to the *Luftwaffe's* raids in 1940, which tied too many fighters to escort the bomber formation of just three Stirlings or a dozen Blenheims, often taking part in two missions a day. These unwieldy formations were known as *Beehives*.

The fighter Wings consisted of close escort, escort cover, high cover and top cover, which had more freedom to leave the bomber formation. Other Wings provided separate target support, withdrawal cover and fighter diversion.

As the strategic purpose of these operations was not the damage caused by the bombs, but the attrition of the enemy's fighter force, they were costly but ultimately did not achieve their stated objectives.

The other problem was the comparatively short range of the fighters, which limited combat time over Europe and the choice of targets in the same way the *Luftwaffe's* fighters had been hampered over southern Britain in 1940. When the Focke Wulf FW 190 was introduced it outclassed the RAF's Spitfire Vs causing additional losses until the improved Spitfire IX was introduced.

## The Beehive, showing how many fighter squadrons were used to escort a few bombers



The bomber formation of 12 Blenheims was protected by four Wings of 36 aircraft (144 fighters) plus another two Wings in support (72 aircraft). Each Spitfire in the diagram represents a squadron of three Finger Fours.

The Target Support Wing swept behind the target area to provide support for the Beehive as it turned away following the bombing run.

The Withdrawal Cover Wing met the Beehive on its return flight to give additional cover, as many aircraft would now be separated from the main formation after combat and making their way back independently.

A Wing was generally made up of three squadrons operating from the same station or sector, and led by an experienced Wing Commander, who determined tactics. From 1941 until early 1944 North Weald's fighter aircraft took part in Wing strength offensive operations providing all types of escort and cover. Tactics were developed as experience was gained in fighting the enemy over France, Belgium and Holland, becoming much more flexible.

The bad weather *Rhubarb* sorties by pairs of aircraft were also discontinued after proving to be too costly in pilots and aircraft for the meagre results achieved.

In the months before D-Day and the invasion of Europe, fighters were also used more in the ground attack role carrying 500 lb bombs. Many were now part of the 2nd Tactical Air Force and gearing up for mobile operations once ashore.

*Supermarine Spitfire Vb, AA855, of 71 (Eagle) Squadron, force landed in France on 27 October 1941 after being damaged by debris from an exploding train. The pilot was Morris Fessler, who became a POW.*



By now much larger formations of bombers were able to inflict strategic damage in their own right with much smaller numbers of escorting fighters. Mustangs had the range to reach Berlin and just two Spitfire squadrons could provide escort for two boxes of 18 USAAF Marauders quite successfully now that fewer *Luftwaffe* fighters were stationed outside Germany.

The latter stages of the war, with constant movement to new airfields to keep up with the retreating Germans, meant that Wings were now made up of two squadrons and even these were proving to be somewhat unwieldy for the prevailing fluid conditions.

Squadrons once again became the tactical norm, and the days of the Wing Leader were numbered.

Subsequently the pair became the standard fighter unit for air combat, which continues to this day. ■

# 2 TAF

## The 2nd Tactical Air Force drew on many North Weald squadrons...

The 2nd Tactical Air Force (2 TAF) was formed on 1 June 1943 as HQ Tactical Air Force by Army Co-operation Command to plan and physically prepare for the invasion of Europe the following year. 2 TAF incorporated units from both Fighter Command and Bomber Command to form a flexible force capable of supporting Armies in the field.

Bomber Command provided 2 Group, which was equipped with light bombers. Fighter Command was re-organised into Air Defence of Great Britain (ADGB), which retained fighter squadrons for home defence, 83 and 84 Groups, which would operate their aircraft offensively as part of 2 TAF, and 85 (Base) Group in support.

83 Group was tasked with supporting 2nd British Army operations, 84 Group did the same for 1st Canadian Army. 85 (Base) Group, controlled ancillary 2 TAF units such as Mosquito nightfighters. They all had a full range of support and maintenance units attached.

Headquarters were set up first for combat Wings and the mobile airfields designated to house them as the campaign unfolded. Once these had become operational squadrons then began moving to their jumping-off points along the south coast as the air campaign got underway in 1944.

North Weald hosted HQ 19 Wing from 14 October 1943 until 12 May 1944. This was part of 84 Group, and was commanded initially by G/Cpt AG 'Sailor' Malan. He later took over the Free French 145 Wing when 19 Wing was reconfigured and expanded to become 19 (Fighter) Sector, which was made up of 132 (Norwegian), 134 (Czech) and 145 (Free French) Wings.

The Fighter Sectors were subsequently disbanded from 18 July 1944, having completed their initial defensive role over the beachhead. Their constituent Wings were then commanded by their respective Group HQs.

HQ 132 Airfield was based at North Weald from 1 November 1943 until 31 March 1944. This was the operational airfield designation for 132 (Norwegian) Wing. 132 Airfield subsequently transferred first to Bognor Regis and then on to France once suitable landing grounds had been secured by the RAF Regiment following D-Day.

© IWM (CH 13488)



The CO of 332 Squadron watches as his Spitfire's drop tank is filled with beer at Tangmere for thirsty pilots in France after D-Day

In addition, HQ 130 Airfield was at North Weald from 15 November 1943 until 29 February 1944. This was the operational airfield designated for 35 (Reconnaissance) Wing of 84 Group, which moved first of all to Odiham then on to Gatwick. Its aircraft were Mustang Is from North Weald's 2, 4 and 268 Squadrons.

Mustangs from 168 Squadron also served at North Weald from November 1943 until March 1944, when it joined 39 (RCAF) Reconnaissance Wing, 83 Group at Odiham.

North Weald's 132 (Norwegian) Wing consisted of the two Norwegian-manned Squadrons – 331 and 332 – along with 66 Squadron, all flying Spitfires. They went to 2 TAF at the end of March 1944 with the 132 Airfield move.

The replacement North Weald Wing, made up of 33, 74 and 127 Squadrons, moved to Lympe on 17 May as part of ADGB. 33 Squadron then transferred to 149 Wing, 84 Group Reserve, 2 TAF, and was used for naval gun spotting on D-Day. 74 Squadron also joined 149 Wing.

63 Squadron from North Weald was also temporarily attached to the Spotting Pool, 85 (Base) Group at Lee-on-Solent flying Spitfire Vs, as was 26 Squadron, which later came to North Weald from January until April 1945 operating Mustang Is.

134 (Czech) Wing was returned to ADGB duties because of its limited ability to replace its Czech pilot casualties, and came to North Weald during August 1944 until the end of the year along with 134 Wing Communication Flight.

Many North Weald ground units also went on to serve with 2 TAF including several RAF Regiment Anti-aircraft Squadrons, No 4 Decoy and Concealment Unit and the servicing echelons attached to squadrons. 422 Advanced Fuel and Ammunition Park originated at Copped Hall, while ground radar interception controllers trained at nearby RAF Chigwell. In its way, North Weald played an important part in support of the liberation of Europe. ■