

## 1/72 SCALE PLASTIC KIT

**ProfiPACK**  
edition

# #7097



### INTRO

Agricultural use of the aircraft became a common practice after the WWII, as many suitable aircraft were available and the aerial spreading or spraying of fertilizers, seeds, or pesticides was found quite effective. It was no wonder the aircraft manufacturers were finally asked to build agricultural specials to get even more efficiency. Representatives of the countries of the CMEA (Council for Mutual Economic Assistance) organization uniting the states of the former Soviet bloc, also set requirements for the development of an agricultural aircraft to be used by all CMEA member countries. The development was assigned to Czechoslovakia in 1960. The new aircraft had to take off and land on very short unpaved areas and it also had to have good handling when flying at minimum altitudes of about 16ft (5m) above the ground. The design also needed to be very tough, resistant to rough handling and wear due to high numbers of takeoffs and landings. At the same time, the aircraft had to be easy to maintain and resistant to various chemicals.

#### Birth of the Bumblebee

Two companies supplied the committee with their preliminary designs. The first, Středočeské strojírny (formerly Letov) prepared the design of the XZ-36, the second, Moravan Otrokovice, developed the XZ-37 design. The latter was chosen as the winner and the design team of Let Kunovice also took part in the development, tasked with the wing design. Due to the nature of typical operations, great attention was paid to the flight characteristics at stall speeds. While stall performance was originally found unsatisfactory, fixed slots on outer parts of the leading edge and in front of the flaps brought performance to an acceptable level.

The design team led by Svatopluk Zámečník and Miroslav Langer intended to use a new in-line M-441 engine, which was still in development at the time. However, the project was cancelled, so it was necessary to find a replacement. The designers chose a version of the Soviet nine-cylinder radial Ivchenko AI-14 R with compressed air start-up system. However, its power was insufficient. The Avia factory solved the problem with modification, resulting in M-462RF with take-off power of 311hp (232kW), 51hp (38kW) more than the original engine. The engine powered a hydraulically operated constant speed V-520 propeller.

Ten prototypes were manufactured under the leadership of Stanislav Sklenář to verify and tune the design thoroughly. Factory pilot Vladimír Vlk took the Z-37 to the air for the very first time on June 29th, 1963, conducting a ten-minute flight. Serial production began in 1965 and was divided between three companies. The fuselage, including the application equipment, was produced by Moravan Otrokovice, the wings and tail surfaces were by Let Kunovice and the undercarriage was manufactured by Technometra Radotín. The final assembly took place in Kunovice. From 1971 until 1977, when production ceased, an improved version of the Z-37A was produced with more effective corrosion protection. In total, about 700 Bumblebees were produced. The production was resumed between 1983 and 1984, when 40 aircraft were produced. Number of Bumblebees were exported, most of them were delivered to the former GDR (about 250).

#### The master of slow and low flight

The designers paid great attention to the performance characteristics of the aircraft with the maximum load while making some effort to create a comfortable environment for the pilot. The cockpit had ventilation and heating, and air was supplied to it through a carbon filter to prevent the penetration of chemical application substances into the cockpit. To achieve the best possible view the cabin position was in line with leading edge of the wing. To increase safety, an emergency discharge of the spreader and the load in the tank was incorporated. Emergency ejection was carried out during pilot training, but instead of the chemicals water was used. Another thing that the design team paid attention to, was the protection of the aircraft against corrosion and the effects of chemicals. For this reason, a solid Terylene canvas was used to cover the tubular structure of the fuselage and tail surfaces. In addition, it was provided with a very durable polyurethane coating.

The wing was designed as all-metal with a cover reinforced by longitudinal bracing. The wing has very efficient flaps which, even in the closed position, create an increase in lift due to the offset from the wing profile. The free space behind the chemicals tank was called the "sulk room" and was usually used for transportation of mechanic with his necessary tools from the base to the operating area. He was sitting back to the direction of flight and between him and the pilot was a chemical tank and a rubberized canvas screen. The "sulk room" also served for the occasional unofficial "sightseeing flight."

#### In the middle of nowhere

Aerial crop dusting is a very challenging kind of flying. In the past, most aircraft in former Czechoslovakia were operated by Slov-Air company, which was also responsible for proper pilot training. During the socialist era, some large agricultural cooperatives also had their own Bumblebees, some were also owned by machine and tractor stations.

The pilots spent whole days in the cabin and were often pushed hard by an agriculturalist that ordered their service. The maximum allowable 80 take-offs per day was often exceeded, with over one hundred take-offs per day not unusual. The cabin did not have air conditioning and, despite the air filtration, chemicals from the sprays made their way into it.

As the crews and their machine are usually staying all working day somewhere "in the middle of nowhere" without aviation fuel supply, the Z-37 can carry two underwing tanks. They are nothing more but the streamlined barrels to be removed from the aircraft after landing at the field aerodrome. The mechanic pumped fuel from them into the plane using a hand pump. Each external tank had a volume of 27.5 UK gal (125Litres), which doubled the fuel supply, as there are two inner tanks, each of the same volume. The consumption of the Z-37 is around 17.69 UK gal (80Litres) per flight hour when crop dusting and about 13.2 UK gal (60Litres) per flight hour when flying at travel speed.

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 době 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 OTVORSYMMETRICAL ASSEMBLY  
SYMETRICKÁ MONTÁŽREMOVE  
ODRÍZNOUTREVERSE SIDE  
OTOCITAPPLY EDUARD MASK  
AND PAINT  
POUŽIT EDUARD MASK  
NABARVIT

PARTS



DÍLY



TEILE



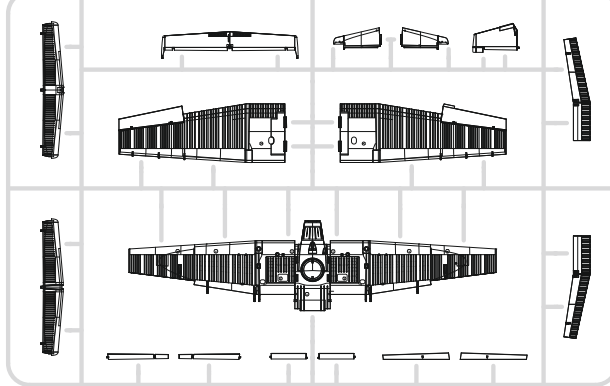
PIÈCES



部品

A&gt;

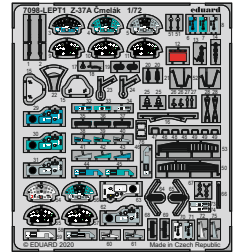
7097 A



PLASTIC PARTS

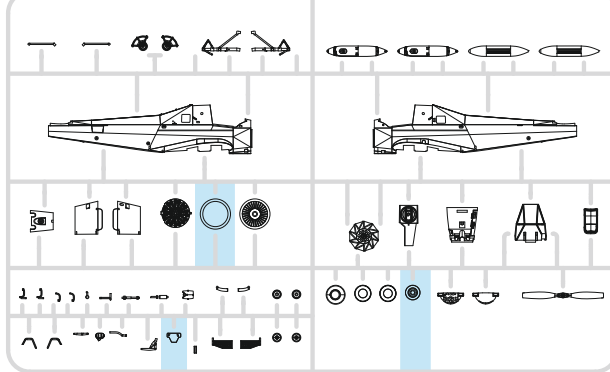
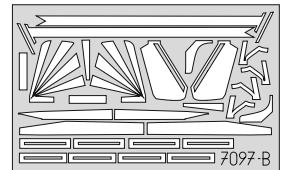
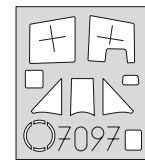
C&gt;

7097 C

PE - PHOTO ETCHED  
DETAIL PARTS

B&gt;

7097 B

eduard  
MASK

7097-B

-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



PEINTURE

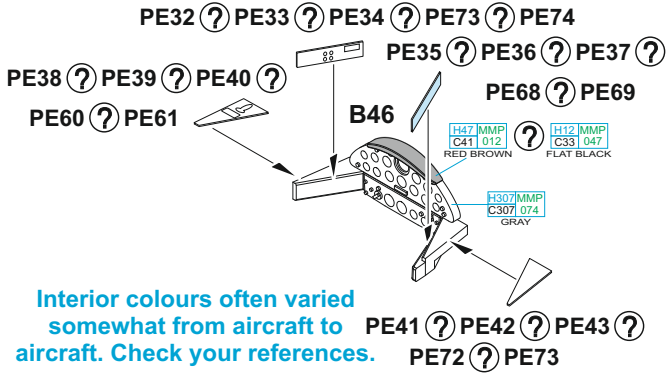


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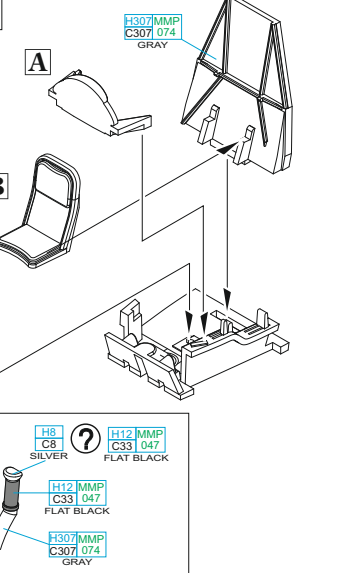
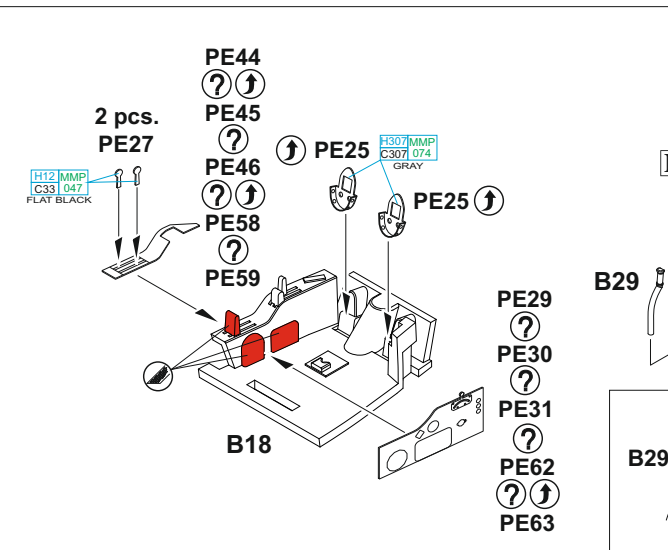
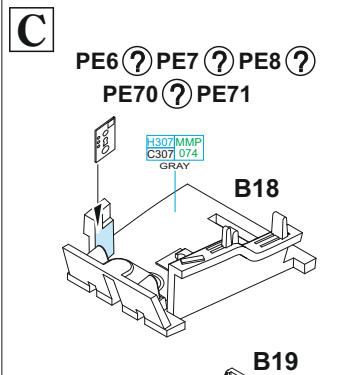
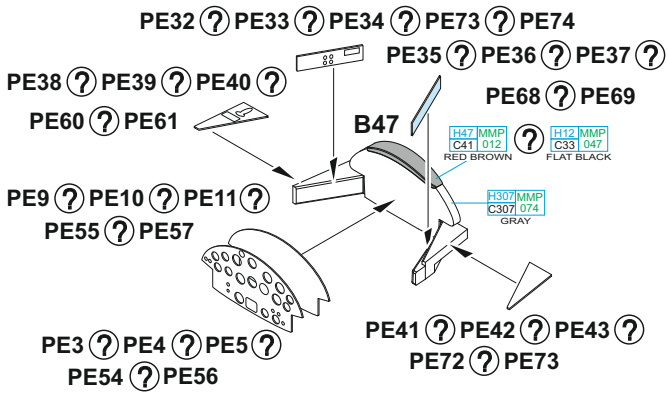
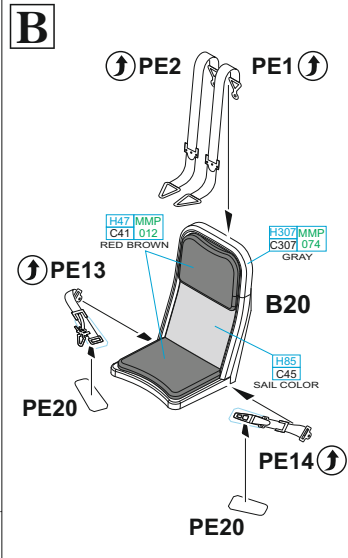
GSI Creos (GUNZE)		MISSION MODELS	
AQUEOUS	Mt.COLOR	PAINTS	
[H1]	C1	[MMP-001]	WHITE
[H3]	C3	[MMP-003]	RED
[H8]	C8		SILVER
[H11]	C62	[MMP-001]	FLAT WHITE
[H12]	C33	[MMP-047]	FLAT BLACK
[H14]	C59	[MMP-005]	ORANGE
[H24]	C58		ORANGE YELLOW
[H43]	C190		WINE RED
[H47]	C41	[MMP-012]	RED BROWN
[H77]	C137	[MMP-040]	TIRE BLACK
[H85]	C45		SAIL COLOR

GSI Creos (GUNZE)		MISSION MODELS	
AQUEOUS	Mt.COLOR	PAINTS	
[H307]	C307	[MMP-074]	GRAY
[H315]	C315	[MMP-059]	GRAY
[H327]	C327	[MMP-101]	RED
[H338]	C338	[MMP-116]	LIGHT GRAY
[H413]	C113	[MMP-090]	YELLOW
Mt.METAL COLOR		METALLICS	
[MC214]		[MM-001]	DARK IRON
Mt.COLOR SUPER METALLIC		METALLICS	
[SM201]		[MMC-001]	SUPER FINE SILVER 2
[SM203]			SUPER IRON 2
[SM209]		[MMC-001]	SUPER CHROME SILVER 2

**A** INFORMATION ON NEXT PAGE



Interior colours often varied somewhat from aircraft to aircraft. Check your references.





## GROUPS OF DECALS OR ETCHED PARTS FOR INTERIOR

GROUP 1: decals 54, 55, 56, 57, 58, 59, 60, 79 ? PE3, 6, 9, 29, 32, 35, 38, 43, 44

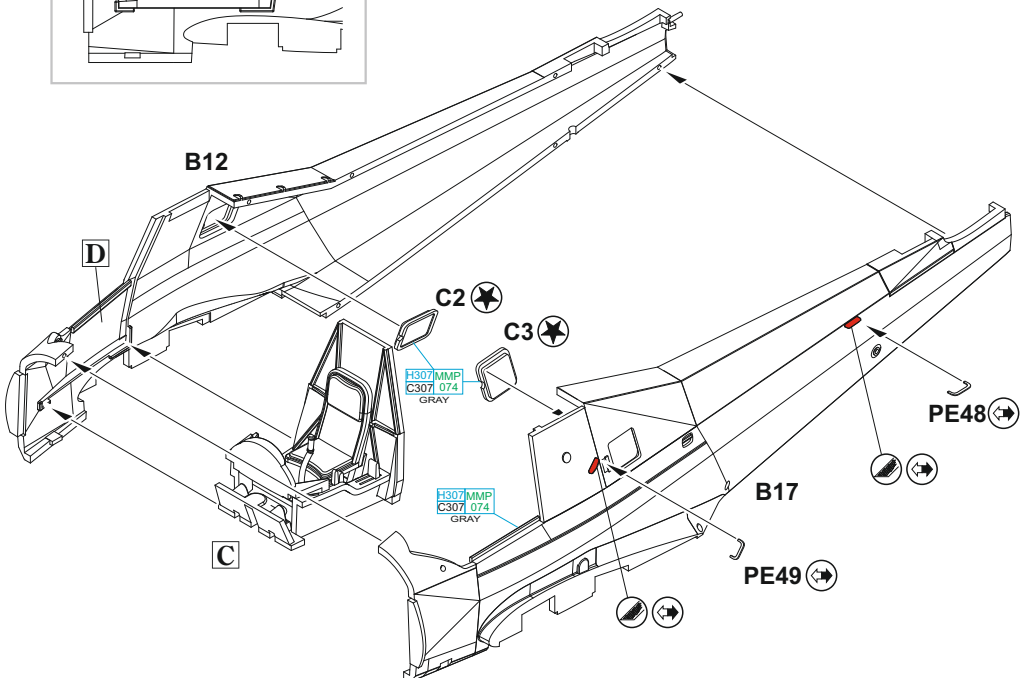
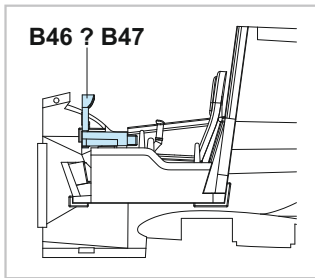
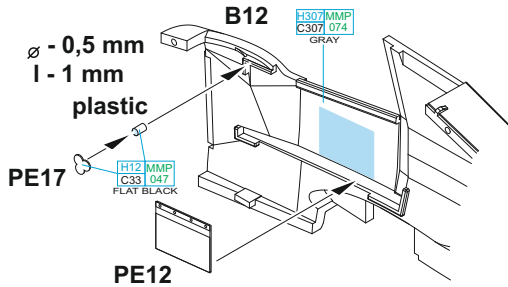
GROUP 2: decals 53, 62, 63, 64, 65, 66, 67, 68 ? PE4, 7, 10, 30, 33, 36, 39, 42, 45

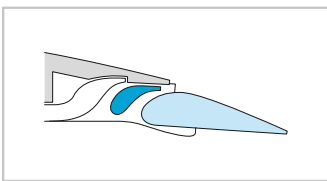
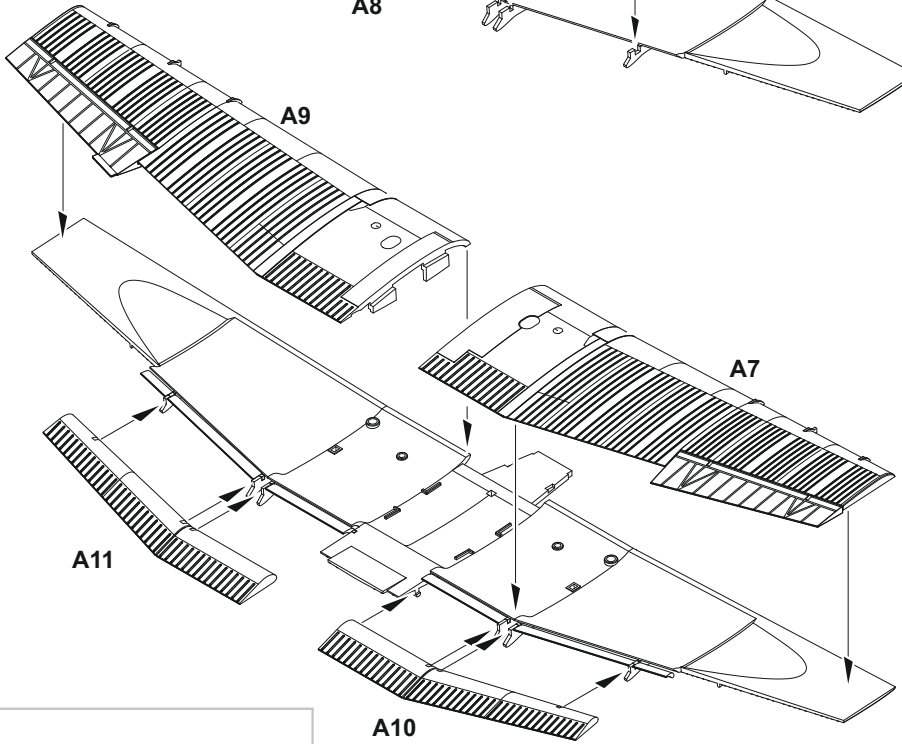
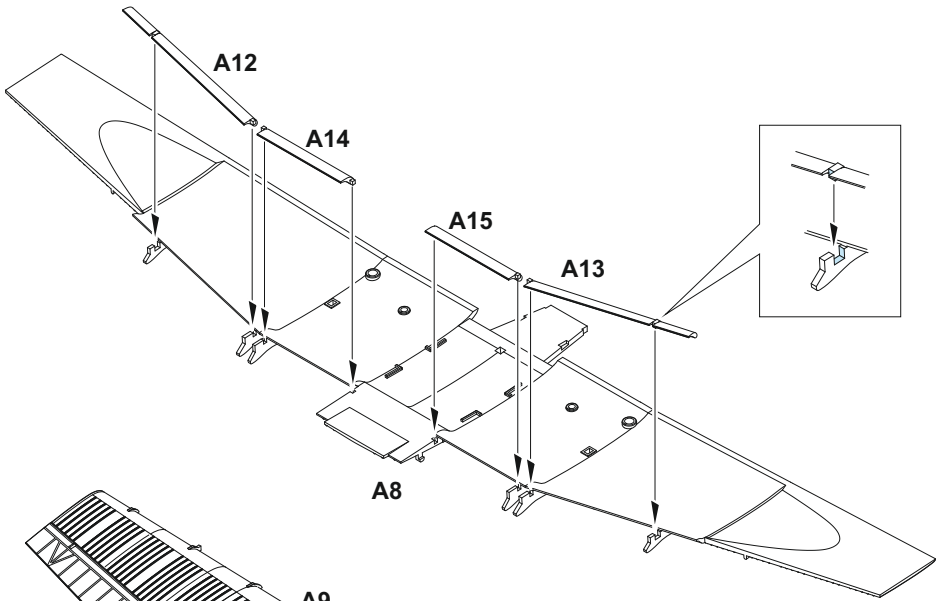
GROUP 3: decals 69, 70, 71, 72, 73, 74, 75, 76 ? PE5, 8, 11, 31, 34, 37, 40, 41, 46

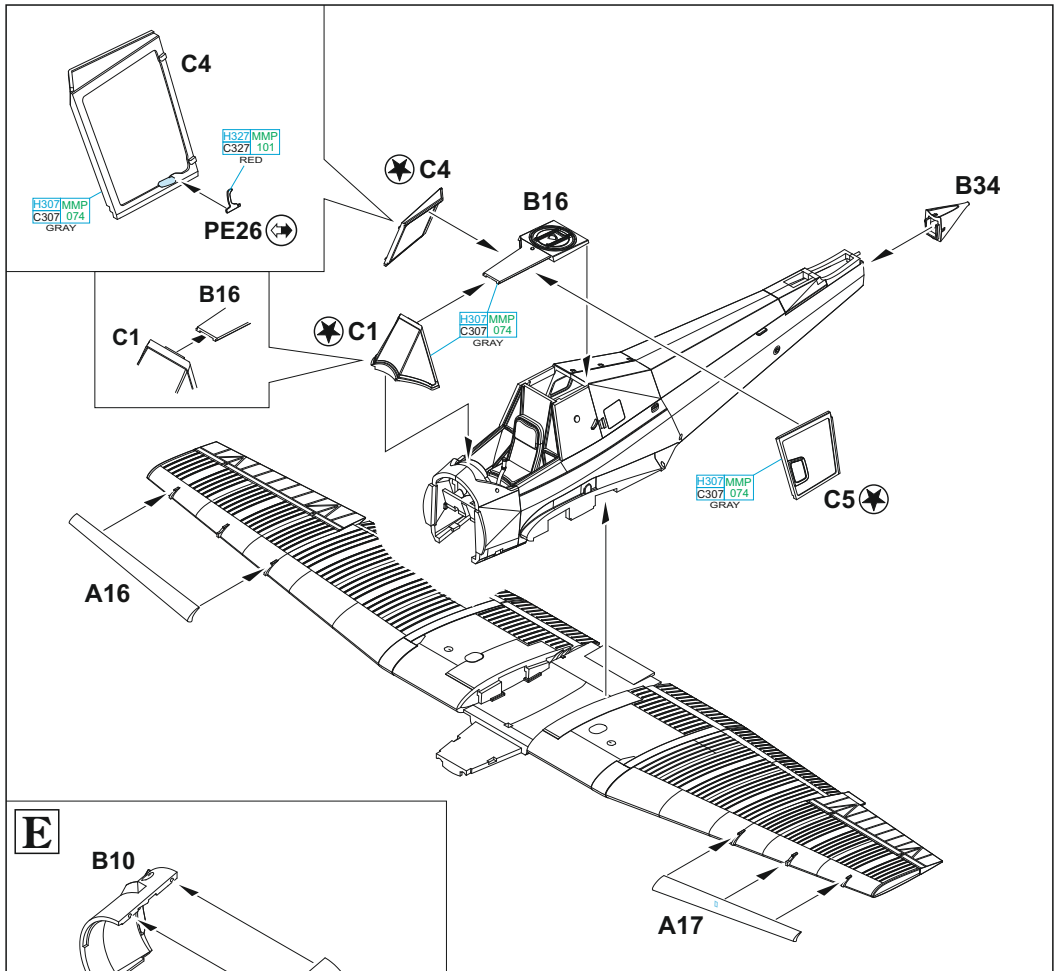
GROUP 4: decals 81, 82, 83, 84, 85, 86, 87, 88 ? PE54, 55, 59, 60, 63, 68, 70, 72, 74

GROUP 5: decals 61, 89, 90, 91, 92, 93, 94, 95 ? PE56, 57, 58, 61, 62, 69, 71, 73, 75

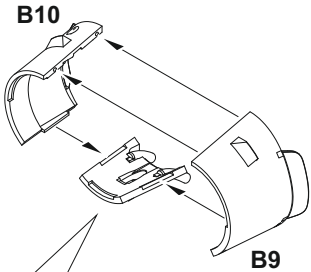
**D**



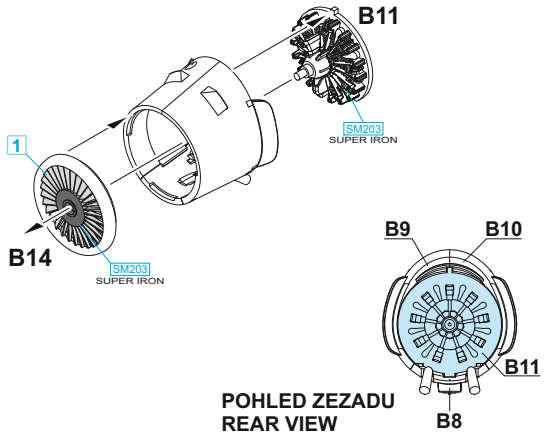
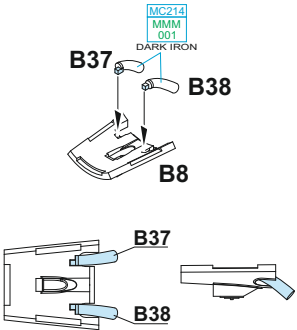




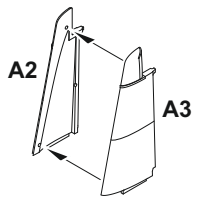
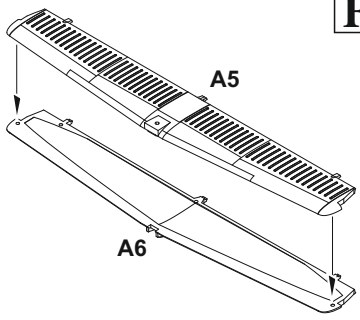
**E**



**1** = **SM203 SUPER IRON** - MARKINGS **B | C | D | E | F**  
**1** = **H307/MMP C307 074 GRAY** - MARKING **A**

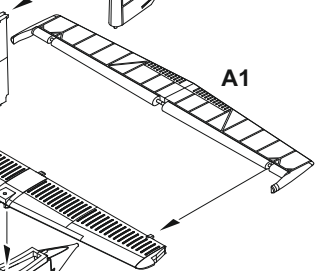


**F**

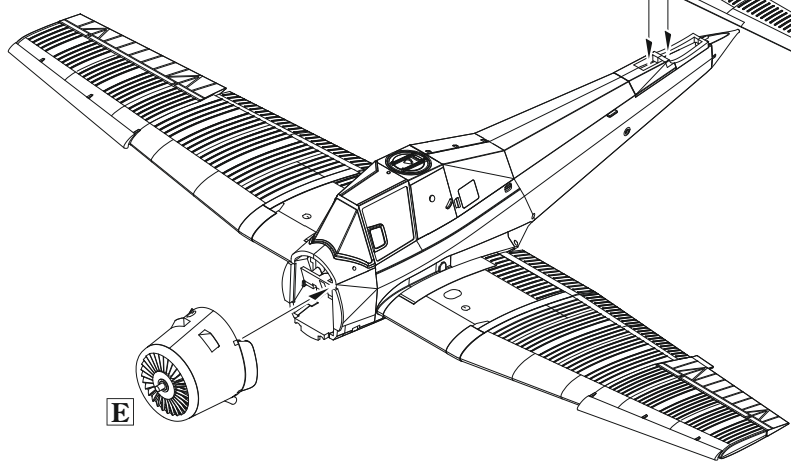


PE66 - MARKING **A** ONLY

PE66 (?)



**F**

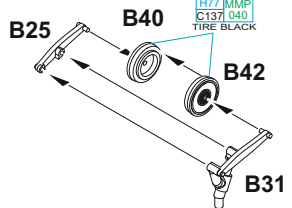
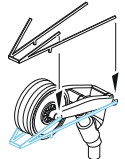


**E**

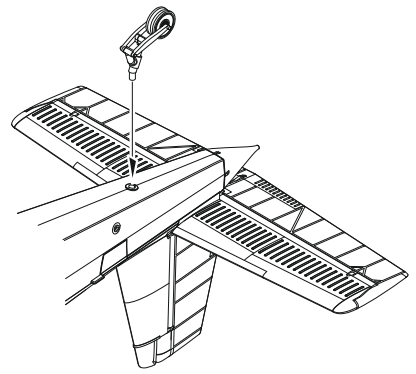
(?)

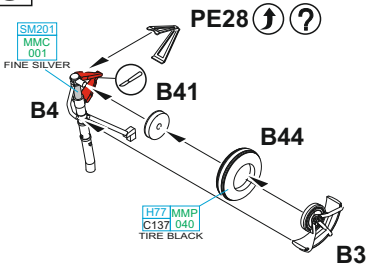
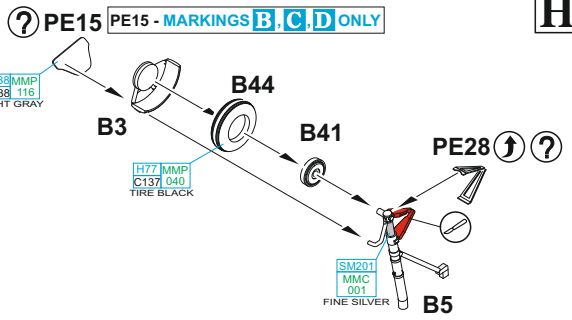
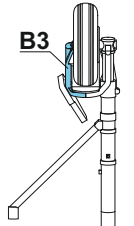
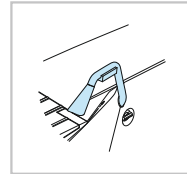
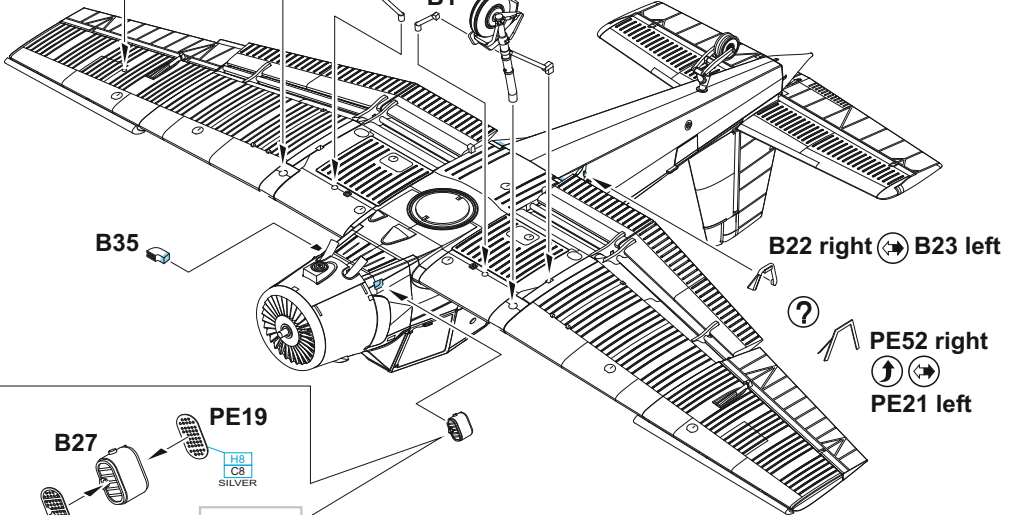
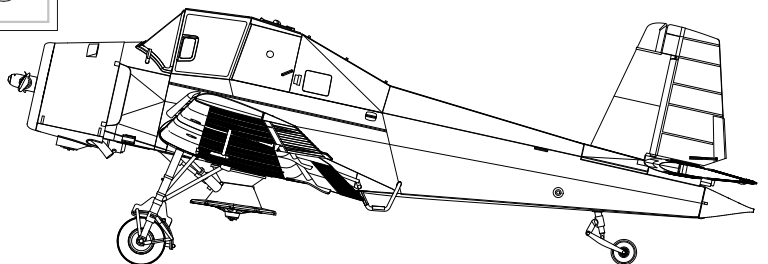
PE16 - MARKING **D** ONLY

PE16 (↑)

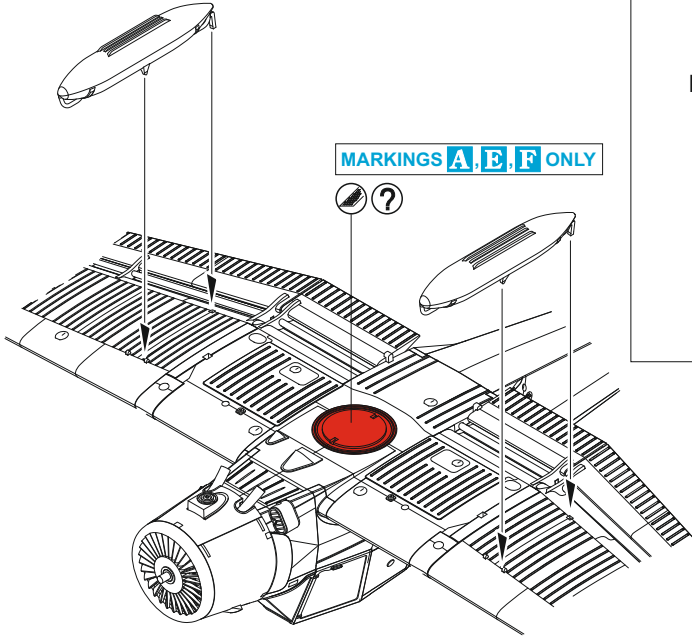


H77 MMP  
C137 040  
TIRE BLACK

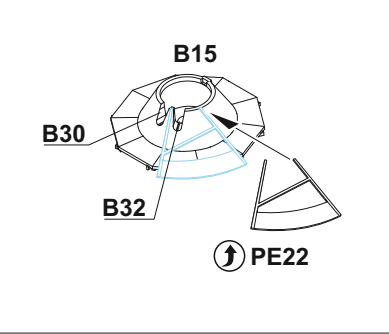
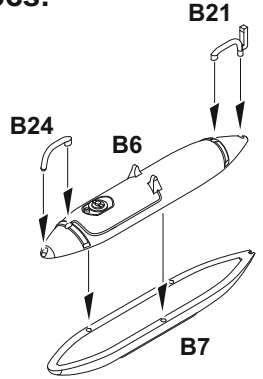


**G****H****B28****PE76 - MARKING E ONLY****PE76 ?****B3****B28****H12 MMP C33 047 FLAT BLACK****H12 MMP C33 047 FLAT BLACK****PE76 ?****B28****B2****B1****PE19****PE19****H8 C8 SILVER**

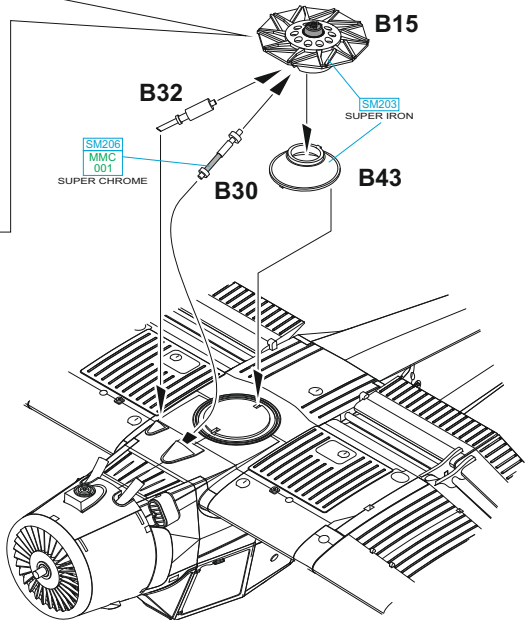
?



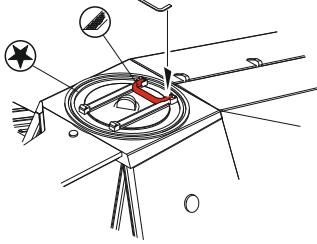
2 pcs.



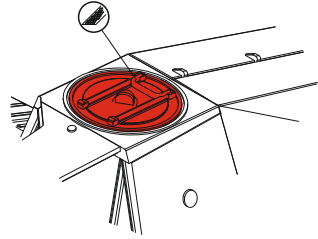
MARKINGS B, C, D ONLY



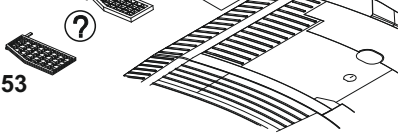
PE47



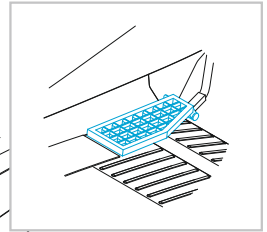
MARKINGS **A, F** ONLY



B36



PE53



PE18 - MARKINGS **B, C, D** ONLY

H12 MMP  
C33 047  
FLAT BLACK

PE18



PE67

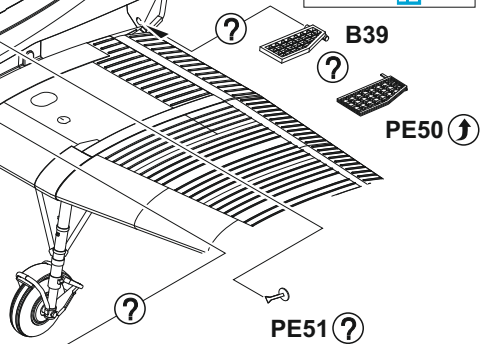
PE67 B48

PE67 - MARKING **E** ONLY

MARKING **A** ONLY

B39

PE50



PE51

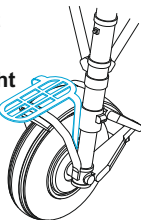
PE51 - MARKING **F** ONLY

MARKING **A** ONLY

PE64 left



PE65 right



B26

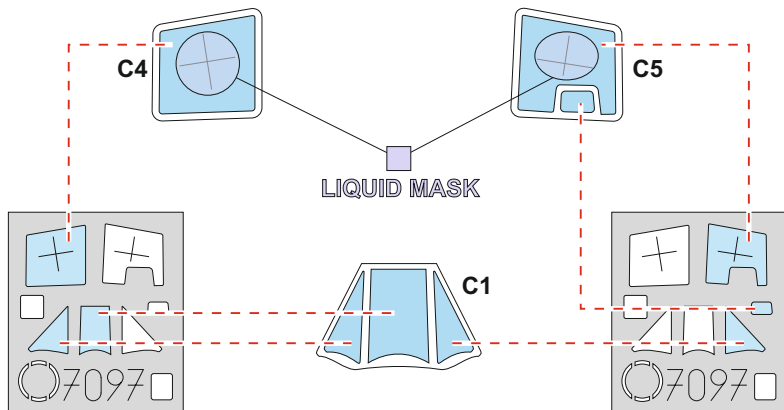
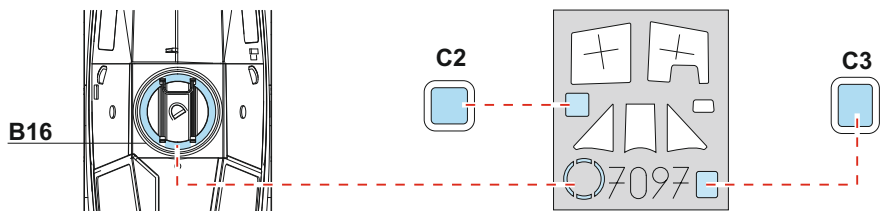
MARKINGS **A, B, C, D, E** ONLY

PE51

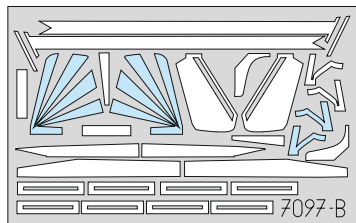
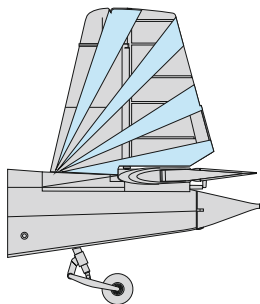
H12 MMP  
C33 047  
FLAT BLACK

SM206  
MMC  
001  
SUPER CHROME

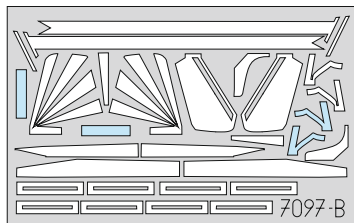
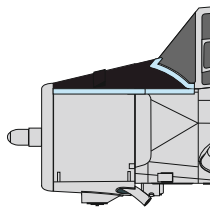
PE51



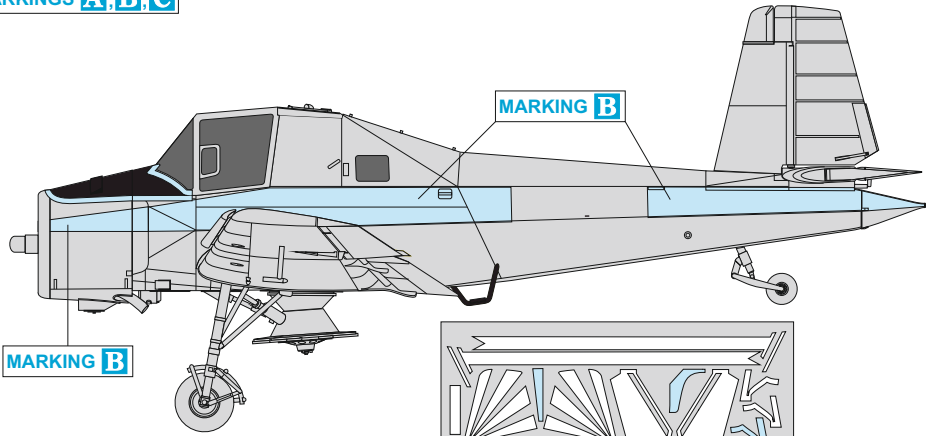
**MARKING C**



**MARKINGS D; F**

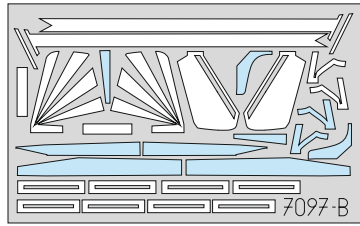


MARKINGS A;B;C

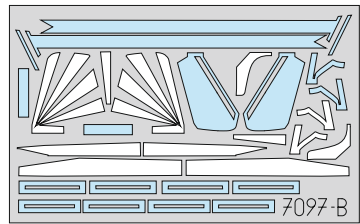
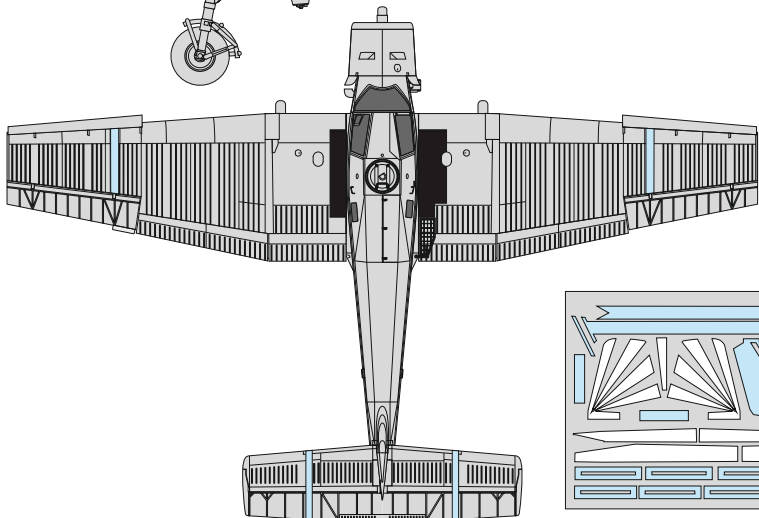
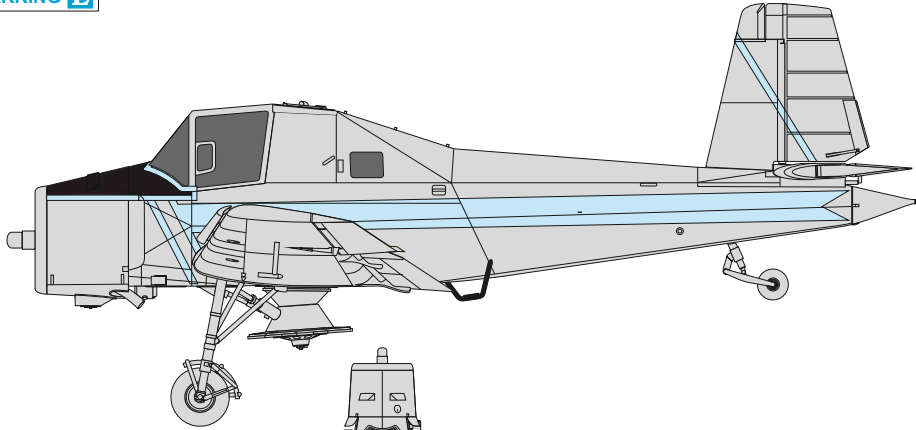


MARKING B

MARKING B

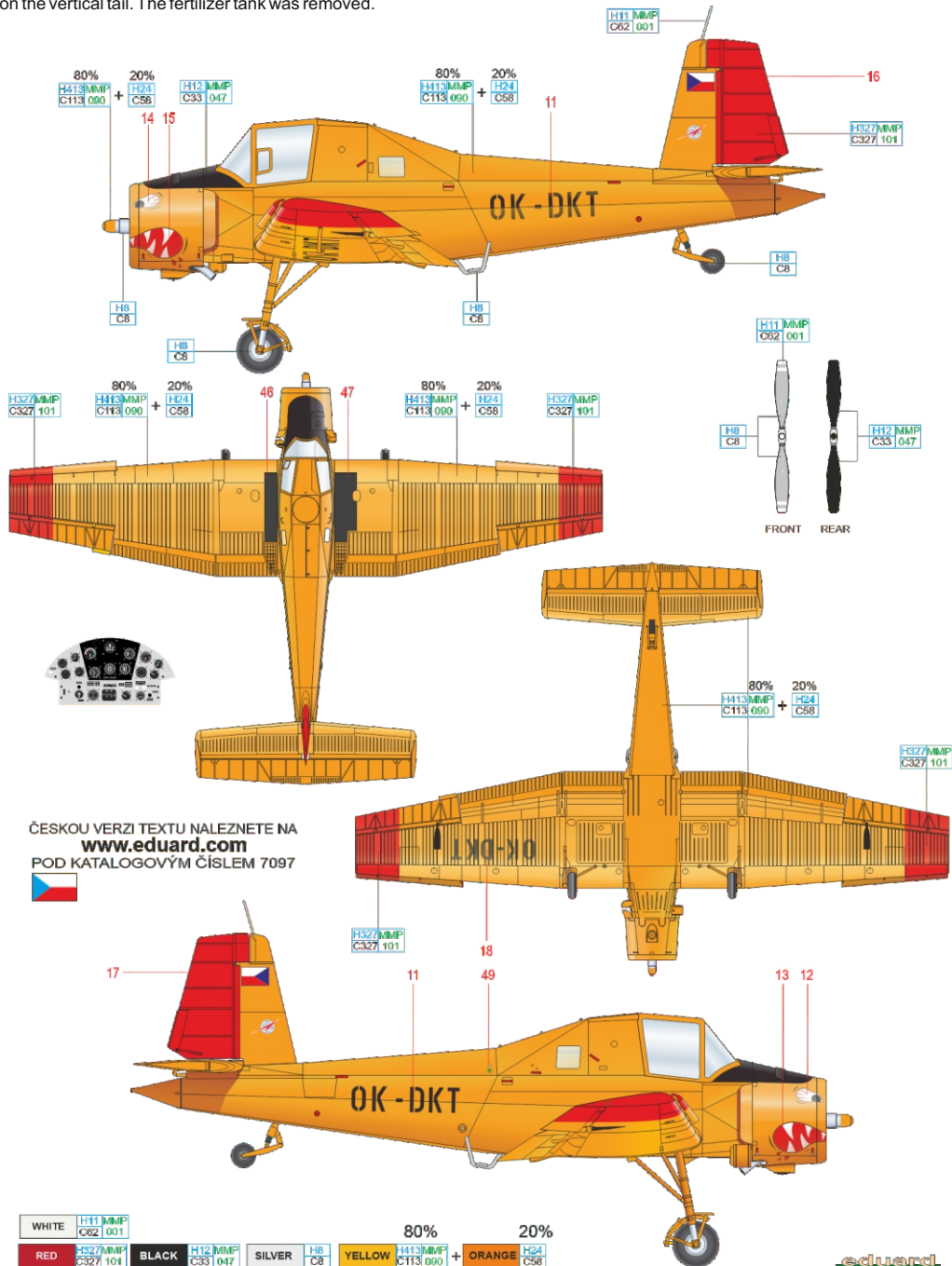


MARKING E



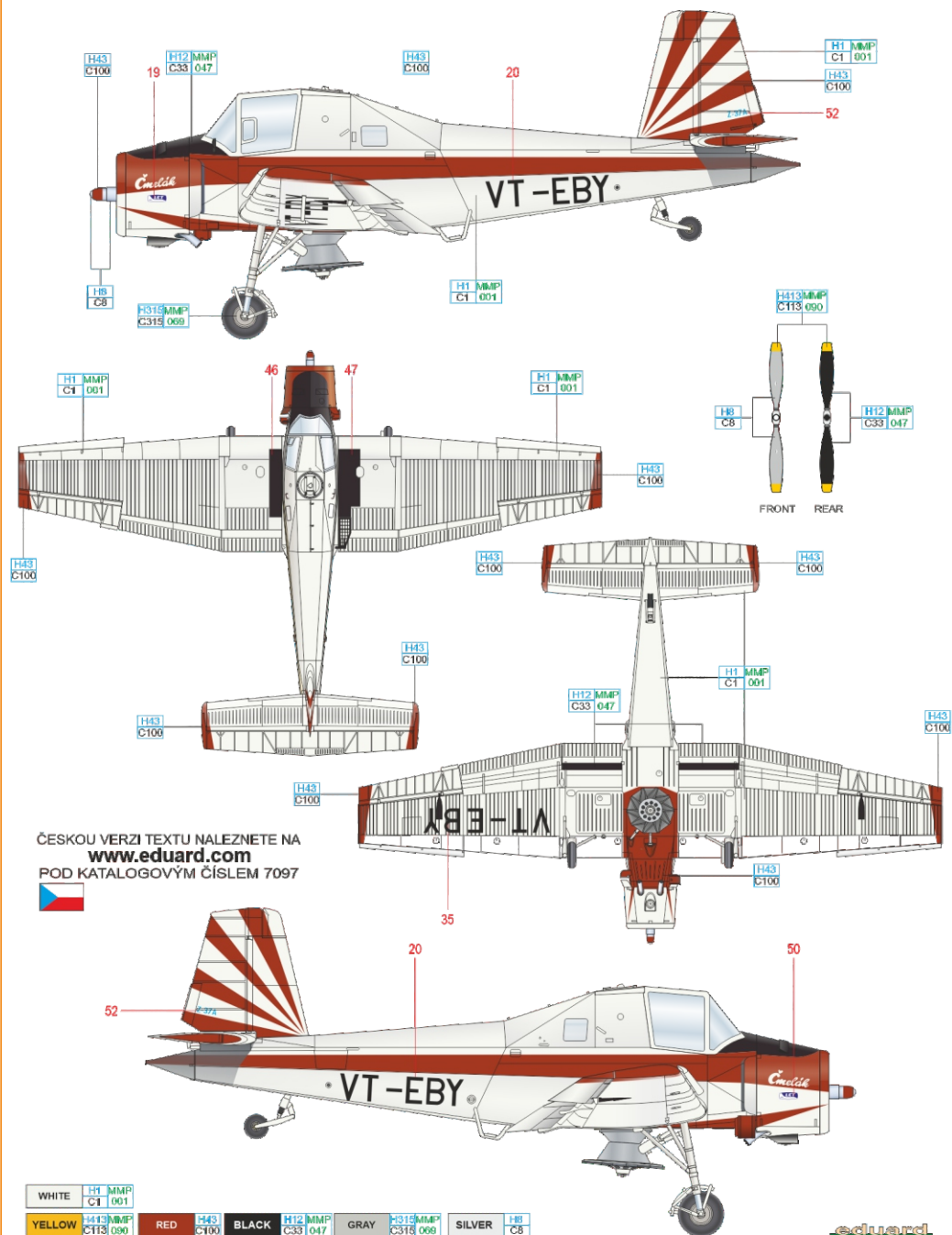
# A OK-DKT, Czech Republic

OK-DKT s/n 19-26, was manufactured in 1975, and since 1997 has been stored in a non-airworthy condition. It was sold in 2009 at auction, overhauled in 2020 and now is flown out of Hosin Air Field with a shark mouth reminiscent of what was worn by the F6F Hellcat. It was repainted back to its appearance when with Slovaik in the 1980's, including the red areas as well as the Slovaik logo on the vertical tail. The fertilizer tank was removed.



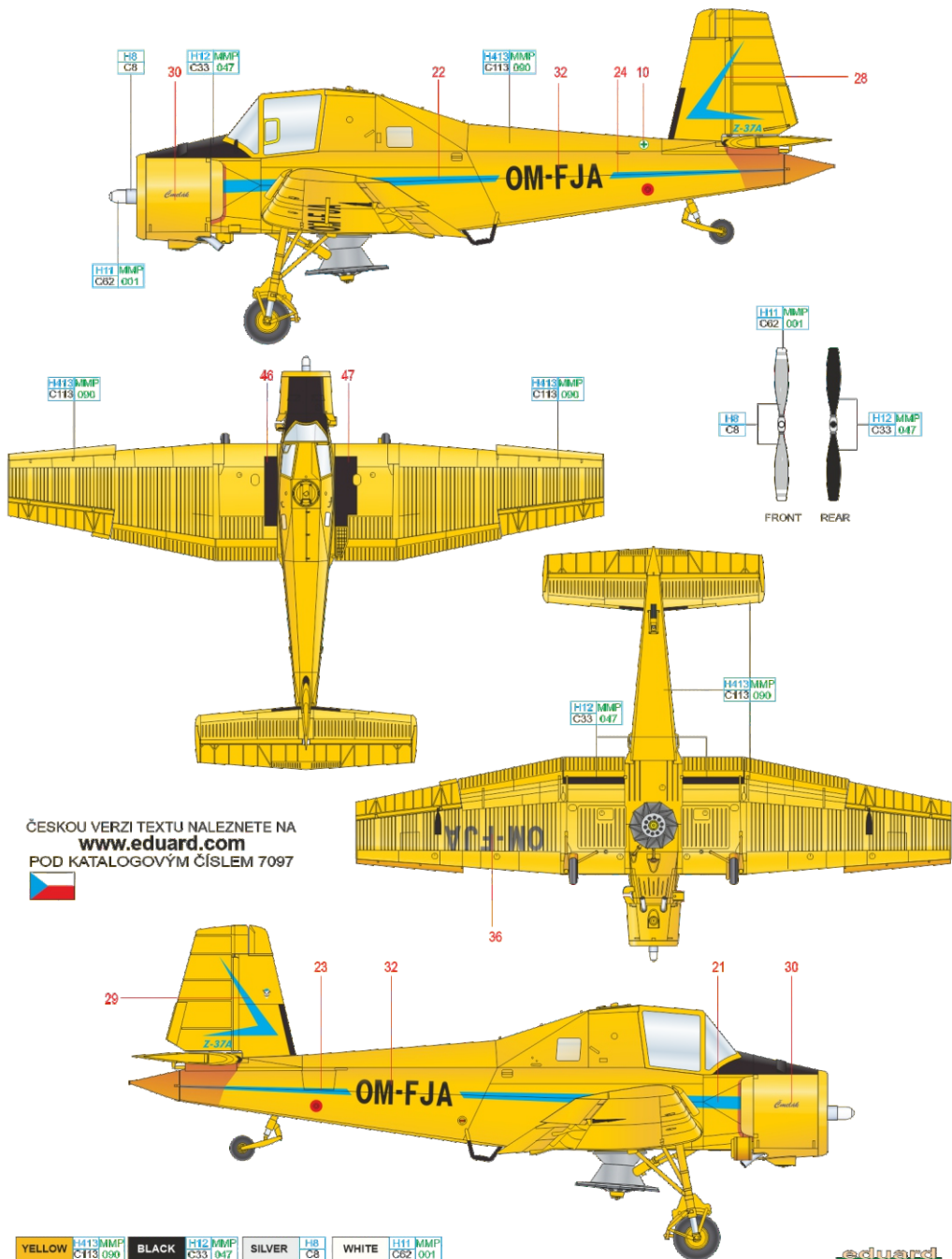


Z-37A s/n 12-12 was one of two Z-37A delivered to India in 1975. The aircraft was registered in Indian registers for Bharat Agro Aviation Services (P) Ltd. – Delhi, withdrawn from use on December 1st, 2005.



# D OM-FJA, Slovakia

Z-37A s/n 21-05. Originally delivered to East Germany's Interflug as DDD-SWF, after the re-unification of Germany, it was re-registered as D-WSWF. It was sold to Slovakia in 1990's and flown by Agrolet as OM-FJA. It was overhauled in 2009, when it received a blue fuselage band and other blue accessories. OM-FJA is flown in Trnava-Kopanka.



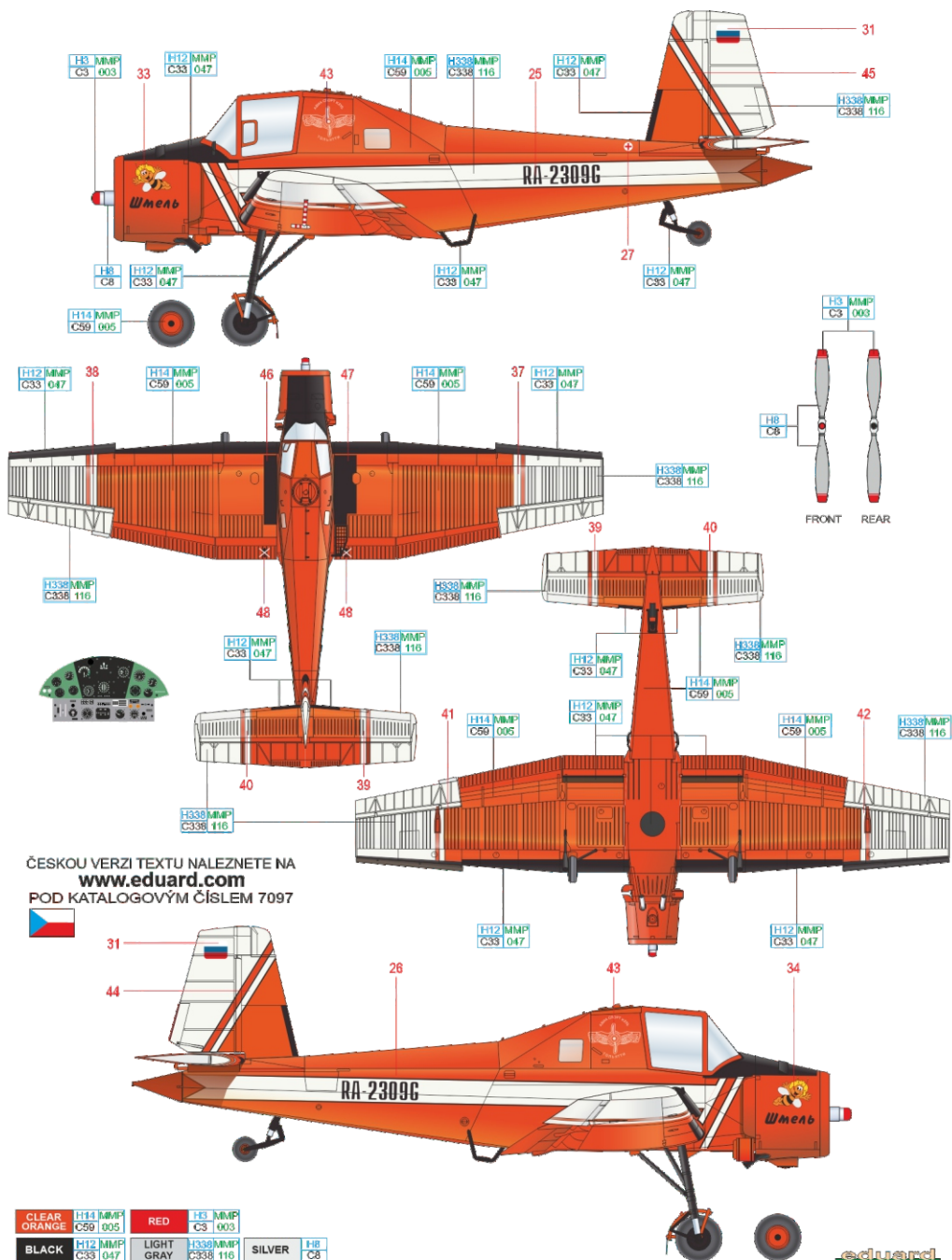
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YELLOW	H413 MMP C113 090	BLACK	H12 MMP C33 047	SILVER	H8 C8	WHITE	H11 MMP C62 001
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# E RA-2309G, Russia

RA-2309G was manufactured in 1970, registered in Russian registers in 2014, serial unknown. Purchased probably in the Ukraine, it was overhauled in Toljatti. The aircraft is equipped with a Yak-12 propeller and was also equipped with Mi-4 wheels. It was put up for sale in 2020.



Z-37A s/n 13-29 was manufactured in 1971 and delivered to Hungary, registered there as HA-MCO. Purchased by SlovAir in 1981, it was registered as OK-AJM. It was sold back to Hungary in 2005, this time to perform glider tug duties under the registration HA-MFY from 2009. The fertilizer storage tank apparatus was removed and the accesses were covered.

