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Spitfire Story:
The Sweeps



INSTRUCTION SHEET

**DUAL COMBO
LIMITED EDITION**

11153-NAV1

The Sweeps

Spitfire Mk.V history



by Vladimír Šulc

In the course of 1940, the Spitfire Mk.I large scale production at Supermarine company has been fine-tuned so it could meet the Air Ministry orders, supply the RAF Fighter Command combat units with the new aircraft and replenish the combat losses. The situation was similar at Castle Bromwich Aircraft Factory in Birmingham which after some initial organizational problems reliably supplied the fighter squadrons with license-built, and compared to Mk.I, slightly improved Spitfires Mk.II. In the end of 1940, the new aircraft were arriving at the units in their final weapons and equipment configuration as full-fledged, fully functional combat aircraft. Airplanes manufactured earlier were continuously upgraded by the installation of the armor and more modern equipment to meet the standards of the newly manufactured Spitfires. However, during the same time, the modernized Bf 109 versions started to arrive at the German Luftwaffe fighter units. The Spitfires kept up the pace quite successfully with Bf 109E-7 arriving in the fall 1940. However, with the arrival of Bf 109F-1 and 2, in the end of 1940 and beginning of 1941, the tables turned in favor of the Germans. In order to counter the growing German technical supremacy, the Spitfires' performance had to be improved rapidly.

A traditional way to increase the aircraft performance is to install the more powerful engine. The first attempt to develop the more powerful Spitfire version was the project Improved Spitfire, later renamed Superiority Spitfire, launched as early as the beginning of 1939. The prototype with the factory designation Type 330 and military one as Spitfire Mk.III was ready for its maiden flight in March 1940. It was designed by modifying the standard Spitfire Mk.I serial number N3927. The airframe was modified by installing a new Rolls-Royce Merlin RM 2SM engine, the future Merlin XX, featuring a single-stage, two-speed compressor with the maximum output of 1,320 hp (1,037 kW). In order to accommodate Merlin XX, the engine bearers were strengthened, and the nose lengthened by four inches.

The wingspan was shortened to 9.30 meters by removing the wingtips and shortening the ailerons while the internal design remained unchanged. During the flight trials, the prototype apparently never reached the calculated maximum airspeed of 644 kph at 6,400 meters, the maximum recorded speed is said to be 620 kph which was regardless an outstanding performance improvement in comparison to Mk.I. Air Ministry demanded that the large-scale production of Spitfire Mk.III was accelerated however there was a serious obstacle to this effort due to the complicated development of Merlin XX and teething troubles with its large-scale production. In the fall 1940, the available engines were utilized for Hurricane Mk.II and Defiant Mk.II upgrades and they were also installed in Bristol Beaufighter Mk.II, Avro Lancaster B Mk.I, Mk.III and Mk.IV and

◀◀ Early production Spitfire Mk.Vb from No. 92 Squadron RAF.

Handley Page Halifax Mk.II and Mk.V. There were none left for Spitfires and the idea of an accelerated, large-scale Spitfire Mk.III production was silently swept under the table. The smaller series of photo-reconnaissance Spitfires PR Mk.III was manufactured under the same designation, mostly by converting Spitfires Mk.I.

Merlin 45

Once the Merlin XX installation proved to be more and more complicated, in the end of 1940 Rolls-Royce company offered a feasible and fast solution in the form of parallelly developed and easier to manufacture engine Merlin RM5S later marked Merlin 45. It featured one-stage, single-speed compressor optimized for high altitudes, its output at 5,400 meters was 1,210 hp (902 kW), some sources state rather optimistic, and to tell the truth, less probable output of 1,440 hp (1,074 kW). It had the same dimensions as Merlin II and its design enabled Merlin III upgrade to Merlin 45 standard by replacing the compressor. This facilitated the simple installation into the current Spitfire Mk.I and II airframes and the conversion of the already manufactured aircraft as well. RR company promised to supply 300 Merlin 45 by March 1, 1941, and further 200 by April 1.

The first airframe to receive the new engine, modified from Merlin XX, was supposedly Spitfire Mk.I K9788 on December 26, 1940, in Boscombe Down. It was followed by PR Mk.III X4334, converted into the photo-reconnaissance version from Spitfire Mk.I, which took to the air on January 13, 1941, from the Rolls Royce factory airport in Hucknall. Spitfire Mk.I N3053, too test-flown on February 13, 1941, in Hucknall, was another conversion. Right after both airplanes were flown over to Boscombe Down for further testing. The flight trials recorded the maximum speed of 593 kph at 6,100 meters was recorded during the flight trials, climbing time to this altitude was 6 min and 12 seconds and the operational ceiling 11,590 meters. The trial also discovered the problems with the constant-speed propellers De Havilland when oil in their control system was freezing at high altitudes. There were troubles with Mk.II oil cooler as well as it was not efficient enough for the more powerful engine. Even though this was considered an interim solution, as the Spitfire Mk.III production was still being planned, the order for new Spitfires was placed, or better said, the program for converting Spitfires Mk.I and II into Spitfires Mk.V was ordered.

Spitfire Mk.Va nad Mk.Vb

During the trials of Spitfires Mk.V, re-built at Rolls-Royce, the program of converting Spitfires Mk.I was under way at Supermarine at the same time. In the middle of March 1941, another aircraft X4922 arrived in Boscombe Down, built in Eastleigh at Spitfire Mk.I assembly line already featuring Merlin 45 and test-flown on February 7. During the trials it was fully armed and equipped and reached the maximum speed of 603 kph at the altitude of 6,344 meters reaching it in 7.1 minutes, the operational ceiling was 11,499 meters. In Eastleigh, in the second half of February total of 23 Spitfire Mk.I airframes received Merlins 45, mostly as a cannon version Mk.Ib and thus became the first Spitfires Mk.Vb. Several airplanes were produced with eight wing machine guns and became the first Spitfires Mk.Va.

Besides the engine, the equipment of these aircraft corresponded to Spitfire Mk.I standard including the smaller oil cooler with U-shaped intake which was the cause of the higher oil temperature in the first Spitfires Mk.V and posed a certain risk of the engine overheating. The first squadron to receive Spitfires Mk.Vb was No. 92 Squadron commanded by S/Ldr Jamie Rankin, up until then flying Spitfires Mk.Ib. The first Spitfire Mk.Vb X4257 was delivered to the unit on February 16, but since Rolls-Royce in Hucknall was gradually converting current Mk.Ib, sent over from the unit to Mk.Vb standards, No. 92 Squadron was fully equipped with "fives" only in the beginning of April.

During March, the Supermarine assembly lines were switching to Spitfire Mk.V production and by the end of the month 12 Mk.Vb and 26 Mk.Va were built, with Mk.I still in production. In April the Mk.V production was at the full speed resulting in 36 Mk.Va and 22 Mk.Vb completed. The last manufactured Mk.I was R7257, also produced in April. By the end of May, the RAF Nos. 54, 74, 603 and 611 Squadrons were equipped with new Mk.V. The production at Supermarine ran until October 1942 and its final output was 1,352 airframes out of which 94 were versions Mk.Va, 780 Mk.Vb and 478 Mk.Vc.

CBAF (Castle Bromwich Aircraft Factory) launched the Spitfire Mk.V production in June 1941 at the same time fulfilling the contract for 1,000 Mk.IIs, signed on April 12, 1939. Gradually the company received another eight orders to produce Spitfires Mk.V, out of which the last one, from May 1942, largely transitioned to the manufacture of modernized Spitfires Mk.IX. Until the end of April 1943, the total production at CBAF was 3,003 Spitfires Mk.Vb and 1,474 Spitfires Mk.Vc.

Since the summer 1943, the Mk.V production was under way at Westland company located in Yeovil in county of Somerset. Westland manufactured various versions of Spitfire Mk.V until November 1943 and ultimately delivered total of 140 Mk.Vb and 495 Mk.Vc.

Spitfire Mk.V modernization

During the two and half years of Spitfires Mk.V production, the airframe was gradually developed and improved. Already at the beginning of manufacture they featured thicker armor in comparison to Mk.I and Mk.II. The oil cooler was relatively quickly replaced with larger one featuring a circular intake which was retroactively installed on the first batch of Spitfires Mk.V converted from Mk.I and Mk.II and became one of the features distinguish-

ing Spitfires Mk.V. At the same pace the armament of eight 0.303 Browning machine guns was abandoned. Only 94 Mk.Va were manufactured with such armament while 6,370 Mk.Vb and Mk.Vc, armed with two 20mm Hispano cannons and four 0.303 Browning machine guns, left the assembly lines.

The problems with weapons freezing at the higher altitudes persisted on Spitfires Mk.V. Therefore, the weapons compartment heating was enhanced by introducing the heat from the engine exhausts which was visually distinguishable by an additional pipe running through the exhausts, entering the engine cover from the last one and running through the fuselage and wing leading edge to the cannons. The exhaust pipes were gradually changed as well. The first Spitfires Mk.V featured the same exhausts as Mk.I and Mk.II. Then the various types of pipes with rectangular openings (fish tails) were introduced. In the end of production and after overhaul the "fives" received four independent exhaust pipes as featured on Spitfires Mk.IX.

Canopy

The windshield, which originally featured the armored glass mounted on its outside, was in later "fives" modified so as the armored glass was integrated into it in a way that it was no longer sticking out. The sliding portion of the canopy was modified as well. In the later production batches it was not only bulging upwards but to the sides as well (Malcom hood, modification nr. 461). This new canopy was lacking the small, hinged window.

Engine modifications

Several engine versions powered Spitfire Mk.V. Besides the essential Merlin 45, it was Merlin 46 with more powerful compressor providing higher manifold pressure at high altitudes. As the original assumption, that the combat with Luftwaffe will move up to higher altitudes did not materialize, quite the opposite happened, many missions took place at the lower altitudes. So, the low altitude version of Merlin 45M was developed and tuned for the optimal performance at low altitudes. The carburetor development is a separate story on its own. The original drawback of the Merlin III carburetors SU A.V.T.40, when during the negative G maneuvers the intermittent fuel supply interruption occurred, was partially eliminated by means of RAE restrictor a.k.a. Till's orifice, named after its inventor, Beatrice Shilling, but it was not a perfect solution. The problem was resolved by introducing a membrane-type carburetor designed by Rolls-Royce and introduced into the production in 1942. They were installed in Merlin 50 and 55 powering Spitfires Mk.Vc.

Propeller

Spitfires Mk.V manufactured at mother company Supermarine mostly featured De Havilland Hydromatic Type 5/29A, 5/39, 45/1 and 45/4 propellers which differed primarily in a pitch. These propellers demanded careful maintenance and pitch control assembly tended to freeze at high altitudes. The identical propellers were installed on Spitfires Mk.V manufactured by Westland. Spitfires Mk.V manufactured by CBAF were traditionally equipped with more reliable and popular propellers Rotol RX5/14 and RX5/24 with metal blades, later with propellers RX5/10 with wooden blades Jablo of a slightly smaller diameter (3.12 meters compared to 3.28 meters of metal propeller).



Early production Spitfire Mk.V manufactured in October 1941 with symmetrical lower bulges under the cannon well, enlarged cooler, older canopy style with exterior armor and hinged window hatch. The aircraft still lacks the armament, it's equipped with the De Havilland propeller and newer type of radio Tr1133.

Ailerons

There were continued problems with fabric-covered ailerons on Spitfires Mk.V, dating back to Spitfires Mk.I and Mk.II. Even though the all-metal ailerons had been designed and tested in the end of 1940, in the middle of 1941 they were still not installed as a standard on the aircraft leaving the assembly lines. Therefore, not only Mk.Vs converted from Mk.I and Mk.II featured fabric-covered ailerons but the first mass-produced "fives" as well. Only after the Air Ministry interference in June 1941 the all-metal ailerons were introduced into the mass production which significantly improved the dog-fighting ability of the Spitfires that were equipped with them. This case shows the cumbersome process of applying the technical improvements into the large-scale production.

The situation was so serious, and non-sensical, that the American units equipped with Spitfires MkV supposedly replaced the fabric-covered ailerons with plywood-covered ones.

Spitfire Mk.Vc

Spitfire Mk.Vc represented the logical combination of all gradual modifications of the original Spitfire design. Besides the modernized bulged sliding canopy and armored glass integrated with the windshield internally, the most important and fundamental change was a newly-designed wing. Traditionally, the ability to house variety of weapons installations is considered a main advantage. These options were eight machine guns (variant a), two cannons and four machine guns (variant b) or four cannons (variant c). In the real life, out of all these, variant b, two cannons and four machine guns, was absolutely dominant. Variant c was rarely used because heavy cannons had significantly negative impact on the aircraft flight characteristics and had the four cannons been installed at the factory regardless, usually two of them, mostly at inner locations, were removed at the unit level. Variant a was practically never installed on Spitfires Mk.Vc. The important change was introduction of the belt-fed Hispano II cannons allowing for larger ammunition load (120 bullets per cannon as opposed to 60 bullets with the older, drum-fed Hispano Mk.I). These cannons were also less prone to jamming. The visual indication of their installation was a missing bulge under the cannon well which on Spitfire Mk.Vb appeared in two forms, straight, symmetrical on the older airframes and kidney-shaped, asymmetrical on the newer aircraft. In comparison, the upper bulge above the cannon well on Mk.Vc appeared in at least three recorded different shapes based on the anticipated armament variant and was also subject to a certain improvisation at the unit level.

Decidedly fundamental change was a landing gear re-design featuring the strengthened gear legs' attachments and increased rake moving the wheels 5 cm forward in comparison to the older Spitfire versions. This solution improved the aircraft stability during the ground maneuvers and was visually recognizable by a new, elliptical wheel well shape. The wings and fuselage design were strengthened by the application of thicker sheet metal skin and later Mk.Vc batches featured flush rivets on the rear fuselage. The later aircraft also featured the horizontal tail surfaces with modified weight balance, pressurized fuel tanks, submersible fuel pump in the bottom tank and six single exhaust pipes on each side of the engine. Later Spitfires Mk.Vc batches were almost exclusively powered by Merlin engines series 50 and 55/56 with membrane-type carburetor. Moreover, Merlin 55/56 featured the separate piston blocks. Their specific versions were distinguished by compressors tuned for the optimal output at various operational altitudes.

Short wing / low level Spitfires LF Mk.V

In the course of 1942, number of both defensive and offensive, low altitude missions increased. It led to the requirement to modify Spitfire Mk.V design in order to optimize their low altitude performance. Low level Spitfires LF Mk.Vb and LF Mk.Vc received Merlin engines series M (Merlin 45M, 50M and 55M) with smaller compressor which gave the engine

Later production Spitfire Mk.Vb featuring the asymmetrical lower bulges under the cannon well, tropical filter and a drop tank.



Spitfire Mk.Vc armed with four Hispano Mk.II cannons. Propeller is De Havilland, new canopy style with interior glass armor on the windshield and bulged sides of the canopy sliding portion. The aircraft supposedly carries an older type of radio Tr.9D.

the highest output at low altitudes. In case of Merlin 45M it was 1,585 hp (1,182 kW) at 838 meters altitude. Another modification was in strengthening the wing design by means of two strips on the wing upper surfaces above wheel wells area. Number of Spitfires LF Mk.V received a clipped wing having wingspan shortened to 9.8 meters. This modification improved the rate-of-roll and moderately increased the maximum speed. The wingtips varied, both short and long ones could be installed. Therefore, the short wingtips do not decidedly identify the LF version.

Auxiliary fuel tanks

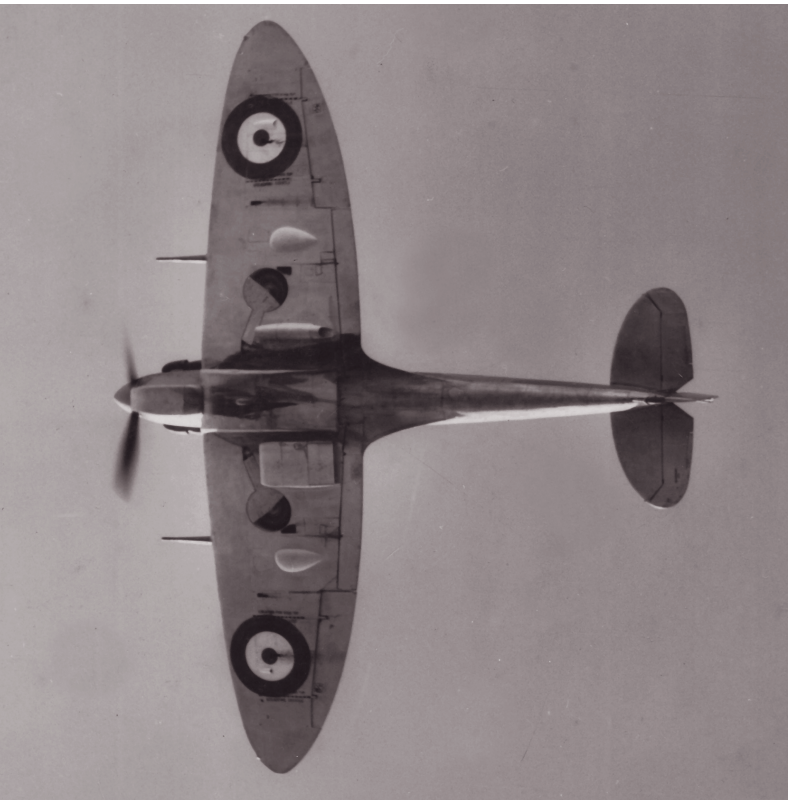
There were several types of the auxiliary tanks of different capacity developed in order to extend Spitfire Mk.V range. The smallest one was 30gal (136 liters) tank introduced into service in September 1941 extending the range to 1167 km. It was followed by a larger, 45gal tank (204.5 liters). Both tanks were of so-called blister-type (also known as slipper-type) referring to the tank's curved outline on the bottom and upper flat surface mating with fuselage and wing's center-plane. Both were droppable. The cylinder-shaped 45gal tanks were also used. In Malta, 44gal (200 l) cylindrical tanks from Hurricanes Mk.II were used, attached in pairs, next to each other under the fuselages. In the end of 1941, 90gal (409 l) non-droppable fly-over tank was introduced extending the range to 1,988 km. In 1942 even 170gal (773 l) fly-over tank arrived extending the range to 2,334 km however at the cost of significantly worse flight characteristics. Both of these tanks also came as blister-type and there was also a cylindrical 170gal fly-over tank. In the actual operations, since the middle of 1942, the combination of 29gal (132 l) tank mounted in the fuselage behind the cockpit and a 170gal drop tank was used. This combination allowed for a range to be extended to 2,615 km at the maximum altitude of 4,575 m.

Tropical filters

In the dusty tropical and sub-tropical environments, the engine was subject to a potential damage caused by sucked-in dust. To lower this risk Vokes company designed a voluminous, fully covered filter which formed a typical chin under the aircraft nose. The worsened aerodynamics together with the lower pressure of the entering air on such modified aircraft resulted in the maximum speed drop by approximately 12 kph, which was actually better value than the anticipated drop by 37 kph. These tropicalized versions were quite widely used in both Mediterranean and Far East. Tropicalized airplanes undergoing maintenance at No. 103 Maintenance Unit in Egyptian Aboukir, received the Aboukir type filter manufactured by this unit. They were better aerodynamically shaped and, on the intake, featured a louver which closed the filter only at critical flight stages when larger dust volume could be sucked in. Two versions of this filter are known. The majority of aircraft equipped with Aboukir filter were of Mk.Vc version and in the course of modifications at No. 103 MU usually received the clipped wingtips and Rotol propellers as well.

In combat

Spitfires Mk.V of all versions served in all combat areas practically until the end of WWII. They bore the grunt of the RAF fighter offensive in 1941-1942 and became main fighter type which in 1942 defended Malta against the intense German Luftwaffe as well as Italian Regia Aeronautica raids. Apparently, they were the most powerful fighters deployed during the Allied landing in North Africa and were of essential importance for RAAF to modernize their equipment in Far East. They did well during the build-up of the first USAF fighter groups in Europe and Mediterranean where two American fighter groups, 31st FG and 52nd FG flew them until the end of 1944. They were flown by pilots of many nations serving in RAF: Canadians, South Africans, French, Czechoslovaks, Polish pilots, Norwegians, Belgium pilots and others. They were supplied to Soviet Union under the Lend-Lease program, became the backbone of the Italian Air Force fighting on the Allied side after Italy's surrender in 1943 and served in the air forces of many neutral countries such as Turkey or Ireland.



ATTENTION



UPOZORNĚNÍ



ACHTUNG



ATTENTION



注意



Carefully read instruction sheet before assembling. When you use glue or paint, do not use near open flame and use in well ventilated room. Keep out of reach of small children. Children must not be allowed to suck any part, or pull vinyl bag over the head.



Před započítím stavby si pečlivě prostudujte stavební návod. Při používání barev a lepidel pracujte v dobře větrané místnosti. Lepidla ani barvy nepoužívejte v blízkosti otevřeného ohně. Model není určen malým dětem, mohlo by dojít k požití drobných dílů.

INSTRUCTION SIGNS * INSTR. SYMBOLS * INSTRUKTION SINNBILDEN * SYMBOLES * 記号の説明

OPTIONAL
VOLBABEND
OHNOUTSAND
BROUSITOPEN HOLE
VYVRTAT OTVORSYMETRICAL ASSEMBLY
SYMETRICKÁ MONTÁŽREMOVE
ODŘÍZNOUTREVERSE SIDE
OTOČITAPPLY EDUARD MASK
AND PAINT
POUŽIT EDUARD MASK
NABARVIT

PARTS



DÍLY



TEILE



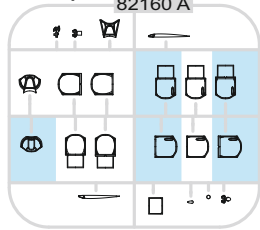
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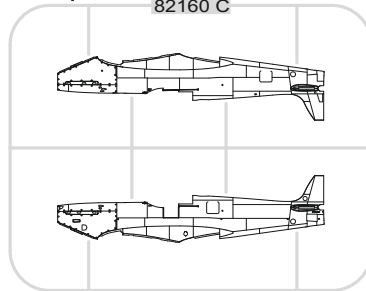
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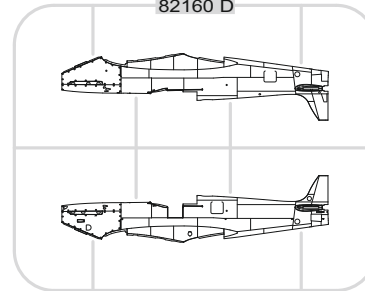
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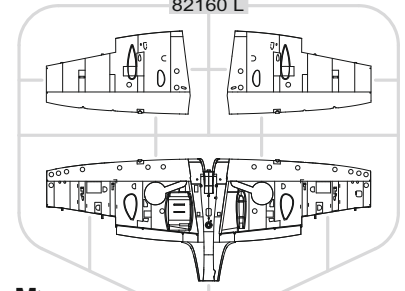
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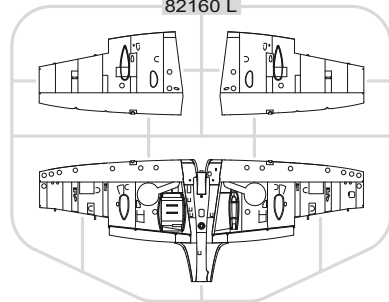
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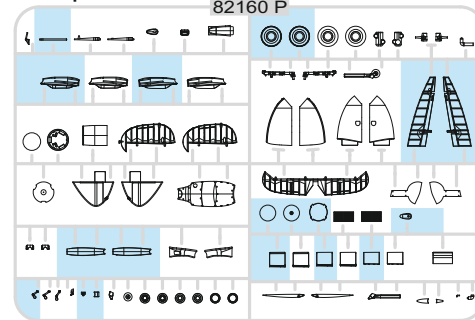
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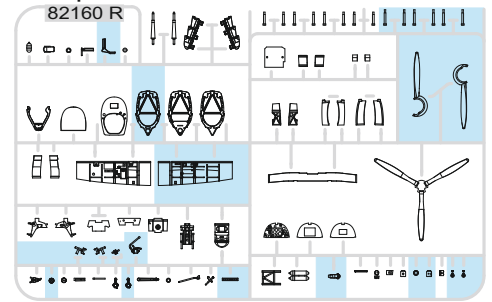
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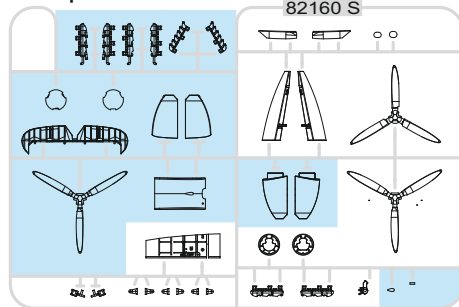
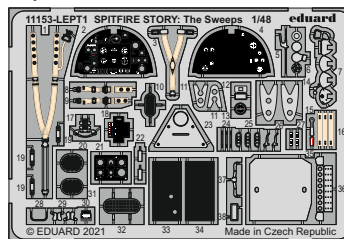
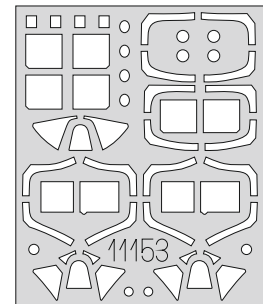
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COLOURS



BARVY



FARBEN



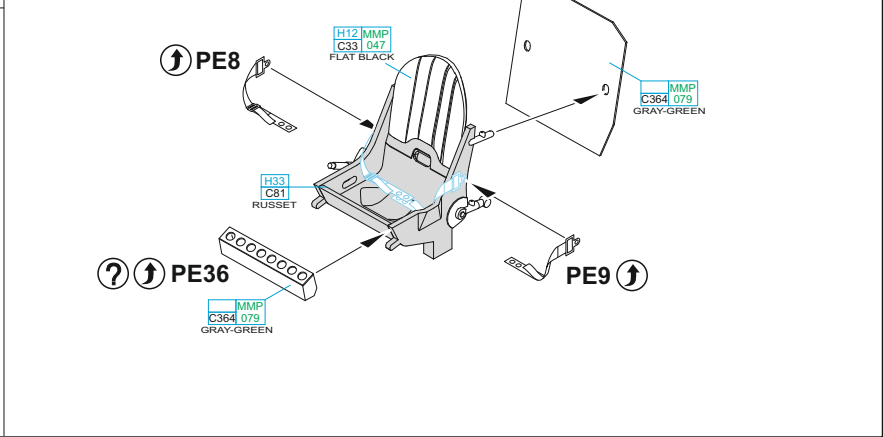
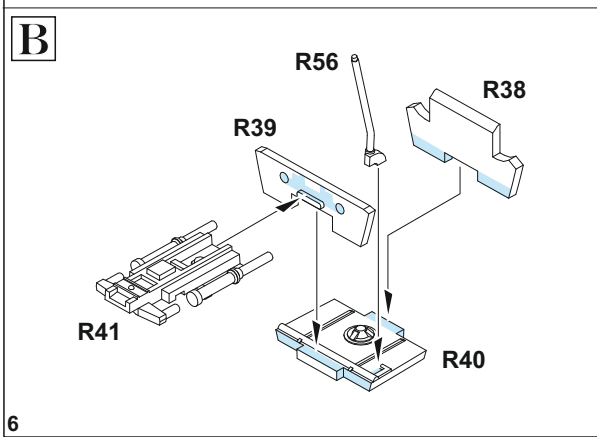
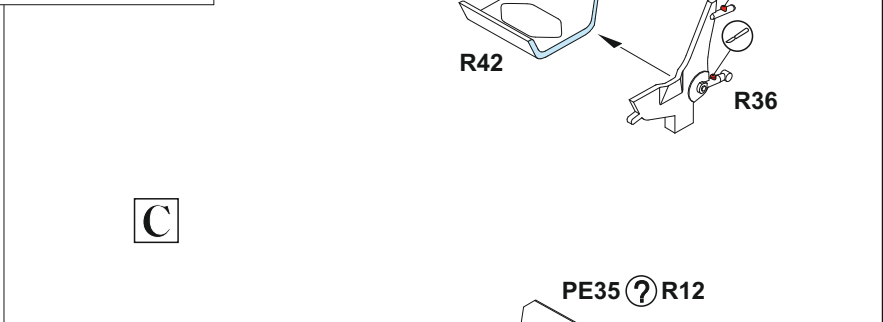
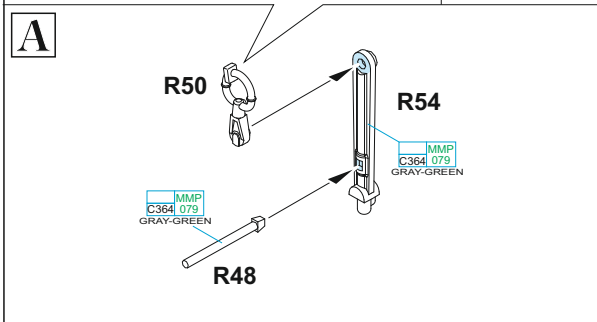
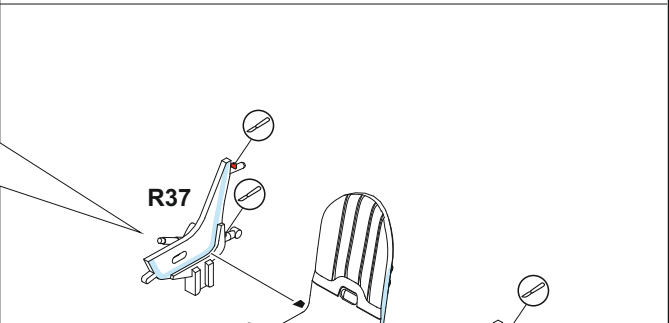
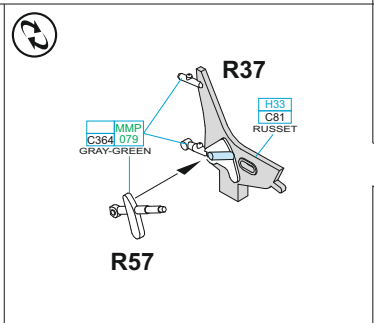
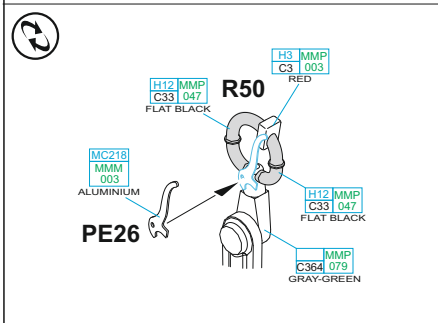
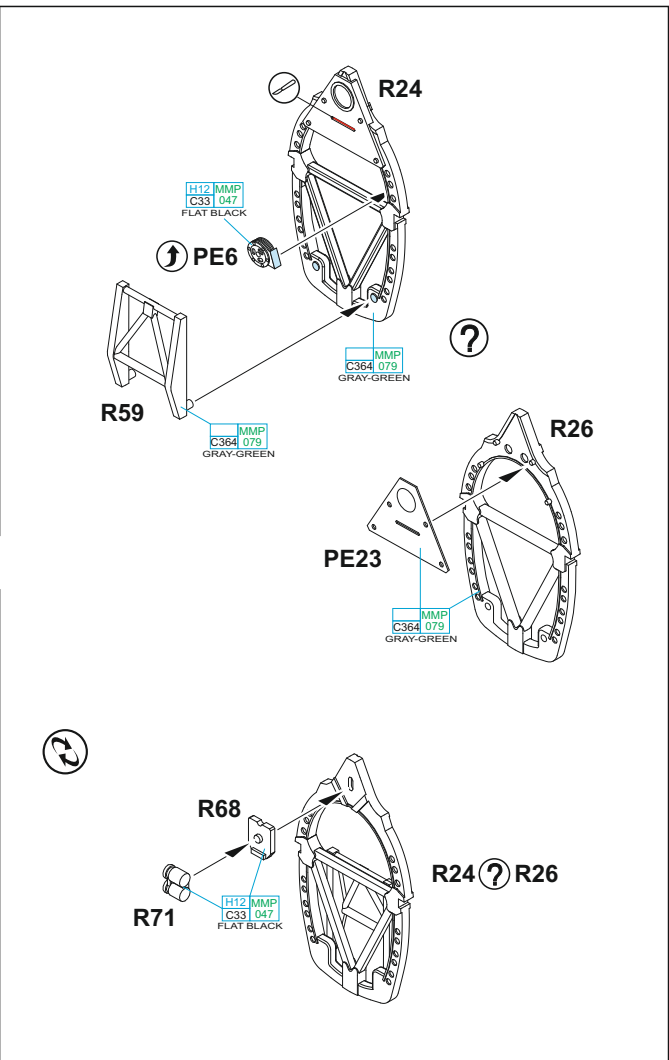
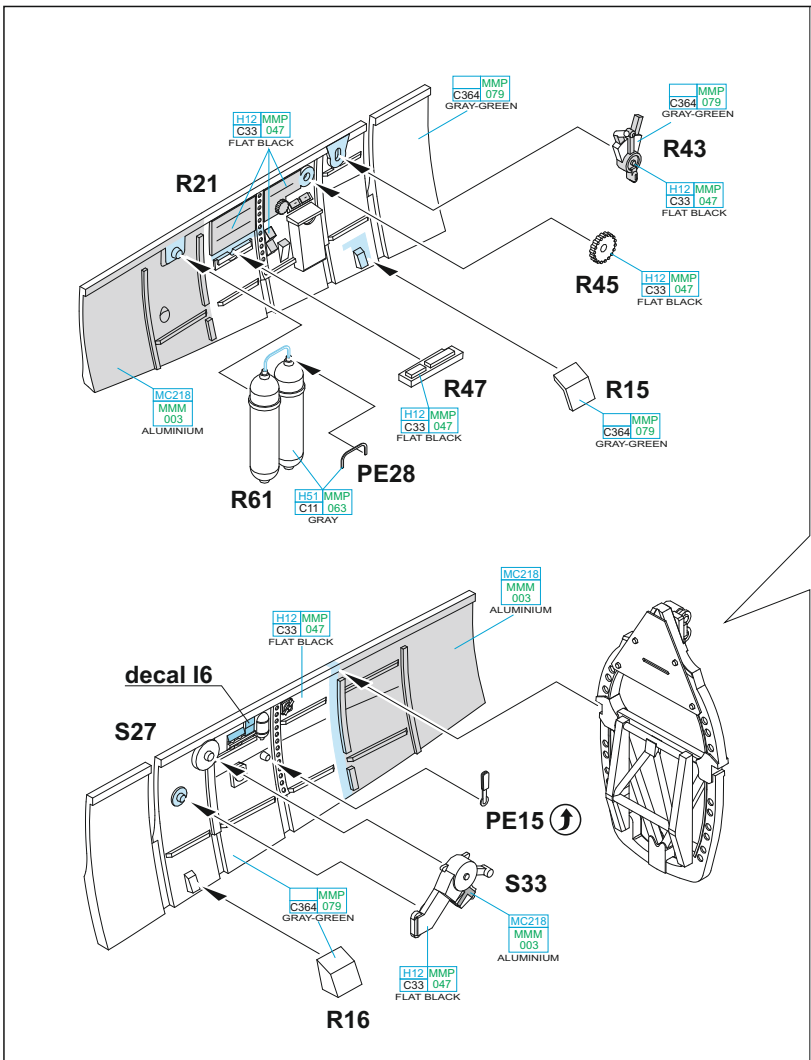
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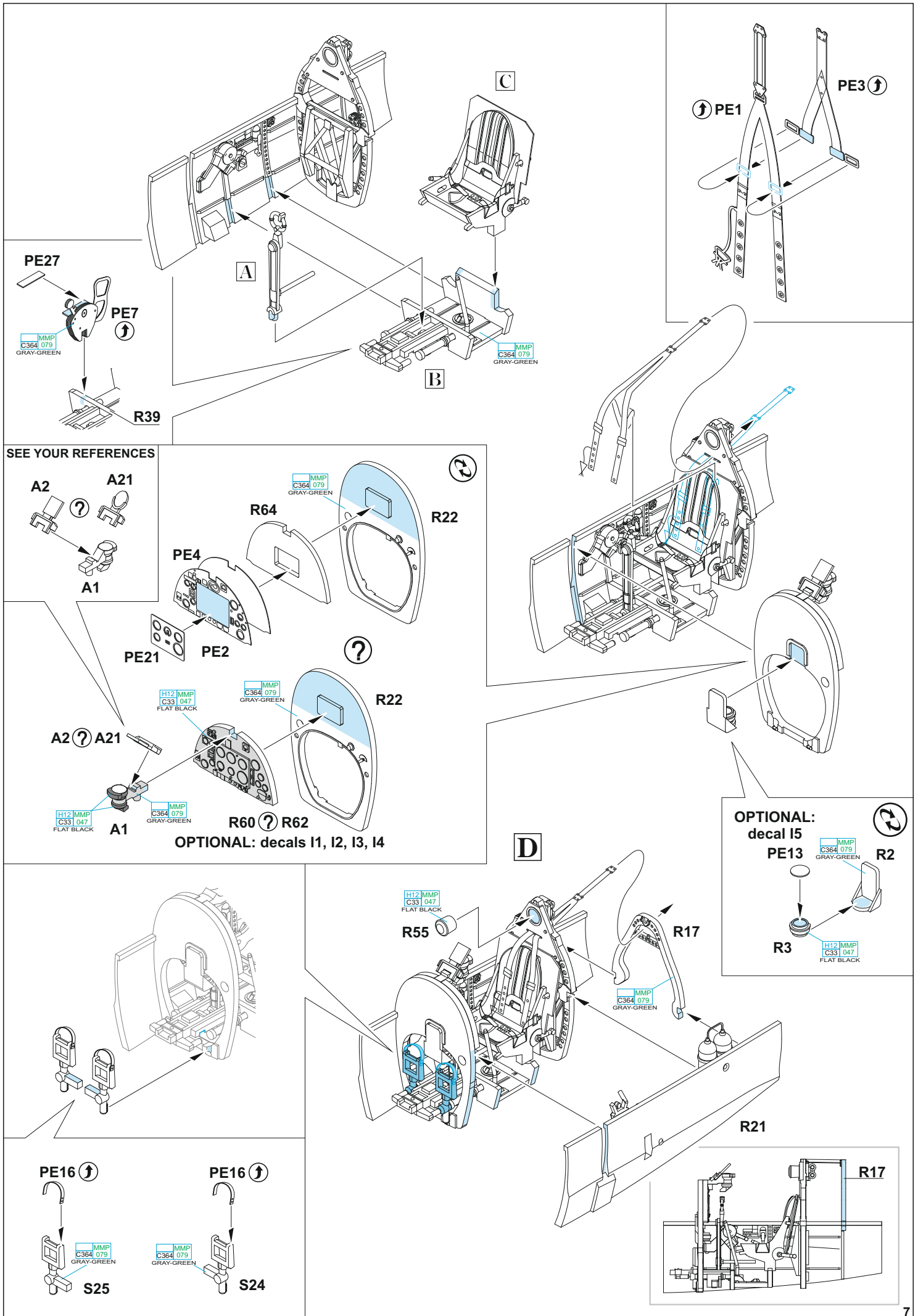


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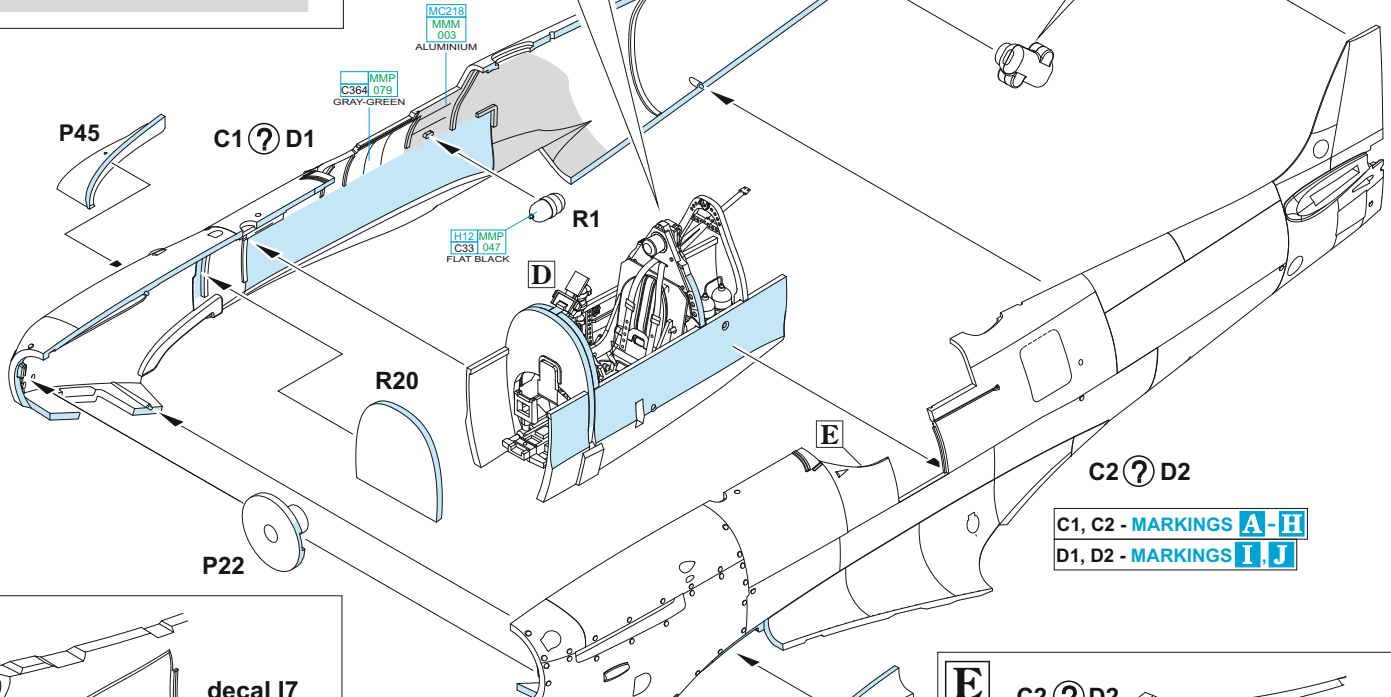
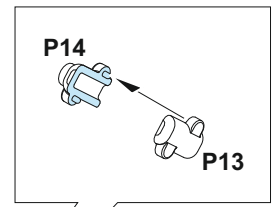
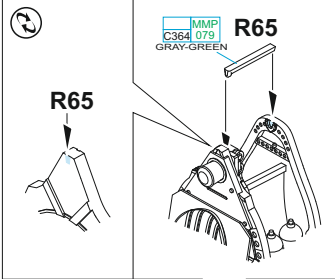
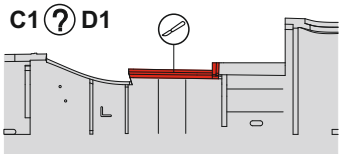
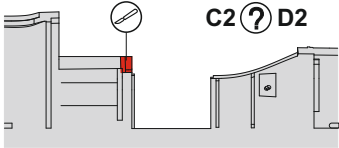
GSI Creos (GUNZE)		MISSION MODELS	
AQUEOUS	Mr.COLOR	PAINTS	
H3	C3	MMP-003	RED
H4	C4	MMP-007	YELLOW
H11	C62	MMP-001	FLAT WHITE
H12	C33	MMP-047	FLAT BLACK
H33	C81		RUSSET
H51	C11	MMP-063	LIGHT GULL GRAY
H72	C369	MMP-078	DARK EARTH
H74	C368	MMP-080	SKY
H77	C137	MMP-040	TIRE BLACK
H90	C47		CLEAR RED

GSI Creos (GUNZE)		MISSION MODELS	
AQUEOUS	Mr.COLOR	PAINTS	
H94	C138		CLEAR GREEN
H330	C361	MMP-077	DARK GREEN
H335	C363	MMP-094	MEDIUM SEAGRAY
	C362	MMP-093	OCEAN GRAY
	C364	MMP-079	AIRCRAFT GRAY-GREEN
Mr.METAL COLOR		METALLICS	
	MC214	MMM-001	DARK IRON
	MC218	MMM-003	ALUMINIUM
Mr.COLOR SUPER METALLIC		METALLICS	
	SM201	MMC-001	SUPER FINE SILVER

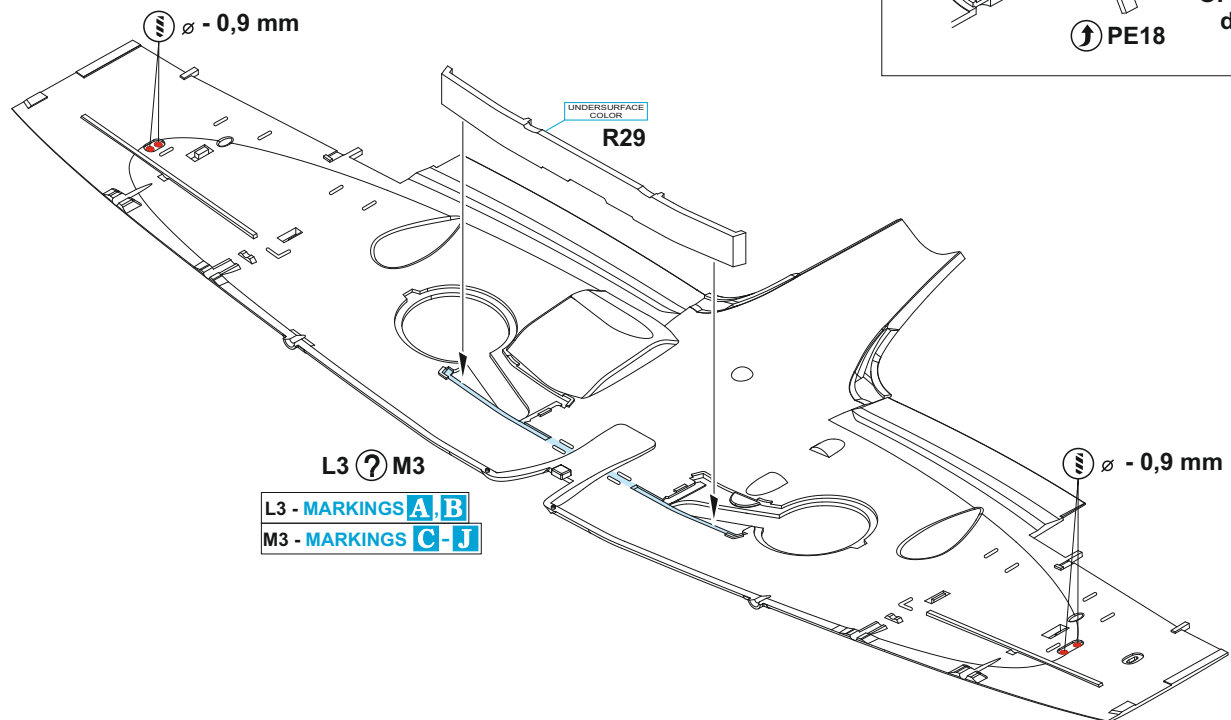
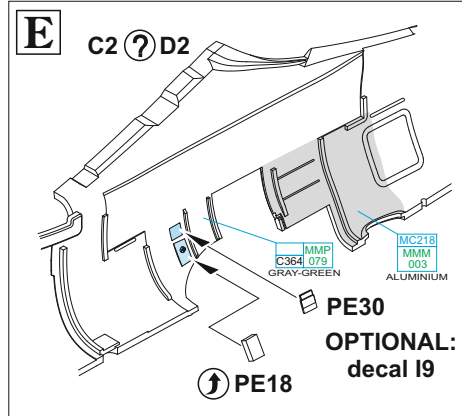
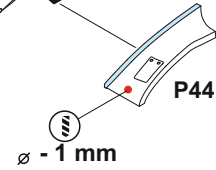
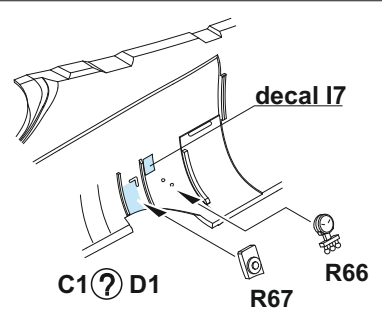


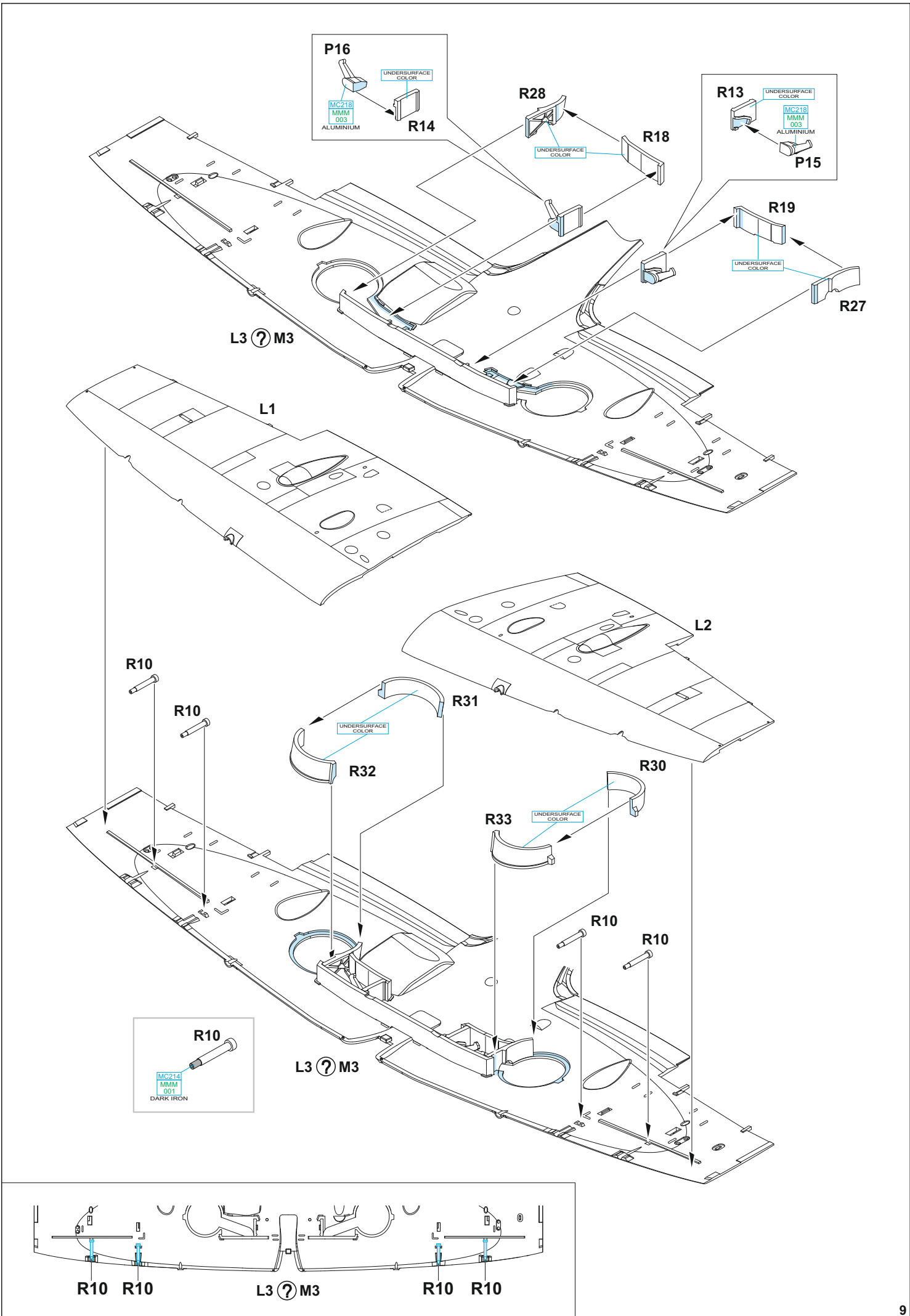


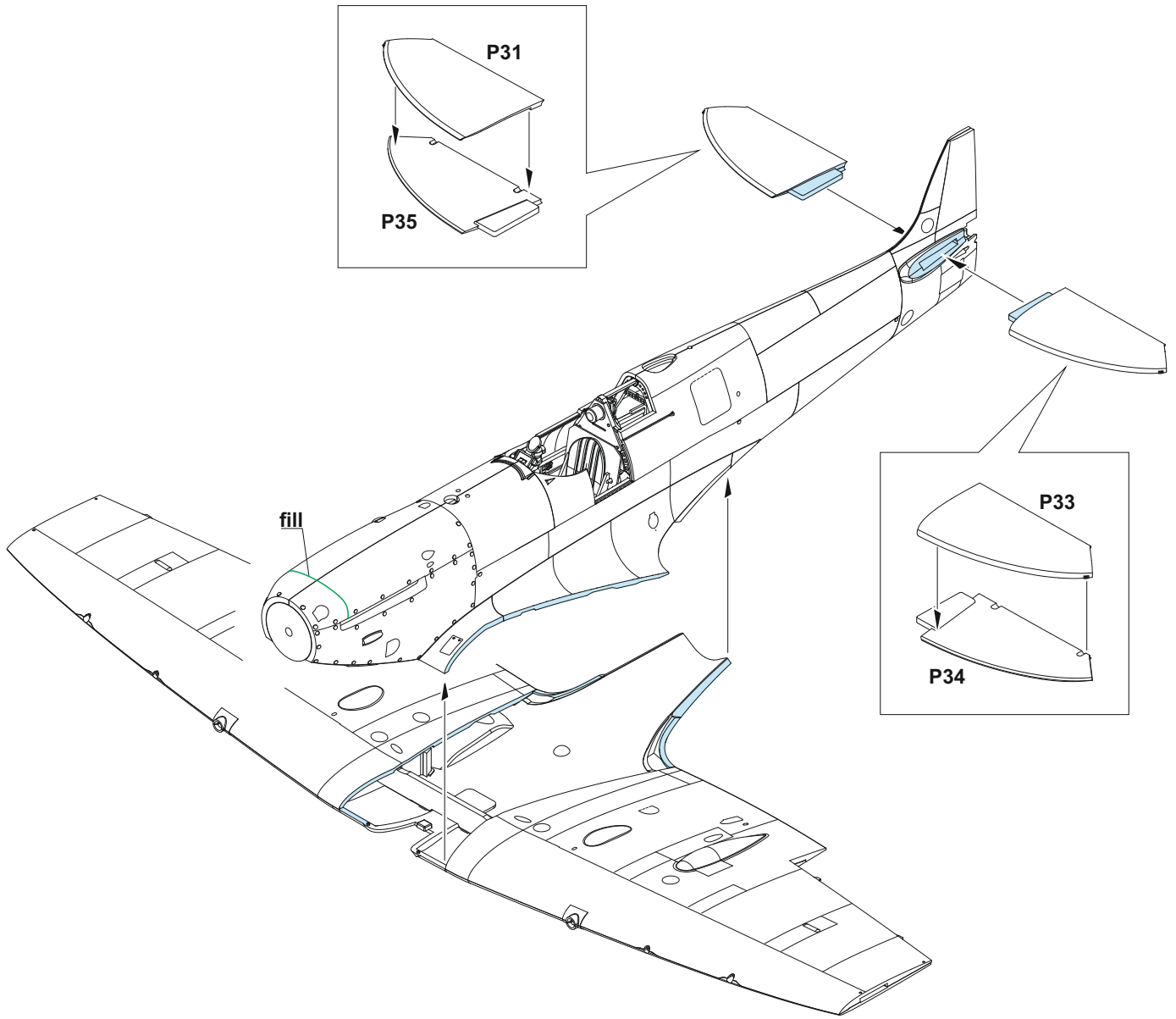
FOR CLOSED CANOPY ONLY



C1, C2 - MARKINGS A-H
D1, D2 - MARKINGS I, J



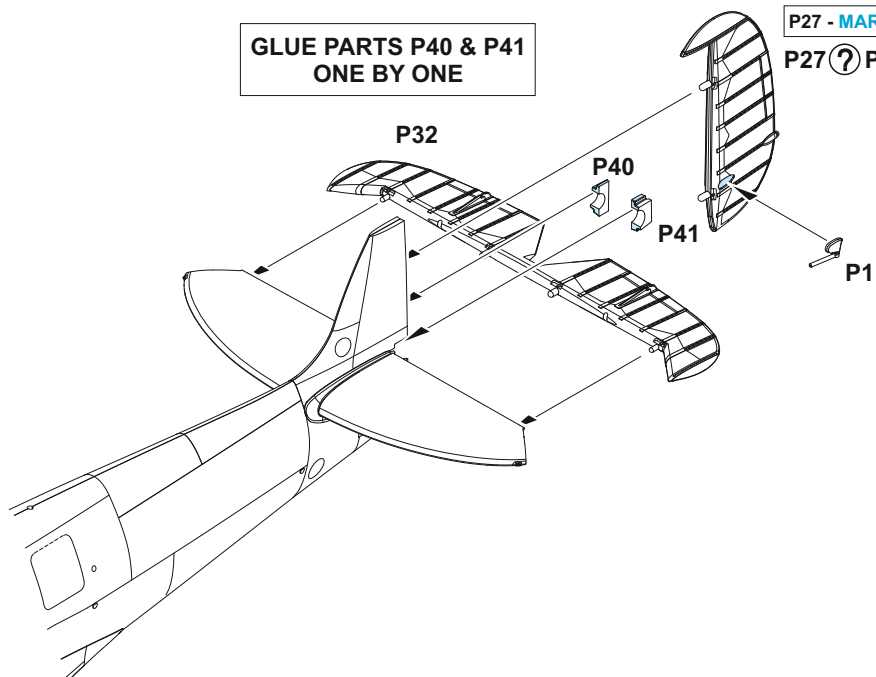


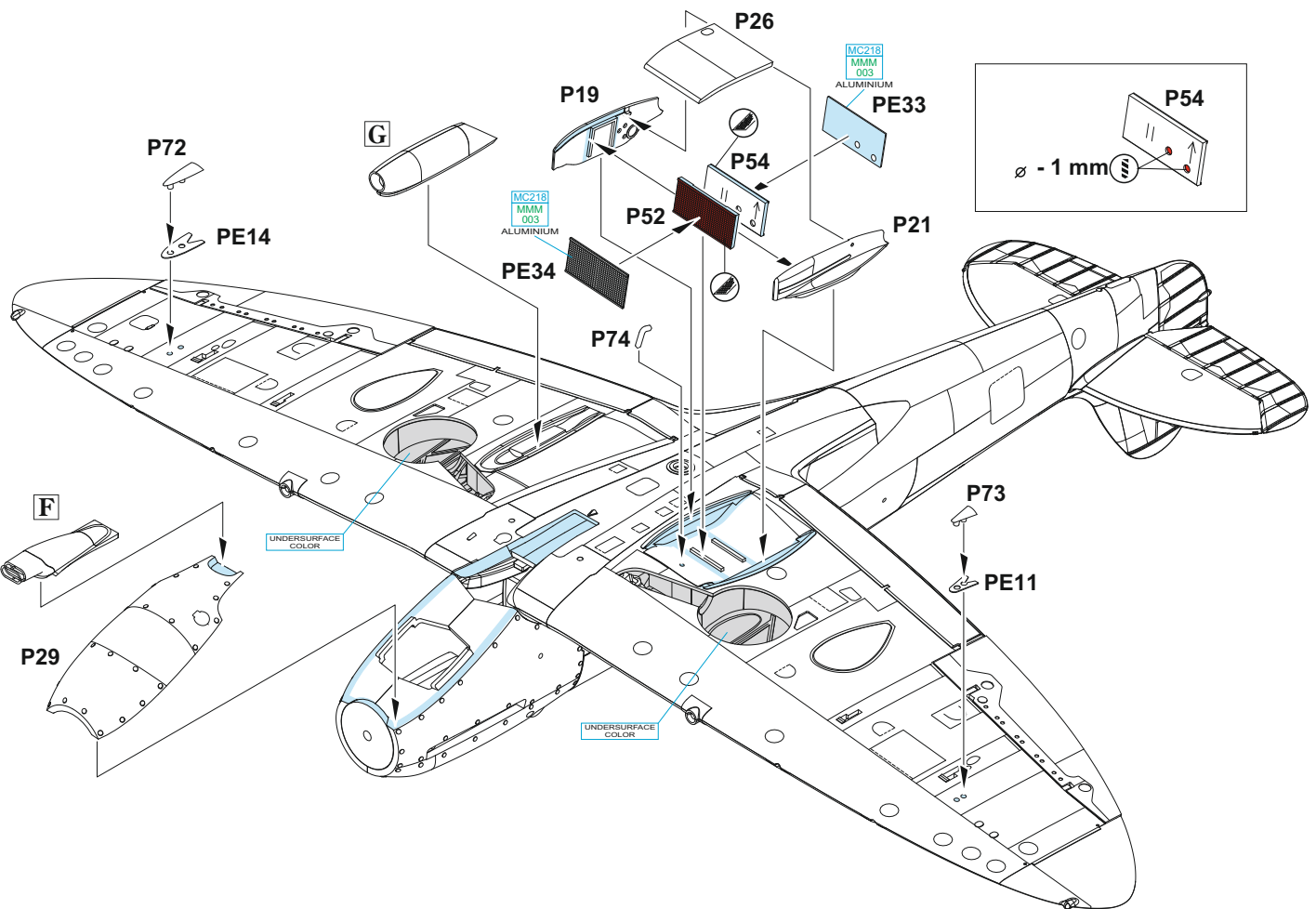
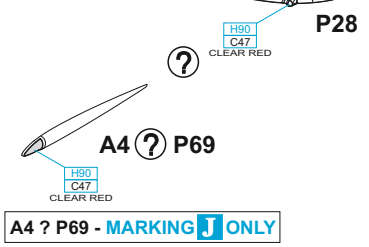
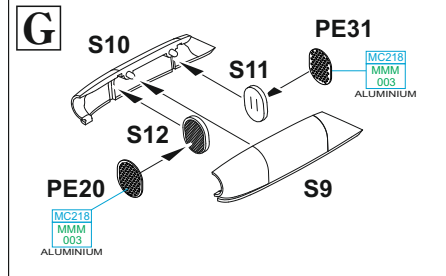
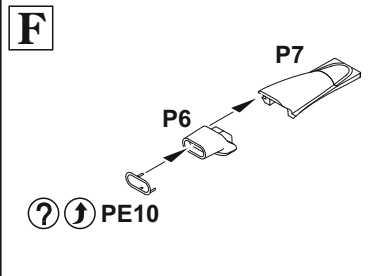
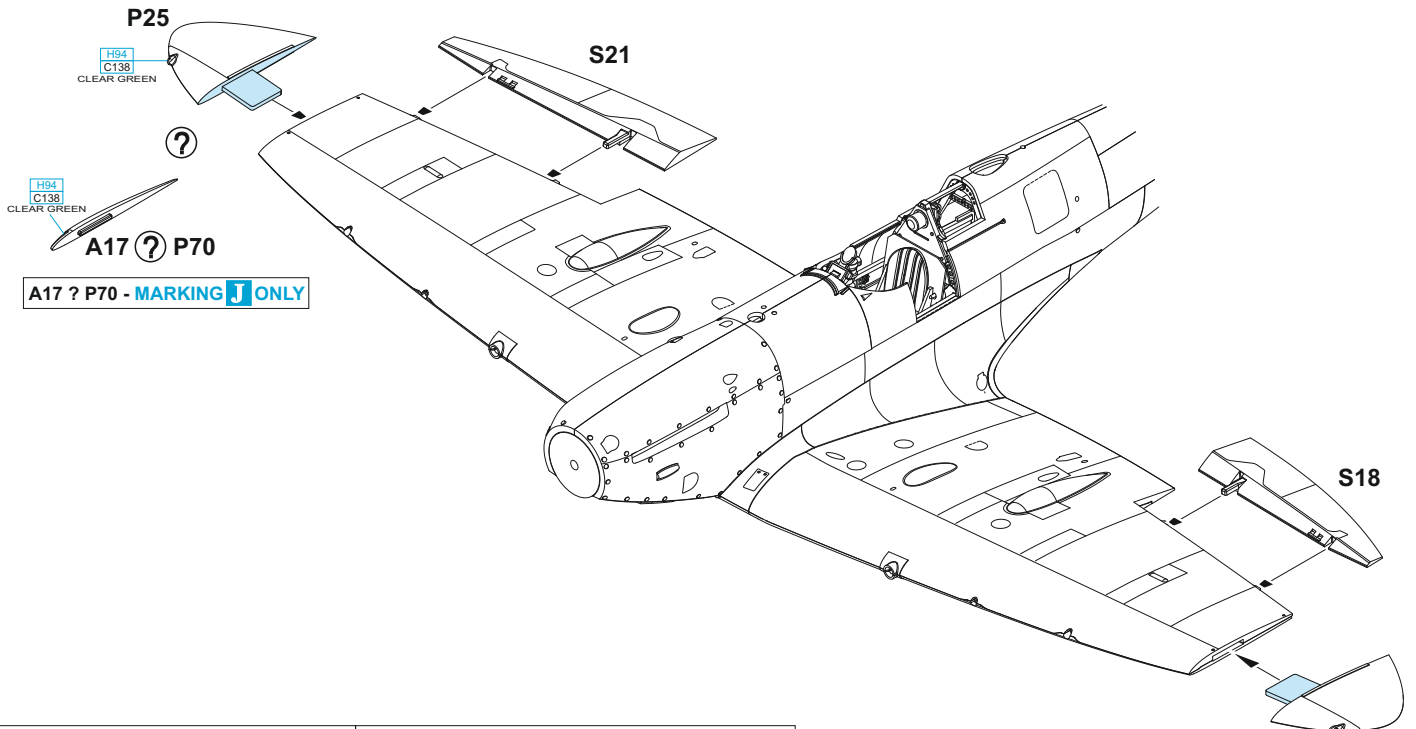


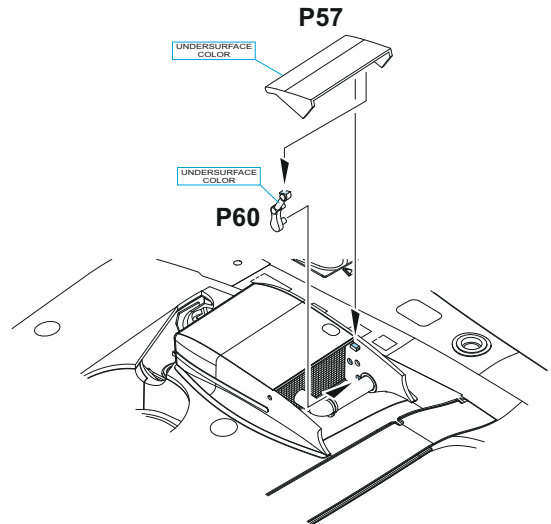
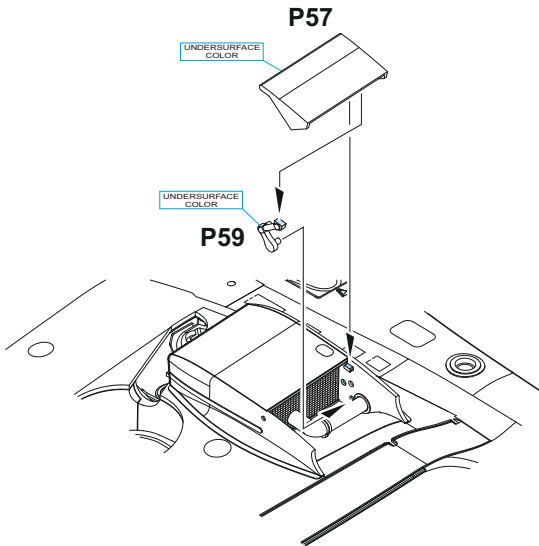
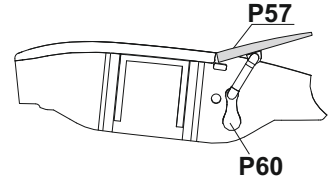
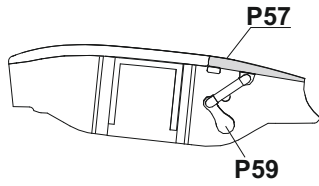
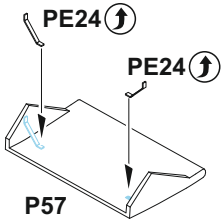
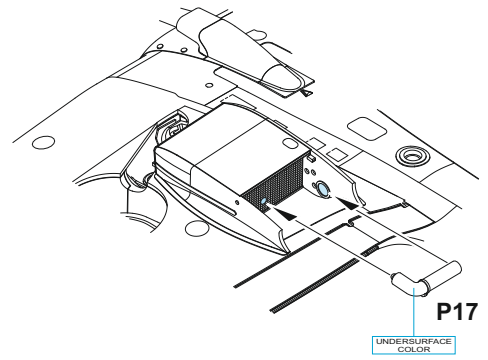
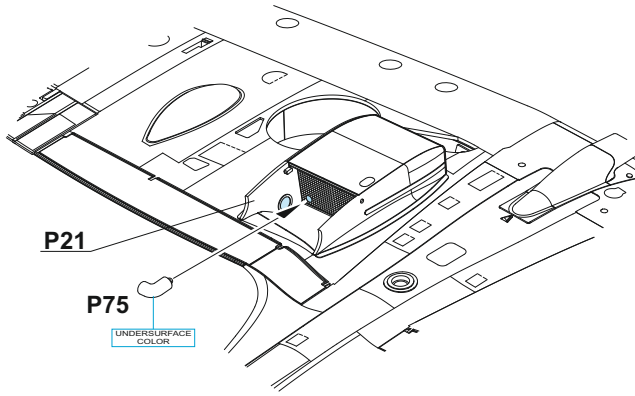
**GLUE PARTS P40 & P41
ONE BY ONE**

P27 - MARKING B ONLY

P27 ? P30



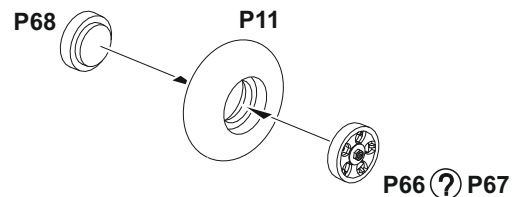
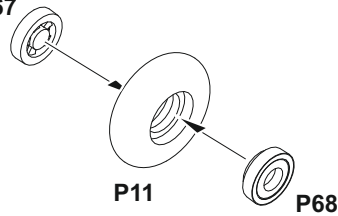




P66 - MARKINGS **A, B, E, F, G, H, I, J**

P67 - MARKINGS **C, D**

P66 ? P67

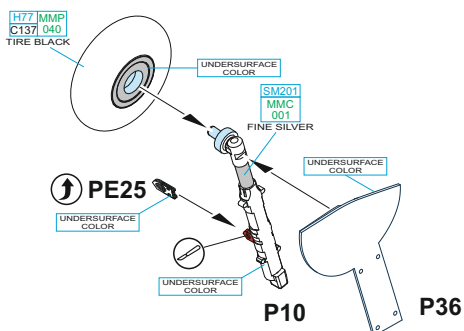


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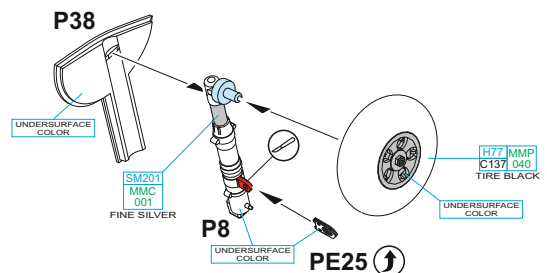
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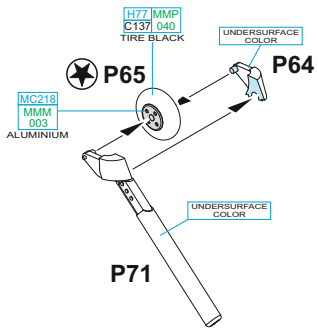
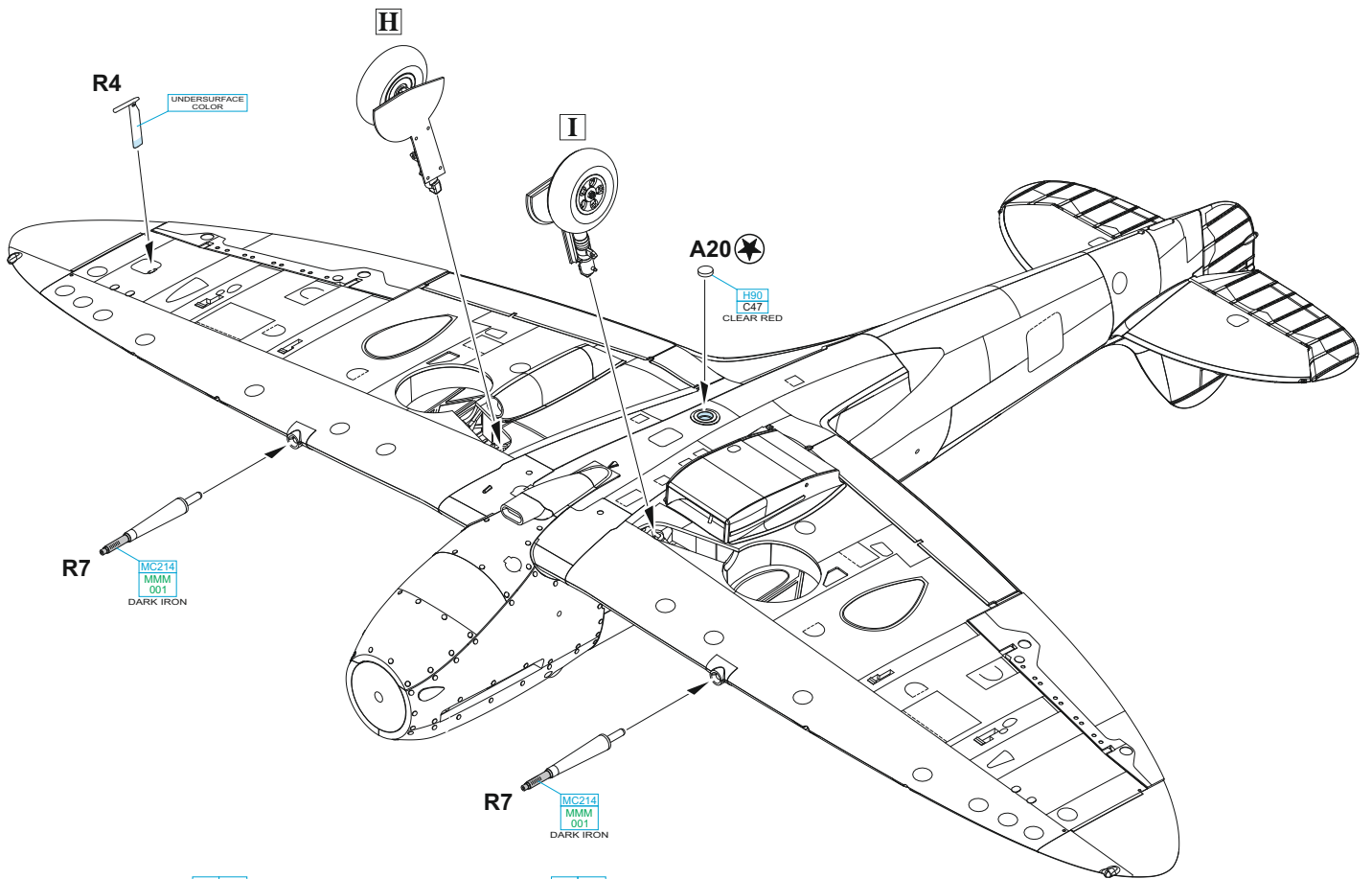
P67 - MARKINGS **C, D**

H

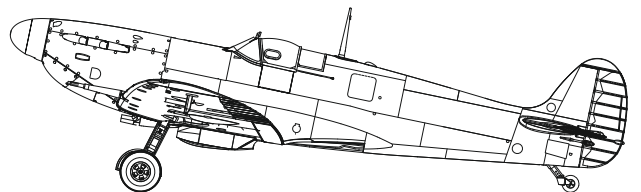
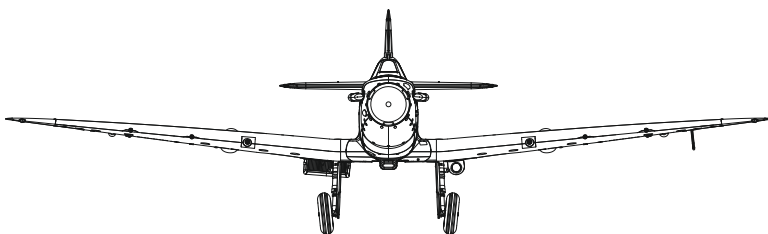
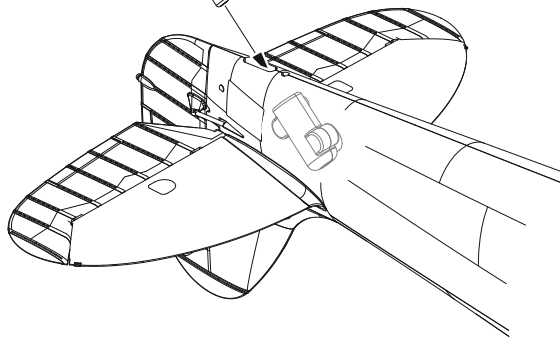
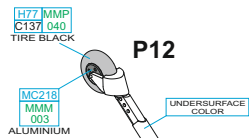


I



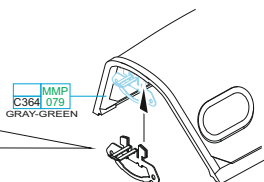
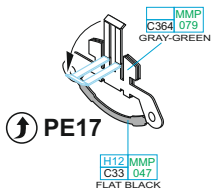


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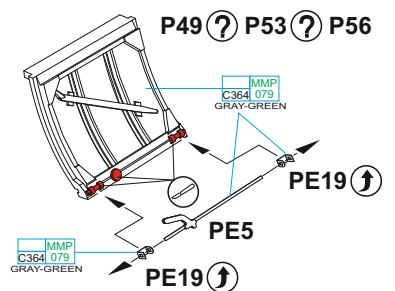
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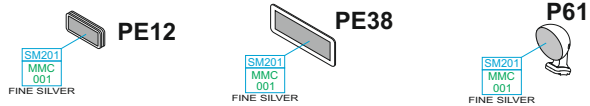
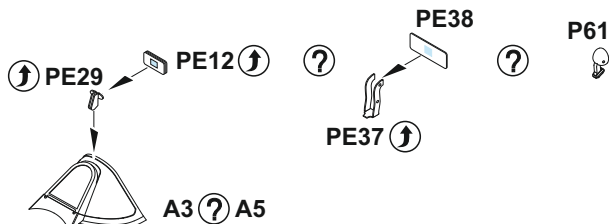
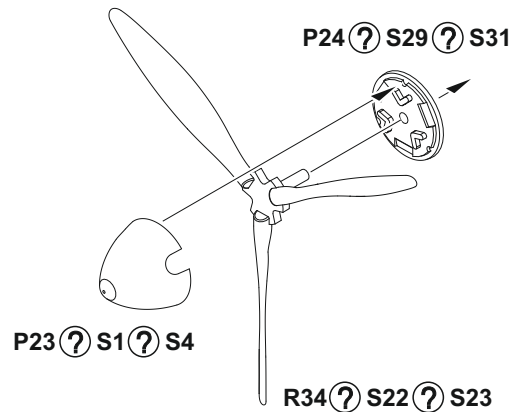
A7 ? A8 - MARKINGS **E, G, H**
 A9 ? A10 - MARKINGS **I, J**
 A13 ? A14 - MARKINGS **A, B, C, D, F**



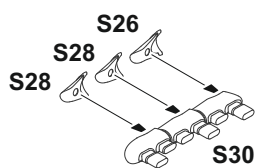
A7 ? A8 ⬤
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 A9 ? A10 ⬤
 ?
 A13 ? A14 ⬤

K

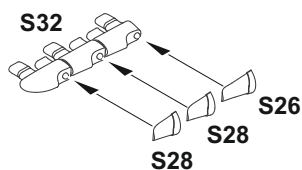


LPE12, PE29 - MARKINGS **A, B, C, D, E, F, H, I**PE37, PE38 - MARKING **G** P61 - MARKING **J**A3 - MARKINGS **I, J**A5 - MARKINGS **A-H****M**P23, P24, R34 - MARKINGS **A, B**S1, S22, S29 - MARKING **I**S4, S23, S31 - MARKINGS **C, D, E, F, G, H, J****N**

starboard side

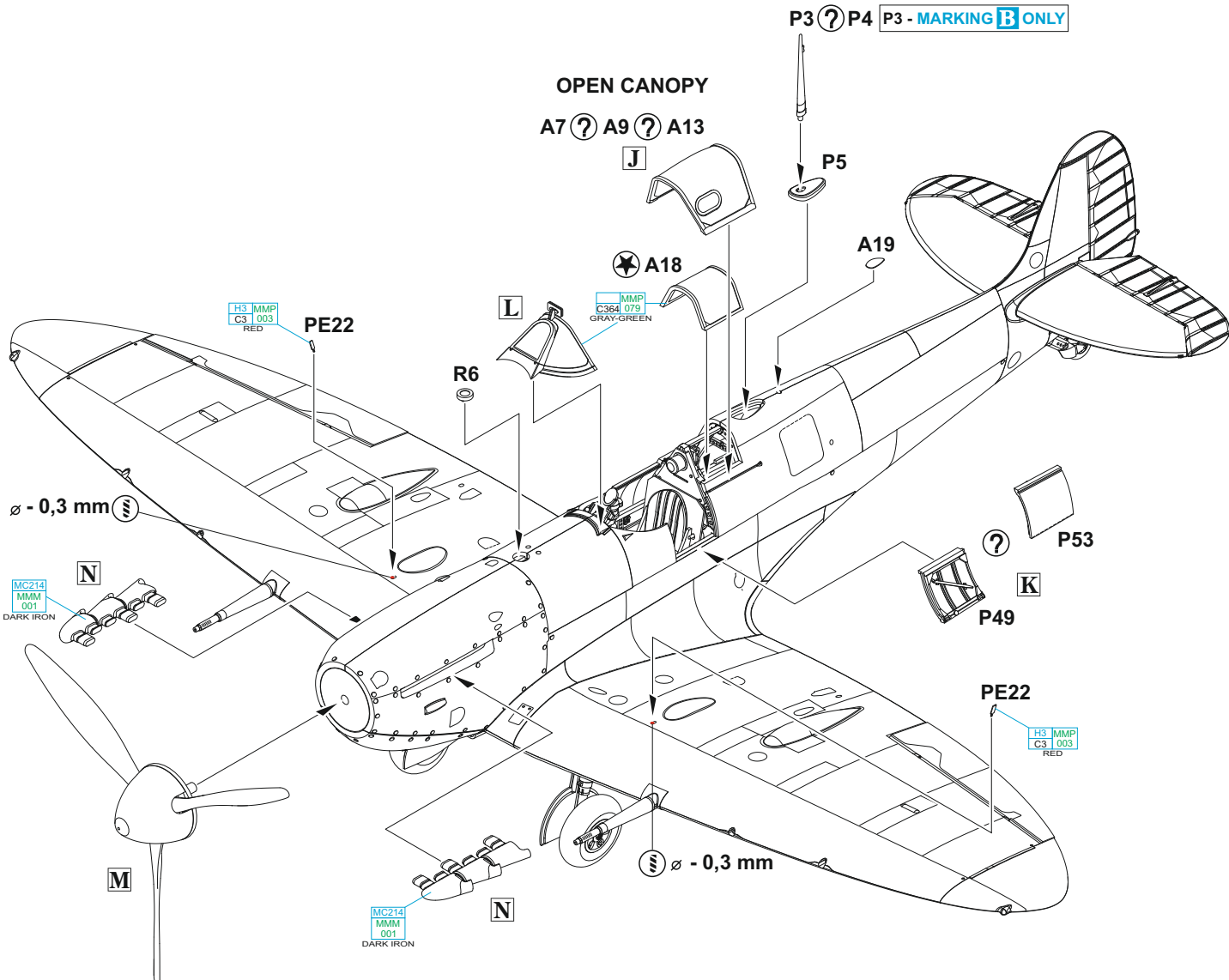


port side

P3 ? P4 P3 - MARKING **B** ONLY

OPEN CANOPY

A7 ? A9 ? A13

J

CLOSED CANOPY



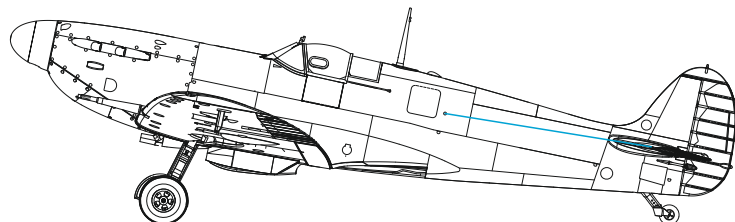
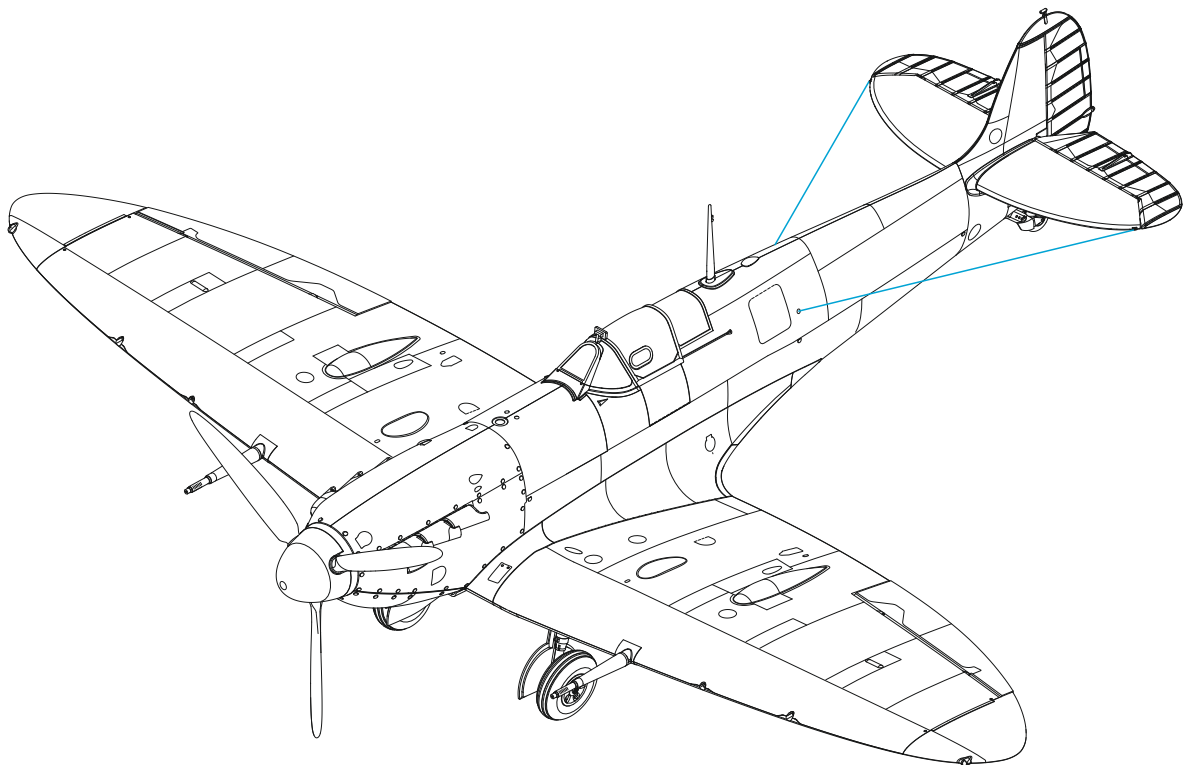
A8 ? A10 ? A14

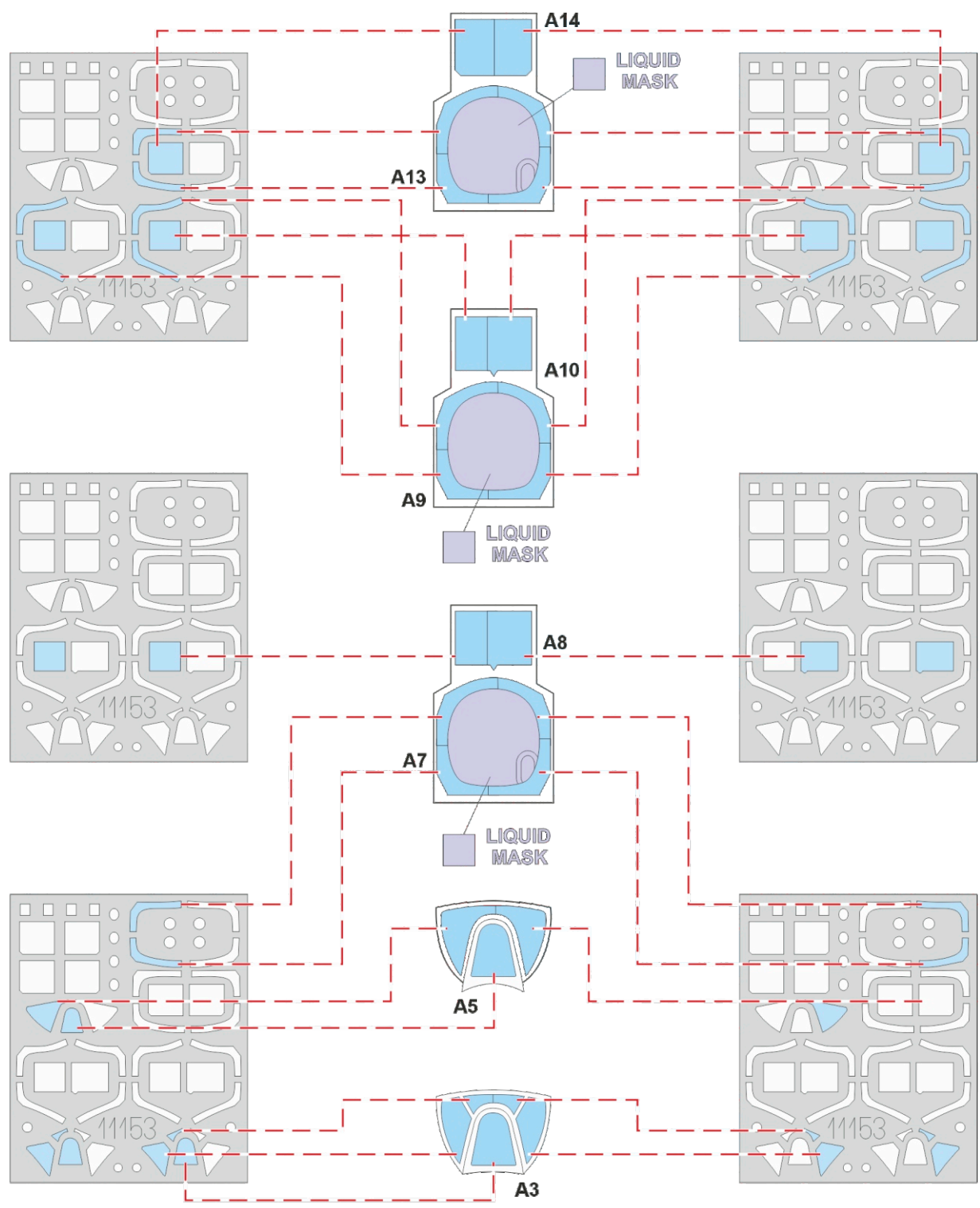
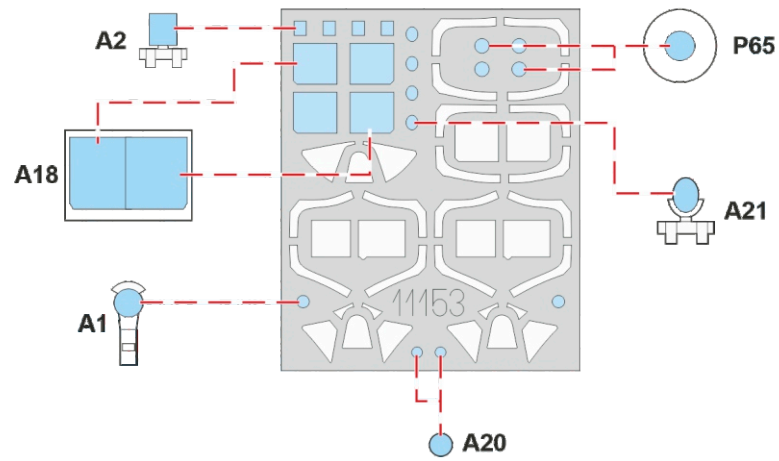
K

M

MMP
C364 079 J
GRAY-GREEN

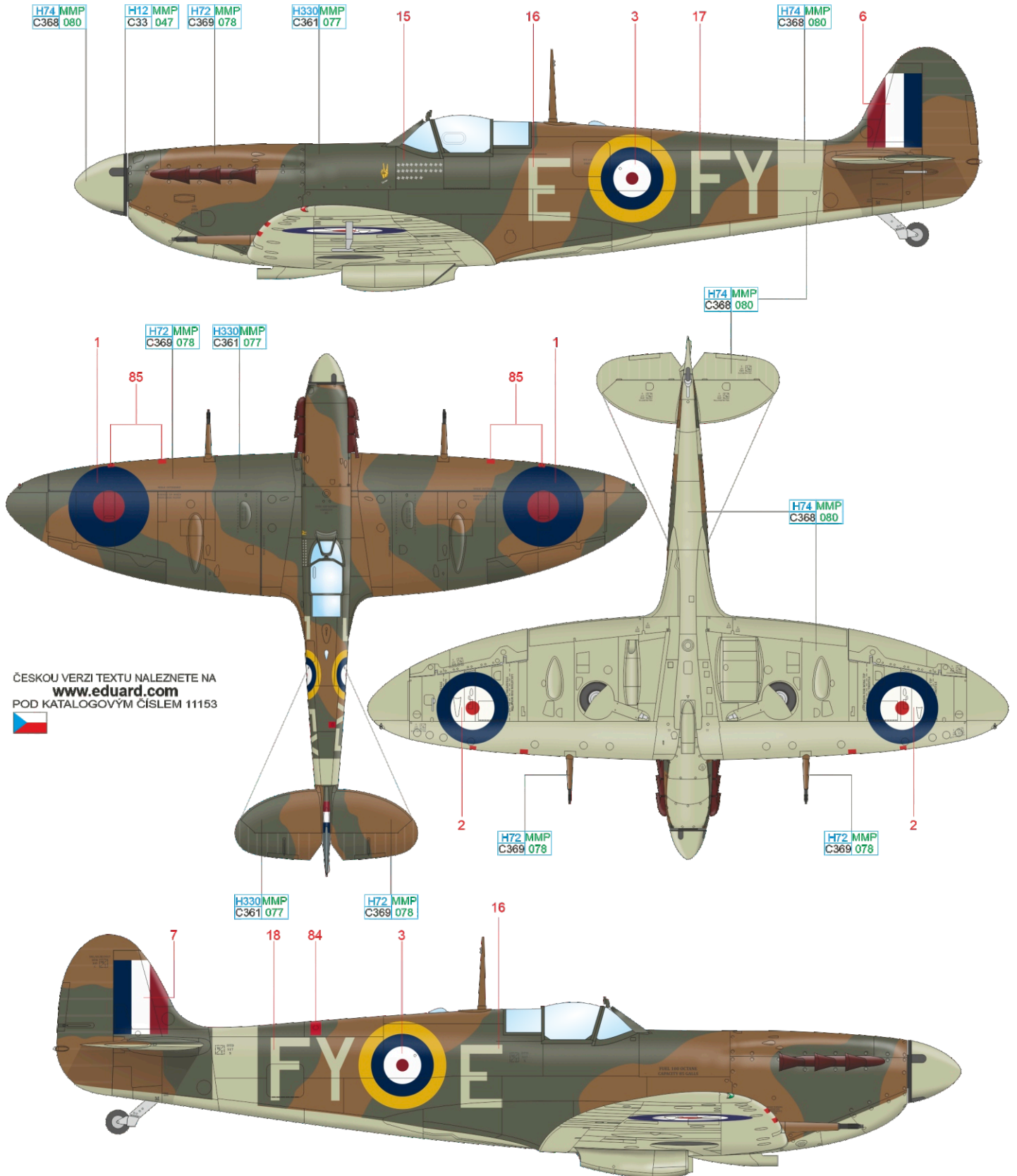
K P56





A W3257, F/Lt Eric S. Lock, No. 611 Squadron, RAF Hornchurch, Great Britain, July 1941

The most successful pilot of the Battle of Britain, Eric Stanley Lock, sortied for the first time with his Spitfire W3257 on July 14, 1941. He baptized his new airplane by fire by shooting down a Bf-109F, which was also his very last kill. Barely three weeks later, on August 3, returning from a Rhubarb mission, he attacked a German column near Pas de Calais and has been missing ever since. It's supposed he was shot down by AA fire and crashed into the sea. Neither his Spitfire Mk.V W3257 nor Lock himself have ever been found. At the time of his disappearance his score stood at 26 kills achieved during 25 weeks of the operational deployment in the course of one year out of which he spent six months in the hospitals. Spitfire Mk.Vb W3257 was camouflaged in the standard Dark Green/Dark Earth/Sky. Code letters E-FY were painted in Sky which was a standard code letters color of the Hornchurch Wing Spitfires. A serial was overpainted in the camouflage color.



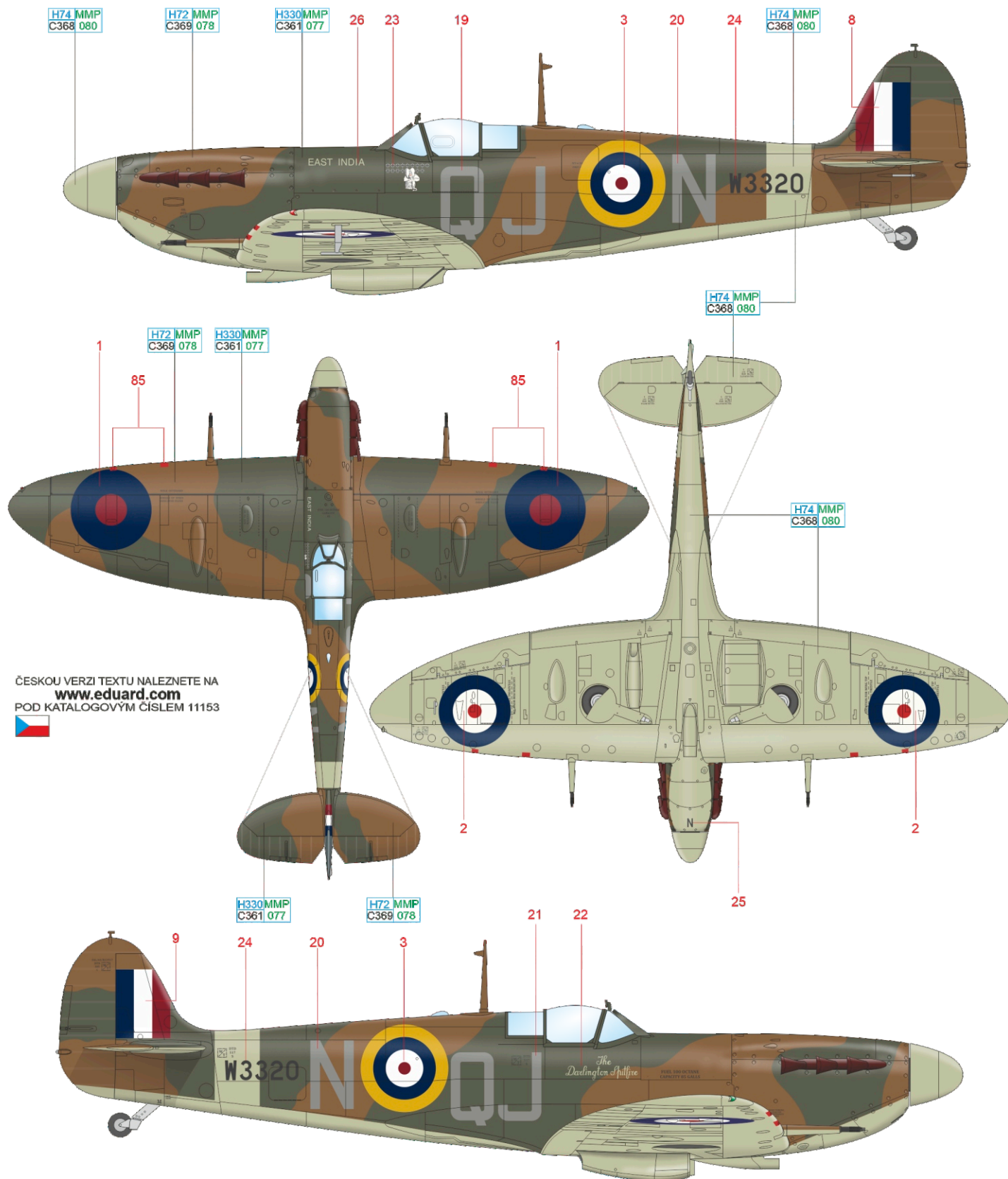
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SKY	H74 MMP C368 080	DARK EARTH	H72 MMP C369 078	DARK GREEN	H330 MMP C361 077	BLACK	H12 MMP C33 047
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B W3320, P/O Donald E. Kingaby, No. 92 squadron, RAF Biggin Hill, Great Britain, August 1941

Donald Ernest „Don“ Kingaby flew with No. 92 Squadron from September 1940 till the end of 1940 scoring 8 kills. From July 20, 1941 till October 16, 1941, when Kingaby completed his tour of duty with No. 92 Squadron, at the controls of W3320 he flew 33 missions, scored three confirmed Bf109F kills, another three as probables and damaged one. He returned to the combat flying in March 1942 with No. 111 Squadron at Debden and continued with his military career reaching the rank of Wing Commander leading the Hornchurch Wing. Later he served at Fighter Command Headquarters and finished the war as a commander of Advanced Gunnery School in Catfoss. His total score was 23 kills. To purchase the Spitfire Mk.Vb W3320 „The Darlington Spitfire“ citizens of Darlington, in Durham county, northeastern England, contributed 5,082 GBP. After August 15, 1941, W3320 upper, Dark Earth surfaces were repainted in Mixed Grey, Medium Sea Grey on the lower surfaces.



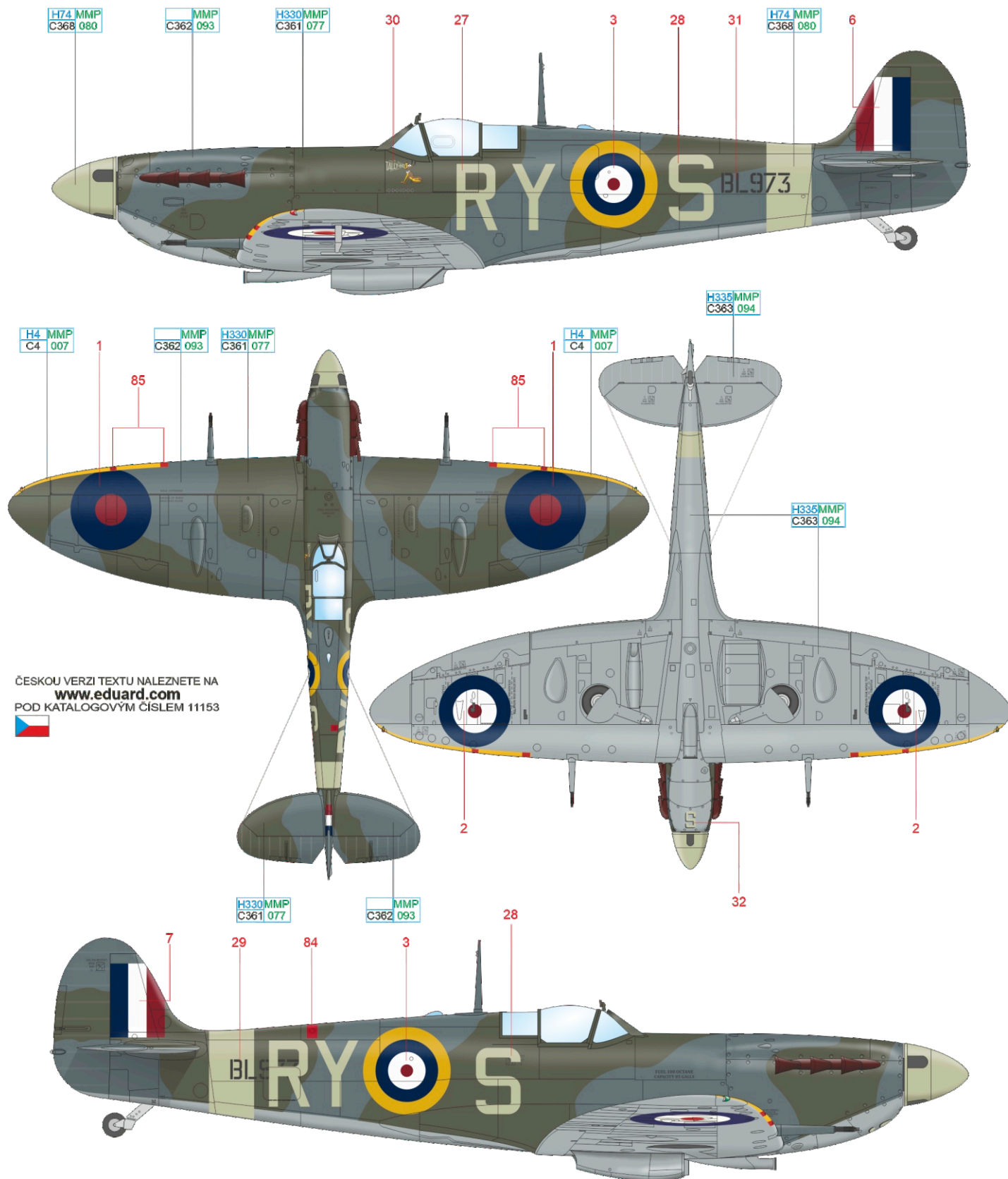
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SKY	H74 MMP C368 080	DARK EARTH	H72 MMP C369 078	DARK GREEN	H330 MMP C361 077
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C BL973, F/Lt Stanislav Fejfar, No. 313 (Czechoslovak) Squadron, RAF Hornchurch, Great Britain, March – May 1942

Stanislav Fejfar, a member of Czechoslovak Air Force before the war, flew as a commander of 45th Fighter Squadron based in Slovakia during the Munich crisis. He scored his first two kills during the Battle of France as a member of Armee de l'Air flying MS.406 with GC I/6. On July 12, 1940 he arrived in the Great Britain aboard the ship Neuralia. On September 9, he started his operational career as a Pilot Officer with No. 310 (Czechoslovak) Squadron RAF scoring his first out of three kills claimed during the Battle of Britain. On July 21, 1941 he joined No. 313 (Czechoslovak) Squadron as a F/Lt in the position of a B Flight leader. Stanislav Fejfar perished on May 17, 1942 in the cockpit of Spitfire Mk.Vb BL973 during the Ramrod 33 mission. He was shot down by Hptm. Josef Priller between Guines and Audebert in the northern France. Couple of days earlier Priller also shot down Sergeant Karel Pavlík, author of Pluto the Dog nose art on Fejfar's Spitfire.



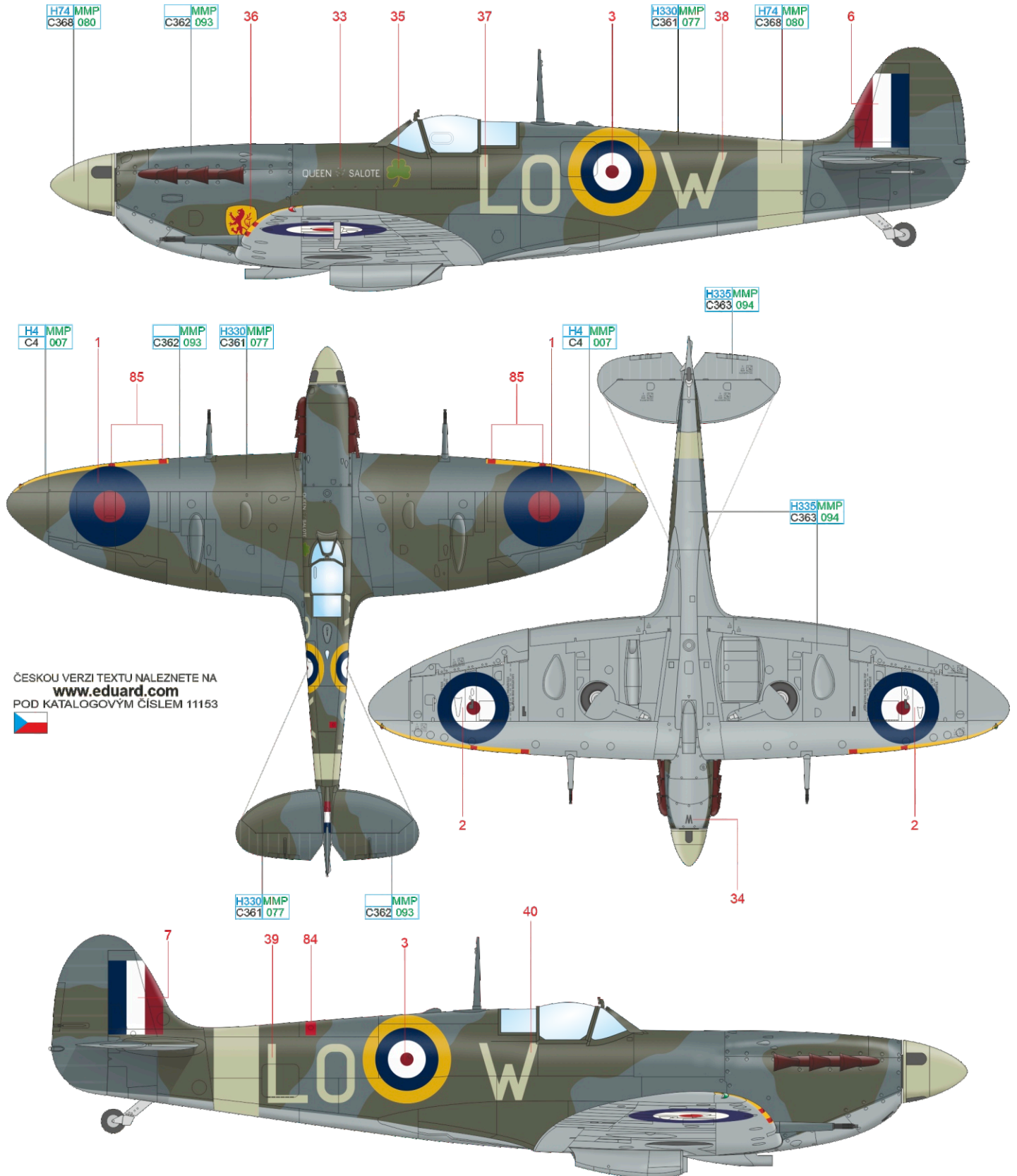
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YELLOW	H4 MMP C4 007	SKY	H74 MMP C368 080	DARK GREEN	H330 MMP C361 077	OCEAN GRAY	MMP C362 093	MEDIUM SEA GRAY	H335 MMP C363 094
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D BM124, S/Ldr Brendan E. F. Finucane, CO of No. 602 Squadron, RAF Kenley, Great Britain, April 1942

In March 1942, No. 602 Squadron commander, S/Ldr Brendan Finucane consequently flew Spitfires Mk.Vb BL548 and BL822. Ultimately he felt most comfortable with the third one, BM124 which remained his personal aircraft until June 18, 1942. He had a green shamrock painted under the windshield. In the beginning of May, No. 602 Squadron insignia was painted on the engine cowling and on May 21 the presentation inscription QUEEN SALOTE remembering the long-term ruler of the island state of Tonga, Queen Salote and her subjects from whose donations Spitfire BM124 was purchased. The grey camouflage patterns were painted in very dark shade of Mixed Grey which in the black and white photographs gives the impression of grey and green camouflage pattern being reversed. It is not so. Dark Green patterns remained painted according to the standard. The wing leading edge features wavy division between upper and lower camouflage colors. The stencils are missing from the upper and side surfaces however they were preserved on the wing lower surfaces. The black wing walks are missing as well.



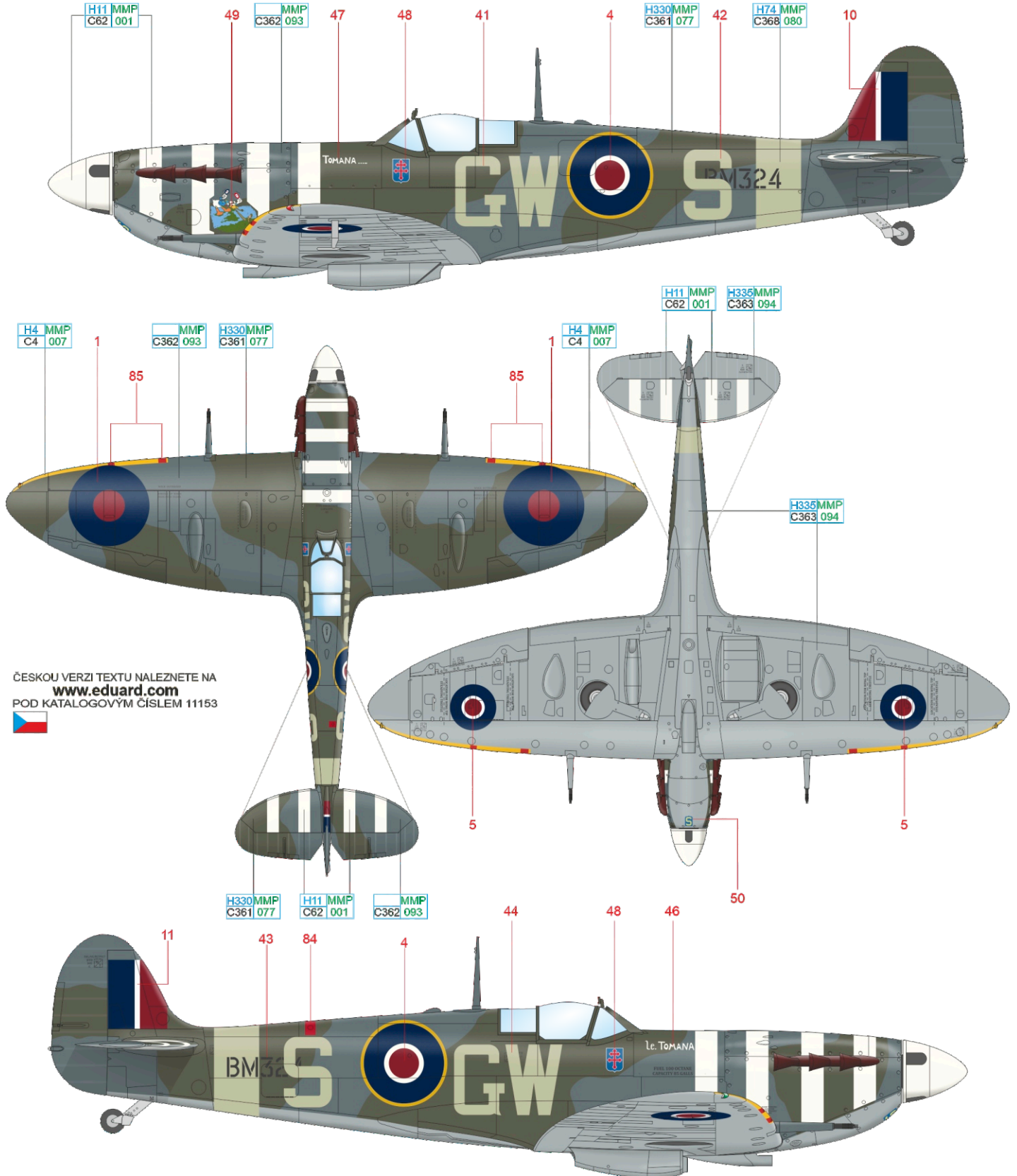
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YELLOW	H4 MMP C4 007	SKY	H74 MMP C368 080	DARK GREEN	H330 MMP C361 077	OCEAN GRAY	MMP C362 093	MEDIUM SEA GRAY	H335 MMP C363 094
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E BM324, F/Lt Bernard Dupérier (Baron Léon Sternberg de Armella), No. 340 (Free French) Squadron, RAF Westhampnett, West Sussex, Great Britain, July 1942

Bernard Dupérier, whose real name was Leon Sternberg de Armella, enlisted in the Free French Air Force in New York on January 15, 1941 under his mother's maiden name. Having served with No. 242 and No. 615 Squadrons RAF, in October 1941 he joined No. 340 (Free French) Squadron (GC II/4 Ile-de-France) as a B Flight (Versailles) leader. As of May 1, 1942 he assumed command of the whole squadron. From December 1942 he served at FAFL Headquarters. From August 30, 1943 he was given command of No. 341 (Free French) Squadron (GC III/2 Alsace) and from September 1943 he commanded the Biggin Hill Wing. On June 25, 1944 he was parachuted to Bretagne where he acted as a commander of 3. Headquarters of FFI. On August 6, 1944, during the liberation of the city of Saint-Brieuc he was severely wounded. He returned to the duty in April 1945. After the hostilities he worked in several positions including Air France director. In 1958 he entered the world of politics and in 1962 became the member of Parliament. The white stripes on the nose and horizontal tail surfaces of his BM324, in which he scored two victories, pertain to the cancelled invasion operation Rutter scheduled for July 7, 1942. This markings are mistakenly attributed to the operation Jubilee in which No. 340 (Free French) Squadron also took part.



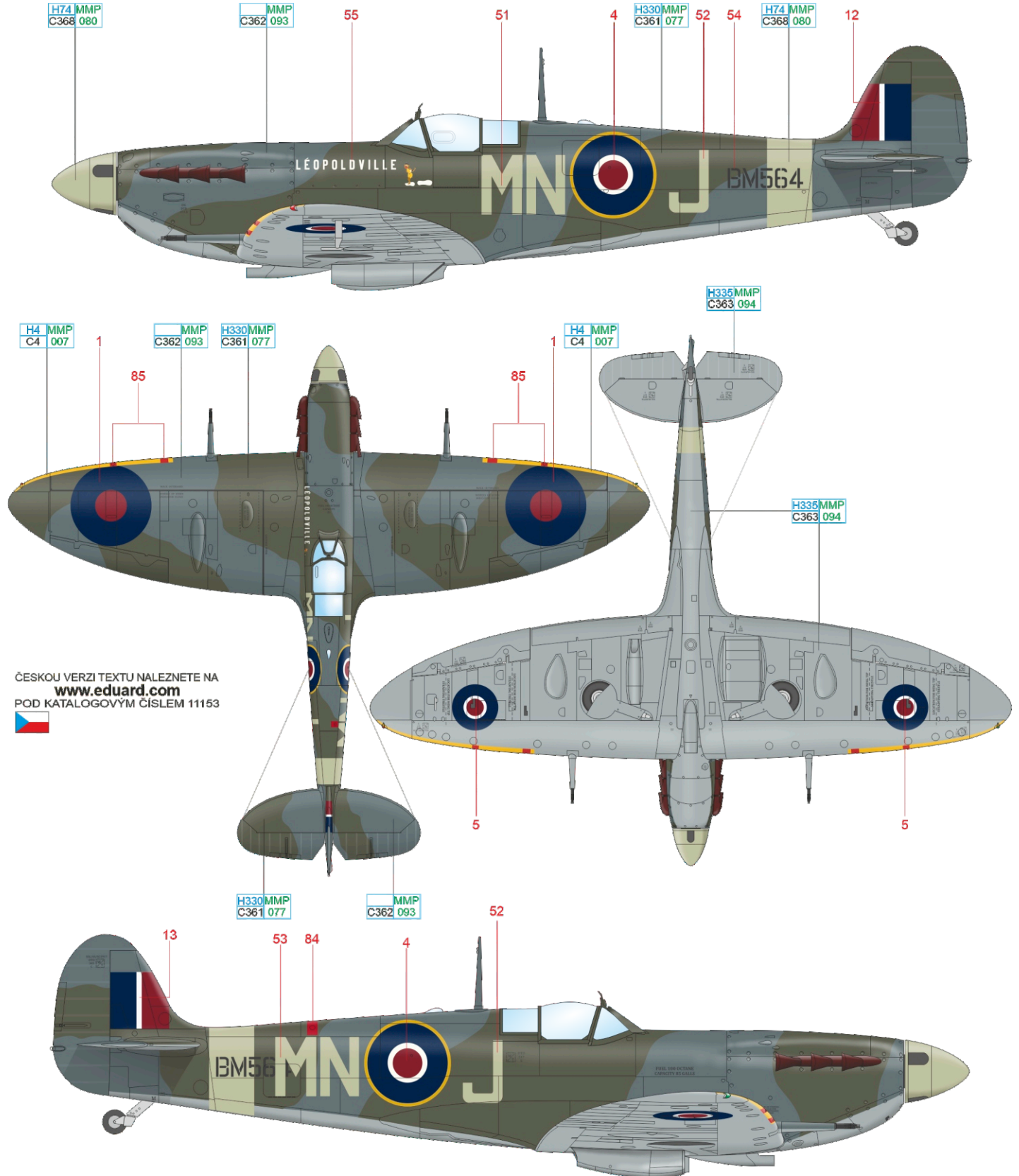
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WHITE	H11 MMP C62 001
YELLOW	H4 MMP C4 007
SKY	H74 MMP C368 080
DARK GREEN	H330MMP C361 077
OCEAN GRAY	MMP C362 093
MEDIUM SEA GRAY	H335MMP C363 094

F BM564, P/O André M. A. F. Plisnier, No. 350 (Belgium) Squadron, RAF Redhill, Surrey, Great Britain, summer - fall 1942

Spitfire Mk.Vb BM564 flew with No. 350 (Belgium) Squadron from April 30, 1942 till December 27, 1942. During this period all sixteen Spitfires of the unit sported the presentation inscriptions list of which allocates inscription Léopoldville to BM564. This aircraft was almost exclusively flown by well-known Belgian pilot and ace P/O André Marie Alfred Frederick Plisnier who in its cockpit scored four kills, two during the operation Jubilee, landing at Dieppe on August 19, 1942 and two more kills later in November. His total score during the war was six kills. The presentation inscription Léopoldville is also included in the later list of the Belgium presentation Spitfires and allocated to AA720. This aircraft flew missions briefly, from June 6, 1944 till June 10, 1944 when the pilot F/Lt Alec Alexander perished in it. At that time this airplane certainly sported the invasion stripes and its windshield probably featured the integrated armored glass. Apparently it would not sport the nose art under the canopy.



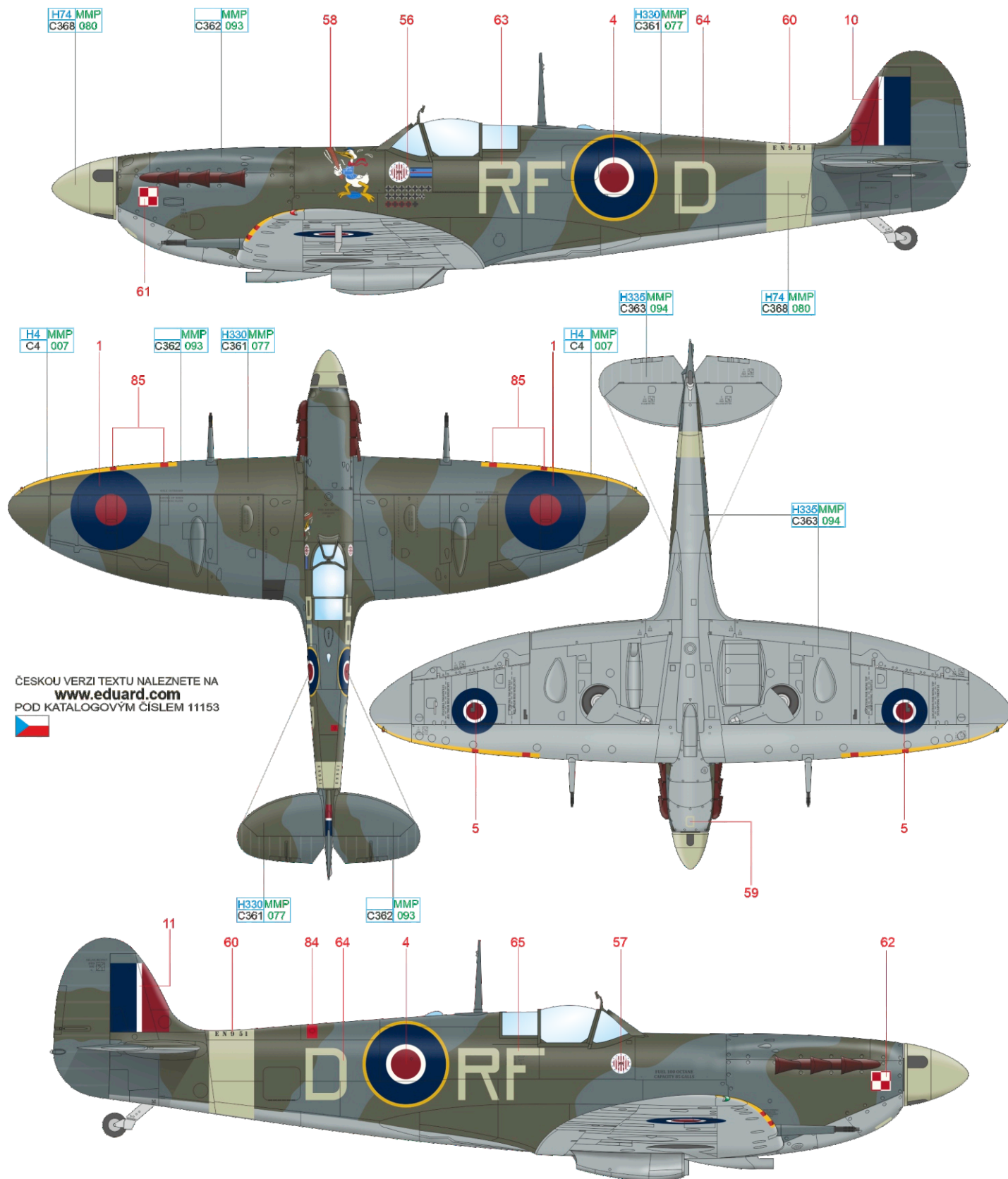
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YELLOW	H4 MMP C4 007	SKY	H74 MMP C368 080	DARK GREEN	H330MMP C361 077	OCEAN GRAY	MMP C362 093	MEDIUM SEA GRAY	H335MMP C363 094
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G EN951, S/Ldr Jan Zumbach, CO of No. 303 (Polish) Squadron, RAF Kirton in Lindsey, Lincolnshire, Great Britain, September 1942

Jan Zumbach, a grandson of a Swiss emigrant, Swiss citizen himself, served with No. 111 Fighter Squadron of the Polish Air Force from 1938. After Poland was defeated he fought in the ranks of the French GCD I/55. On August 2, 1940 he joined No. 303 (Polish) Squadron where, during the Battle of Britain, he scored eight kills. On May 17, 1942 he was given command of No. 303 (Polish) Squadron. From the end of September till December 1942 he flew Spitfire EN951, the former personal mount of Don Blakeslee from the USAAF 336th FS, 4th FG. The aircraft sported Zumbach's personal insignia in the form of Donald the Duck nose art, known in several versions from several Zumbach's Spitfires. During the war, in which end he was shot down and briefly imprisoned, Jan Zumbach's total score was thirteen confirmed kills and five probables. His life after the war is no less colorful than during the wartime. He engaged in the international arm dealing, often illegal, and fought as a mercenary in Africa, in the service of the insurgent forces in Katanga and later Biafra. He died under unclear circumstances in Paris on January 3, 1986.



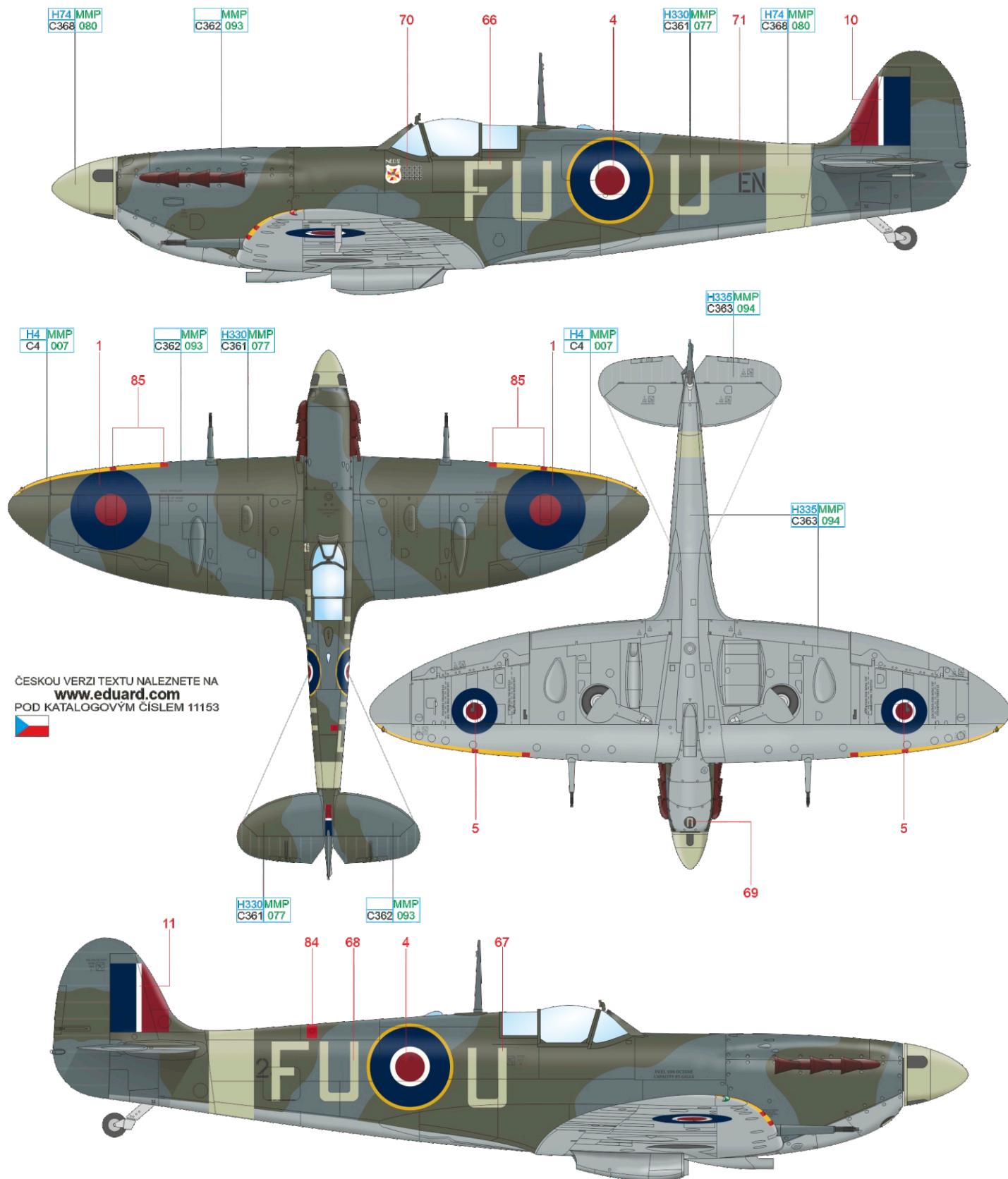
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YELLOW H4 MMP C4 007 SKY H74 MMP C368 080 DARK GREEN H335 MMP C361 077 OCEAN GRAY MMP C362 093 MEDIUM SEA GRAY H335 MMP C363 094

H EN824, F/Lt John Yarra, No. 453 Squadron RAAF, RAF Ipswich, Suffolk, Great Britain, December 1942

Nicknamed „Slim“ Yarra was one of the most successful pilots defending the island of Malta during the hot summer of 1942. During the tough battles for Malta he scored 12 kills. In September 1942 he was promoted to Flight Lieutenant and assigned to the Australian No. 453 Squadron, part of the Hornchurch Wing, flying the offensive raids over France. F/Lt Yarra's fateful date came on December 10, 1942 when during the attack on shipping at the Holland coast, his Spitfire EN824 was hit by AA fire and crashed into the sea. The pilot tried to bale out of the damaged aircraft but was hit by the tail surfaces damaging his parachute which did not fully deploy and pilot's body hit the sea surface falling from 300 meters. His brother Robert Ernest, fighter pilot as well, was also shot down by the AA fire and killed on April 14, 1944 while attacking the V-1 missiles launching pads at Ligescourt (operation Ramrod 735). The tragedy of war is fully exposed in the case Yarra brothers.



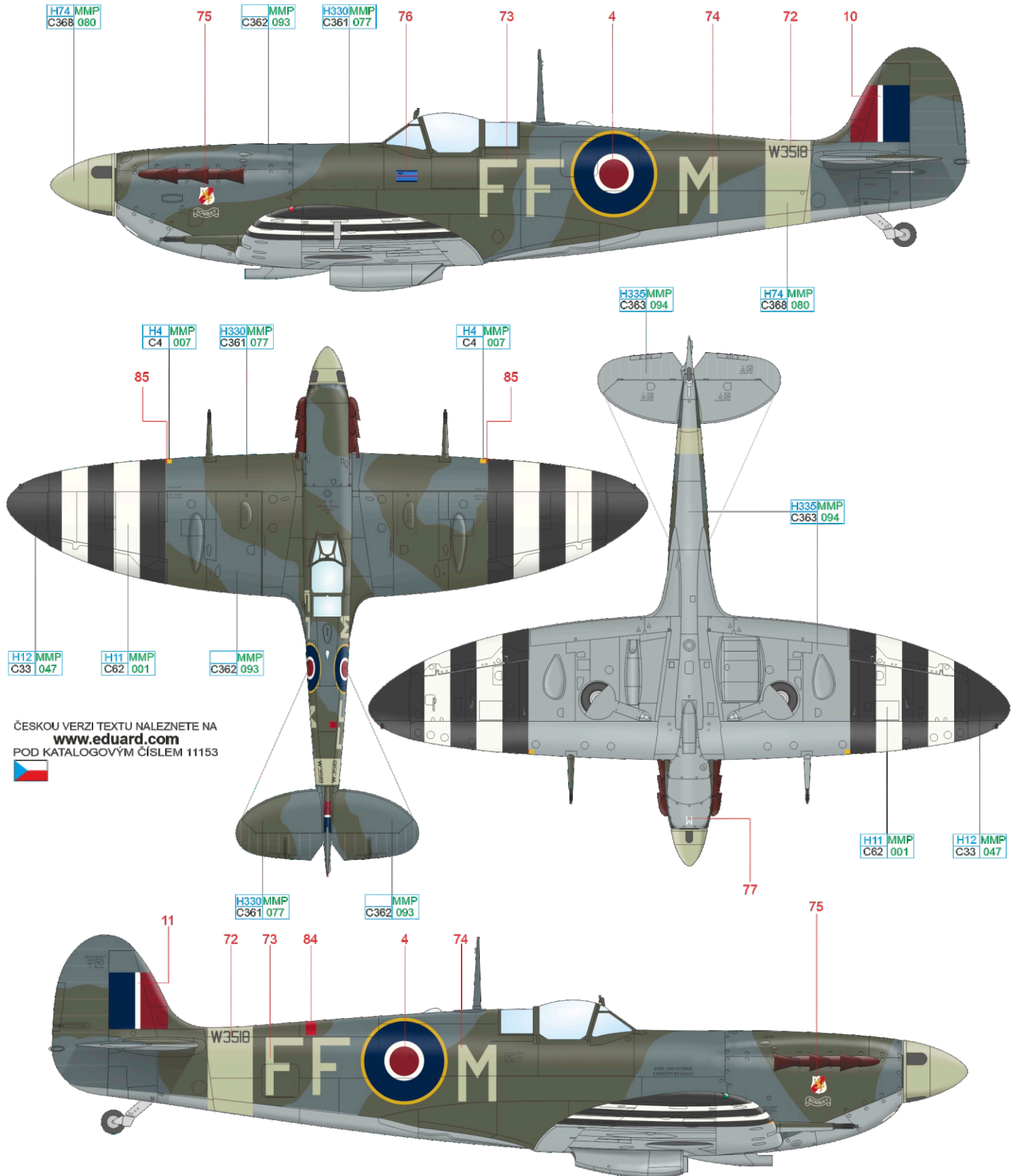
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YELLOW H4 MMP C4 007 SKY H74 MMP C368 080 DARK GREEN H330MMP C361 077 OCEAN GRAY MMP C362 093 MEDIUM SEA GRAY H335MMP C363 094

W3518, S/Ldr Count Franz F. Colloredo-Mansfeld, CO of No. 132 Squadron, RAF Newchurch, Kent, Great Britain, September 1943

An American citizen, Harvard University graduate, Franz Ferdinand Count of Colloredo-Mansfeld, was born in Rome, son of an Austrian diplomat, Count Ferdinand Colloredo-Mansfeld (1878-1967) and his American spouse Eleonor, born Iselin. After 1918 the family settled in the USA. Before the USA entry into the war, Franz Ferdinand had volunteered for RAF where he achieved the rank of Squadron Leader and on August 15, 1943 assumed the command of No. 132 Squadron. On September 9, 1943, flying Spitfire Mk.Vb W3518 he participated in the mock invasion operation Starkey which purpose was to create fear of invasion in the German Command and lure the German troops out of Italy and the Eastern Front to the West. On that occasion the wing tips were painted with black and white identification stripes, predecessors of the later well-known invasion stripes used during the operation Overlord. S/Ldr Franz F. Colloredo-Mansfeld perished in his Spitfire Mk.IX near Berck-sur-Mer on January 14, 1944.

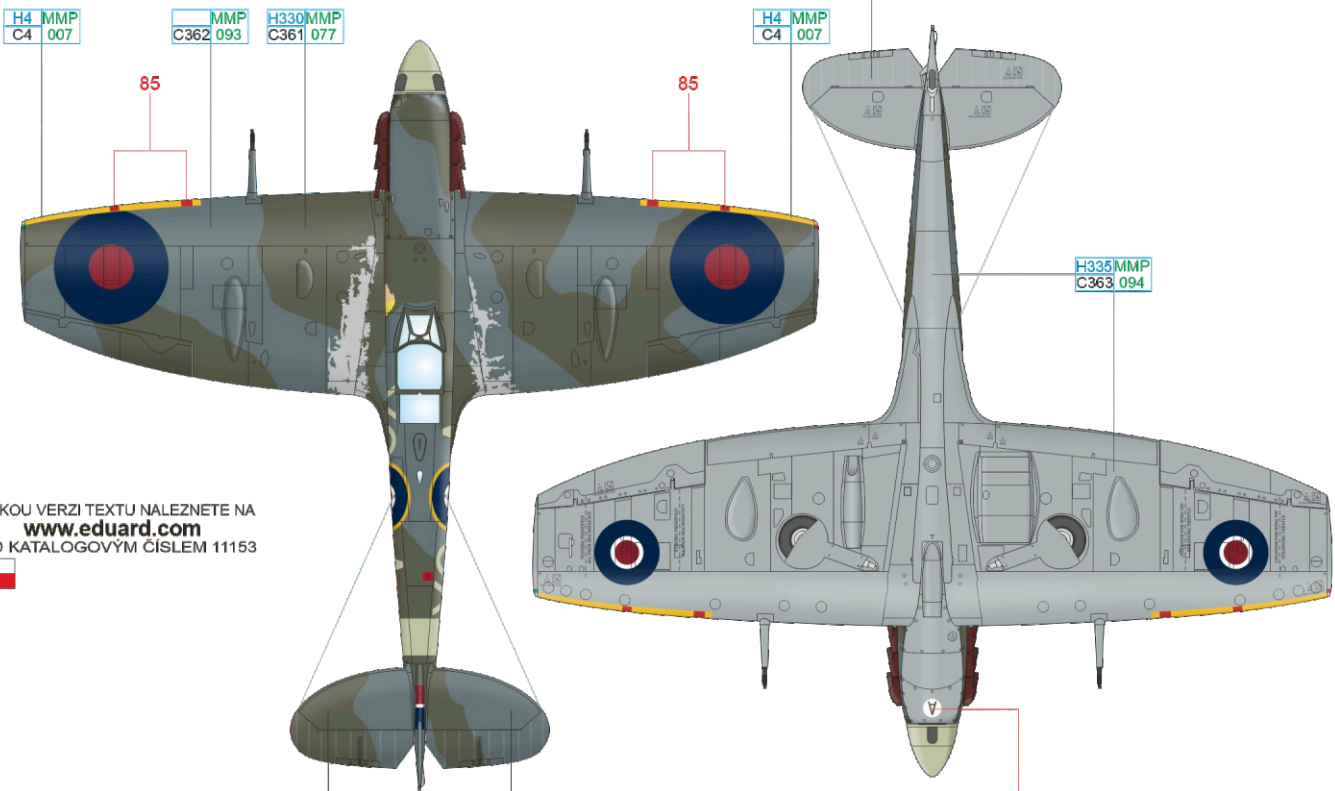
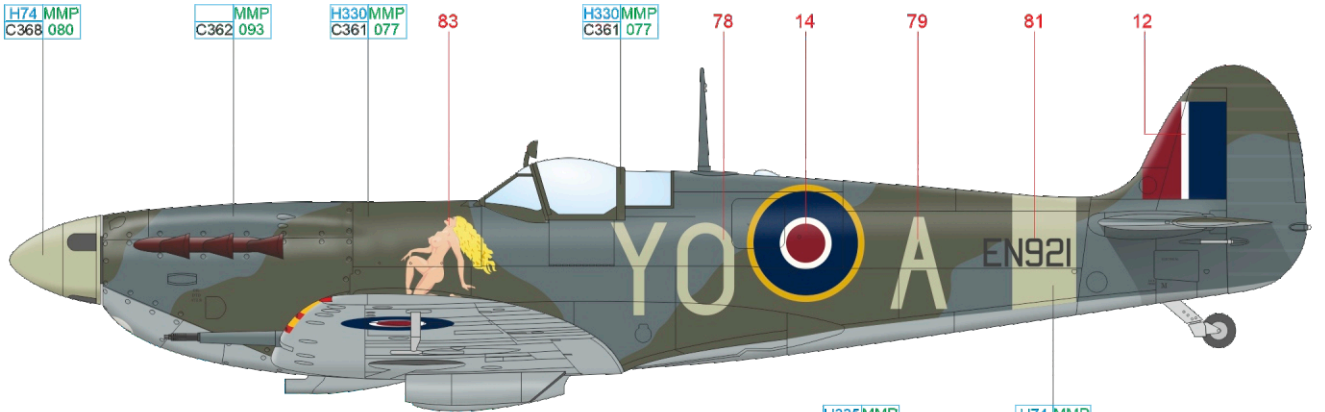


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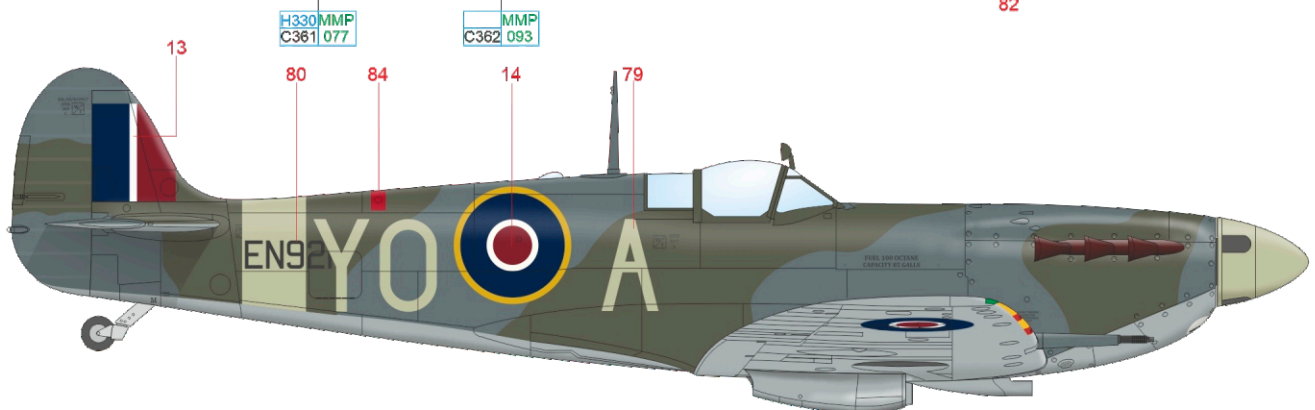
WHITE	H11 MMP C62 001	SKY	H74 MMP C368 080	DARK GREEN	H330 MMP C361 077	OCEAN GRAY	MMP C362 093	MEDIUM SEA GRAY	H335 MMP C363 094	BLACK	H12 MMP C33 047
YELLOW	H4 MMP C4 007										

J EN921, F/O Jackson E. Sheppard, No. 401 Squadron RCAF, RAF Biggin Hill, Great Britain, October 1943

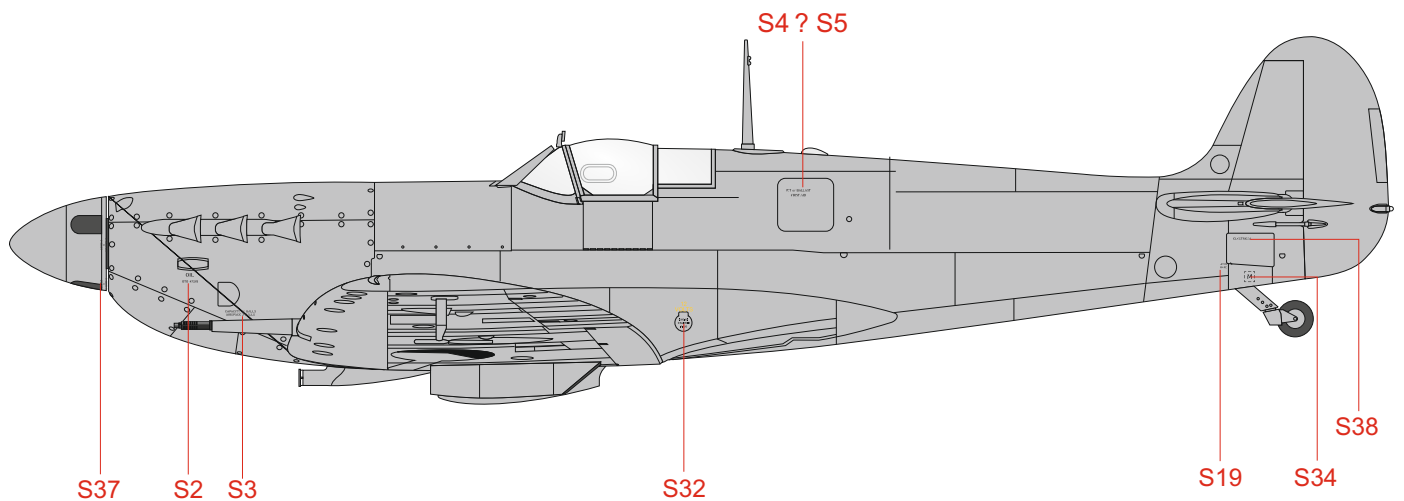
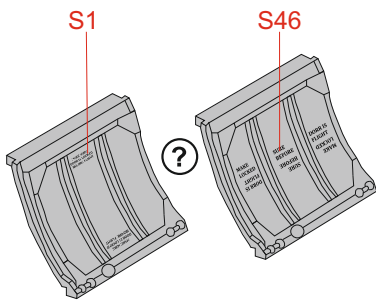
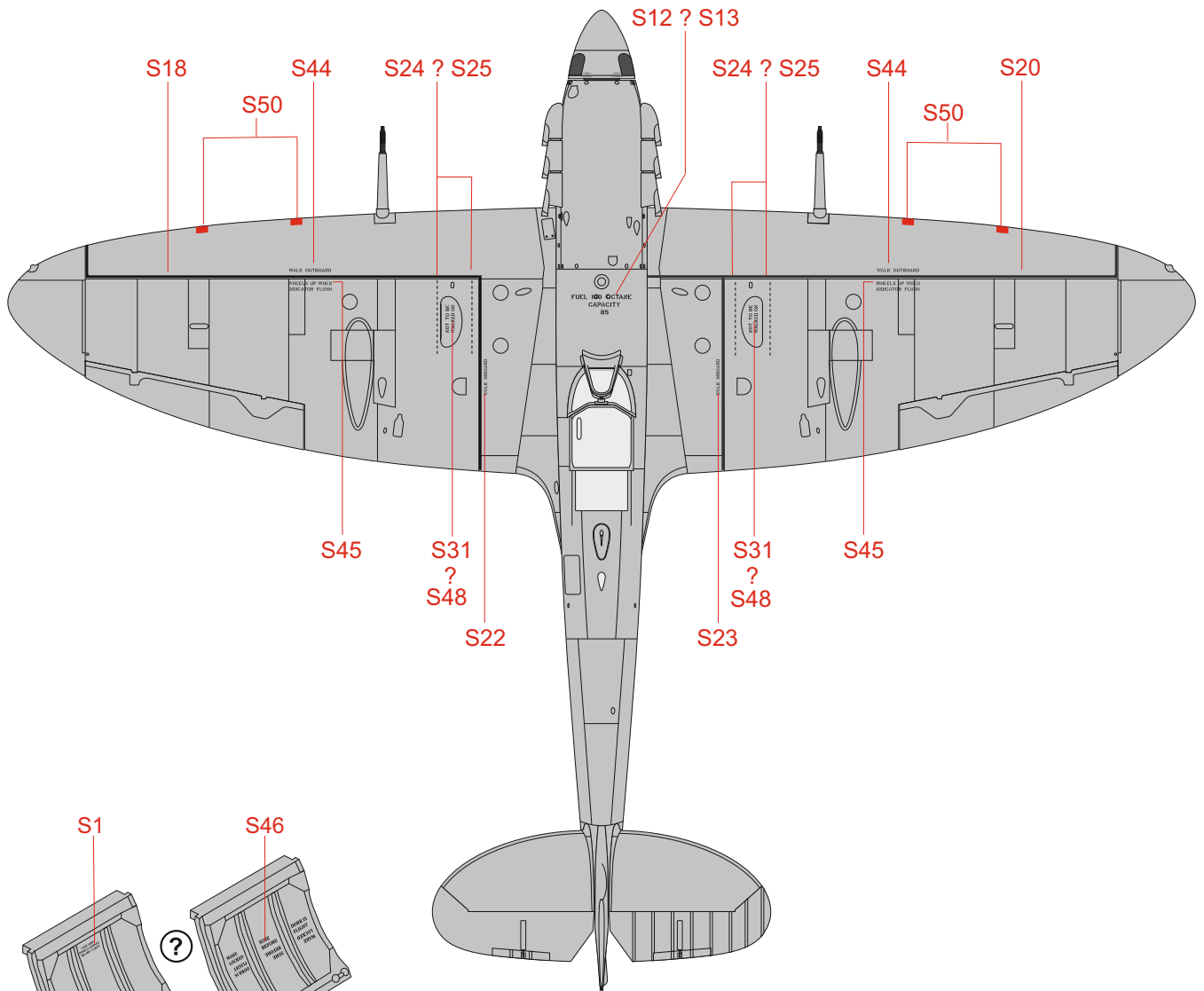
„Jack“ Sheppard, originally a dock worker, enlisted in the RCAF in 1939 and till August 1940 served with No. 120 Squadron. In August 1941 he completed the pilot training at No. 53 OTU and in November 1941 was assigned to No. 43 Squadron. In December he volunteered for the convoy escorts. On February 10, 1942 he crashed into the sea in Hurricane Z4569 having been catapulted from a deck of a transport boat. In July 1943 he became an A Flight leader with No. 401 Squadron. In April 1944 he assumed command of a flight of the No. 412 Squadron and led the unit till August 2 when he was shot down by German fighters in Normandy. He managed to avoid capture and returned to the unit. On August 22 he was decorated with DFC and in October he returned to Canada. In February 1946 he finally left the military service. Jackson Sheppard flew Spitfire serialed EN921 on the regular basis from July till October 1943. Even though he did not score any of his 5 kills in its cockpit, he flew this aircraft on many offensive sweeps including the mock operation Starkey on September 9, 1943.



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see you references for propeller stencils

