

# PROFILE

# 206

## SUPERMARINE SPITFIRE MK. IX





The invasion of Southern France, D-Day plus 4 of "Operation Dragoon" on August 19, 1944, at the hastily-bulldozed vineyard forward landing strip at Ramatuelle. The first two R.A.F. fighters to call were Spitfires from the base at Calvi, N.W. Corsica, piloted by Group Capt. Duncan Smith in charge of No. 324 Wing and his "No. 2." Prince (then F/Lt.) Emmanuel Galitzine i/c No. 72 Squadron. Depicted is the latter's Castle Bromwich-built Spitfire L.F. Mk. IX C (MH763: RN-S). In accordance with prevailing Tactical Air Force instructions, both the duck-egg blue spinner and rear fuselage band have been darkened. Non-standard artistry includes the white outlining of the fuselage code letters and the unorthodox retention of the pre-war white spearhead device containing No. 72(F)'s squadron badge. Ultimately, Prince Galitzine flew no fewer than 11 different marks of Spitfire. (Photo: I.W.M.)

## Supermarine Spitfire Mk. IX

PETER MOSS and LEN BACHELOR

JUST as the Vickers-Armstrong Supermarine Type 349 Spitfire Mark V (see Profile No. 166) was evolved as a "stop-gap" for the Mk. III, so too did the Mk. IX serve the same purpose for the Mk. VIII.

It was on September 27, 1941, that Royal Air Force pilots reported the presence of a new radial-engine fighter during a daylight sweep over German-occupied Northern France. The superior speed and ceiling of this new *Luftwaffe* fighter, known to be the Focke-Wulf FW 190A-1, made it an urgent priority for the British to produce quickly and in quantity a fighter equal to this new threat.

To meet this requirement, the Spitfire Mk. VIII was evolved from the Mk. VII. But as this variant was a complete redesign, production re-tooling would take time to accomplish. This factor was appreciated by the Air Staff planners and a decision was arrived at with urgency.

Cover picture: Superbly detailed underside view of a No. 1 Squadron, S.A.A.F. Spitfire Mk. IX, in 1947, revealing the attachment points for rocket projectiles and the bomb carriers. (Photo: S.A.A.F. via Ken Smy, Air-Britain)

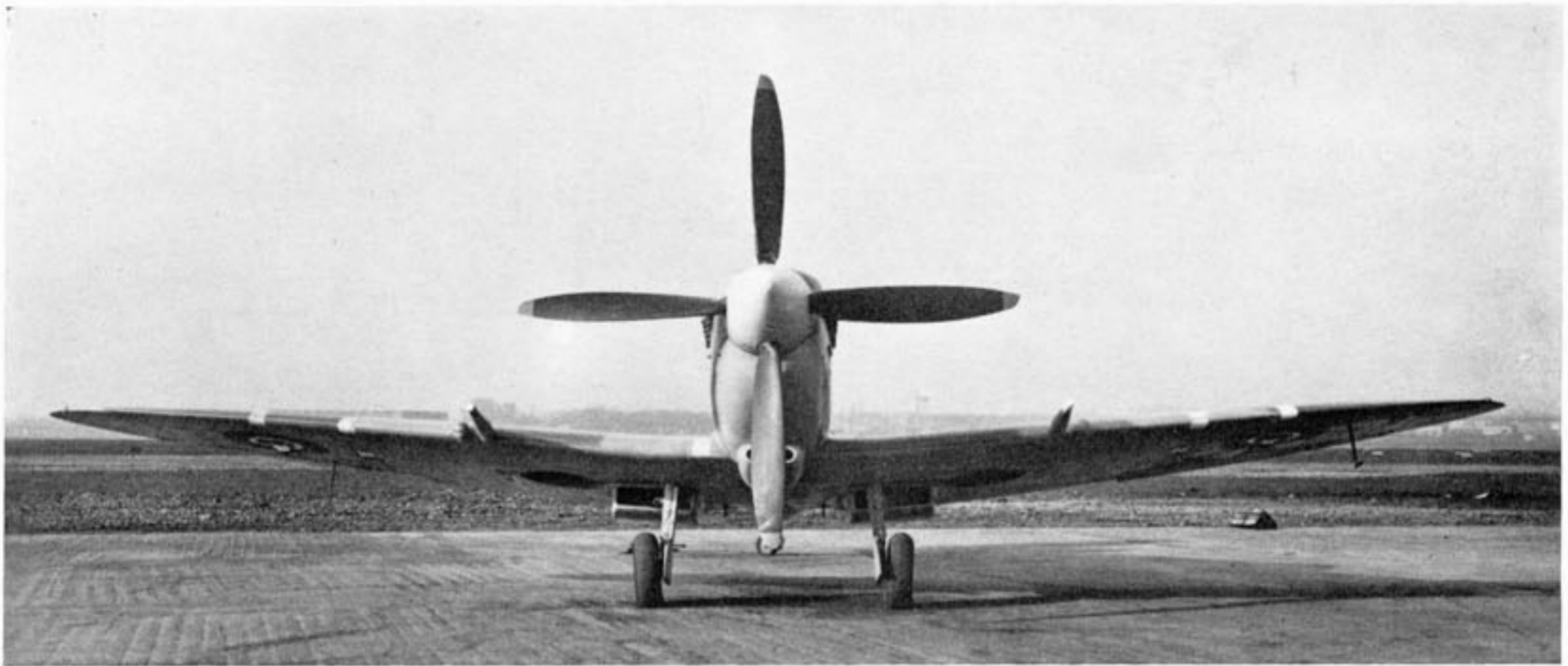
Left: The second of two definitive Mk. IX prototype conversions from Mk. V airframes by Rolls-Royce Ltd. in April 1941. AB197 was photographed at Boscombe Down in May 1942. Right: The experimental Mk. III Spitfire (W3297) with retractable tail wheel, modified to an interim Mk. IV; with Merlin 61, four-blade Rotol propeller and two radiators under the wings. Photo taken at the A. & A.E.E., Boscombe Down, Wiltshire, in October 1941. (Photos: I.W.M.)

Rolls-Royce Ltd., who designed and built the Spitfire's Merlin engine, was asked to convert two Spitfires to take the Merlin 60 (1,565 h.p.) and 61 (1,565 h.p.) as an experiment. Mk. III (R.A.F. serial number N3297) and Mk. I (R6700) airframes were selected and delivered to the Rolls-Royce test airfield at Hucknall, near Nottingham, in April 1941.

The Mk. III had its 1,390 h.p. Merlin XX removed and a Merlin 60 fitted and the Mk. V its Merlin 45 exchanged for the Merlin 61; both driving 4-blade propellers. Later the Mk. III also had the Merlin 61. In this form, the Mk. III—modified first flew on September 20, 1941; in October it was delivered to Boscombe Down, in Wiltshire, for Service evaluation trials.

Encouraged by the successful result of the Merlin 61 installation, the Air Staff ordered two Mk. V airframes (AB196 and AB197) to Hucknall and, with their fuselages strengthened to take the larger Merlin 61, they served as definitive prototypes. Officially known as the Mk. IX they had an additional radiator





Head-on view of an L.F. Mk. IX C, showing the two radiators under the wings and the in-board mounted cannon on the "C" wing, with stubs for two extra cannons. The "L.F." (Low Altitude Fighter) prefix referred to the mark of Merlin employed for best low-altitude performance and not to standard or "clipped" wing tips. (Photo: via Bruce Robertson)

under the port wing to house the intercooler and oil cooler. This extra radiator gave the Mk. IX a symmetrical appearance when viewed head-on, but it was not the first Spitfire variant to be so modified, having first appeared on the Mk. VII (that also featured the Merlin 61) and on the two interim models, N3297 and R6700.

The success of the Mk. V conversions resulted in Rolls-Royce receiving a contract for quantity conversions. The first (AB505) was delivered straight to the R.A.F. Air Fighting Development Unit at Duxford, south of Cambridge, on April 26, 1942, for 12 days of intensive evaluation. By the time retrofit work ceased at Hucknall in March 1944, a grand total of 284 conversions had been made (see production list on page 36).

In addition to the conversions, existing contracts for Mk. V Spitfires were modified to include the completion of certain airframes to Mk. IX standard, at the Woolston (Southampton) and Castle Bromwich (Birmingham) factories, as Merlin 61s became available.

### VARIATIONS ON A VARIANT

The armament carried by the Spitfire Mk. IX varied but consisted mainly of two 20-mm. British Hispano cannon and four 0.303-in. ("British calibre") Browning

Close-up of the armament arrangement in a "C" wing. Aircraft is BS538, an F. Mk. IX C, of No. 341 (Free French) Squadron, coded NL-B. Note the Cross of Lorraine insigne near cockpit door. (Photo: I.W.M.)



machine-guns (Mk. IXc), or two 20-mm. cannon and two 0.50-in. ("U.S. caliber") Browning machine-guns (Mk. IXe). The early production variant (Mk. IXe) had provision for only two 20-mm. cannon and four 0.303-in. machine-guns, whereas the "c" and "e" wing had provision for two extra cannon in place of machine-guns; they also had attachment points for wing-mounted bomb racks. The "a" wing was not used—this being eight 0.303-in. Brownings.

The Mk. IX was flown in a variety of rôles and, from 1942 onwards, the mark number was prefixed by a letter or letters to denote the primary rôle. The following applied to Spitfire IXs: **F.**—Fighter; **L.F.**—Low Altitude Fighter; and **H.F.**—High Altitude Fighter. In later years, Mark IXs also played limited rôles as: **F.B.**—Fighter Bomber; **F.R.**—Fighter Reconnaissance; **T.T.**—Target Towing; and **MET**—Meteorological.

The F, L.F., and H.F. rôles depended upon the altitude rating of the Merlin fitted (see data section) and did not affect the wing span length which could be "clipped" in the F. and L.F. rôles.

Early Mk. IX production Spitfires retained the original rounded fin and rudder, but in late-series production, a broad chord and pointed tip rudder was

Spitfire Mk. IX Es awaiting collection at the Castle Bromwich factory in 1944. Aircraft in the front row include (right to left): NH432, NH311, NH419, NH45 and NH425. Some cowlings, wing fillets, ailerons and tailplanes require final camouflage. (Photo: via Bruce Robertson)





One of the four Mk. IX conversions with incorrectly painted serial identity—BF274. This Spitfire was sold to the Royal Netherlands Air Force as H-68 on March 23, 1948.  
(Photo: via Bruce Robertson)



The experimental floatplane Mk. IX B (MJ892) on a flight from Hamble in 1943. Note revised tail unit.  
(Photo: via Bruce Robertson)

introduced and some early models were also converted. The rear-view (shallower) fuselage and “tear-drop” cockpit hood was introduced after a favourable report from the Air Fighting Development Unit at Wittering, on a Mk. VIII so modified in August 1943.

The Spitfire’s range to cope with increasing penetration of Occupied Europe was a continual problem. Although a series of jettisonable, flush fitting, auxiliary drop-tanks became standard, they were not entirely satisfactory and experimentation continued. During evaluation it was found that the “slipper” tank did not always drop away cleanly, and either struck the tail-plane or flapped in the slip-stream. A solution was

S/Ldr. G. R. S. McKay’s Spitfire F. Mk. IX E (NH346) while he was C.O. of No. 87 Squadron in Italy 1944-45.  
(Photo: G. R. S. McKay)



found by allowing the tank, on release, to slide back to stops so that the “slipper” leading-edge would drop to release the suction and allow gravity to do the rest. Even so, R.A.F. fighter squadrons experienced mishaps; No. 65 Squadron, for example, was not impressed with auxiliary tanks for during take-off they could drop off. This happened to one of their Mk. IXs (MH358) when its tank became dislodged during take-off, was up-ended and became wedged between the ground and the fuselage, causing considerable damage to the Spitfire.

Other difficulties were experienced with drop-tanks. On a number of occasions accidents occurred as the result of engine fuel starvation following failure by the pilot to switch over from wing tanks.

Sgt/Plt Dickerson of No. 64 Squadron had switching trouble while flying his Mk. IX (BR605) on a sortie during August 1, 1942. He crashed into the sea but was rescued with only minor injuries. Earlier that day four Mk. IXs from the same squadron had returned to base because of similar trouble.

The procedure laid down was for take-off to be on main wing tanks to 2,000 ft. when, if carrying an auxiliary tank, the pilot would switch over to the drop-tank. The 2,000 ft. height limit was necessary as the Stromberg carburettor fitted was not gravity-fed, as was the SU type fitted to other marks, and required priming by hand pump that took some five laborious seconds to carry out. Another difficulty was that the auxiliary tank did not have a gauge to show the state of fuel consumption.

Other experiments were carried out: On EN314 with a streamlined, bomb-shaped tank of some 200 Imperial gallons; while, in the U.S.A., MK210 had two wing mounted drop-tanks from a North American P-51 Mustang. Neither installation was found satisfactory enough for production purposes and a final choice was made on a 50 Imp. gallon cigar-shaped tank slung under the fuselage and used for long-range bomber escort duties from 1943.

For Spitfires alone, more than 300,000 drop-tanks of varying shape and capacity were produced.

The internal fuel capacity of the Spitfire was increased with larger forward (nose) fuel tanks to hold 95 Imp. gallons, by two 18 gallon Mareng fabric cells in the wings, and by a 72-gallon tank behind the pilot’s cockpit. The first Spitfire to carry the rear tank was a Mk. IX (ML186) in which Supermarine Chief Test Pilot Jeffrey Quill flew from High Post (near Boscombe Down) to Scotland and back non-stop in 1942.

At Wright Field, Ohio (now Wright-Patterson Air Force Base, a major Research & Development Centre) MK210 was modified to take 500 gallons of fuel for a non-stop flight across the Atlantic from Newfoundland to Northern Ireland. This became the longest Spitfire flight on record. To accommodate such a large quantity of fuel, the aircraft had to be drastically stripped of military equipment.

A modification that is known to have been carried on at least one Mk. IX (MJ197) was the fitting of an oblique camera behind the pilot’s cockpit. This made it an F.R. Mk. IX, but as the modification was unofficial it was not recognised as such.

The target-towing Mk. IX was also a rarity and included PT753 (coded 7B-G) of No. 595 Squadron. A

variation of the T.T. rôle was that of NH403, used by the Royal Aircraft Establishment, South Farnborough, Hampshire, to tow the Me 163 (VF241) in 1945.

The two-seat trainer variant was not used by the R.A.F., but surplus Mk. IXs were converted from 1946 onwards by Supermarine at their factory at South Marston, near Swindon (Wiltshire), to Type 509 configuration for export. Conversion to two-seat layout involved a second cockpit raised above and behind the front cockpit which was moved forward 13½ inches.

### SPITFIRE XVI

No account of Mk. IX variants would be complete without some mention of the Mark XVI. To boost production of the Spitfire IX, a decision was reached in 1943 to include one of the Merlin 61-series engines in the production plans of the Aircraft Engine Division of the Packard Motor Car Company, Detroit, Michigan. Chosen for this purpose was the low-rated Merlin 66 (1,705 h.p.) which was produced by Packard as the Merlin 266.

Exported to the U.K. from 1944 onwards, the engines were installed in Mk. IX airframes, thereby officially incurring a change in mark number to XVI—a distinction made because the U.S.-built engines were to metric measurements and therefore differed from the Merlin 66.

Initially, both Mark IXs and XVIs were built simultaneously on a mixed production line at the Castle Bromwich factory. There is no external feature to distinguish the two variants and only the Service (R.A.F.) serials can provide positive identification\*.

The Mark XVI was built as the C and E sub-series (according to the wing armament) and in the L.F. rôle. The majority had the “clipped” wing of 32 ft. 2 in. and, in late production, the rear fuselage was lowered for the “teardrop” or “bubble” cockpit hood, introduced as standard on the Mk. XVIe.

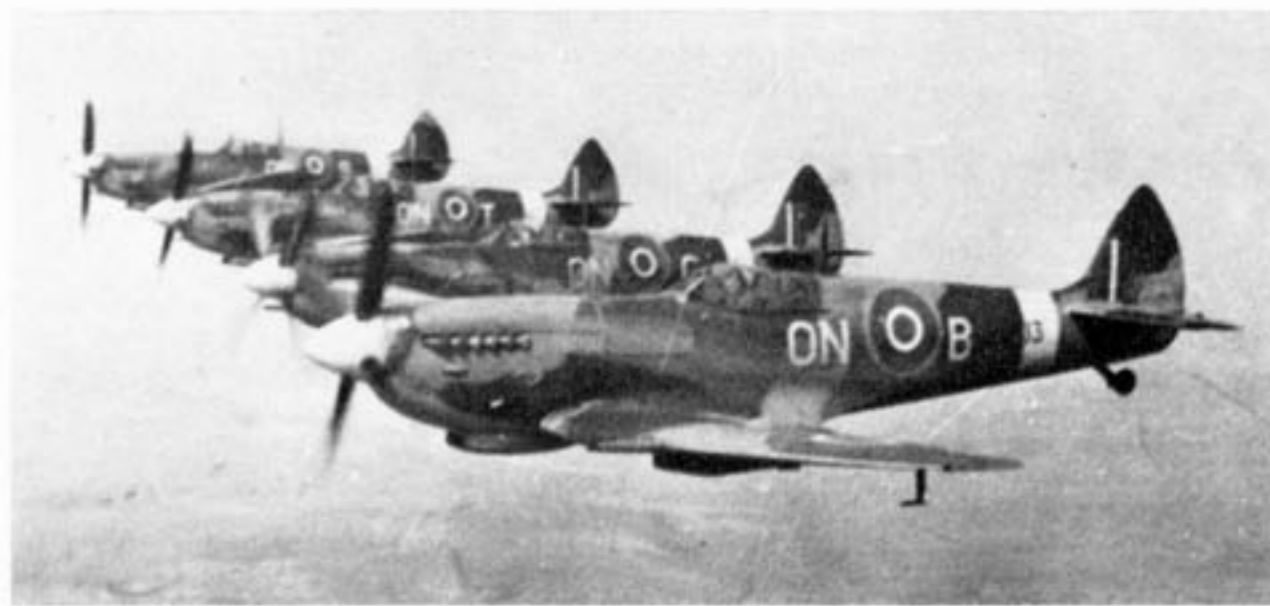
Major experiments were conducted with the Mk. XVI in connection with rocket projectiles (R.P.s) and zero-length, Mk. VIII rocket launchers. Various combinations were tried, with up to four R.P.s with 25-lb. or 60-lb. warheads beneath each wing, in both single and two-tier arrangements.

### THE Mk. IX IN ACTION

The arrival of the Spitfire IXs to R.A.F. fighter squadrons operating outclassed Mk. Vs came as a tonic to dissatisfied pilots. No. 43 Squadron, serving in Sicily, had to wait until the late summer of 1943 before six Mk. IXs were taken on charge in mid-August. No. 43's enthusiasm is reflected in this comment by J. Beedle, the Squadron's historian:

*“The arrival of six Mk. IX Spitfires . . . was greeted enthusiastically by the pilots and not without reason, for gleeful entries in log books like—‘reached 39,000 ft.’; ‘aerobatic at 32,000 ft.’—were not to be disregarded lightly in the pre-jet era. Henceforward, the usual Squadron formation consisted of two sections of four Mk. Vs with a top cover of four Mk. IXs. The increased performance of the Mk. IX came none too soon, for the tropical*

\*See Spitfire Mks. IX and XVI production lists on page 36.



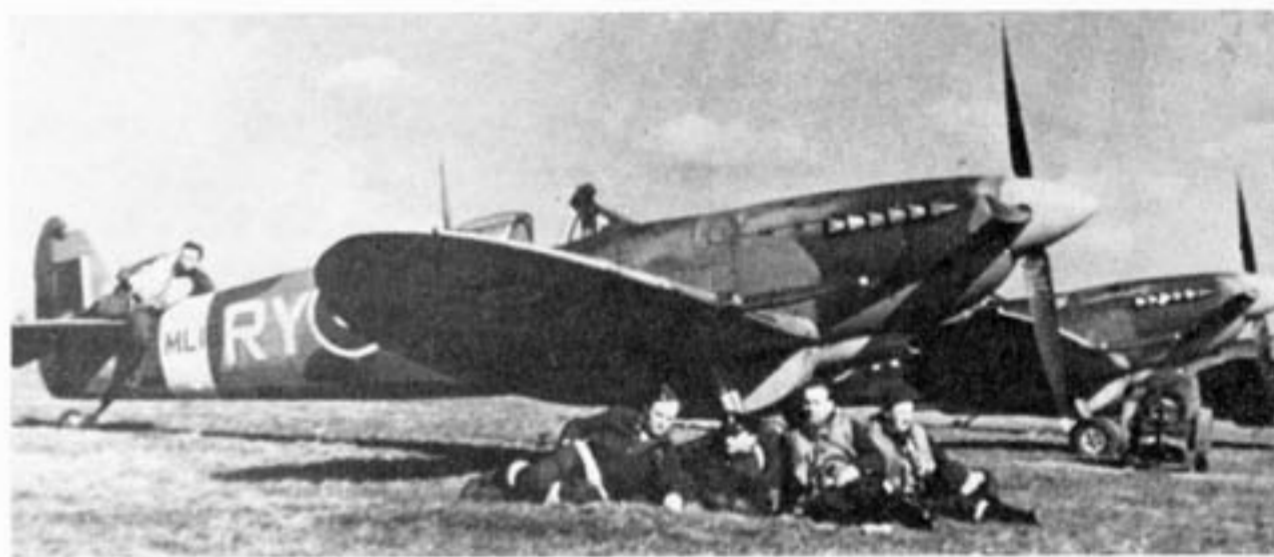
Formation of H.F. Mk. IXE Spitfires of No. 124 Squadron from Hutton Cranswick on June 20, 1945. The broad chord fin and rudder that featured some late production Mk. IXs. The first three aircraft are: ON-B (PV303), ON-C (SM515) and ON-T (RR252). (Photo: B. R. Murphy)

*Mk. V had long been outspeeded and outclassed by Me 109 and FW 190 alike. . . .”*

The first R.A.F. squadron to receive the Mk. IX was No. 64 at Hornchurch, Essex. Re-equipment began on July 6/7, 1942 and by the 12th they had 13 on strength. Formation flying was first tried on the 19th and the Squadron became operational on the 28th.

This event was celebrated by taking part in a *Rodeo\** along with Nos. 81, 122 and 154 Squadrons, but there was no contact with the enemy that day and No. 64 had to wait until July 30 before F/Lt. Kingaby (flying BS105) destroyed their first FW 190 during an attack on nine 190s. Later that same day, while on an evening *Ramrod\**, the Squadron successfully bounced

\*Rodeo was a fighter sweep over enemy-held territory: Ramrod was target elimination by fighter-protected bombers.



Czech pilots of No. 313 Squadron awaiting and relaxing before a sweep over France in preparation for D-Day 1944. Note 90-gallon drop tanks. (Photo: K. Zokhar)

A Spitfire Mk. IX of No. 313 Squadron with broad chord fin and rudder and 90-gallon drop tank, flying above cloud base in 1944. (Photo: K. Zokhar)





Spitfire Mk. IXCs of No. 349 (Belgian) Squadron on a snow-covered airfield during the winter of 1943-44. (Photo: I.W.M.)



Two 2nd T.A.F. Mk. IXE Spitfires of "A" Flight, No. 43 Squadron, at Zeltweg, Austria, in 1946. Note Squadron marking on the fin of C-FT (RK855), while only a blank space appears on E-FT (TB546) as it was a "new" aircraft from No. 93 Squadron. (Photo: 43 Squadron Association)

The experimental Spitfire Mk. IXC (MK210) at Wright Field, U.S.A., between May and June 1944, showing the underwing carriers for tests on auxiliary drop-tanks to improve range. (Photo: via E. N. Hooten)



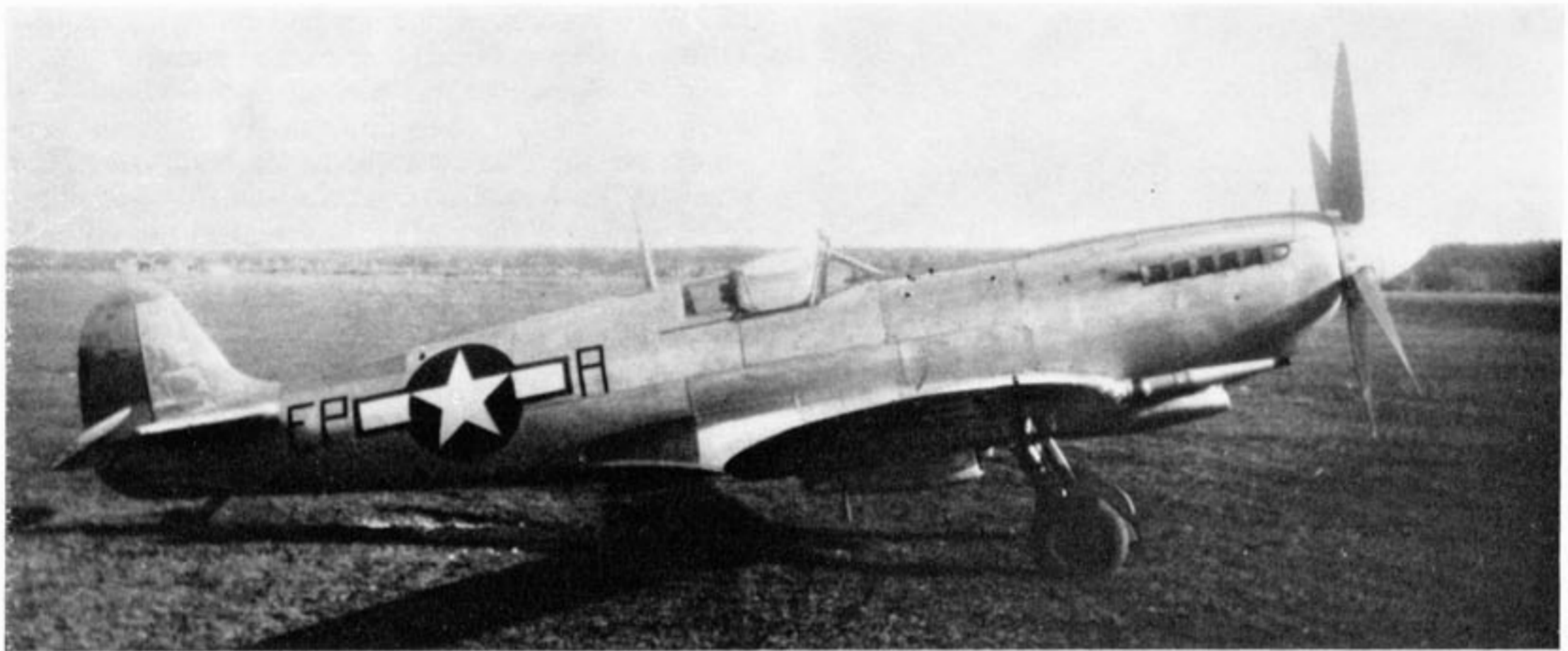
15 FW 190s—destroying three and damaging another. Then, on the way home, they bagged a fourth.

No. 92 Squadron was serving in the Middle East when it began to re-equip with Mk. IXs in 1943. S/Ldr. Neville Duke recalls, in his book *Test Pilot*, that when the Squadron was only partially re-equipped in July, four of their Mk. IXs acted as top cover to eight Mk. Vs from No. 145 Squadron. After attacking enemy transport aircraft they were jumped by FW 190s and Bf 109s. He writes:

*"Just as I was about to attack another Savoia, I glanced back and found an FW 190 on my tail. And then suddenly the air seemed to be filled with Focke-Wulfs . . . with the engine flat out I flew low over the sea . . . turning, dodging, gaining a bit of confidence when I found that my Spit IX could turn inside the Focke-Wulf, nearly blacking-out sometimes with high G. Finally, in desperation and to get more height to fight, I put the aircraft into a steep climb and after what seemed a lifetime found myself alone again."*

As the then commander of the Biggin Hill (Bromley, Kent) Wing, Group Captain Alan C. Deere, D.S.O., O.B.E., A.F.C., has since recounted in his book, *Nine Lives*:

*"I was now all set to renew my acquaintance with the formidable Focke-Wulf, but this time I was better equipped. The Biggin Hill squadrons were using the Spitfire IXB (Merlin 66) a mark of Spitfire markedly superior in performance to the FW 190 below 27,000 ft. Unlike the Spitfire IXA, with which all other Spitfire IX Wings in the Group were equipped, the IXB's supercharger came in at a lower altitude and the aircraft attained its best performance at 21,000 ft. or at roughly the same altitude as the FW 190. At this height it was*



This particular Spitfire Mk. IXC was obtained by Lt.-Col. E. P. Allen, Assistant A-3, XIX T.A.C., who traded in his P-51 Mustang to the British in France during 1944. (Photo: W. T. Larkins)

*approximately 30 m.p.h. faster, was better in the climb and vastly more manoeuvrable. As an all round fighter the Spitfire IXB was supreme, and undoubtedly the best mark of Spitfire produced...*

The Biggin Hill Wing was considered the *élite* of R.A.F. Fighter Command and were fortunate to have L.F. Mk. IXCs (*not IXBs—Authors*). With the menace of the FW 190 awaiting them on the other side of the English Channel, they now felt confident to meet it.

But there was a staggering blow awaiting No. 133 (Eagle) Squadron, of Biggin Hill, on September 26, 1942 over Brest when 11 of their new Mk. IXs were lost. This calamity removed the Spitfire IX from the Secret List, and when the Squadron re-formed it was equipped with Mk. VBs.\*

When the Wing claimed its 1,000th German aircraft destroyed on May 25, 1943, there followed a

\*The Spitfires were part of the fighter cover for a U.S.A.A.F. 97th Bomb Group (B-17 Flying Fortresses) mission against Morlaix airfield (near the Channel port in Finistere). Exeter Control sent the Spitfires hotfoot after the 97th BG who had left the rendezvous too early. The target was hidden by cloud, the bombers got lost and the Spitfires were carried 100 miles out into the Bay of Biscay "riding on a 200 m.p.h. jetstream" tail wind. When, eventually, all broke cloud they were over Brest Harbour. The 97th BG immediately headed for home but the luckless Spitfires had no fuel reserves. Ten of No. 133 Squadron's Mark IXs decorated the Brittany peninsula while a more fortunate eleventh managed to make the Cornish coastline and "glided ashore."

Spitfire Mk. IXC, FN-C (PT934) of No. 331 Squadron undergoing maintenance at Kjevik AFB, Norway, circa 1945.

(Photo: Audun Sjurseike)



memorable party at Grosvenor House, in London's Park Lane, W.1, with three bands providing music, a free bar, and exotic table dressing that included three large lobsters labelled *Hitler*, *Göring* and *Mussolini*.

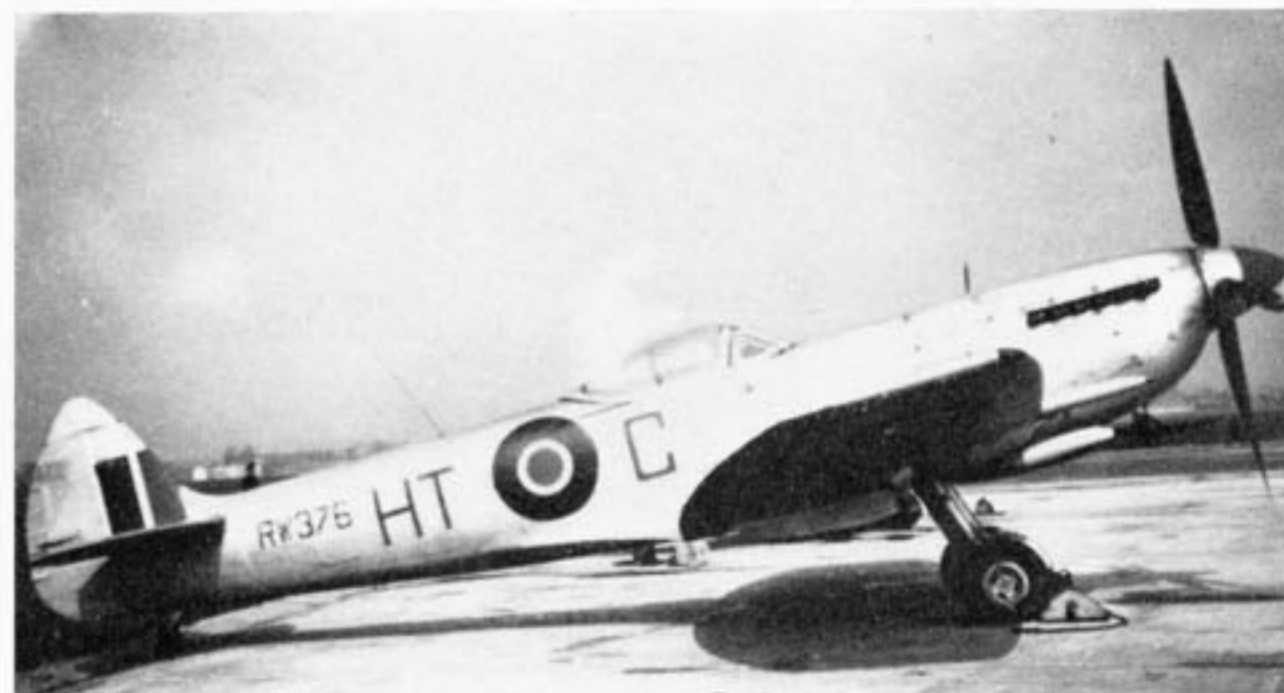
After Germany's defeat in North Africa, the Allies invaded Sicily on July 10, 1943. The first fighters to land on Sicilian soil were the Spitfire Mk. Vs and IXs of No. 92 Squadron, at Pachino on the 14th.

On September 3, the British Eighth Army crossed the Straits of Messina and, by July 1944, they were through Rimini and advancing to Ravenna on the Adriatic coast. No. 601 Squadron took part in the all-out assault on road and rail bridges. One pilot, who flew a Mk. IXc (MK551, coded UF-T) on July 26, recorded in his log book:

**"Sortie 1.** Bombing railway bridge at Ravenna (four aircraft)—two hits on railway. No flak over target, but some on way home. **Sortie 2.** Bombing road/railway south of Ravenna (four aircraft)—two near misses on bridge. One (bomb) hang-up. No flak. **Sortie 3.** Bombing 1st Parachute Division H.Q., S.E. of Florence, also strafed it (eight aircraft). Direct hits on building, six other bombs in area. Hits all over building with cannon fire. Heavy, medium and light flak. No losses."

An example of the Spitfire Mk. XVI that closely resembled the Mk. IX in its final form. HT-C (RW376) was attached to No. 601 (County of London) Squadron in 1946.

(Photo: via P. W. Moss)





One of the 76 Spitfire IXs that were transferred to the Czech Air Force in 1946. This Spitfire (A-717) was used by the Military Pilot School. (Photo: via Bruce Robertson)

In Europe, the Allies were preparing to invade. Softening-up daylight assaults from the air were carried out by squadrons of the Allied Expeditionary Air Force (A.E.A.F.) throughout May 1944. Characteristic of the Spitfire's rôle at this time is a fragment from the operational history of one particular Spitfire (MK356), a Canadian squadron Mk. IX that survived World War 2 and is still extant. MK356 served with No. 443 Squadron, R.C.A.F., during the period March 11 to August 6, 1944 and the following sorties were made in May. The hours quoted are for take-off:

**May 5**—Sweep into Belgium 06.55 hrs. led by Wg. Cdr. J. E. Johnson. Four FW 190s claimed as destroyed during the sweep. **May 7**—Close escort to thirty B-25s 19.05 hrs, bombing Cambrai area. **May 10**—Escort to Bostons and Mitchells 09.00 hrs., bombing near Charleroi. **May 13**—Dive-bombing bridge north of Cleres 11.15 hrs. **May 23**—Sweep into Paris area 07.00 hrs. **May 24**—Dive-bombing huts at Bailley-en-Riviere 11.25 hrs. **May 25**—Dive-bombing marshalling yards at Mons with 500-lb. bombs 11.25 hrs. **May 27**—Dive-bombing Noball\* target in Abbeville area

\*Noball was low-level attack on V-I flying bomb and V-2 rocket sites, storage depots and manufacturing centres.

An example of an instructional Spitfire IX (6237M) with its original serial (ML171) still under the wing.



One of the Mk. IXs used by the E.C.F.S. Hullavington was MJ216 coded FCW-F. (Photo: J. D. R. Rawlings)

11.15 hrs. **May 28**—Sweep over Cambrai to Denain area 11.30 hrs: Sweep to Creil in Paris area 15.45 hrs."

With the preparations for D-Day, the Spitfire IX squadrons—in common with all aircraft of the A.E.A.F.—had been liberally decorated with black and white stripes around the fuselage and wings by dawn on June 4. This marking was for instant Allied recognition that the aircraft was "friendly" to trigger-happy troops and airmen alike.

On June 6 the invasion of Europe took place. Nine Spitfire squadrons provided the initial cover as the first troops landed in the early hours of that historic morning. The first Spitfire Mk. IX (MJ339) to land in Northern France did so inadvertently when P/O D. L. Kidd of No. 602 Squadron was forced to make a wheels-up belly landing in the restricted bridgehead area because of engine failure.

By June 10 No. 144 Wing, comprising Nos. 441, 442 and 447 Squadrons, R.C.A.F., was operating from the lodgement area. Three weeks after D-Day, 30 squadrons were based in France. But an unforeseen crisis arose when the limestone dust of the temporary landing grounds began to clog the Merlin's air induction system. The Spitfires had to be quickly fitted with tropical Vokes filters; and, at Hucknall, Rolls-Royce carried out further air filtration tests with a Mk. IX (MA357).



The menace of the V-1 pilotless jet-propelled flying bomb (oddly nicknamed *Doodle-bug*) was realised on June 13. In nine days over 2,000 were launched against London and the scale of attack was to be increased.

Anti-aircraft guns, balloon barrages and fighter squadrons were deployed to destroy them as they crossed the Channel. The fighter squadrons of the Air Defence of Great Britain (A.D.G.B.) consisted of Mosquito night-fighters and Mustang, Tempest, Typhoon and Spitfire day-fighters; but they were hard put to achieve a 400-m.p.h. interception. The Spitfire IX, in particular, had to be stripped of armour and paint, the surfaces had to be highly polished and 150-octane fuel boost specified to give it extra speed.

Shooting down the V-1 (Fieseler Fi 103) was also a hazard to fighter pilots. To approach it closer than 100 yards before opening fire meant that the attacker would also be blown up. But a solution was tried out on June 23 when a Spitfire pilot flew alongside a V-1 and manoeuvred himself until the wing of his aircraft was under that of the V-1's and he then simply banked away, causing the V-1 to fall out of the sky.

With the declining resistance of the *Luftwaffe*, the Spitfire was used more and more for ground attack work. But the Germans had, by September 1944, brought their new Messerschmitt Me 262 twin-engined jet fighter into service. Sightings were made and on October 6 the Spitfire IXs of No. 401 Squadron, R.C.A.F., encountered one of them in the Dutch air space of Nijmegen, near the famous Arnhem battle area and at a lower altitude. Making use of his superior height, the Canadian squadron leader dived and opened fire with a long burst from some 250 yards range, and the Me 262 spun into the ground.

Other encounters with the incredibly fast but not so manoeuvrable Me 262 resulted in further killings. But with VE-Day on May 8, 1945, the Spitfire IX's combat career came virtually to a close, only to see brief action again in the 1948 Arab-Israeli "War of Liberation" when it served in both the Egyptian and Israeli air forces.

*S/Ldr. G. R. S. McKay's Spitfire Mk. IX E (TE215) of No. 130 Squadron at Odiham in 1946. AP-A was one of the few Mk. IXs to have the tear-drop cockpit canopy fitted.*



*Preserved at Bodo, Norway, is this Mk. IX E (MH350). Note victory swastikas under cockpit window.*  
(Photo: Royal Norwegian A.F.)

*One of the 36 H.F. Mk. IXEs sold to Denmark in 1946 to become 422 (ex RR252) in the Danish Air Force. It was scrapped in 1952.*  
(Photo: via N. Kranklin)



#### EXPERIMENTAL Mk. IXs

For comparative trials against a captured Focke-Wulf FW 190, a Spitfire Mk. IX (BS980) went to the R.A.E. Farnborough in August 1942.

The British Royal Navy was interested in the Mk. IX and had BS390 fitted with an arrester hook for trials at R.N.A.S. Crail, Fifeshire, Scotland.

For calibrating engine and propeller efficiency, EN409 was used by the R.A.E., Farnborough, from September 1943 to January 1944. The test equipment included: A pitot static head designed for high speeds with large bore tubes to reduce lag; a comb of pitot



*Ex-I.D.F./A.F. Spitfire Mk. IX Es of the Union of Burma Air Force with rocket launch points—three to each wing. Period early 1955. (Photo: Capt. A. P. Bishop)*

*Civilian Spitfire Mk. IX C operated by COGEA as OO-ARC until it was sold to W.W.2 Spitfire pilot, John N. Paterson of Canada, in 1961. It first flew as CF-NUS on January 13, 1962, and is now painted up in wartime camouflage with the code letters AU-H. (Photo: via J. M. G. Gradidge, Air-Britain)*



heads to determine the propeller efficiency up to Mach 0.89; a set of differential pressure gauges modified from rate of climb indicators; an underwing electrical thermometer connected to a Tinsley marine-type, reflecting galvanometer giving lagless readings to within  $\frac{1}{2}^{\circ}\text{C}$ ; and a desynn-type propeller pitch indicator giving pitch to within a  $\frac{1}{4}^{\circ}$  accuracy.

Four Mk. IX airframes (MA587; MH 874; JL349 and AA873) are known to have been used by Rotol Ltd. for propeller tests. The first (MA587) was fitted with a 4/6 size counter-rotating six-blade propeller and flown for 230 flying hours between October 24, 1944 and April 21, 1945. MA587 underwent, additionally, a 30-hour oiling test period for the translational bearings, which were satisfactory. MH874 was similarly fitted in February 1944 and had a Merlin 63A specially adapted to take the Merlin 71 reduction gears. The third Mk. IX (JL349) was tested between April 18 and July 14, 1944, when the translational bearings failed after 48.45 flying hours. The fourth Mk. IX (AA873) was used by Rotol Ltd. but there is no information available on the type of tests carried out.

### THE SPITFIRE IX SEAPLANE

As an extension to the floatplane experiments carried out by Folland Aircraft Ltd. at Hamble, near Southampton, in 1942 on three Mk. Vs (W3760, EP751 and EP754), one Mk. IXB (MJ892) was similarly converted. Modifications involved fin-area increase by a ventral stabilizer fin to off-set the additional side area of the floats (inner track, 10ft.) and, extensions to the fin leading-edge and rudder area.

The conversion work was not considerable and, apart from the modifications to fin and rudder, only the undercarriage unit and mechanism had to be stripped out and a tropical radiator fitted with a special air scoop designed to deflect sea spray on take-off.

The seaplane Spitfire handled well, with only 30 m.p.h. to separate it from the landplane counterpart. Although the seaplane had a tendency to "patter" from float to float on take-off and landing, its manoeuvrability was well up to combat standard.

A small batch of Mk. IX seaplane conversions was planned at Hamble, but the contract was cancelled when the efficiency of Japanese fighters was appreciated—the "Zero" (Navy: Mitsubishi A6M *Zero-Sen*) in particular—and the Seaplane Spitfire with reduced performance would have been useless.

### STRUCTURAL FAILURE

Six accidents involving structural failure of the wing were reported, four of them in the first six months of 1943. With the Mk. IX, the all-up weight increased by about 600 lb. over the Mk. V. Experience showed that when structural failure took place, the break would occur either in the centre-section or in the main spar. Modification No. 842 served to strengthen the centre-section, but it was recommended that a more fruitful line of attack would be to improve the Spitfire's flying characteristics. The Mk. IXs involved in the structural failures in 1943 were: BS251 on January 30 during a dive (No. 332 Squadron); BS404 on February 2 during a dive (No. 306 Squadron); BR627 on May 12 during a spin (No. 332 Squadron), and BS385 on May 19 during a dive (No. 421 Squadron).

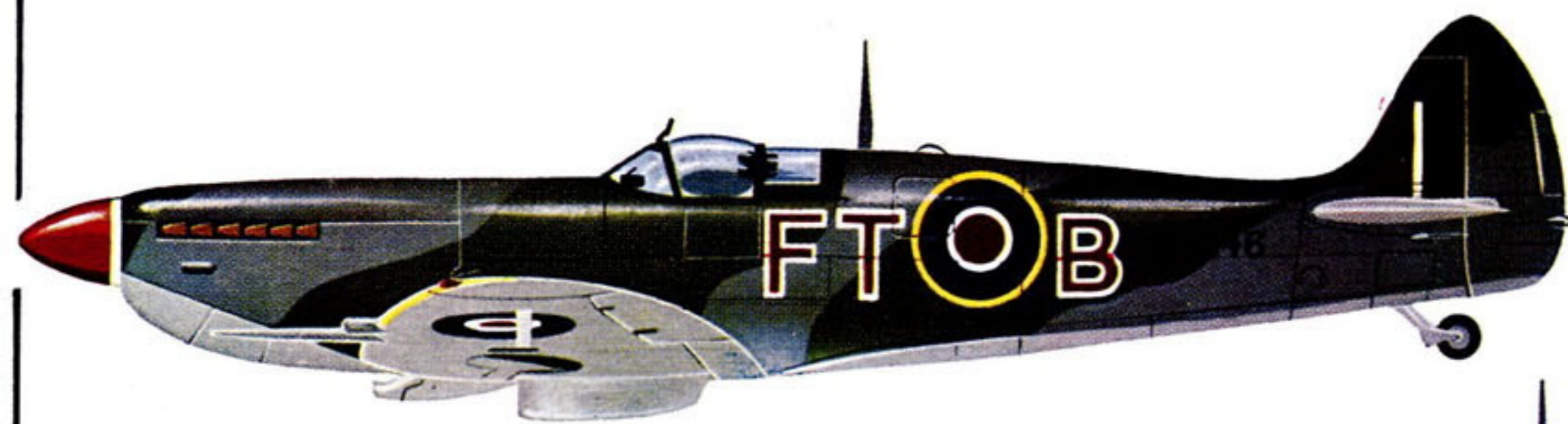
Later it was found that, with the "E" wing (where an external bomb load had been carried), wing buckling had occurred in the bay containing the outboard-mounted cannon with the bomb attachment point. Where this happened new wings had to replace them, as it was thought that these two factors were responsible for the wing buckling.

### FOREIGN AIR FORCE SERVICE

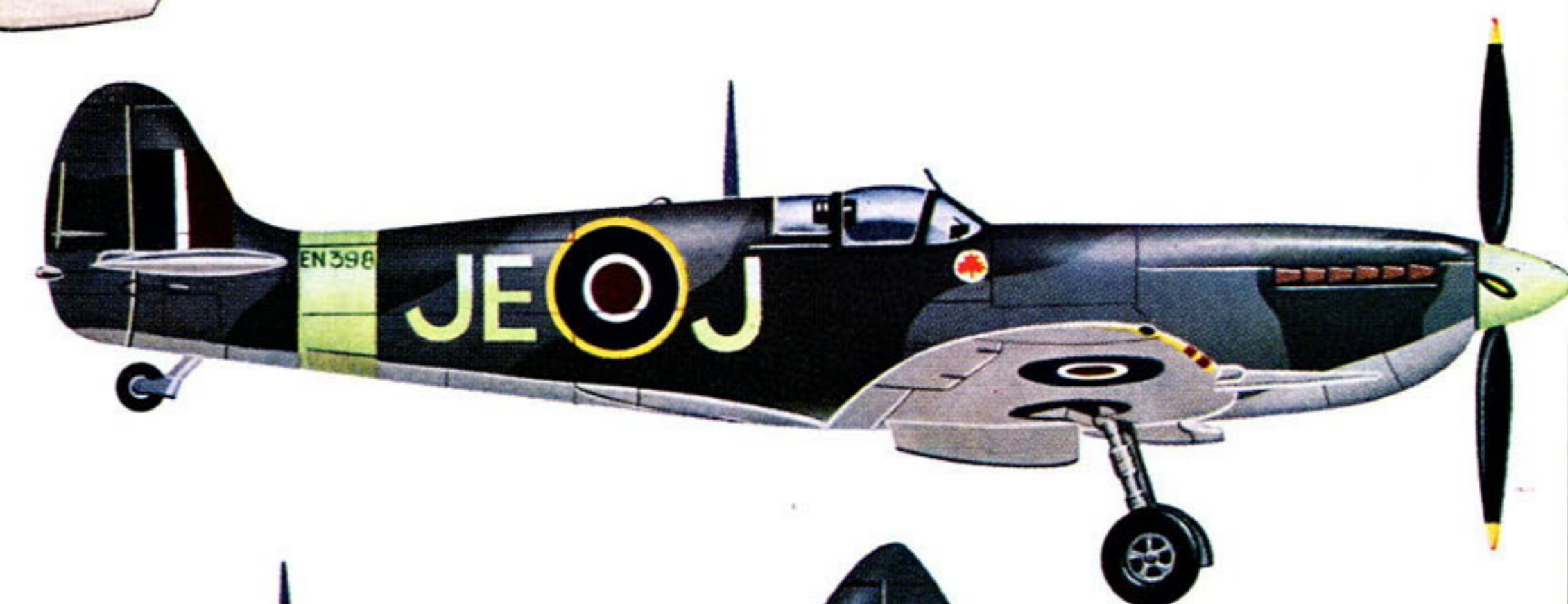
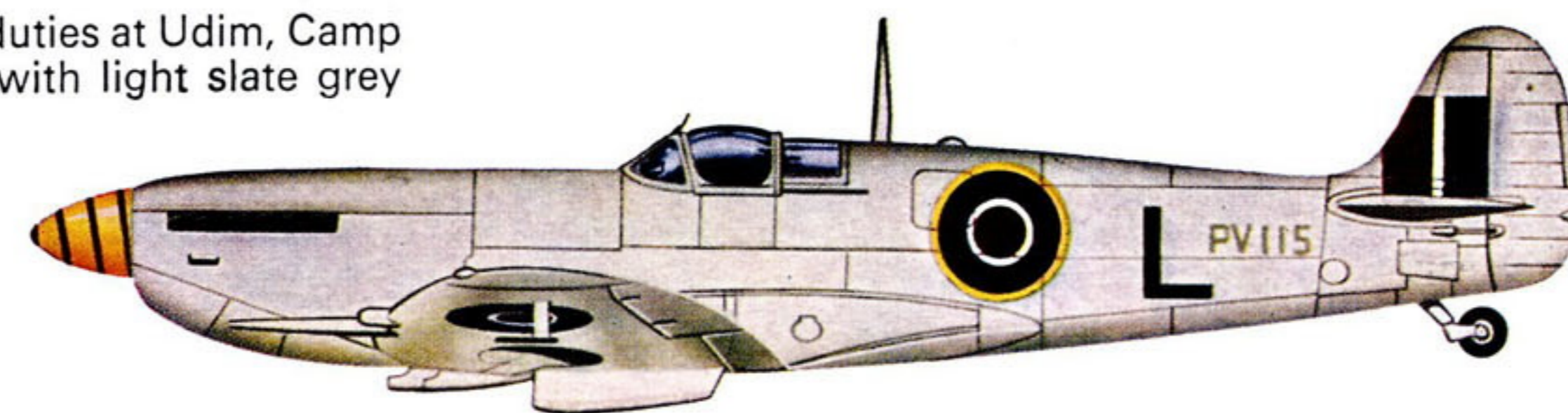
From mid-1944 until April 1945, the U.S.S.R. received no fewer than 1,188 Spitfire IXs under the Aid to Russia programme. Turkey received approximately

*W/C A. G. Page, D.F.C. and Bar, in his personal Spitfire with initials AGP under the spinner. Photo taken after D-Day in Normandy 1944. It can be clearly seen that with the "E" wing both cannon and bomb carrier are in line, a factor thought to have caused wing buckling. (Photo: I.W.M.)*





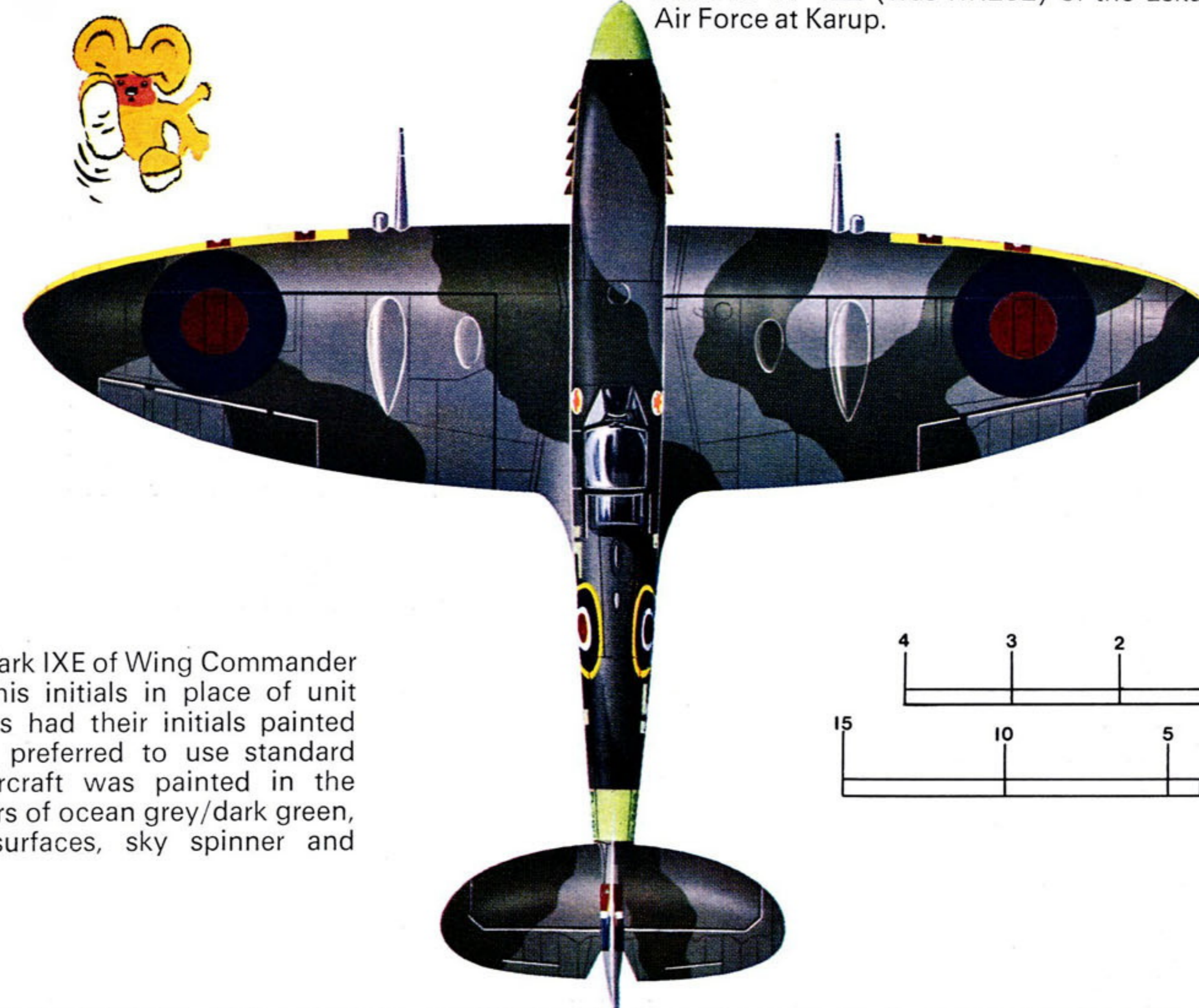
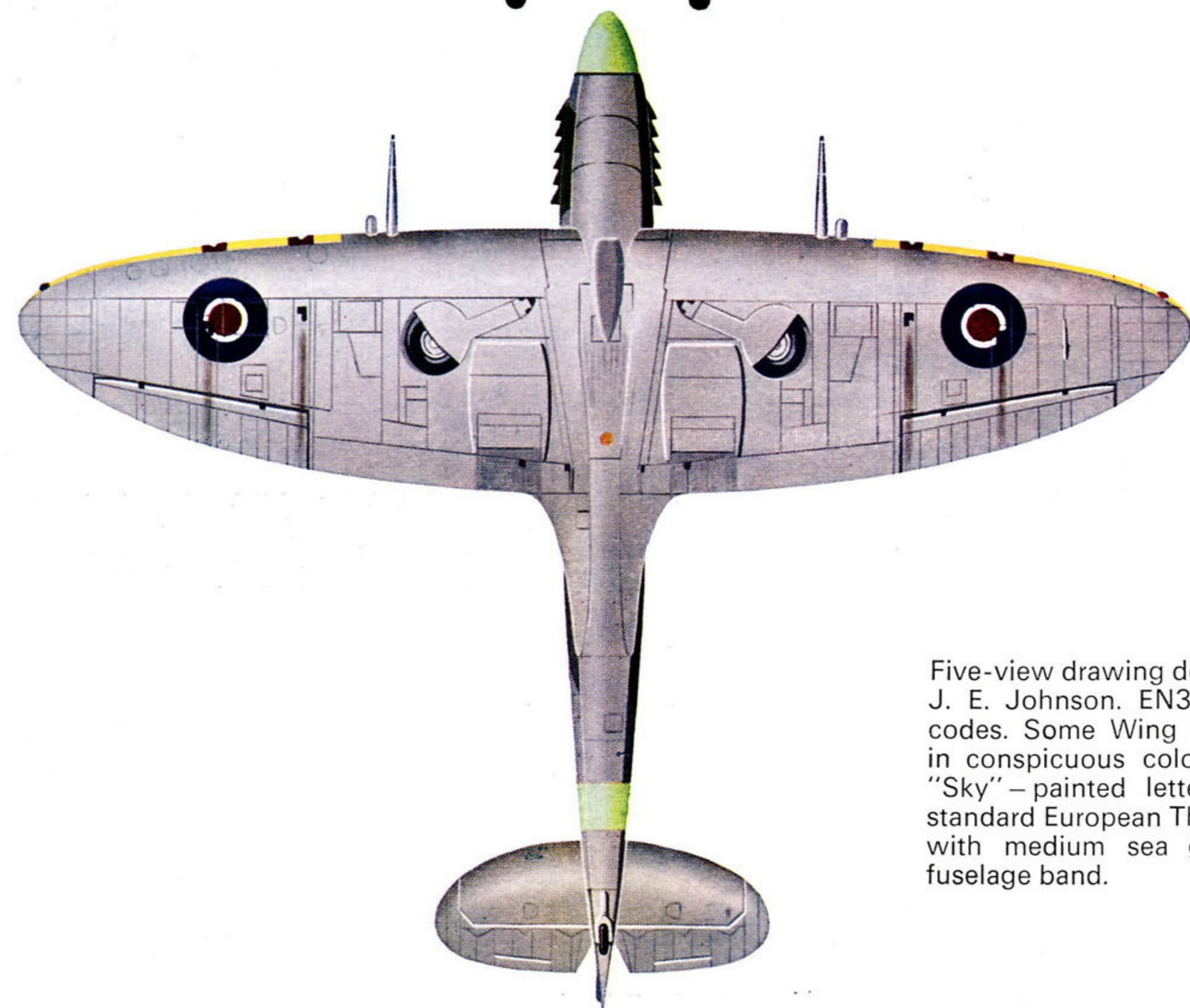
Mark IX, PU115, used for photographic duties at Udim, Camp Fordo, or Laverno, Italy. White overall with light slate grey serials.



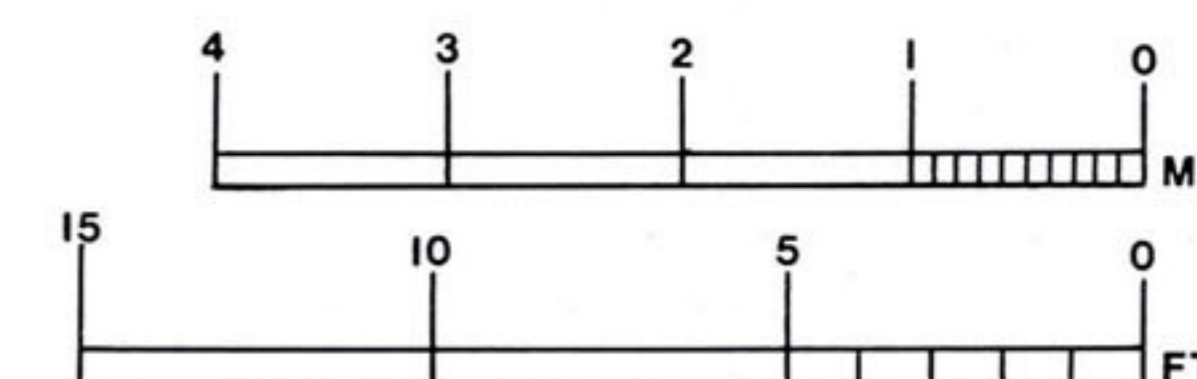
RR246 of No. 43 (F) Squadron "A" Flight, circa 1945. "B" Flight had blue codes and aircraft letter. Type C upper wing roundel. Sky band painted out. On some aircraft under-surface grey was used for this purpose.



Mark IX 41-422 (was RR252) of the Eskadrille 725, Danish Air Force at Karup.



Five-view drawing depicts the Mark IXE of Wing Commander J. E. Johnson. EN398 carried his initials in place of unit codes. Some Wing Commanders had their initials painted in conspicuous colours; others preferred to use standard "Sky"-painted letters. This aircraft was painted in the standard European Theatre colours of ocean grey/dark green, with medium sea grey undersurfaces, sky spinner and fuselage band.





Pre-dawn take-off of a MET. Mk. IXC attached to the first R.A.F. Met. Flight to operate on the Continent, circa 1945. (Photo: I.W.M.)

44 L.F. Mk. IXs. The U.S.A.A.F. in Britain during 1943-4 had 16 transferred from the R.A.F.

Surplus R.A.F. Mk. IXs were made available for export from May 1945. France signed an agreement on November 24, 1945, for the transfer of 207 H.F. and L.F. Mk. IXs. Some of these were later shipped by France to Algeria and French Indo-China (now Viet-Nam).

To form the initial equipment of the re-constituted Czechoslovakian Air Force, an agreement to supply 76 F. Mk. IXEs was signed on February 19, 1945, and ultimately they were flown by Czechoslovak pilots across Europe to Prague.

Norway signed an agreement to receive 68 L.F. Mk. IXEs on September 27, 1946.

Under the terms of the Italian Peace Treaty of 1947, Italy received 110 L.F. and H.F. Mk. IXs.

The Royal Netherlands Air Force received 54 F., L.F. and H.F. Mk. IXs between September and December 1946. Twenty were operated in the Netherlands East Indies (Indonesia) until independence. Three were civilianised as PH-NFO, 'NFP, 'NFR. Three T. Mk. 9s were exported on March 23, 1948, as H-97, '98 and '99 (ex-MK715, BF274, BS147) and later flew as 3W-20, 3W-21 and 3W-22. H-99 was civilianised as PH-NFN for Schreiner & Co. as a target-tower.

The Egyptian Air Force received 21 L.F. Mk. IXs, delivered August to September 1946, and these were used against Israel in the 1948 "War of Liberation". Egypt also bought one T. Mk. 9 that was ferried out from Britain as G-ALJM in March 1950.

The Israel Defence Forces/Air Force had at least 30 L.F. Mk. IXs and XVIs obtained from Czechoslovakia and ferried via Yugoslavia in 1946. They were subsequently refurbished by Bedek at Lod (Lydda) Airport and sold to the Union of Burma, in 1954-5, with U.B.A.F. serials in the UB420 range.

Greece received 77 L.F. and H.F. Mk. IXs, although deliveries were not completed until 1949.

Belgium received a number of Mk. IXs, along with Mk. XVIs, that were numbered in the series SM-1 to SM-48. They were used by the Fighter School at Coxyde. Six were later civilianised for target-towing.

Denmark received 36 H.F. IXs and four instructional L.F. Mk. IX airframes, the former being given Royal Danish Air Force serials 401 to 436.



One of ten Spitfire Mk. IX two-seat trainers sold to the Indian Air Force circa 1946. (Photo: Hawker Siddeley)

South Africa ordered 139, mainly in the H.F. rôle, and these were delivered by ferry pilots of No. 46 Group, Transport Command, R.A.F., from April 1947. On arrival they were considerably modified and re-designated Mk. IXA, IXB and IXC. They were also re-numbered in the S.A.A.F. series from 5501 onwards.

Only one H.F. Mk. IX (PL194) was delivered to the Argentine Air Force in mid-1947. It was later civilianised as LV-NMZ.

Yugoslavia had an unknown quantity supplied, including EN135 and SM147.

Other export orders for the T. Mk. 9 conversions consisted of six to the Irish Air Corps with the serials 158 to 163. The first two (158 and 159) and 163 later returned to the U.K. as G-ASOZ, 'VAV and 'WGB. The Indian Air Force bought 10 Mk. 9s. Cancelled orders were for ten from the Argentine and six from Iraq.

### SPITFIRE IX & XVI—FILM STARS

Happily, the Spitfire in various marks has managed to maintain a relatively high survival rate and, around the world, devotees can track down specimens of the Marks IX and XVI in museums and elsewhere. The transient ones are the "film stars" and other privately-owned examples which may be put up for sale at short notice.

Darryl F. Zanuck's D-Day wide-screen movie, *The Longest Day* featured the Spitfire Mk. IX although the abbreviated flying sequences eventually screened are a tribute to the magisterial dispassion of the film editor. For this epic, Belgium's COGEA Nouvelle (contractors for gunnery target-towing) supplied three of its six for-sale. H.F./L.F. IX BCs. These were combat-

The Turkish Air Force had at least 44 Spitfire L.F. Mk. IXEs supplied to them in 1945. This example retains its R.A.F. serial PV140 and long-range tank. (Photo: J. D. R. Rawlings)





Three Spitfire L.F. Mk. IXs of No. 32 Squadron on detachment at Shallufa in 1946. GZ-N is MJ715. (Photo: J. Old)

painted to represent aircraft of No. 340 (Free French) Squadron Spitfires: "GW-O" (civil-registered OO-ARB; ex-R.Bel.A.F. SM-43; ex-MH729); "GW-R" (OO-ARD; SM-40; ex-MH415) and "GW-D" (OO-ARF; SM-37; ex-MK923). These, together with OO-ARA (SM-41); OO-ARC (SM-39) and OO-ARE (SM-36) all formerly operated from Ostend's Raversijde aerodrome.\*

The Autumn 1969 premiere of *The Battle of Britain* (shot in Spain and East Anglia's Duxford, Cambridgeshire, aerodrome where 30 years before the first Mk. I Spitfires entered R.A.F. service with No. 19(F) Squadron), probably marks this Harry "James Bond" Saltzman and J. Benjamin Fisz production in the same classic mould as the fabulous *Hell's Angels* (Sept. 1931: United Artists, director, Howard Hughes).

No fewer than 30 Spitfires of various marks were brought together by Spitfire Productions Ltd. and the Hamish Mahaddie Partnership. Twelve actually flown included four Mk. IXs and two Mk. IX two-seat trainers (MH415 and 434; and trainers MJ772 and TE308) together with "taxying only" and static Mk. IX and XVI.

## HANDLING THE SPITFIRE F.IX

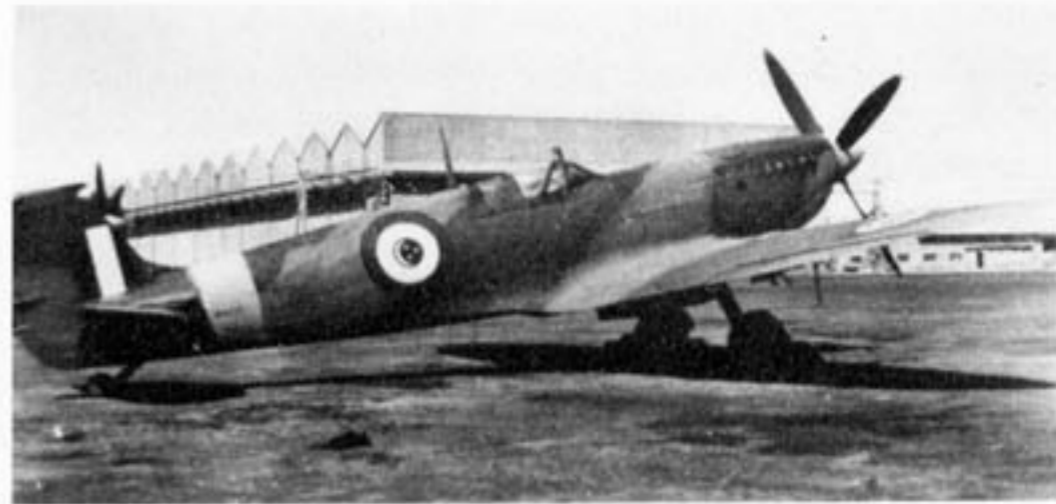
(Merlin 61 or 63)

The pilot, on approaching the Spitfire IX he is about to fly, should ensure that the wheel chocks are in

\* H.F. Mk. XC (SM-36, 39 & 43); H.F. Mk. IXB (41); L.F. Mk. IXB (40) and L.F. Mk. IXC (37).

Two L.F. Mk. IXEs of the I.D.F./A.F. with clipped wings and Israel military markings.

(Photo: Air-Britain archives, via Charles W. Cain)



An Egyptian Air Force Spitfire Mk. IXC (EN314) at No. 107 M.U., Kasfareet, in May 1947. (Photo: D. A. Wylds)

position and that the ground immediately below the propeller is clear of small stones or rubble.

On entering the cockpit check the fuel gauge and, if an auxiliary tank is fitted, ensure that the cock is "OFF". Then check that the undercarriage selector lever is down (and that the "DOWN" indicator shows green). Control-column and rudder bars are moved about to ensure that ailerons, rudder and elevators are free to move.

The pilot is now ready to start the Merlin and warm it up by setting the fuel cock at "ON", pushing the throttle half-an-inch open; ensuring that the propeller control is fully forward and the carburettor air-intake is "OPEN" (except when tropicalised and take-off is from a sandy or dusty airfield, when position is "CLOSED").

Now work the priming pump until the fuel reaches the priming nozzles which can be judged by the sudden increase in resistance. By switching-on the ignition and pressing the starter and booster coil buttons, the propeller and engine are permitted to turn-over for a period not exceeding 20 seconds.

If the engine fails to fire first time, wait 30 seconds before a second attempt. By working the priming pump as vigorously as possible while the engine is turning, it should start a cold engine after three strokes at +30°C, seven at +10°C and twelve at 0°C. At temperatures below freezing it will undoubtedly be necessary to continue priming after the Merlin has fired and until it picks up on the carburettor.

As soon as the engine starts, the starter and booster-coil buttons must be released. With the engine running satisfactorily, screw down the priming pump and open up the engine to 1,000 r.p.m. to warm it up. During the warm-up, check temperatures and pressures, pressing the radiator test push button so that the ground crew can check that the shutters open.

Before further tests the pilot signals for three men on the tail and one on the starboard wing-tip to hold the aircraft down as he opens-up the engine to +4 lb./sq. in. boost to test the two-stage, two-speed supercharger by operating the test push button. The r.p.m. should fall as the "S"-ratio is engaged and the red light comes on. At the same boost, check the operation of the constant-speed propeller and, with the control fully back, the r.p.m. should fall to 1,800. Then, with the propeller control fully forward, open-up the throttle to the gate to check that the take-off boost and static r.p.m. is at 3,000.

When satisfied with this test, throttle back to +9 lb./sq. in. boost and test each magneto in turn,

noting that the drop does not exceed 150 r.p.m. Before taxiing for take-off position, check brake pressure is at 80 lb./sq. in. and pneumatic supply pressure is at 220 lb./sq. in.

With everything functioning well, the pilot signals to the tail and wing "human weights" that their task is over; and the chocks are removed from the wheels. With a burst of power the Spitfire rolls forward to take up position for take-off. Taxiing has to be carried out with caution for, with the tail down, the long nose blocks the pilot's forward vision. Only by peering out of the cockpit sides and gently fish-tailing can he see his way forward.

Prior to actual take-off, check that the trimming tabs on the elevator are half-a-division, nose-down; that rudder is fully right and propeller control is fully forward. Check the state of the lower main tank; that the drop-tank cock is "OFF"; the electric booster pump (if fitted) is "ON"; the rear fuselage tank cock (if fitted) is "OFF"; the flaps are "UP"; the supercharger over-ride switch is at "AUTO" (and the red light is out) and that the carburettor air intake is "OPEN" or "CLOSED", according to the conditions already related.

On closing the cockpit hood, the pilot is now ready to take-off by opening the throttle slowly until a boost of +7 lb./sq. in. is reached, or to the gate if needed. Any tendency to swing can be corrected by the rudder. Once airborne raise the undercarriage, making sure the red indicator "UP" comes on. At 160–180 m.p.h., start to climb at the maximum rate from sea level to 26,000 ft.

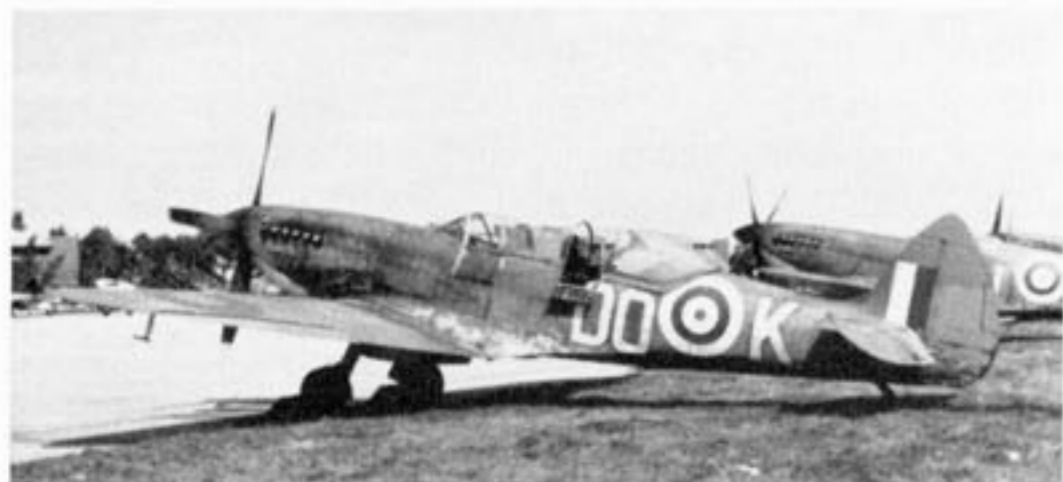
The fuel tank pressure cock should normally be kept "OFF", but must be turned "ON" if the fuel pressure warning light comes on with a drop in pressure.

The pilot converting from the Mk. V to Mk. IX will notice that the Mk. IX has more longitudinal stability in flight. At around 22,000 ft., the two-stage supercharger cuts in and there is a marked improvement in performance at higher altitudes.

For aerobatics, here are the recommended speeds: 280–300 m.p.h. for a loop; 220–260 m.p.h. for a roll; 320–350 m.p.h. for a half-roll off a loop; and 330–380 m.p.h. for an upward roll. Flick manoeuvres are not permitted and spins are restricted to two turns.

When preparing to land, reduce speed to 160 m.p.h.; open the cockpit hood; lower the undercarriage; select flaps down; check that the propeller control is

*A view of G-AWGB in its film rôle disguise (The Battle of Britain) at R.A.F. Duxford, Cambridgeshire, in 1969.*  
(Photo: R. W. Cranham)



*A superb shot of an I.D.F./A.F. Spitfire L.F. Mk. IXE taxiing. Note miniature repeat serial 79 and national marking between large 7 and 9.*

(Photo: Air-Britain Archives, via Charles W. Cain)

fully forward; also that the supercharger's red light is out, the carburettor air-intake is adjusted to conditions and that the brake and pneumatic supply pressures are still functioning correctly.

Since the Spitfire IX is nose-heavy on the ground, care must be taken when applying the brakes. The flaps must be raised for taxiing. To stop the engine on parking, the engine is allowed to idle for half-a-minute at 800–900 r.p.m. before pulling the slow-running cut-out and holding it out until the engine stops. Now turn-off the fuel cock and switch-off the ignition.

#### ACKNOWLEDGEMENTS

The co-authors wish to express their appreciation of the co-operation given by senior members of the M.o.D. Air Historical Branch (Air) by granting access to Official Records for the purpose of confirming previously arrived at assumptions and permitting the correction of certain previously published historical misconceptions. The authors also wish to thank the staff of the Photographic Library at the Imperial War Museum for their help with photographs. Our thanks are also extended to expert Bruce Robertson (author of Harleyford's *Spitfire—The Story of a Famous Fighter*) for the use of unpublished material, and his fellow Air-Britain members Dave Birch and Bruce Rigelsford, the latter for his help with colour schemes.

PWM & LJB.

*The Mk. IX C two-seat trainer G-AWGB (formerly Irish Air Corps 163, ex-R.A.F. TE308) at Baldonnel, Eire, on May 8, 1969, prior to its flight to Henlow, Buckinghamshire, in order to participate in The Battle of Britain film. Pilot was F/Lt. Armstrong.*  
(Photo: T. Kearns)





One of the few airworthy Mk. IXs left, G-ASJV is seen taxiing at R.A.F. Coningsby in 1963. Note Civil Air Ensign on the fin. (Photo: via Bruce Robertson)



This photograph of July 1942 shows an example of an F. Mk. IX C of No. 64 Squadron—the first unit to receive Mk. IXs. Along each outboard wing leading-edge is the yellow strip which was adopted (like the yellow-tipped propeller blades) to assist ground crews when working around Spitfires in the pre-dawn darkness. Note also the larger cannon blisters in place of the more familiar narrow-chord, tear-drop blisters. (Photo: via M. Garbutt)



The Spitfire Mk. IX (MK188) in Dutch military markings at R.A.F. Colerne. (Photo: K. Rutherford)

## SPECIFICATION

### LEADING DATA

#### Engines

F. Mk. IX	1 × 1,565 h.p. Rolls-Royce Merlin 61 or
	1 × 1,650 h.p. Rolls-Royce Merlin 63
L.F. Mk. IX	1 × 1,580 h.p. Rolls-Royce Merlin 66
H.F. Mk. IX	1 × 1,475 h.p. Rolls-Royce Merlin 70
L.F. Mk. XVI	1 × 1,580 h.p. Rolls-Royce (Packard built) Merlin 266

#### Engine installation

Mounted on steel tubular cantilever members pin-jointed at four points to the firewall. 7.5 Imperial gallon oil tank under the engine mounting. Engine weight: 1,640 lb.

#### Propeller

**Merlin 61** with four-blade, constant-speed Rotol 35°-pitch range of Types R3/4F5/2 or R3/4F5/3, made of Dural metal. Alternatively, with Type R5/4F5/4, made of Jablo (a compressed wood) or Hydulignum. **Merlin 63, 66 and 70** with four-blade, constant-speed Rotol 35°-pitch range of Type R12/4F5/4 made of Jablo or Hydulignum. Diameter: 10 ft. 9 in.

#### Fuel tanks

Two forward of the cockpit, the top of 48 Imperial gallons and the lower of 37 gallons (self-sealing). Auxiliary drop-tanks of 30, 90 or 170 gallons capacity optional, fitted flush with the fuselage underside. Later, a 50-gallon cylindrical auxiliary tank became standard. On some aircraft a secondary, 26-gal. tank was fitted in the rear fuselage for use with the 170-gal. auxiliary drop-tank on reinforcing flights. Experimental fuel tanks have been discussed on page 23. Later aircraft were fitted with a 41- or 33-gal. tank behind the cockpit.

#### Radiators

Two Morris QCP coolants, each of 1.24 sq. ft., fitted underwing, with a Morris QCR intercoolant of 0.72 sq. ft. within (starboard) and a Morris QCO oil cooler of 0.6 sq. ft. within (port). Tropicalisation of air intake by Vokes 1943 Aero Vee filter.

#### Flying limitations

- Maximum speeds:
 

Diving	.. .. .	450 m.p.h.
Undercarriage down	.. .. .	160 m.p.h.
Flaps down	.. .. .	160 m.p.h.
- Restrictions:
  - Spinning not permitted with bomb load.
  - Violent manoeuvres with bomb load to be avoided.
  - The angle of dive with bomb load not to exceed 40°.
  - Straight flying only with drop-tanks greater than 30 gal.

### Construction

Fuselage of stressed skin monocoque construction comprising one dorsal and one each fuselage side on top section longerons, plus two lower Vee-section longerons. Oval channel formers with flush-riveted Alclad skin. Main wing spar built into front fireproof bulkhead.

Tail unit bolted on the rear fuselage and comprising an integral fin of stressed-skin construction. Tailplane in port and starboard halves and bolted to the fin. Control surfaces of metal construction and fabric covered (although the elevators of later aircraft were metal covered).

The wing main spar booms constructed as a closed telescope with sheet webs. Main spar and leading-edge forms torsion box Dee-spar. Ribs built-up of light alloy plain angle: light channel section rear spar carrying split flaps and Frise ailerons. Light alloy Alclad stressed-skin covering. The wings attached by seven bolts at the main spar (three top, four bottom) and one at the rear spar.

The main undercarriage comprising two Vickers cantilever, oleo-pneumatic shock-absorber legs retracted hydraulically. Fixed tail wheel with Mk. IX and early Mk. XVI; but retractable in late production Mk. XVI with rear-vision fuselage.

### Dimensions

Wing span:	Normal 36 ft. 10 in.	242 sq. ft. area
	Clipped 32 ft. 2 in.	231 sq. ft. area
Length:	Normal rudder 31 ft. 1 in.	Broad chord rudder 31 ft. 4½ in.
Tail span:	10 ft. 6 in.	Area 31.46 sq. ft.
Height:	11 ft. 5½ in. (or 12 ft. 7¼ in. tail down)	
Wheel track:	5 ft. 8½ in.	

### Weights

Maximum permissible take-off:	9,500 lb.
Maximum for normal flying:	7,900 lb.
Normal take-off:	7,343 lb.
Total removable military load:	1,046 lb.
Total expendable load:	981 lb.
Tare (empty) condition:	5,634 lb.
Fuel and oil (no auxiliary):	672.5 lb.
Armour:	200 lb.
Pilot and parachute:	approx. 200 lb.

### Performance

Maximum level speed:	F. Mk. IX 408 m.p.h. at 25,000 ft.
	H.F. Mk. IX 416 m.p.h. at 27,000 ft.
	L.F. Mk. IX 404 m.p.h. at 21,000 ft.
Normal cruising speed:	324 m.p.h. at 20,000 ft.
Rate of climb:	3,950 ft./min. Climb to 20,000 ft. in 5-7 minutes.
Service ceiling:	43,000 ft.
Stalling speed:	Undercarriage and flaps up 94 m.p.h.
	Ditto and flaps down 84 m.p.h.
Range:	434 miles with 85 Imperial gallons
	980 miles with 175 gallons

## SPITFIRE Mk. IX TRAINER CONVERSION

### Engine Installation

One Rolls-Royce Merlin 66 of 1,580 h.p.  
Propeller: Rotol Type R12/4F5/4 four-blade, constant-speed, 35°-pitch range.

### Fuel Tank Capacities

Total internal capacity 94 Imperial gallons.  
Auxiliary jettisonable tank 30 gals.

### Dimensions

Wing span: 36 ft. 10 in. Length: 31 ft. 4½ in.  
Other dimension same as for the F. Mk. IX.

### Weights

Normal all-up weight: 7,300 lb.

### Performance

Maximum speed fully supercharged: 386 m.p.h. at 20,000 ft.  
Maximum speed moderately supercharged: 360 m.p.h. at 9,000 ft.  
322 m.p.h. at sea level.

Rate of climb: 3,970 ft./min.

Service ceiling: 41,500 ft.

Range: At average cruising speed of 228 m.p.h.—234 miles  
With 30-gal. drop-tank—413 miles.

### Accommodation

Pupil in front cockpit, itself moved forward 13½ inches to allow a second cockpit for the instructor behind and slightly above it.

## SPITFIRE L.F. Mk. XVI

Apart from the U.S. Packard-built Merlin 266 engine, details are as for the Mk. IX. Armament was also the same with "C" or "E" wing design, "clipped" or "unclipped." The 20 mm. cannon each fired 120 rounds and the machine-guns each fired 350 rounds. Late production Mk. XVI Spitfires had rear-view fuselages when the front lower fuel tank was usually of 47 Imperial gallons (instead of 37). Additional rear fuselage tanks could be fitted for ferrying or long-range escort operations: 75 gallons in standard fuselages, 66 gallons in rear-view fuselages. Auxiliary drop-tanks of 30, 45 or 90 gallons could be carried under the fuselage.

## SPITFIRE Mk. IX AND Mk. XVI PRODUCTION

### Serial Numbers

These were allocated by the Contracts Branch (C.30A) of the Air Ministry during the war years. Wherever possible, throughout the text, serial numbers have been quoted to give positive authority for personal identification of individual aircraft. Reference to serial numbers permits the reader to check the true identity of Spitfires either mentioned or illustrated in other publications.

Production totals have been arrived at by an exhaustive study of official records. The Vickers-Armstrong figure of 5,104 Mk. IXs built at Castle Bromwich, Birmingham, cannot be substantiated. The official total of 5,665 Mk. IXs built at all factory production lines is, therefore, incorrect.

The co-authors gratefully acknowledge the researches of Dave Birch, of *Air-Britain*, for the complete breakdown of Mk. V conversions at the Rolls-Royce factory at Hucknall, Nottinghamshire.

Production included the following sub-variants: F. Mk. IXb; F. Mk. IXc; F. Mk. IXe; L.F. Mk. IXb; L.F. Mk. IXc; L.F. Mk. IXe; H.F. Mk. IXc; H.F. Mk. IXe; L.F. Mk. XVIc and L.F. Mk. XVIe.



Six Spitfire Mk. IX Es of the Royal Norwegian Air Force.  
(Photo: I.W.M.)

### Conversions by Rolls-Royce Ltd, Hucknall.

**Two interim prototypes:** N3297 arrived at Hucknall in April 1941 with Merlin XX installed; removed for Merlin 60 and finally had a Merlin 61 with which it first flew on September 20, 1941. R6700 arrived at Hucknall on October 13, 1941 with a Merlin III installed. First flew with a Merlin 61 on January 6, 1942 and was delivered to Vickers-Armstrong at Worthy Down that same day.

**Two definitive prototypes:** AB196 despatched to Vickers at Worthy Down. AB197 despatched to the A. & A.E.E. Boscombe Down.

**Five development aircraft:** AA873 and AB507 despatched to A.F.T.U., Hornchurch, Essex; AB499 and AB501 retained by Rolls-Royce for development; and, AB505 despatched to the A.F.D.U. at Duxford.

**Production of Mk. V conversions to Mk. IX:** Not in chronological order (as BR142 was first): AB456 to 460, 508, 511, 522 and 525. BR138 to 143, 369-371 and 621-640. BF273, 274, 335 and 336 (prefix letters BF applied in error for BS and only two serials had the F changed to S, i.e.: BS335 and BS336). BS271-272, 275-290, 337-354 and 530-559. EN112-121, 239-258, 351-370, 515-534, 551-583 and 628-637. ES107 and 291. JK429, 463, 535, 620, 659, 668, 762, 769, 795, 840, 860, 880, 949 and 979. JL106-107, 109-111, 132, 159, 163, 165, 172, 217, 223, 234, 239, 347, 349, 351, 353-356, 359, 361, 364, 366, 369-370, 372-373, 385 and 395. MA298, 329, 357, 645-646, 648, 651, 655 and 657. Total: 284 (not including N3297 and R6700).

### Built by Supermarine Aviation (Vickers) Ltd at Woolston.

**As Mk. IXs:** BR600-605, 977-978, 980-982 and 985-986. BS104-105, 107, 109-110, 112-113, 116, 118-120, 122-123, 125-132, 135-140, 143-149, 150-152, 157, 159, 167, 170, 172, 176, 177, 179-180, 183, 185, 189, 192, 194-196, 198, 200, 202, 227, 239-244, 246-252, 254-255, 292, 294, 296-297, 299, 301-304, 306-319, 335-336, 383-411, 421-426, 428-435, 438-441, 443-447, 449-452, 454-459 (BS454 crashed on company test flight), 461-464, 466-471, 473-474 and 506-515. EN122-148, 152, 156, 171-175, 177, 179-

No. 1435 Squadron, R.A.F., at Brindisi, Spring 1944. Common squadron code letter (usually double letters) is a singular "V". Photograph taken at Brindisi, Italy. Nearest Spitfire Mk. IX (EN199) was built at the Vickers-Armstrong Supermarine factory. Extreme left is a Spitfire Mk. VB (Trop.) behind which is a Special Duties Handley Page Halifax II. Cowling of second nearest Mk. IX carries a shield containing the Maltese Cross.  
(Photo: via Bruce Rigelsford, Air-Britain)







Yet another No. 1435 Squadron Spitfire Mk. IX at Brindisi in early 1944. Central figure is believed to be a Major Nicholson of the S.A.A.F. Below the windshield is painted an "enemy aircraft destroyed" German cross symbol. The hasty obliteration of the rear fuselage duck-egg blue band has resulted in a confusion of stencilled serial numbers. Under the squadron code letter "V" is the "M" of the smaller restencilled "MH6", the last two digits being hidden by the tailplane.

(Photo: via Bruce Rigelsford, Air-Britain)

188, 190-191, 193-207, 259, 261, 265-270, 286-296, 298-309, 311-315, 329, 333-336, 339-340, 344-345, 349-350, 390, 392-394, 397-406, 408, 410-411, 444-456, 458-464, 466-469, 471-476, 478-483, 490-493, 498, 500-502, 510 and 513-514. Total: 358.

**Built as Mk. Vs, but later converted to Mk. IX standard** during major repair or overhaul: **AD366, BR581, 589, 592, 594 and 596.**

**Built by Vickers-Armstrongs Ltd at Castle Bromwich.**

**As Mk. IXs:** **JG722 and 739, JK395, 611, 641, 650, 770, 796, 881, 883-884 and 980, JL134-138, 177-180, 226-230, 252-256, 375-377 and 383-384, LZ831-833, 836-843, 861, 889-892, 894-899, 915-925, 947-956 and 989-998, MA221-260, 299-315, 369, 398-428, 443-487, 501-546, 559-601, 615-643, 683, 705-713, 726-767, 790-819, 831-849 and 878-879, MB807, MH312-336, 349-390, 413-456, 470-512, 526-563, 597-599, 601-604, 606-626, 635-636, 647-678, 691-740, 750-800, 813-856, 869-912, 924-958 and 970-999, MJ114-156, 169-203, 215-258, 271-314, 328-369, 382-428, 441-485, 498-536, 549-589, 602-646, 659-698, 712-756, 769-801, 814-858, 870-913, 926-967 and 979-999, MK112-158, 171-213, 226-268, 280-326, 339-379, 392-428, 440-486, 499-534, 547-590, 602-646, 659-699, 713-756, 769-812, 826-868, 881-926, 939-969 and 981-999, ML112-156, 169-216, 229-232, 236-277, 291-323, 339-381 and 396-428, NH148-158, 171-218, 230-276, 289-326, 339-381, 393-438, 450-496, 513-558 and 570-611, PK991-998, PL123-169, 185-227, 246-288, 313-356, 369-408, 423-466 and 488-499, PT335-380, 395-436, 451-498, 523-567, 582-627, 639-683, 697-738, 752-795, 818-859, 873-915, 929-970**

A mixed bag of South African Air Force Spitfire Mk. IXs with the old- and new-type cockpit hoods. Photographed "somewhere over the Union", these Mk. IXs of No. 1 Squadron, S.A.A.F., still carry their wartime code letters AX. Note the variations in size and positioning of wing and fuselage blue-white-orange roundels and fin flashes.

(Photo: S.A.A.F., via Ken Smy, Air-Britain)



and 986-999. **PV115-160, 174-215, 229-270, 283-327 and 341-359, RK798-819, 835-868 and 883-926, RR181-211, 228, 231-232, 235, 237-239, 241, 244, 246, 251-254, 258-260, 262 and 264, SL625-635 and 648-665, SM135-150, 170-177, 441-462 and 517-548, TA738-780, 793-840, 850-888, 905-948 and 960-999, TB115-129, 133-135, 142-150, 168-193, (N.B.: TB194 was cancelled from Contract), 195-197, 213-243, 249-251, 253, 393, 413-450, 464-474, 477, 479, 482-491, 499-500, 503, 516-518, 523-524, 527, 529-548, 563-571, 575-577, 579, 584, 586-587, 591-598, 638, 640-659, 674, 676-712, 717-718, 736, 740, 771-809, 824-827, 830, 837-857, 901-918, 920, 924-925, 938-959, 971-988, 992 and 994, TD155, 175, 178-183, 192-213, 287, 290-292, 294-315, 352-368, 370-371, 373-374, 378-379, 395-399, 952-958 and 970-999, TE115, 117-118, 121-158, 197, 205, 211-213, 215, 230-234, 236, 238, 289-290, 292-299, 301, 303-309, 312-313, 315, 329, 331, 333, 336-337, 343, 493-535 and 549-579. Total: 5,085.**

**Built as Mk. Vs, but later converted to Mk. IXs** during major repair or overhaul: **JK882, LZ816 and 893, MA687, 690 and 860.**

**As Mk. XVI's:** **RR212-213, 226-227, 229-230, 234, 236, 240, 242-243, 245, 247-250, 255-257, 261, 263 and 265, RW344-359 and 373-396, SL541-579, 593-625, 666-690 and 713-745, SM178-213, 226-258, 273-316, 329-369, 383-427, 463-488, 503-516, 563-597, 610-648 and 663-671, TB130-132, 136-141, 252, 254-256, 269-308, 326-349, 352-392, 394-396, 475-476, 478, 480-481, 492-498, 501-502, 515, 519-522, 525-526, 528, 572-574, 578, 580-583, 585, 588-590, 613-637, 639, 675, 713-716, 733-735, 737-739, 741-759, 828-829, 831-836, 858-868, 883-900, 919, 921-923, 989-991, 993 and 995-999, TD113-154, 156-158, 176-177, 184-191, 229-267, 280-286, 288-289, 293, 316-325, 338-351, 369, 372, 375-377 and 400-408, TE116, 119-120, 174-196, 198-204, 206-210, 214, 228-229, 235-237, 273-288, 291, 300, 310-311, 314, 328, 330, 332, 334-335, 338-342, 344-359, 375-384, 386-408, 434-471 and 473-480. Total: 1,054.**

A grand total of 5,739 Mk. IX and 1,054 Mk. XVI Spitfires is therefore arrived at. The breakdown of Mk. IXs is as follows: Rolls-Royce, 284; Supermarine, 358 plus 6 Mk. V conversions; Castle Bromwich, 5,085 plus 6 Mk. V conversions = 5,739.

**Mk. IX Conversions to Two-seat Trainer by Supermarine Southampton:** **MJ627 and 772, MK721, ML407, PV202, TE308** for the Irish Air Corps in 1951. Became I.A.C. Nos. 158, 159, 160, 161, 162 and 163 respectively.

Ten to the Indian Air Force; R.A.F. serials not known.

One to Egypt, ferried out as G-ALJM in March 1950.

#### NOTE ON FACTORY FINISH, 1944

Aircraft received from the Castle Bromwich factory in 1944, both new and repaired, had a very high quality finish that gave the aircraft additional speed by some 20 m.p.h.

#### R.A.F. SQUADRONS USING THE Mk. IX AND Mk. XVI

Sqn. No.	Code	Example	Period of use
1	JX	MK172 (JX-M)	Apr.-Nov. 44
5	7B	SL600 (7B-E)	Feb. 49-Sep. 51
6	JV		Dec. 45-Dec. 46
16		MK915	July-Aug. 44 and Dec. 45-Mar. 46
17	UT	SM406 (UT-H)	Feb. 49-Mar. 51
19	QV	MH355	Aug. 43-Jan. 44
	QV	TE458 (QV-J)	Mar.-Oct. 46
20	TH	TD264 (TH-U)	Feb. 49-Oct. 51
28	BF		Aug.-Sep. 45
32	GZ	MA862 (GZ-V)	Apr. 43-June 47
33	5R	PV202	Apr.-Dec. 44
34	4M		Feb. 49-Mar. 51
43	FT	EN140 (FT-10)	Aug. 43-May 47
56 "Punjab"	US	LZ816 (US-V)	May-July 44
63	UB		Sep. 46-Apr. 48
64	SH	MK805 (SH-B)	July 42-44
65 "East India"	YT	MH376	Sep.-Oct. 42 and Aug.-Dec. 43
66	LZ	MK297	May 43-Apr. 45
	LZ	RR263 (LZ-B)	Sep. 46-Mar. 47
72 "Basutoland"	RN	MA444 (RN-B)	Feb. 43-Dec. 46
73	TP	MJ341 ("C")	1944-7
74 "Trinidad"	ZP	PV147 (ZP-M)	1942-Mar. 45
80	W2	EN172 (W2-P)	1944
81	FL	EN120 (FL-P)	Mar. 43-July 43
87 "United Provinces"	LK	NH346 (LK-M)	Aug. 44-Dec. 46
91 "Nigeria"	DL	MJ691	Aug. 44-Apr. 45
92 "East India"	QJ	EN446	July-Sep. 43
93	HN	PV124	Oct. 43-Sep. 45
94			Apr.-July 44 and Feb.-Apr. 45
111	JU	EN138 (JU-M)	July 43-Jan. 47
118	NK	MH488	Jan.-Mar. 44
122 "Bombay"	MT	MH375	1943-Feb. 44
124 "Baroda"	ON	PV303 (ON-B)	July 44-Apr. 46



Another of No. 1435 Squadron's Mk. IXs (MH660), from Castle Bromwich factory, shows the crudely painted-out duck-egg blue rear fuselage band and, similarly, the spinner as far as the back retaining plate. Below the wind shield is the squadron's unofficial emblem, an open-jawed dragon's head painted in green with white teeth and red "flaming" tongue. Above the fin flash is a circular emblem believed to be No. 1435's unofficial crest. (Photo: via Bruce Rigelsford, Air-Britain)

#### R.A.F. SQUADRONS USING THE Mk. IX AND Mk. XVI

153		MK950	Aug.-Sep. 44
126	5J	MK126 (5J-G)	Sep.-Dec. 44
127	9N	MH417	Apr. 44-Jan. 45
129 "Mysore"	DV	MK777 (DV-T)	1943-Apr. 44 and Jan. 45-Sep. 46
130 "Punjab"	AP	BS434 (AP-A)	Aug. 44-45
131	NX	MA834 (NX-A)	Sep. 43-Mar. 44
132 "Bombay"	FF	MH737 (FF-Y)	Sep. 43-Jan. 45
133 "Eagle"	MD	BR640 (MD-V)	Aug.-Sep. 42
152 "Hyderabad"	UM	MA454 (UM-V)	1942-Dec. 43
154	HT	MJ689	Aug.-Sep. 44
164 "Argentine" British"	UB	SM391	May 45-Aug. 46
165 "Ceylon"	SK	MH381 (SK-U)	Oct. 43-Dec. 44 and June 45-6
185	GL	MA464 (GL-B)	Feb.-July 44 and Oct. 44-Aug. 45
208	RG	PV117 (RG-E)	Mar. 44-46
213	AK	MA676	Feb.-June 44
222	ZD	MH413 (ZD-M)	Apr. 43-Nov. 44
225	WU	JL132	June 44-July 46
229	GR	MH907	1943-4
232	EF	MA581	1942-4
232	EF		1942-4
234	FX	TD310 (FX-C)	1946
237	DV	MH541	Nov. 43-Oct. 45
238	FM	MA455	1943-Oct. 44
241	RZ	MA425 (RZ-R)	June 43-May 45
242	KY		1944-Nov. 44
243		MJ712	Feb.-Sep. 44
249	GN	MA392 ("T-V")	Apr. 43-45
253	SW	LZ836 (SW-D)	1944-Apr. 47
256			Mat-Aug. 44
274	JJ	BS227 (JJ-Q)	Apr. 44-Aug. 45
283			1944-5
287		TB652 (KZ-A)	June 45-June 46
288	RP	SL669 (RP-K)	1944-5
601 "County of London"	UF	MK551 (UF-T)	Jan. 44-Aug. 45 May 1946
602 "City of Glasgow"	ZT	MJ339	Oct. 43-Nov. 44
603 "City of Edinburgh"	9R		Jan.-Aug. 45
604 "County of Middlesex"	XT/RAJ	E347 (RAJ-A)	May 46-June 48
607 "County of Durham"	NG/ RAK	RW386	May 46-Nov. 49
609 "West Riding"	RAN		May 46-July 47
609 "West Riding"	PR	RW359 (PR-G)	..
609 "West Riding"	RAP	RW378 (RAP-B)	.. Apr. 48-51
611 "West Lancashire"	FY	BS387 (FY-Y)	.. July 42-June 43 and July 44-Mar. 45
612 "County of Aberdeen"	8W	SL674 (8W-H)	May 46-June 48
614 "County of Glamorgan"	RAS	SL674 (RAS-H)	..
614 "County of Glamorgan"	RAU		May 46-July 48

#### R.A.F. SQUADRONS USING THE Mk. IX AND Mk. XVI

631	6D	SL614 (6D-A)	June 45-Feb. 49
667	U4	TB392	July-Dec. 45
682		EN422	Feb. 43-May 45
691	5S	TB993	Aug. 45-Feb. 49
695	4M/ 8Q	TE450	1945
1435	V	MH660 ("Y-V")	Mar. 43-May 45

#### ALLIED SQUADRONS UNDER R.A.F. FIGHTER COMMAND

302 (Polish)	WX	MH869 (WX-R)	Oct. 43-Jan. 45
303 (Polish)	RF	MA814	1943-5
306 (Polish)	UZ	BS184 (UZ-K)	Sep. 43-Mar. 44
308 (Polish)	ZF	ML407	Oct. 43-Aug. 44
310 (Czech)	NN	TE572 (NN-U)	Sep. 43-Feb. 46
312 (Czech)	DU	MK244	Sep. 43-Feb. 46
313 (Czech)	RY	MK694 (RY-E)	Oct. 44-Feb. 46
315 (Polish)	SZ	BS514	Oct. 42-Mar. 44
316 (Polish)	PK	EN186 (PK-J)	1943-Aug. 44
317 (Polish)	JH	BS302 (JH-B)	1942-5
318 (Polish)	LW	PL353	Oct. 44-46
322 (Dutch)	3W	MJ642 (3W-11)	
326 (Free French)	9I		Dec. 43-Nov. 45
327 (Free French)		MJ133	1944-Nov. 4 5
328 (Free French)	S8	MA912	1944-Nov. 45
329 (Free French)	5A	PT455 (5A-C)	Jan. 44-Nov. 45
331 (Norwegian)	FN	PL187 (FN-Z)	1943-Nov. 45
332 (Norwegian)	AH	BS249 (AH-R)	1943-Nov. 45
340 (Free French)	GW	BS129 (GW-B)	Sep. 42-45
341 (Free French)	NL	BS538 (NL-B)	Mar. 43-45
345 (Free French)	2Y	MJ241 (2Y-F)	1944-5
349 (Belgian)	GE	MJ360 (GE-H)	Mar. 44-Jan. 45
350 (Belgian)	MN	MJ150 (MN-G)	Dec. 43-Jan. 44

#### COMMONWEALTH SQUADRONS

##### Royal Canadian Air Force:

401	YO	MH911	Aug. 42-Jan. 43 and Oct. 43-May 45
402	AE	BM526 (AE-X)	Aug. 42-Apr. 43 and July-Aug. 44
403	KH	BR630	Jan. 43-Dec. 44
411	DB	EN574 (DB-S)	Oct. 43-Sep. 44 and Nov. 44-May 45
412	VZ	MJ452 (VZ-L)	Nov. 43-May 45
414	RU		Aug. 44-Apr. 45
416	DN	BS127	Mar. 43-June 43 and Jan.-Dec. 44
417	AN	LZ923	Apr. -June 45
421	AU	NH183 (AU-K)	May 43-Dec. 44
441	9G	MJ627	Mar. 44-Apr. 45
442	Y2	MK181	1944-Apr. 45
443	21	MK356 (21-V)	1944-Apr. 45

##### Royal Australian Air Force:

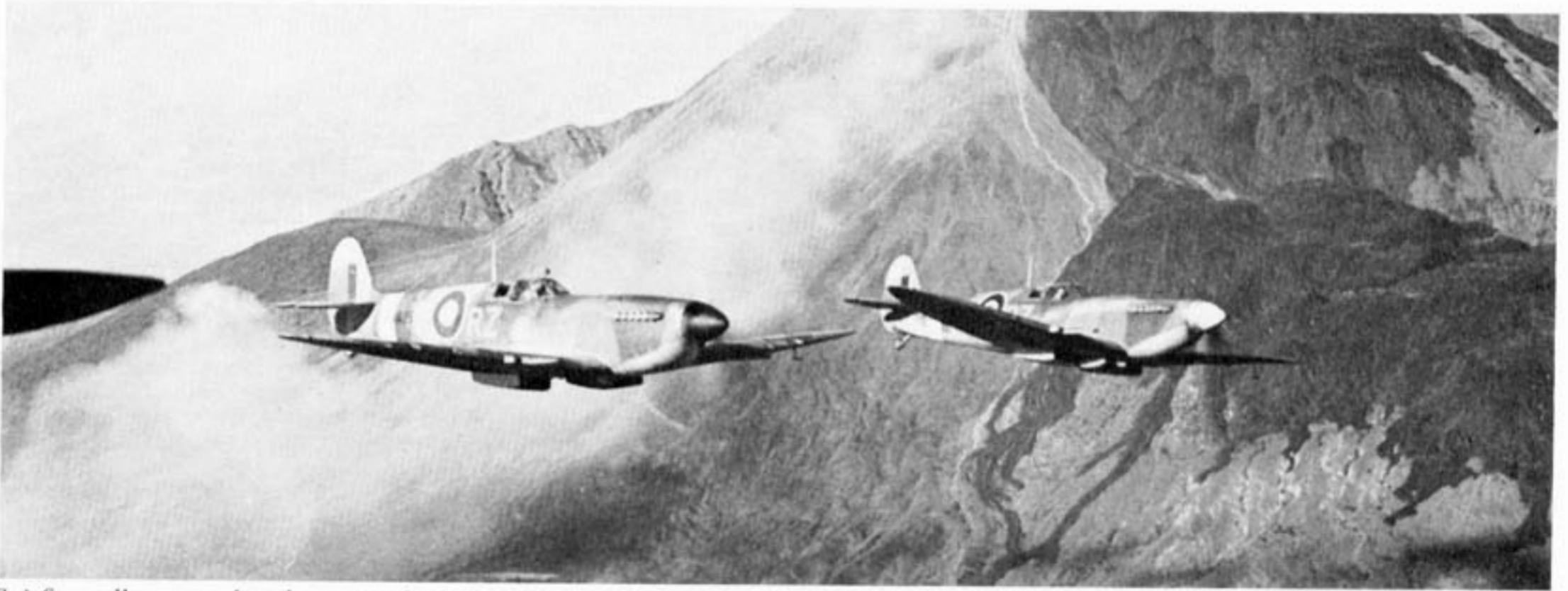
451	NI	MJ135	Dec. 43-45
453	FU	BS441 (FU-T)	Apr. 43-Nov. 44
457	BP		July 43-45

**Royal New Zealand Air Force:**

485	OU	ML407	July 43–Aug. 45
501 "County of Gloucester"	GD	MJ311 (SD-3)	June 43–July 44
504 "County of Nottingham"	TM	PL256 (TM-L)	Jan. 44–Mar. 45
518			Sep. 45–Oct. 46
521	50		1943–45
567	14	SL614	1944
567	14	SL614	July 44–June 46
577	3Y	SM511	June 45–June 46
587	M4		July 45–June 46
595	7B	PT753 (7B-G)	July 45–Feb. 49
595	7B	PT753 (7B-G)	1945-6



*The South African Air Force Spitfire IX, W5581 (ex TD213) on display at Waterkloof Base, Johannesburg.*  
(Photo: Hans B. Andersen)

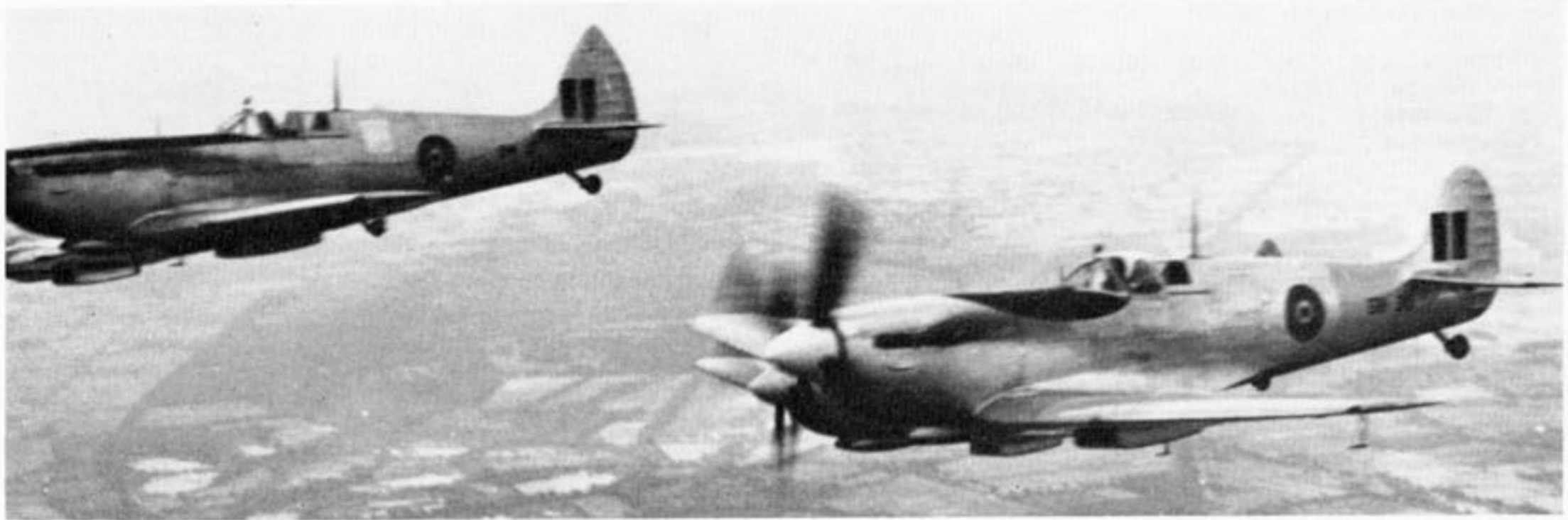


*Spitfires all—natural and man-made. Two Mk. IXC Spitfires of No. 241 Squadron passing near Mt. Vesuvius, an active volcano, on their return to a base near Naples after covering the Anzio beach-head in 1944. The lead aircraft with black spinner is SM425, coded RZ-R.*  
(Photo: I.W.M.)

*The only R.A.F. squadron to have a four-digit number, No. 1435 Squadron was formed out of dire necessity as No. 1435 Flight in 1941 during the Battle of Malta with Hurricane IIs. Disbanded in Spring 1942, it was again reformed with "surplus" No. 603 Squadron pilots in July 1942 and, by the end of 1943, what had now become No. 1435 Squadron exchanged its Mk. V Spitfires for Mk. IXs. Photograph shows squadron personnel whose pilots hailed from as far away as New Zealand, Canada and South Africa, as the latter's army-type headgear confirm. From the beginning of 1944 until the war's end, No. 1435 Squadron spent most of its time engaged in ground-support sorties, first from Sicily and then through Italy. This photograph was taken at Brindisi in early 1944.*

(Photo: via Bruce Rigelsford, Air-Britain)





Four Spitfire Mk. IXs of the Belgian Air Force with armament removed.

(Photo: Amilpress, Brussels)

**Surviving Spitfire Mk. IXs and XVIs:**

R.A.F. serial	Mk. No.	Painted as	Owner	Location
BS464	F. Mk. IXc	BS464 (GW-S)	Musée de l'Air	Paris, France
MH350	F. Mk. IX	MH350 [R.Nor.A.F.(FN-M)]	Wilson C. Edwards	Bodo, Norway
*MH415	L.F. Mk. IXb	G-AVDJ	—	Harlingen, Texas, U.S.A.
*MH434	H.F. Mk. IXb	G-ASJV	—	Bovingdon, Herts., U.K.
MH727	Mk. IX	—	—	—
MJ289 (?)	Mk. IXc	MJ289 [R.Neth.A.F.(VL-V)]	—	Eindhoven, Netherlands
MJ383	L.F. Mk. IX	SM-15	R. Bel. A.F. Museum	Brussels, Belgium
MJ627	L.F. Mk. IXc (Tnr.)	G-ASOZ (ex-Irish A.C. 158)	jointly T. A. Davies & J. S. Fairey	Bossington, Hants., U.K.
MJ755	Mk. IXc	MJ755	R. Hellenic A.F.	Greece
*MJ772	L.F. Mk. IXc (Tnr.)	G-AVAV (to be sold)	N. A. W. Samuelson	Elstree, Herts., U.K.
MK297	H.F. Mk. IXc	"N1882" (spurious)	Confederate A.F.	Harlingen, Texas, U.S.A.
*MK356	L.F. Mk. IXc	(ex-"M5690")	Ministry of Defence	Henlow, Beds., U.K.
MK732	F. Mk. IXc	—	ex-R.A.F. Gütersloh, W. Germany	St. Athan, Glam., U.K.
LK912	L.F. Mk. IXc	MN-P	R. Bel. A.F.	St. Truiden (St. Trond), Belgium
LK923	F. Mk. IXc	Civil N521R	C. Robertson	California, U.S.A.
ML407	Mk. IX	(ex-Irish A.C. 162)	N. A. W. Samuelson	London, U.K.
ML427	L.F. Mk. IXc	ML427 (ST-A)	Birmingham Mus. of Sc. & Inds.	Birmingham, U.K.
NH188	H.F. Mk. IXc	NH188 (AU-H)	Nat. Mus. of Canada	Ottawa, Ontario, Canada
NH238	H.F. Mk. IXc	—	T. H. Pasteur	Newark, Notts., U.K.
NH417	H.F. Mk. IXe	41-401 R. Dan. A.F.	R. Arsenal Mus.	Copenhagen, Denmark
PV202	Mk. IX	(ex-Irish A.C. 161)	N. A. W. Samuelson	London, U.K.
RR263	L.F. Mk. XVIe	(ex-R.A.F. Kenley: TB597 GW-R)	l'Armée de l'Air	Tours, France
*RW382	L.F. Mk. XVIe	—	Ministry of Defence	R.A.F. Henlow, Beds., U.K.
RW386	L.F. Mk. XVIe	"RF114"	Ministry of Defence	R.A.F. Halton, Bucks., U.K.
RW388	L.F. Mk. XVIe	"AB917 The Inspirer"	Ministry of Defence	R.A.F. St. Athan, Glam., U.K.
RW393	L.F. Mk. XVIe	RW393	Ministry of Defence	R.A.F. Turnhouse, Scotland, U.K.
SL542	L.F. Mk. XVIe	SL542 (SH-N)	Ministry of Defence	R.A.F. Coltishall, Norfolk, U.K.
*SL574	L.F. Mk. XVIe	(ex-R.A.F. Bentley Priory)	Ministry of Defence	R.A.F. Henlow, Beds., U.K.
SL674	L.F. Mk. XVIe	—	Ministry of Defence	R.A.F. Biggin Hill, Kent, U.K.
SL721	L.F. Mk. XVIe	SL721 (JM-R)	W. D. Ross	Chicago, Ill., U.S.A.
*SM411	L.F. Mk. XVIe	SM411 (ex-R.A.F. Wattisham)	Ministry of Defence	R.A.F. Henlow, Beds., U.K.
TB252	L.F. Mk. XVIe	TB252	Ministry of Defence	R.A.F. Boulmer, Northumbld., U.K.
*TB382	L.F. Mk. XVIe	TB382	Ministry of Defence	R.A.F. Henlow, Beds., U.K.
TB752	L.F. Mk. XVIe	TB752	Ministry of Defence	R.A.F. Manston, Kent, U.K.
TB863	L.F. Mk. XVI	TB863	Bill Francis	Southend, Essex, U.K.
TD135	L.F. Mk. XVIe	TD135 (NG-U)	P. Sheppard	Hereford, Herefordshire, U.K.
TD248	L.F. Mk. XVIe	TD248 (DW-A)	Ministry of Defence	R.A.F. Sealand, Flints., U.K.
TE184	L.F. Mk. XVIe	TE184 (ME-M)	Ministry of Defence	R.A.F. Finningley, Yorks., U.K.
TE288	L.F. Mk. XVIe	TE288	Brevet Club of Canterbury	Christchurch, S. Island, N.Z.
*TE308	L.F. Mk. IXc (Tnr.)	G-AWGB	N. A. W. Samuelson	Elstree, Herts., U.K.
*TE311	L.F. Mk. XVIe	(ex-R.A.F. Tangmere)	Ministry of Defence	R.A.F. Benson, Oxon, U.K.
TE330	F. Mk. XVIe	TE330 (ex-R.A.F. Biggin Hill)	U.S.A.F. Museum	Wright-Patterson A.F.B., Dayton, Ohio, U.S.A.
TE353	L.F. Mk. XVIe	TE353	R.C.A.F.	Rockcliffe, Ontario, Canada
*TE356	L.F. Mk. XVIe	(ex-R.A.F. Bicester)	Ministry of Defence	R.A.F. Kemble, Glos., U.K.
*TE384	L.F. Mk. XVIe	TE384	Ministry of Defence	R.A.F. Henlow, Beds., U.K.
TE392	L.F. Mk. XVIe	(one-time "VZ477")	Ministry of Defence	R.A.F. Wellesbourne Mountford, Warwickshire, U.K.
TE456	L.F. Mk. XVIe	TE456 (Code: 43)	Auckland Inst. & Mus.	Auckland, N. Island, N.Z.
TE462	L.F. Mk. XVIe	TE462 (RAN-B)	Ministry of Defence	R.A.F. Ouston, Durham, U.K.
*TE476	L.F. Mk. XVIe	TE476	Ministry of Defence	R.A.F. Henlow, Beds., U.K.
TE565	L.F. Mk. IXe	(NN-N)	Nat. Tech. Museum	Prague, C.S.S.R.

**Identifying R.A.F. serials unknown:**

—	F. Mk. IX	HS543	Indian A.F.	Palam, New Delhi, India
—	L.F. Mk. IXe	UB-431	Union of Burma A.F.	Mingaladon A.F.B. Rangoon, Burma
—	L.F. Mk. IXc	(3W-1)	Nat. Avn. Mus.	Schiphol, Netherlands
—	F. Mk. IXe	(TA-26)	—	Delfzijl, Netherlands
—	F. Mk. IX	5501	S.A.A.F. Mus.	Johannesburg, S. Africa
—	H.F. Mk. IXe	As W5518	S.A.A.F.	Waterkloof, S. Africa
—	F. Mk. IXc	—	—	Italy
—	F. Mk. IX	5630	S.A.A.F.	S. Africa
—	L.F. Mk. IXe	57 (gloss black overall)	I.D.F./A.F. Mus.	Israel

\* See page 33 — Battle of Britain film stars.