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LIMITED



Bf 109F-2 & Bf 109F-4

# WUNDERSCHÖNE NEUE MASCHINEN

- P.I.I -

## INSTRUCTION SHEET

**1/72**  
DUAL COMBO

2142-NAV1

# Bf 109F-2 & Bf 109F-4 DEVELOPMENT

collage: Marek Rys & Richard Pios



by VLADIMÍR ŠULC

**DURING WWII, NO OTHER AIRCRAFT WAS MORE ASSOCIATED WITH THE RISE AND FALL OF THE LUFTWAFFE THAN THE MESSERSCHMITT Bf 109 FIGHTER. ITS EARLY VERSIONS BECAME THE SYMBOL OF THE GERMAN AIR SUPERIORITY OVER THE EUROPEAN BATTLEFIELDS DURING THE FIRST HALF OF THE WAR.**

History of the Bf 109 fighter dates back to the end of March 1933 when the RLM formulated the specifications L.A. 1432/33 to develop a single engine fighter monoplane. The companies that participated in the contest to meet the specifications were Arado, Heinkel, Focke-Wulf and Bayerische Flugzeugwerke. Willy Messerschmitt, who became well known for his success with the design of tourist and courier Bf 108 aircraft, worked as a technical director at the last-mentioned company. His goal was to design an airplane with the best possible power to the total weight ratio and aircraft dimensions. At the same time, he focused on the most efficient aerodynamics.

In the course of coming months, several prototypes were built and were used for tests and further development. The result was a relatively small aircraft with smooth aerodynamical lines and progressive design features, such as low-wing concept, retractable landing gear, wing with a thin airfoil, automatic slats, landing flaps or weapon firing through the propeller shaft. Four years before the war outbreak, closed canopy or monocoque fuselage were not common either. So, from the beginning of its design, Messerschmitt's Bf 109, despite the teething troubles with the power plant, was a promising project and quite surprisingly won the contest beating much better-established competitors. The power plant problems were resolved by replacing Jumo 201 engine with DB 601 one which together with later deployed DB 605 engine was closely linked to the whole Messerschmitt Bf 109 development and its service. The inverted V twelve-cylinder engine powered several tens of thousands of "one-o-nines" produced in more than 25 versions and variants.

## **Bf 109 E**

The first combat deployment of three pre-production Bf 109s took place during the Civil War in Spain where they had been shipped in December 1936. The aircraft from the pre-production batch were to prove their abilities in the modern air warfare. Large scale production Bf 109 B-1 version was next to fly combat with 2.J/88 Legion Condor. To demonstrate their air power, the Germans also took advantage of sport events and the triumph of the prototypes of the Bf 109 E production version at the 4<sup>th</sup> International Aviation Meeting in Zurich held in the

summer of 1937 was complemented several months later by the world speed record of 610.95 kph.

Bf 109 E was a milestone version once the Jumo 210 engine was replaced with the more powerful and reliable Daimler-Benz DB 601 driving three-blade, constant speed VDM 9 propeller. The production of E-1 variant armed with four 7.9 mm caliber machine guns and E-4 armed with two 7.9 mm caliber machine guns and two 20 mm caliber MG-FF cannons went simultaneously since the beginning of 1939. The Luftwaffe thus entered WWII with the most modern and powerful single engine fighters forming the backbone of its units until the spring of 1941. From the occupation of Poland, Sitzkrieg on the Western front, invasion of Norway and battles of France and Britain, Bf 109 E ensured Luftwaffe's technical and tactical superiority over its opponents. After the Battle of Britain in the fall of 1940 and during the winter months of the following year, it became apparent though that it was a time to replace the "Emil" with a more potent successor.

## **Bf 109 F**

This successor got the designation Bf 109 F. In fact, its development had started during the time of the Bf 109 E large scale production's preparation in the fall of 1938. The new project was designed to accommodate the new DB 601 E engine with projected output of 1,350 hp compared to 1,100 hp of DB 601 A. Besides the more powerful engine installation, the goal of a design team led by chief designer Robert Lusser was the overall aerodynamic refinement of the airframe and incorporation of number of other technical improvements. Those were result of the complicated development through testing the prototypes and pre-production Bf 109 F-0 which was based on the Bf 109 E airframe and still showed the main design features of the original concept. In summary, all the design changes were applied to the first production version Bf 109 F-1, radically different shape-wise from both Bf 109 E as well as Bf 109 F-0 prototypes.

## **Bf 109 F-1**

Besides the aircraft's nose aerodynamical refinement, introduction of the new propeller spinner and circular compressor air intake, the immediately visible

## DUAL COMBO

change was the absence of the horizontal tail struts. Compared to Bf 109 E the armament was reduced to a single cannon mounted between the engine cylinder blocks and firing through the hollow propeller shaft (Motorkanone) plus two 7.9 mm caliber MG 17 machine guns above the engine in the fuselage nose. The development delay prevented the installation of the planned MG 151/20 cannon, therefore the MG FF with 60-rounds drum was mounted. The aircraft featured REVI C12/D reflex-type gunsight. The planned DB 601 E development was also delayed (due to the reliability issues) and DB 601 N with maximum output of 1,175 hp was used instead. It was developed from DB 601 A and the increased output was achieved by raising the compression ratio and using the C3 fuel (Octane Rating 95). The oil cooler under the nose was of 9-6130A type and the propeller used was VDM-9.12007.10.

The wing featured a new elegant elliptical wingtip with a cutout for the position light on the leading edge and the new glycol coolers with regulation flaps also forming the inner part of the landing flaps. Same as on Bf 109 E, the slots were automatic and the control surfaces of metal structure were fabric covered. The tail wheel was retractable. The fuselage fuel tank, located under and behind the pilot's seat, was of 400 liters volume. Bf 109 F-0 were not capable to carry a fuel drop tank. The aircraft were equipped with FuG VIIa radio, but some were fitted with IFF FuG 25 system in 1941. The maximum airspeed was stated as 595 kph (495 kph at the ground level), rate of climb 17 mps, range 700 km and ceiling 12,000 m (Vogt).

The large-scale production was launched at Bayerische Flugzeugwerke factory (Messerschmitt - Mtt. Reg) in Regensburg in June (Prien/Rodeike) or August (Murawski) 1940. Vogt and Valtonen state that the production started during October 1940, but it doesn't seem credible. Till the end of February 1941, probably 137 airframes left Mtt Regensburg factory (Vogt, Valtonen, Rodeike state 157). In November 1940, the Bf 109 F-1 production also started at Wiener Neustädter Flugzeugwerke (WNF) producing 50 aircraft until January 1940 (Vogt, Valtonen, Prien/Rodeike state 49 aircraft).

The aircraft manufactured at WNF differed in details from those produced at Mtt Regensburg, for example by rectangular shape of the compressor air intake. The new aircraft arrived at frontal units piecemeal during the fall of 1940, none of the combat units however was fully converted to F-1 variant. In the beginning of October, Stab/JG 51 was the first unit to receive the new aircraft. The first two sorties were flown by Maj. Werner Mölders on October 9, 1940. He used Bf 109 F-1 WNr. 5628 SG+GW and he shot down a Spitfire Mk.I from No. 66 Squadron RAF over Folkestone flying it on October 11. It was Mölders' 43<sup>rd</sup> victory. Spitfire pilot, P/O Pickering, was wounded but survived. In the beginning of November, several Bf-109 F-1s were received by I./JG 51 which suffered its first loss when the commander of I./JG 51, Oblt. Georg Claus, was shot down over the British coast. During the month of November, smaller number of Bf 109 F-1s were received by supply groups (Ergänzungsgruppen) JG 26 and JG 51. The units stationed in France received a single aircraft in the beginning of 1941.

As usual with the introduction of the new type into the service, a lot of failures and shortcomings surfaced rather quickly. Besides the problems with the brakes, quality of tires and oxygen masks, the too far mounted seat was found unsatisfactory which led to its replacement by Bf 109 E seat. This seat was later installed in Bf 109 F-2 as well. The most serious problem was however the insufficient fuselage tail rigidity. In February 1941 three aircraft were lost when the engine vibrations transmitted into the airframe caused the fuselage tail destruction. The fourth crash investigation revealed the rear fuselage structural problems and insufficient airframe rigidity of the tail section attachment to the last fuselage bulkhead. Four outer reinforcement stringers were added as a temporary solution, two on each fuselage side on the last fuselage bulkhead. Majority of production Bf 109 F-2 had these strips installed.



photo: SDASM

Bf 109 F-0 WNr. 5604 VK+AB. The aircraft with the DB 601 A engine already had the compressor intake with a circular cross-section. It was used to test the newly designed glycol cooler flaps combined with landing flaps. The wing still had the straight ends of the Bf 109E.



photo: SDASM

Bf 109 F-0 PH+BE already had oval wingtips, but the intake turbocharger had a rectangular cross-section, characteristic of the Bf 109 F-1 produced by the WNF factory.

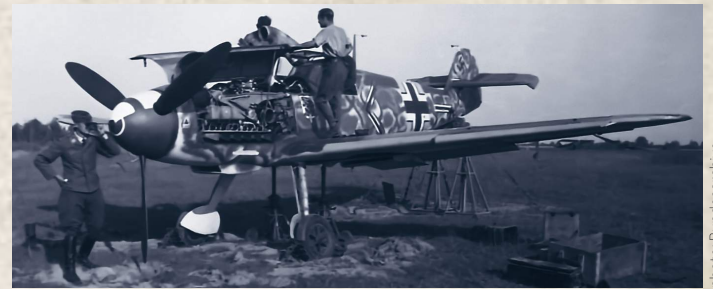


photo: Bundesarchiv

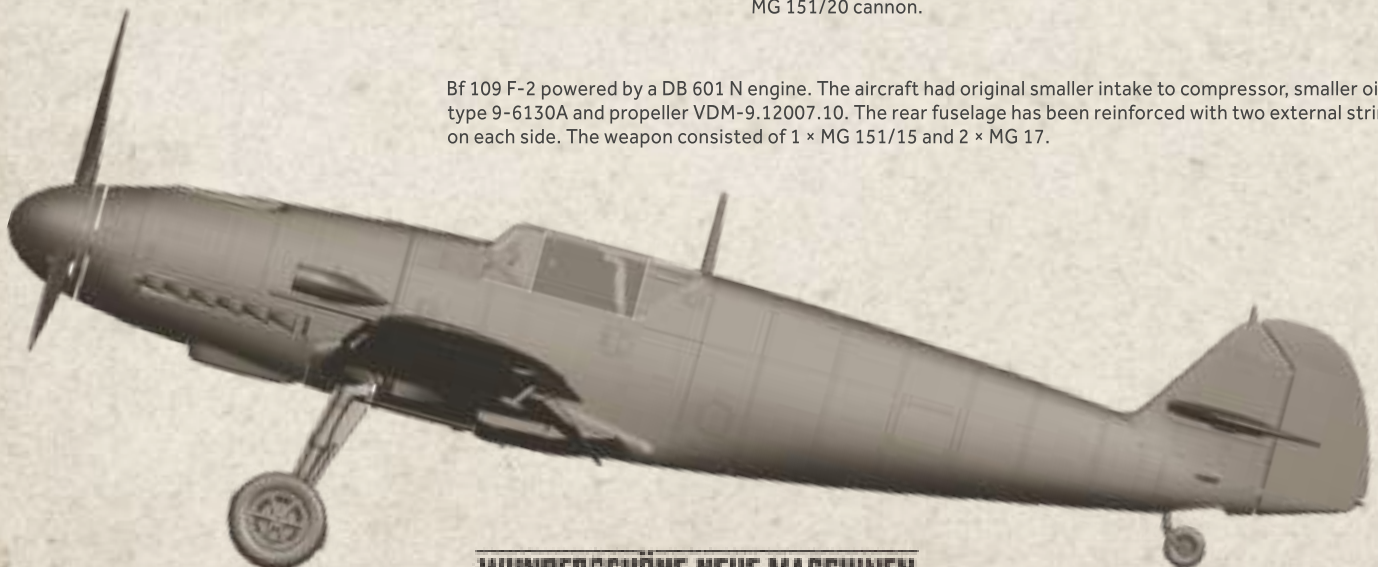
JG 54 Bf 109 F-4 on the Eastern Front in the care of mechanics. The position of the deployed automatic slat can be clearly seen in the picture. That was its usual position when the aircraft was parked and still.



photo: Bundesarchiv

JG 27 Bf 109 F-4 Trop in North Africa. Mechanics are cleaning the barrel of the MG 151/20 cannon.

Bf 109 F-2 powered by a DB 601 N engine. The aircraft had original smaller intake to compressor, smaller oil cooler type 9-6130A and propeller VDM-9.12007.10. The rear fuselage has been reinforced with two external stringers on each side. The weapon consisted of 1 × MG 151/15 and 2 × MG 17.



## Bf 109 F-2

In November 1940, at AGO factory in Oschersleben, the first large-scale production of Bf 109 F-2 was launched. The type started to arrive at the combat units in January 1941. In the same month the production also started at WNF in Wiener Neustadt and during the spring at Arado in Warnemünde, Mtt in Regensburg and Erla in Leipzig. The F-2 variant was again powered by DB 601 N engine, this time, however, the Motorkanone was the 15 mm caliber MG 151/15 with supply of 200 rounds belt-fed from the ammunition box in the left-wing root. The cannon rearming was done through two relatively small hatches on the wing upper surface and was certainly not an easy task.

The provision for 300 liters drop tank, same as on Bf 109 E-7, enabled the range increase by roughly 500 km. The system of fuel transfer from a drop tank to the main fuel tank was based on the overpressuring the drop tank by compressed air therefore no fuel pump was necessary. The Bf 109 F-2 could also be modified to a fighter-bomber version by installing the ETC 500/IXb bomb attachment for a 500 kg aviation bomb or consolidated ETC 50/VIII bomb attachment for four 50 kg bombs. The aircraft modified in this manner were designated Bf 109 F-2/B or Bf 109 F-2/Bo respectively.

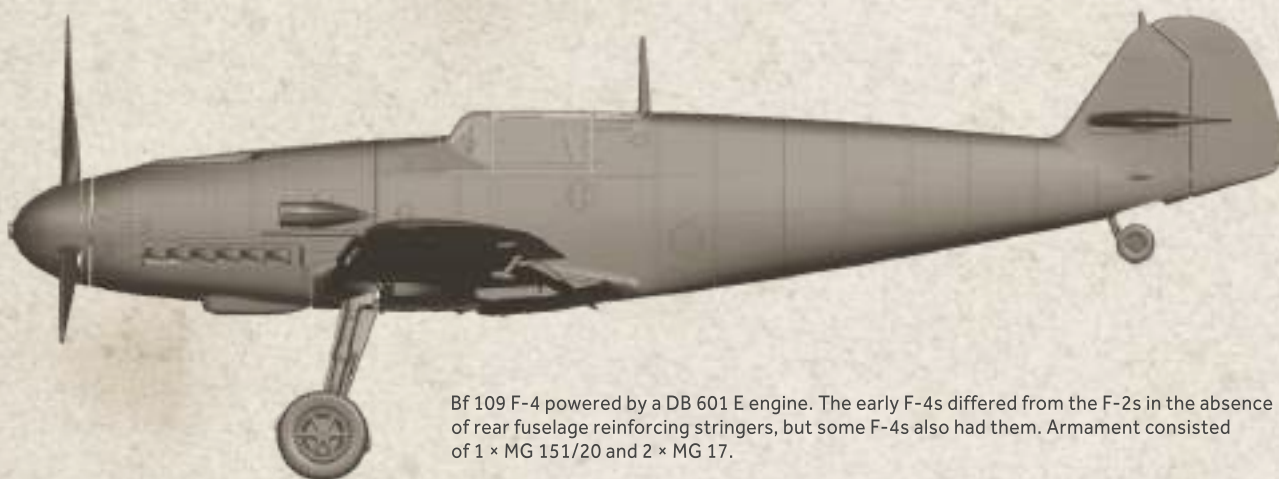
simultaneously at five factories: Mtt Regensburg (228 airframes), Erla Leipzig (219 airframes), AGO Oschersleben (378 airframes), WNF (169 airframes) and Arado Warnemünde (359 airframes) where the production ceased in August 1941.

## Bf 109 F-3

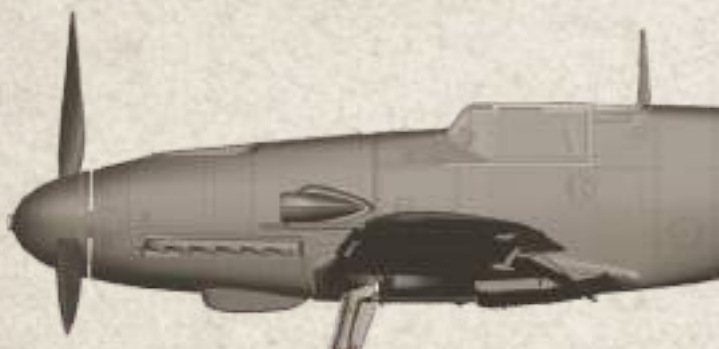
This variant was a direct development of F-1 and featured the combination of DB 601 E engine and MG-FF Motorkanone. The production ceased after 15 airframes had been manufactured as the new powerful MG 151/15 cannon became available.

## Bf 109 F-4

The production of the final and best performing variant of Bf 109 F version was launched at WNF factory in May 1941 followed by Erla factory in June 1941. The first Bf 109 F-4s arrived at the combat units in June. The main F-4 modification was DB 601 E which finally reached its mature state of the development. The engine offered maximum output of 1,350 hp, driving three-blade, constant-speed VDM 9-12004.10 propeller. The standard 87 octane aviation fuel B3 was used. The armament was enhanced by installation of 20 mm caliber MG 151/20 Motorkanone with supply of 200 rounds. The fuselage 7.9 mm caliber MG 17 machine guns



Bf 109 F-4 powered by a DB 601 E engine. The early F-4s differed from the F-2s in the absence of rear fuselage reinforcing stringers, but some F-4s also had them. Armament consisted of 1 × MG 151/20 and 2 × MG 17.



Bf 109 F-4/Z was equipped with a system of nitrous oxide injection for a short-term power boost. Aircraft equipped with this system had a larger air intake to the compressor and the larger Type 9-6150 (Fö 870) oil cooler. They were also usually equipped with a VDM 9-12087A propeller with wider propeller blades.



Bf 109 F-4 Trop had a larger air intake to the compressor with a dust filter. They were usually also fitted with a larger 9-6150 (Fö 870) oil cooler, and some with a VDM 9-12087A propeller with wider propeller blades.

During the Bf 109 F-1 and F-2 combat deployment on the Western front quite many losses were suffered when one of the coolers was hit by enemy fire. As both coolers were serving one cooling circle, any damage to one of them caused a rapid coolant leak from the whole system and led to immediate engine seizure. Therefore, the valves were installed in the oil system which, in the case of a cooler damage, enabled pilot to close and separate the damaged part of the circle from the rest of cooling system. There was a demand at the units to retrofit them on existing aircraft and it supposedly (Prien/Rodeike) led to the race among the units' mechanics to salvage the valves from the shot down or damaged aircraft. Bf 109 F-2 equipment was nearly identical to F-1 variant, IFF FuG 25 system was installed as a standard supplement to FuG VIIa radio. The performance increased moderately, the maximum airspeed raised to 630 kph (528 kph at the ground level). Also with the introduction of F-2 a large number of failures occurred. The report of Luftflotte 2 commander, Generalfeldmarschall Kesselring, dated from the beginning of April 1941, states 24 issues at different level of urgency. Those were gradually fixed during the production. Majority of them were ultimately resolved on the next large-scale production variant Bf 109 F-4. The total production of Bf 109 F-2 was 1,586 airframes (Vogt). The production ran

were retained. The fuselage rear section was redesigned and reinforced, so the stringers were no longer necessary. Regardless, some Bf 109 F-4 photographs still show them. The possible explanation is that the older F-2 airframes were used at the beginning of production or for later rebuilds. The FuG 25 identification device was replaced with more modern FuG 25a. The wing featured the standard position light covers following the wing outlines, already introduced with the later Bf 109 F-2. The wheel wells were either circular, following the shape of the tire, or square, same as on Bf 109 E.

Roughly 600 aircraft were equipped with GM-1 nitrogen-oxide injection into the cylinders which for limited time increased the engine output and, in connection with it, the airspeed by 20 kph at the altitudes above 6,000 m. These airframes were designated Bf 109 F-4/Z and featured the larger oil cooler type 9-6150 (Fö 870), which was later a standard for Bf 109 Gs. These planes were usually equipped with VDM 9-12087A propeller featuring wider blades. The larger oil cooler was a feature of part of 576 tropicalized Bf 109 F-4s Trop manufactured at Erla factory in Leipzig. They were also equipped with the larger compressor air intake with the operable dust filter. The tropical equipment further included the ventilation flap on the upper side of the windshield, and for the case of

# dual combo



Most Bf 109 F-2s and some F-4s had a landing gear wheel well with trapezoidal ending shape.



Most of the Bf 109 F-4s and some of the F-2s had a circular shaped landing gear wheel well.



Position lights on the wing of most of the Bf 109 F-2s had no aerodynamic cover.



Most of the Bf 109 F-4s had position lights on the wings aerodynamically covered.

emergency landing, a survival kit located in the rear fuselage containing the food pack, water and Mauser K98 carbine. The larger compressor air intake became standard on the Bf 109 F-4 of the later production batches.

Between December 1941 and April 1942, WNF factory manufactured in total 240 Bf 109 F-4/R1s which could carry the underwing MG 151/15 cannon pods with 135 rounds of ammo. This equipment was rarely used by the combat units, unlike on the later Bf 109 G version. Also, Bf 109 F-4 could be modified as the fighter-bomber Bf 109 F-4/B. The bomb attachments were the same as on Bf 109 F-2/B, however, could not be installed on neither Bf 109 F-4/Z nor Bf 109 F-4/R1 equipped with underwing cannon pods. Part of Bf 109 F-4 production was modified for the photo-reconnaissance variants Bf 109 F-4/R2, R3, R4 and R8 carrying various types of aerial cameras. The total production of all Bf 109 F-4 variants was 1,808 airframes out of which 1,034 were manufactured at WNF and 774 at Erla in Leipzig. The production at WNF ceased in April 1942 and Erla built their last Bf 109 F-4 Trop in May 1942. A month later, at both of these factories, as well as at Messerschmitt A. G. in Regensburg, the Bf 109 G-2 production was launched.



Left: VDM-9-12007.10 propeller (Bf 109 F-2 and F-4)  
Right: VDM 9-12087A propeller (Bf 109 F-4/Z, Bf 109 F-4 Trop)



photo: Bundesarchiv

Bf 109 F-4/Z during an oil refill. The aircraft has circular wheel wells, a larger compressor intake and a VDM 9-12087A propeller with wider propeller blades.

## Bf 109 F-5 and Bf 109 F-6

Bf 109 F-5 was a high-altitude fighter and photo-reconnaissance aircraft based on Bf 109 F-2 equipped with GM-1 system. Only one airframe was built due to lack of interest from the RLM side and so the further development was stopped. Bf 109 F-6 was to be a heavy fighter based again on Bf 109 F-2 featuring the MG 151/20 Motorkanone, four MG 17 machine guns. Two mounted over the engine as usual plus two wing-mounted ones. Not a single airframe was built. In France, Stab JG 26 used the Bf 109 F-6/U designation for Bf 109 F-2 WNr. 6750 which was, in addition to the standard armament, equipped with two additional MG FF/M cannons mounted in the wings in the same manner as on Bf 109 E. It was tested by Obstlt. Adolf Galland who shot down a Spitfire over the English coast flying this airplane on November 18, 1941. At the same time, Galland also tested another aircraft carrying the non-standard armament and designated Bf 109 F-2/U1 equipped with two 13 mm caliber MG 131 machine guns installed over the engine instead of the standard MG 17s.

## This kit: Bf 109 F-2 and F-4

The camouflages and markings selection of this kit covers the Bf 109 F-1, F-2 and F-4 combat deployments on the Western front in France and over the Channel, fighting on the Eastern front in 1941-1942 and also deployment in the Mediterranean and North Africa from September 1941. The selection demonstrates the variety of camouflage and markings based on the combat area and its prevailing natural conditions. On the Eastern front in particular, the Bf 109 F camouflages were very colorful and inventive. Have a lot of fun and enjoyment building this model kit!



External 300 litre drop tank.



ETC 500/IXb bomb rack with 500 kg SC 250 aerial bomb



ETC 50/VIIId composite bomb rack with four 50 kg SC 50 bombs

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 započatím 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

\* 説明の記号

OPTIONAL  
VOLBABEND  
OHNOUTSAND  
BROUSITOPEN HOLE  
VYVRTAT OTVORSYMETRICAL ASSEMBLY  
SYMETRICKÁ MONTÁŽREMOVE  
ODŘÍZNOUTREVERSE SIDE  
OTOČITAPPLY EDUARD MASK  
AND PAINT  
POUŽIT EDUARD MASK  
NABARVITPLEASE, CHECK THE LATEST VERSION OF THE INSTRUCTIONS ON [www.eduard.com](http://www.eduard.com)

PARTS



DÍLY



TEILE



PIÈCES

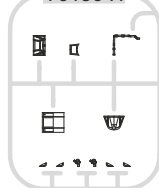


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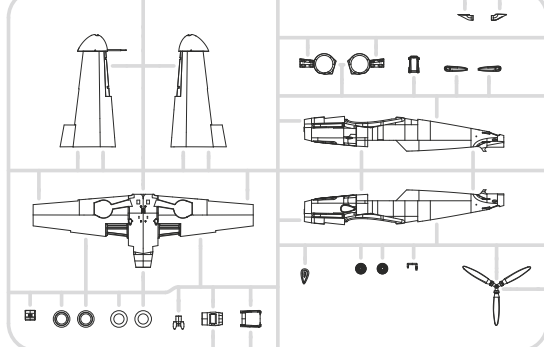
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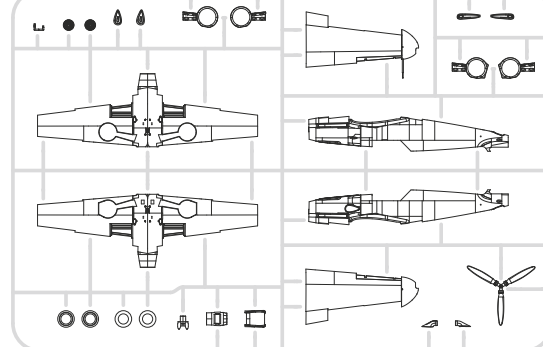
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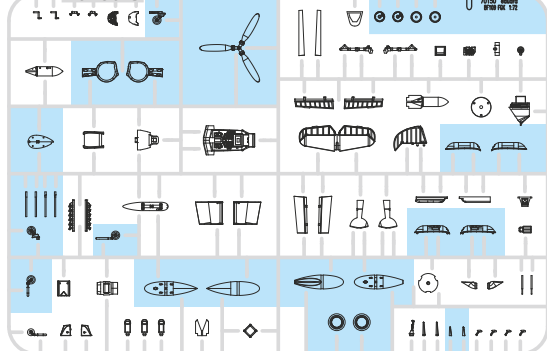
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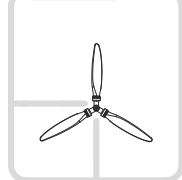
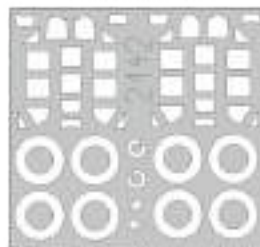
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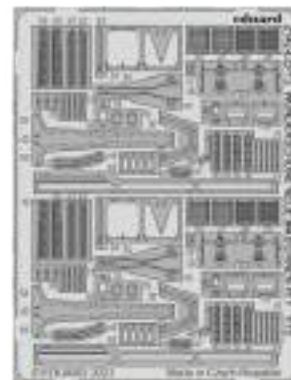


W&gt;

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eduard  
MASK

PE - PHOTO ETCHED DETAIL PARTS



-Parts not for use. -Teile werden nicht verwendet. -Pièces à ne pas utiliser. -Tyto díly nepoužívejte při stavbě. -

COLOURS



BARVY



FARBEN



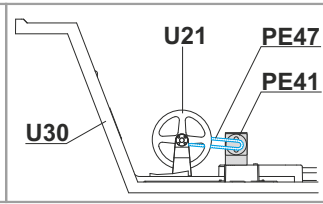
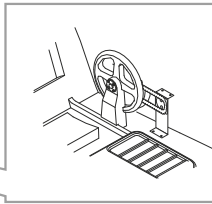
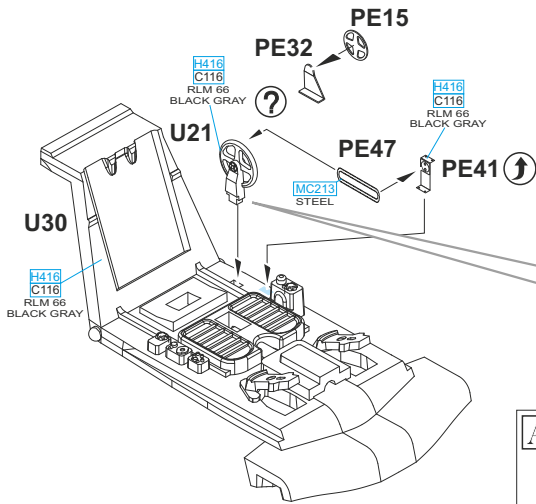
PEINTURE



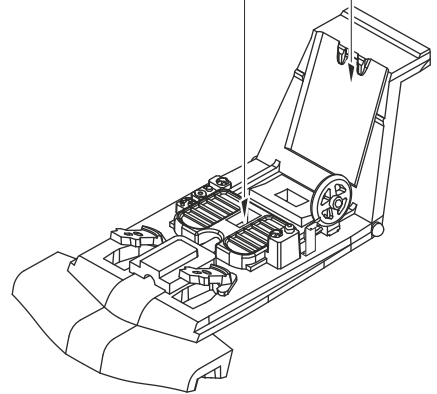
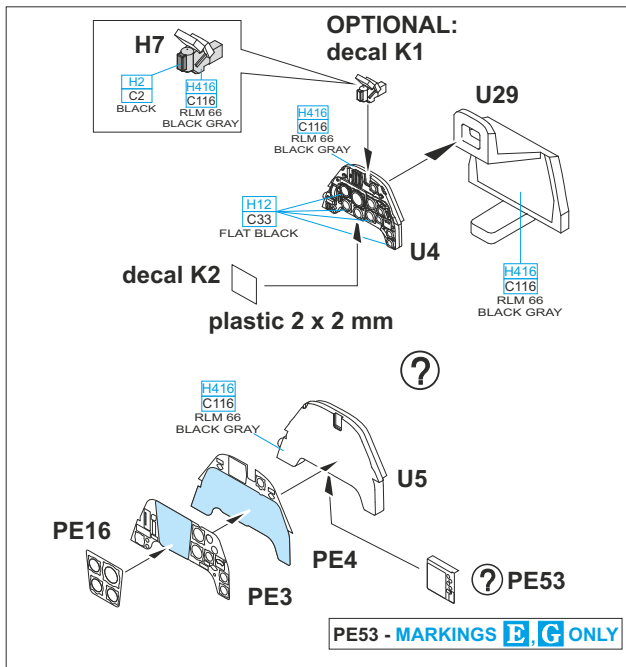
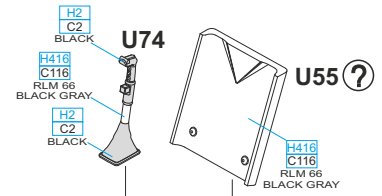
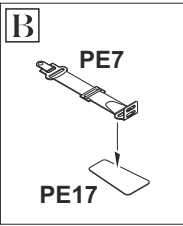
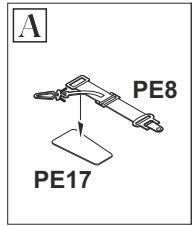
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GSI Creos (GUNZE)		
AQUEOUS	Mr.COLOR	
H2	C2	BLACK
H11	C62	FLAT WHITE
H12	C33	FLAT BLACK
H37	C43	BROWN
H47	C41	RED BROWN
H51	C11	LIGHT GULL GREY
H64	C17	RLM71 DARK GREEN
H65	C18	RLM70 BLACK GREEN
H66	C119	RLM79 SAND YELLOW
H67	C115	RLM65 LIGHT BLUE
H68	C36	RLM74 DARK GRAY
H69	C37	RLM75 GRAY
H70	C60	RLM02 GRAY
H77	C137	TIRE BLACK
H80	C54	KHAKI GREEN

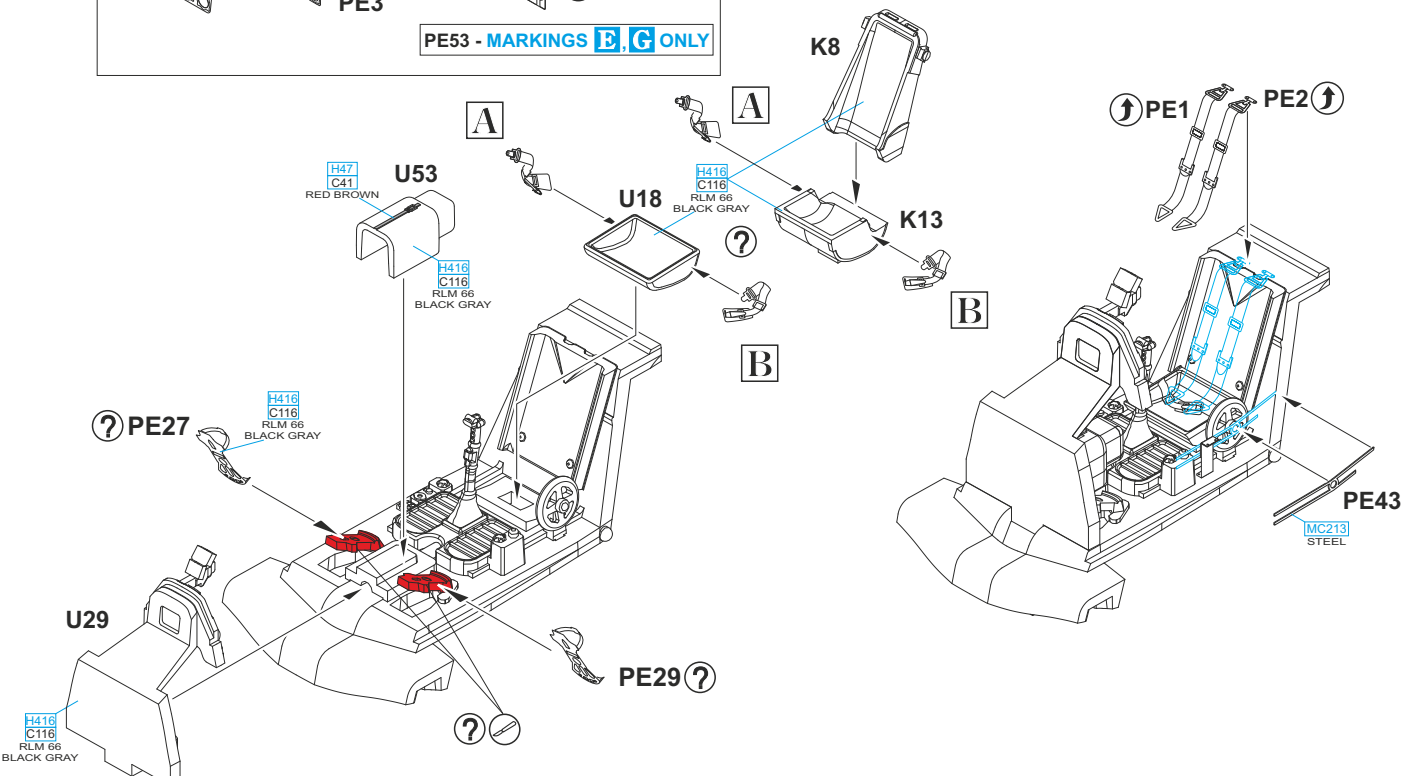
GSI Creos (GUNZE)		
AQUEOUS	Mr.COLOR	
H90	C47	CLEAR RED
H94	C138	CLEAR GREEN
H303	C303	GREEN
H413	C113	RLM04 YELLOW
H414	C114	RLM23 RED
H416	C116	RLM66 BLACK GRAY
H417	C117	RLM76 LIGHT BLUE
H418	C118	RLM78 LIGHT BLUE
Mr.METAL COLOR		
MC213		STEEL
MC214		DARK IRON
Mr.COLOR SUPER METALLIC		
SM201		SUPER FINE SILVER
Mr.COLOR GX		
GX05		SUSIE BLUE

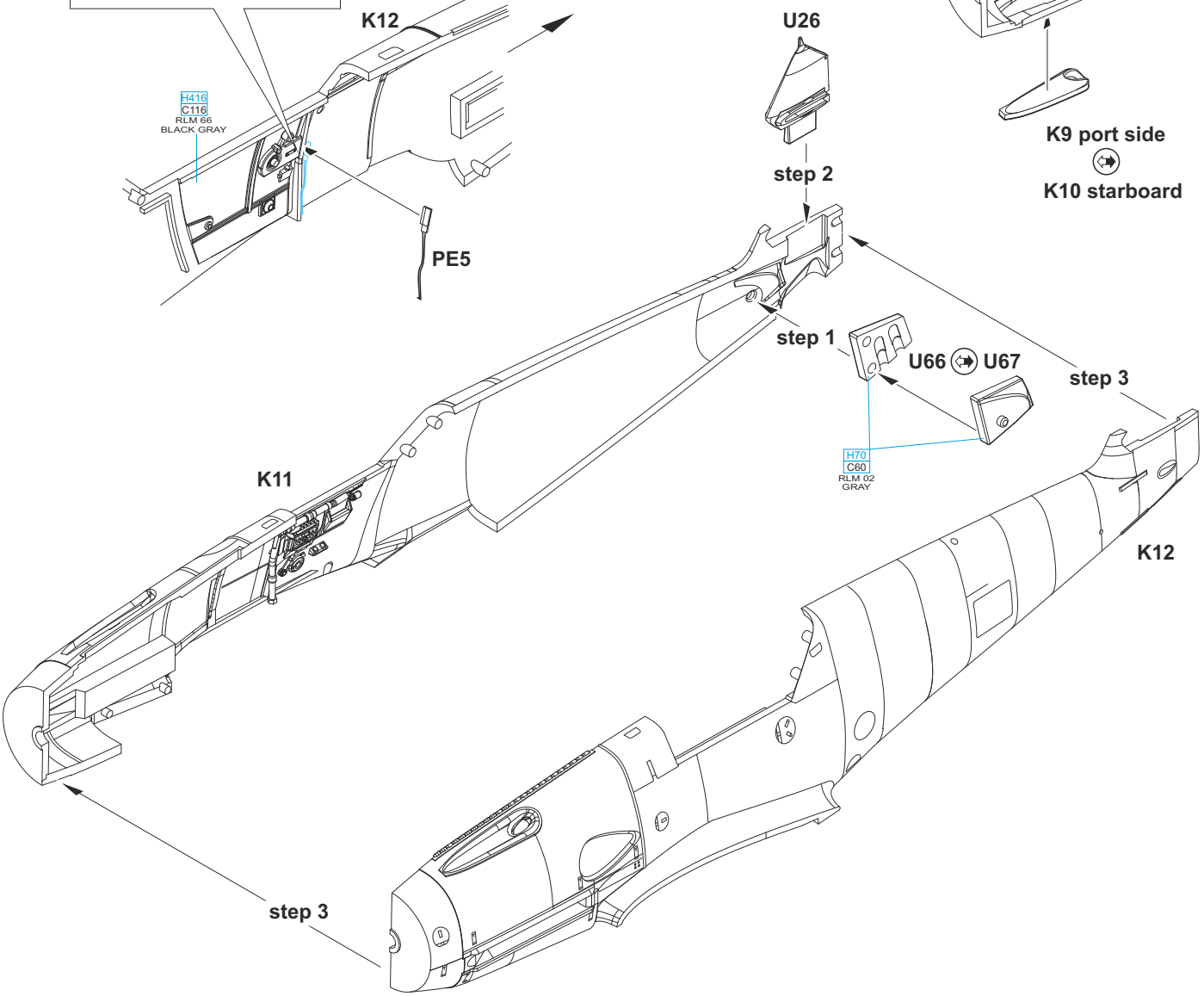
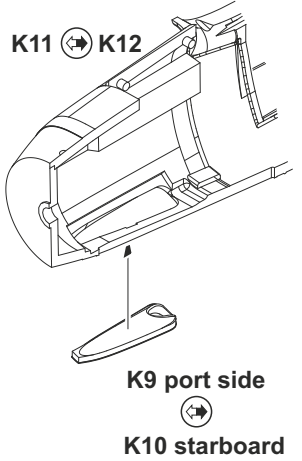
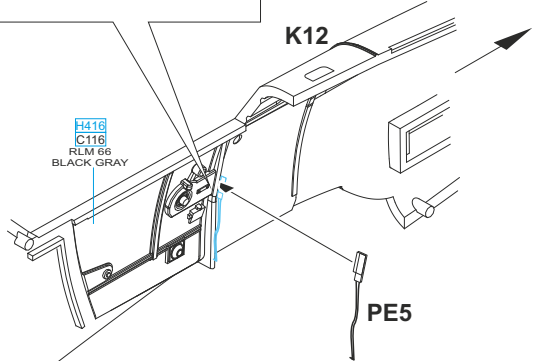
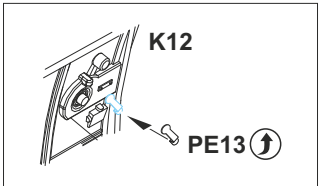
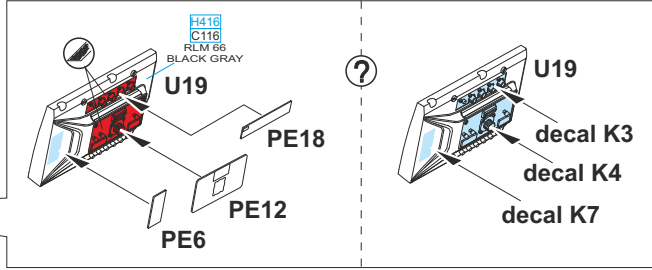
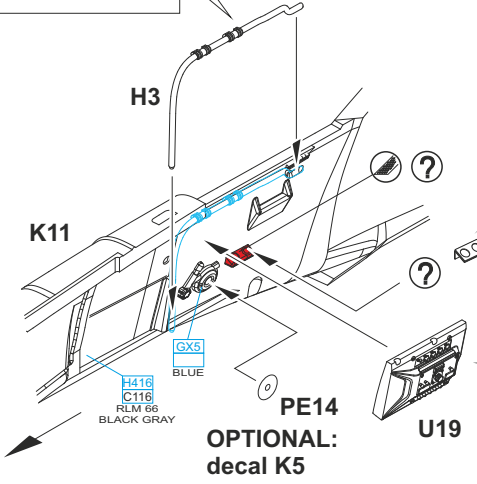
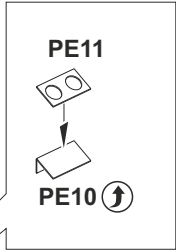
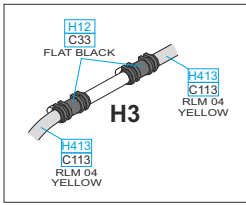


**U55 - IF YOU USE IN THE NEXT STEP PART U18 ONLY**

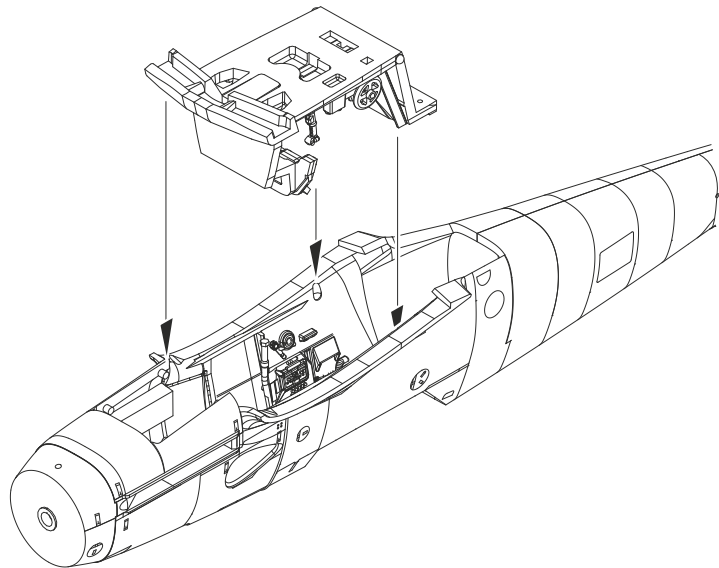
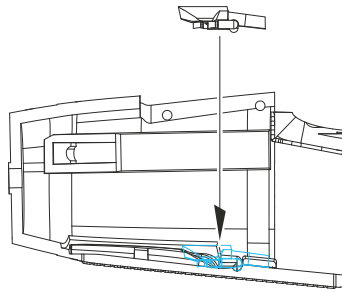
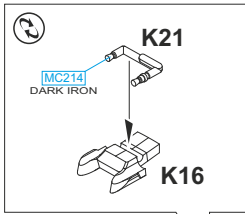


**SEAT K8 + K13 USED RARELY**

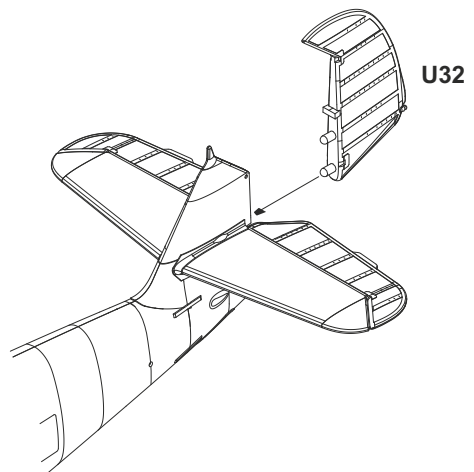
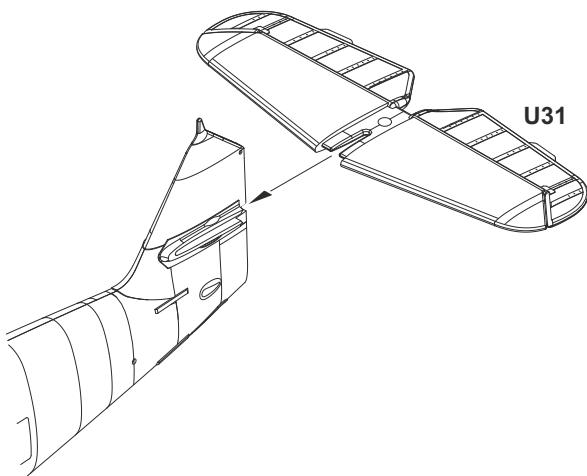
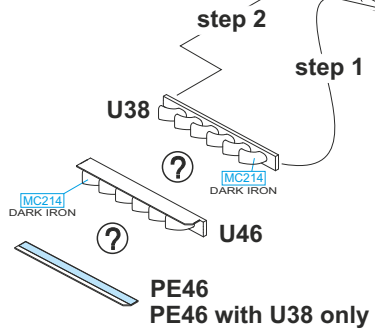
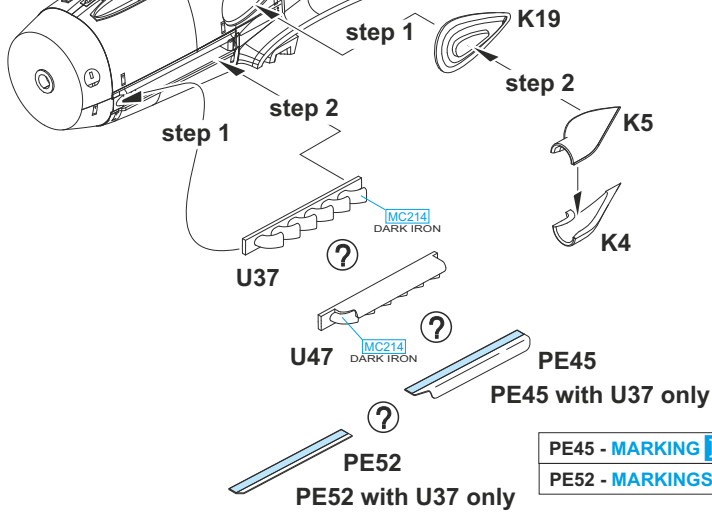
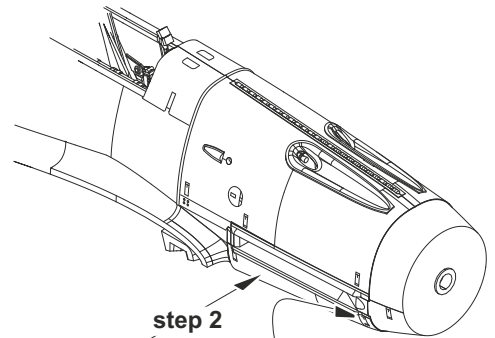
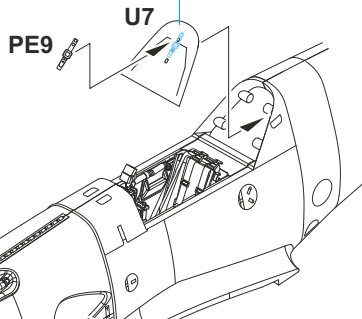


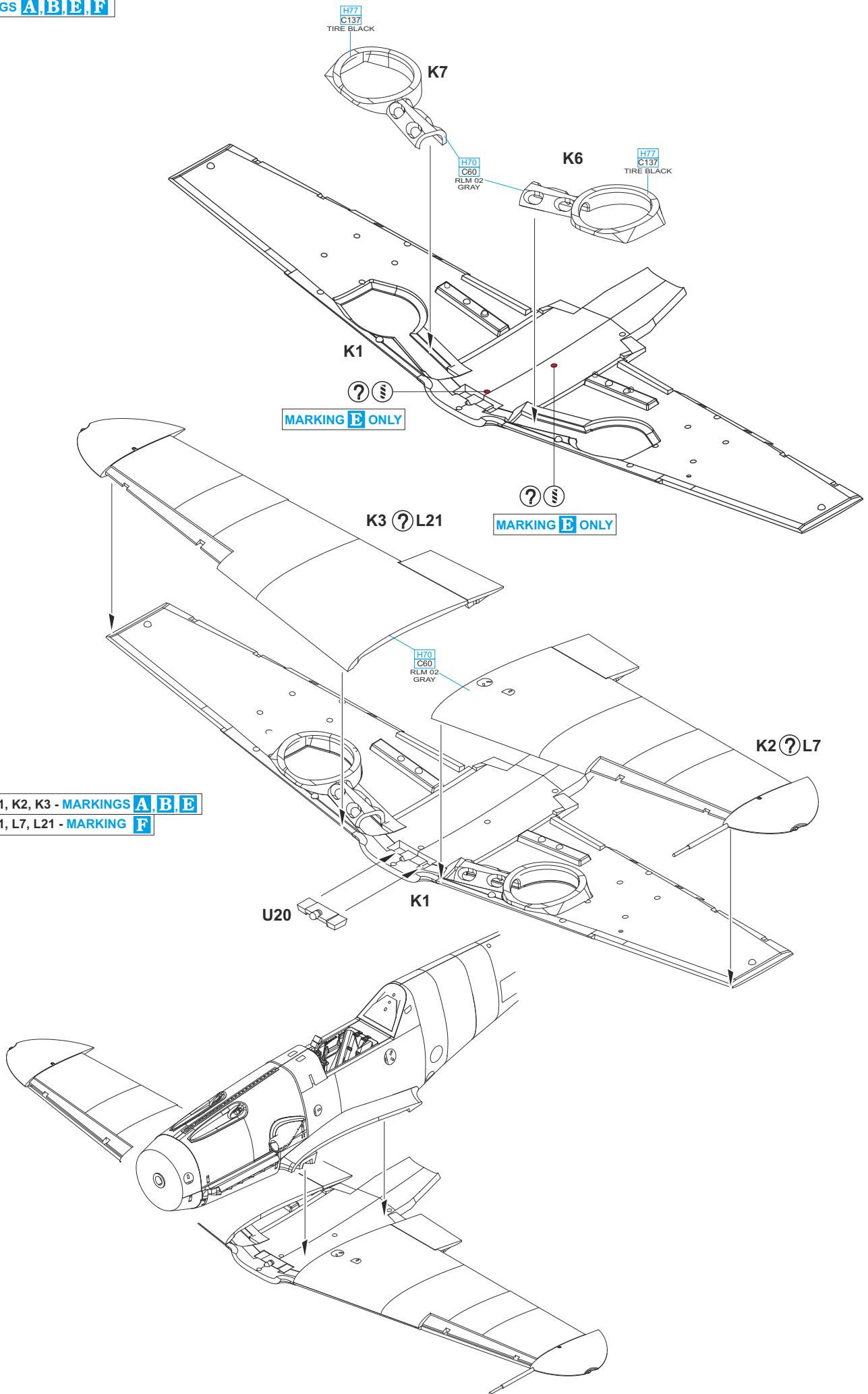


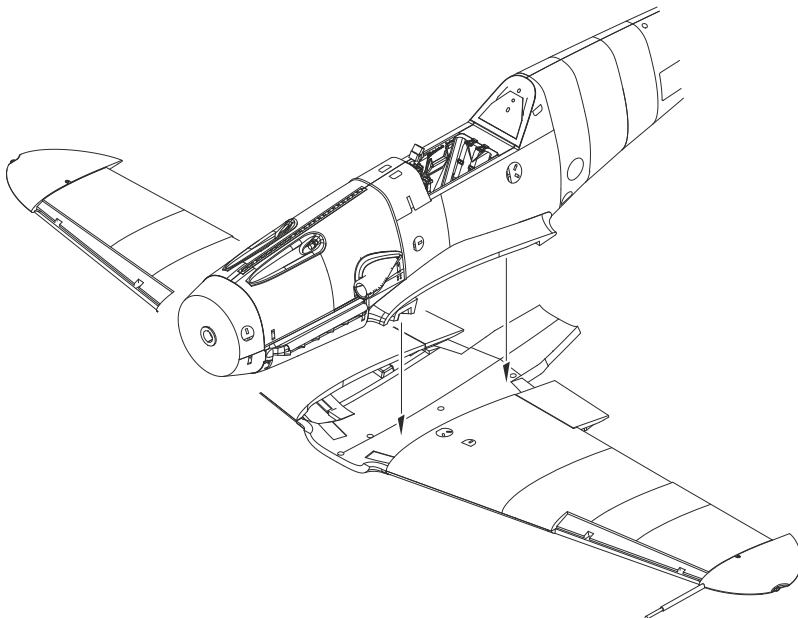
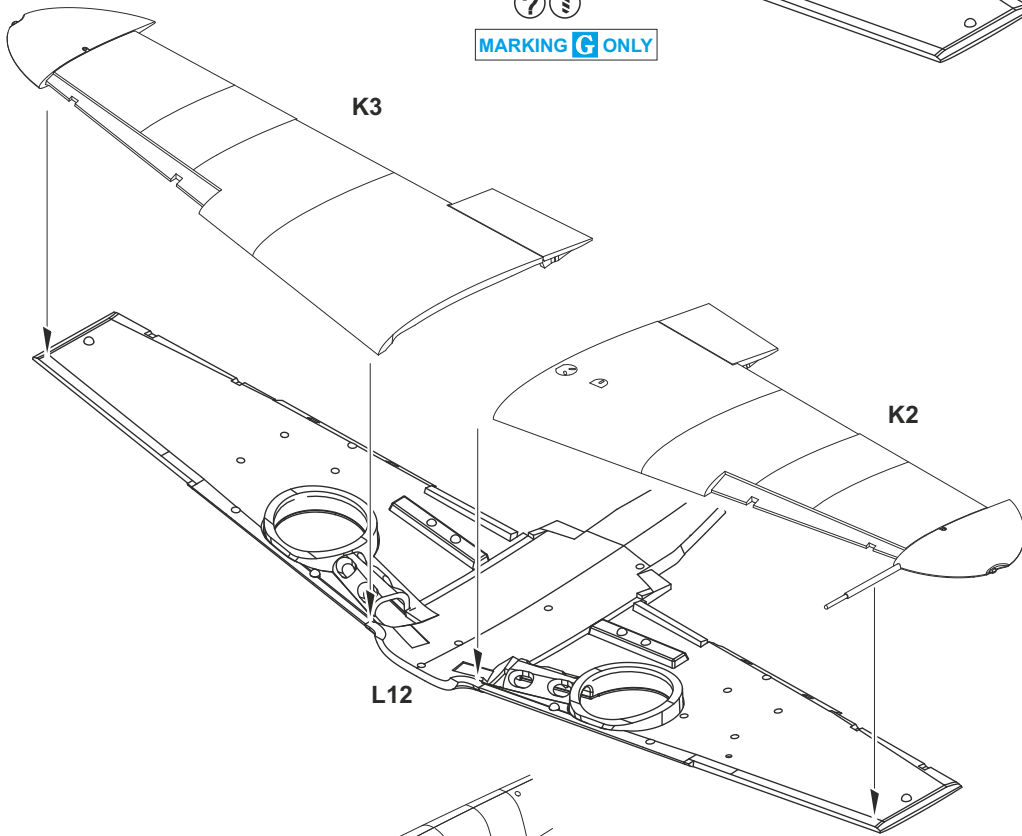
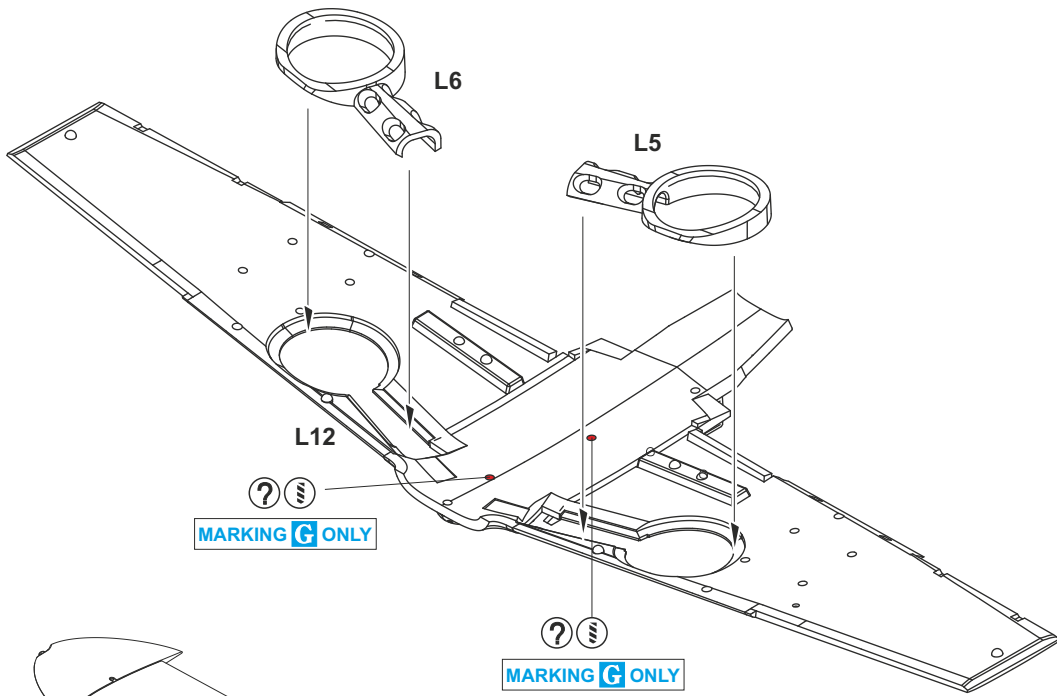


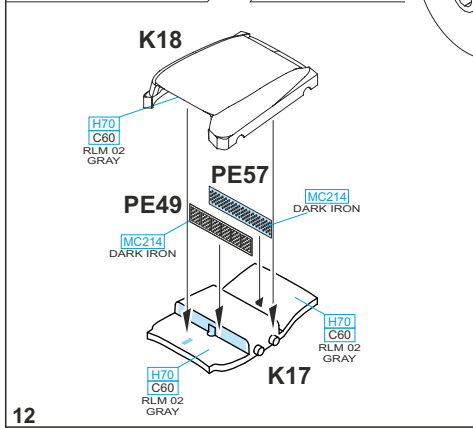
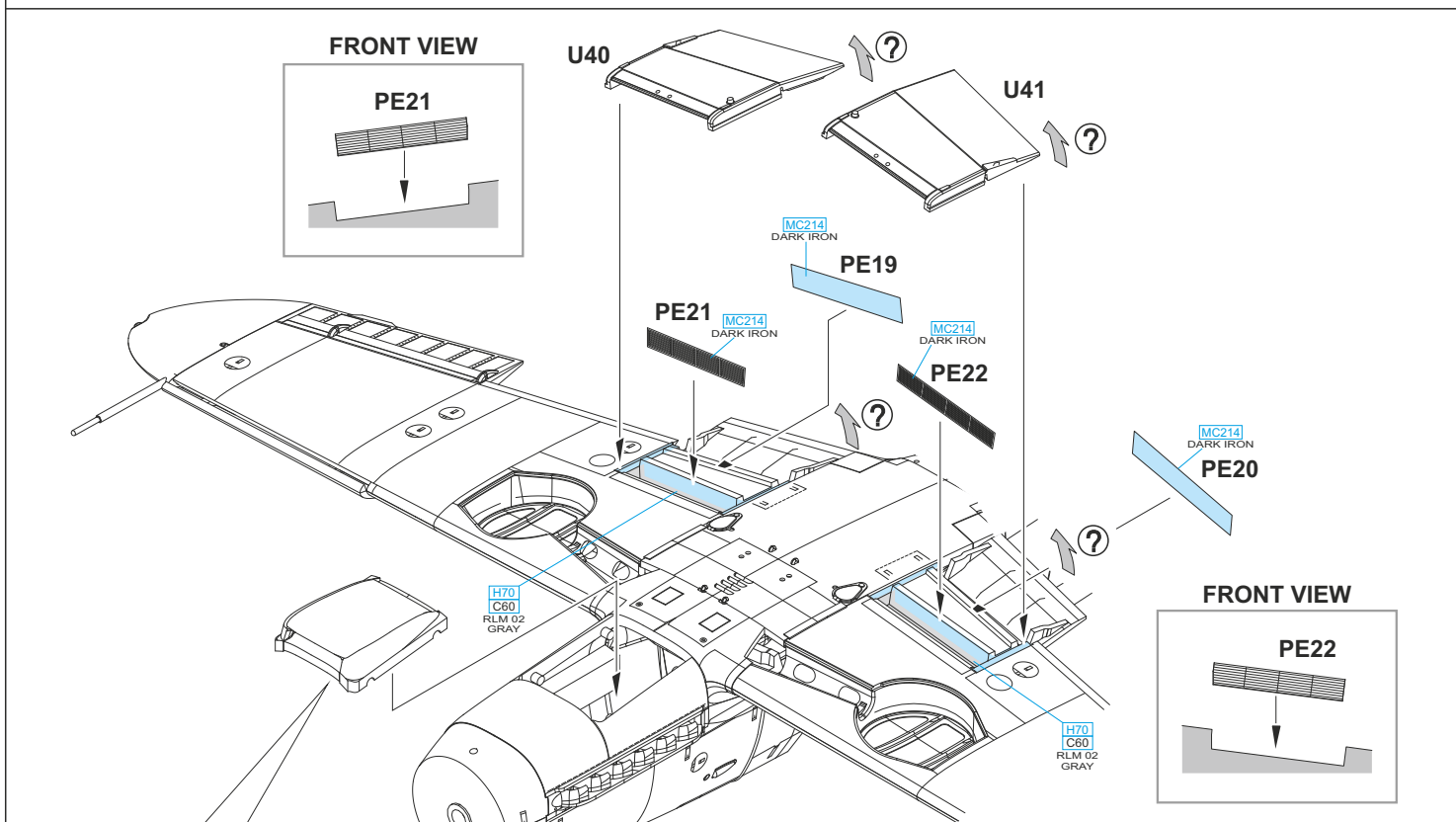
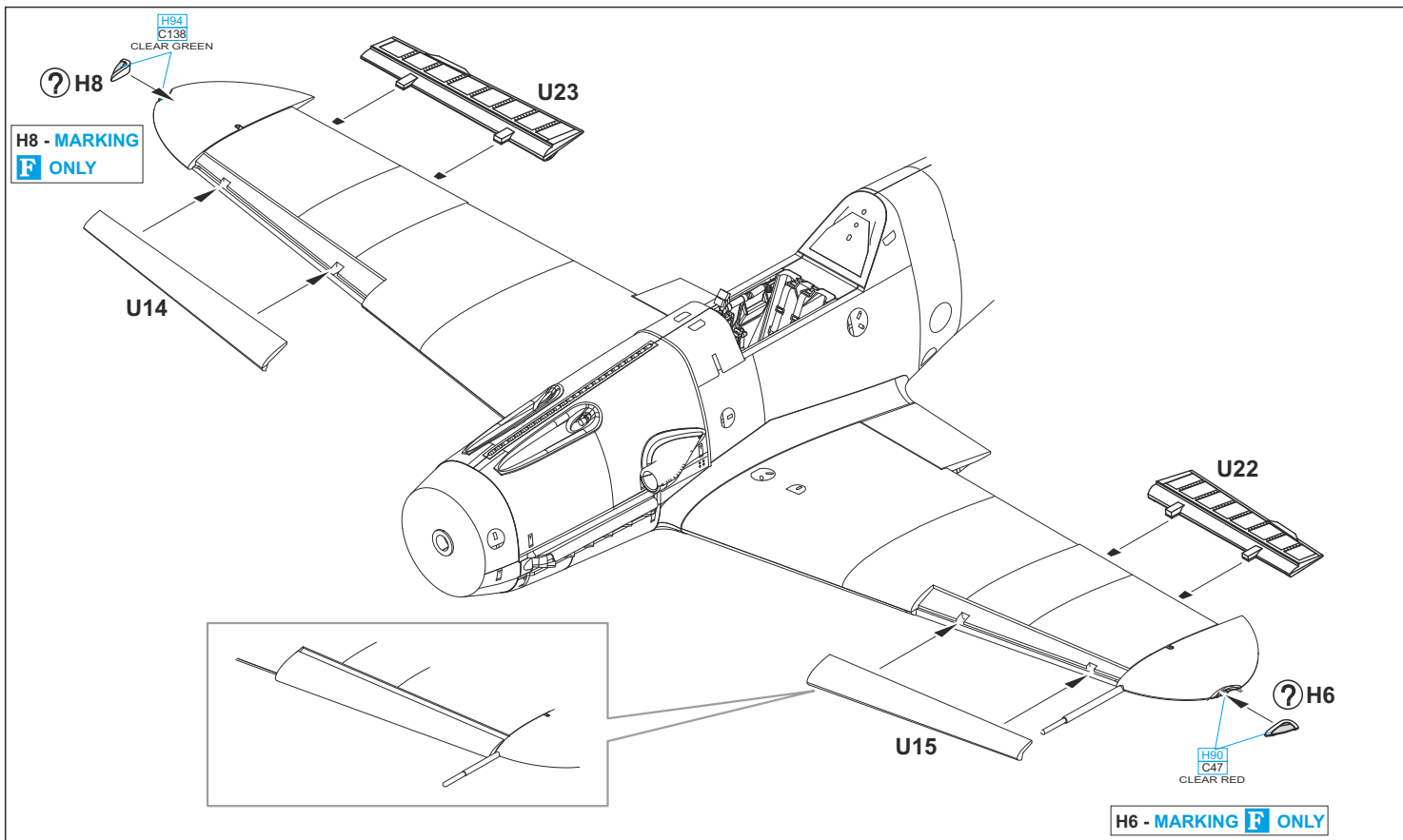


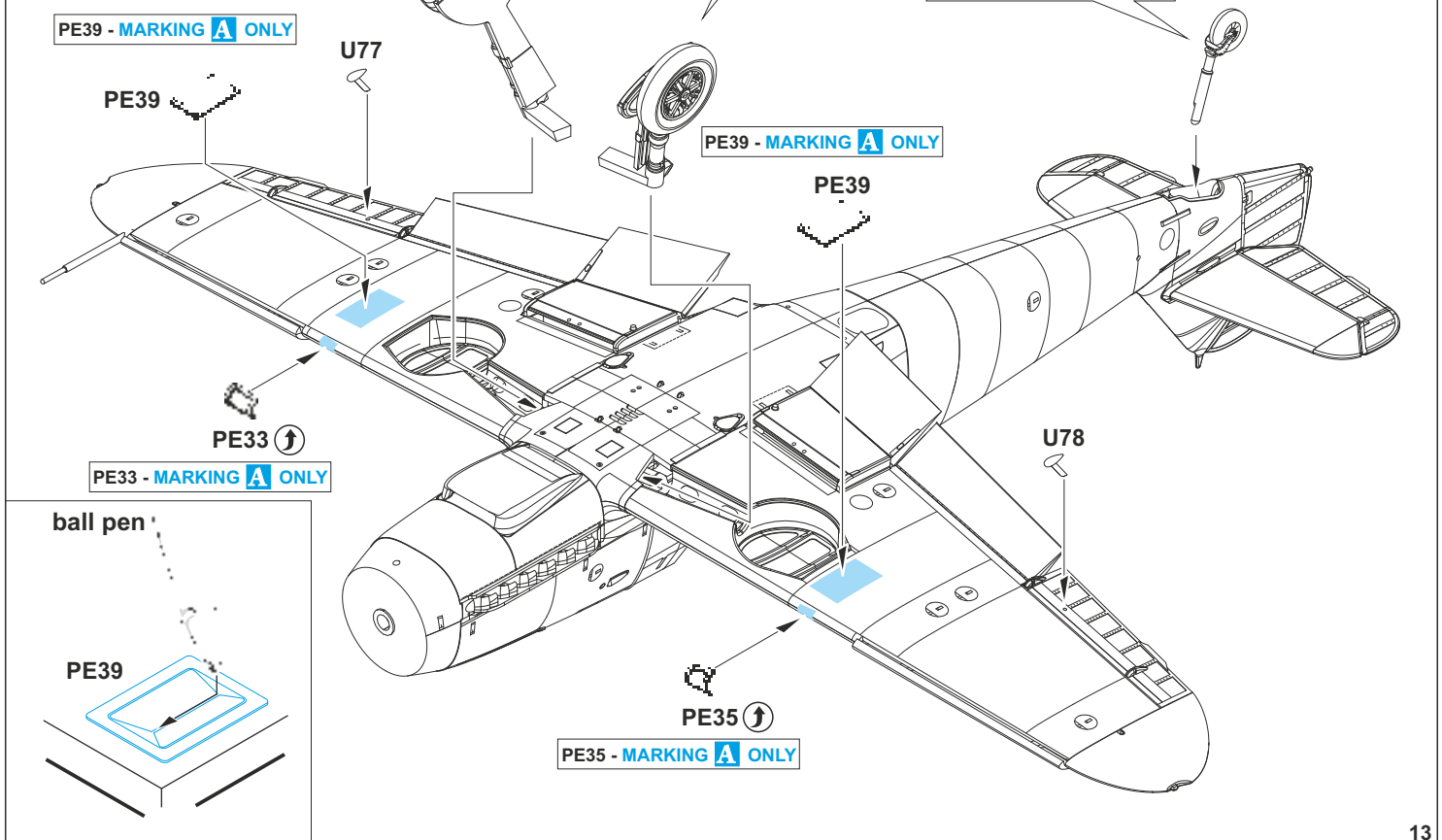
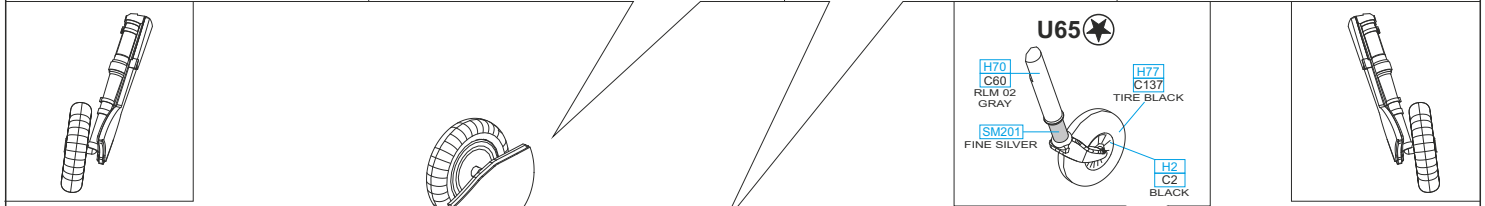
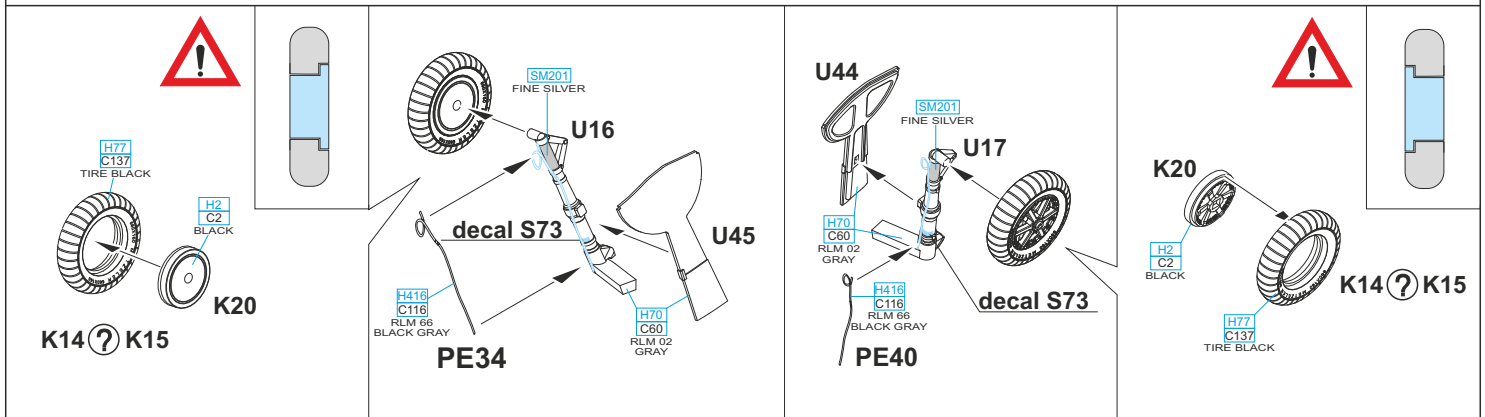
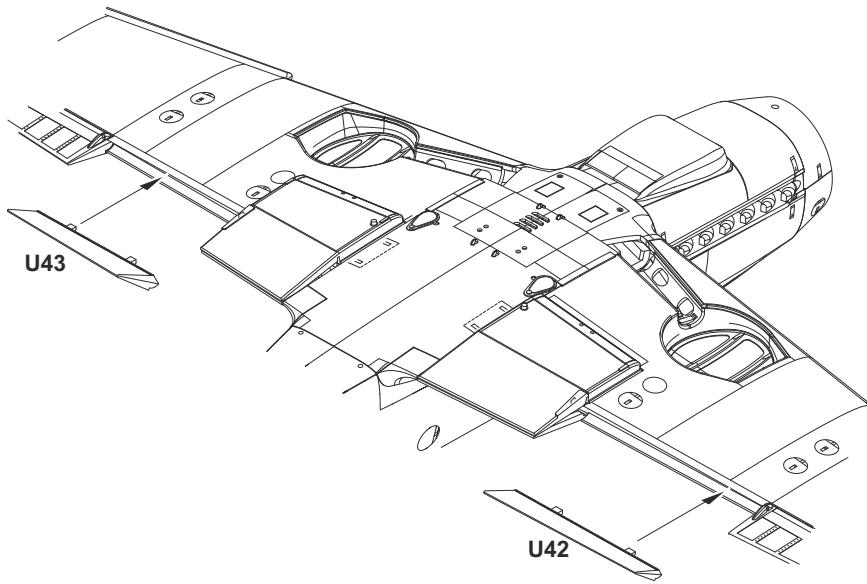
H416  
C116  
RLM 66  
BLACK GRAY

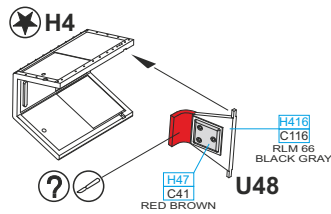
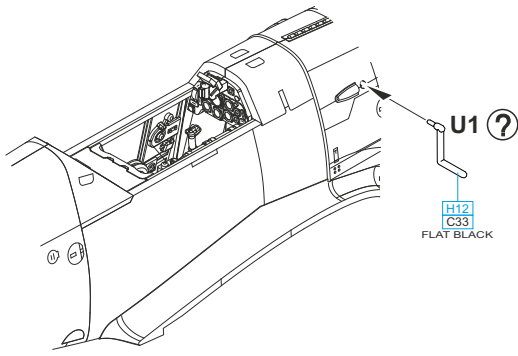




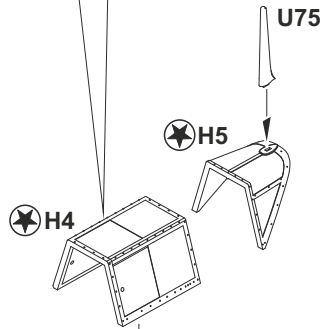
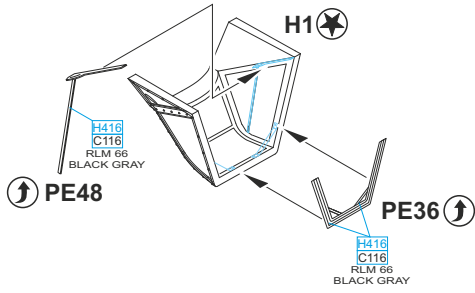
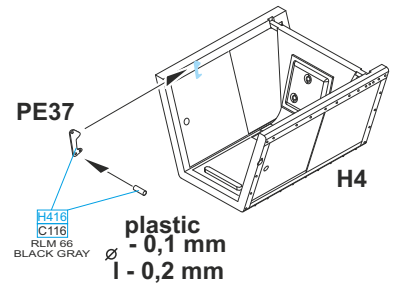
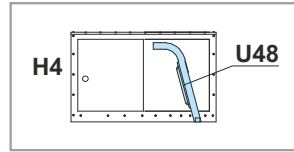




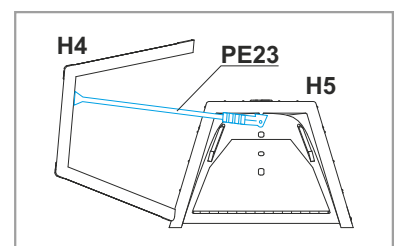
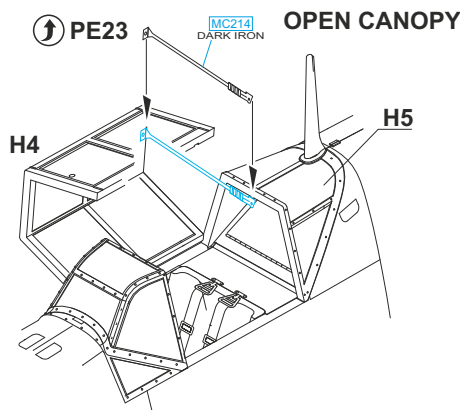
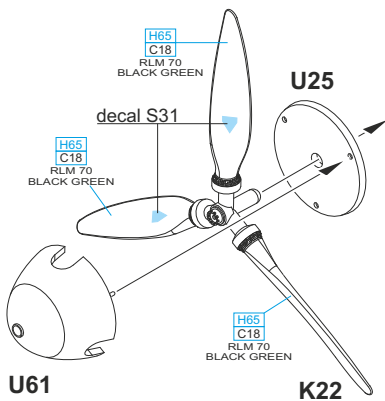
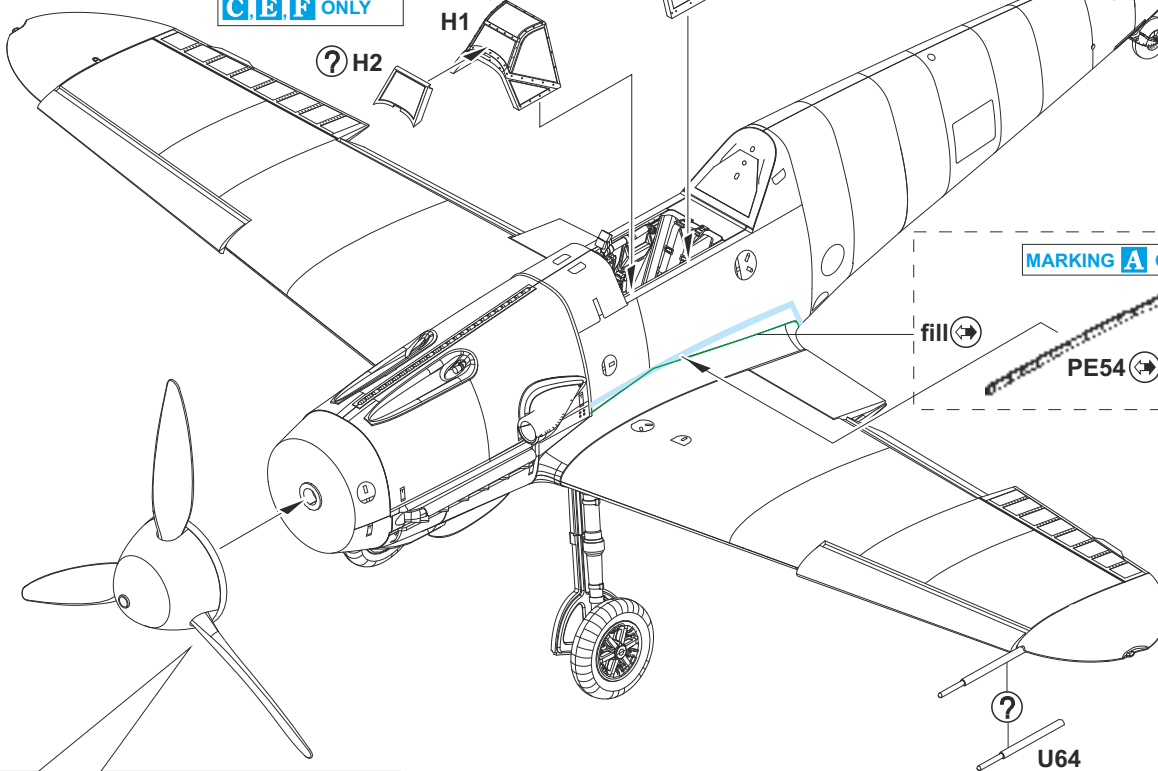




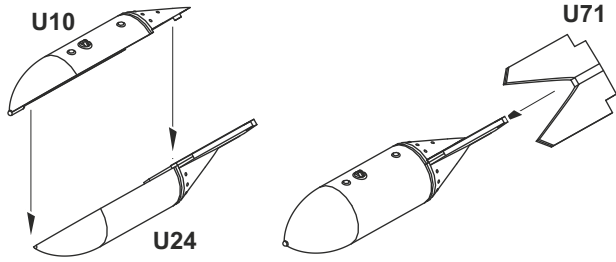
MARKINGS **F, G** ONLY



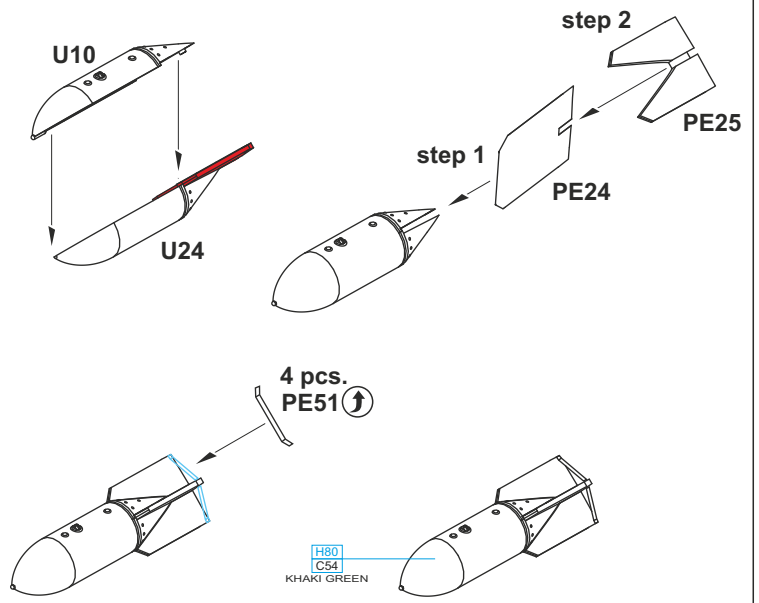
H2 - MARKINGS **B, C, E, F** ONLY



MARKINGS E, G ONLY



?

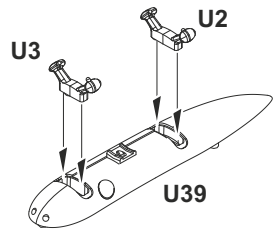


H80  
C54  
KHAKE GREEN

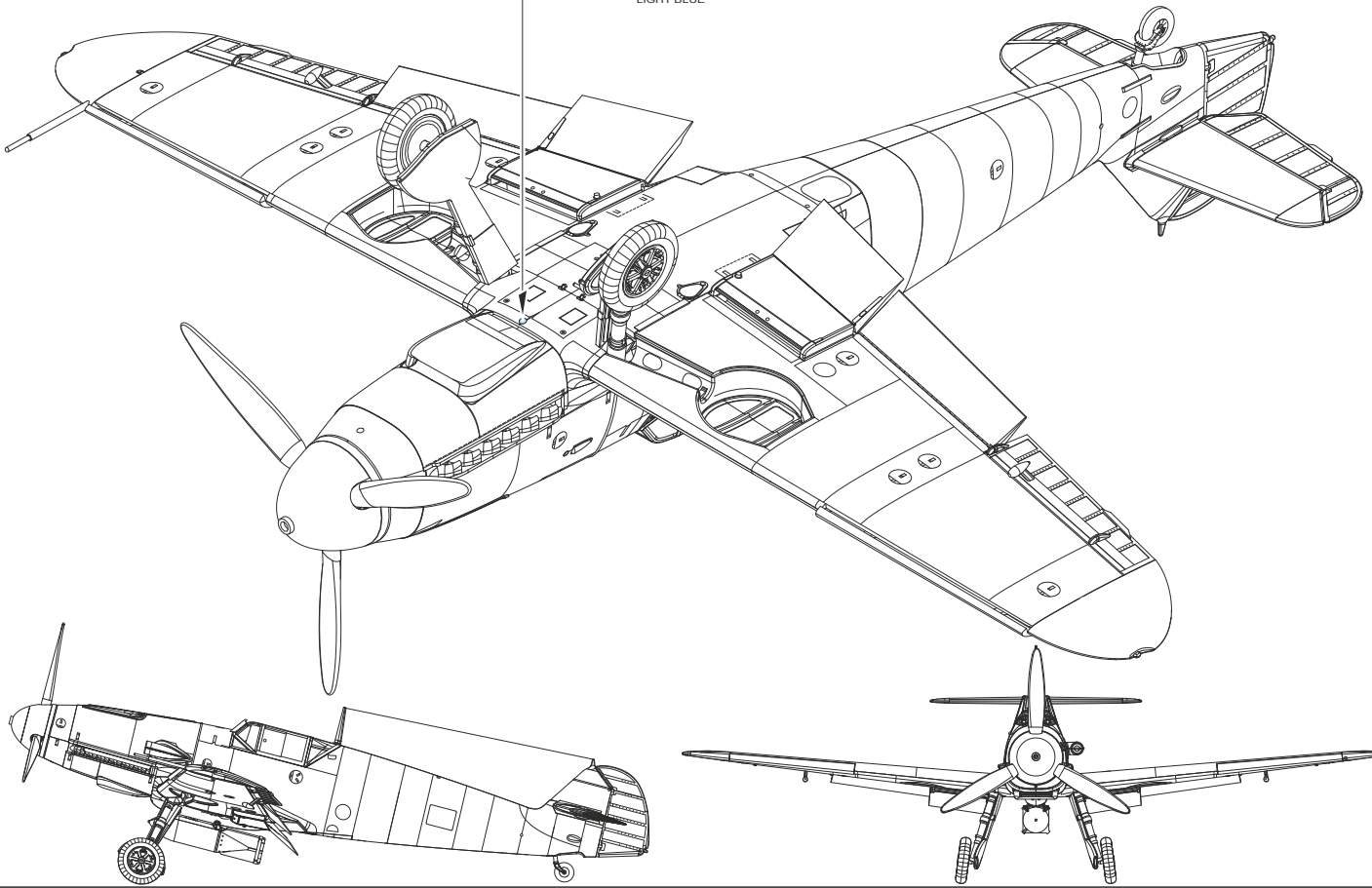
H80  
C54  
KHAKE GREEN

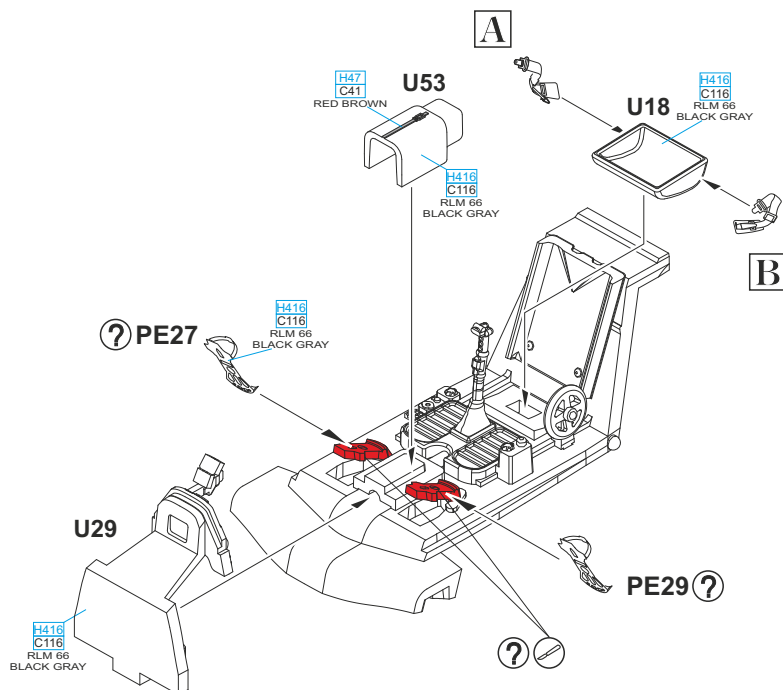
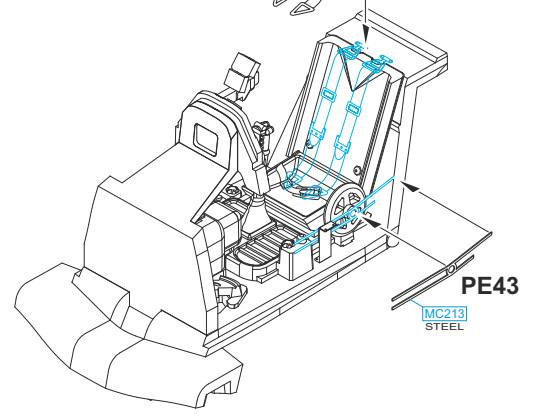
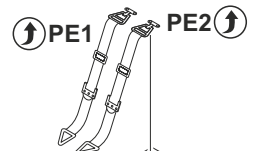
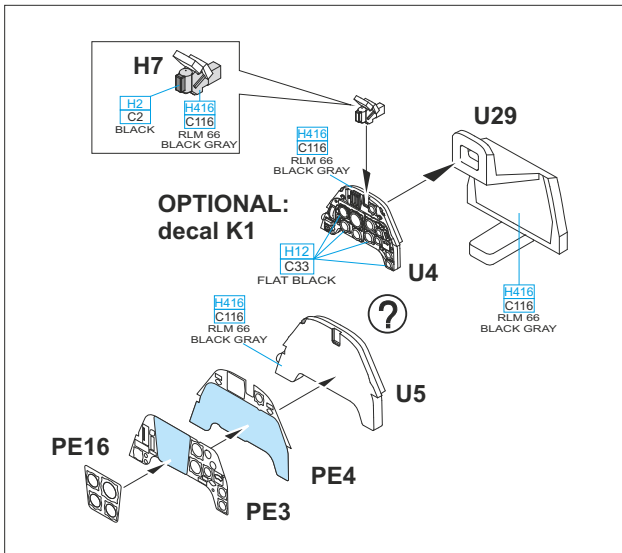
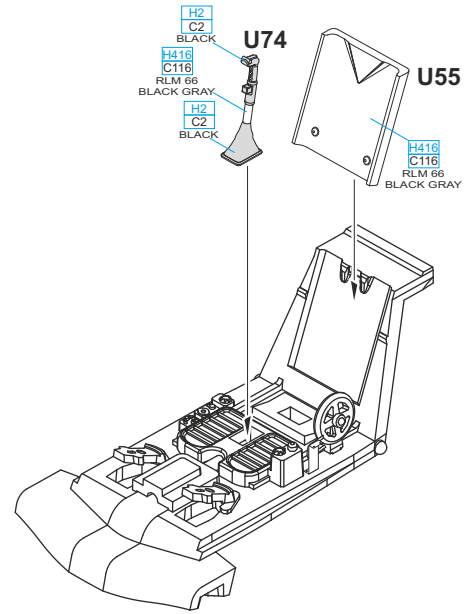
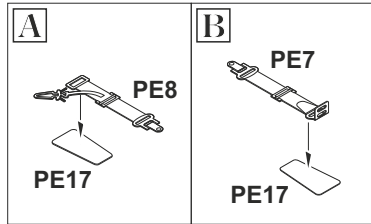
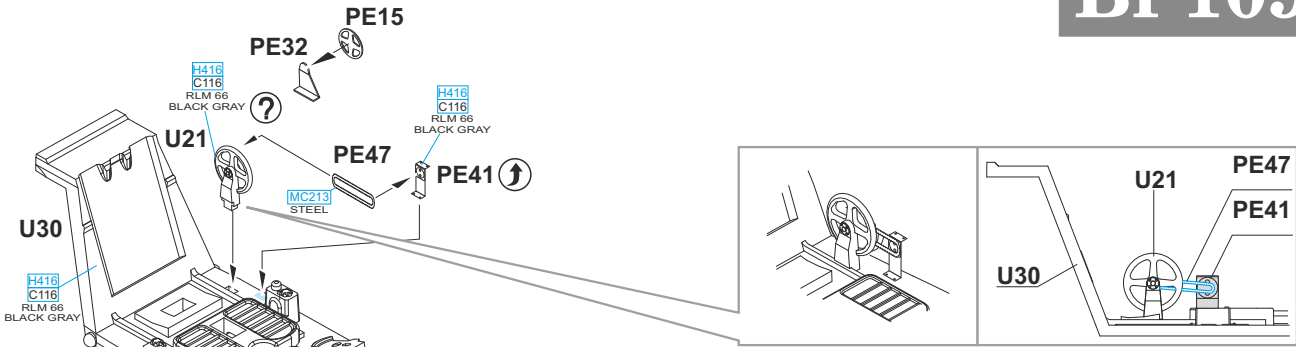
MARKINGS E, G ONLY

H12 C33 FLAT BLACK ?  
H51 C11 GRAY ?  
H70 C60 RLM 02 GRAY ?  
H80 C54 KHAKE GREEN

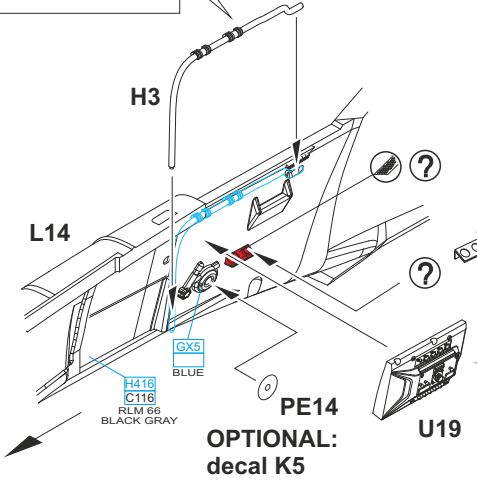
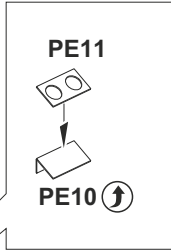
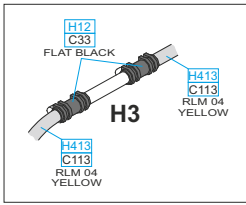


H417  
C117  
RLM 76  
LIGHT BLUE

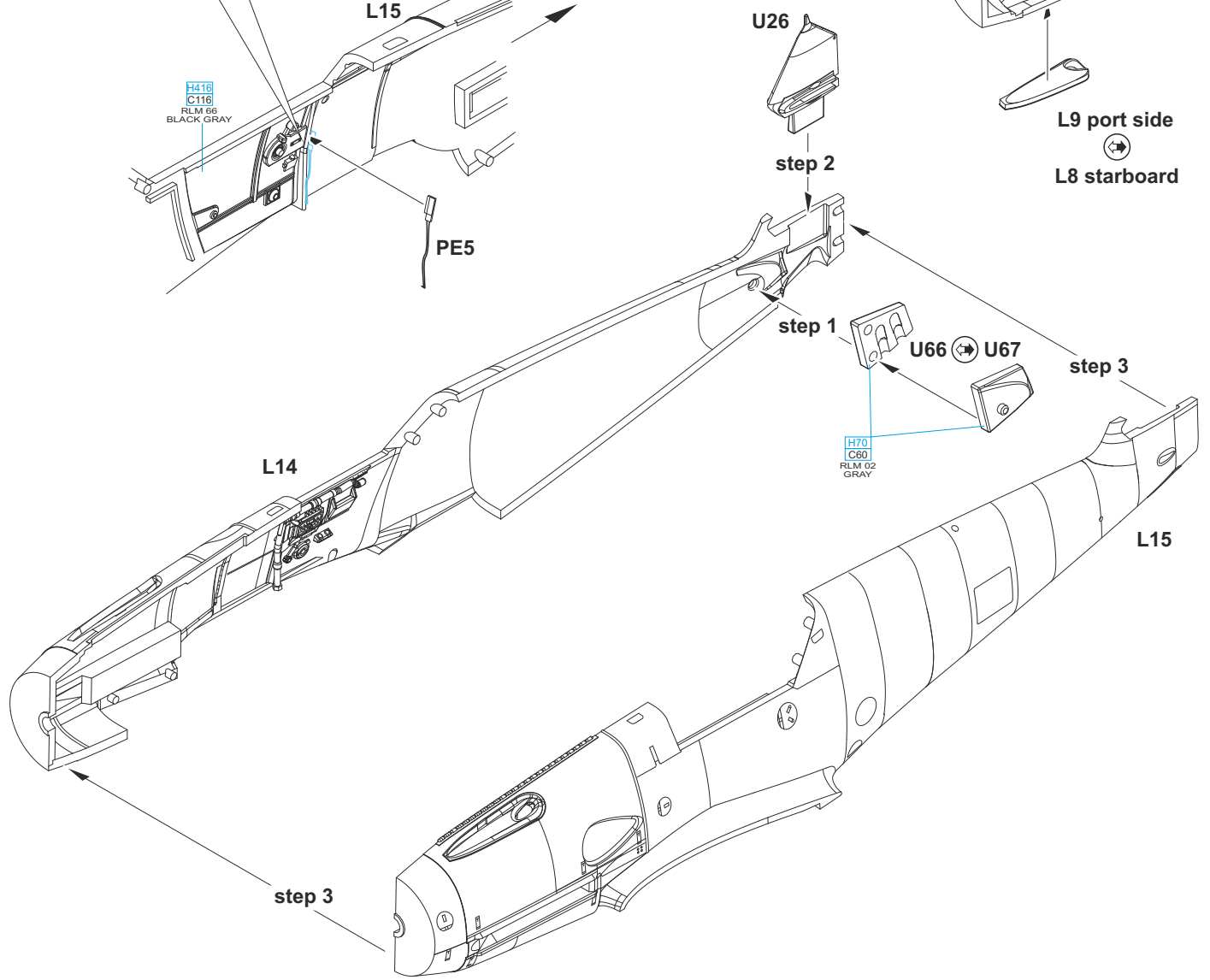
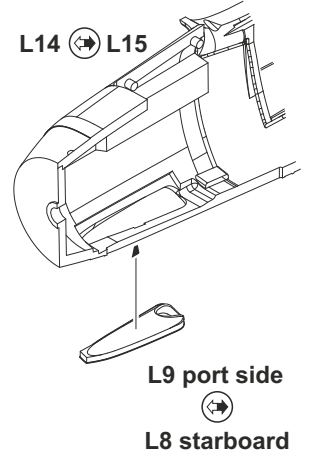
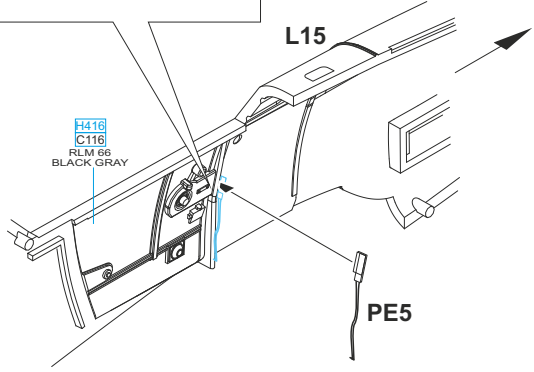
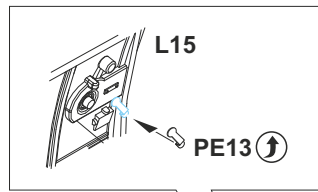
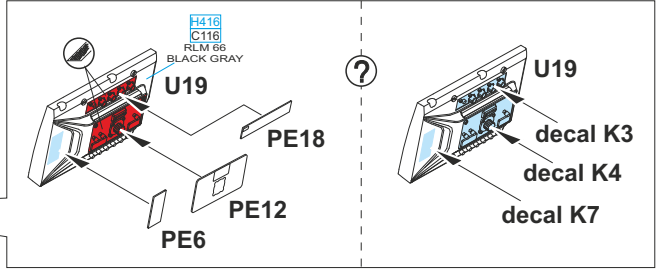


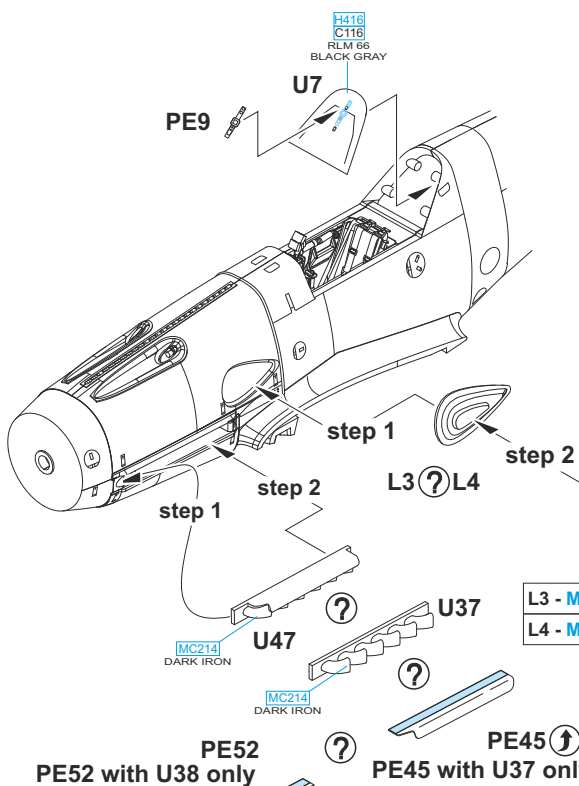
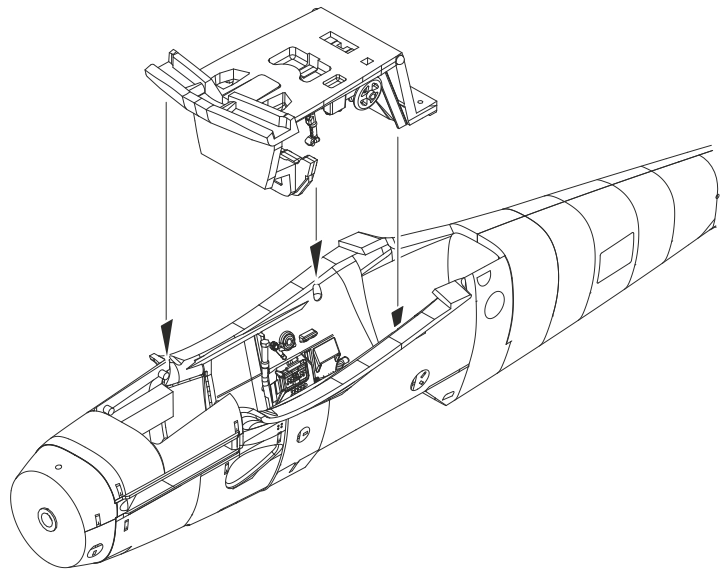
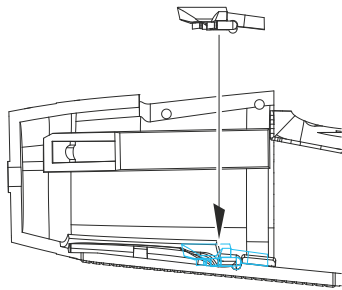
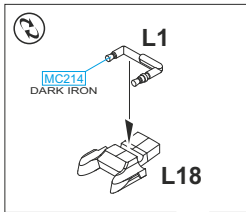




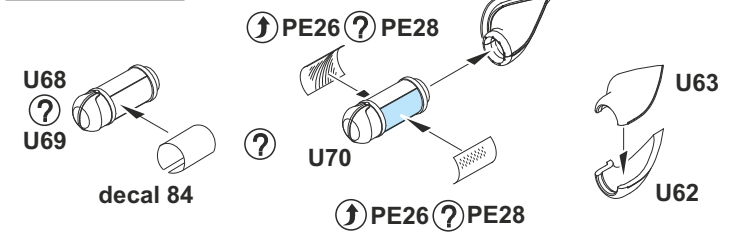


OPTIONAL:  
decal K6

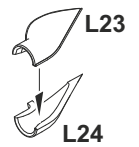




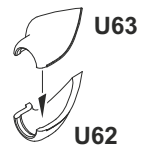
**MARKINGS J, N**



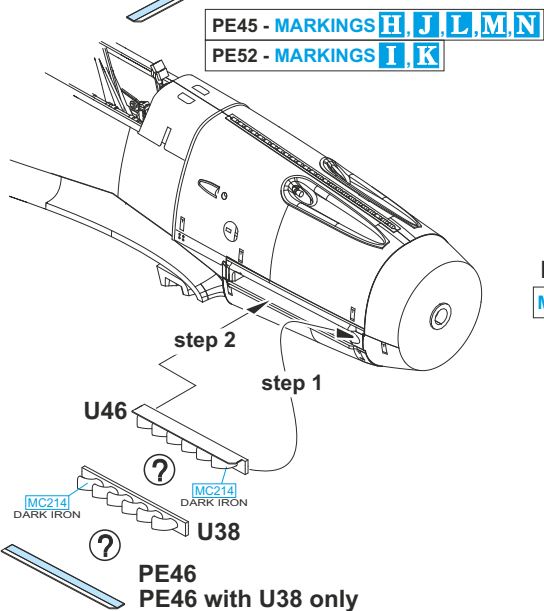
**MARKINGS H, I, K, L**



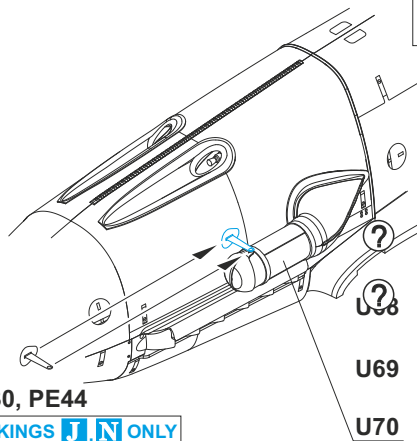
**MARKING M**



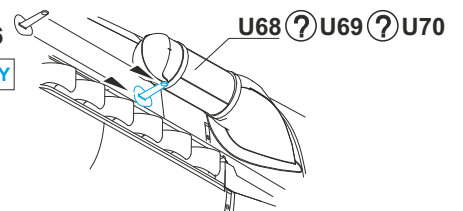
**L3 - MARKINGS J, M, N**  
**L4 - MARKINGS H, I, K, L**

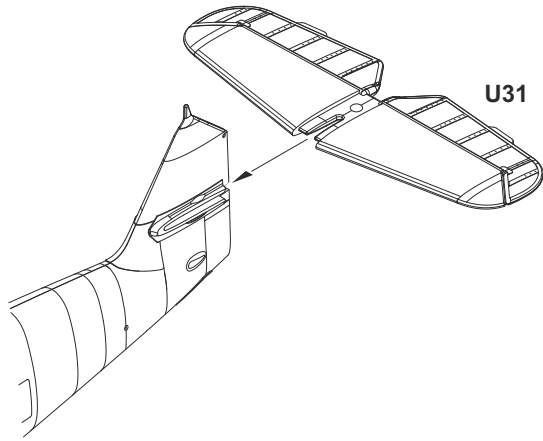


**PE45 - MARKINGS H, J, L, M, N**  
**PE52 - MARKINGS I, K**

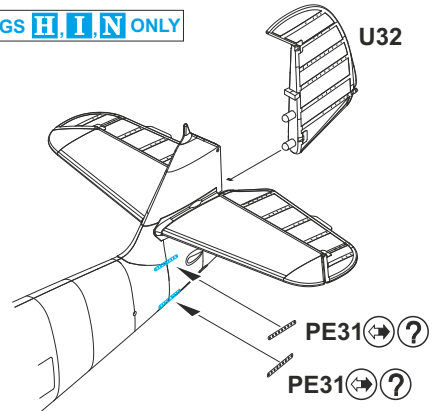


**PE30, PE56**  
MARKINGS **J, N** ONLY

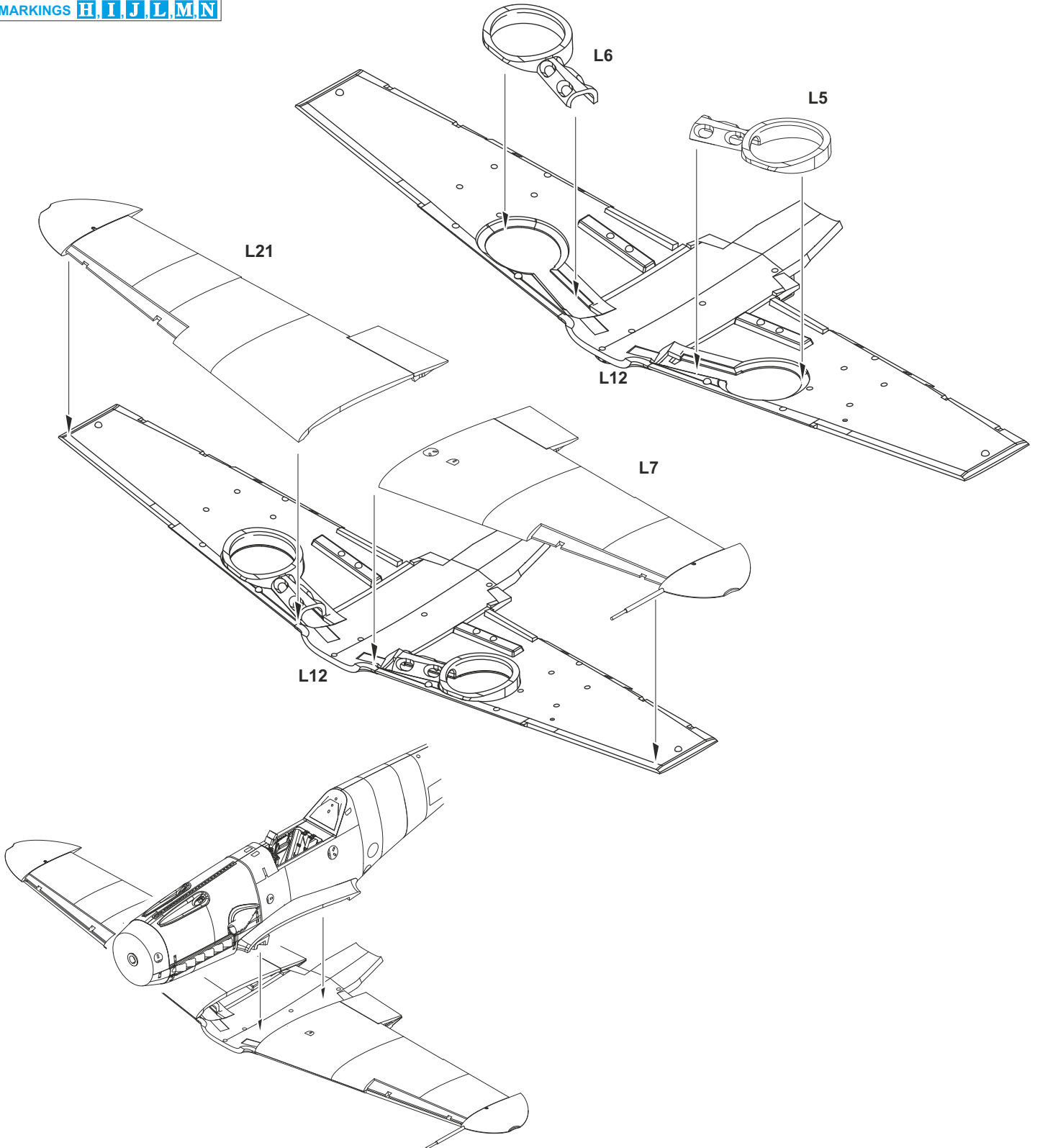


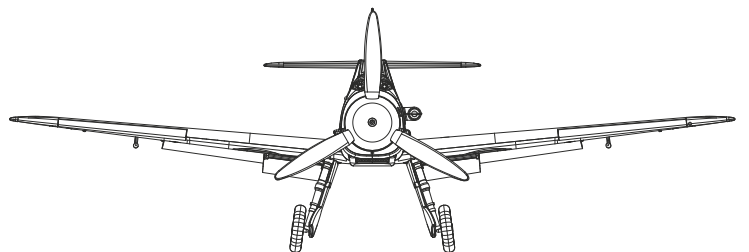
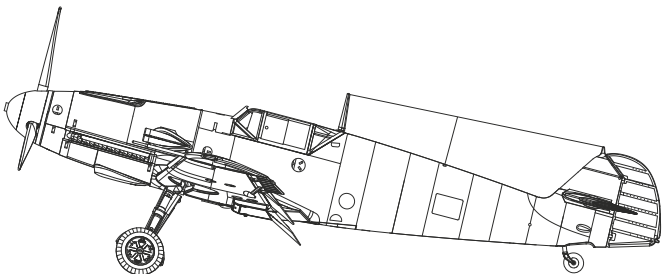
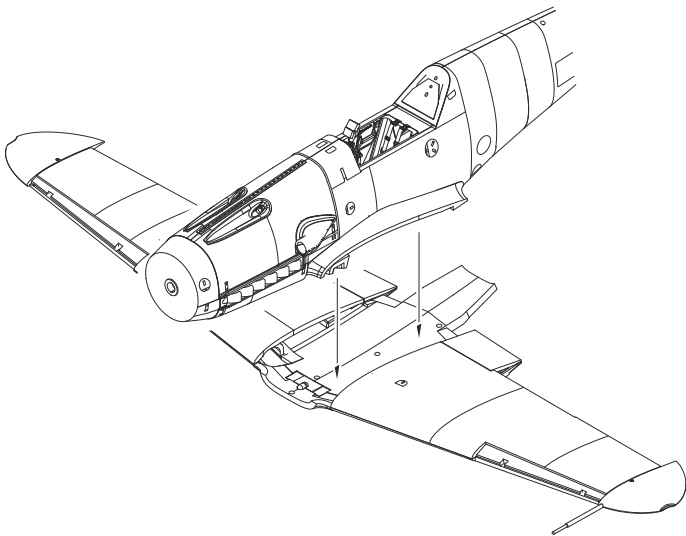
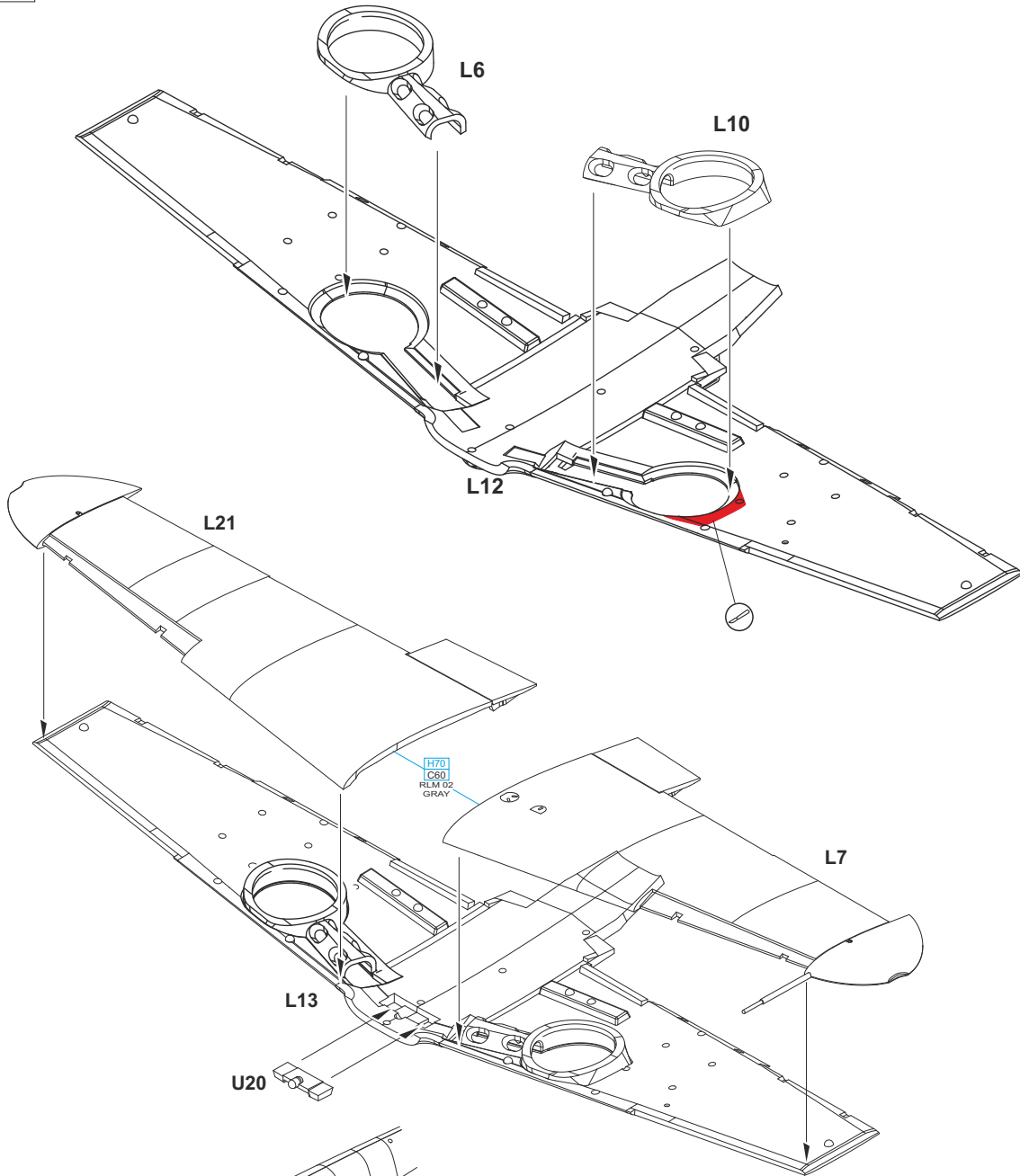


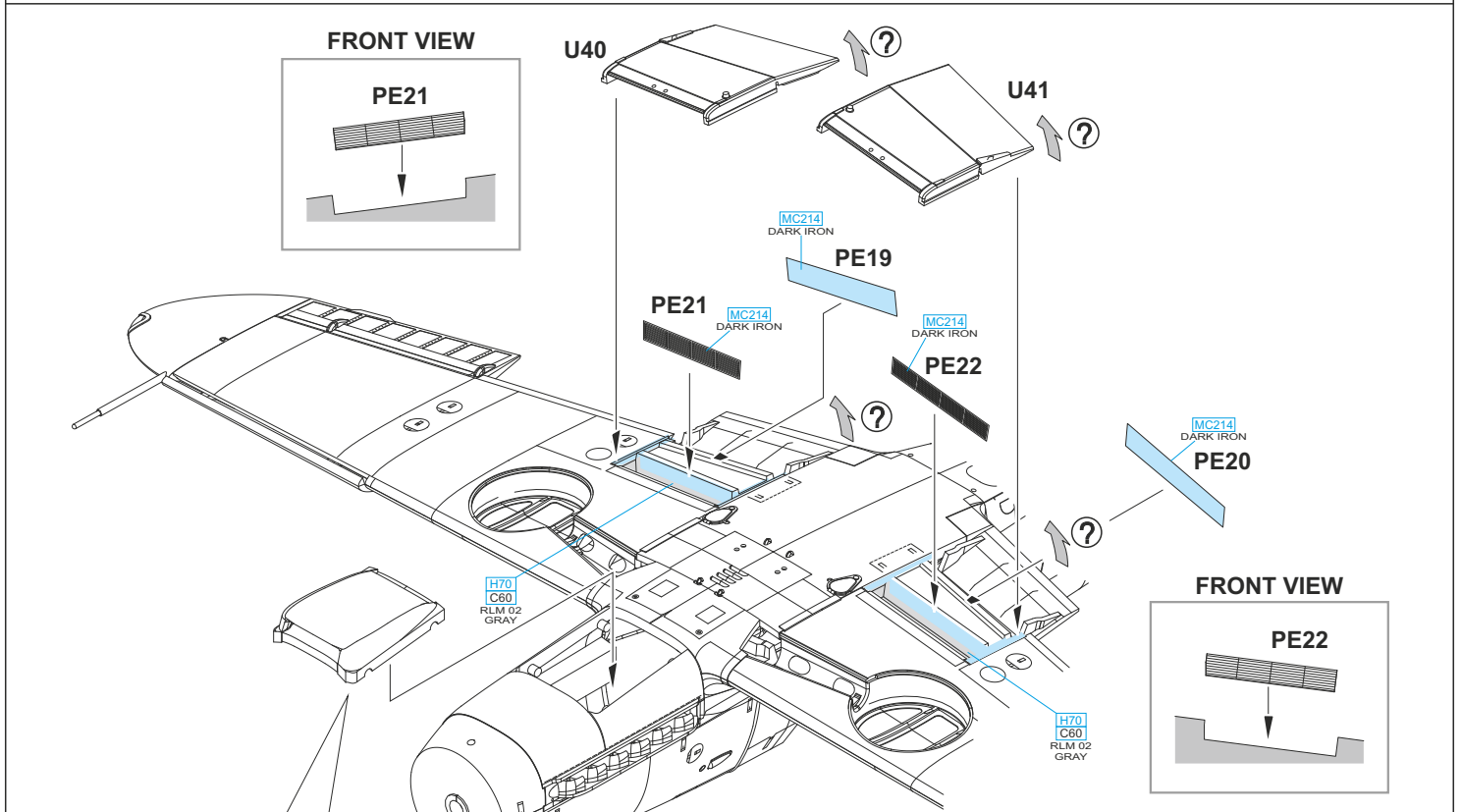
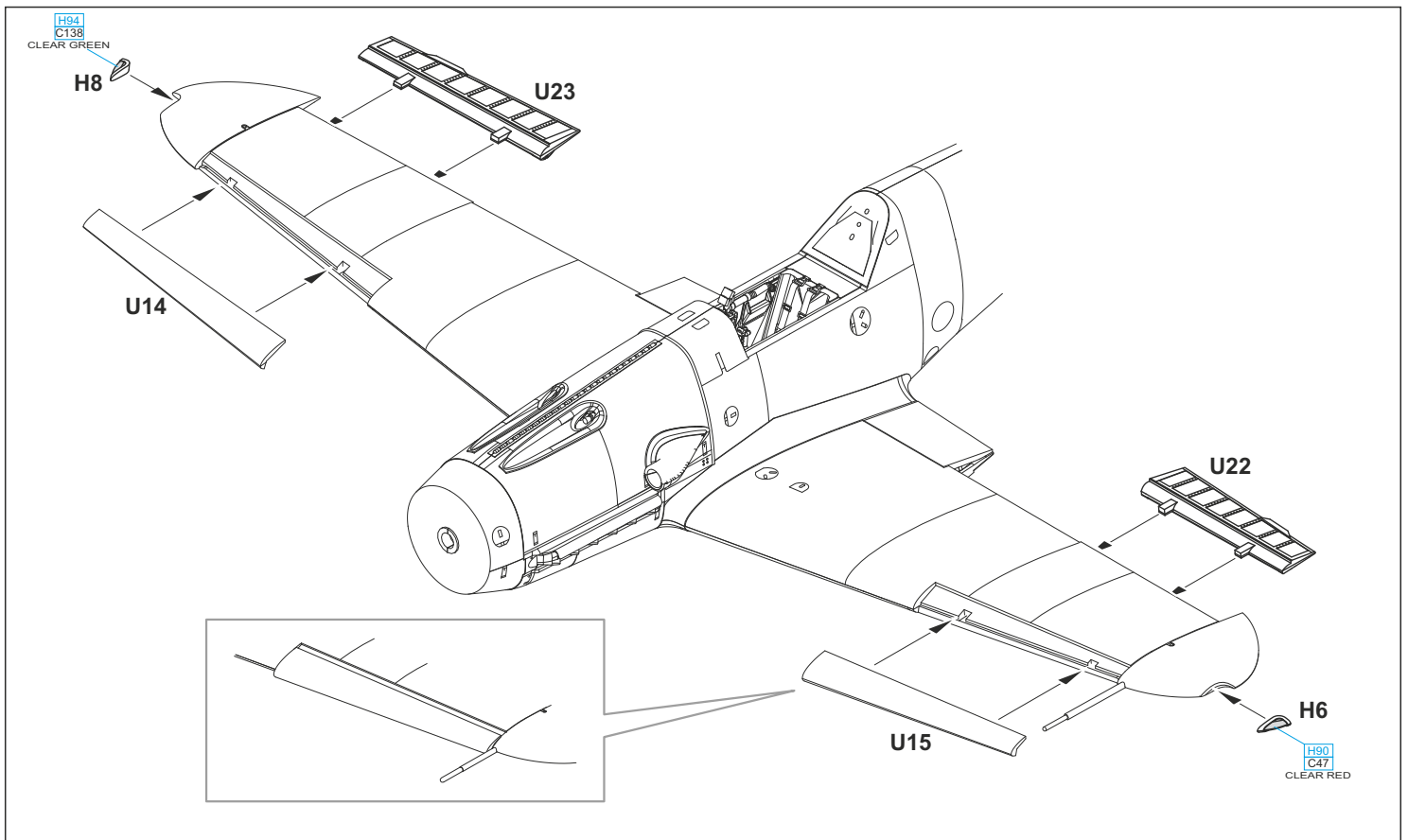
PE31 - MARKINGS **H, I, N** ONLY



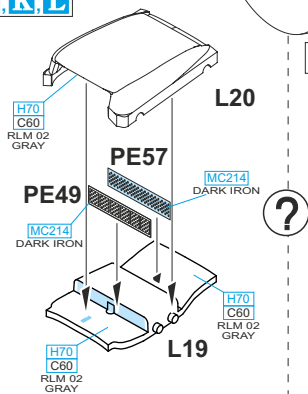
MARKINGS **H, I, J, L, M, N**



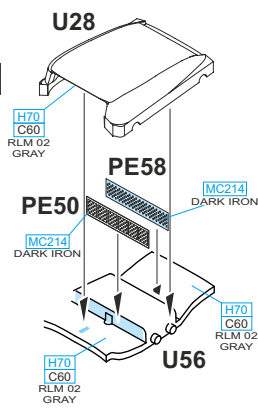


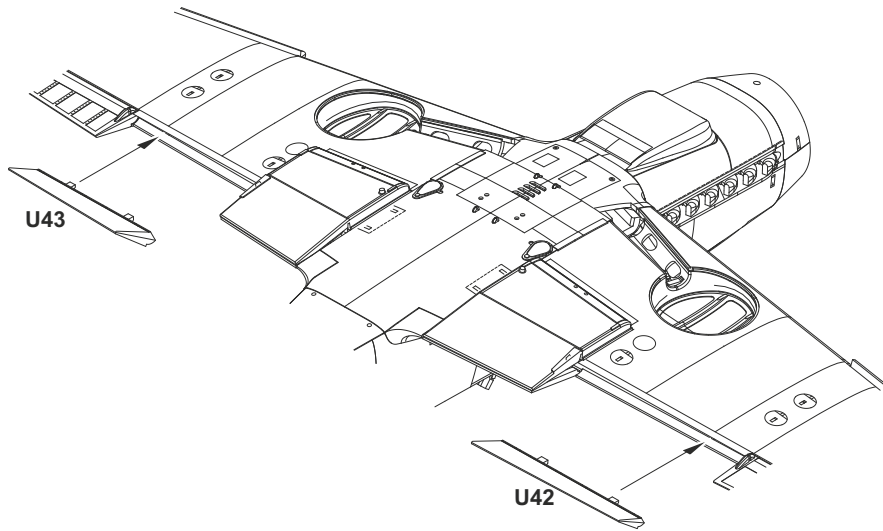


MARKINGS **H, I, K, L**



MARKINGS **J, M, N**





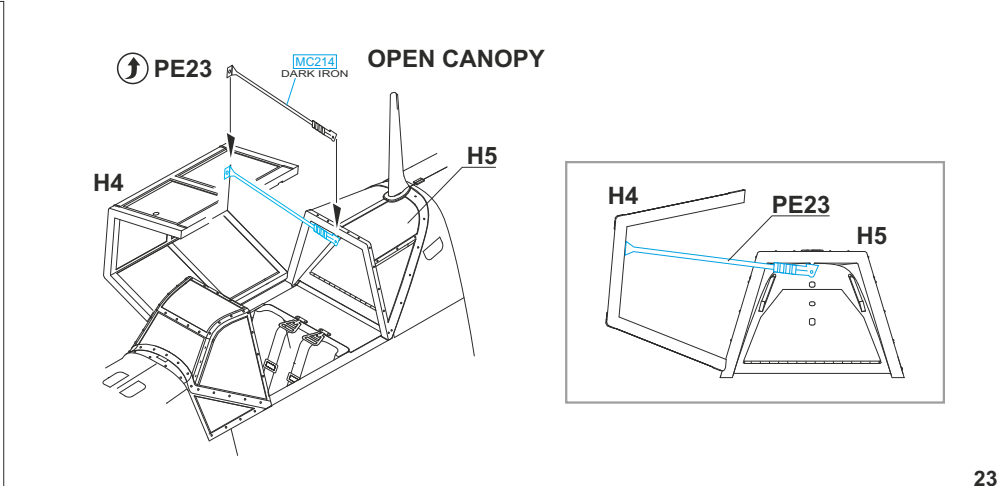
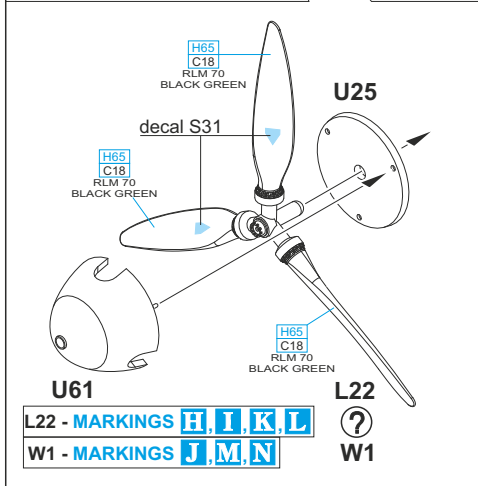
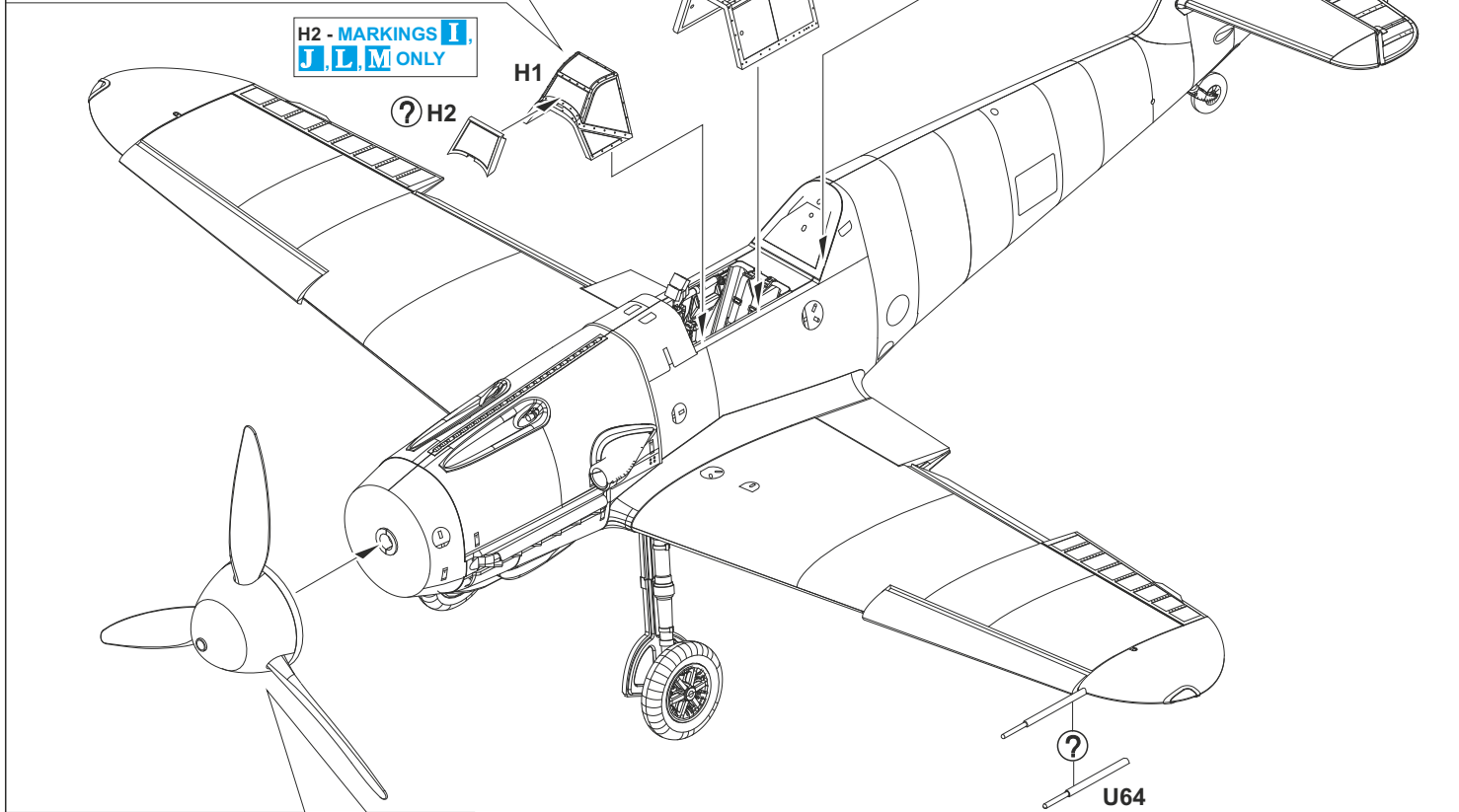
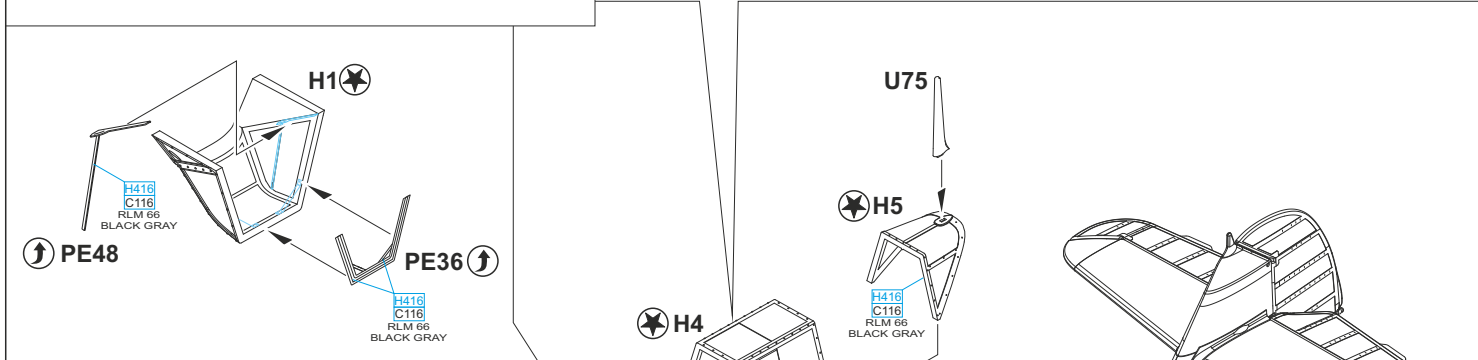
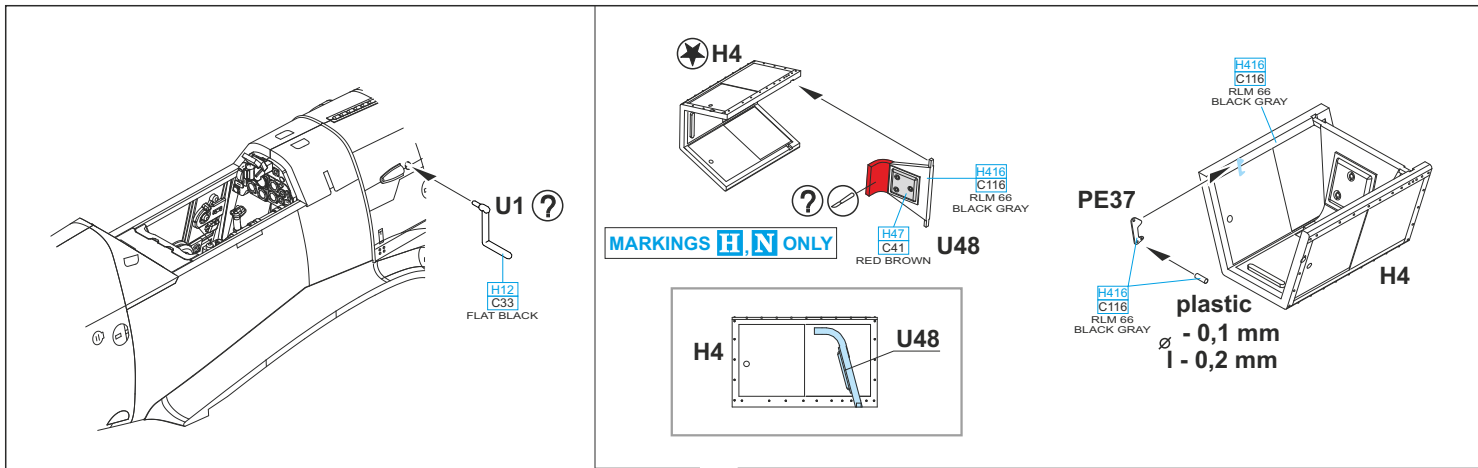
<p>L16 ? L17 H77 C137 TIRE BLACK H2 C2 BLACK L2</p>	<p>decal 72 - MARKING K ONLY</p> <p>SM201 FINE SILVER decal S73 ? decal 72 U16 U45 H416 C116 RLM 66 BLACK GRAY H70 C60 RLM 02 GRAY PE34</p>	<p>U44</p> <p>SM201 FINE SILVER U17 H70 C60 RLM 02 GRAY H416 C116 RLM 66 BLACK GRAY decal S73 ? decal 72 PE40</p> <p>decal 72 - MARKING K ONLY</p>	<p>L2 H2 C2 BLACK H77 C137 TIRE BLACK L16 ? L17</p>
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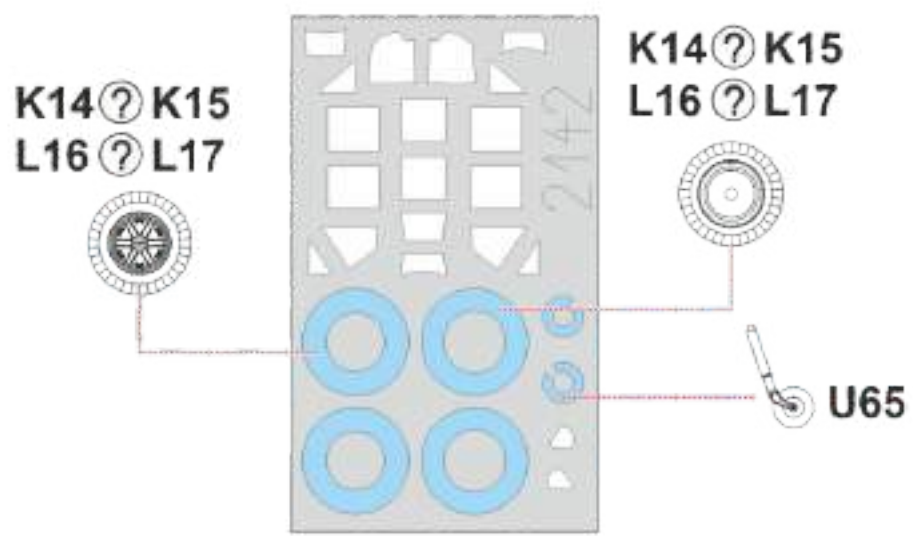
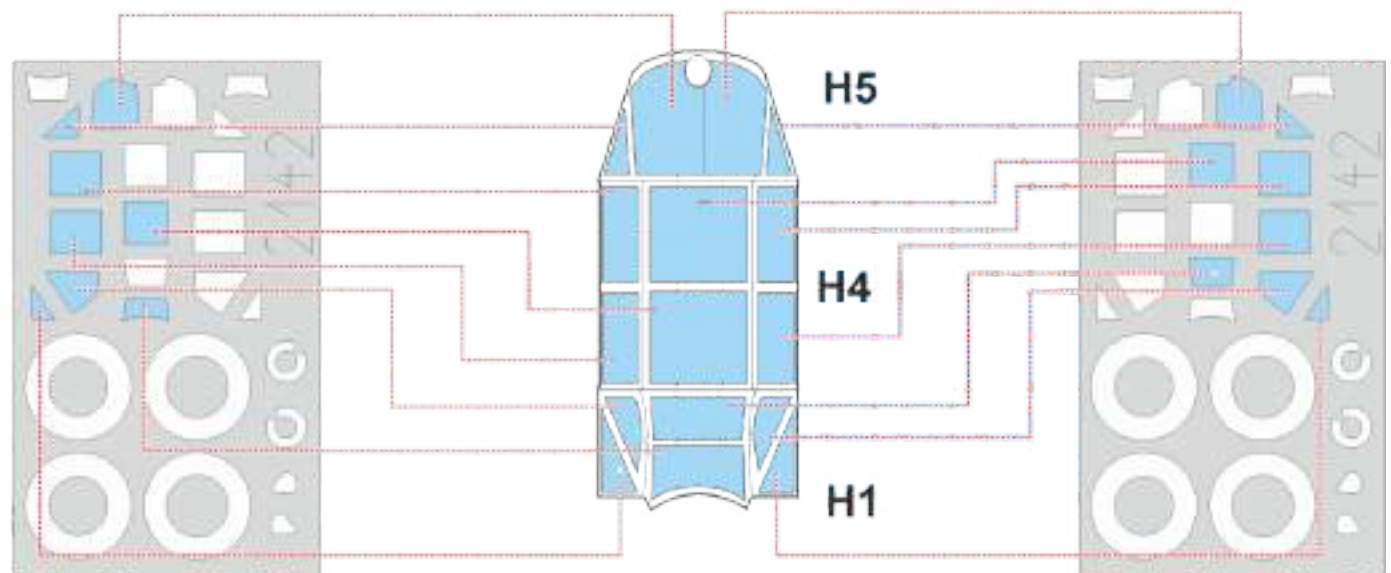
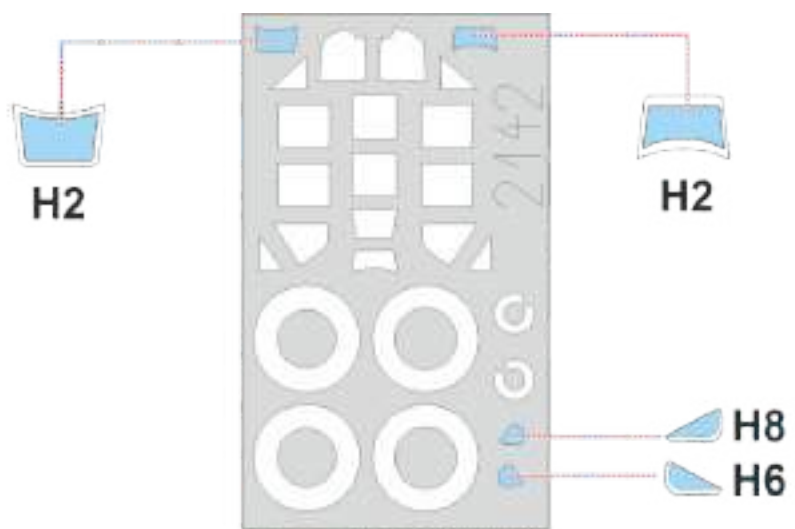
U65

H70 C60 RLM 02 GRAY  
H77 C137 TIRE BLACK  
SM201 FINE SILVER  
H2 C2 BLACK

MARKING I ONLY

PE38  
PE42  
decal 72

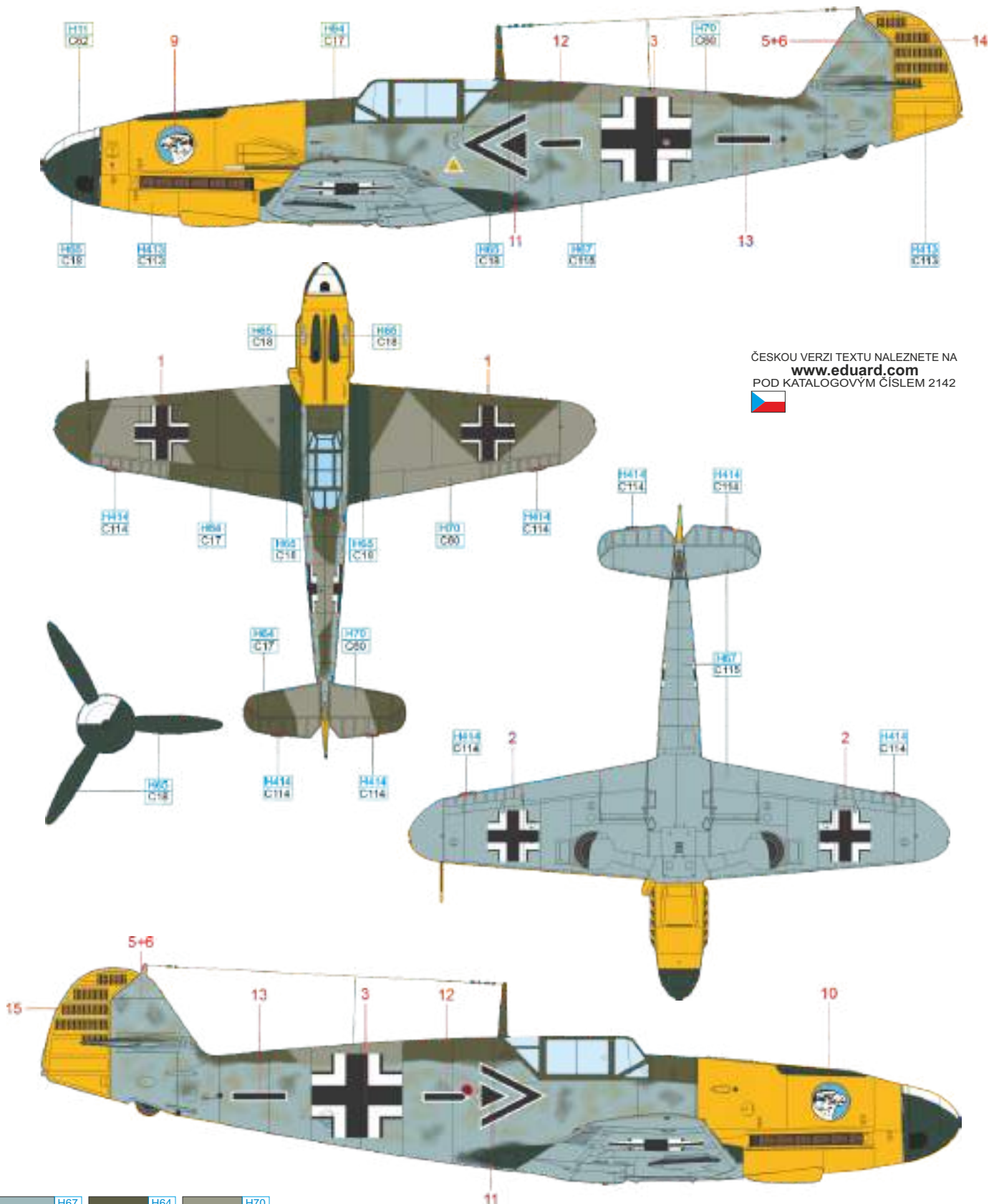






# A Bf 109F-1, WNr. 5628, Obst. Werner Mölders, CO of JG 51, Krefeld, Germany, June 1941

Werner Mölders, nicknamed Vati (Daddy), gained the ace status in the Spanish Civil War where he developed finger-four formation tactics. He was the first pilot to reach the mark of one hundred enemy kills. In June 1940, as CO of III./JG 53, he was shot down by a French fighter and was captured. A month later he was appointed commander of JG 51 and successfully led it in combat against both the RAF and the Soviet Air Force. Due to the fears of Nazi leadership regarding his possible capture or killing, he was withdrawn from combat operations and appointed Inspector of Day Fighters in August 1941. He perished in the crash of a Heinkel He 111 in a storm near Wrocław on November 22, 1941. He was flying as a passenger to Berlin for the state funeral of Ernst Udet. His score stopped at 115 victories of which he scored 14 in the Spanish Civil War and 68 in fighting on the Western front in Europe. For his achievements, he was awarded the Knight's Cross with Oak Leaves, Swords and Diamonds. The illustrated aircraft was flown by Werner Mölders in the summer of 1941 during a downtime as the unit prepared for Operation Barbarossa (the attack on the Soviet Union). The aircraft carried a camo scheme from the first half of 1941, as the top surfaces were sprayed RLM 71/02 and the bottom ones in RLM 65. The engine cowl sports the unit marking of JG 51, and the rudder displays the pilot's score.



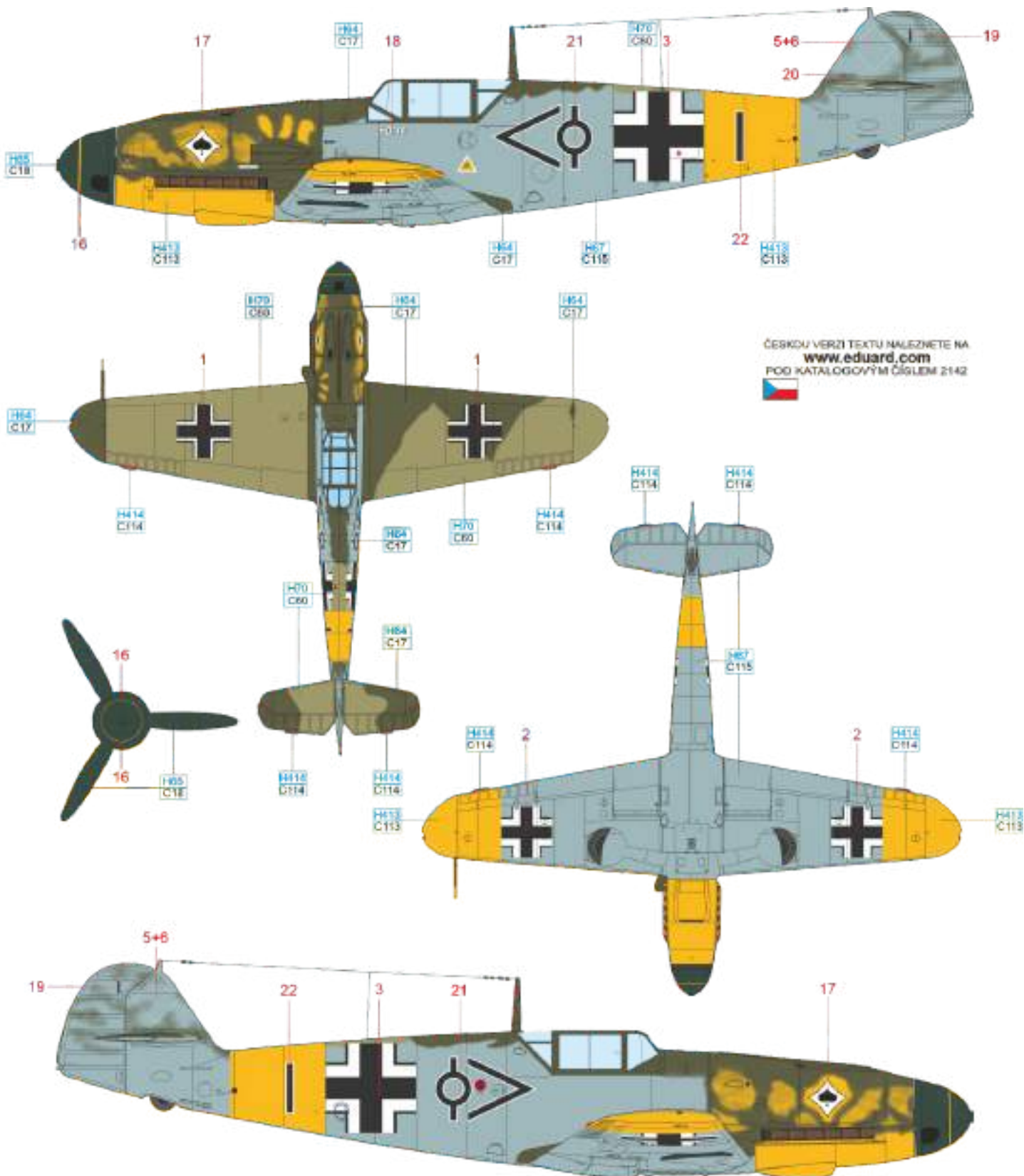
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RLM 65	H67 C115	RLM 71	H64 C17	RLM 02	H70 C60
WHITE	H11 C62	RLM 23	H414 C114	RLM 04	H413 C113
				RLM 70	H65 C18

# B Bf 109F-2, WNr. 8085, Lt. Jürgen Harder, Stab III./JG 53, Sobolewo, Germany, June 1941

Jürgen Harder, brother of the better known Harro Harder, achieved his first kill on June 22, 1941, the day Operation Barbarossa began. He joined the Luftwaffe in 1939 and served in 7./JG 53 from early 1941, then became a staff officer in III. Gruppe. In April 1942 he took command of 7./JG 53 in Africa and in February 1944 became commander of I./JG 53 in Italy. Until the end of the war he claimed further 63 kills both on the Eastern and Western fronts. On February 1, 1945, he was decorated with the Knight's Cross with the Oak Leaves. His luck ran out on February 17, 1945, when, due to the engine failure of his Messerschmitt Bf 109G-14, he crashed to death nearby the town of Strausberg. Harder's WNr. 8085 later served with 4./JG 51, Jagdgruppe West, underwent an overhaul and its version designation was changed to F-4. It was destroyed on December 2, 1943, in Southern France when it was allocated to Jagdgruppe Süd, commanded by Heinz Bär. In its cockpit, Uffz. Alexis Prinz zu Bentheim und Steinfurt was shot down in combat with American airmen.



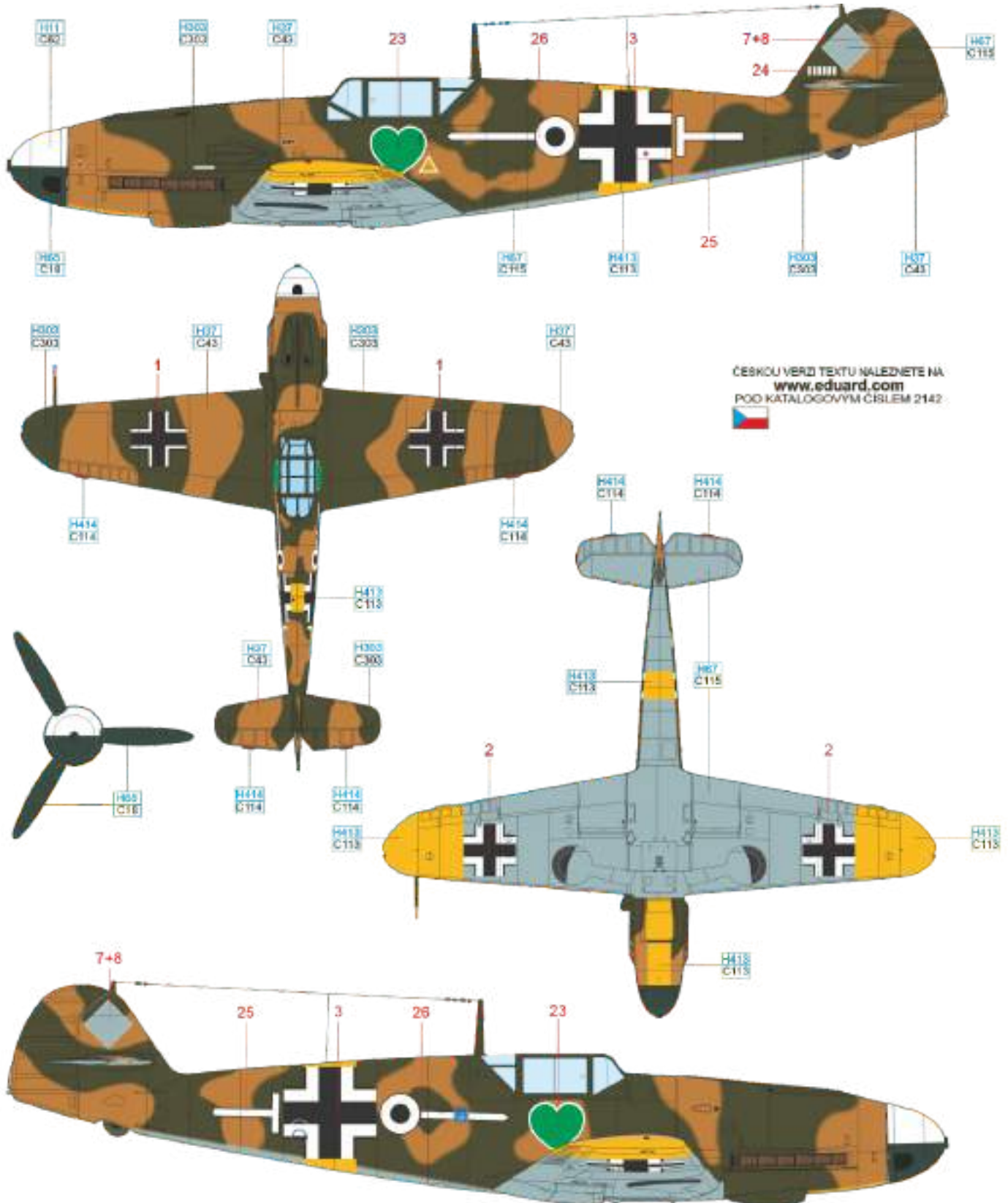
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RLM 45	H70 C60	RLM 71	H64 C17	RLM 62	H70 C60
RLM 23	H15 C14	RLM 34	H13 C13	RLM 70	H65 C18

**C** Bf 109F-2, WNr. 8235, Hptm. Werner Pichon Kalau vom Hofe, Stab JG 54, Trakehnen (Yasnaya Polyana, Russia today), Germany, June 1941

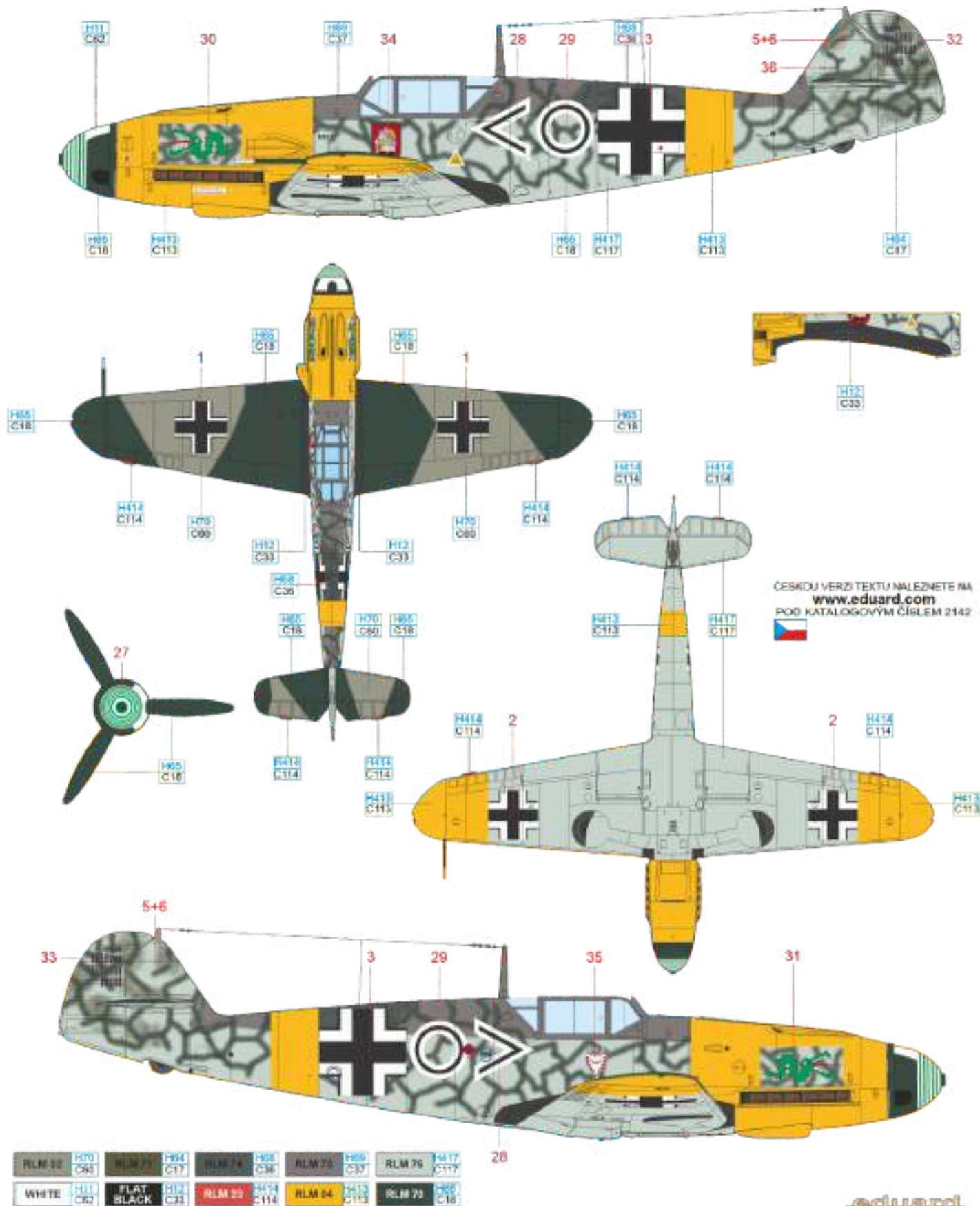
Werner Pichon-Kalau vom Hofe (1917–1999) was a pre-war member of I./ZG 1 and early after start of conflict he served with I./JG 3. After service with III./JG 51 he became in August 1940 Trautloft's Geschwaderadjutant in JG 54. Later on he acted in JG 54 also as Technischer Offizier and in early 1942 became commander of 7./JG 54. Later in the war he was a member of several fighter command headquarters in Western Europe. He was credited with 21 victories. He achieved his first successes on the Eastern front on June 25 when he shot down two twin-engine bombers as his 7<sup>th</sup> and 8<sup>th</sup> victories. His aircraft, which this pilot has captured on color footage, bears the non-standard designation, which relate to his position as technical officer. The airplane was camouflaged on the upper surfaces in brown and green paints.



RLM 65	H07 C43	BROWN	H07 C43	GREEN	H003 C303
WHITE	H111 C082	RLM 23	H414 C114	RLM 04	H413 C113
				RLM 79	H05 C18

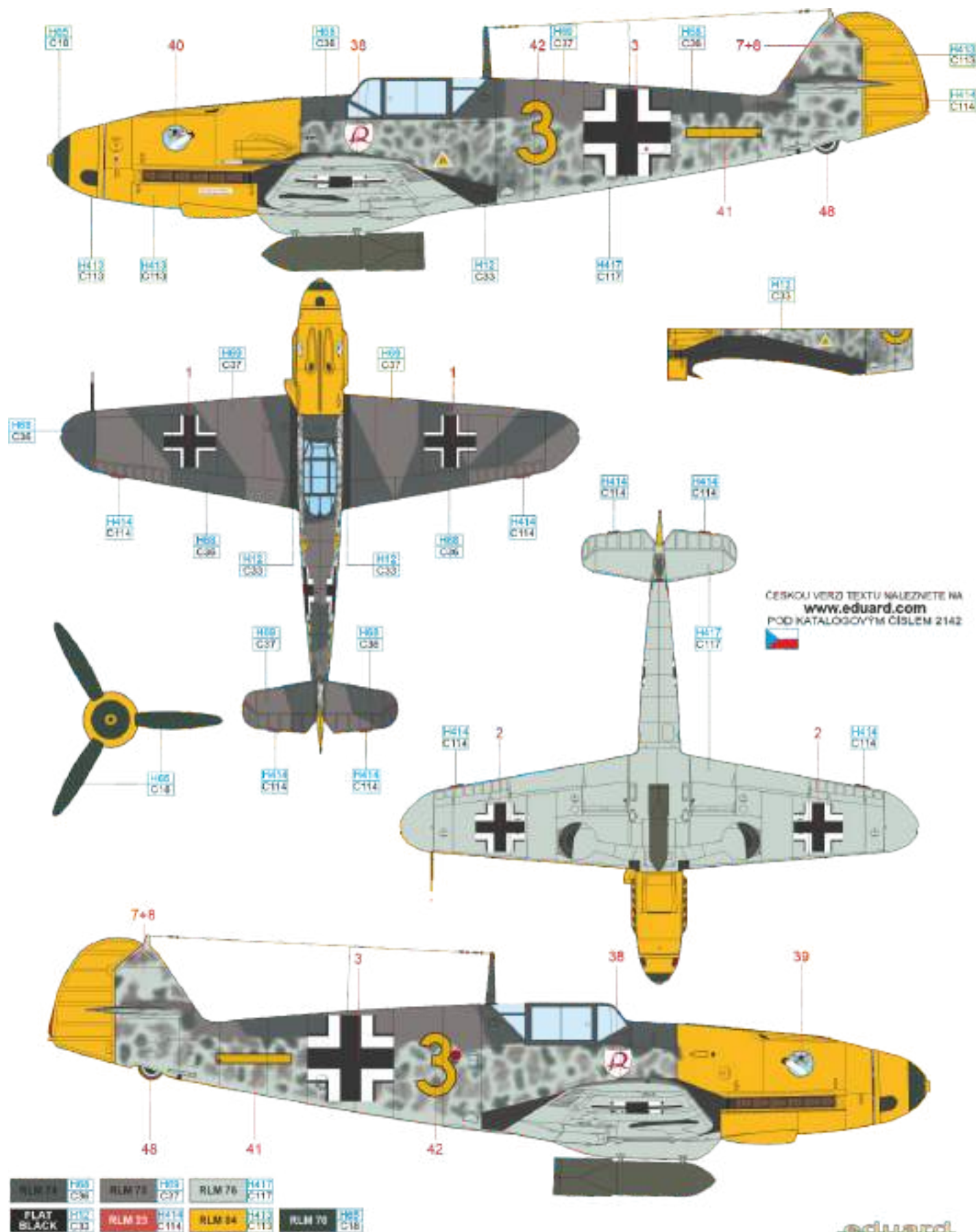
# D Bf 109F-2, WNr. 6801, Lt. Detlev Rohwer, Stab I./JG 3, Byelaya Tserekev, Soviet Union, August 1941

Rohwer's fighter career began in September 1939 at the Stab I./JG 3 and the first victory achieved June 6, 1940. He served in the ranks of JG 3 throughout the entire war. He was several times shot down and was several times severely wounded, but he always recovered and carried on flying. Except for when his career, and ultimately his life, ended on March 29, 1944, when his Bf 109G-6 was hit by defensive fire from a B-17. He had to set down, and P-38s in the area were bent on finishing him off. During their attack, Rohwer was seriously wounded. His lower limbs had to be amputated, but he nevertheless succumbed to his injuries the next day. He shot down a total of 38 enemy aircraft and was awarded the Knight's Cross. The illustrated aircraft was flown by Detlev Rohwer during the summer of 1942. The wing camouflage was made up of RLM 70/02 while the fuselage had already been sprayed in RLM 74/75. The sides of the fuselage were covered by irregular snakes of RLM 70. The aircraft markings were supplemented by the typical yellow quick identification aids carried by aircraft serving in the East, a fuselage band, wingtips and engine cowl. The side of the cowl sports the Tatzelwurm, the unit marking of I./JG 3 and Rohwer's personal emblem of the Götz von Berlichingen knight below the cockpit. The right side probably carried the Coat of Arms City of the City of Kiel, the hometown of Detlev Rohwer.



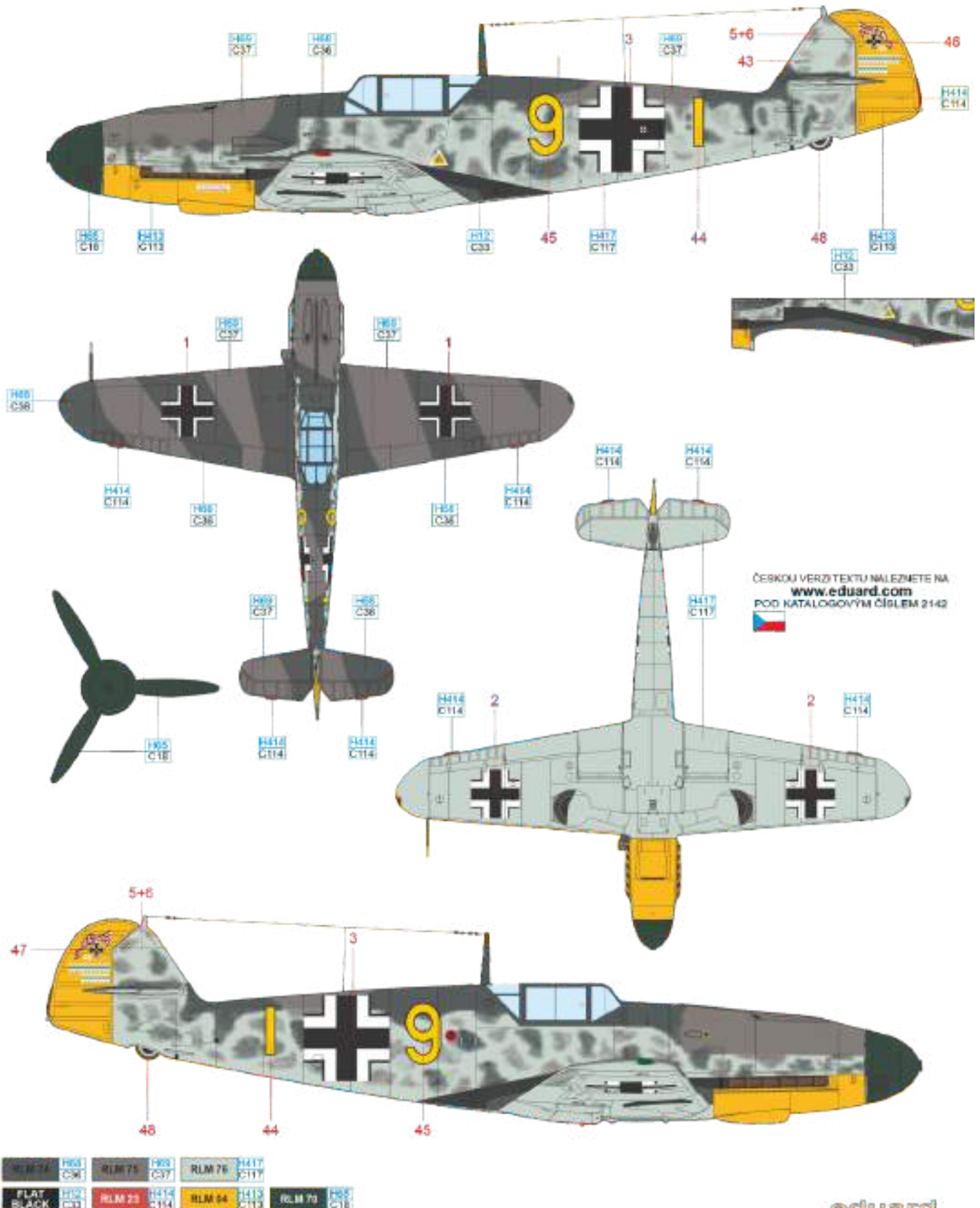
# E Bf 109F-2/B, Uffz. Richard Übelbacher, 6.(Jabo)/JG 2, Abbeville-Drucat, France, Summer 1941

Austrian Richard Übelbacher was born in 1918 in Innsbruck and after pilot and fighter training he was assigned to 6./JG 2 in the summer of 1940. Its commander was Oblt. Frank Liesendahl, who later became the key officer for the deployment of JG 2 fighter aircraft in the bomber role, primarily against shipping targets. Übelbacher saw combat during the Battle of Britain and achieved his first victory in August 1941. He also achieved an aerial victory during the fight against the Allied landing at Dieppe. At that time, II./JG 2 had already been rearmed to the Fw 190A type. In the autumn of 1942, he moved with his unit to Tunisia and was by then one of the most experienced veterans. He had a total of seven or eight victories to his credit. Übelbacher was killed on March 3, 1943, south-east of Ferryville when he was accidentally shot down by a pair of I./JG 53 pilots with Messerschmitt Bf 109 fighters during a landing maneuver. Richard Übelbacher was buried at Borj Cédria and was posthumously promoted to the rank of Leutnant.

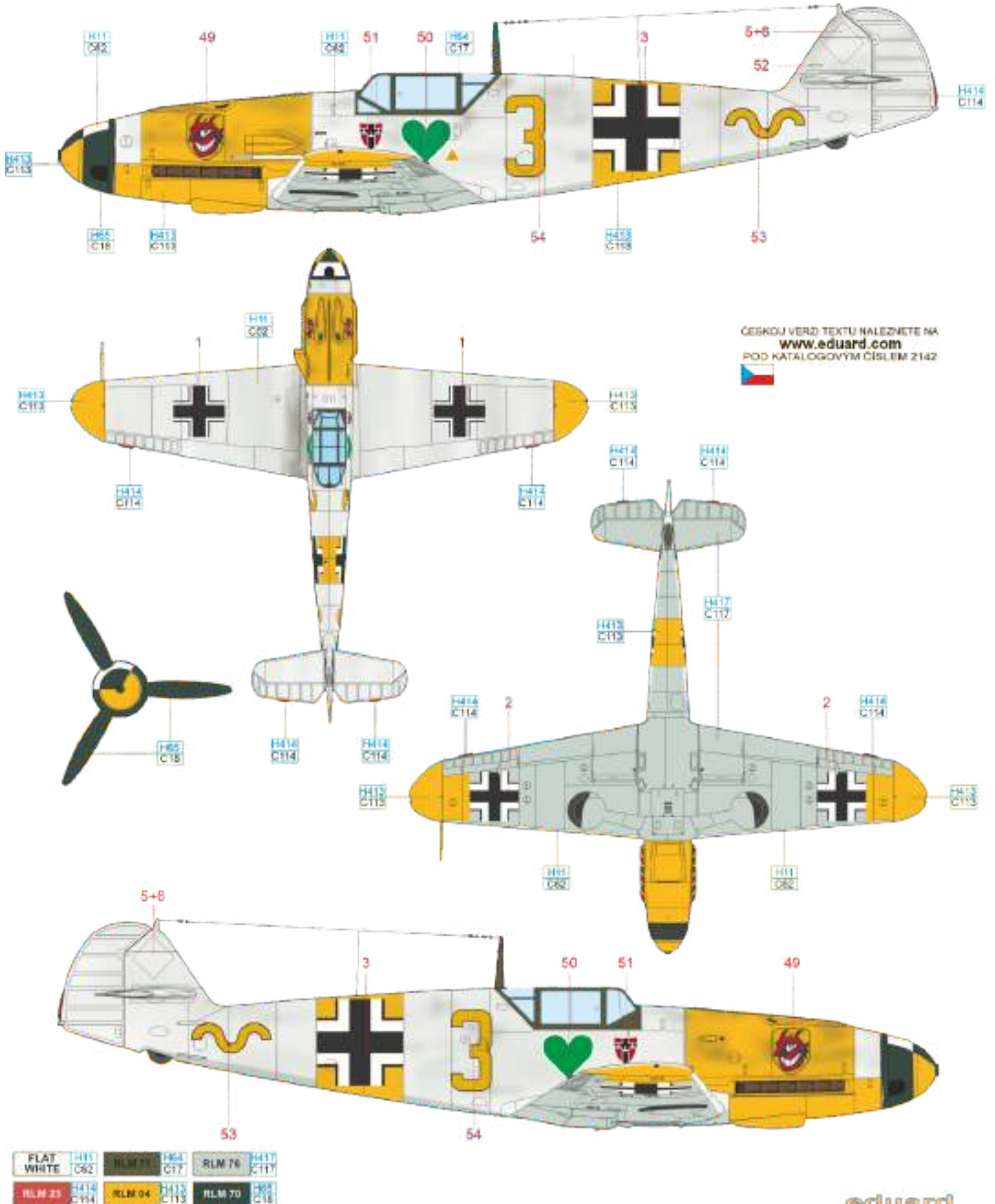


# F Bf 109F-2, WNr. 9553, Oblt. Siegfried Schnell, CO of 9./JG 2, Théville, France, November 1941

Siegfried "Wumm" Schnell, a native of today's Polish Sulęcín (then Zeilenzig in Germany) joined the ranks of the Luftwaffe in 1936 and at the beginning of the Second World War he served with 4./JG 2. His first kill was in combat over France on May 14, 1940, others followed over Britain and against English and American pilots over western Europe. After being assigned to JG 54, he first served with its III. Gruppe and on February 1, 1944, he was appointed CO of IV. Gruppe. While serving in this function, he was shot down over Narva on February 25, 1944, by a Soviet fighter, this proving to be a fateful encounter. For his combat results, he was awarded on July 9, 1941, the Knight's Cross with Oak Leaves. He downed 93 enemy aircraft in WWII. Siegfried Schnell's aircraft was camouflaged in the standard Luftwaffe fighter scheme using RLM 74/75/76. Both sides of the fin were decorated with the Knight's Cross with Oak Leaves and markings symbolizing his victories.

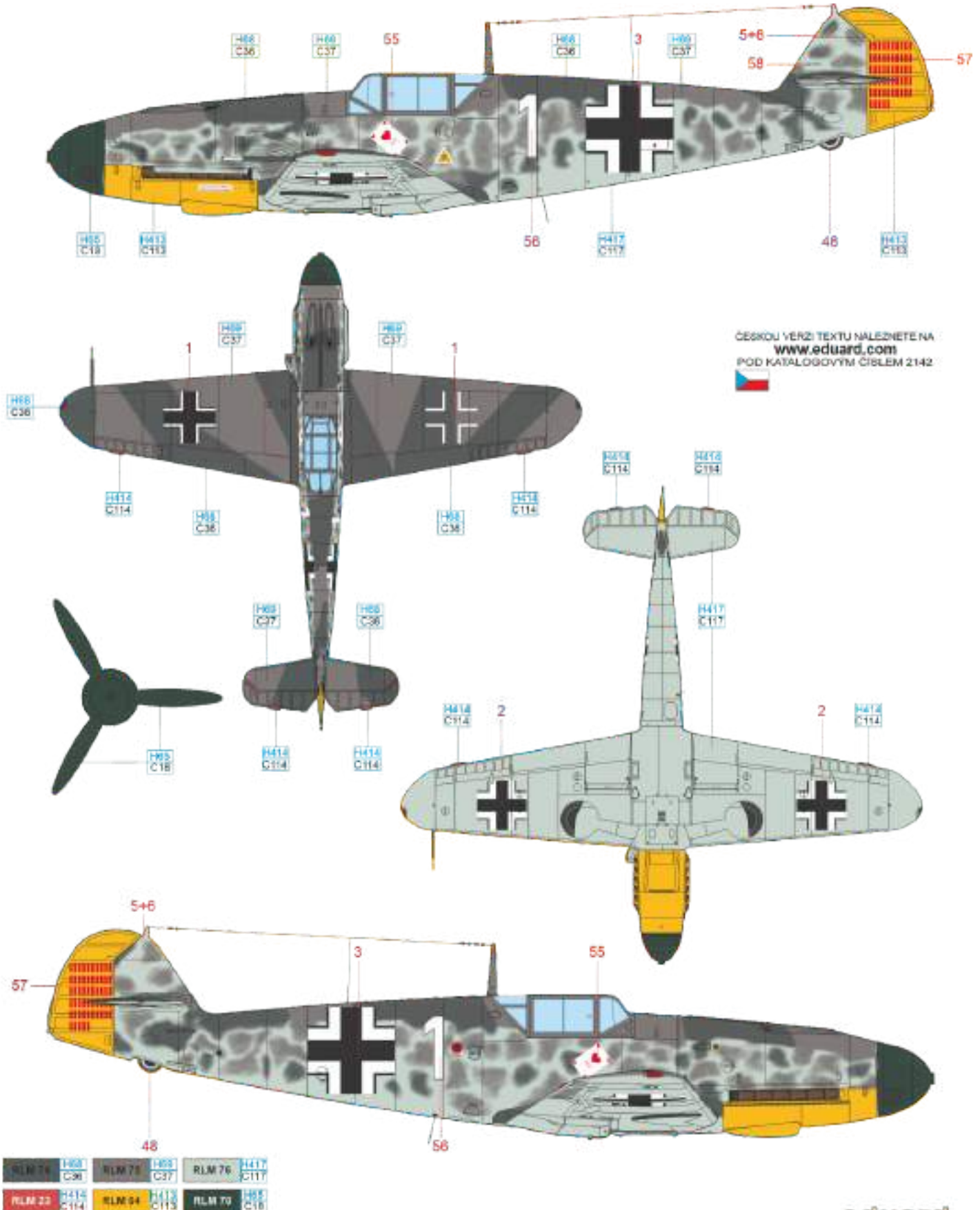


Oblt. Hans Ekkehard Bob was the commanding officer of 9./JG 54 from November 1940 to July 1943. He joined the Luftwaffe in 1936 and in July 1939 was assigned to 3./JG 21 (later 9./JG 54). Bob achieved his first victory on May 10, 1940, in combat with a Belgian Gladiator. In August 1943 he was appointed CO of IV./JG 51 on the Eastern Front and from May 1944 led II./JG 3 in the Defense of the Reich and Normandy. From August he led the operational training unit II./EJG 2 and he ended the war as a member of Jagdverband 44, unit equipped with the Me 262 Schwalbe. Over the course of some 700 sorties, he shot down sixty enemy aircraft, and was awarded the Knight's Cross. After the war, he first worked on a farm, later formed his own transportation company and in 1956 he formed the world-famous company BOMAG. The illustrated aircraft was taken over from 6./JG 54 and it was flown by Bob's Staffel in the winter of 1941/42 in the northern section of the Eastern Front, where in an effort to better hide their aircraft when on the ground, support personnel sprayed them in a washable white paint on the upper surfaces. The aircraft carried the typical identifiers carried on the Eastern Front – a yellow fuselage band and yellow wingtips.



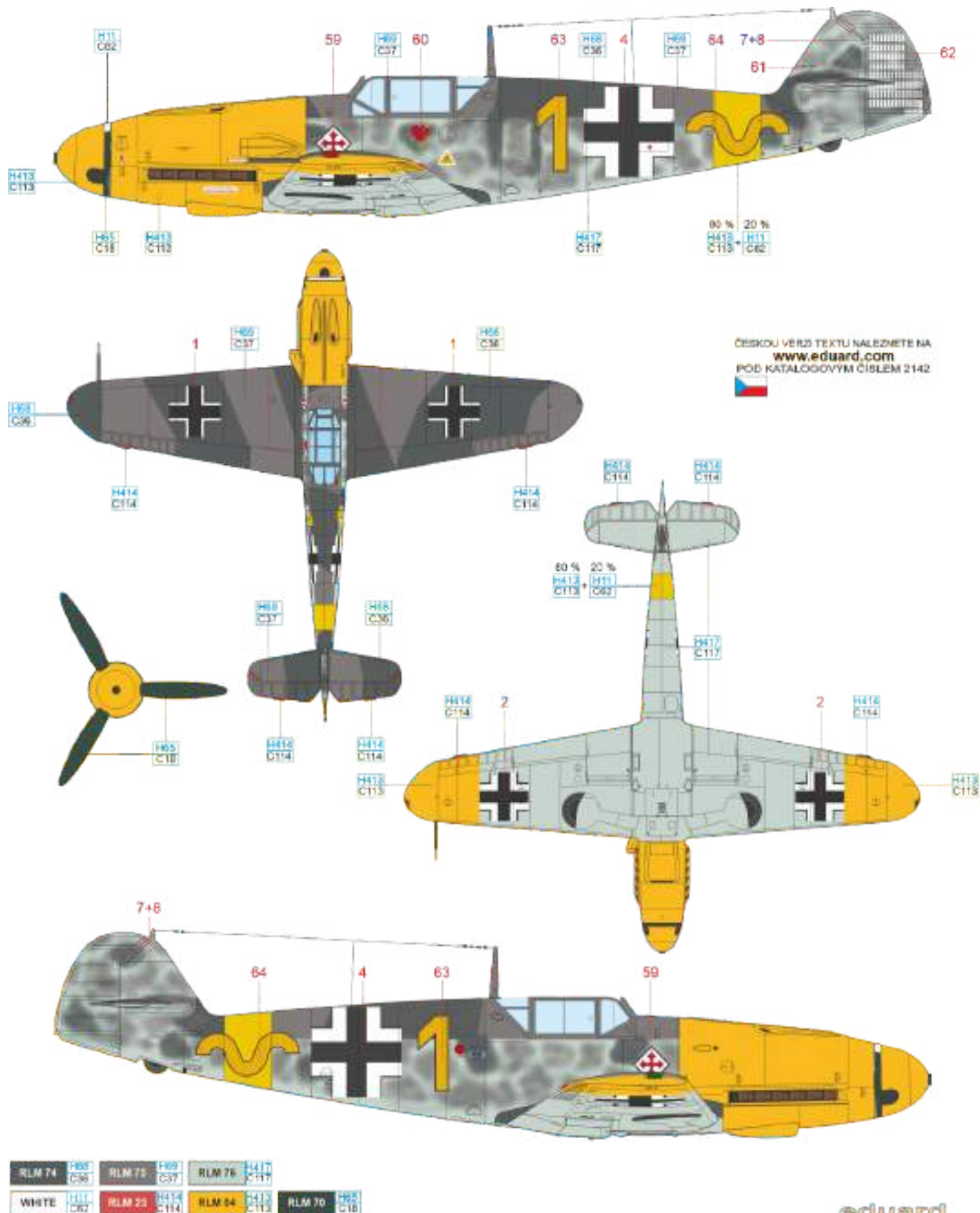
# H Bf 109F-4, WNr. 7205, Oblt. Josef Priller, CO of 1./JG 26, St. Omer-Arques, France, October 1941

This aircraft was produced in August 1941 by the WNF and became the personal mount of Josef "Pips" Priller, who was commander of 1./JG 26 "Schlageter" at that time. Rudder shows his 55<sup>th</sup> victory, which was achieved on October 21, 1941. On both sides of the fuselage, a heart card symbol with the name of Priller's wife Jutta was painted under the cockpit. Priller began his military career in the infantry in 1935 and joined the Luftwaffe a year later. After fighter training, he was assigned to Stab I./JG 51 in November 1938 and transferred to I./JG 71 (later II./JG 51) in July 1939. In October 1939 he became CO of 6./JG 51 and recorded his first two aerial victories on May 28, 1940. By October he had increased his number of victories to 20 and was awarded the Knight's Cross. In November 1940 he was transferred to JG 26 and became CO of 1. Staffel, which he led for a year. After achieving his 58<sup>th</sup> victory he became CO of III./JG 26. During 1942 he achieved a further 23 victories and in January 1943 became commander of JG 26. His last victory, the 101<sup>st</sup> one, came in October 1944 and in early 1945 Priller became Inspector of Day Fighter Units in Western Europe. He attained the rank of Oberst and was awarded the Oak Leaves and Swords in addition to the Knight's Cross.



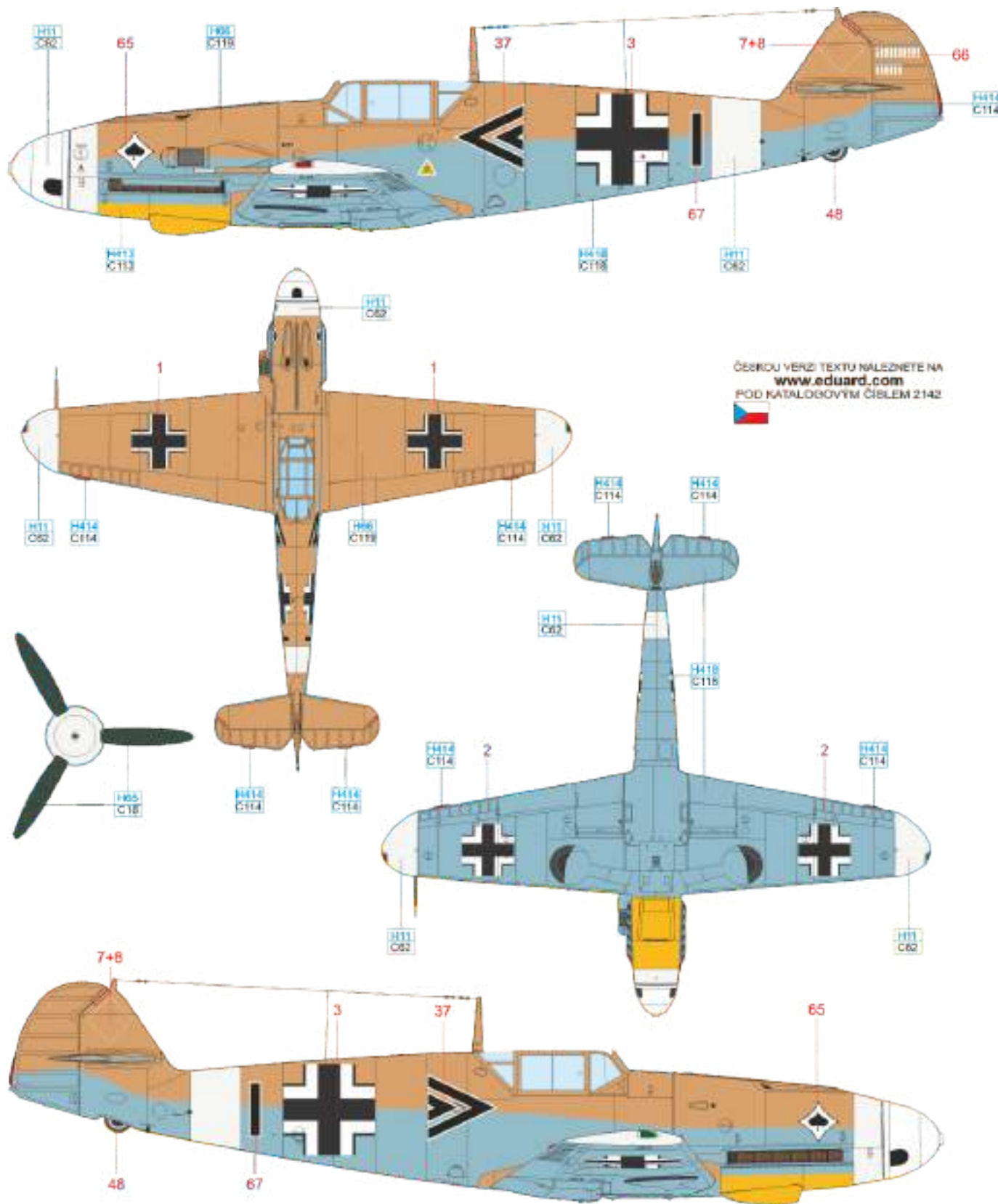


Hermann Anton Graf was born on October 24, 1912. He trained as a locksmith and was a keen football player in his youth. Later he took up sailing and entered the army in 1939. In the spring of 1940, he served in JG 51 and participated in the Battle of France. In April 1941, he fought over Greece and Crete, but did not record any victories during this period. His first kill came on August 4, 1941, near Kiev and things changed. At the end of January 1942, he received the Knight's Cross for 45 kills, in May 1942 he achieved his 100<sup>th</sup> aerial victory and received Oak Leaves and Swords in addition to the Knight's Cross. He was the fifth in line of pilots to be awarded the Diamonds to the Knight's Cross with Oak Leaves and Swords on September 29, 1942. Graf became part of propaganda campaigns, even a member of the Luftwaffe football team. At the end of the war, he was leading JG 52 and retreated with the unit from East Prussia, through Silesia and into Bohemia. He surrendered on May 8, 1945, in Písek (South Bohemia) to the Americans. They promptly handed him over to the Russians and Graf spent more than four years in captivity.



# J Bf 109F-4/Trop, Maj. Erich Gerlitz, CO of III./JG 53, Martuba, Libya, May 1942

Austrian Erich Gerlitz graduated from the military academy in Wiener Neustadt in 1935 and became commander of Jagdstaffel 5 of the Austrian Jagdgeschwader II. After the Anschluss of Austria he became commander of 3./JG 135 (later 3./JG 51). In March 1940, he was appointed commander of 7./JG 2 and after several other posts, in April 1941 he became CO of 2./JG 27. He served with Jagdgeschwader 27 during the following year, briefly serving as commander of 7. Staffel and in December 1941 was appointed CO of II./JG 27, which was then fighting in Africa. In May 1942, after achieving 15 victories, he became commander of III./JG 53 "Pik As", which was operating in the same theatre of operations. He won three more victories with this unit. His personal aircraft was apparently retained from his previous posting. He led the unit until October 1942, after which he served for some time as part of the Luftwaffe HQ branch in Romania. In January 1944 he returned to combat as commander of I./JG 5, which was then based in Bulgaria. After moving to Western Europe, he was killed on March 16, 1944, in a dogfight with a P-47.



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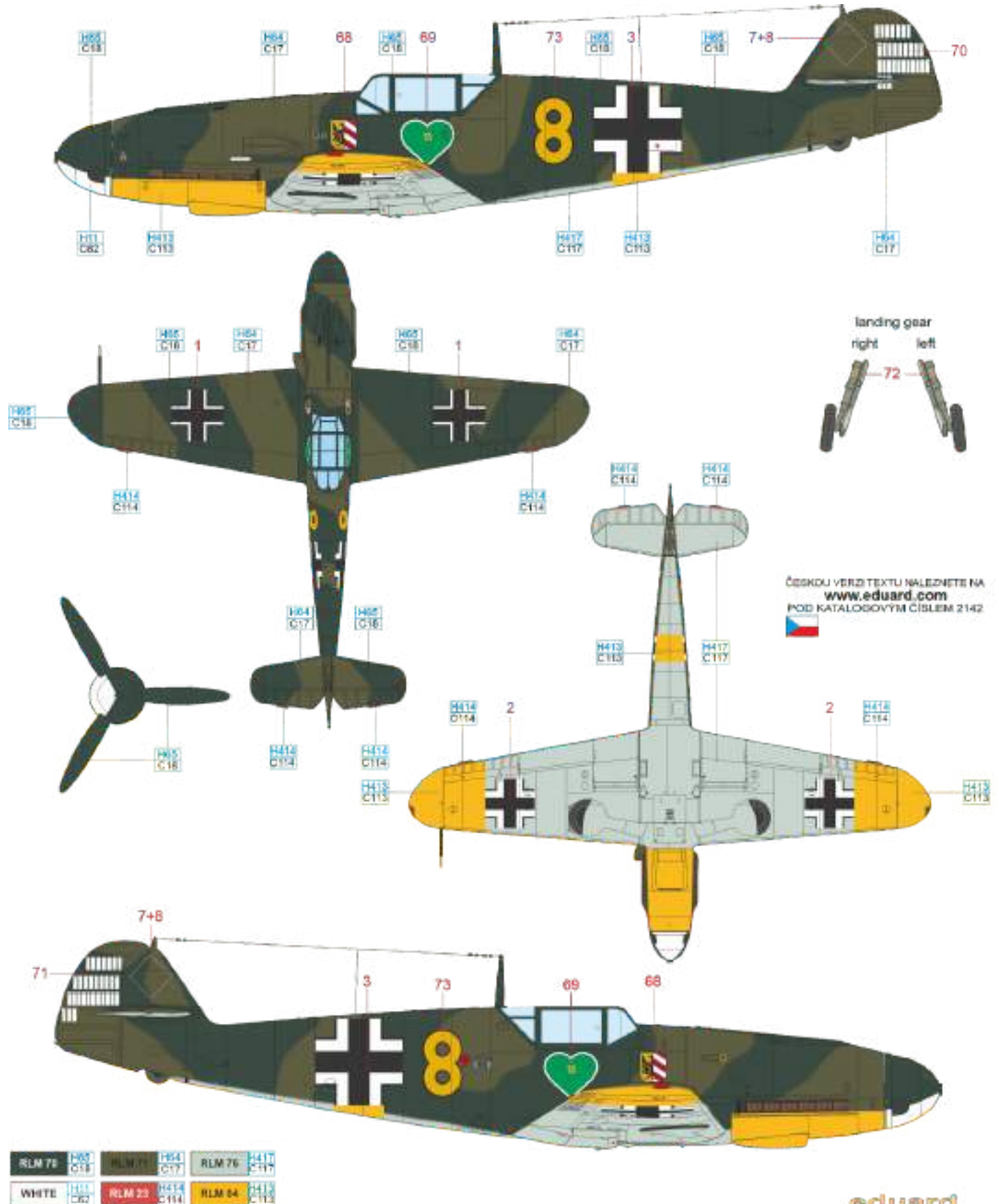


RLM 79	H95 C118	RLM 78	H418 C118
WHITE	H11 C62	RLM 23	H418 C114
		RLM 84	H419 C113
		RLM 73	H65 C18

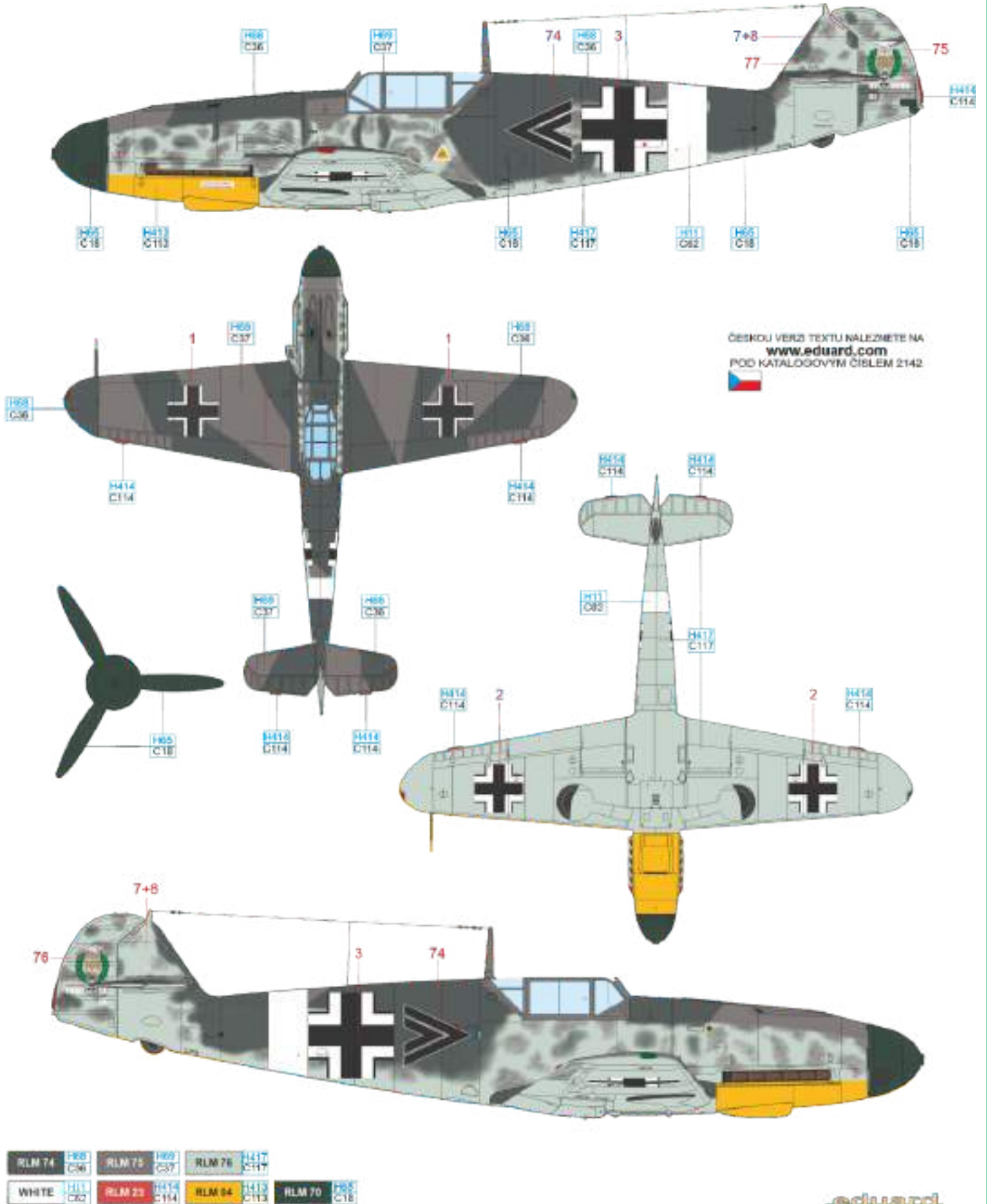


# K Bf 109F-4, Lt. Walter Nowotny, 3./JG 54, Krasnogvardeysk, Soviet Union, July 1942

An Austrian with Czech ancestry, Walter "Nowi" Nowotny came from Gmünd near the border with Czechoslovakia. He joined the Luftwaffe in October 1939 and was assigned to 9./JG 54 in February 1941, shortly after which he was transferred to Stab Erg. JGr. 54. With this training part of JG 54 he achieved his first victory in Baltic on July 19, 1941. In March 1942 he was transferred to 3./JG 54 and by the beginning of August he had achieved over 40 victories with this unit. After recovering from wounds he suffered, he became commander of 1./JG 54 in October 1942 and in August 1943 was appointed commander of the entire I./JG 54. Walter Nowotny was a holder of the Knight's Cross with Oak Leaves, Swords and Diamonds, and shot down 258 enemy aircraft over the course of 442 combat sorties. He was killed in combat with American escort fighters near an airfield at Hesepe on November 8, 1944, when flying his Me 262 Schwalbe. The aircraft carried a non-standard scheme consisting of two greens on the upper surfaces, probably RLM 70 and RLM 71, typical for JG 54. The lower surfaces remained in RLM 76. The wingtips were painted in RLM 04 yellow, which was an identification mark of aircraft serving on the Eastern Front. The port and starboard wheel wells have different designs. The fuselage number is painted on the undercarriage legs.

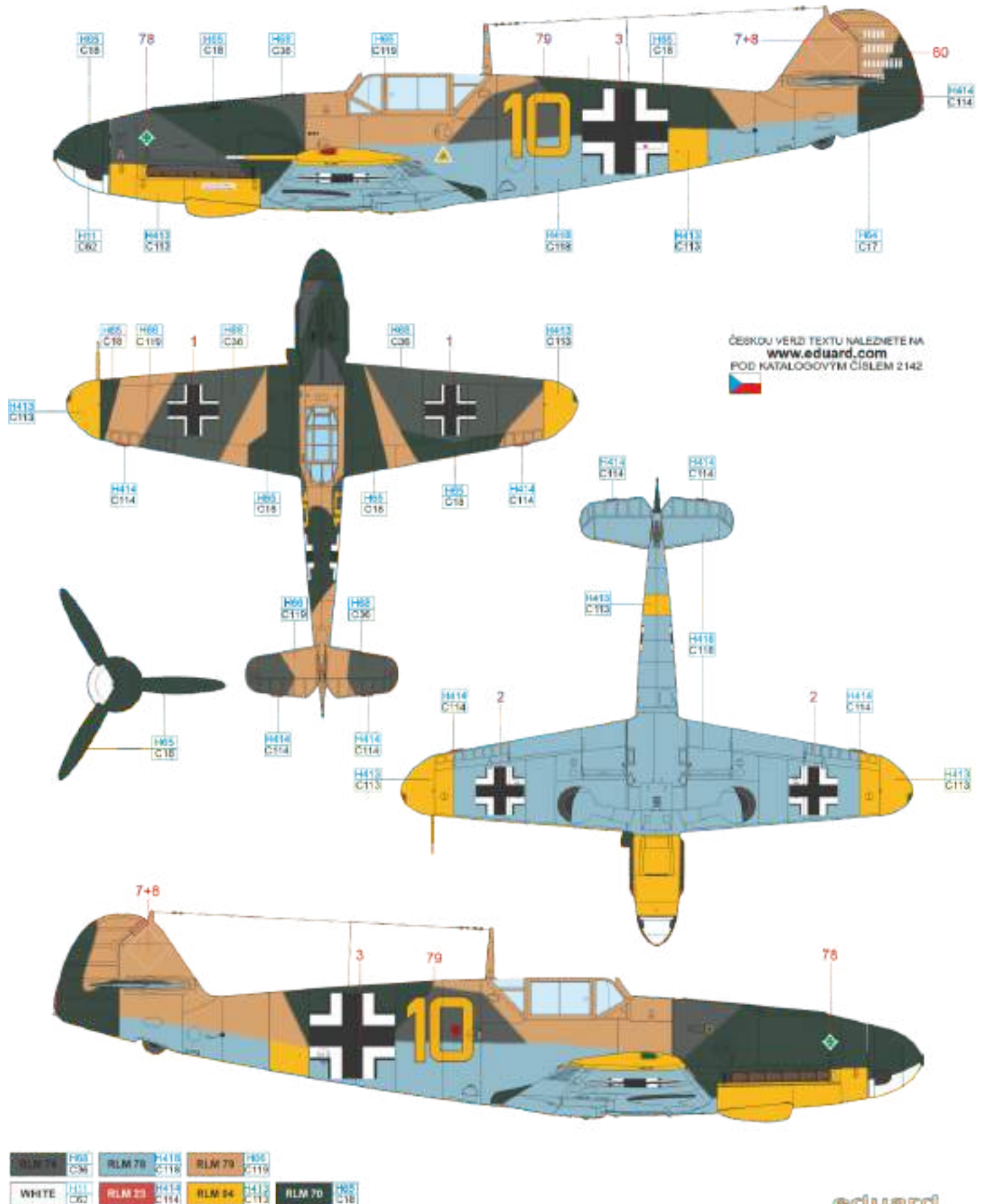


Heinz "Pritzl" Bär successfully fought over all major battlefields of World War II. He first served in the Luftwaffe in the 1930s as a mechanic but aspired to become a fighter pilot. Despite opposition from his superiors, he got into flight training and became a Ju 52 transport pilot with I./JG 51. With this unit he was unofficially trained on the Bf 109, which had to be retroactively legalized. He achieved his first victory in September 1939 and by April 1945 had scored 220 more successes. He was awarded the Knight's Cross with Oak Leaves and Swords. After a previous command of 12./JG 51, he was appointed commander of I./JG 77 in the Crimea in May 1942. He then successfully led this unit for a year in the Mediterranean and Africa. At the end of the war he was in the rank of Oberstleutnant in command of the elite JV 44 armed with Messerschmitt Me 262s. After the war he continued to fly sport planes but was killed on April 28, 1957, during an air show demonstration of extremely slow flight in an LF-1 Zaunkönig. The Bf 109F-4 carried a classic Luftwaffe scheme comprised of RLM 74/75/76. Previous marking was oversprayed in a dark color, probably RLM 70. The white fuselage band identified aircraft fighting in the Mediterranean, but in this case, wingtips were not painted white.



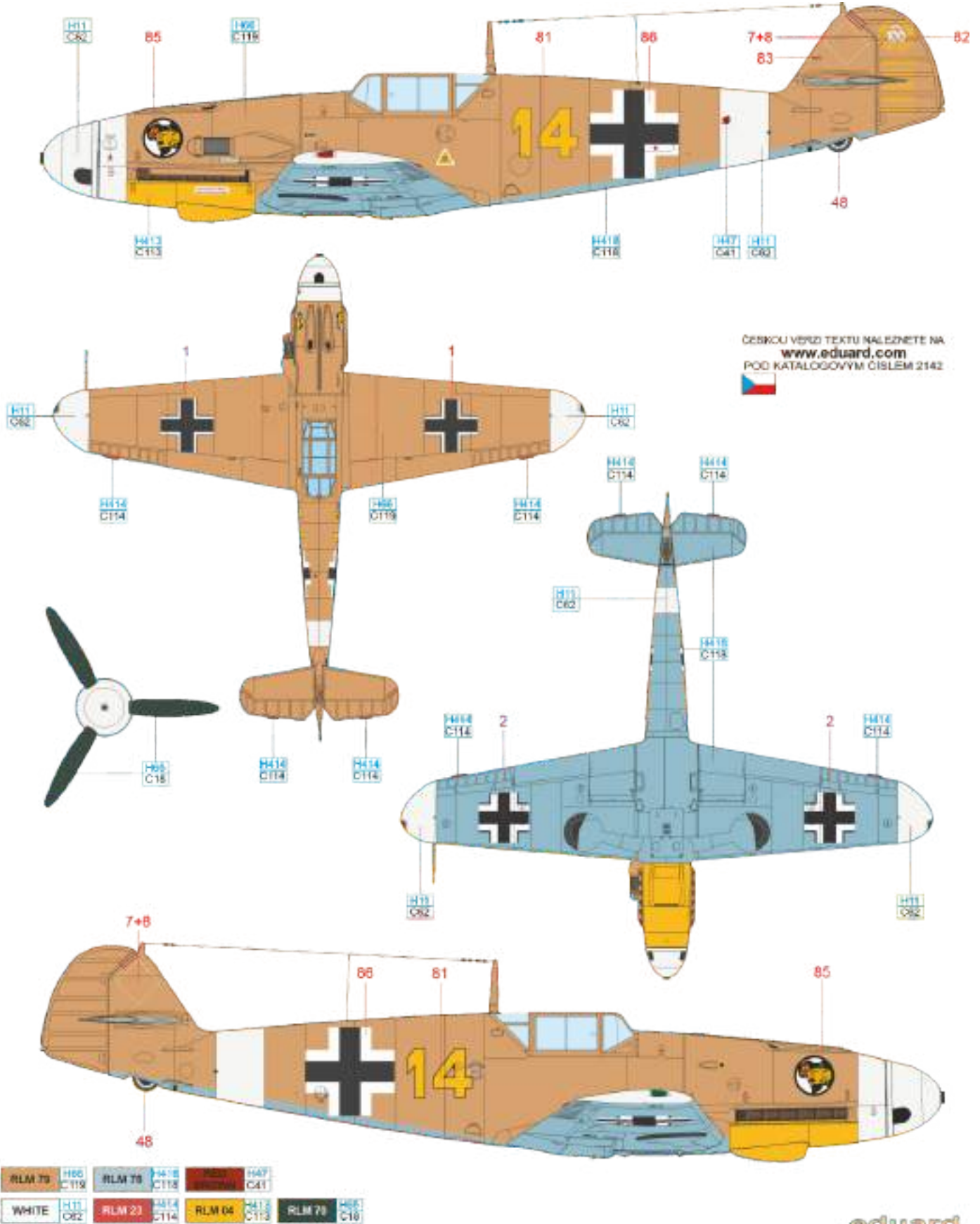
# M Bf 109F-4, Uffz. Hans Döbrich, 6./JG 5, Petsamo, Finland, September 1942

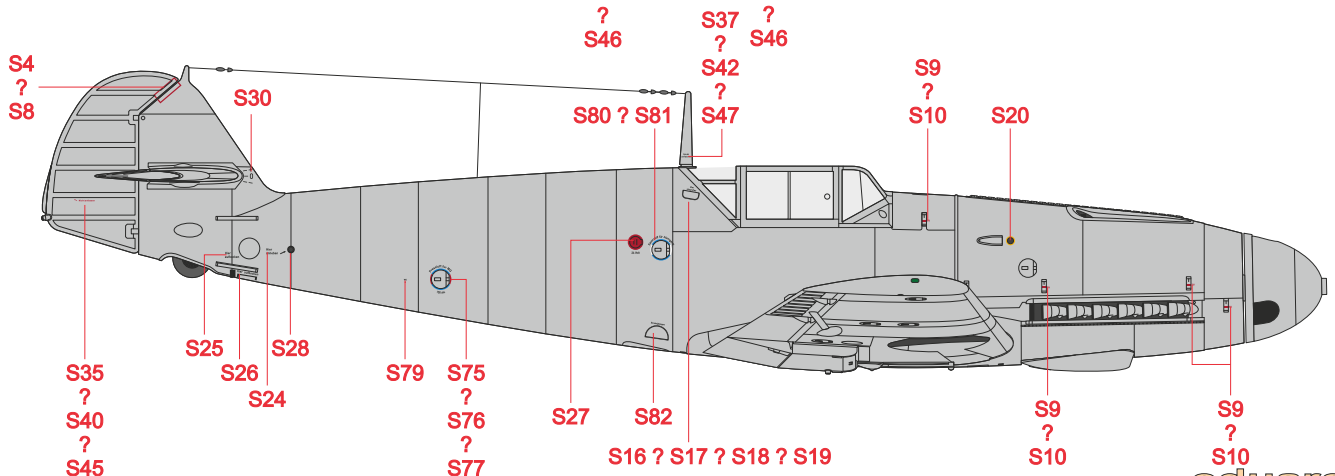
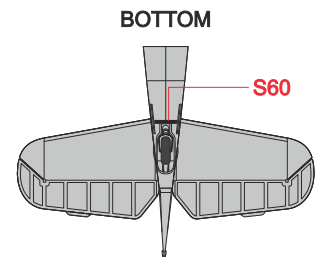
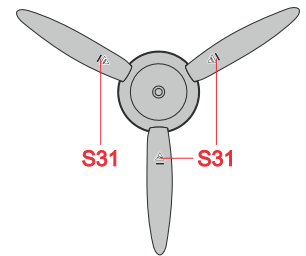
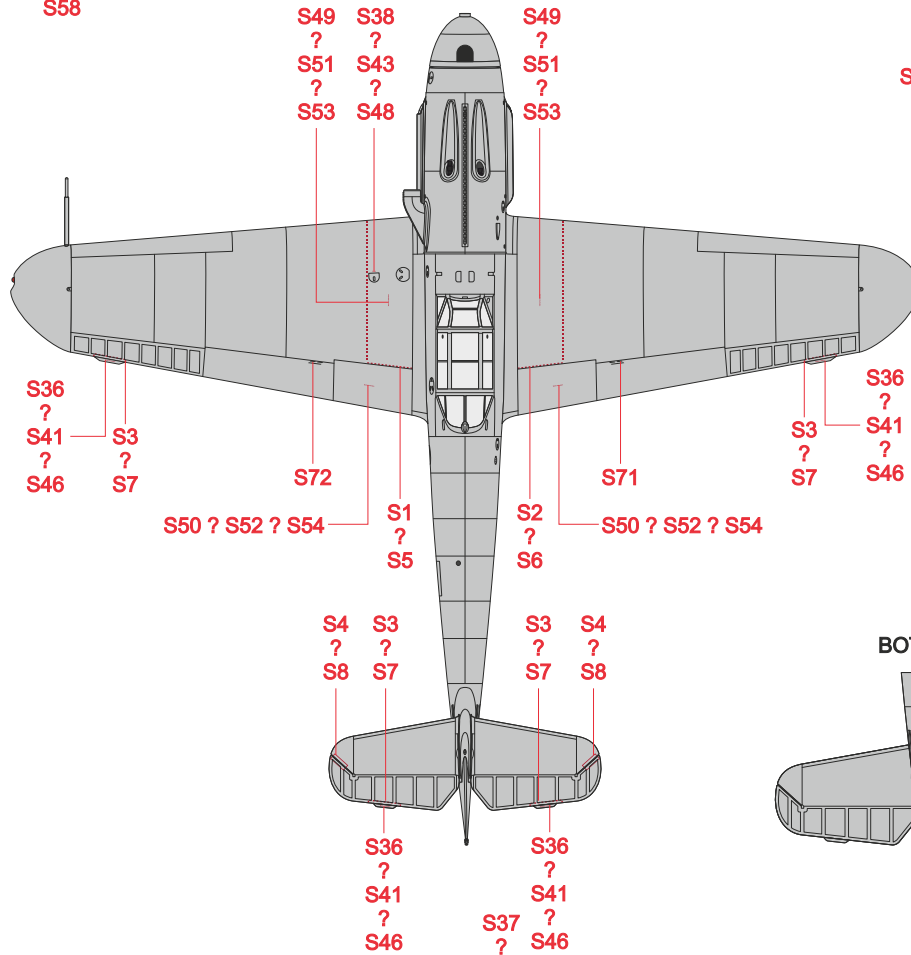
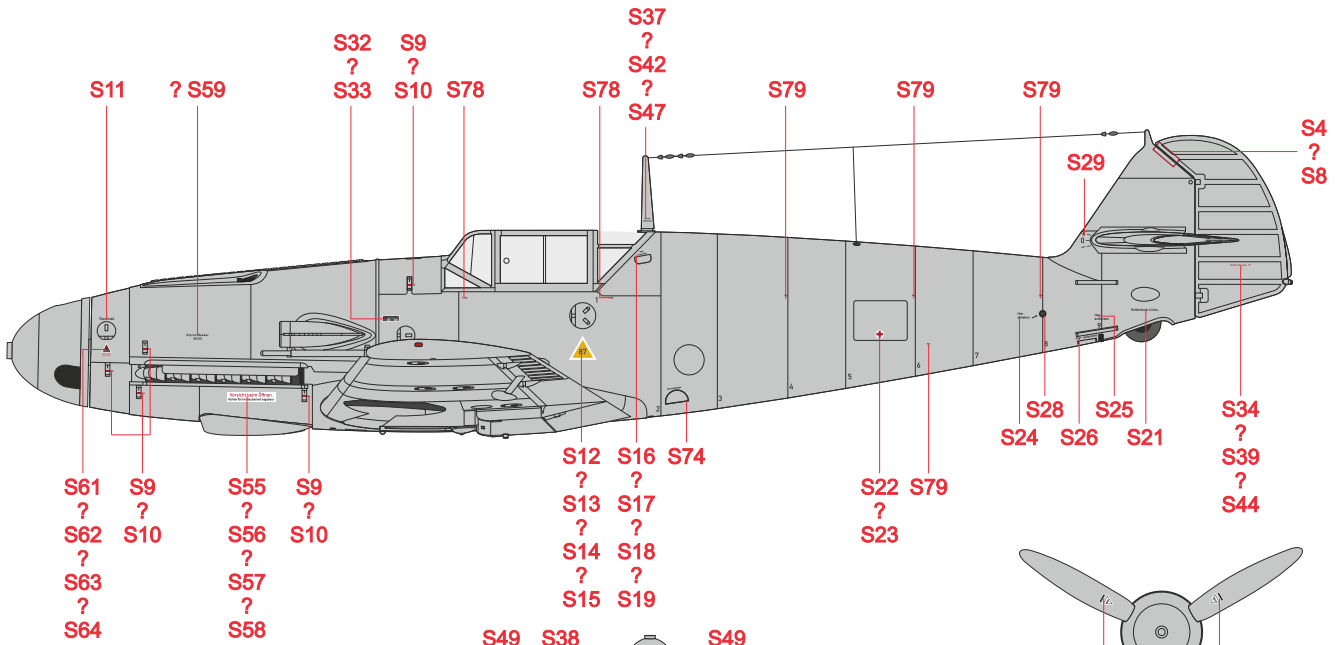
This aircraft was flown by Hans Döbrich, a fighter ace credited with 65 victories. He was downed three times and seriously wounded during the last incident. He never flew a combat sortie again. During the second half of 1942, II./JG 5 was equipped with "Friedrichs" manufactured for service in a tropical environment. The desert camouflage colors consisting of RLM 79 and RLM 78 were applied at the factory. Feldflugpark (Repair Field Unit) in Pori added segments of RLM 74/70 (some sources state RLM 75/71) which helped to camouflage effect over the northern territory. The green shamrock on the cowl was a crest of 6./JG 5.



**N** Bf 109F-4/Trop, WNr. 8673, Hptm. Hans-Joachim Marseille, CO of 3./JG 27, Quotaifiya, Egypt, September 1942

Hans-Joachim "Jochen" Marseille became the most successful German fighter pilot fighting against the Western Allies. He was awarded the Knight's Cross with Oak Leaves, Swords and Diamonds. A master of piloting, shooting and dog fighting, he also showed a respect and grace to his opponents as he tried to save downed enemy airmen in the desert by dropping news of their fate on the other side of the front. Marseille used this plane after his return from Rome and achieved 49 victories with this last of "Friedrichs" he used from August 24, 1942, to September 25, 1942. On September 30, 1942, he flew the Messerschmitt Bf 109G-2/Trop as he led escort mission of the 3. Staffel to cover a squadron of Ju 87 Stukas. On the return leg, a smoke filled the cockpit and Marseille was forced to bail out. Hitting the rudder after the emergency exit of the plane, he lost consciousness, and his parachute did not open. Seconds later, Marseille died from the impact on the ground. After his death, WNr. 8673 was used by 1./SG 2 but was hit by flak and lost southward of El Alamein on October 22, 1942. The aircraft had the upper camouflage color RLM 79 sprayed all over the fuselage sides as a non-standard finish. The lower surfaces were sprayed with RLM 78 and the camouflage was complemented by the markings of the aircraft operating on the Southern front, i.e., white wingtips, white propeller cone and a band on the aft fuselage of the same color. The engine cowling bore the emblem of I. Gruppe JG 27 on both sides.



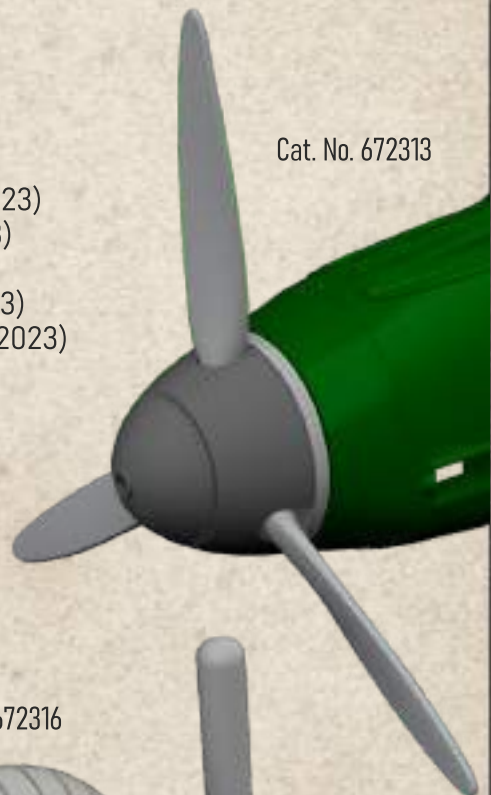


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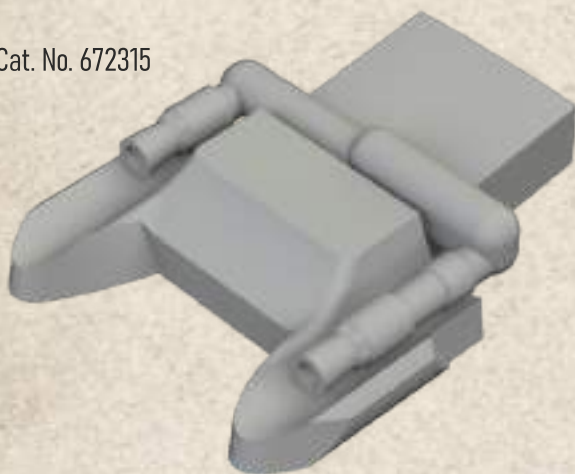
# BF 109F-2 & BF 109F-4

- 672313 Bf 109F propeller early PRINT (Brassin)
- 672314 Bf 109F propeller late PRINT (Brassin)
- 672315 Bf 109F gun barrels PRINT (Brassin)
- 672316 Bf 109F wheels PRINT (Brassin)
- 3DL72018 Bf 109F SPACE (3D Decal Set)
- 672317 Bf 109F undercarriage legs BRONZE (release 07/2023)
- 672318 Bf 109F radio compartment PRINT (release 07/2023)
- 672321 Bf 109F/G external fuel tanks (release 07/2023)
- 672322 Bf 109F wheel bays rounded PRINT (release 07/2023)
- 672323 Bf 109F/G wheels bays angular PRINT (release 07/2023)
- 672324 Bf 109 SC250 bomb (release 07/2023)
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