

# S-199 bubble canopy

eduard

1/48 Scale Plastic Model Kit

**HYBRID**



item No. 948012

**The Avia S-199 became an aircraft that, despite its rather poor performance and flying characteristics, played an important role both in the rebirth of the post-war Czechoslovak Air Force as well as in the defense of the new state of Israel.**

With the end of the World War II, countries occupied or taken over by Nazi Germany regained their freedom. At the same time, they faced the urgent need to rebuild their armed forces including the aviation. For decimated industry and economies, this was no easy task in many countries.

Although post-war Czechoslovakia acquired aircraft the members of the foreign resistance returned home with (both from Eastern and Western front), there were not enough of them. Moreover, the war-impooverished country lacked sufficient funds to purchase the large number of modern fighter aircraft it needed. The estimated cost of one billion Czech crowns was amount equal to the entire financial reserve in gold of the country at that time. Nevertheless, it was necessary to build air regiments and to train new pilots. The intended solution was to use the airframes of German Messerschmitts Bf 109 G and K versions and DB 605 engines, of which Czechoslovakia had quite a large number in various state of condition. Other airframes were purchased from Bulgaria. A total of 21 Avia S-99s were assembled, which in fact were the German Bf 109G-10s apart of some minor technical details. These aircraft undergone army trials, although all but one of them served with the Police Air Units.

Further production of the S-99 was ruined on July 31, 1945, by a massive explosion at the former sugar factory Krásné Březno, where military equipment, ammunition and almost all the DB 605 engines were stored. As there was also a significant number of Jumo 211 and 211F engines available (up to 4,270 units) in Czechoslovakia, the decision was made to use them instead of now unavailable DB 605 and merge them with the Bf 109G/K airframes. This was a stop-gap solution only, as the Jumo 211 engine was not ideal for powering fighter aircraft. Even less suitable was the Jumo VS-11 propeller designed for them. It had wooden propeller blades that were heavy, plus they were quite wide, which suited bombers, but not fighter aircraft. They generated massive torque, which was the problem especially during take-offs. The aircraft had high tendency to change the direction, which had to be negotiated by strong pilot's controls input. This led to many dangerous situations and crashes. Because of its handling, the S-199 earned the nickname Mezek, which in the Czech language means Mule and also corresponds with the original name of the aircraft (Messerschmitt).

In spite of all the problems with the quality of the war booty equipment, the unsuitability of the Jumo 211 engine and its propeller for a fighter aircraft, and, unfortunately, also in spite of sometimes rather poor quality of the craftsmanship of the post-war Czechoslovak aviation industry during the production and servicing of these aircraft, the S-199s gradually equipped all the fighter units of the Czechoslovak Air Force between 1948 to 1950 years. Thanks to them, the continuity of combat training, including the education of new fighter pilots was ensured.

#### Lacking desperately

The new fighter aircraft was offering flight performances that were far from the top of the contemporary machinery at the time of its creation. It

lagged behind the best piston-engined aircraft in top speed by about 110 to 124 mph (180 to 200 km/h). This was down to the engine, which, even in comparison with the least powerful version of the DB 605, lacked some 107 hp (80 kW), but when compared to the DB 605AM version it had up to 426 hp (317 kW) power deficit, and compared to the top piston machines of its time the deficit was up to 1140 hp (850 kW!) No wonder that S-199 could not compete with modern fighters in terms of flight performance. However, it was fully aerobatic aircraft, so the air combat training and also gunnery training were possible. The armament consisted of either two or four MG 131 machine guns of 13-mm caliber (two each in the fuselage and wing), or a pair of MG 131 fuselage guns and two MG 151/20 cannons in the under the wing housings. Bombing training could also be carried thanks to the 4 × ETC 50 bomb racks, which were made available for S-199s.

A total of 510 single-seat and 47 two-seat converted Messerschmitts were ordered at the end of 1947. However, the exact number actually produced is unclear and is estimated at between 450 and 500 of S-199s, while 82 of CS-199s were to be produced. Gradual modifications were made during production. The single-seat aircraft of the first production runs at the Avia and Aero factories, where the S-199 were also built, kept the standard oil radiator under the nose, but this was replaced by a heat exchanger on later machines. There was also replacement of the original side-opening "Erla" canopy with a new convex sliding one, a change in the wheel angle they were attached to the main landing legs and some minor changes in comparison with the original Bf 109.

#### This kit: Avia S-199 bubble canopy

The first S-199s produced differed little from the Bf 109G/K design save for the engine and the changes to the cowl. These included narrow longitudinal extensions to the original oval bulges above the machine guns due to the bulkier engine mount and the air intake to the carburetor moved from port to starboard side. The front of the fuselage was also modified to better match the smaller diameter spinner. However, it was not long before changes began to take place. The most visible were replacement of the standard oil cooler by heat exchanger under the cockpit floor and change of the canopy from the original side-opening "Erla Haube" to semi-bubble rear sliding one. The latter improved the view from the cockpit and increased the space in the pilot's head area as well. This design was, by the way, a takeover of the German development. Also, the angle of the wheels was changed in relation to the main landing gear legs. Originally, the wheels were almost parallel with the landing gear legs in front view. This position was disadvantageous for taxiing on concrete surfaces, so the position was changed to nearly vertical position.

The armament also changed. Initially, it consisted of only two MG 131 machine guns of 13 mm caliber above the engine, later some aircraft received another pair of these, mounted in the wing. Finally, MG 151/20 20 mm caliber cannons mounted in cases were installed under the wing instead of the wing machine guns.

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. SYMBOLY

\* INSTRUKTION SINNBILDEN

\* SYMBOLES \* 記号の説明

OPTIONAL  
VOLBABEND  
OHNOUTSAND  
BROUSITOPEN HOLE  
VYVRTAT OTVORSYMETRICAL ASSEMBLY  
SYMETRICKÁ MONTÁŽREMOVE  
ODRÍZNOUTREVERSE 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



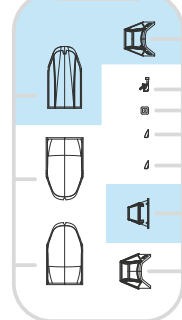
PIÈCES



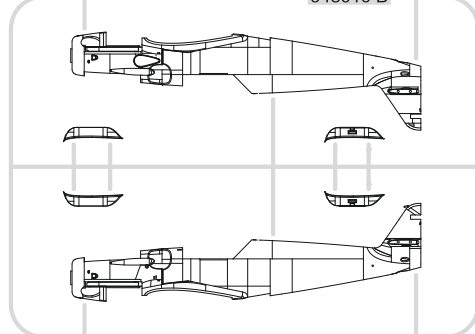
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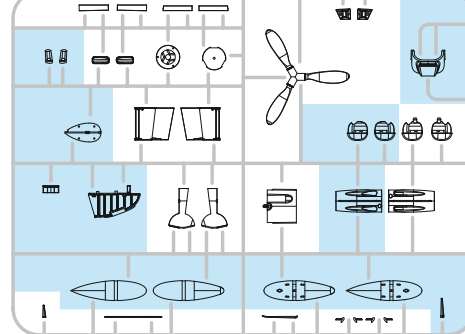


B&gt;

PLASTIC PARTS  
948010 B

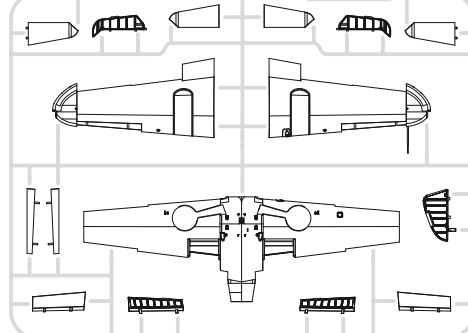
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948010 E

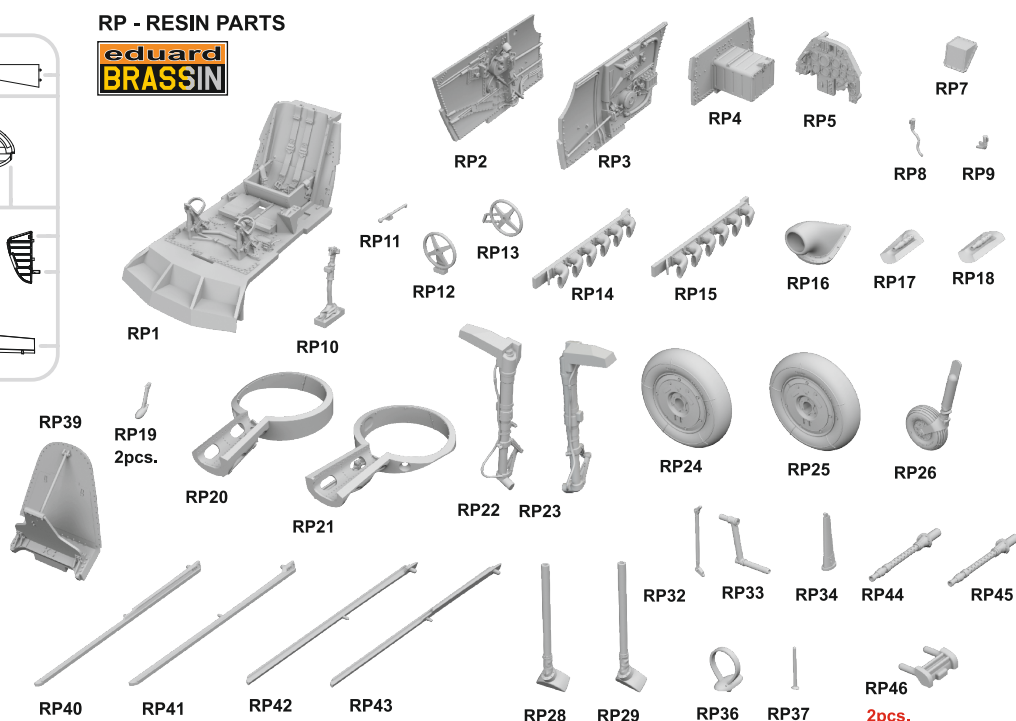
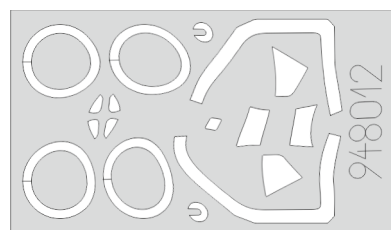


D&gt;

948010 D



RP - RESIN PARTS

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MASK

-Parts not for use. -Teile werden nicht verwendet. -Pièces à ne pas utiliser. -Tyto díly nepoužívejte při stavbě. - 使用しない部品

COLOURS



BARVY



FARBEN



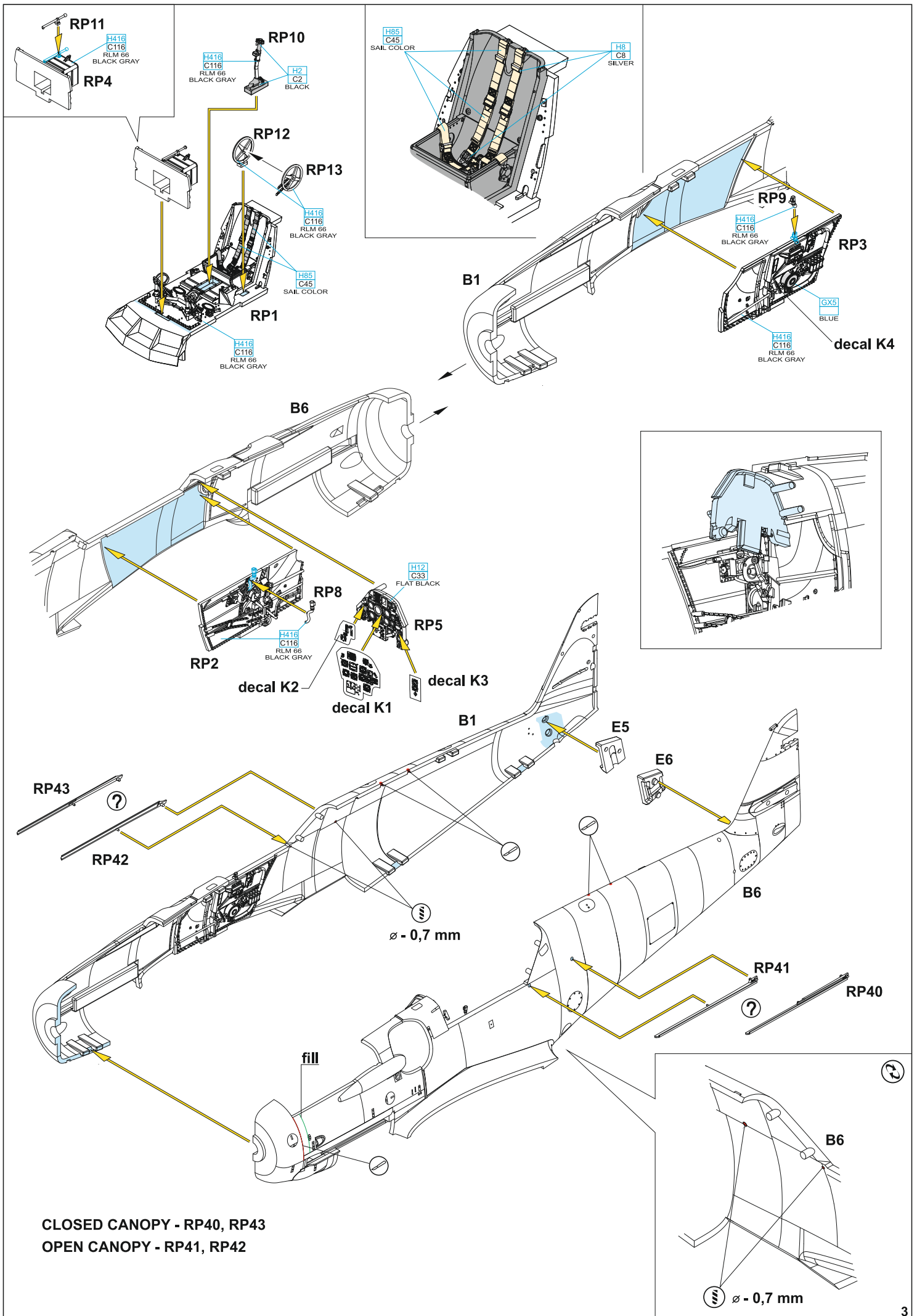
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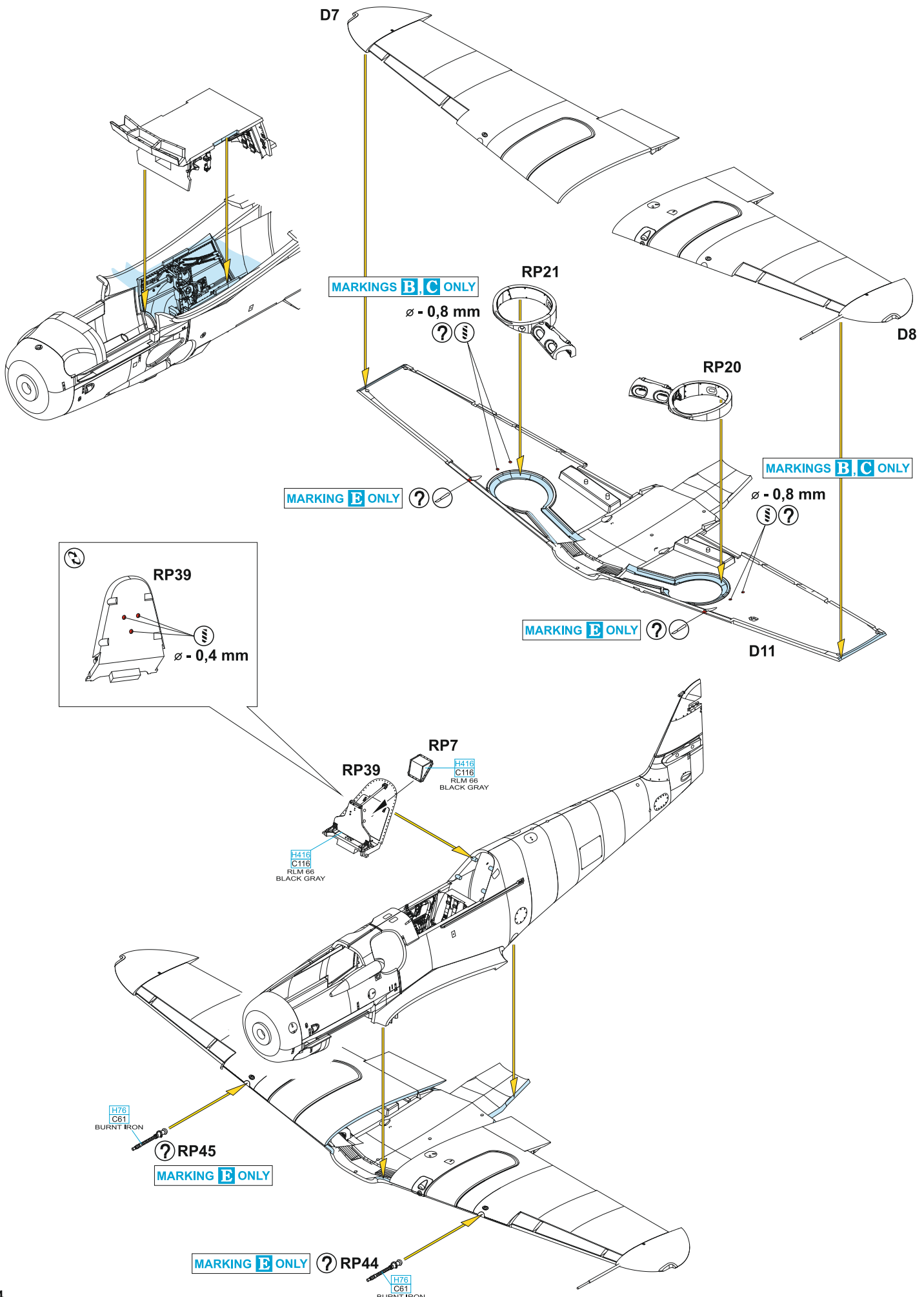


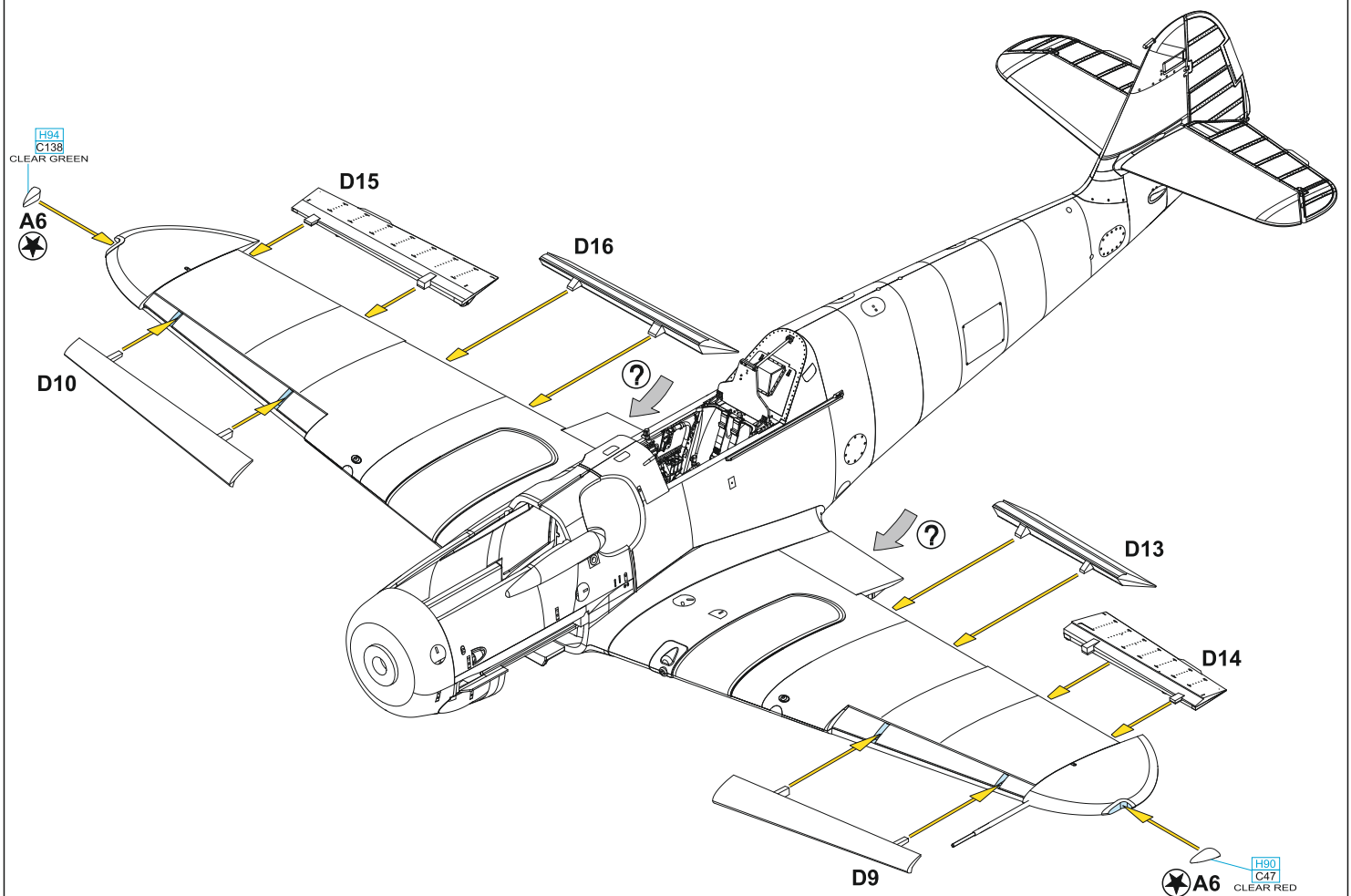
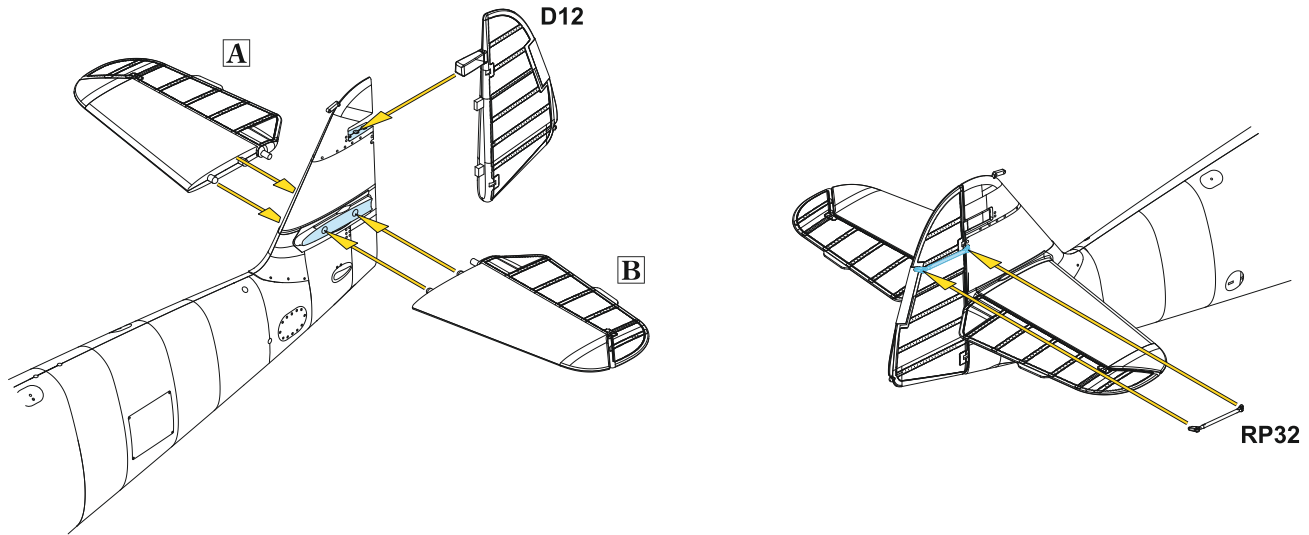
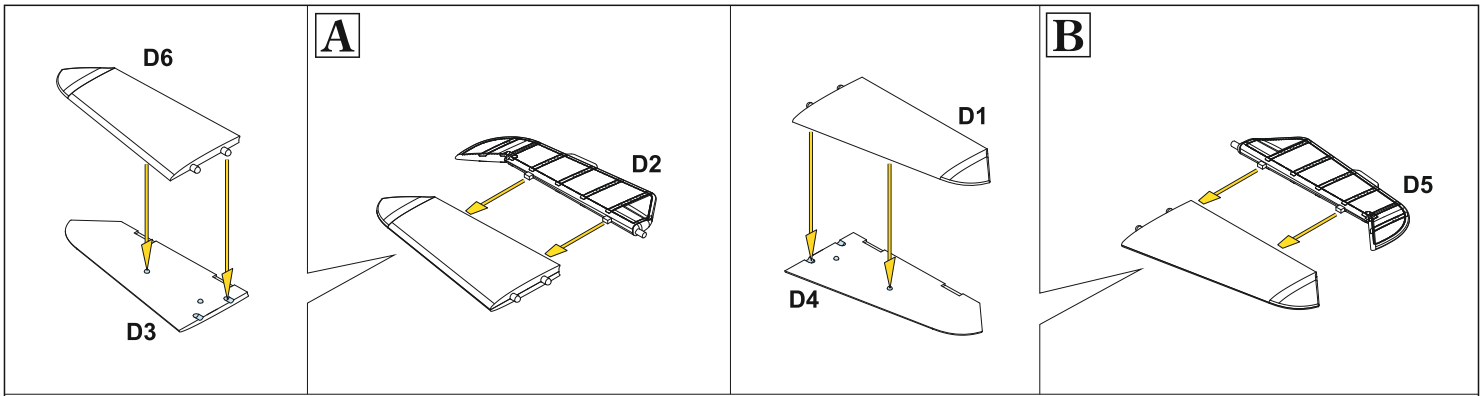
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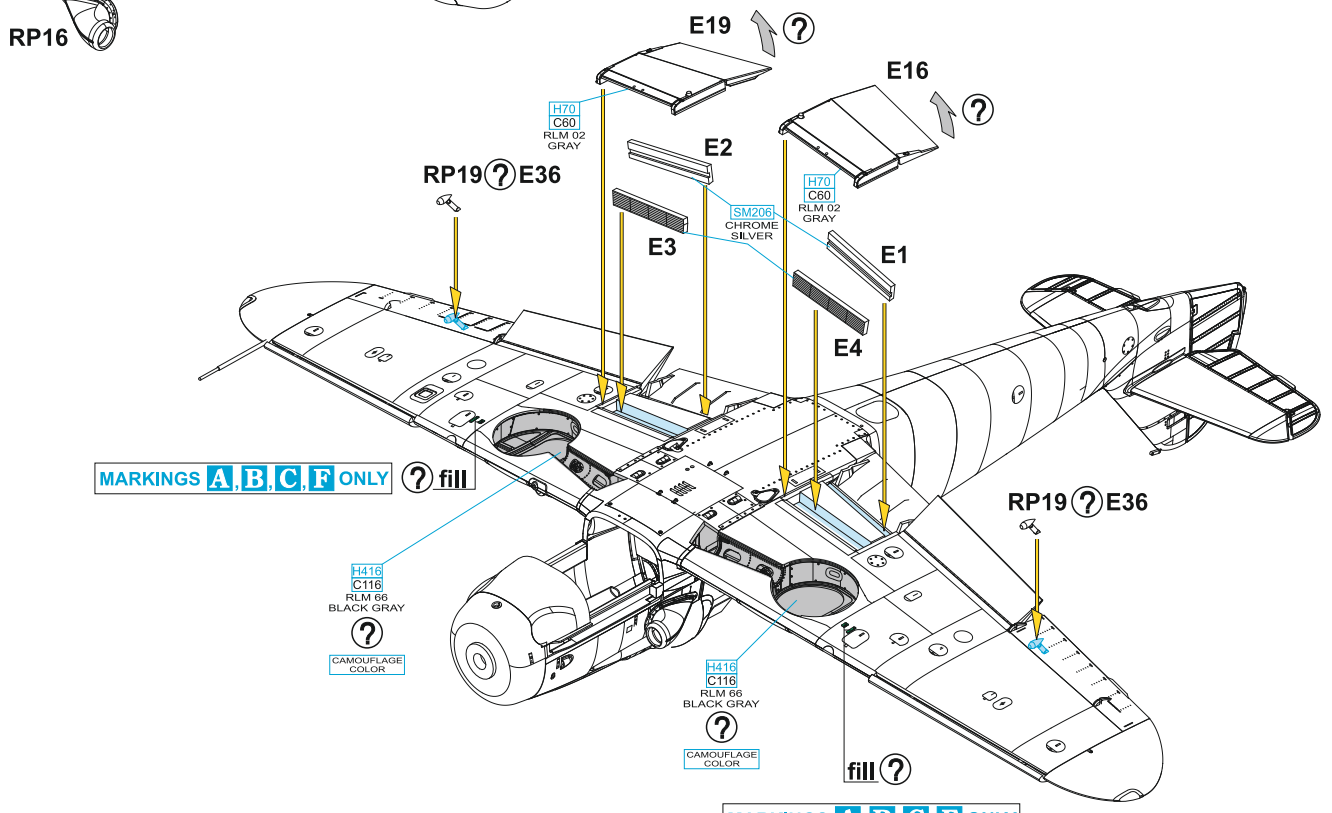
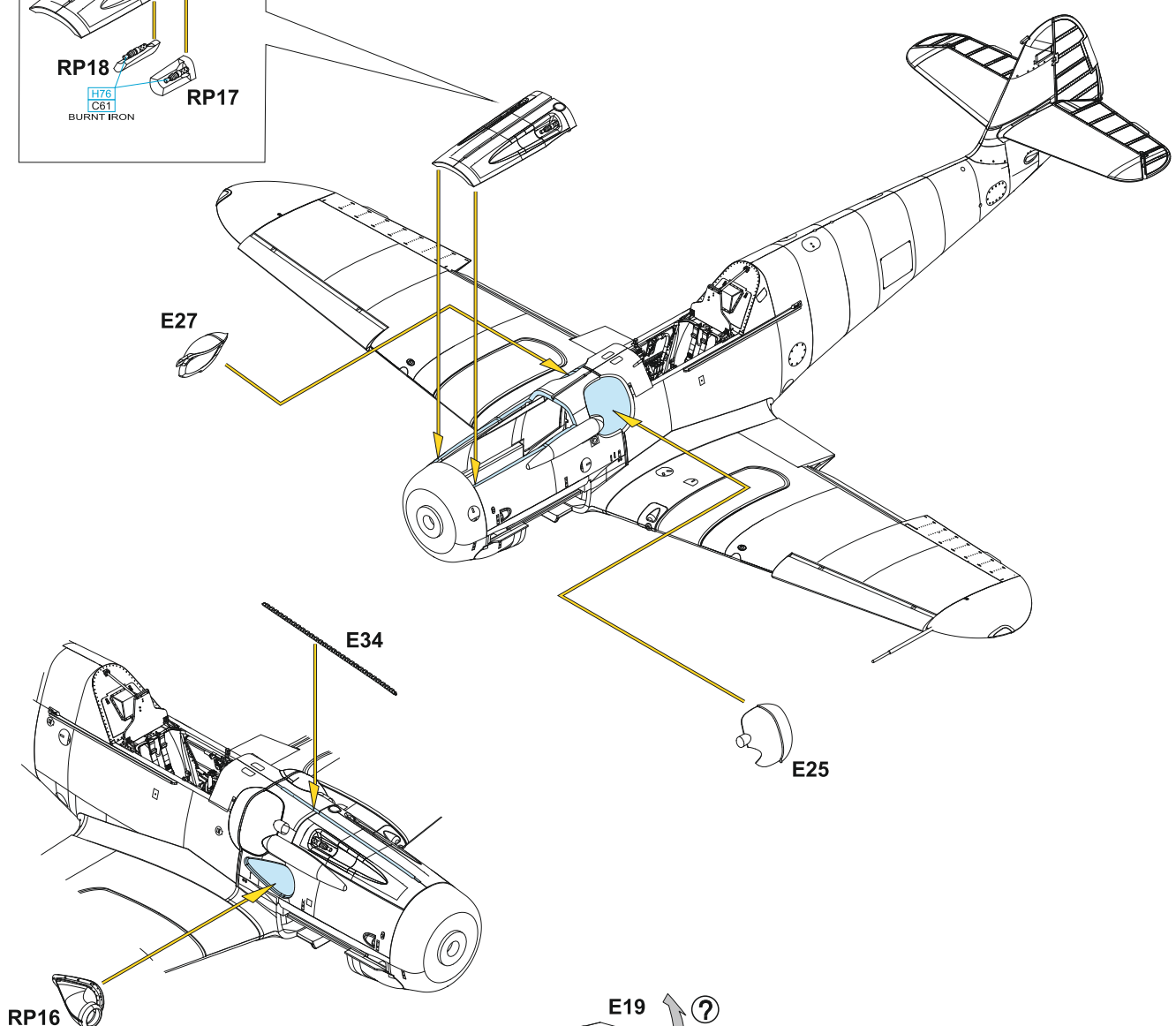
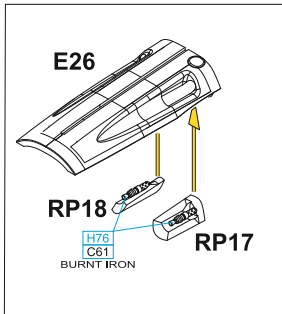
GSI Creos (GUNZE)		
AQUEOUS	Mr.COLOR	
H1	C1	WHITE
H2	C2	BLACK
H3	C3	RED
H5	C5	BLUE
H12	C33	FLAT BLACK
H25	C34	SKY BLUE
H43	C100	WINE RED
H69	C37	DARK GRAY
H70	C60	GRAY
H76	C61	BURNT IRON
H77	C137	TIRE BLACK
H85	C45	SAIL COLOR

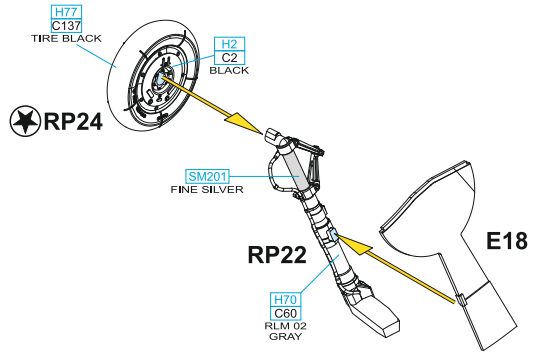
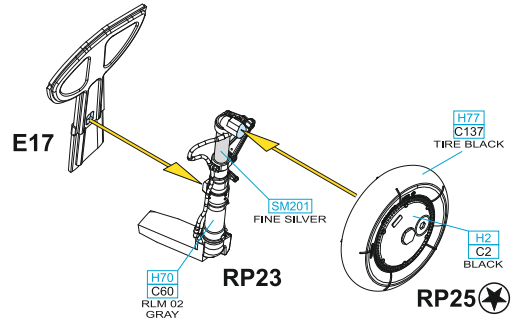
GSI Creos (GUNZE)		
AQUEOUS	Mr.COLOR	
H90	C47	CLEAR RED
H94	C138	CLEAR GREEN
H324	C324	LIGHT GRAY
H413	C113	YELLOW
H416	C116	BLACK GRAY
H421	C121	RLM81 BROWN VIOLET
H422	C122	LIGHT GREEN
Mr.COLOR SUPER METALLIC		
SM201		SUPER FINE SILVER
SM206		SUPER CHROME SILVER
Mr.COLOR GX		
GX5		SUSIE BLUE



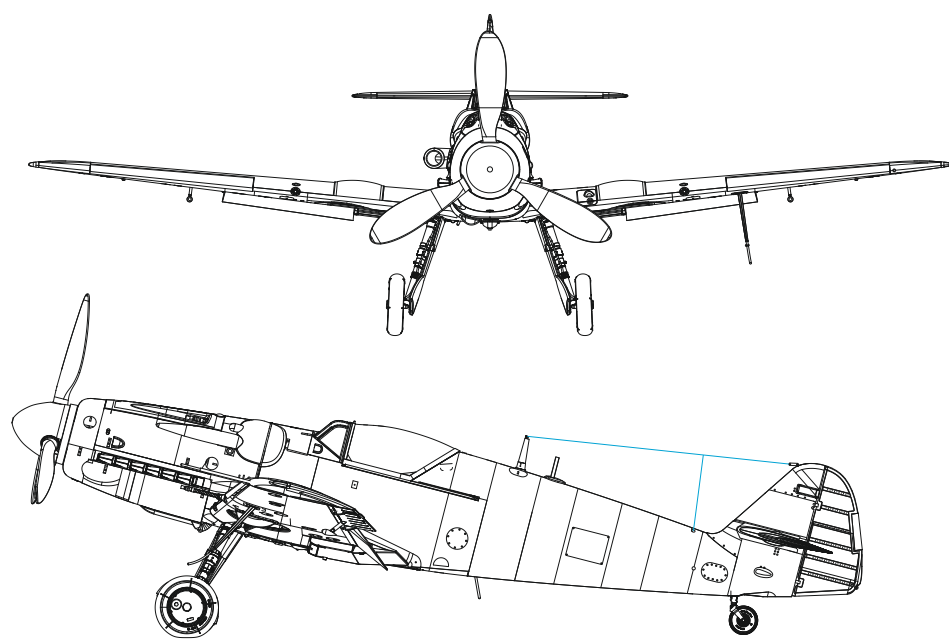
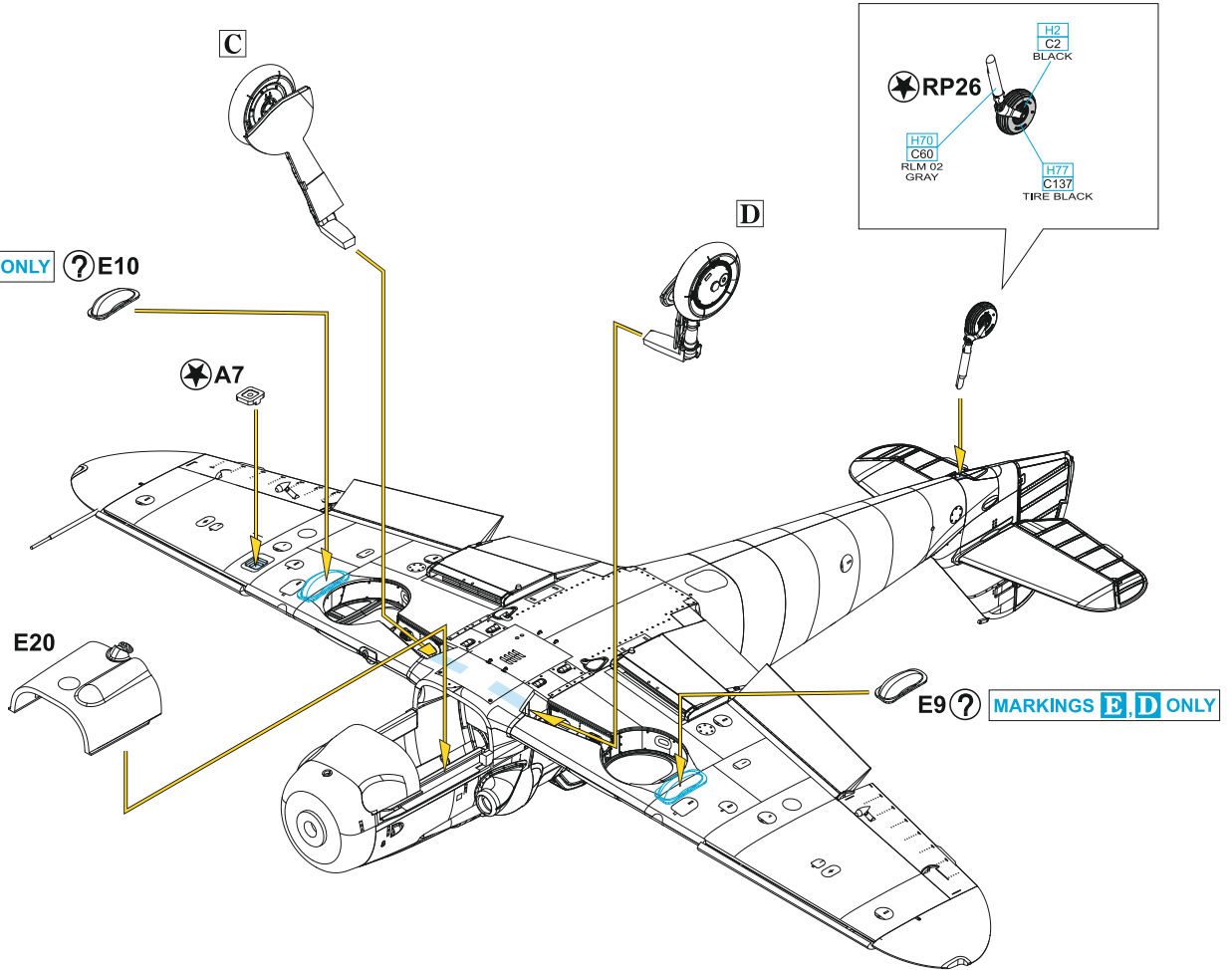




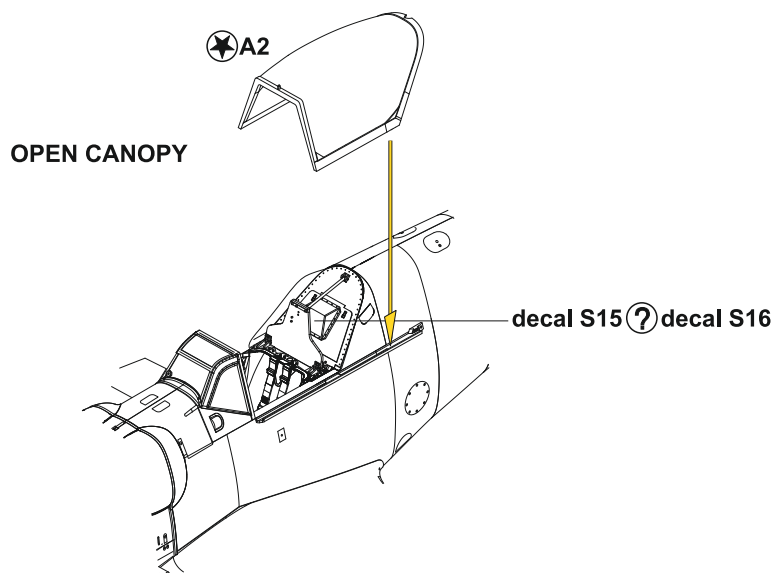
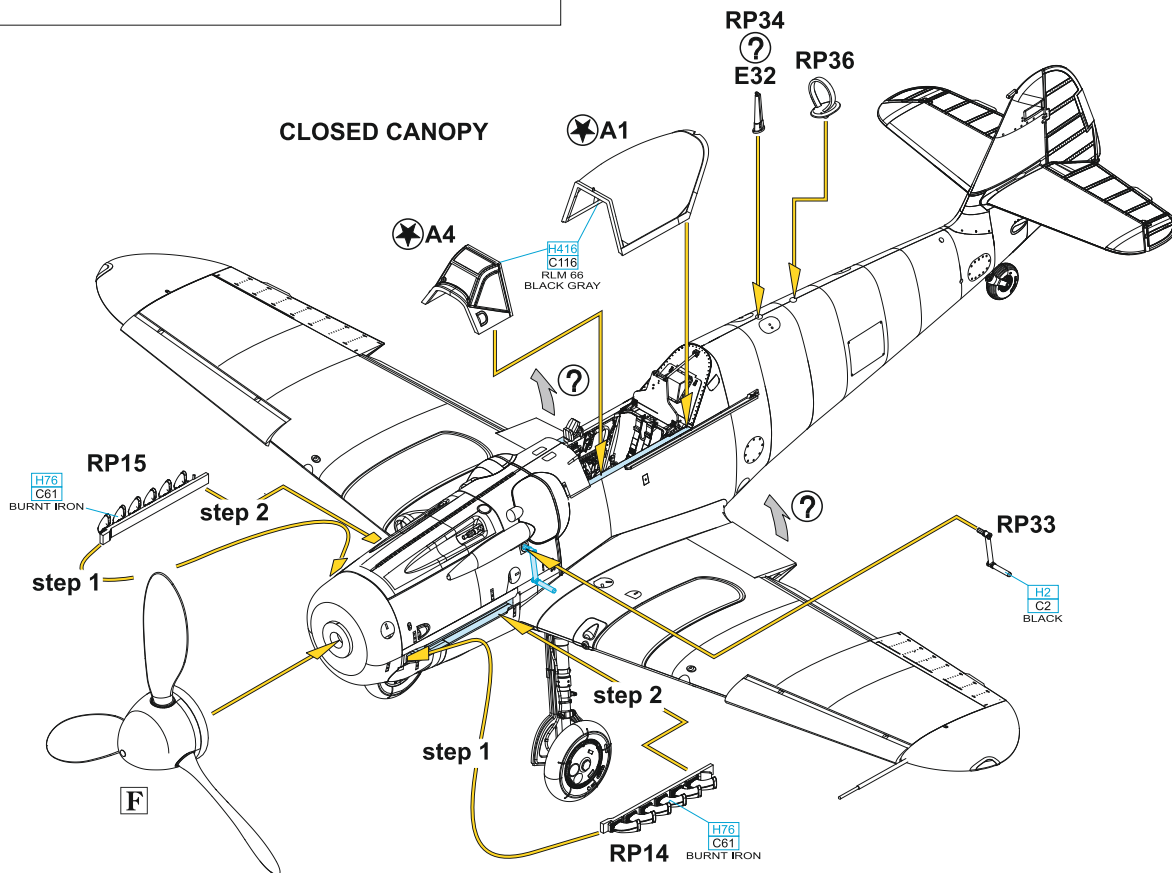
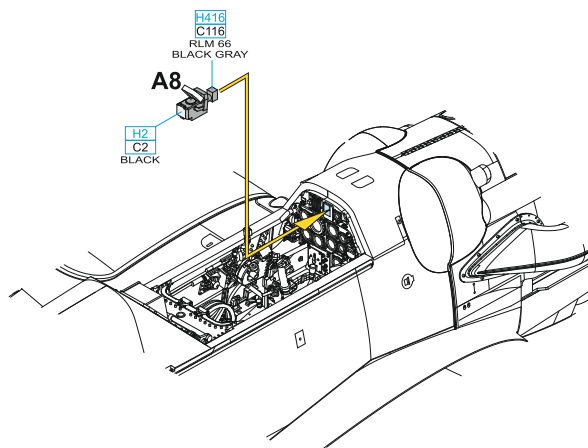
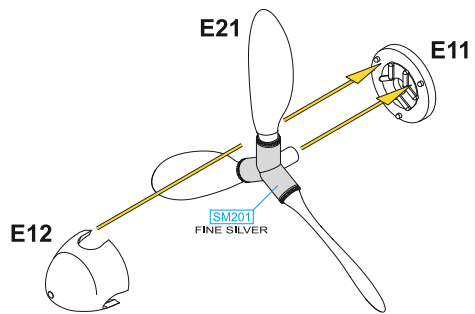


**C****D**

MARKINGS **E, D** ONLY ? E10



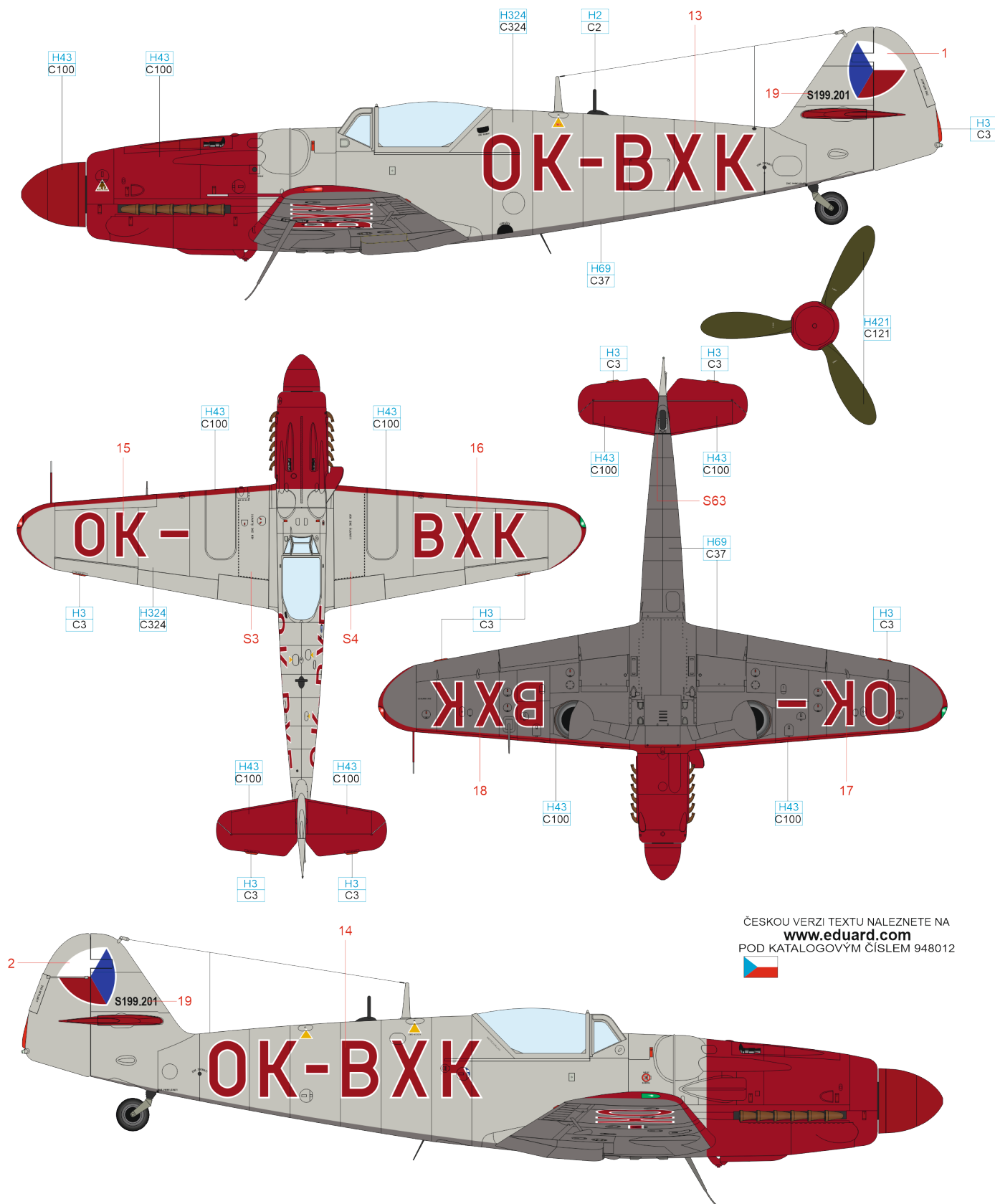
**F**





# A Police Air Patrol, Brno/Olomouc, Czechoslovakia, 1949

The Police Air Patrol of the Security Air Force (until mid-December 1947 the National Security Air Force) used this aircraft at Brno and Olomouc airports. At the time of its service with the Police Air Patrol, it bore the standard livery of this air force, i.e., light grey paint on the upper surfaces and dark grey on the lower surfaces, complemented by scarlet paint on the nose and leading edge of the wing. Also, the horizontal tail surfaces were the same color. The reconstruction of the color scheme was based on photographs of similar aircraft as no photographs of OK-BXK have survived. The serial number is still unknown, but could probably be 201, 410 or in the range 414 to 416. There is full range of the digits for creating any number.



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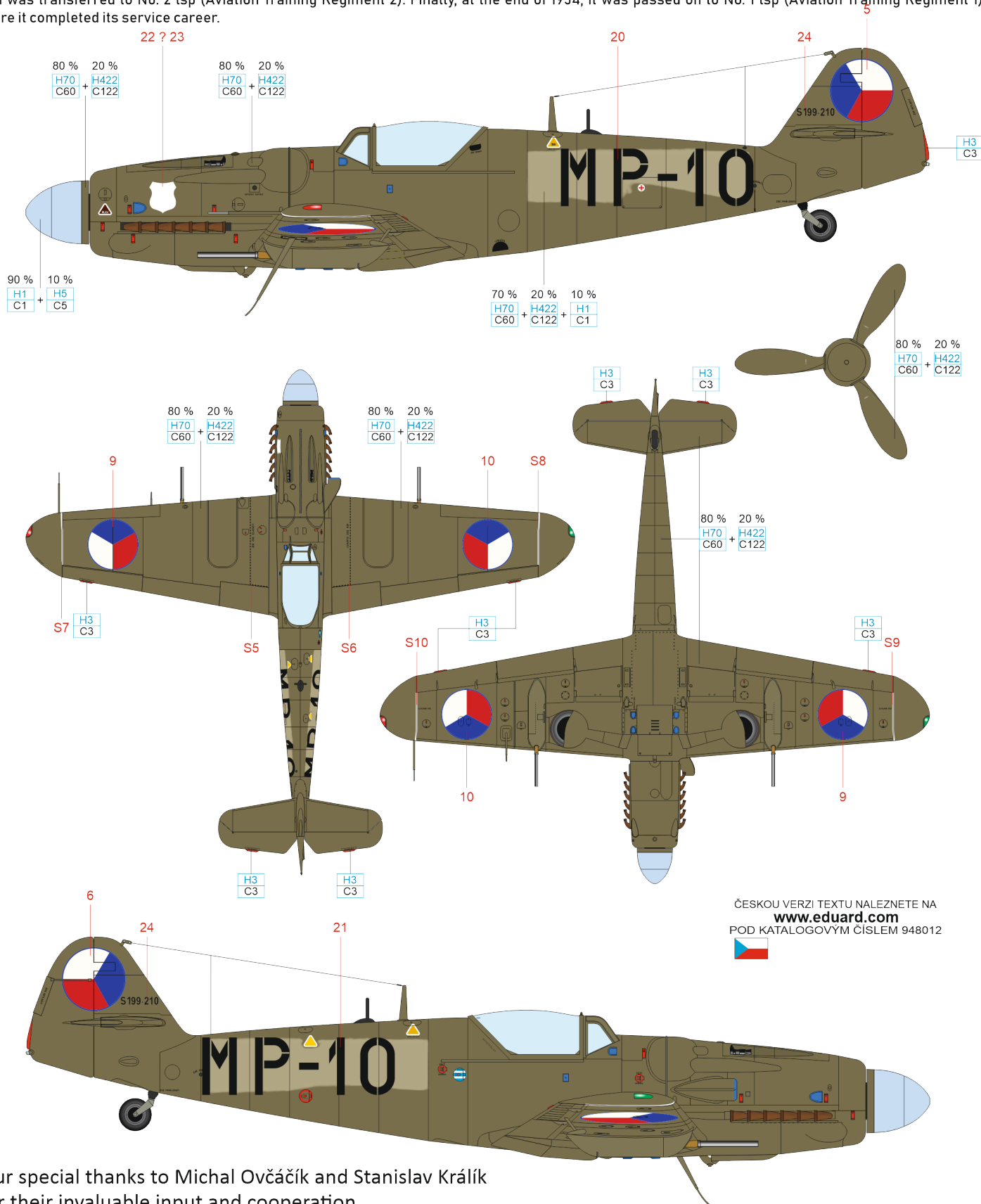
Our special thanks to Michal Ovčáčík  
 for his invaluable input and cooperation.

DARK GRAY H69 C37    LIGHT GRAY H324 C324    GREEN H421 C121    BLACK H2 C2    RED H43 C100    RED H3 C3

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## B S-199.210, Aviation Regiment 5, Plzeň-Bory, Czechoslovakia, 1950

Nose-art was rare on Czechoslovak Air Force aircraft in the 1950's and 1960's. Rigid discipline and regulations did not favor such activities, but from time to time commanders apparently turned a blind eye to a certain level of expressionism. Something like this may have happened in 1949 or 1950 at LP 5 (Aviation Regiment 5). A carefully crafted heraldic silhouette in white appeared on the aircraft. We will probably never know which emblem was to be subsequently added to it, because before the painting could be finished, the aircraft suffered an emergency landing. During subsequent repairs, the aircraft either received a new engine cowling or the in-progress nose-art was deleted. One likely possibility of the original intent might be the emblem of the local football club Baník Líně. As a result, this aircraft can be modeled in both states, i.e., with the white coat of arms only, or in the form it probably would have taken, if higher powers had not intervened. We don't know if the emblem would have been painted on the starboard side as well, since only the port side was photographed. However, decals are provided for either version. This aircraft was subsequently used by training units. It was handed over by LP 5 (Aviation Regiment No. 5) on July 8, 1950 to the Aviation Training School. From April 1953, it served with No. 4 lsp (Aviation Training Regiment 4) and then was transferred to No. 2 lsp (Aviation Training Regiment 2). Finally, at the end of 1954, it was passed on to No. 1 lsp (Aviation Training Regiment 1) where it completed its service career.



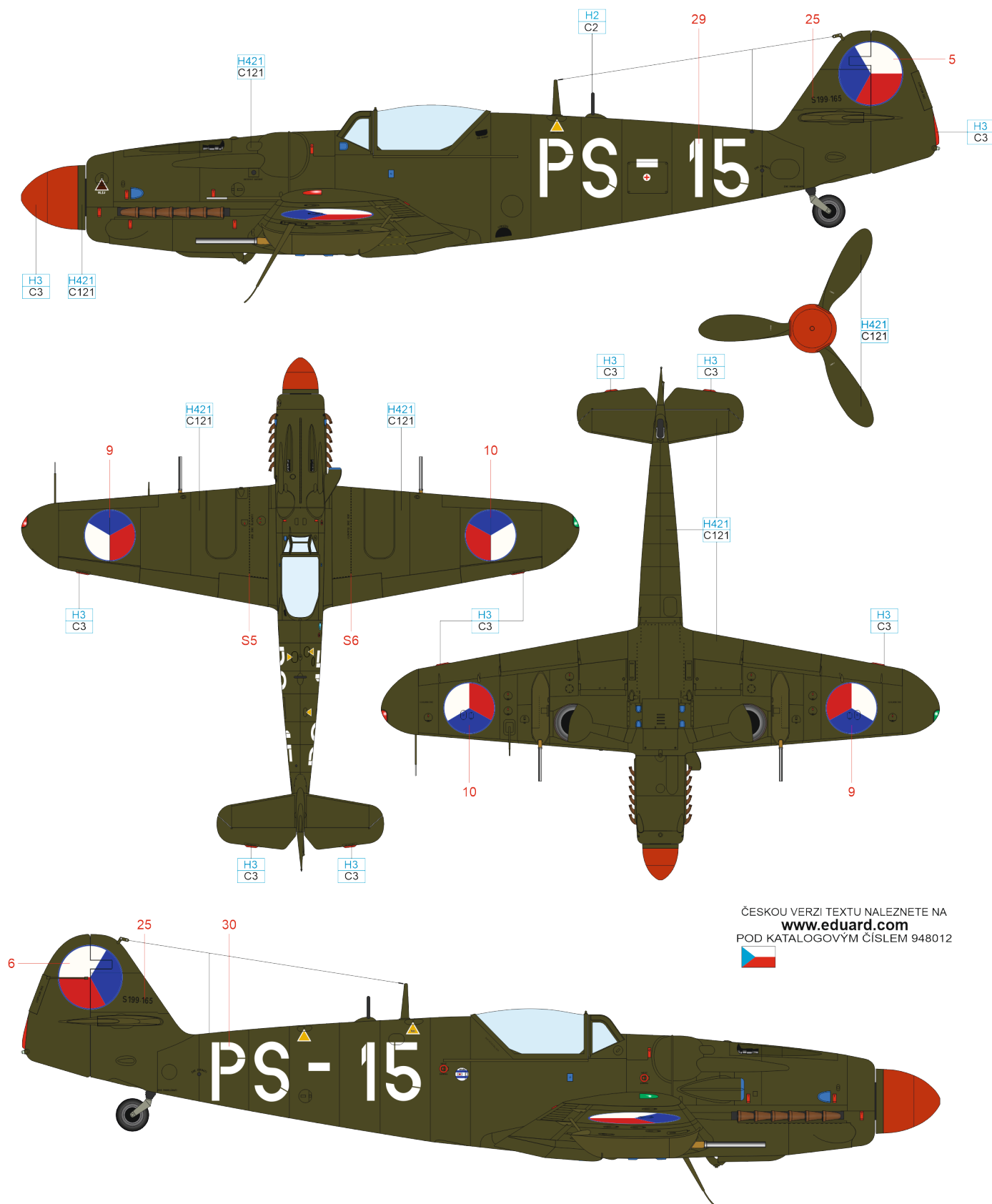
Our special thanks to Michal Ovčáčík and Stanislav Králík for their invaluable input and cooperation.

GRAY H70 C60 LIGHT GREEN H422 C122 WHITE H1 C1 BLUE H5 C5 RED H3 C3

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**C** S-199.165, Lt. Vladislav Petráš, 1 Squadron, 18 Aviation Regiment, Plzeň-Skvrňany, Czechoslovakia, July 1952

This aircraft was test-flown at the end of October 1948 by the factory pilot Petr Široký and on November 23 it was flown to the designated Pilsen Aviation Regiment 4. On March 19, 1950, the aircraft was damaged, subsequently repaired and reassigned to its unit in mid-July of the same year. From April 1952 it was used by the 1 Squadron of the 18 Aviation Regiment at the Plzeň-Skvrňany airfield. On July 23, 1952, this Avia, codenamed PS-15, was flown by Lt. Vladislav Petráš who was performing a training flight. During it, a technical malfunction occurred, and the pilot had to make an emergency belly-landing near Trhové Dušníky, Příbram district. In such a landing, the aircraft suffered only minor damage, especially to the propeller blades and was subsequently repaired.



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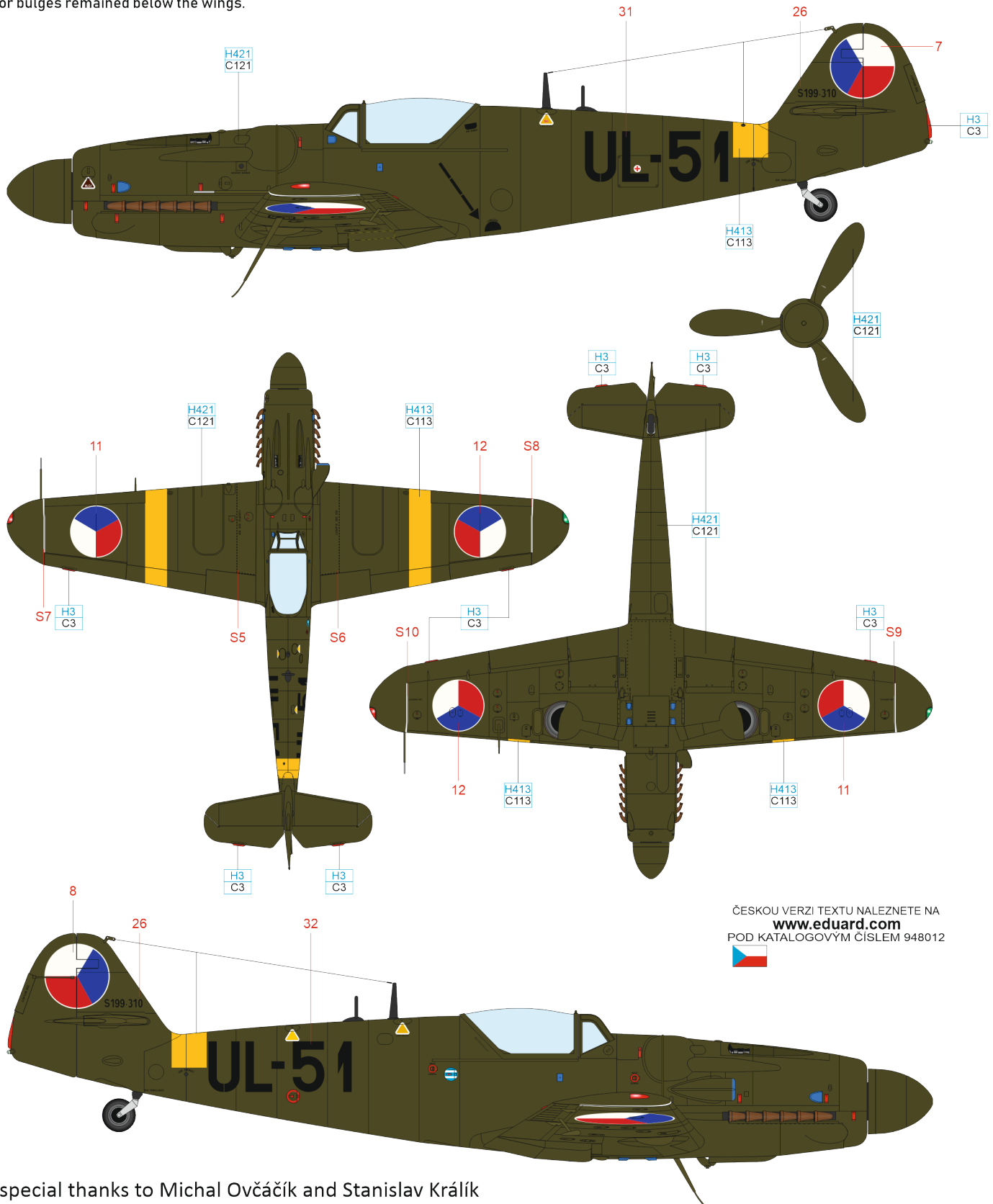
Our special thanks to Michal Ovčáčík for his invaluable input and cooperation.

GREEN H421 C121 BLACK H2 C2 RED H3 C3

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# D S-199.310, PFC Josef Mucha, Aviation School Regiment 5, Zvolen, Sliáč AB, Czechoslovakia, August 1952

This "Mezek" was assigned to Aviation Regiment 7 on August 4, 1948 and flew first with the Staff Flight coded JP-1. Later, it was assigned to No. 3 Squadron, and its code was changed to KT-3. On March 9, 1949, it was damaged during an emergency landing near Boskovice and was sent in for factory repairs. Staff Captain Truhlář conducted an acceptance flight on July 14, 1949, in Kunovice and on August 17, 1950, the aircraft was transferred from Aviation Regiment 1 to the Aviation School. Later, after repairs at Avia, it was assigned to Aviation School Regiment 5, where it received the code UL-51. On August 26, 1952, a take-off was aborted by PFC Josef Mucha, causing damage. No further records are available. This aircraft is listed among the ones delivered to Israel, although the records of its service in Czechoslovakia contradict this. The same can be said for S-199s Nos. 302, 307 and 311. Of the five "Mezek" aircraft produced by Aero and delivered to Israel as part of the second batch of fifteen aircraft (ten being delivered by Avia), only the case of No. 287 is certain. As part of its service with the school regiment, aircraft 310 was given yellow markings, indicating its function as a trainer. These consisted of a band on the spine at the rear fuselage and stripes on the upper sides of both wings. The wing stripes wrapped around the leading edge before terminating behind it on the lower surface. Interestingly, although the aircraft lacked the wing-mounted machine guns, at least in available photographs, the spent cartridge collector bulges remained below the wings.



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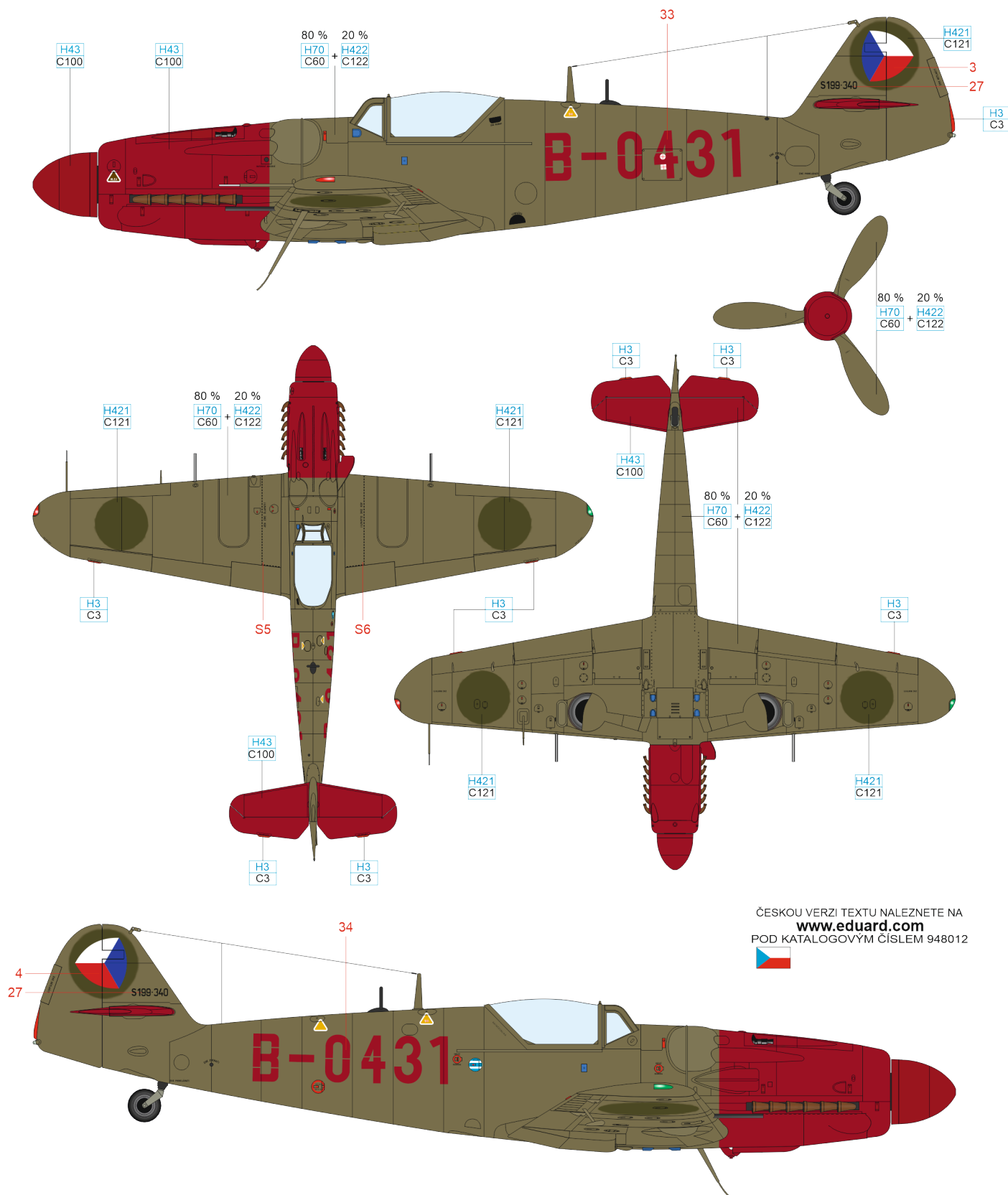
Our special thanks to Michal Ovčáčík and Stanislav Králík for their invaluable input and cooperation.

GREEN H421 C121 YELLOW H413 C113 RED H3 C3

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**E** S-199.340, Lt. František Kratochvíla, No. 3 Squadron, 51 Aviation Regiment, Mladá, Czechoslovakia, July 1952

Not much is known about the early service of this aircraft. It was manufactured in the summer of 1948. The aircraft underwent general overhaul in Kunovice from June 5 to November 20, 1950 and served with the Police Air Patrol service briefly (this aviation arm of the Police was disbanded on December 23, 1950). In May 1952, it was assigned to Aviation Regiment 51, where it was first assigned to No. 4 Squadron and then served, after reorganization of the regiment, with No. 3 Squadron, which retained the original Police code of its aircraft (numbers B-0311 and higher). On July 30, 1952, the aircraft made an emergency landing in Zvolen while being flown by Lt. František Kratochvíla. This aircraft was one of a number that retained their simplified Police markings, including the red nose, horizontal stabilizer and elevator. The army roundels on the wings were overpainted in a darker colour than the camouflage coat. The same color was used to adapt the insignia on the rudder from circular to triangles with curved edges. It is not known what specific color was used, but it may have been a darker shade of green used later on the S-199.



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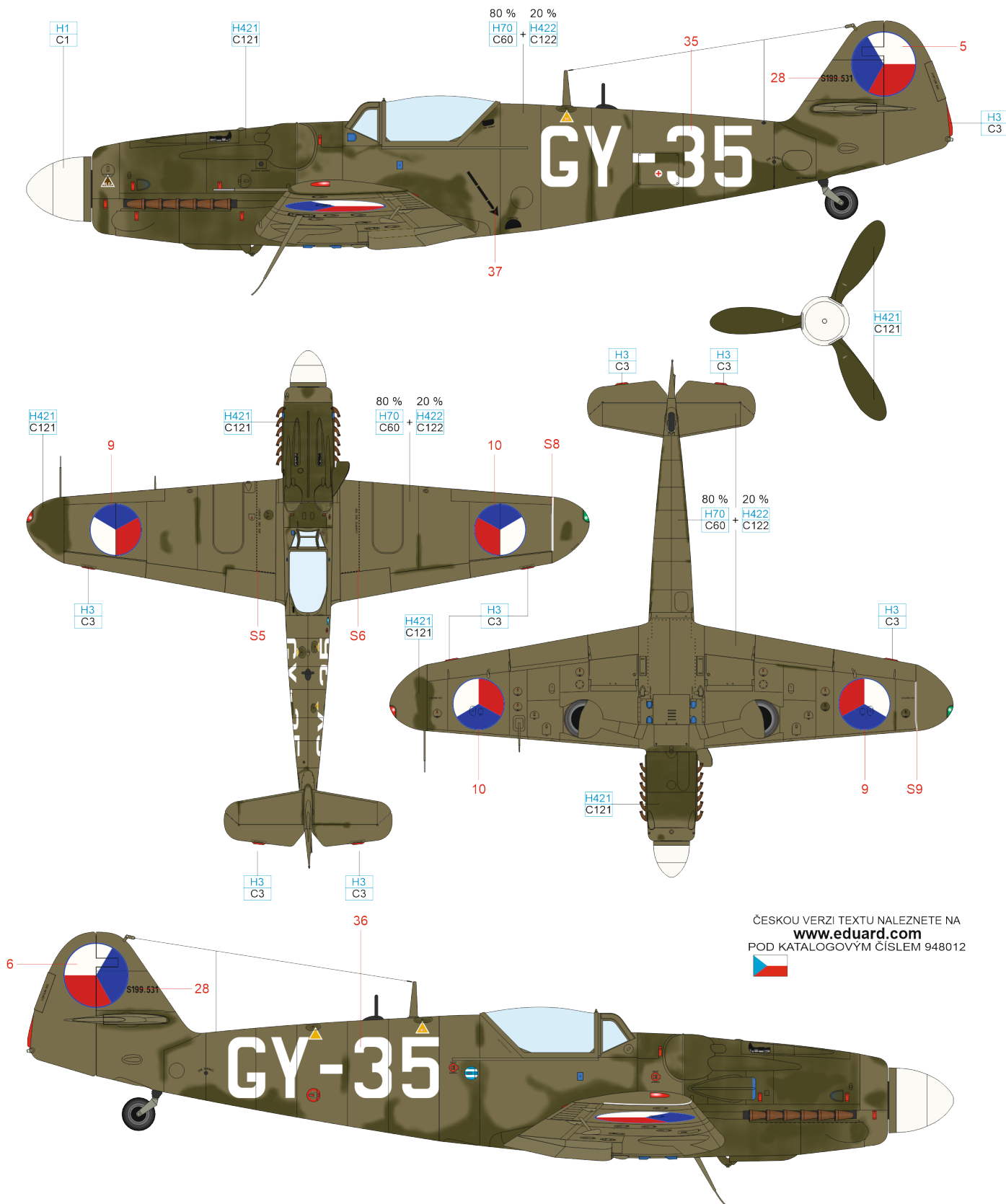
Our special thanks to Michal Ovčáčík and Stanislav Králík for their invaluable input and cooperation.

GRAY H70 C60   LIGHT GREEN H422 C122   GREEN H421 C121   RED H43 C100   RED H3 C3

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# F S-199.531 Lt. Václav Dvořák, No. 2 Squadron, Aviation Fighter Regiment 3, Brno-Černovice, Czechoslovakia, April 1953

This "Mezek" was test flown on April 19, 1950 and was one of the last of this type produced. From June 12, 1950 it was assigned to the Air Reserve (LZ 8) at Zvolen Air Base with assignment to the VLT (Air Force Headquarters) in Prešov. Later it was transferred to Aviation Regiment 3, which was part of 22 Air Fighter Division, comprising units flying piston engined fighter aircraft. There, "Mule" 531 served with the code GY-35. On April 5, 1953, Lt. Václav Dvořák made an emergency landing with it due to an injection pump malfunction. The airframe was visibly worn at the time with numerous signs of repairs to the original paint, which had been made in a darker shade of green. The engine cowling was apparently a replacement unit from a machine painted in the later, darker shade, but darker spots were also visible on it. These were likely the result of contrast between fresh and faded paint of the same shade. Similar signs of repairs were found on older Avia S-199s of the unit.



Our special thanks to Michal Ovčáčík and Stanislav Králík for their invaluable input and cooperation.

GRAY H70 C60 LIGHT GREEN H422 C122 GREEN H421 C121 WHITE H1 C1 RED H3 C3

