

# Camouflage & Markings

Supermarine Spitfire

RAF  
Northern  
Europe  
1936-45



Number 1  
30p



*The Spitfire prototype in overall finish of Seaplane Grey. Fuselage roundels are 25in. in diameter outlined in white. Non-outlined upper wing roundels are 50in. dia. The white outlined serials are 8in. and 6in. high respectively.*

## Supermarine Spitfire Fighters

DURING 1936 British fighter aircraft were still adorned in the gay, heraldic paint schemes that typified the years between the end of the 1914–18 war and the appearance of the new types of combat aircraft ordered under the Expansion Scheme for modernising the Royal Air Force's equipment. The year 1936 was proved to be the last before the new types in their newly-adopted camouflage finish began to be seen in ever-increasing numbers throughout the country.

On 5th March of that year, the Supermarine Spitfire, K5054, made its first flight from Eastleigh Aerodrome, near Southampton. Unlike its Aluminium (silver) painted contemporary prototype, the Hawker Hurricane, the new Supermarine monoplane was painted overall in a high-gloss grey finish. Although difficult to confirm it is likely, in view of the company's long association with flying boats and seaplanes, that the paint used was standard seaplane hull grey, with an additional coat of high-gloss varnish. The Red, White and Blue fuselage roundel, known as Type A, was of the standard, pre-war fighter diameter of 26in., but it was outlined in white. The 8in. fuselage and 6in. rudder serial numbers were painted in Night (black) and also outlined in White. The 50in. upper and lower Type A wing roundels were not, however, outlined in white.

With the Expansion Scheme came the decision to adopt a disruptive camouflage scheme on the upper surfaces of operational aircraft, consisting of two colours known as Dark Green and Dark Earth. For fighters a suggested pattern guide was issued by the Air Ministry in Air Publication 970, to which most small fighter aircraft conformed. Two camouflage schemes known as A and B were to be painted on alternate aeroplanes on the production line. The B scheme was the mirror image of the A scheme. Often the first aeroplane of a particular batch had the A scheme pattern, but this was not always the case. Thus the first Spitfire off the production line at Supermarine's Works, K9787, had A scheme camouflage, and the second B scheme.

When camouflage was introduced on fighter air-

craft, only the upper surfaces were affected by the change. The under surfaces remained, unaltered, in the standard Aluminium (silver) finish, with Red, White and Blue Type A roundels and black serial numbers. In fact, the application of the new finish of Dark Green and Dark Earth can be regarded as being purely to make fighter aircraft less conspicuous when on their aerodromes, although a concession to peace-time requirements was the introduction of an additional yellow ring around the standard roundel to make the national markings more visible. This type of roundel was known as the Type A.I, and was applied initially to both upper wings and fuselage.

When K9787, the first production Spitfire Mk. I, made its first flight on 14th May, 1938, it was painted in the new camouflage scheme on all upper surfaces, and Aluminium overall underneath. The standard fuselage roundel used on fighters during the inter-war period was 25in. in diameter, and was composed of five ring widths of 5in. The introduction of the additional outer ring of yellow, again of 5in. width,

*Spitfire Mk. I, K9795, with the number '19' in White. A-scheme pattern, 56in. Type A.I wing roundels and 35in. Type A.I fuselage roundels. Propeller is painted in Night, with Yellow tips (4in. long).*



4.95  
0604300



*Spitfire Mk. Is of No. 74(F) Squadron at Northolt in May 1939. The port wings have been painted in Night, but the starboard wings are still in the original delivery scheme of Aluminium.*

resulted in the new type A.I. fuselage roundel being 35in. in diameter, and this was the size of the fuselage roundel used on early production Spitfires. The upper wing roundel, also a Type A.I, applied to the Spitfire was made up of seven ring widths of 8in. each – the total diameter being 56in. The underwing roundel was a standard Type A of 50in. diameter, made up of five 10in. ring widths. Underwing serial numbers of one foot height were used, the small size being dictated by the lack of space between roundel and the wheel well. Serial numbers of 8in. in height were painted on the fuselage in Night (black) and 6in. high serials appeared on the rudder.

Spitfire Mk. Is first entered service with No. 19(F) Squadron on 4th August, 1938, about a month before the Munich Crisis threatened Europe with war. The first Spitfire to be delivered was K9789, and it was painted in the 'A' scheme pattern. During August and September more Spitfires were delivered to No. 19 Squadron, and at the opening of Cambridge Airport on 8th October several of the Squadron's aircraft attended the display there wearing the number '19' on their fins. The colour of this numeral has been quoted as being White, Red or Yellow, and all are probably correct. K9797 certainly had the numeral painted in Red—it was possibly part of 'A' Flight—and was painted in 'A' scheme camouflage.

K9795 ('A' scheme camouflage) appears from photographs to have had the number '19' in white, and may possibly have been the Squadron Commander's aircraft. Other reports of the '19' being painted in yellow may refer to 'B' Flight aircraft, although there is no mention of Blue being used, Blue being the 'C' Flight colour. As Yellow was commonly used for marking the Squadron number and machine letter on Service aircraft during the early days of the introduction of camouflage finish, it may have been the original intention to mark all the Squadrons' Spitfires with a Yellow '19' on the fin, but this changed to the use of the Flight colour. In the event, these early markings remained for only a brief period, possibly too brief for 'C' Flight to have their aircraft marked with a Blue



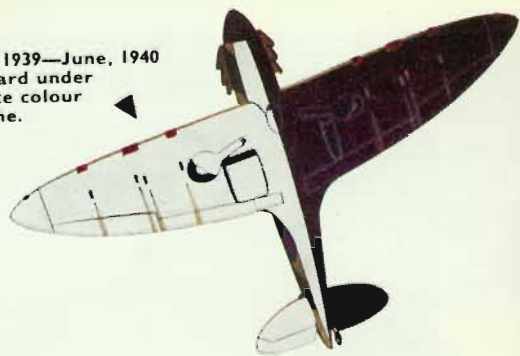
*Spitfire Mk. Is of No. 19(F) Squadron. The foreground aircraft has B-scheme camouflage, the next A-scheme camouflage. Both have White undersides to the port ailerons. The painted-out Yellow ring on the fuselage, and serial number, can be clearly seen. Photo below shows Black ailerons on White wing.*



1938  
Initial production deliveries.  
Dark Earth and Dark Green. 56 in. dia. upper wing roundels. 35 in. dia. fuselage roundels. 50 in. dia. underwing roundels.  
Spitfire I, K9794, of No. 19 (F) Squadron.



Early 1939—June, 1940  
standard under surface colour scheme.



Typical standard Battle of Britain colour scheme after 11th Aug. 1940. Earlier in the 'Battle' no underwing roundels were carried. After 1st Aug. the standard 27 in. x 24 in. fin flash was introduced.



Fighter command day fighter underside colour scheme, from 27th Nov. 1940 until 22nd April, 1941.



Standard factory finish on undersides from 23rd Feb. 1940 to 11th June 1940. Night White and Aluminium.

Standard day fighter scheme after 15th Aug. 1941. Dark Earth replaced by either Ocean Grey or mixed grey (7 parts, Medium Sea Grey, 1 part, Night). Mixed grey illustrated.



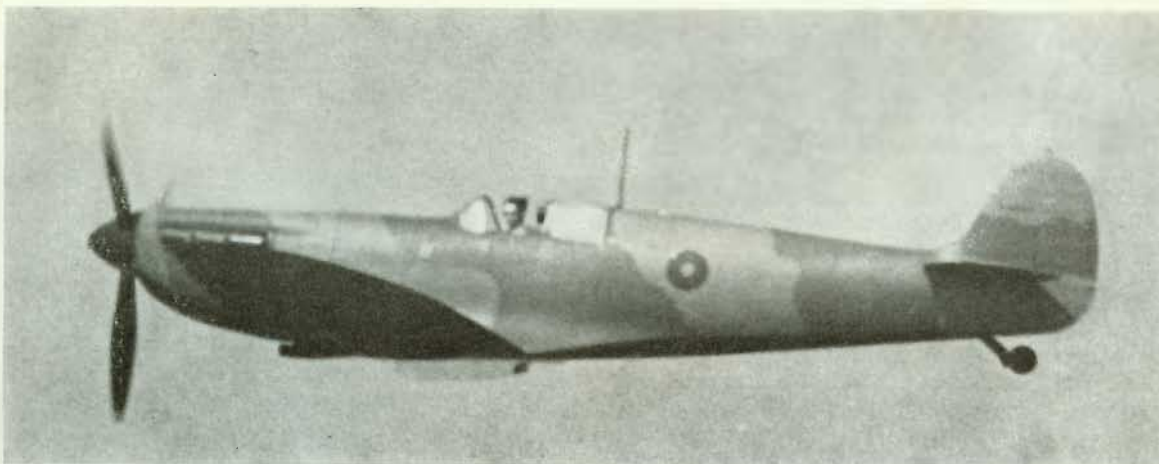
June, 1943  
standard finish for very high altitude day fighters. Medium Sea Grey upper surfaces. P.R.U. Blue undersurfaces.



Standard day fighter finish after mid-May, 1942. Type C & C.I roundels and 24 in. square fin flash. Ocean Grey and Dark Green upper surfaces shown.  
(Spitfire XII of 41 (F) Squadron)



The basic combinations of colours



*A rare photograph of the 15in. diameter Type B fuselage roundel painted on a Spitfire Mk. I. Unfortunately the serial number, painted on the fin, is too small to be discernible.*

'19', before new, sombre markings replaced those existing.

During the Munich Crisis of September 1938, the closeness of war had brought about a hurried change of markings. In order to make aircraft of the Royal Air Force less conspicuous on the ground, aircraft of all types, and sizes, received a hurried application of the camouflage finish which had hitherto adorned only the new types entering Squadron service. Although Reserve aircraft were sometimes left in their original paint scheme, Dark Green and Dark Earth camouflage was generally applied to many operational aircraft, and the gaiety of the inter-war period markings largely disappeared from the Royal Air Force until the years following the return of peace.

The new, sombre colour schemes were intended to make operational aircraft harder to sight, especially when parked on aerodromes during periods of servicing and re-arming. Being short in number it was imperative that the risk of aircraft being attacked and destroyed on the ground should be minimised, and it was standard practice for the new markings to be applied to the upper surfaces.

The Munich Crisis period produced many anomalies in markings, for time was of the essence. Some of the new types already in service had their roundels changed

*LO-B of No. 603(F) Squadron. The wing roundel is a 40in. Type B, derived from the 56in. diameter Type A.I. The centre Red spot is not the correct proportion.*



to Red and Blue Type B. Many of the older biplane types received camouflage finish for the first time. Although the Crisis passed without a declaration of war, it was obvious that it was only a matter of time before hostilities would begin. The sombre markings initiated during the September crisis needed rationalising, and in order to produce a standard camouflage finish throughout the Royal Air Force, Air Ministry Order A.154/39, amended by A.298/39, and dated 27th April, was issued. It applied to all units of the R.A.F. The upper surface finish of all aircraft was to be Dark Green and Dark Earth, with the following markings as laid down by the order: On both sides of the fuselage and on the upper wing surfaces, Type B roundels, the lower surface of wings of all types, except fighters, to have Type A roundels.

Two code letters indicating the Squadron number were painted either forward or aft of the National markings on both sides of the fuselage. One letter indicating the individual aircraft was painted on the opposite side of the roundel to the Squadron code letters on both sides of the fuselage. These letters were to be painted in Grey, to be 48in. high and of strokes 6in. wide. Smaller letters were permissible only if the space was insufficient. It is interesting to note that contrary to reports of widely differing shades of Grey used for codes, the paint used was standard issue under stores reference 33B/157. Any variation in shade would only have been caused by insufficient stirring of the paint.

The under surfaces of fighters were to be painted in Night (black) and White. The official order for painting these markings was that 'the lower surface of the starboard plane and half the under surface of the fuselage is to be painted White. The corresponding port side is to be painted Black'. This directive was open to misinterpretation, as no mention was made of tailplane and elevator colouring. Although there may have been some anomalies, it was generally understood to mean 'Black and White' equally divided down the aircraft centre line.

The instructions for the serial numbers were that they should be painted 'underneath the lower planes and at the rear end of the fuselage'. This again was open to individual interpretation and some aircraft

appeared with underwing serial numbers. But as a general rule fighters at this period, either carried them on the rear fuselage, or had them painted out.

Squadron badges were still permitted to be painted on aircraft, with the proviso that they must be removable at short notice.

Although 48in. code and machine letters were painted on some fighters, it appears that Spitfires never used this size due to the slender contours of the fuselage.

### Red and Blue Roundel

When No. 19 Squadron became fully operational a Press Day was arranged on 4th May, 1939, and on this occasion all the Spitfires had been repainted in the new markings. As applied to the Spitfire the existing Dark Green and Dark Earth A and B scheme camouflage was retained, but all the existing upper surface roundels were replaced by the Type B form. Apparently, in order to ease the task of replacing the existing Type A.I roundels, the Blue ring was retained and used as a marker. The Red centre spot was enlarged to two-fifths of the Blue ring diameter, and the rest of the roundel filled in with additional Blue. On the fuselage the total Blue diameter was 25in., the Red centre spot was increased to 10in., and the remainder of the existing Wing ring was over-painted with Blue. The Yellow outer ring was painted out with appropriate Dark Green or Dark Earth paint to continue the existing pattern.

The wing roundel size was based on the Blue maximum diameter of 40in., with the centre Red Spot extended to 16 in. dia., and the rest filled in with Blue. Again, the Yellow outer ring was painted out with the normal camouflage colours.

Grey Squadron code and machine letters, approximately 36in. high, were painted on the fuselages of No. 19(F) Squadron's Spitfires. The number '19' on the fin was replaced by the code letters WZ, painted forward of the roundel on the port (left hand) side and aft on the starboard (right hand) side. Machine letters were not painted on all the aircraft at this time, but when they were their position was on the opposite side of the roundel to the code letters.

The Night and White under surface scheme was subject to some variation on Spitfires until it eventually became a straight division between black and white. When the scheme was first introduced it was common practice to paint the aileron on the 'black' wing in White, and the aileron on the White wing in Night. This was applied to many of No. 19 Squadron's Spitfire Is.

Sometimes Spitfires could be seen with Aluminium-painted ailerons on the 'black' wing, where the aileron had been left in the original finish.

Gradually the anomalies disappeared, and by the time war broke out the majority of Royal Air Force fighters had the equally-divided 'black and white' scheme.

Other Spitfire Squadrons began to appear rapidly as existing biplane fighters were replaced during the last few months of peace in 1939, and the majority of aircraft conformed to the standard upper surface colours. There were, of course, some anomalies to be seen, as might be expected during such a period of hasty preparation for war. Most of these anomalies



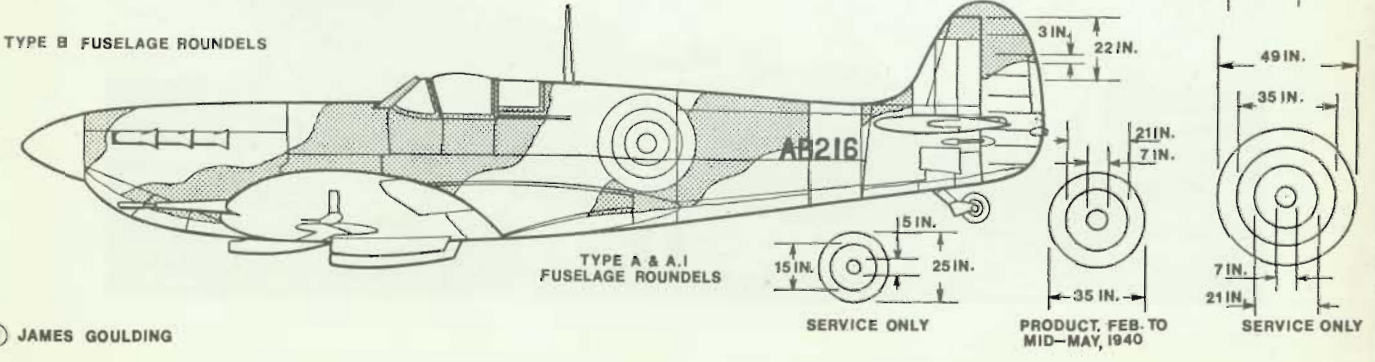
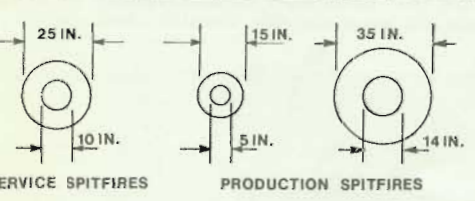
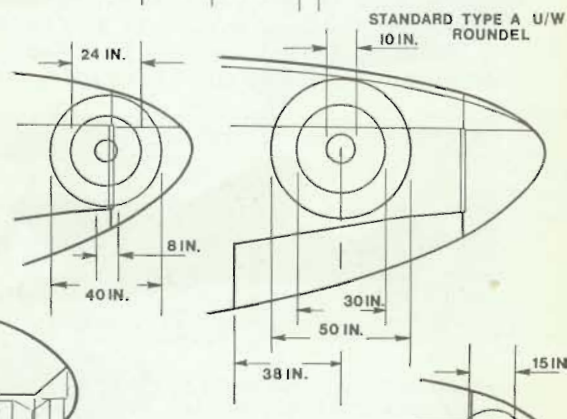
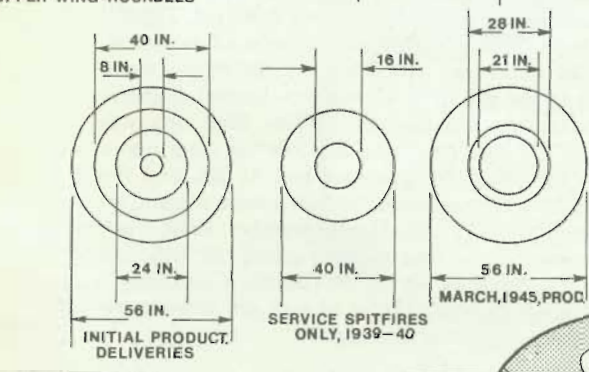
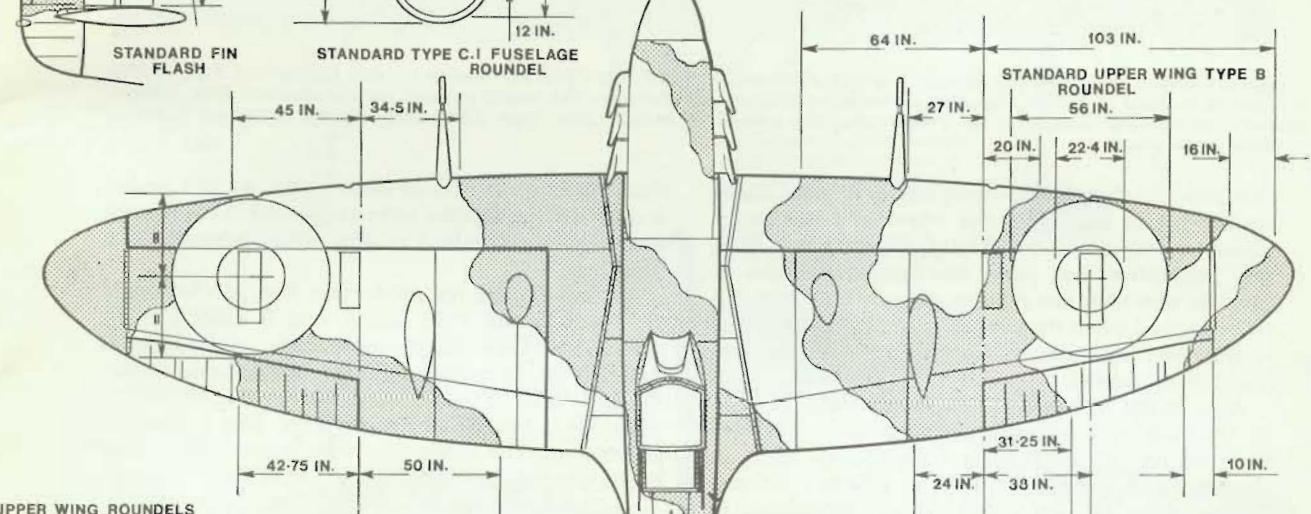
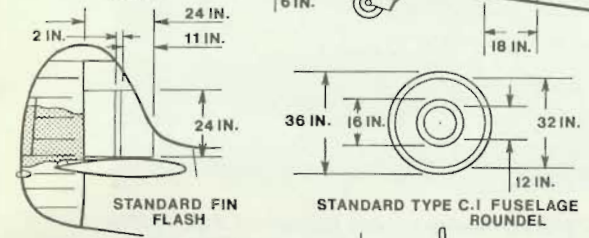
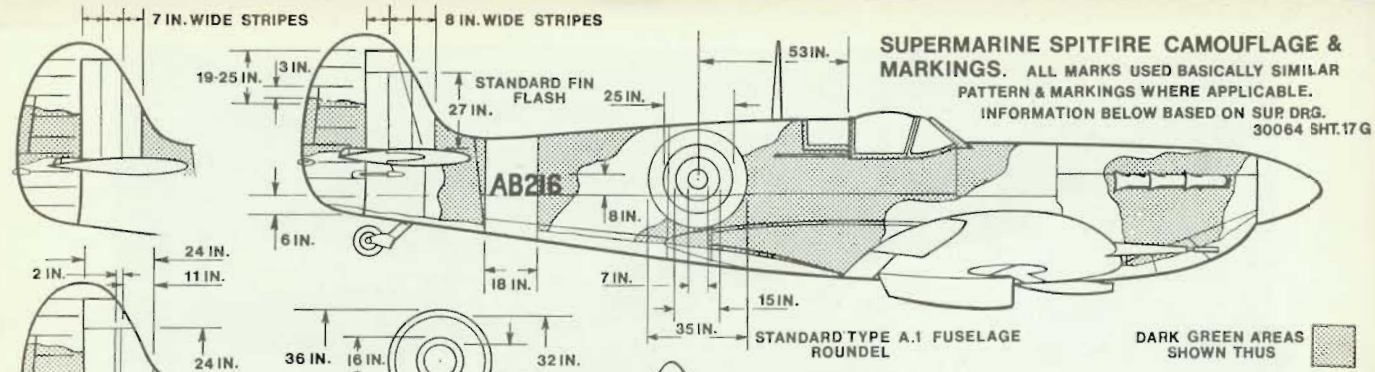
*Spitfire Mk. Is of No. 609(F) Squadron. Interest is in the aircraft still being in their Night, White and Aluminium factory under side finish.*

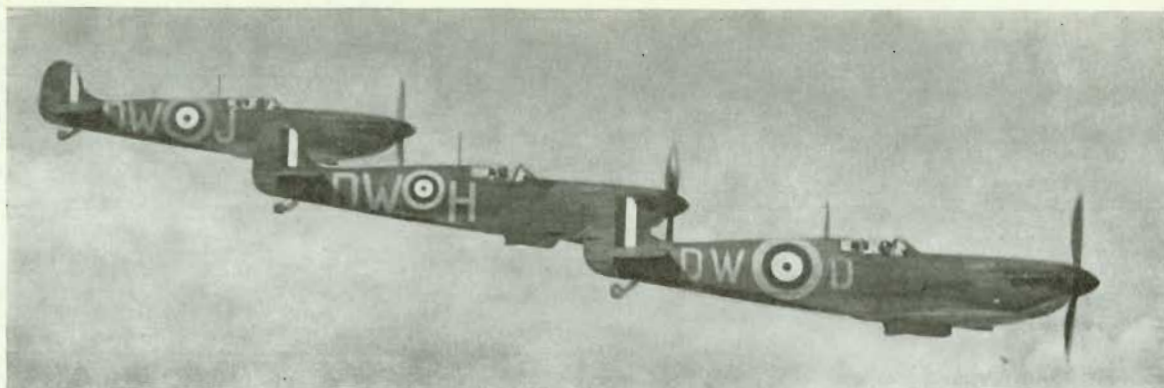
occurred on the under sides of Spitfires. No. 74 Squadron, coded in this pre-war period with the letters JH, had at least three of their aircraft, machine letters F, Q and C, only partially painted on the under surfaces. Their port sides were hurriedly painted in Night, but the rest of the under surface remained in the original Aluminium finish—although they were eventually repainted in White on the starboard side. No. 65(F) Squadron, using the pre-war code letters of FZ, were to be seen in the standard upper surface colours, but photographs taken at that period show

*Factory finish from Feb. to May 1940. Night, White and Aluminium under surfaces. 35in. Type A fuselage roundel.*



**SUPERMARINE SPITFIRE CAMOUFLAGE & MARKINGS.** ALL MARKS USED BASICALLY SIMILAR PATTERN & MARKINGS WHERE APPLICABLE. INFORMATION BELOW BASED ON SUP DRG. 30064 SHT.17 G





*Spitfire Mk. Is of No. 610(F) Squadron seen (probably) during late May 1940. The leading aircraft has had the Type A 35in. roundel outlined in Yellow producing a roundel of 49in. overall diameter. The second aircraft has the standard 35in. roundel, resulting from the painting of the Yellow outer ring around the existing 25in. Type. The leading aircraft is unusual in having 30in. code letters.*

that some of their aircraft were still in original under surface finish. But again, this was only a temporary measure, and all were correctly painted later. As it was imperative that pilots flew as many hours as possible with their new mounts, the new markings had to be applied when the aircraft became available, and it was quite a common sight to see aircraft only partially re-painted.

After initial batches of Spitfires had been delivered in the original camouflage scheme, new markings were introduced in keeping with the situation in international affairs. The factory schemes differed from those used in Royal Air Force Squadrons in respect of the under surface colours. Why this was so is obscure, but it is likely that the reason was to differentiate between Squadron flying and ferry flights

from factories to Maintenance Units. At this period it was usual for fighters to be re-painted in the Service under surface standard scheme when delivered to a Squadron.

Spitfires leaving the production lines at the end of 1938 and during 1939 had A and B scheme Dark Green and Dark Earth camouflage, with Type B roundels on their upper surfaces. But underneath, the fuselage forward of the wing, the fuselage aft of the wing, the tailplane and the elevators, were finished in Aluminium. The wings only were painted Night and White divided down the centre line of the aeroplane. No underwing roundels were applied.

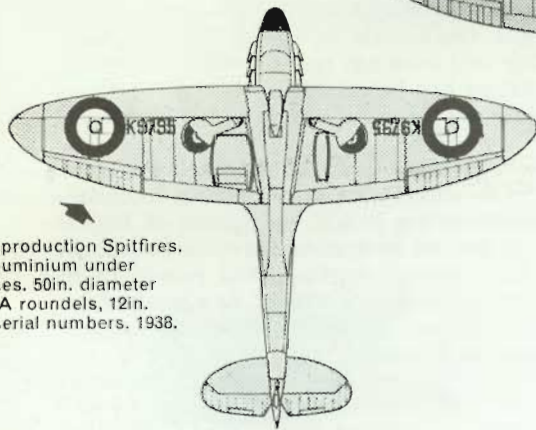
At one period during 1939 the standard Type B roundels on the wings and fuselage were of exceptionally small diameter, which must have been almost invisible to the eye from all but the shortest distance. On the fuselage the diameter of the Blue ring was 15in. and the Red ring 5in., and on the wing upper surfaces the Blue ring diameter was 31.2in. and the Red ring 10in. These minute roundels were painted on production Spitfires until 16th September, 1939. They were apparently re-introduced, albeit in different colours, on Spitfires during the Burma Campaign—but markings in that theatre of war are outside the scope of this particular volume.



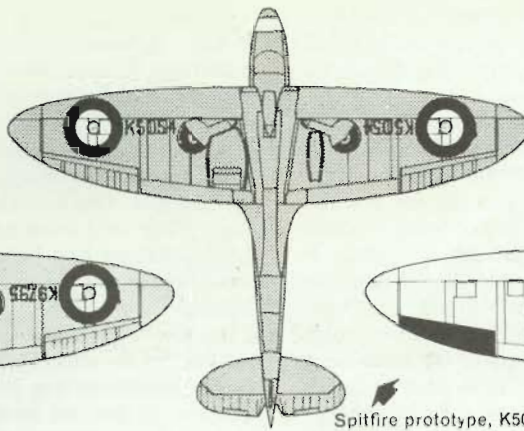
*(Above and below) Spitfires of No. 19(F) Squadron. Both aircraft have Dark Green and Dark Earth upper surfaces and Sky under surfaces. The aircraft above has 25in. diameter under wing roundels, while the one below has 40in. roundels. Both aircraft have 7in. wide fin stripes.*



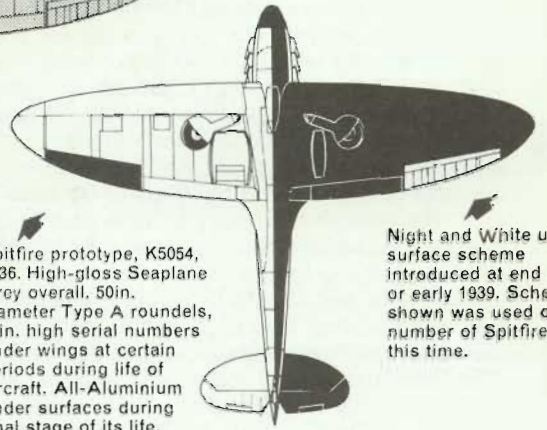




Initial production Spitfires. All-Aluminium under surfaces. 50in. diameter Type A roundels, 12in. high serial numbers. 1938.

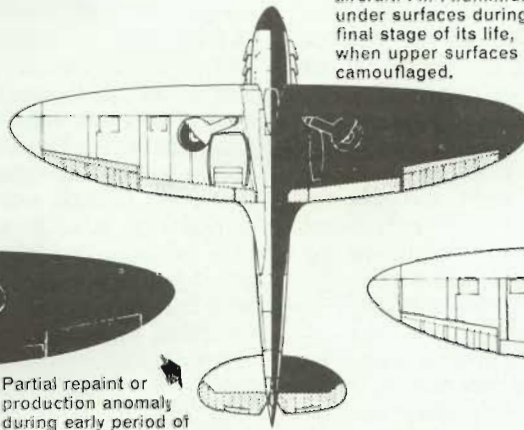


Spitfire prototype, K5054, 1936. High-gloss Seaplane Grey overall. 50in. diameter Type A roundels, 12in. high serial numbers under wings at certain periods during life of aircraft. All-Aluminium under surfaces during final stage of its life, when upper surfaces were camouflaged.

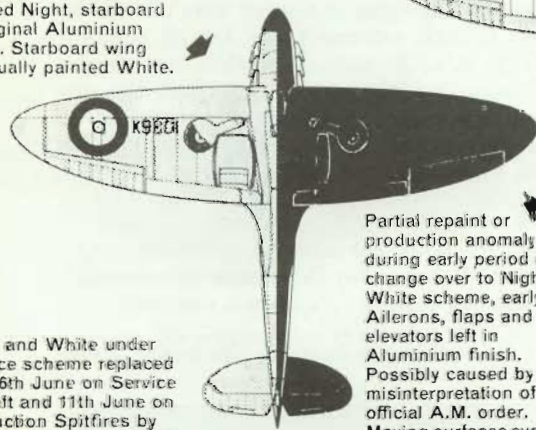


Night and White under surface scheme introduced at end of 1938 or early 1939. Scheme shown was used on a number of Spitfires at this time.

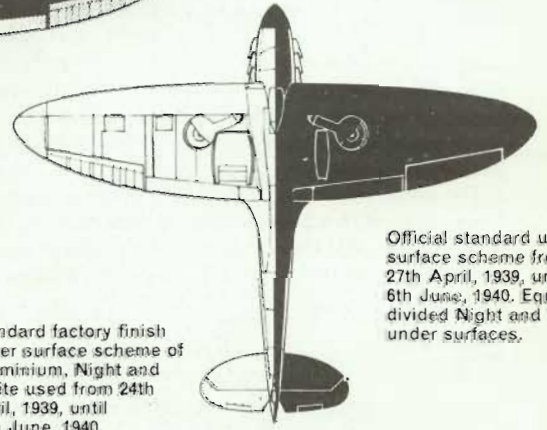
Partial repaint anomaly seen during May 1939. Typical of under surface markings during change over to Night and White scheme. Port wing painted Night, starboard in original Aluminium finish. Starboard wing eventually painted White.



Partial repaint or production anomaly during early period of change over to Night and White scheme, early 1939. Ailerons, flaps and elevators left in Aluminium finish. Possibly caused by misinterpretation of the official A.M. order. Moving surfaces eventually painted Night or White.

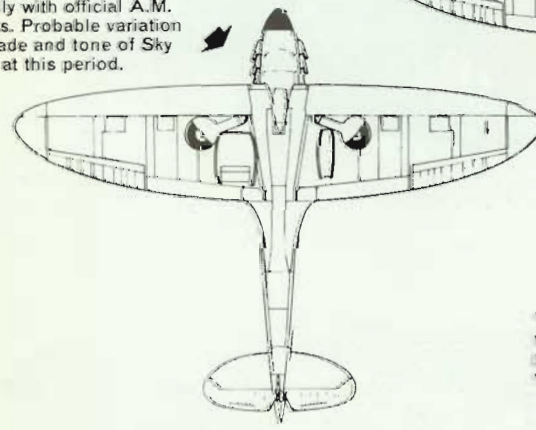


Night and White under surface scheme replaced from 6th June on Service aircraft and 11th June on production Spitfires by Sky on all under surfaces. No under wing roundels used generally, although some may have been painted on if combat over France was expected, to comply with official A.M. orders. Probable variation in shade and tone of Sky used at this period.

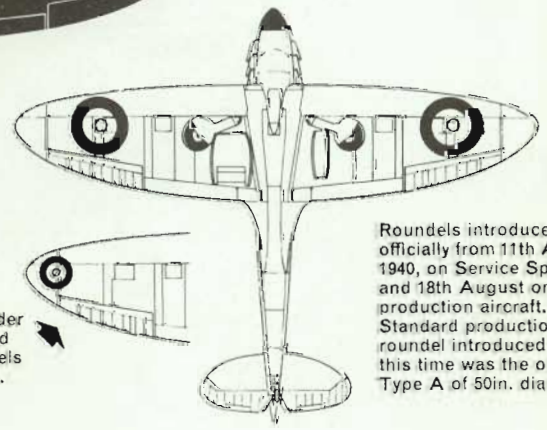


Standard factory finish under surface scheme of Aluminium, Night and White used from 24th April, 1939, until 11th June, 1940.

Official standard under surface scheme from 27th April, 1939, until 6th June, 1940. Equally divided Night and White under surfaces.



Wide variation of under wing roundel size and position when roundels were first introduced.



Roundels introduced officially from 11th August, 1940, on Service Spitfires, and 18th August on production aircraft. Standard production roundel introduced at this time was the original Type A of 50in. diameter.

After 16th September, the fuselage roundel was enlarged, the Blue ring to 35in. diameter and the Red centre to 14in. The wing roundel reverted to 56in. with a 22.4in. Red centre spot.

On factory-finished Spitfires 8in. high serial numbers were painted in Night on the fuselage sides, 6in. forward of the tailplane. During 1939 the serial numbers on Squadron aircraft were painted out for security reasons, but this was not a rigid rule. Some aircraft, such as RB-V of No. 66(F) Squadron (K9987, B scheme camouflage), had the serial painted in Grey, but this was unauthorised. Other aircraft had very small serials stencilled on the fin, and in some instances only the last two numbers of the serial were used. But the value of hiding an individual aircraft's identity was questionable, and from early in 1940 the serial number was left on service aircraft.

During the last months of peace Spitfires in their new, dull markings were to be seen in ever-increasing numbers, at such occasions as the last Empire Air Day, when large numbers of old, well-known and newly-opened, recently-built Royal Air Force stations were open to the public, and the annual Air Defence Exercises. But one Spitfire during this period did not conform to the standard camouflage pattern. This was N-17, ex-K9834, the special Spitfire modified for an attack on the World Landplane Speed Record.

Although it has been quoted as being painted in Royal Blue and Gold, this is almost certainly not correct. The Supermarine House Colours were Royal Blue and Silver, and when the aircraft was exhibited at the Brussels Exhibition in 1939, *Flight* magazine reported that the 'Speed-Spitfire' was resplendent in Royal Blue and Silver.

The entire upper surfaces were painted in high gloss Royal Blue, with a Silver lightning flash over the whole rear fuselage. All the lower surfaces of the wings and part of the under fuselage aft of the wing, were painted silver.

When war came at last on 3rd September, 1939, British fighters continued to retain their existing markings. During the first months of the war the expected massive enemy bombing raids on major cities and towns in the United Kingdom did not materialise. Instead, for the most part, enemy activity was confined to reconnaissance or mine laying. Thus there was little to test the effectiveness of the Royal Air Force camouflage and markings under combat conditions. Local changes had been made to aircraft operating over France, but these did not apply to Home-based fighters.

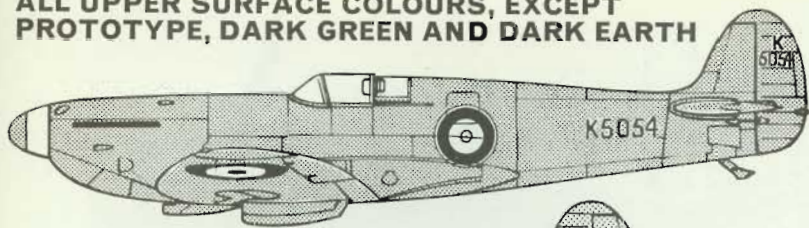
In October 1939, a tragic recognition mistake resulted in the shooting down of a coastal reconnaissance aircraft of the R.A.F. by fighters of Fighter Command. Aircraft recognition was still in its infancy, and R.A.F. National markings had proved to be insufficiently visible during combat. As a result of this unfortunate incident, a telegram (A.949/32) was sent to all Commands ordering that aircraft were to carry Type A Red, White and Blue roundels on the upper surfaces of wings. This message was sent on 30th October, and was followed by two further telegrams on the 5th and 10th of November ordering all British aircraft, except fighters and night bombers, to carry Type A roundels under their wings. The issue of the telegrams was a hurried action which caused some doubts as to which types of aircraft were affected by the order. General reconnaissance aircraft certainly carried Type A upper surface roundels, but there is little evidence that many other types had the new roundels. Fighters, from available evidence, seem to have been excluded from the order, with the possible exception of twin-engined types. The under wing roundels were certainly carried by many aircraft, except the two types to which reference was made.

In order to clarify the situation, Commands were notified on 21st November in advance of an amendment to A.M.O. A.154, of the correct markings to be

*Spitfire Is of No. 92(F) Squadron landing after an interception. Both aircraft have 7in. wide fin stripes. The leading Spitfire has 40in. (approximate) under wing roundels, whilst the other has standard 50in. roundels.*

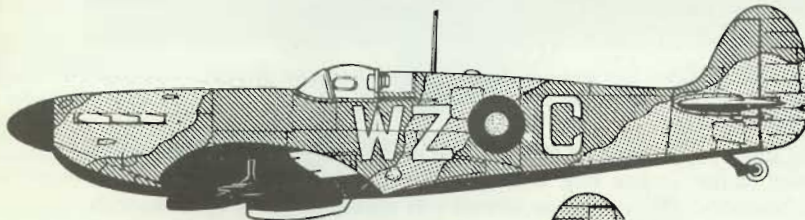
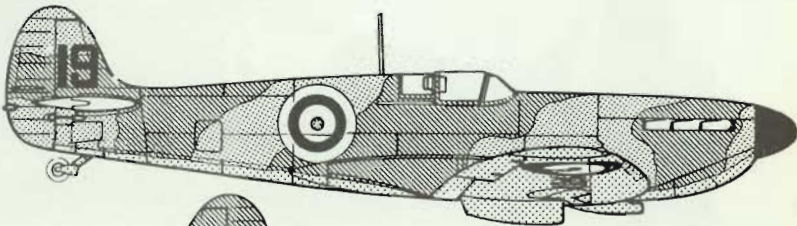


**ALL UPPER SURFACE COLOURS, EXCEPT PROTOTYPE, DARK GREEN AND DARK EARTH**



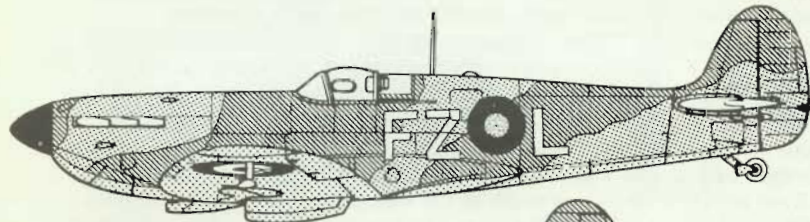
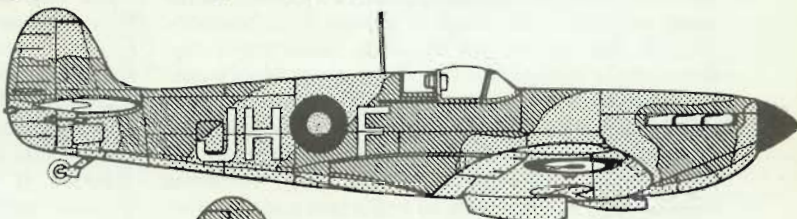
Spitfire prototype, K5054. High-gloss Seaplane Grey, 25in. Type A fuselage roundels outlined in white, 50in. Type A upper and lower wing roundels, 12in. under wing serials, 8in. serials on fuselage, 6in. serials on rudder. 8in. and 6in. serials outlined in white. 1936.

Initial delivery finish. 35in. Type A.I fuselage roundels, 56in. Type A.I upper wing roundels, 50in. Type A lower wing roundels, 12in. high under wing serials. Under surface colour—Aluminium (silver). K9797 of No. 19(F) Squadron. '19' in Red on fin. September 1938.



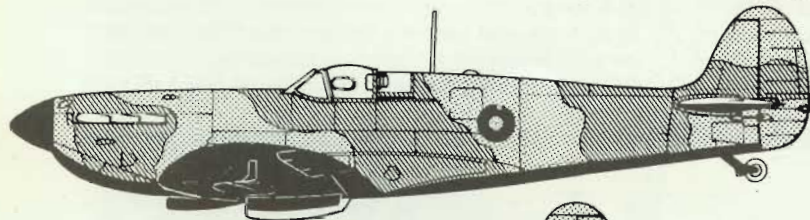
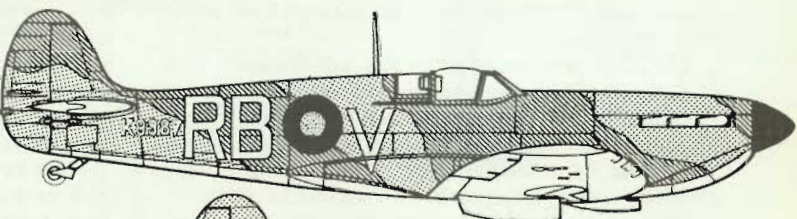
Typical 1939 (pre-war) scheme, No. 19(F) Squadron shown. Night and White under surfaces. Reverse coloured ailerons (see text) on this particular aircraft. 25in. Type B fuselage roundels, 40in. Type B upper wing roundels, Grey code letters.

May 1939. Partial repaint anomaly, No. 74(F) Squadron. Upper surface colours as WZ-C. Port side (divided at centre line of aircraft) Night. Starboard side—initial delivery scheme.



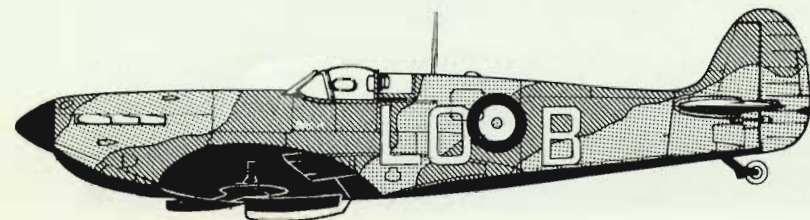
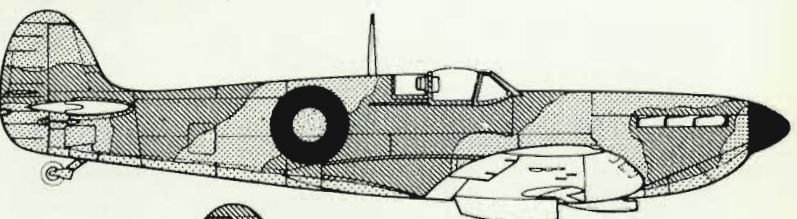
Standard 1939 upper surface scheme. Under surfaces not yet repainted and still in initial delivery scheme. No. 65(F) Squadron. Grey code letters.

Standard, early 1939 scheme. Night and White under surfaces, non-standard grey serials on fuselage. No. 66(F) Squadron.



15in. Type B fuselage roundels. Mid-1939 to 15th September, 1939. Factory finish.

35in. Type B fuselage roundels, 56in. upper wing roundels, Night, White and Aluminium under surfaces. 15th September, 1939, to 23rd February, 1940. Factory finish.



LO-B ('Bogus' in White immediately forward of entrance flap). Grey B under nose, behind spinner. 25in. Type A fuselage roundels, 40in. Type B upper wing roundels. No. 602(F) Squadron. 21st November, 1939, to 1st May, 1940. Grey code letters.



*Spitfire IIA, P7420. Dark Green and Dark Earth upper surfaces, Sky under surfaces, 7in. wide bands on fin flash, 35in. Type A.I fuselage roundels, with correct proportion Red centre spot. 25in. under wing roundel near tip.*

applied to various classes of aircraft. It was directed that the Type A roundel would only be painted on the upper surfaces of the wings of general reconnaissance aircraft, the rest having the Type B as previously. But a major change was that Type A roundels would be painted on the fuselage sides of all aircraft. The order regarding the underwing roundels still stood. An interesting item included in these new orders was the first specified application of the colour Sky, which was to eventually become such an important under surface shade. The only aircraft authorised to use the new colour at this period were Blenheim bombers.

Another amendment to the original A.M.O. was that serial numbers were to be painted on the sides of the rear fuselage only, cancelling the previous instruction which included under wing serial numbers as well. These had by this time largely disappeared from use at the outbreak of war.

The only item included in this notification which caused a markings change on Spitfires concerned the introduction of the Type A roundel in place of the Type B on the fuselage. On service Spitfires the change was made by merely adding a White ring on the existing roundel, resulting in five ring widths of 5in.

New production Spitfires built after 23rd February, 1940, had the revised roundels. These were larger than those already in use in squadrons, being based on the

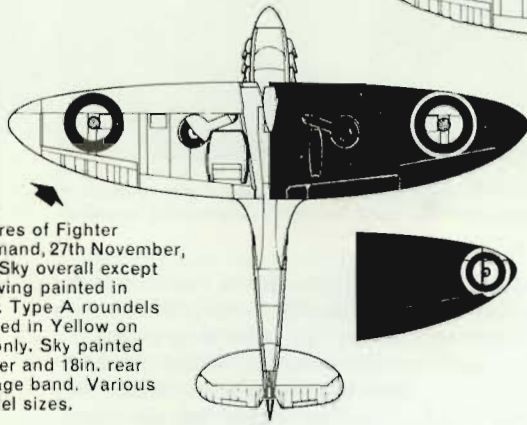
existing roundel size of 35in. The new roundels had five ring widths of 7in. each. All the other existing camouflage scheme was unchanged, and Spitfires with these larger roundels were delivered to Maintenance Units for eventual dispatch to squadrons. No photographs seem to exist which show these larger roundels in Squadron use in their Type A form. As the replacement rate in the squadrons was not high during this period, it is likely that the majority were stored at M.U.s. until after the next change of markings.

This occurred on 1st May, 1940, and was the result of increased combat experience, which proved that the existing National markings were still inadequate. On this date, the Air Ministry sent a signal, X.485, notifying all Commands that fuselage roundels should be encircled with an additional ring of Yellow, to be the same width as the Blue ring. Red, White and Blue stripes of the same width were to be painted on the fin, or fins. In the instances of slim fuselaged aircraft the roundels could be repainted in a smaller size to accommodate the Yellow ring, or, as a temporary measure, a narrower Yellow ring could be used.

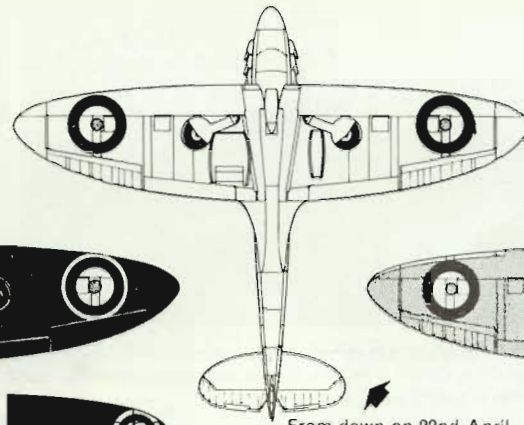
These new markings were painted on squadron aircraft soon after the signal was received. As the standard Type A roundel used on Spitfires was 25in. diameter, the additional ring of Yellow increased the size to 35in. diameter, thus reverting to the original size and type

*P7490, LZ-Z of No. 66(F) Squadron. The port wing is Night with remainder of under surfaces Sky. Roundel on port wing outlined Yellow.*

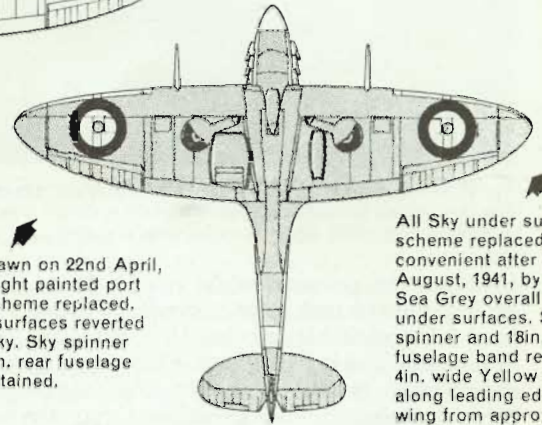




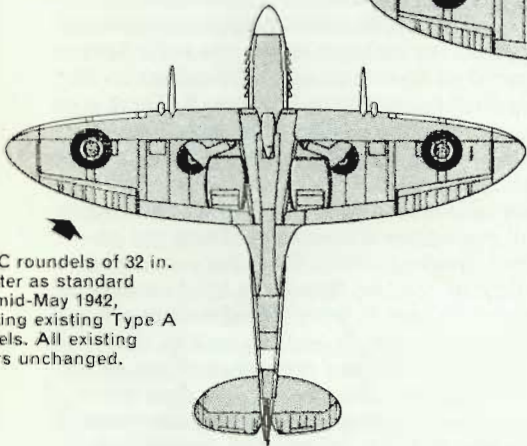
Spitfires of Fighter Command, 27th November, 1940. Sky overall except port wing painted in Night. Type A roundels outlined in Yellow on port only. Sky painted spinner and 18in. rear fuselage band. Various roundel sizes.



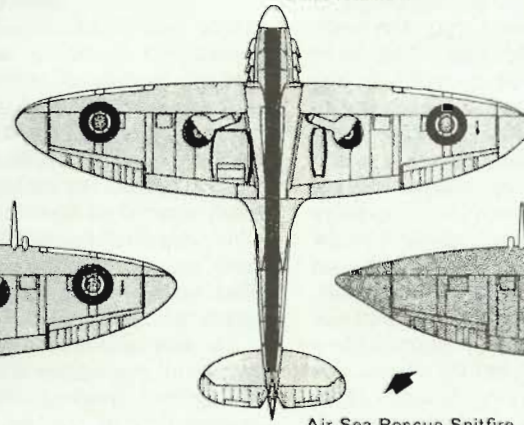
From dawn on 22nd April, 1941. Night painted port wing scheme replaced. Under surfaces reverted to all Sky. Sky spinner and 18in. rear fuselage band retained.



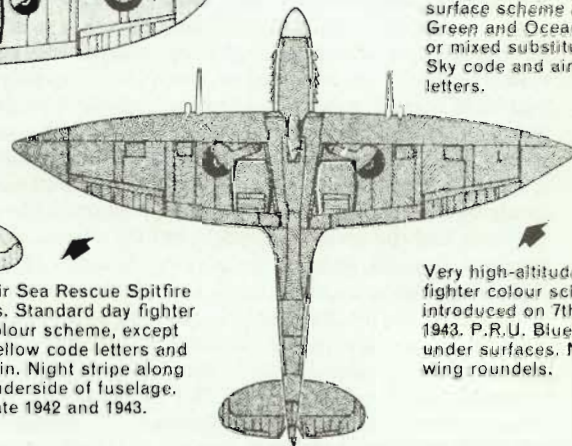
All Sky under surface scheme replaced as convenient after 15th August, 1941, by Medium Sea Grey overall on under surfaces. Sky spinner and 18in. rear fuselage band retained. 4in. wide Yellow strips along leading edge of wing from approximately mid-way along each semi-span, 50in. Type A roundels standard. New under surface colour used solely with new upper surface scheme of Dark Green and Ocean Grey or mixed substitute grey. Sky code and aircraft letters.



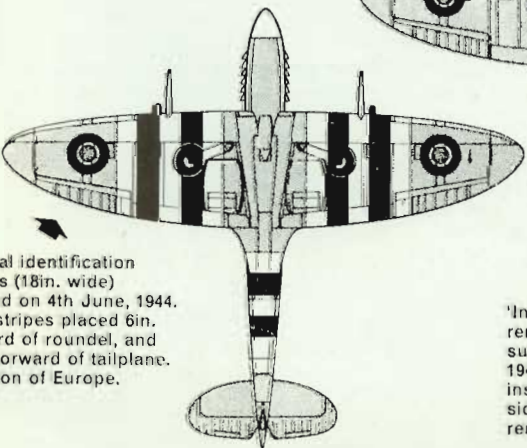
Type C roundels of 32 in. diameter as standard from mid-May 1942, replacing existing Type A roundels. All existing colours unchanged.



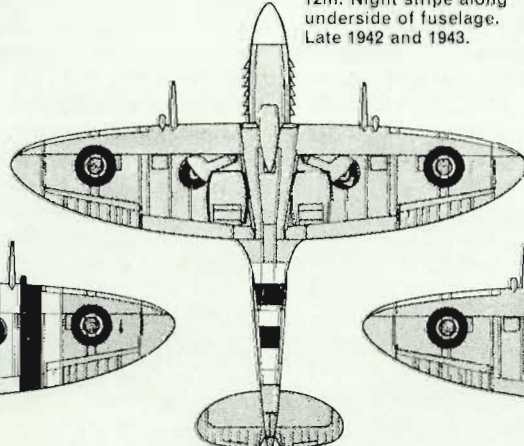
Air Sea Rescue Spitfire IIs. Standard day fighter colour scheme, except Yellow code letters and 12in. Night stripe along underside of fuselage. Late 1942 and 1943.



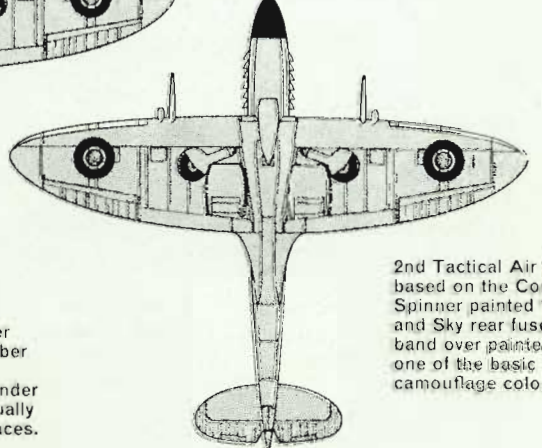
Very high-altitude day fighter colour scheme introduced on 7th June, 1943. P.R.U. Blue on all under surfaces. No under wing roundels.



Special identification stripes (18in. wide) applied on 4th June, 1944. First stripes placed 6in. inboard of roundel, and 18in. forward of tailplane. Invasion of Europe.



'Invasion' stripes removed from all upper surfaces after September 1944, and in some instances from wing under sides also. Later gradually removed from all surfaces.



2nd Tactical Air Force based on the Continent. Spinner painted 'black' and Sky rear fuselage band over painted with one of the basic camouflage colours.



*No. 92(F) Squadron Spitfire VBs. Photograph was taken after 22nd April, 1941, when all Sky under surface was re-instated. The foreground aircraft has 35in. Type A.I roundels with 7in. centre spot, codes are light grey and motif 'East India Squadron' in same colour. 50in. Type A under wing roundel.*

used on initial deliveries of the aircraft. But it should be remembered that large numbers of Spitfires had been delivered to Maintenance Units with 35in., Type A roundels, and the additional Yellow ring increased the diameter in this instance to 49in., consisting of seven ring widths of 7in. Two sizes of roundels could therefore be seen when the latter Spitfires started to be delivered to squadrons, some with normal size and others very large. In fact, reports of squadrons supposedly painting very large roundels on their aircraft for recognition purposes during the early period of the Battle of Britain, refer to those aircraft with the 49in. roundels. It was not a question of existing roundels being removed and replaced by much larger sizes, but of using the easiest method of bringing an aircraft into line with the latest markings requirements.

Amendment of the Spitfire camouflage drawings was made on 16th May, and thereafter all new production Spitfires had the revised roundels and fin stripes. The fuselage roundel reverted to a 35in. diameter Type A.I, but with a puzzling and interesting anomaly which was unique to Spitfires. To conform to the correct proportions of the standard A.I roundel, the centre Red spot should have been 1/7th of the total diameter, or 5in. in diameter. But either through a draughtsman's error, or the objection on aesthetic grounds by some unknown person, the Red centre spot was increased to 7in. on new production aircraft. This shows up clearly on many photographs, and the roundel looks different to the normal Type A.I. This peculiarity must have been noticed in some quarter, for many Spitfires did carry roundels of the correct proportions.

The fin stripes on the official drawing were composed of three bands of 7in. According to the signal the fin stripes should have had band widths of 5in., but these were probably considered to be too narrow. The majority of Squadron Spitfires used similar stripes, probably because painters worked to the manufacturers drawing for these new additions to the aircrafts' markings.

Following experience built up during the first year of war, particularly during the hard fighting in France, a general decision was taken to replace the under surface scheme of Night and White, which had remained standard for two years. The German Luftwaffe had used a pale blue, Hellblau, as their standard under surface colour, and this had proved to be less conspicuous in combat than the R.A.F.'s 'black and white' scheme. Although the high contrast

between the Night and White sides of the aircraft did break up the general outline, the R.A.F. fighters were always clearly visible. As the scheme provided no element of surprise, they were at a tactical disadvantage. It, therefore, became necessary to adopt a new colour which was suitable for general use under average sky conditions at the comparatively low or medium altitudes of combat during the period.

The new colour, first used on light bombers, was a pale blue-green, and was officially known as Sky. All the surface colour paints at this period were given the suffix 'Type S', but for some reason the suffix became solely applied in documents and publications to Sky. Thus, it is often referred to as Sky Type S. There is no truth in any reference to Sky Type S being a later, paler version of Sky, as has been suggested in some quarters.

The new colour became known popularly by many names, all descriptive of the shade. 'Duck egg green', 'Pale green', 'Duck egg blue', 'Pale blue', were all used at some time or another. 'Duck egg blue' became the most commonly used in both official documents and the popular press. It appeared, as well as the other names, in many books and magazines of the period, and has been quoted ever since. Being descriptive of the colour, these names caught the popular imagination for more than the name Sky, which had no descriptive meaning to the general public.

One official document, DTD Specification 83A, quotes 'Duck egg blue', but in fact this should not be taken as any indication that this colour existed as a separate shade to Sky, because in the same document reference is made to 'silver' and 'black', both popular names for the official colours Aluminium and Night.

*Spitfire Mk. IIA of No. 65(F) Squadron. This photograph was probably taken after 22nd April, 1941, when under surfaces reverted to Sky. Port wing previously Night. 7in. wide finstripes; Type A.I fuselage roundel 35in., 50in. Type A under wing roundel.*





*Spitfire VBs of No. 91(F) Squadron. Spitfire in the foreground is AB216, the Squadron Commander's aircraft. Upper surface colours are Dark Green and (probably) Ocean Grey.*

Evidently there was much confusion in the use of all these different names, and in the Admiralty Supplement to DTD 83A the following paragraph appears: 'Appendix para 4 (ii). In order to clarify the position of the colour of under sides with this order and the camouflage drawings which will shortly be issued, it should be noted that duck egg blue and Sky Type S are one and the same colour'.

On 6th June, 1940, the Air Ministry ordered that all fighters would be painted on the under surfaces with Sky in place of the 'black and white' scheme, and no under wing roundels would be carried. The manufacturer's drawings were amended to comply with this instruction on 11th June and the change was introduced on the production lines soon afterwards.

As the 'Battle of Britain' was in the opening phase at this time, hundreds of fighters had to be repainted with the new colour as soon as was possible, a truly gigantic task, which must have put an enormous strain on the capacity of the paint manufacturers trying to meet the demand. It should be pointed out that Sky was not only in use on fighters, but was applied to a great many other types also, such as light bombers, Army-co-operation, Naval aircraft and Coastal reconnaissance aircraft.

*Spitfire VBs of No. 64(F) Squadron. Aircraft in foreground is 'Atchasmickar', a presentation machine. It carries the Squadron Leader's pennant. Note the 7in. Red centre spot of the 35in. roundel. Fin stripes are the standard 27in. x 24in. The camouflage scheme is probably Mixed Grey (Medium Sea Grey and Night) and Dark Green, with Medium Sea Grey under surfaces.*



There have been many reports of Sky varying greatly in shade during this period, and there are a number of explanations for this. It is unlikely that there was any significant difference in the official shade of the colour, either in 1940 or for the rest of the war years. But, because of the vast quantity of paint required at short notice, supplies were limited and, therefore, much unofficial mixing took place at both Royal Air Force and civilian units. Unless the exact percentages of each of the colours used in the mix was known and correctly apportioned, there was certain to be variation.

In some instances it would be bluer, in others green was more dominant, and shades did appear lighter or darker than the standard scheme. If some of the authorised primary colours used in the mixture were in short supply locally, some units may well have used unauthorised colours. This would account for some odd variations in the colour. Insufficient stirring of the official paint would have also accounted for some differences in the shade. The influence of the under-coat, which was either Yellow chromate or Cerrux Grey primer, is also said to have affected the top coat tone, and this could have been another reason for colour differences.

Some reports have quoted that the 1940 shade of Sky was brighter and greener than that used later in the war, but there is no evidence to justify them. The sudden appearance of numbers of aircraft painted in the exotic new colour after two whole years of seeing R.A.F. fighters and bombers in either 'black and white', or just plain 'black' underneath, would make the new colour seem bright and gaudy, but after the initial impact of sighting the new shade the viewer became used to it, and it did appear to be not so vivid.

As stated earlier the two main sizes of Type A.I roundels continued to be used throughout the 'Battle'. As many hundreds of Spitfires had been delivered to the M.U.s. with the Type A fuselage roundel of 35in. in earlier months, many of these continued to be sent



*Spitfire VBs of No. 131(F) Squadron. This photograph is interesting as it was taken during May 1942 when the markings were being changed to the Type C.I fuselage roundel and 24in. square fin flash. Second and third aircraft have partly repainted roundels.*

to squadrons as replacements with the additional Yellow outer ring usually added before delivery. But gradually all the new Spitfire deliveries from factories had the standard Type A.I roundel of 35in. diameter, and as these passed from M.U.s. to squadrons rapidly due to the high replacement rate, this type of fuselage roundel became the established standard size.

Fin flashes, due to individual interpretations of the rather simple directive, had appeared in a variety of styles. On Spitfires these had been more uniform than on, for example, Hurricanes, which showed considerable variation. Possibly this was due to the Hurricane's larger fin area, which permitted a more imaginative use of the space available. The majority of Spitfires during the 'Battle of Britain' continued to use the 7in. wide bands of colour in accordance with the manufacturers' drawing. Owing to the varying styles of fin flashes, the Air Ministry issued a directive on 1st August, 1940, introducing the familiar standard size of rectangle consisting of three 8in. wide bands of Red, White and Blue, with a constant height of 27in.

New production Spitfires incorporated the new fin flash after 18th August. The new marking was not painted on squadron aircraft immediately, but was

gradually introduced as and when it was convenient. If a fighter was taken out of service for some reason, the new flash was added. More began to be seen as new factory deliveries were made, but some Spitfires retained their existing stripes well into the following year.

On 11th August, following a conference on markings, the Air Ministry issued new instructions clarifying existing markings. An alteration made to existing markings at this time was the re-introduction of underwing roundels on fighters. Whether any Spitfires carried underwing roundels before this date is uncertain. At the outbreak of war the A.M. ordered all aircraft flying over France to carry these roundels, and this Order still stood. As Spitfires went into action over France during the Dunkirk evacuation, roundels may have been hurriedly added for these actions. These may also have been removed afterwards. Often photographs showing fighters during the 'Battle' carrying roundels, and said to have been taken at a certain date, prove to have been photographed at a later date. No new production Spitfires had underwing roundels before 18th August, when the markings drawing was amended to include both the new standard fin flash and Type A underwing roundels of

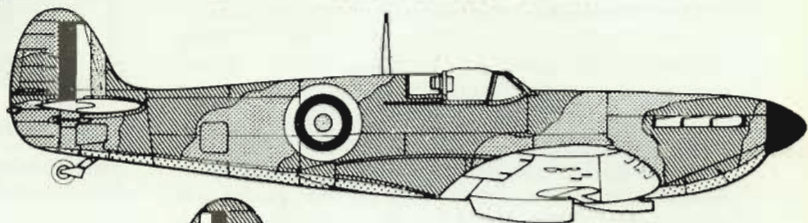
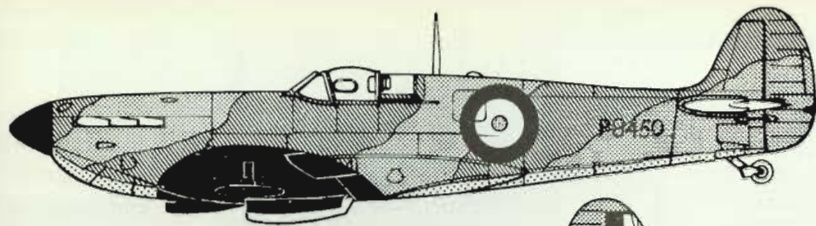
*Spitfire Mk. VC. Note the crudely sprayed Dark Green areas. Special masking mats which gave a sharp edge to the Dark Green areas, were usually used to mark out the camouflage pattern.*



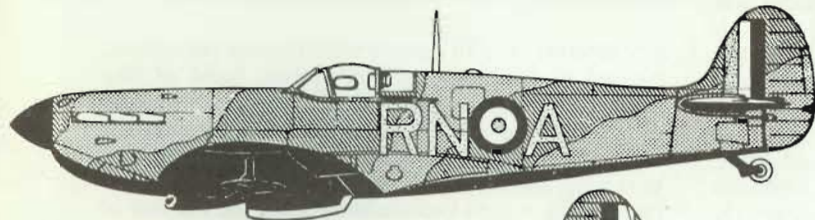


**ALL UPPER SURFACE COLOUR SCHEMES  
DARK GREEN AND DARK EARTH**

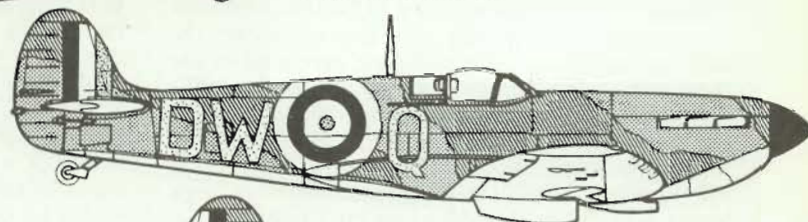
Standard production scheme from 23rd February, to 16th May, 1940. Lower surfaces Night (port wing), White (starboard wing), and Aluminium. Fuselage roundel Type A of 35 in. diameter.



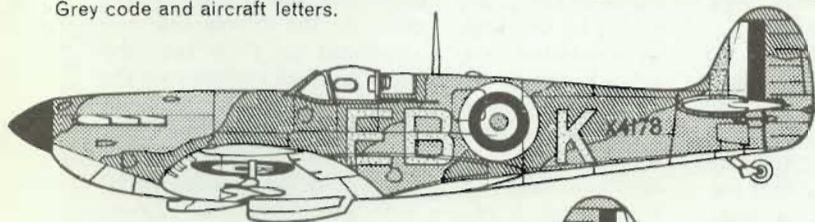
Standard production scheme from 16th May, to 11th June, 1940. 35in. diameter Type A.I. fuselage roundel (with 7in. Red centre spot), and 7in. wide fin stripes. Basic colours as previous scheme.



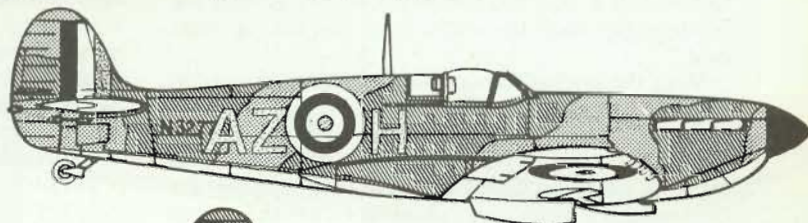
No. 72(F) Squadron. Service anomaly. 5in. wide fin stripes and Type A fuselage roundel not yet surrounded by a Yellow outer ring. Grey code and aircraft letters (paint DTD 33B/157). Night and White undersurfaces.



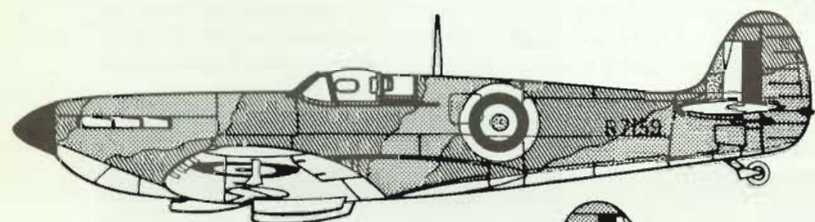
No. 610(F) Squadron. 49in. diameter Type A.I. fuselage roundel, modified from production 35in. diameter Type A roundel. Sky under surfaces introduced from 6th June, 1940. No under wing roundels generally, although some aircraft may have had them for individual actions over France. Grey code and aircraft letters.



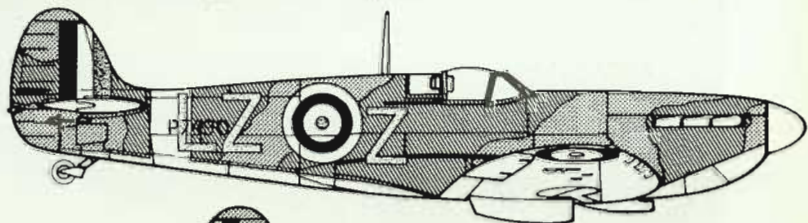
No. 41(F) Squadron. 7in. wide fin stripes, Type A.I. fuselage roundels with 7in. Red centre spot. Serial X4178. Under wing roundels added after 11th August, 1940. A-scheme camouflage, Sky under surfaces.



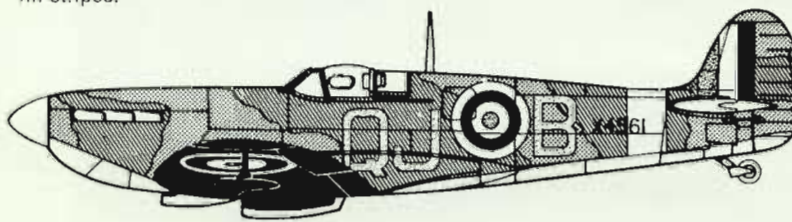
N3277 of No. 234(F) Squadron, 1940. 7in. wide fin stripes, Type A.I. fuselage roundel of 35in. diameter with Red centre spot of correct proportions (5in. diameter). Sky under surfaces.



Standard production scheme from 18th August, 1940. Under wing Type A roundels of 50in. diameter. Introduction of the standard fin flash of three 8in. wide stripes, 27in. high. Sky under surfaces.



27th November, 1940. Introduction of the Sky spinner and 18in. rear fuselage band. Under side of port wing Night, with roundel outlined in Yellow (incomplete due to small diameter roundel being located too near to wing tip). Sky under surfaces. P7490 of No. 65(F) Squadron. 7in. wide fin stripes.



X4561 of No. 92(F) Squadron. Similar scheme to LZ-Z, but larger under wing roundel. 7in. wide fin stripes, 7in. Red centre spot to roundel. Grey code letters.

50in. diameter, as on the original deliveries in August 1938.

The roundel size on Service Spitfires showed greater variation, both in size and position. Some were smaller and carried on the extreme wing tip, but the majority conformed to the manufacturers' drawing, which was always available to squadron paint shops 'on request'. The positioning of wing roundels in Air Ministry Orders is often given as 'on the upper (or lower) surfaces of wing tips', and this was apparently taken literally by some units, who positioned their under wing roundels, in small sizes, at the extreme tip. In fact, the position as laid down on the Ministry of Aircraft Production camouflage pattern guides was approximately one third of the half-span of the wing, and this was usually the position used by the manufacturers in the preparation of their colour schemes.

Squadron code and aircraft letters remained in grey, but with some variation in size and style. Although still officially required to be 48in. high with 6in. strokes, such a size was impractical on the Spitfire. Squadrons were, therefore, permitted to use their own judgement on size. Those of No. 19(F) Squadron (QV) were approximately 28in. high with 6in. strokes, while those of No. 610(F) Squadron (DW) had approximately 36in. high letters with 6in. strokes. No. 92 Squadron (QJ) had approximately 30in. high letters, with 6in. strokes. These are but a few examples of the variation of code lettering used on Spitfires.

Aircraft spinners at this period were usually painted in Night, but there were a few individual cases of different colours being used, such as P9386 of No. 19 Squadron, which appeared to have a White spinner. Others had a thin band of white or Sky around the spinner. But such deviations from the normal were rare.

With the gradual diminishing of enemy activity in daylight over the British Isles, a change took place in markings which only affected aircraft of Fighter Command. On 27th November, the Air Ministry sent signal X.798 to all Commands notifying them that the port wing of day fighters in Fighter Command was to be painted underneath in Night overall, and the roundel under that wing was to be outlined in Yellow.



*Spitfire VB of No. III(F) Squadron, Squadron Commander's aircraft. Note the unauthorised familiar 'III black bar' aft of engine exhausts. Ocean Grey and Dark Green upper surfaces. The aircraft is a presentation Spitfire 'O Bandierante.'*

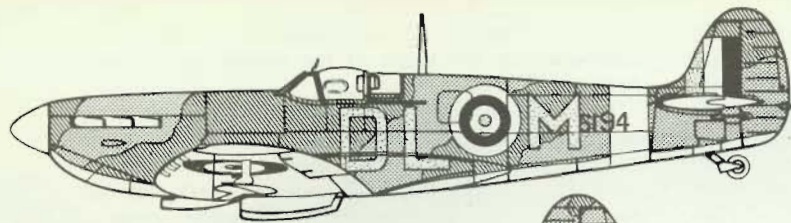
At the same time all fighters were to have the spinner painted in Sky and an 18in. vertical band of Sky painted around the rear fuselage immediately in front of the tailplane. It would be interesting to learn the reason behind the decision to re-introduce the 'black' port wing, and adopt the Sky spinner and rear fuselage band which was to become so familiar for the rest of the War. The reason was almost certainly for recognition purposes.

The Yellow-outlined roundel on the port wing appeared in a number of different forms. In some instances it became a standard Type A.I roundel, while in others the Yellow ring was not completed owing to insufficient space. As the former roundels were retained, much depended on their size and position. On those aircraft with small roundels on the extreme wing tip, the Yellow ring could not be completed. Other aircraft, especially those with the standard 50in. type, had only a narrow ring of Yellow, approximately half the width of the existing rings. Wing roundels of any type were never painted over moveable parts of wings, and for this reason it was not usual for the Yellow ring to be painted over ailerons when the largest roundels were used. M.U.s. were ordered to paint on the new markings before delivering new aircraft to squadrons.

On 14th January, 1941, an alteration to production Spitfires occurred which did not apply to existing service aircraft. This was the abandonment of the A and B scheme camouflage patterns which had remained

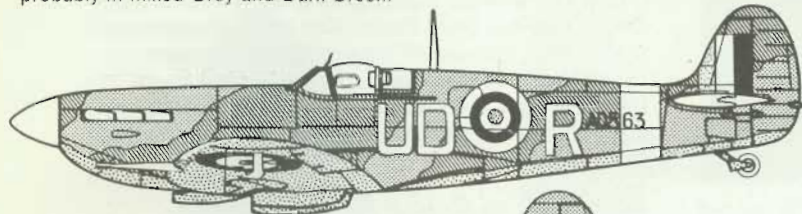
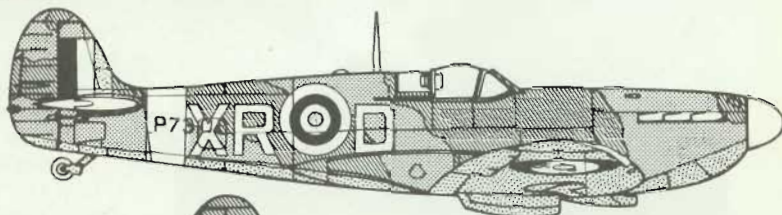
*Spitfire H.F.Mk. VI of No. 124(F) Squadron. Ocean Grey and Dark Green upper surfaces, Medium Sea Grey under surfaces. The Yellow leading edge stripes are unusual in length, extending inwards to the 20mm. guns.*





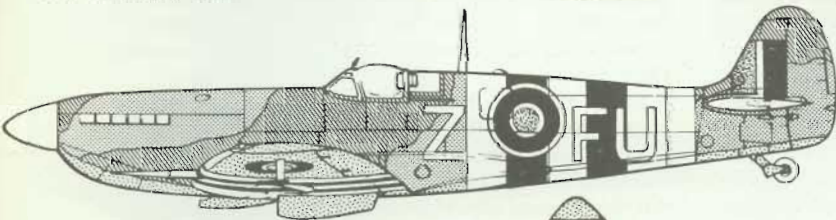
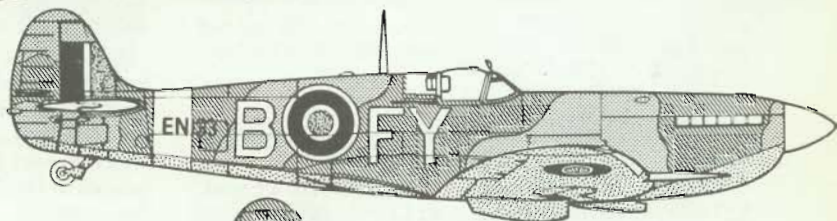
22nd May, 1941. Dark Green and Dark Earth upper surfaces. Sky under surfaces overall. Sky Spinner and 18in. fuselage band. Grey code and aircraft letters. Underwing roundels. Spitfire IIA, P8194, of No. 91(F) Squadron.

15th August, 1941. Ocean Grey and Dark Green upper surfaces, or mixed Grey (Night and Medium Sea Grey), and Dark Green upper surfaces. Medium Sea Grey under surfaces. Sky spinner, 18in. fuselage band, code and aircraft letters. Spitfire IIA, P7308, of No. 71(F) Squadron, probably in mixed Grey and Dark Green.



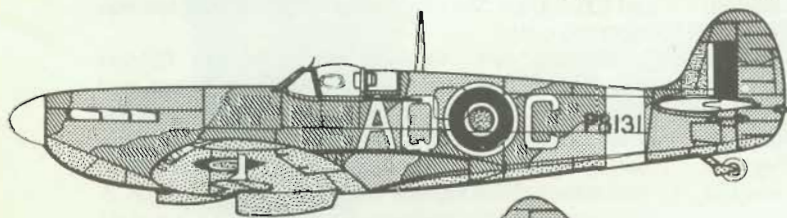
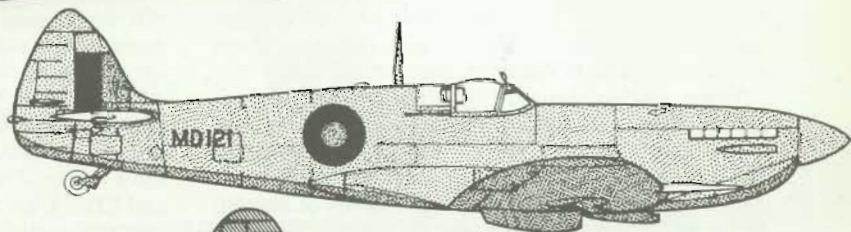
Spitfire VB, AD563 of No. 452 Squadron, R.A.A.F., Fighter Command, probably Ocean Grey and Dark Green upper surfaces. Standard production colour scheme using Ocean Grey or mixed Grey. Introduced on production lines after 16th August, 1941.

Standard day fighter scheme from mid-May 1942. Type C and C.1 roundels, 24in. square standard fin flash. Sky spinner, 18in. fuselage band, code and aircraft letters. Introduced on production lines from 21st May, 1942. Ocean Grey and Dark Green most commonly used.



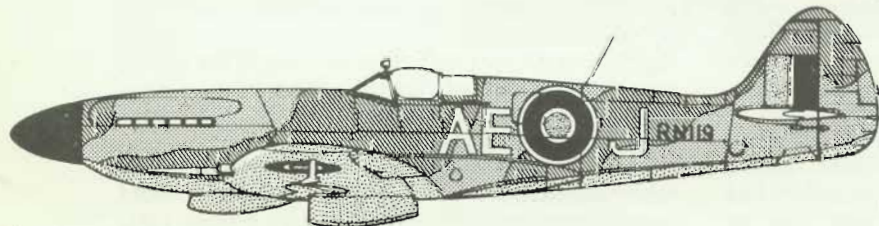
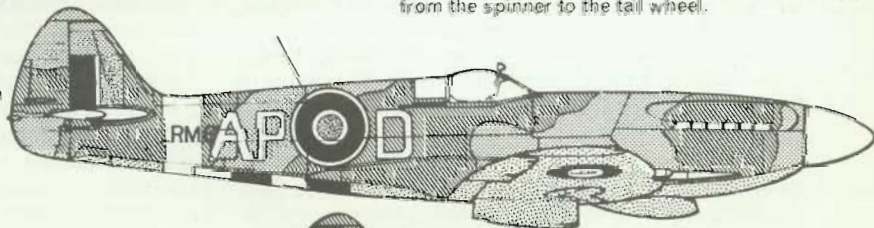
Invasion stripes added, 4th June, 1944, for the operation on 5th June. Delayed by one day.

Spitfire Mk. VII limited production. Standard high altitude finish for day fighters, 7th June, 1943. Medium Sea Grey upper surfaces and P.R.U. Blue under surfaces. Either normal or extended wing tips.



Spitfire IIC, P8131, of No. 276 Squadron, Air-Sea-Rescue duties. Standard day fighter scheme. Yellow code and aircraft letters. Night (black) stripe, 12in. wide, along under side of the fuselage, from the spinner to the tail wheel.

Spitfire Mk. XIV of No. 130(F) Squadron. Invasion stripes removed from upper surfaces after September 1944, and from wing under surfaces in some instances.



Spitfire Mk. XIV, RN119, of No. 402 Squadron, R.C.A.F., 2nd Tactical Air Force, based on the Continent. Black spinner Sky fuselage band overpainted to make the aircraft less conspicuous on airfields close to the enemy. Type C upper wing roundels introduced in March 1945. Yellow outline to roundel just before the end of hostilities.



*Spitfire Mk. XIV of No. 610(F) Squadron. The aircraft letter under nose is painted in Medium Sea Grey on a black circle.*

in force since the initial deliveries. From this date, all future Spitfires had A scheme camouflage only.

On 7th April, 1941, Fighter Command sent a signal, A279, to the Air Ministry and all Commands notifying them that from dawn on 15th April all fighters would revert to all-Sky under surfaces, with Type A roundels. This was subsequently delayed to be effective from dawn on 22nd April. The 'black' port wing had remained in use from 27th November, 1940, until removed by 22nd April, 1941. From available evidence it seems that it was never applied to production Spitfires, although the Sky spinner and band were introduced on the production lines later.

There were good reasons why the 'black' wing was probably not painted on at factories. During this period large stocks of reserve Spitfires were held at M.U.s and the usage rate was much less than it had been a few months earlier during the Battle of Britain. As the 'black' wing was only intended to be temporary, new production Spitfires so marked would not have reached squadrons until after the markings had been removed. As the markings only applied to Fighter Command aircraft, and Spitfires in standard European day fighter camouflage were being used in other war zones (i.e. non-desert areas in the Middle East and the Far East), these markings would have had to be removed before dispatch. It was, therefore, more convenient to have them painted on at M.U.s. when they were required for delivery to Fighter Command squadrons.

From the middle of 1941 British fighters began to increase the offensive into enemy-held territory, and the fighting was carried out over land and sea, and at ever-increasing altitudes. For this changed tactical reason the existing colours of Dark Green and Dark Earth, with Sky under sides, were unsuitable. These colours had proved their worth when rendering fighters less conspicuous on aerodromes during re-arming and refuelling when enemy aircraft roamed the skies over Britain during daylight. The colours had also proved to be correct during combat over the

greens and browns of the British countryside at the comparatively low levels of the average raids made during mid-1940.

But with the changed situation of the air war, experiments were carried out to determine a suitable combination of colours to meet the new combat conditions. Different colours were tried out on several Hurricanes at the Air Fighting Development Unit at Duxford, and included various combinations of Dark Green and different Greys, or two tones of Grey. Extended trials were carried out on a few operational Hurricanes.

Eventually the decision was taken to retain Dark Green as one of the basic colours, but to evolve a new Grey to replace Dark Earth. This change would cause a minimum amount of repainting on the upper surfaces. The best replacement colour for Dark Earth was found to be a fairly deep Grey with a distinct blue-green hue, and it was given the official colour name of Ocean Grey.

### Compromise Colour

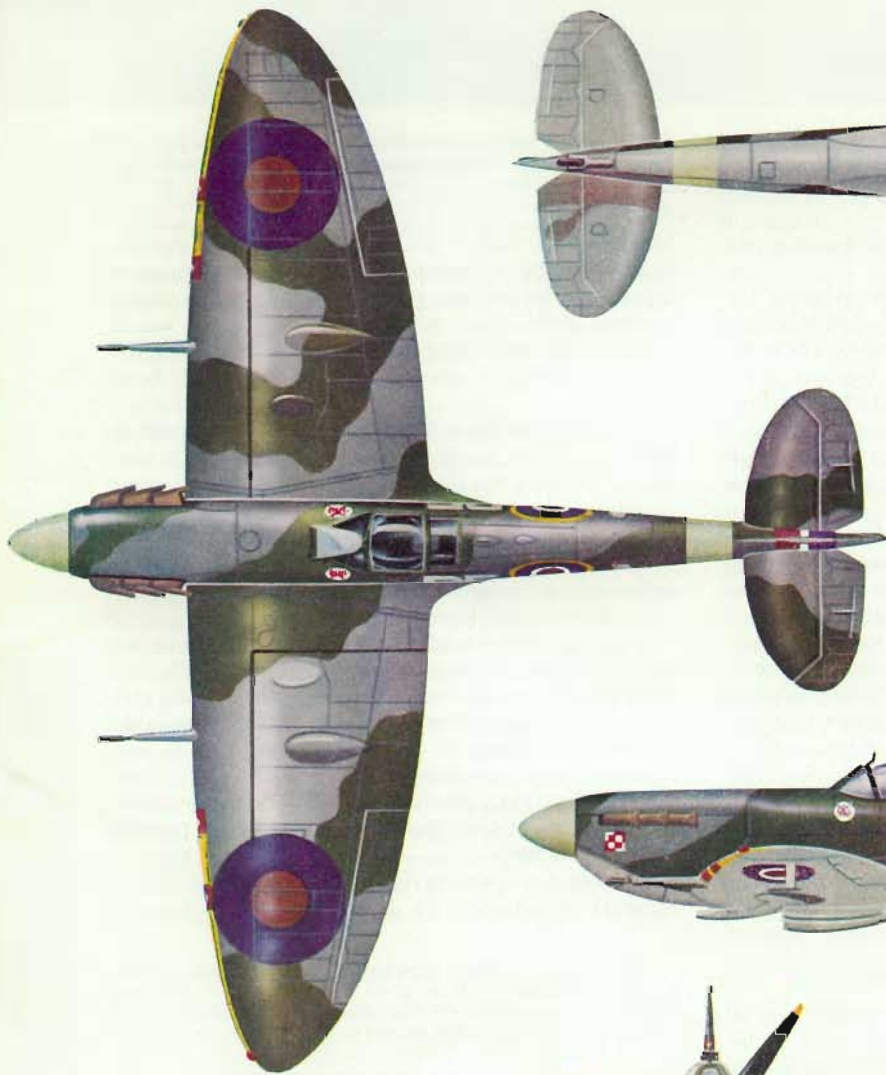
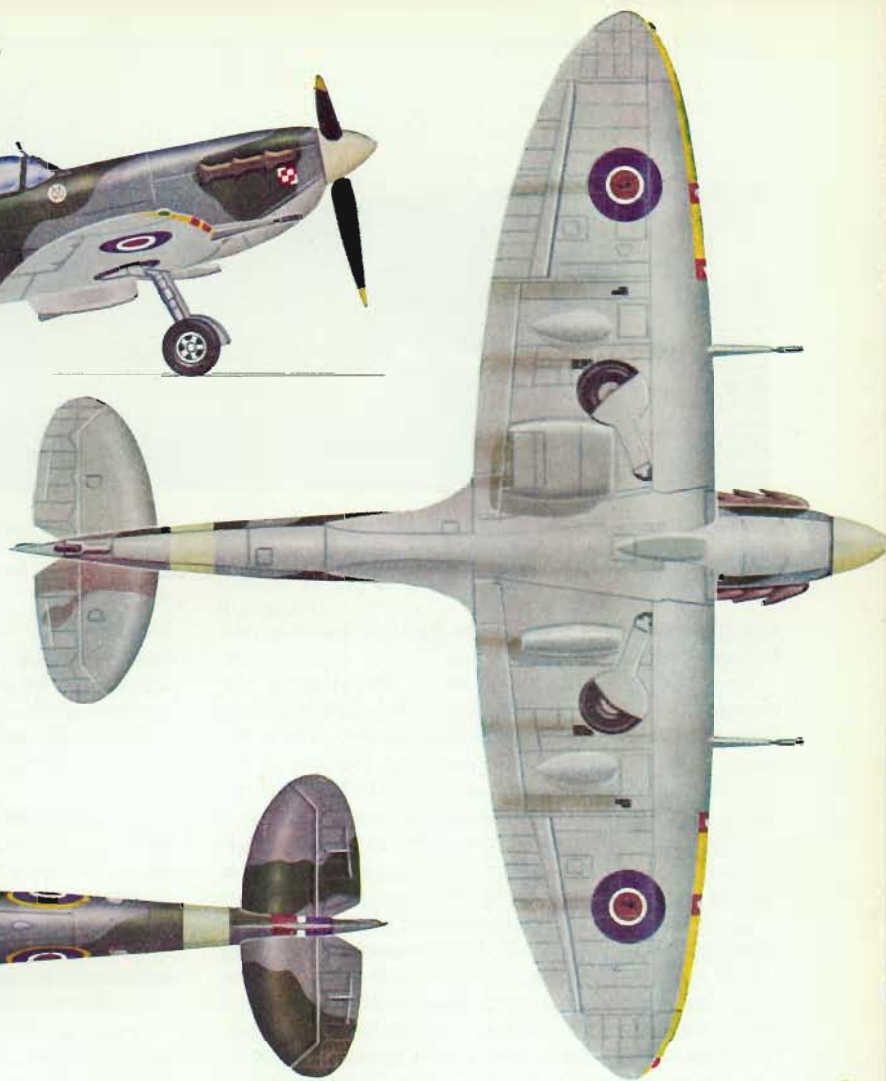
Ultra-violet light effects produce bluer tones over land and sea when viewed from higher altitudes, as can be seen in the distance on any bright sunny day at ground level. But the new colour also had to be effective over the sea at lower altitudes. Ocean Grey proved to be a good compromise colour between these two differing requirements, and it was adopted to become the new companion colour to the existing Dark Green.

In the harsher, more contrasting lighting effects at higher altitudes, and against the deeper blue of the sky at these levels, the existing underside colour of Sky was too light and vivid. When illuminated by sunlight it would appear almost a brilliant white. Again, it was necessary to evolve a new standard colour which was altogether much duller in tone to replace Sky. The adopted colour was called Medium Sea Grey, and it is probable that the inclusion of the word 'Sea' in its title is an indication of its origin. It belonged to the same family of non-blue-toned greys as Dark Sea Grey and Extra Dark Sea Grey, both naval colours, but was lighter in tone.

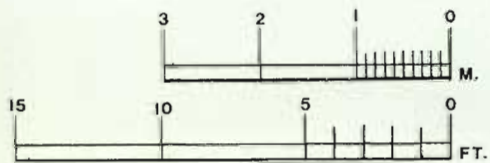
Thus the new standard finish for day fighters operating in Northern Europe was Dark Green and Ocean Grey on all upper surfaces, with medium Sea Grey under surfaces. The Sky spinner and 18in. fuselage band were retained. Code and machine letters were standardised at 24in. high and painted in Sky. A new feature was the painting of a 4in. wide Yellow strip along the outer portion of the wing leading edge of the Spitfire, and it was intended to assist R.A.F. fighter pilots to distinguish friend from foe immediately in the difficult head-on position of battle.

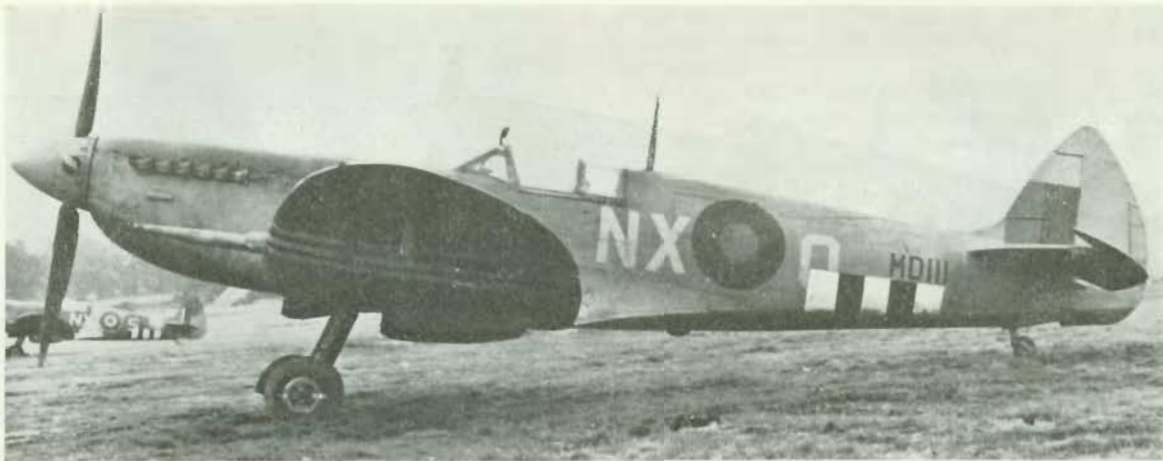
As no similar marking was ever carried by the Luftwaffe's aircraft, it is probable that they found it equally useful. It was to the advantage of both sides not to make mistakes in identification. The painting instructions on the camouflage drawing of the Spitfire gave the positioning of the strip as being from half-way along the wing and out to the tip, but this varied slightly on individual aircraft and marks.

The Air Ministry ordered the new standard day fighter camouflage scheme to be gradually introduced as and when it was convenient after 15th August, 1941,



Spitfire Vb, AB 183, of No. 303, 'Kosciuszko' (Polish) Squadron, Royal Air Force. Colour scheme: Dark Green and Ocean Grey upper surfaces, Medium Sea Grey under surfaces.





*Spitfire Mk. VII, MD111, of No. 131(F) Squadron. High altitude day fighter scheme introduced 7th June, 1943. Code and aircraft letters in Sky Grey. 30in. Type B fuselage roundel, 24in. square fin flash. The invasion stripes are of incorrect size, being approximately 10in. wide on both black and white. (R. C. Jones).*

and Supermarine amended the Spitfire drawings the following day.

But there was a complication in this story of the change from Dark Earth to Ocean Grey. It has always been popular to quote the new grey used as 'Dark Sea Grey', and many publications during the war years, and after, quoted the colour as being 'Dark Sea Grey', and it is still being stated as such in some of today's publications. Some observers refer to a 'non-blue' Grey being used on upper surfaces, and all these reports are based on a half-truth.

The official new replacement colour for Dark Earth was Ocean Grey, and all Air Ministry Orders and signals refer only to that colour. There is no truth in any suggestion that Ocean Grey varied in colour during the war years, and was less blue in earlier years. Any variation in shade would only have been due to bad mixing or, more probably, insufficient stirring. But the fact is that there was another grey which was apparently authorised for use in place of Ocean Grey, and this was the 'non-blue' grey already observed. Although no mention is made of this grey in Air Ministry Orders, it is quoted on the manufacturer's camouflage and markings drawings and, therefore, must have been officially authorised, as all these drawings had to be approved by the Air Ministry.

This grey was a straight mix of seven parts of Medium Sea Grey and one part of Night. It was usually quoted as an alternative to Ocean Grey. As there were literally thousands of day fighters of all types to be repainted the demand on the paint manufacturers for Ocean Grey must have been enormous. Ocean Grey contained a number of colours in its mix, such as Night, White, Blue and Yellow, and it would have been difficult for anyone other than the authorised paint manufacturers to produce a consistent shade. This was the probable reason why a simple mix of Medium Sea Grey and Night was given as the alternative. Although not as effective a colour as Ocean Grey it was better than Dark Earth under the new tactical conditions.

The mixed grey may have been the same shade as Dark Sea Grey, but it seems unlikely. Probably it would be more correct to refer to it as 'darkened

Medium Sea Grey'. Dark Sea Grey was already established as a Ministry of Aircraft Production colour, but its use was generally limited to the upper surfaces of the lower wings of naval biplanes. But it was available and therefore, could have been specified as an alternative grey if the colour had been satisfactory.

It may be that Dark Sea Grey was only produced in small quantities, due to the limited applications in use, and as Medium Sea Grey was being produced in great quantities the mix with Night offered the easiest solution for an alternative Grey. In the absence of any evidence that the two greys were the same, it is better not to refer to the alternative as 'Dark Sea Grey', as so many publications have done in the past.

Both Ocean Grey and the mixed grey came into use on production Spitfires on 16th August, 1941, but Ocean Grey became the main colour used for the rest of the war years. The mixed Grey, from available evidence, went out of use and reference to it was removed from drawings, but it was re-instated on 2nd October, 1943, and from this date either Grey was specified. Ocean Grey, however, remained the normal standard colour.

Possibly the specified use of the mixed grey, the removal of reference to it and its re-instatement,

*Spitfire H.F.Mk. VII in standard high altitude day fighter finish introduced 7th June, 1943. Upper surfaces Medium Sea Grey, under surfaces P.R.U. Blue. 30in. diameter Type B fuselage roundel and 24in. square fin flash.*





*Spitfire F.Mk. IXE flown by Wing Commander A. G. Page. This photograph shows the crudely-painted 18in. 'Invasion Stripes'. The Wing Commander's pennant can be seen beneath the windscreen, and the pilot's initials are painted in Sky under the nose. Medium Sea Grey under surfaces.*

reflected supply problems with Ocean Grey from time to time. It is not known for certain that the alternative colour was mixed by squadrons, but as they used the manufacturers drawings it is almost certain that they did.

When Ocean Grey and its alternative were first used, all the existing roundels on Spitfires remained the same, and by this time had become standardised.

A re-appraisal of the markings of R.A.F. aircraft took place during early 1942, with the conclusion that they were much too conspicuous, particularly on night flying aircraft. Bombers and night fighters were still using light grey code and aircraft letters, together with the standard fin flash and Type A.I fuselage roundels. These were much too bright and visible, especially during searchlight illumination. It became common practice to apply a dark wash over the Yellow and White areas of roundels of night bombers. A decision was taken to adopt Dull Red code and aircraft letters on bombers and night fighters, and to evolve a new type of roundel and fin flash. The new colour, Dull Red, used for these markings was a dull, brick red, very different from the bright red previously used. The new roundel was called the Type C, and it consisted of a broad Blue ring and a large Dull Red centre, with a

narrow ring of White. A related variant of the new roundel using an additional narrow Yellow outer ring was known as the Type C.I. The new fin flash consisted of broad Blue and Dull Red bars, with a narrow White centre strip. In order to standardise throughout the Royal Air Force, the new roundels and fin flash were applied to all aircraft whatever the role, and were specified in three sizes—small, medium and large. The Type C.I roundels had overall diameters of 18in., 36in., and 54in. respectively, and according to aircraft size, and the fin flashes, all to a common height of 24in., were 18in., 24in., and 36in., wide. The Type C roundels had diameters of 16in., 32in., and 48in.

On day fighters the medium-sized roundels and fin flash were used, and consisted of the following dimensions—overall dimensions of rings—Yellow ring, 36in., Blue ring, 32in., White ring, 16in., and Dull Red centre spot, 12in. The fin flash widths were as follows: Dull Red, 11in., White, 2in., and Blue, 11in. The new roundels were not used at this time on wing upper surfaces of any aircraft types which retained the Type B roundel.

The revised markings were introduced in the middle of May, and the Spitfire drawing was amended on 21st May, 1942—all other colours and markings remaining the same. These markings then remained standard for day fighters in Northern Europe for most of the remaining period of the war.

During the latter part of 1942 and early 1943, some 50 Spitfire IIs were converted to the Air-Sea-Rescue role and operated by six squadrons under the control of Fighter Command. These Spitfires were finished in standard day fighter camouflage and markings, except for two differences. The Squadron code and aircraft letters were painted in Yellow instead of the standard colour of Sky, and each aeroplane had a 12in. wide Night (black) strip painted along the under fuselage, from spinner to the tail wheel.

To counter any threat from possible high-altitude enemy aircraft a small batch of special Spitfire HF.Mk. VIIs, with extended wing tips, was produced and entered service with Fighter Command. On 7th June, 1943, the Air Ministry issued instructions for a new colour scheme to be applied to very high flying day fighters, and this finish was painted on some production HF.Mk. VIIs. The new colour scheme was as follows: all upper surfaces, including fin, rudder and spinner, Medium Sea Grey. All under surfaces—

*Spitfire Mk. XIVs of No. 130(F) Squadron. Invasion stripes removed from all surfaces except under the fuselage.*



P.R.U. Blue. Roundels, carried on upper wing surfaces and fuselage sides only, were Type B, and the fin flash was the standard 24in. square, but was composed only of two bars of Dull Red and Blue. On the Spitfire the upper wing roundels were 40in. diameter, with a 16in. Dull Red centre, and those on the fuselage were 30in. overall diameter, with 12in. Dull Red centres. The serial letters and numbers were of the standard 8in. high pattern painted in Night. 24in. code and aircraft letters were used and were in Sky Grey.

The next major addition to existing markings occurred on 4th June, 1944, when black and white stripes were painted on Allied aircraft in preparation for the Invasion of Europe, which should have taken place on 5th June, but was delayed for one day. On single-engined aircraft these 18in. wide stripes were painted across the full chord of the wings, top and bottom, 6in. inboard of the roundels. On the fuselage the stripes were painted 18in. forward of the tailplane, but not over National markings, code and aircraft letters or serial numbers. In most instances, as the rearmost band was 18in. forward of the tailplane, the Sky rear fuselage band was not obliterated but was reduced in width. In each position on the wings and fuselage five alternating bands of black and white were used. As with all other types operating near the Invasion areas, Spitfires carried these markings in the authorised positions.

### D-Day Markings Removed

After September, 1944, the markings were removed from upper surfaces. As many squadrons had by then moved to aerodromes on the Continent the possibility of being attacked on the ground increased, and, therefore, it became necessary to restore the effectiveness of upper surface camouflage. Gradually the markings disappeared from use, and by the end of 1944 most had been removed. The markings were really only required for the initial phases of the Invasion, when such vast numbers of aircraft of all types were swarming over the beach-heads, and associated areas of activity.

After the formation of the 2nd Tactical Air Force in preparation for the forthcoming Invasion of Europe, a number of Spitfire squadrons, mostly Mk. IXs, were allotted to the new command. With the decreasing number of combats between opposing fighters, many Spitfire Squadrons were employed in the Ground Attack role, and operated in this manner with the 2nd Tactical Air Force.

As the Allied Forces pushed further into enemy-held territory squadrons began operating from bases on the Continent. In order to reduce their vulnerability on the ground when based at such short distances from enemy airfields, the Sky-painted spinner and 18in. rear fuselage band were usually re-painted, the spinner in black and the band in one of the basic camouflage colours. In the case of the latter this was often Ocean Grey. Early in 1945 the upper wing roundel of Royal Air Force fighters was changed from a Type B to a Type C. No size was stipulated and there was some variation. Some Spitfires had the 32in. diameter Type C roundel as used on the wing under sides, others merely added a thin White ring of the appropriate size



*Spitfire Mk. XIV of No. 402 Squadron, 2nd Tactical Air Force. The Sky spinner has been repainted 'black' and the Sky 18in. fuselage band over painted in the standard camouflage colours. Type C upper wing roundel outlined in Yellow used during the final phases of war.*



*Spitfire Mk. XIV of No. 41(F) Squadron, on the Continent. Black spinner, Sky fuselage band overpainted in normal camouflage colours. Type C upper wing roundel of 56in. diameter introduced on production Spitfires after 9th March, 1945.*



*Spitfire F.R. Mk. XIV, RM795, in May 1945. Standard day fighter camouflage scheme. Thin White or Sky band, approximately 6in. wide, around the rear fuselage. Black spinner. (Photos: R.C. Jones).*

to the existing roundel. In this instance the total diameter of the new White ring was 28in., where the existing roundel had an overall diameter of 56in. Production Spitfires received the new roundel after 9th March, 1945, and using similar dimensions to the Service Spitfires with the standard roundel, the sizes were as follows: Dull Red centre, 21in. diameter, White, 28in. diameter, and Blue, 56in. diameter.

At the end of hostilities a thin Yellow ring was added to the upper wing roundels in some squadrons, thus altering the roundel to a Type C.I. This was usually the same width as the White ring.

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