INFO EDUARD

ISSUE 143

Vol 21, January 2022

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INFO EDUARD

ISSUE 143

Editorial and Graphics - Marketing department, Eduard - Model Accessories, Ltd.

JANUARY 2022

CONTENTS

Published by Eduard-Model Accessories, spol. s.r.o.
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EDITORIAL

Good Evening, Ladies and Gentlemen

Allow me to introduce today's Newsletter, on this, the Eve of the Epiphany, marking the first to be posted for 2022, with the belief that the year will be a good one, will be successful, and that all upcoming obstacles will be overcome. We can probably count on these obstacles being many. Last year at this time, our forecasts for the year were not particularly rosy, and the end result is now plain for all to see. But really, the year didn't end up being all that bad. Compared to the year previous, there was an anticipated decrease in sales, but it was not as dramatic as one would have anticipated last January. Sales dropped by somewhere in the vicinity of five percentile, and the most heavily hit department, kit production, fell by thirteen. At the start of the year, it looked significantly worse, when kit production dropped by forty percentile right from the get-go, inventory of plastic sprues was down to zilch, and rebuilding stock took a lot of time and energy throughout the balance of the year. The pre-fire range of our catalog has not yet fully recovered. Despite that, the last quarter of the year saw an average increase in sales of twenty percentile over the annual average of the year before, and last year's average was surpassed in terms of the overall market, with November being the most successful month in our history with respect to overall sales. So, as far as I am concerned, things ended up well. Or, at the very least, with room for much optimism. We are going into the new year with the goal of exceeding last year's output. So... How do we go about doing that?

New Kits for January

This year picks up where last year left off, with the Zero. This time around, it's a ProfiPACK kit of the A6M2 Type 21. The marking options are more striking than they were with the Limited Edition Tora Tora Tora! kit, even though there are only five options in all. For one thing, they aren't monotone grey overall, although the one that is probably the most interesting for us Czechs, Saburo Sakai's V-128, is in that scheme. Besides the brief look at the marking of the aircraft offered in the kit, I can highly recommend a more detailed study of the chosen pilots, their aircraft, and the stories behind them. It is certainly worth the time! You can take this ProfiPACK kit as a little teaser for the upcoming Zero themed Limited Edition kit named "Zero Zero Zero!", which will feature ten options of fascinating subjects to choose from. There may even be twelve options, we are not quite sure yet. The Zero Zero Zero! is being prepared for the second quarter.

A similar situation will hold true for January-'s Z-126 Trener Limited Edition kit. As with the majority of Limited Edition kits released on the basis of our own sprues, this will be a Dual Combo kit, meaning that two complete sets of plastic will be included. We chose a mix of historical and current subjects for the marking options, and these make a good impression. Truth be told, I originally had my reservations about the marking possibilities for this type, but I was wrong. In fact, there are plenty more interesting subjects left for future ProfiPACK and Weekend kits.

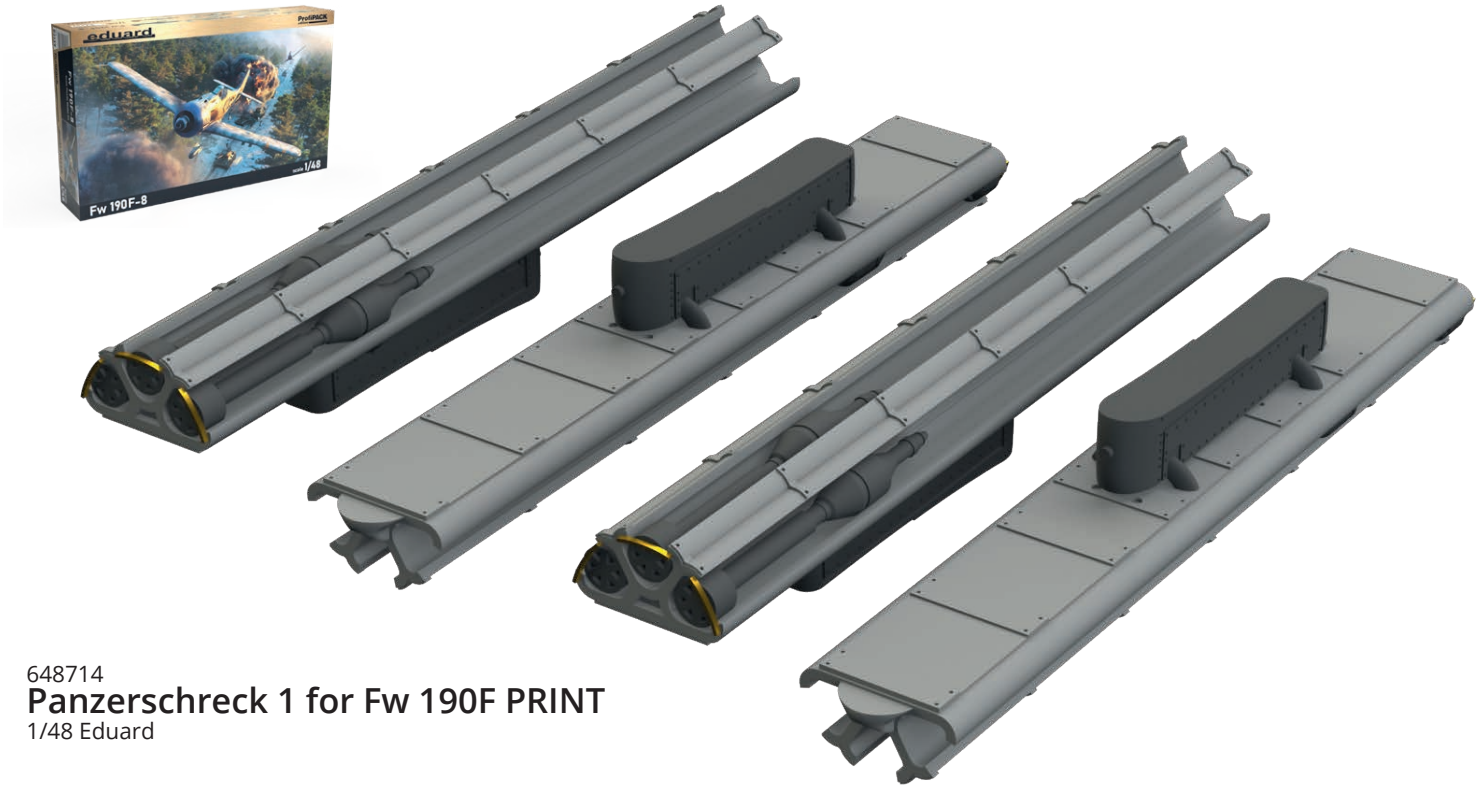
There were to have been two Limited Edition releases in January. The second was the Tornado ECR in 1:48th scale, built around the Revell kit. However, we ran into a little stumbling block that was for us an issue, but turns out to be a bit of a bonus for you. We figured on a larger sheet, approaching the European A4 format (roughly corresponding to North America's 8.5 x 11"), along with a smaller sheet to cover stencil data. As it turns out, there are actually three sheets, and each approaches A3 format (roughly 11 x 16" for you North Americans). As if that weren't enough, the mask sheets that are included are also considerably larger than originally planned. It's not only larger, but it's also quite complex. So complex that its production had to be delayed due to the failure of one of our cutting plotters. The bottom line is that both of these kit components were delayed in production and the kit release has been moved to February. I would see this all as fairly good news for modelers. The bad news is that the production cost of the kit went up, but we raised the retail on it by the amount of the production cost increase only, meaning that the Tornado still presents a great value.

In January, we also have two new Weekend kits coming out. These are the Spitfire Mk.Ia and the MiG-21SMT, both in 1:48th scale. We are also releasing a re-edition of the recently sold-out P--51D-5 Mustang Weekend kit, and the ProfiPACK MiG-15bis in 1:72nd. The latter represents a revival of the MiG-15 line in 72nd scale in our range. This has prompted the question as to whether or not we plan on ever releasing the subject in 48th scale, and the answer is yes, we will. At some point...

January Accessories

As a direct result of the original intention of releasing the 48th scale Tornado ECR this month, we have several accessory items coming out for it first. As mentioned earlier, the actual kit is now slated for February. The correspondingly delayed release of its accessory items too would have meant absolute chaos within our system of notifying retailers of new items, and simply was not an option. It is built on the grounds of the release of complete tables listing all new releases for retailers, a part of which also includes the release of the Distributor Newsletter, which many modelers download from our site as well to get a six week advanced notice of what's coming down the pipes. At the moment when I decided for the postponement of the release of the Tornado ECR kit to February, the corresponding changes to these tables would have created massive chaos and a delay of detailed information for retailers. For this reason, we avoided changing the release schedule of these accessory items, despite the resulting minor confusion in the release sequence of them. I believe that our reasons are understandable.

The Brassin lineup is extraordinary this month, because the majority of them, six out of the eleven, are 3D printed, while only five are cast resin. This is the first time this has happened, and is set to become the norm. It will have to wait till after February, though, because our 3D printing capacity will need to be dedicated to the printed production of parts for the USS Arizona



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Panzerschreck 1 for Fw 190F PRINT
1/48 Eduard

kit in 1:350th scale. These will be included with the kit to the tune of 1500 units, and we will go into more detail on its release in next month's newsletter. It will be quite a different matter in March. We took delivery of another two 3D printers in December, one of which is calibrated for twice the resolution to produce much finer prints. Our range will still include resin cast parts, and the existing catalog of them will be preserved, but over time, cast parts will decrease in number while printed parts will increase. This is the future of accessory items. It can be said with certainty that printed parts will be able to do what cast parts cannot: to vigorously compete with photoetched brass items. We have seen the first examples of this to illustrate the point in the form of 3D printed landing flaps and Remove Before Flight tags. Those are also 3D prints, much like LooK and Space items, but printed on different machines.

The printed parts for February are no tiny specks, meaning that they account for a substantial portion of production capability. Among them is an engine for the Zeke, a compact, single piece item that includes the cylinders and pushrods. Only the prop shaft is separate, and the plug wiring is supplied as photoetched brass. That's the weakest link remaining, the infamous tangle of rectangle wires, but this will change shortly as well, because as we all know, you can't stop progress. We also have the cockpit for the Z-226 Trener which offers a typical range of versions associated with the Trener line, and another engine for the Camel, the Gnome Monosoupape 9N. It is also a compact little print, the advantages of which have already been brought to light. Very nice are the Panzerschreck 1 rocket launcher units for the Fw 190F, as are the Martin-Baker Mk.5 Ejection Seats for early versions of the F-4B Phantom II. That sixth set is the TSPJ Container, and that stands for Tornado Self Protection Jammer, which makes this item pretty self explanatory. I am under the impression that it is used exclusively with the ECR variant of the aircraft.

There are, of course, many more accessory items being released in the various lines than those mentioned above. I will only mention a few of them, such as the two Space sets for the MiG-21PF in 1:48th, which differ in the color of the main instrument panel and sidewalls and consoles. Then there is the collection of photoetched sets for Zvezda's 1:72nd scale C-130J-30, for Revell's 1:32nd scale P-51D-5, and for Hobby Boss's 1:350th scale Gato sub. I am sure you will be able to find out more about our new products down in this newsletter without my guidance.

Other New Items for 2022

As known, the situation on the battlefield is always changing. For example, in last month's newsletter, I made mention of the upcoming F-51D ProfiPACK, which has now evolved into a Limited Edition kit under the influence of the number of marking options included. This, in turn, is pushing another Limited Edition kit of the Mustang, the Red Tails, dedicated to the USAAF in Italy, to the latter half of the year. The release schedule of new items is constantly evolving, so all information described here regarding the second half of the year needs to be taken with the understanding that significant changes may, and almost certainly will, arise. The situation was no different in 2021, even though the year was especially unstable if only due to the mentioned December 2020 blaze.

The latter half of the year will see us continue on with the Spitfire Mk.V, with the Limited Edition Spitfire Story. Per Aspera Ad Astra, dedicated to the Spitfire Mk.Vc, to be followed by the Spitfire Mk.Vc ProfiPACK. The Spitfire Mk.I and Mk.II will make their appearance as Weekend kits, and the Spitfire Mk.VIII and Mk.IX will be re-issued as well as come in as new kits in both 1:48th and 1:72nd scale.

We will also release new Trener kits. There is Z-326/C-305 Limited Edition item planned for E-day, and we can expect at least one Weekend kit of the Trener to appear over the final two quarters. Also planned for its premiere at E-day is the 1:48th scale S-199, while various versions of the S-199 will be released as ProfiPACK kits in 1:72nd scale. There will also be more Zeros, in the form of a ProfiPACK A6M2-N Rufe float version and versions of the A6M3 Type 22 and Type 32 in further Limited Edition kits. The second half of the year will see the Zeros complemented with different versions of the Wildcat. The Limited Edition kit dubbed "Guadalcanal' will contain sub-variants of the F4F-4, and just as the F4F-4, the F4F-3 will also be released as ProfiPACK kits.

We'll also make a return to the good ol' Messerschmitts and Focke-Wulfs. Day versions of the Bf 109F and Fw 190A-2 and A-3 will be the focus of the Limited Edition release called 'Wunderschone neue Machinen', and at the very end of the year, we will round out the Wilde Sau trilogy with a kit dedicated to the Fw 190A.

Following our experiences with the delivery of plastic from Asia last year, we are anticipating issues this year as well. For this reason, we are currently only planning one Hasegawa based Limited Edition release of the B-25J Mitchell, a solid nose strafer in 1:72nd. We are planning this one for August, same as the aforementioned Limited Edition Guadalcanal and Red Tails in 1:48th, and these plans are influenced by the timing of the IPMS Nationals in Omaha. We are fully expecting to accompany these kits to the event personally!

Other planned out-sourced Limited Edition kits will originate from Europe. We are expecting a 1:72nd scale Bf 109V-13/14 with plastic from Special Hobby, which will be combined with the Avia B.534 to form the Limited Edition kit dedicated to the 1937 Zurich Air Races. This is planned for September, because the Races of 1937 were held, if memory serves, in August. Not that I was there, mind you. It's what I remember reading. The last out-sourced item is based on Zvezda's 48th scale Mi-24V Hind, planned for E-day, and as you might expect, it focuses on Czechoslovak and Czech Air Force Hinds. The kit will again include the publication by Jaroslav Spacek. I am probably not the only one who would dearly love to see the release of the MiG-21F-13 in the final quarter. In 48th scale, of course. Whether or not this will occur, it's tough to say at the moment. There is still much to do on it. But there is also a lot of time between now and the end of the year, and hope is the last to die. And ultimately, history will continue to be written after the final day of the year.

Not Just Models Live On, so do Modelers...

... and for this reason, we will dedicate ourselves

to various related support activities as well, such as the further development of the accessory lines, the continued publication of our newsletter and, as far as the epidemic allows, the hosting of model shows and contests, and other promotional events. Our main attention will be focused on the development of the aforementioned 3D print accessories. At the moment, we are planning to put into service a new 3D print studio which will be only temporary, but will suffice for at least a year in supporting our 3D printers and support equipment. Things will largely depend on the development of our capacity requirements, and next year's change from predominantly cast production to 3D printing will have a loud say in the matter. This will bear different types of fruit. As you may know, we are developing a line of decals encompassing raised rivets, and we would like to use the same technology for the development of similar products to represent other delicate surface features. And not just for aircraft kits. Over the course of the year, we want to dedicate a part of our production capacity to other segments of the market, not just planes. 3D prints will look great on AFVs as well as on ships. That we are well able to design accessories for ship kits has been demonstrated in the design of our photoetched sets for them, I think. New accessory items for the USS Arizona will also be really nice. Just wait and see.

With respect to our newsletter, I am hoping that a strengthening in the editorial team is just around the corner, which will lead to a higher level of professionalism in our work and its results. We have been approached by new authors, as can be seen in today's issue. We are beginning to build up a nice stock of articles to publish. I also hope that we can get to a printed version of the newsletter. The last plan is to put out a printed yearbook of 2021's newsletters as a single volume through the first half of the year, with a focus on the historical articles. Cross your fingers... If we can do this, it will be a significant step closer to a printed newsletter.

And speaking of shows and contests, it is difficult to promise anything, because God only knows what is coming down the line. I tend to be on the optimistic side, but God may well be laughing at me. Either way, it is our plan to put on another outdoor event, the one which we will continue to describe as an "Intimate Walkaround" at the Line airfield. The program for the event has begun to take shape, and the timetable too, but as I say, it's a tough one to predict accurately at this point. Either it doesn't pan out and there will be further lockdowns that will postpone E-day yet again, and that will see the Intimate Walkaround take its place in the fall. On the other hand, it could all reverse in the spring, and then the event would be held somewhere at the beginning of the summer. The plan for E-day is the same as last year, assuming it will take place. It would see the premiere of the Czech Model Masters competition. We already have the cup for the overall winner... And if everything works out for the better, the epidemic goes away, and the Czech Police services completes their new training facility in Bublava, we'll even hold our Iron Bunny event. We'll leave the other events up to their respective organizers. Unfortunately, at the moment, it looks as though many of the old events won't be resurrected, but maybe it's not all bad as that. As long as the events that we were used to attending in pre-epidemic days begin to show up again (no pun intended), we will be coming back as well.

Articles

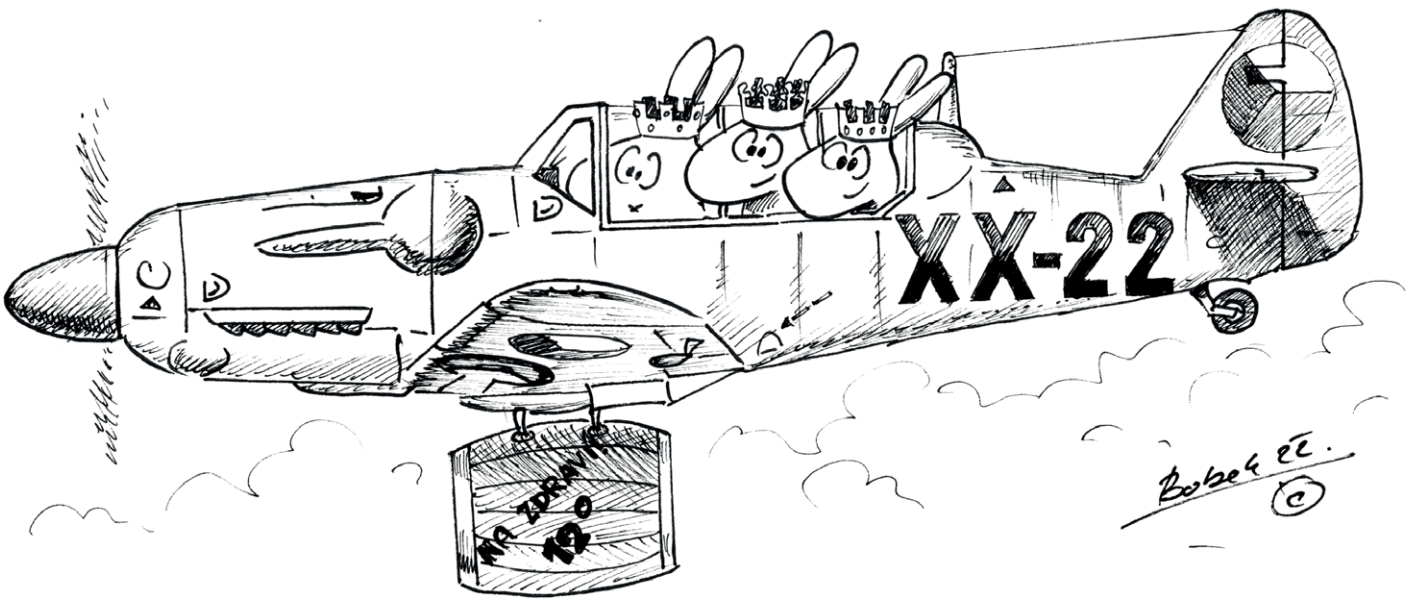
Immediately on the heels of the release of the Zero, there came about debates surrounding the colors of them, first and foremost of the grey. The development of the consensus of the colorization of the Zeke is described in Marian Holly-'s article entitled "The Color of Zero". If you are one to build the kit, and you know that it will be grey, just not sure of the flavor, then you should start with this article. It will at least help you in the orientation of the subject matter that is filled with as many myths and fictions as those surrounding the covid vaccines.

The story of the Camel from the BFC113 kit and of his pilot is told by Richard Plos in his article "The swag from the Houthulst forest". In this issue, we also have the fictional what-if read from Jan Bobek, "The Storm over the Antarctic", marking the return of the exploits of Lt. Kleinkonig and describing some of the origins of related Tempest Mk.V color schemes. This is also the new Bunny Fighter Club Entry Model. The story is so densely populated with various historical figures that it strongly reminds me of my favorite science fiction novel, the First Day of the Valhalla, which is an incredible work based on the notion that the Nazis win the Second World War, based on their success in opening the Gates of Valhalla and shift the earth's axis. The remnants of Admiral Halsey's American forces retreated to the Antarctic, where they re-established the United States and George Bush Sr. destroys a German submarine using a silver lighter and Vaclav Havel runs a young women smuggling ring that includes Marilyn Monroe from America to the Antarctic, because naturally, there was a shortage of women there. Jan Bobek is evidently going down a similar road which pleases me and I look forward to his fantastic continuation.

I also put in a contribution of my own with my article on the development of the Spitfire Mk.V and its technical development. If you plan on reading it, make yourself a big cup of coffee. It's long and it's not particularly easy to read. I am still recovering from the writing of it!

I wish you all the best for the New Year with good health. The rest, including built and stashed kits, will come on their own!

Happy Modeling!
Vladimir Sulc



Spitfire Mk.V:
Technical development in 45 frames

Vladimír Šulc

In the course of 1940, the Spitfire Mk.I large scale production at Supermarine company has been fine-tuned so it could meet the Air Ministry orders, supply the RAF Fighter Command combat units with the new aircraft and replenish the combat losses. The situation was similar at Castle Bromwich Aircraft Factory in Birmingham which after some initial organizational problems reliably supplied the fighter squadrons with license-built, and, compared to Mk.I, slightly improved Spitfires Mk.II.

SPITFIRE Mk.V HISTORY

In the end of 1940, the new aircraft were arriving at the units in their final weapon and equipment configuration as full-fledged, fully functional combat aircraft. Earlier manufactured airplanes were continuously upgraded with the installation of armor and more modern equipment to meet the standards of the newly manufactured Spitfires. However, during the same time, the modernized Bf 109 versions were arriving at the German Luftwaffe fighter units. The Spitfires were able to keep up the pace with Bf 109E-7 quite successfully when they appeared in the fall 1940, but with the arrival of Bf 109F-1 and F-2 in the end of 1940 and beginning of 1941, the tables turned in favor of the Germans. In order to counter the growing German technical supremacy, the Spitfires' performance had to be improved rapidly.

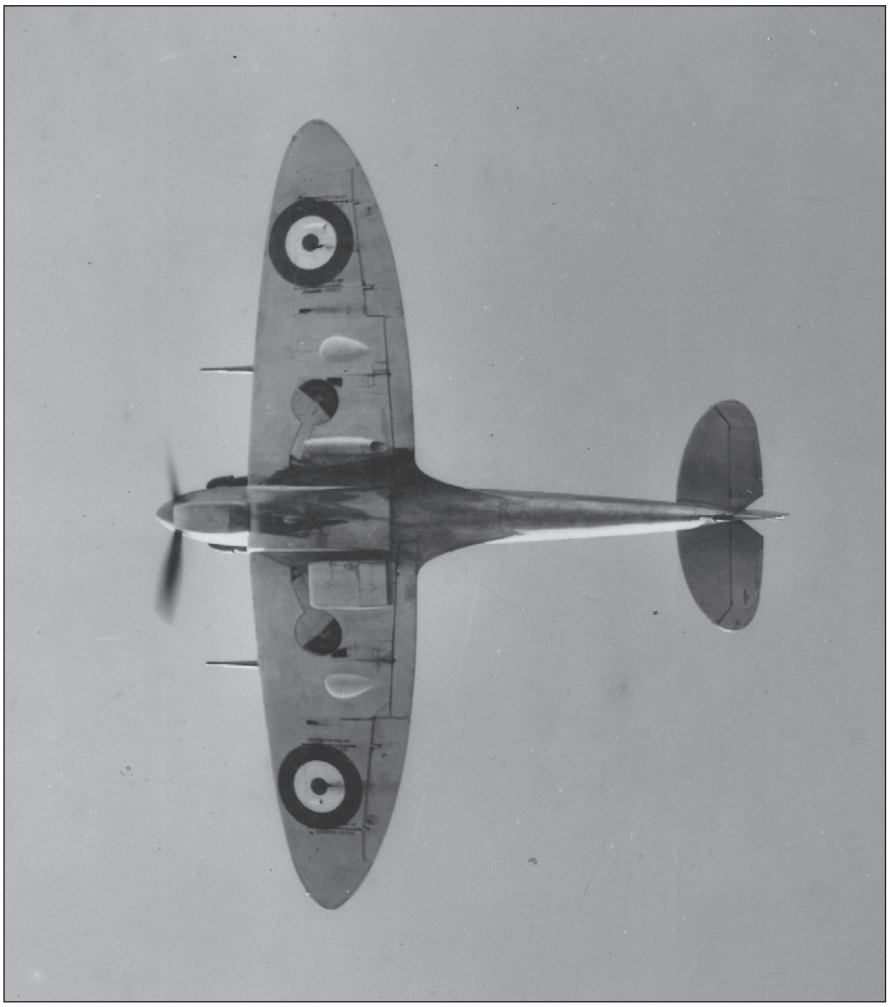
A traditional way to increase the aircraft performance is to install the more powerful engine. The first attempt to develop a more powerful Spitfire version was the project Improved Spitfire, later renamed Superiority Spitfire, launched as early as the beginning of 1939. The prototype with the factory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

The wingspan was shortened to 9.30 meters by removing the wingtips and shortening the ailerons while the internal design remained unchanged. During the flight trials, the prototype apparently never reached the calculated maximum airspeed of 644 kph at 6,400 meters, the maximum recorded speed is said to be 620 kph which was still an outstanding improvement in comparison to Mk.I performance. Air Ministry demanded that the large-scale production of Spitfire Mk.III was accelerated, however there was a serious obstacle to this effort due to the complicated development of Merlin XX and teething troubles with its large-scale production. In the fall 1940, the available engines were utilized for Hurricane Mk.II and Defiant Mk.II upgrades and they were also installed in Bristol Beaufighter Mk.II, Avro Lancaster B Mk.I, Mk.III and Mk.IV and Handley Page Halifax Mk.II and Mk.V. There were none left for Spitfires and the idea of an accelerated, large-scale Spitfire Mk.III production was silently swept under the table. The smaller series of photo-reconnaissance Spitfires PR Mk.III was manufactured under the same designation, mostly by converting Spitfires Mk.I.

Merlin 45

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

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



Later production Spitfire Mk.Vb featuring the asymmetrical lower bulges under the cannon well, tropical filter and a drop tank (photo: Simon Erland).

Squadron Leader M Rook, Commanding Officer of No. 43 Squadron RAF, and noted as the tallest pilot serving in the RAF at the time, poses with his Supermarine Spitfire Mk.Vc, JK101 ‚FT-Z', at Jemappes, Algeria. The aircraft is fitted with a Vokes tropical filter (photo: IWM).

for new Spitfires was placed, or better said, the program for converting Spitfires Mk.I and II into Spitfires Mk.V was ordered.

Spitfire Mk.Va and Mk.Vb

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

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

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

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

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

In the summer 1943, the Mk.V production was under way at Westland company located in Yeovil, in the County of Somerset. Westland manufactured various versions

of Spitfire Mk.V until November 1943 and gradually delivered a total of 140 Mk.Vb and 495 Mk.Vc. Except for several initial production Mk.Vb all Westland-built Spitfires featured the inner, integrated armor glass. Westland-built Mk.Vc featured specific wing cannon upper covers shaped as bulges with flattened sides and front not used by any other manufacturer.

Spitfire Mk. V modernization

During the two and half years of Spitfires Mk.V production, the airframe was gradually developed and improved. Already at the beginning of manufacture they featured thicker armor in comparison to Mk.I and Mk.II. The oil cooler was soon replaced with a larger one featuring a circular intake which was retroactively installed on the first batch of Spitfires Mk.V, converted from Mk.I and Mk.II, and became one of the features distinguishing Spitfires Mk.V. At the same time the armament of eight 0.303 Browning machine guns was abandoned. Only 94 Mk.Va, with such armament, were manufactured, while 6,370 Mk.Vb and Mk.Vc, armed with two 20mm Hispano cannons and four 0.303 Browning machine guns left the assembly lines.

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

Canopy

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

Radio equipment

The first Spitfires Mk.V converted from Spitfires Mk.I were still fitted with TR.9D shortwave radios with a wire antenna stretched between the antenna masts behind the cabin to the top of the rudder. The new-built production aircraft were already equipped with the new TR.1133 and later TR.1143 VHF radios, which replaced the older units from the summer of 1941. The TR.1133 and 1143 had no wire antenna, so the serial aircraft equipped with them had the antenna mast on top of the rudder deleted. Similarly, the first of the converted Mk.Vs had the IFF R.3002 identification Friend or Foe device, soon replaced by the newer IFF device ARI 5000. Both had wire antennas between the fuselage sides and the leading edge of the elevator. The IFF antenna on later Spitfires was located on the lower surface of the right wing half. From November 1941, the A.1271 radio navigation system for radio beam guidance on landing was also gradually introduced.

Engine modifications

Several engine versions powered Spitfires Mk.V. Besides the essential Merlin 45, the high altitude Merlin 46 with a more powerful compressor providing higher manifold pressure at high altitudes.But the original assumption that the combats with Luftwaffe will move up to higher altitudes did not materialize and quite the opposite happened, many missions then took place at lower altitudes. So, the low altitude version Merlin 45M was developed and tuned for the optimal performance at low altitudes.

The carburetor development is a story on its own. The original drawback of the Merlin III carburetors SU A.V.T.40, during negative G maneuvers an intermittent fuel supply interruption occurred, was partially eliminated by means of RAE restrictor a.k.a. Tilly's orifice, named after its inventor, Beatrice Shilling. But it was not a perfect solution. The problem was fully resolved by introducing a membrane-type carburetor designed by Rolls-Royce and introduced into the production in 1942. They were installed in Merlin 50 and 55 powering Spitfires Mk.Vc.

Propeller

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

Spitfires Mk.Vc equipped with the four-bladed propellers could be encountered during the second half of the conflict.

Exhausts

The early Spitfires Mk.V featured the exhausts with straight, oval orifice same as Spitfires Mk.I. These were fairly promptly replaced by new exhausts with flattened orifice known as fishtail. Several variations of this type of exhaust are known. With the introduction of 20 mm caliber Hispano cannons to Spitfire Mk.Vb equipment it was found out that the current weapons' heating system using the oil cooler hot air was insufficient and the cannons were freezing at the higher altitudes. Therefore, the heating was enhanced by the hot air from the pipe running through the exhausts exiting behind the last exhaust pipe, entering the fuselage in front of the fuel tank, running through the fuselage to the wing leading edge and further to the cannons. These pipes were a trademark of Spitfires Mk.Vb. Spitfires. Mk.Vc received the electrical heating of the guns therefore the aforementioned pipe was missing from their exhaust sets. In theory because it can still be recognized in many Mk.Vc photographs. These were probably Mk.Vc converted from Mk.Vb mating the new C wings with the old Mk.Vb fuselages

Ailerons

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

Spitfire Mk.Vc

Spitfire Mk.Vc represented the logical combination of all gradual modifications of the original Spitfire design. Besides the modernized bulged sliding canopy and armored glass integrated internally into the windshield , the most important and fundamental change was a newly-designed and strengthened wing (called the Universal wing or c type). Traditionally, the ability to house variety of weapons installations is considered a main advantage. These options were eight machine guns (variant a), two cannons and four machine guns (variant b) or four cannons (variant c only possible in the new c type wing but c isn't the designation of this option). In fact, out of all these, variant b, two cannons and four machine guns, was absolutely dominant. Four cannons installation was rarely used because heavy cannons had significantly negative impact on the aircraft flight characteristics so if the four cannons had been installed at the factory regardless, usually two of them, mostly at inner locations, were removed at the unit level. Variant a. was practically

Early production Spitfire Mk.V manufactured in October 1941 with symmetrical lower bulges under the cannon well, enlarged cooler, older canopy style with exterior armor and hinged window hatch. The aircraft still lacks the armament, it's equipped with the De Havilland propeller and newer type of radio Tr.1133 (photo: Simon Erland).

never installed on Spitfires Mk.Vc. An important change was the introduction of the belt-fed Hispano II cannons allowing for larger ammunition load (120 bullets per cannon as opposed to 60 bullets with the older, drum-fed Hispano Mk.I (as on the earlier b type wing). These cannons were also less prone to jamming. The visual indication of their installation was a missing bulge under the cannon well which on Spitfire Mk.Vb appeared in two forms, straight, symmetrical on the older airframes and kidney-shaped, asymmetrical on the newer aircraft. In comparison, the upper bulge above the cannon well on Mk.Vc appeared in at least three different shapes based on the anticipated armament variant and was also subject to a certain improvisation at the unit level. Another fundamental change was the landing gear re-design, featuring strengthened gear legs' attachments and increased rake, moving the wheels 5 cm forward in comparison to the older Spitfire versions. This solution improved the aircraft stability during taxiing and ground maneuvers and was visually recognizable by a new, elliptical wheel well shape. Undercarriage retraction was already standard on all Mk.V Spitfires with a hydraulic pump driven by the engine. The wings and fuselage design were strengthened by the application of thicker sheet metal skin and later Mk.Vc batches featured flush rivets on the rear fuselage. The later aircraft also featured the horizontal tail surfaces with modified weight balance, pressurized fuel tanks, submersible fuel pump in the bottom tank and six single exhaust pipes on each side of the engine. Later Spitfires Mk.Vc batches were almost exclusively powered by Merlin engines series 50 and 55/56 with membrane-type carburetor. Moreover, Merlin 55/56 featured the separate piston blocks. Their specific versions were distinguished by compressors tuned for the optimal output at various operational altitudes.

Short wing/low level Spitfires LF Mk.V

In the course of 1942, the number of both defensive and offensive, low altitude missions increased. It led to the requirement to modify Spitfire Mk.V design in order to optimize their low altitude performance. Low level Spitfires LF Mk.Vb and LF Mk.Vc received Merlin engines series M (Merlin 45M, 50M and 55M) with smaller compressor diameter which gave the engine the highest output at low altitudes. In case of Merlin 45M it was 1,585 hp (1,182 kW) at 838 meters altitude. Another modification was the wing's strengthening design by means of two strips on the wing upper surfaces above wheel wells area. Some of the Spitfires LF Mk.V received "clipped wings", in fact shorter wingtips reducing the wingspan to 9.8 meters. This modification improved the rate-of-roll and moderately increased the maximum speed. The wingtips varied, both short and long ones could be installed. Therefore, the short wingtips do not decidedly identify the LF version.

Auxiliary fuel tanks

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

Tropical filters

In the dusty tropical and sub-tropical environments, the engine was subject to potential damages caused by sucked-in dust. To lower this risk Vokes company designed a voluminous, fully covered filter which formed a typical chin under the aircraft nose. The worsened aerodynamics together with the lower pressure of the entering air on such modified aircraft resulted in the maximum speed drop by approximately 12 kph, which was actually better value than the anticipated drop by 37 kph. These tropicalized versions were quite widely used in both Mediterranean and Far East theaters of operations. Tropicalized

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

airplanes undergoing maintenance at No. 103 Maintenance Unit in Egyptian Aboukir, received the Aboukir type filter manufactured by this unit. They were better aerodynamically shaped and featured a louver which opened the filter on the intake only at critical flight stages when larger dust volume could be sucked in. Two versions of this filter are known. The majority of aircraft equipped with Aboukir filter were of Mk.Vc version and in the course of modifications at No. 103 MU usually received the clipped wingtips and Rotol propellers as well.

The shortened wingtips fitted in Aboukir had a different shape to the conventional shortened wingtips of the LF Mk.Vb and Mk.Vc versions and did not have position lights fitted. Some aircraft retained the original wing design with classic wingtips, and aircraft with extended wingtips for high altitude operations, later used on the Spitfires HF Mk.VIII, are also known..

In combat

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

Some hard truth in the end

From the preceding outline of Spitfire Mk.V development you may get the feeling that it was pretty logical, one precisely specified version replaced another one on the assembly lines, the performance and characteristics were gradually increased. In short a text-book step by step evolution. Unfortunately not so. As usual, reality is much more diverse than the best thought out theory. The characteristics of the Spitfire versions were intertwining. The development was not straightforward, on the contrary, it was rather turbulent. The airframes were gradually upgraded during the overhauls or regular maintenance. So we encounter the aforementioned Mk.Vc with the exhaust pipes for the weapons' heating which were not supposed to be there or Mk.Vb with smooth leading edge featuring only the Hispano cannon barrel which is typical for Mk.Vc. Spitfire Mk.Vb categorization into Early, Mid and Late is neither precise nor clear. In fact many airframes with the integrated armor glass, considered as Mk.Vb late, were manufactured earlier than the series of aircraft with the outer armor glass designated as Mk.Vb mid. Similarly if the airframe features the integrated armor glass it does not automatically mean it also features the bulged Malcolm Hood sliding canopy. There were airplanes with the combination of the integrated armor glass and older sliding canopy with the flattened sides and ventilation opening. And then we have tropical Spitfires. Theoretically the vast majority of Spitfires Mk.Vb and Vc modified at No.103 OU in Aboukir were converted to LF Mk.Vb/c with the shortened wings. In fact many of these aircraft retained the standard non-clipped wing and we know about the aircraft with lengthened wings for high altitude operations typical for later versions HF Mk.VIII and IX. Much confusion still exists around the wing skin strengthening strips above the wheel wells. These were installed on the war-weary airframes when the skin degradation and fatigue cracks started to appear. These aircraft are typically the well-preserved museum exhibits. For that reason these strengthening elements are considered the integral parts of Spitfire Mk.V design as well as Mk.I and Mk.II. Not true again. Actually it is very difficult, maybe even impossible to find these strips on the wartime Spitfires operational at the combat units. We could continue naming these types of anomalies indefinitely. Let's conclude this chapter on Spitfire Mk.V development with the statement that as far as this aircraft is concerned nothing is impossible, features that are not supposed to be there are found and vice versa. But that's the life I guess. Well, it's not only a matter of life, it's a matter of war as well. War is the true reason for this apparent chaos. However, it's the chaos from today's point of view, point of view of the people in whose world the technical progress is fast but contained by certain conditions and norms or let's say by the letter of law. This was completely different at the time of war. The whole life in the society, all manufacturing and the individual lives were subject to one single goal: the victory.

It was the goal cherished by the victorious nations decades after the end of hostilities and up until these days. Since the outbreak of the war, which some people naively expected to be short and easy, it was clear that the victor will be the tougher, more powerful and more creative one. It has been like that in every war as far as we can remember just due to some mysterious reasons people, including their top leaders, kept forgetting it to only re-learn those facts when the new conflicts occured. The Second World War was no different in this aspect; it was however unique in its scale, persistence, damages and horrors it caused. Everyone involved was determined, tough and persistent, all nations that took part in it reached to the bottom of their resources despite different levels in casualties, suffering of the soldiers and civilian population as well. As we know it was getting worse going further to the East. The aviation industry reflects the given period of time and this was identical on both sides of the front. You will find the Spitfire's development mirror image in Messerschmitt Bf 109 development. The same motivations, same goals, same problems and same results. The greatest effort was made to produce as many aircraft as possible, with the best performance possible and surpass the enemy both in numbers and quality. There was the same effort on both sides resulting in the deadly race. Every innovation on one side triggered the innovation on the opponent's side, every increase in performance almost immediately caused the rapid reaction in the enemy's camp. If we apply this principle to the competition between Spitfire and Bf 109 it will be crystal clear. Just the scale of troubles experienced during manufacturing will be opposite on the timeline. With a fair amount of simplification we can say that while in Britain, or the Allied side, the most serious problems were encountered at the beginning of the war, culminating during 1940-1942, things got streamlined towards the end of the conflict when the material supremacy of the Allies was absolute. Of course the economical potential of the United States played a crucial role but we cannot underestimate the importance of the British industry and its share in the Allied manufacturing achievements. It was the opposite on the Axis side. Out of all countries Germany was best prepared for war and in 1940 lived in euphoria that its industries could supply the armed forces without problems until the victorious end. The breakpoint was reached however in the second half of 1942 with the opposite trend than in Allied countries. Even though the productivity of the German industry continued growing it was consistently falling behind the Allied industries and the supplies to the armies at the fronts were getting worse proportionally to improving supplies to the Allied armies.

From this aspect some apparently illogical facts start to emerge in a different light. As an example, the aforementioned fabric-covered ailerons on Spitfires Mk.I and Mk.V remained in production long after the new, more effective all-metal ailerons were developed. They were approved for large-scale production in December 1940 but almost the whole first half of 1941 Spitfires were leaving the assembly lines with the fabric-covered ailerons and in some combat units a large number of aircraft still featured these ailerons in late summer and fall 1941. During this time, typically pragmatic Americans, without any lengthy approval process, started to cover the ailerons on their Spitfires with the plywood. So this was happening almost a year after the all-metal ailerons were to undisputedly replace the fabric-covered ones on manufacturing lines (one can hardly imagine the situation like this nowadays). If we however factor in all other facts of that period of time we will get another picture. What was happening then? The winter 1940/41 German bombing raids on Britain continued until the spring. The Spitfires production however was seriously affected by the raid on September 26, 1941 when the Supermarine plants in Wolston and Itchen were heavily damaged. This resulted in the production reorganization, component manufacturing had to be spread among the number of subcontractors and the aircraft final assembly was being transferred to new locations. This of course caused a number of problems not only in manufacturing but also in the logistics which had to be dealt with promptly. Restarting the Spitfire Mk.I manufacturing before the end of 1940 is from this point of view a miracle enhanced by a fact that the aircraft manufactured were continuously improved. After New Year's 1941 Spitfire Mk.V production was being launched. The goal was to improve Spitfire performance to the level of the most powerful RAF fighter before Bf 109F started to appear at the front and soon even better and more dangerous FW 190A made their debut. At the same time RAF losses were mounting after commencing the permanent offensive in the spring of 1941 which created an enormous pressure on their replenishment. In such a situation the quantity beats quality and the manufacturer under pressure prioritizes fulfilling the orders at all cost. The requirement was to deliver the aircraft with a more powerful engine and more powerful weapons in sufficient numbers to meet combat needs. The production met the goals however at the cost of the enormous problems. There was a shortage of everything, from labor force to material to means of daily consumption but time was in the shortest supply. In such a situation the fabric-covered ailerons were a minor problem for the manufacturers. Their production was going smoothly, it was well established, fabric was applied by highly skilled female workers and as such it was not a burden for the overall plant tasks. All-metal ailerons were a different cup of tea. Their immediate implementation would take away some capacity from the airframe production. While the responsible department would train for the new technology it would result in the short supplies of the ailerons and for some time no deliveries at all. The personnel enthusiasm for technology change has never been great either. It's been a problem since the Industrial Revolution and it remains the issue nowadays. People don't like to change something that works and can put up a persistent and sophisticated resistance against the change. If you are a manager you are under the customer's pressure and if you don't want to get a heart attack you need to minimize the problems resolving the major ones first addressing minor ones later. Big problem was new engines and heavier weapons installation. That had to be solved, it was a fundamental problem. The ailerons were a minor problem, the manufacturing was going smoothly, the airplanes were flying with them just fine so the problem was put on the back burner. The air force got their share of trouble while introducing Mk.V into the operations such as engine overheating, guns freezing etc. therefore the ailerons and their limits were not really on the radar screen. Once these initial problems were resolved in the summer of 1941 the damned ailerons came back on the agenda and the air force demanded the thorough replacement of the fabric-covered ailerons for all-metal ones on all Spitfires in service. So finally the manufacturers had to yield and implement the change. Does it make sense to you? It does to me, it sounds all too familiar. It is exactly the same with new technologies introduction in our company, with one exception, no one is dropping bombs on our heads and instead of RAF the modellers are yelling at us when something does not work at the first shot. And nothing works satisfactorily for the first time.

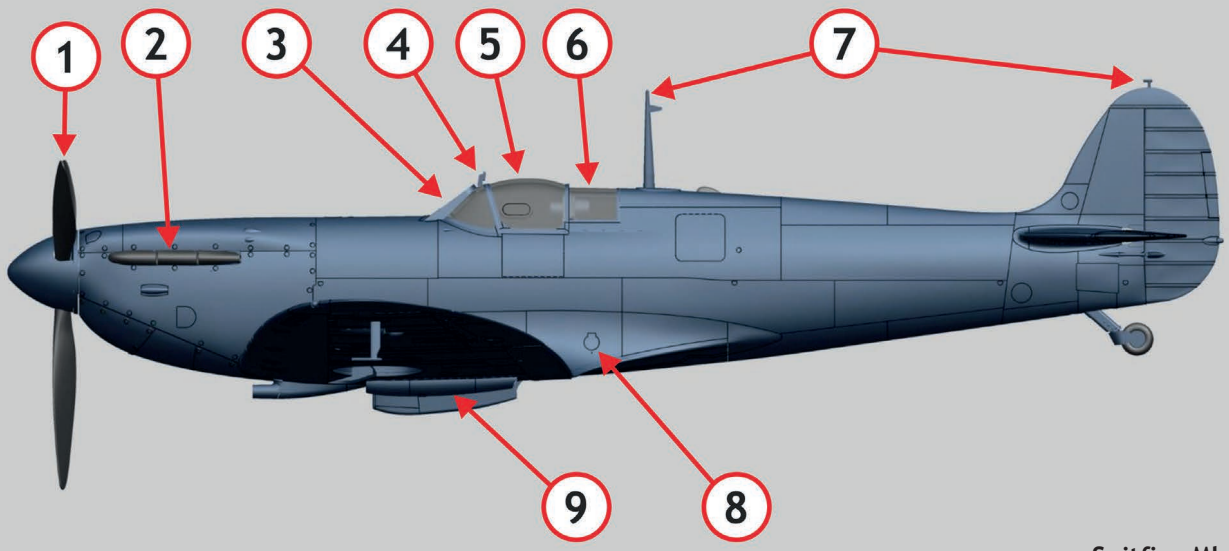
We can go case by case and it will be the same story. Ridiculing it, talking about chaos and inability is not fair. Only us, people from the future, from our perspective of the over-educated and over-regulated smart heads living in comfort who have rather vague and Hollywood-distorted visions about the conditions our ancestors lived in and problems they dealt with. Once we get in-depth familiar with these conditions and put the historic processes and facts into the perspective, which we otherwise tend to judge separately, we will change our opinion. We will appreciate what our ancestors achieved and have to bow to them very low. And regardless of the nation we belong to. It doesn't matter if we speak about the British, Americans, Germans, Japanese, Czechs or Russians. In principle the stories are the same. Let's respect and honour our ancestors and let's make an effort not to lose the well-being, achieved thanks to their work and sacrifices, because of our ignorance and arrogance.

The following 47 figures will lead you through the Spitfire Mk.V development depicting the details peculiar to each version. The focus is on the changes made in comparison to the previous version. The common features are usually not described and commented on, however exceptions can be found in some figures.

Enjoy studying the following references.

Spitfire Mk.Va

Fig. 1



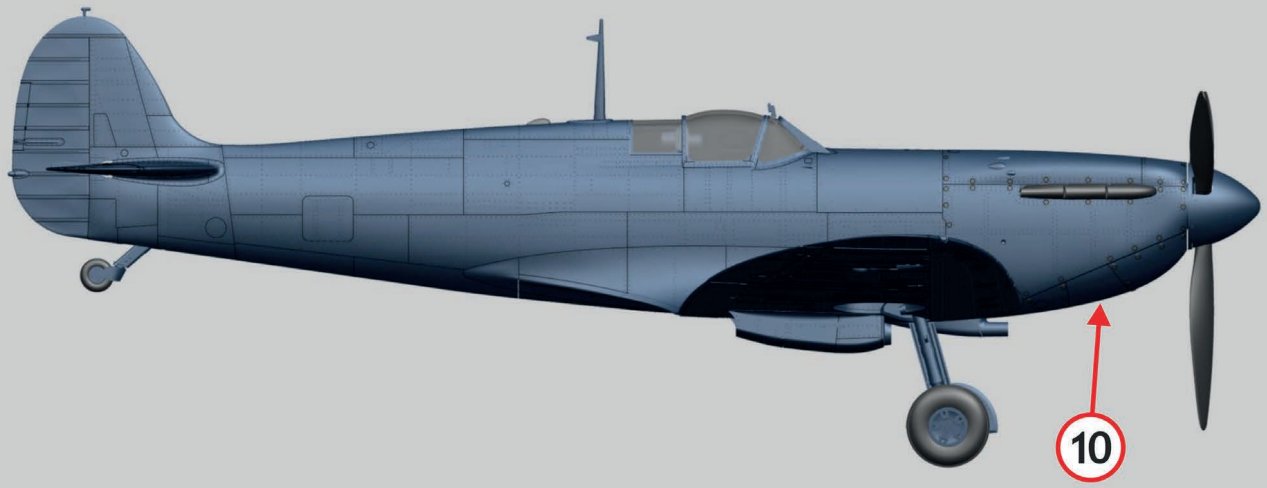
Spitfire Mk.Va

This view pictures Spitfire Mk.V converted from Spitfire Mk.Ia by Merlin 45 engine installation into the Spitfire Mk.Ia airframe.

Figure 1:

1. De Havilland Hydromatic Type 5/39 constant speed propeller
2. Exhausts feature straight tubes of the same type as on Mk.I and Mk.II
3. 2 in thick outer armor glass mounted on the windshield
4. Rear mirror
5 Convex canopy with a ventilation opening
6. Transformer located on the fuselage bulkhead behind the headrest
7. TR.9D radio antenna masts for antenna wires. Some airframes were still equipped with these radios, some were already furnished with new TR.1133 radios without antenna wires
8. 12V electrical socket
9. The original smaller oil cooler with U-shaped air intake

Fig. 2

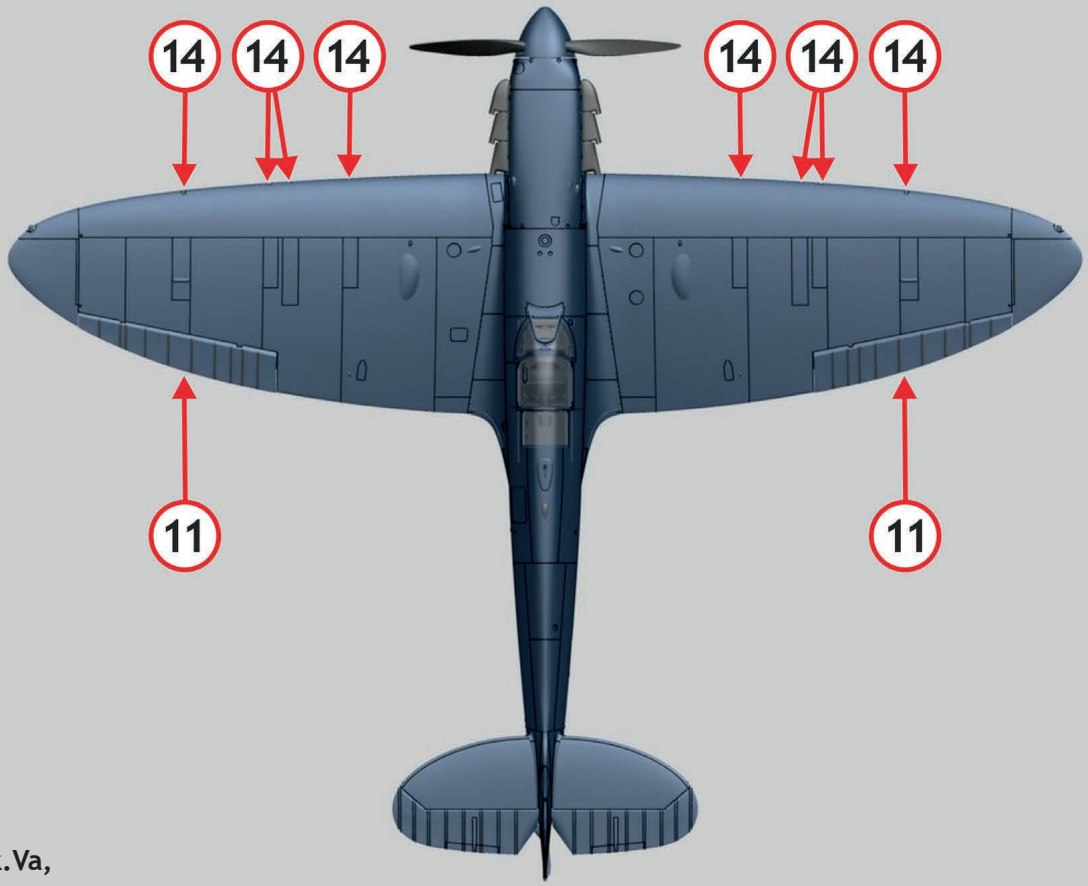


Spitfire Mk.Va

Figure 2:

10. Merlin 45 engines already lacked the Cowman pyro starter, engine cowling is missing the starter's cover bulge

Fig. 3



Spitfire Mk.Va, conversion from Mk.Ia

Figure 3:

11. The fabric covered ailerons. Large number of Mk.Va and Mk.Vb Spitfires still featured the fabric covered ailerons. Significant portion of Spitfires Mk.V, converted from Spitfires Mk.I, featured them as well.

14. Eight 7.7 mm caliber Browning machine guns

Spitfire Mk.Va
(photo: Simon Erland)

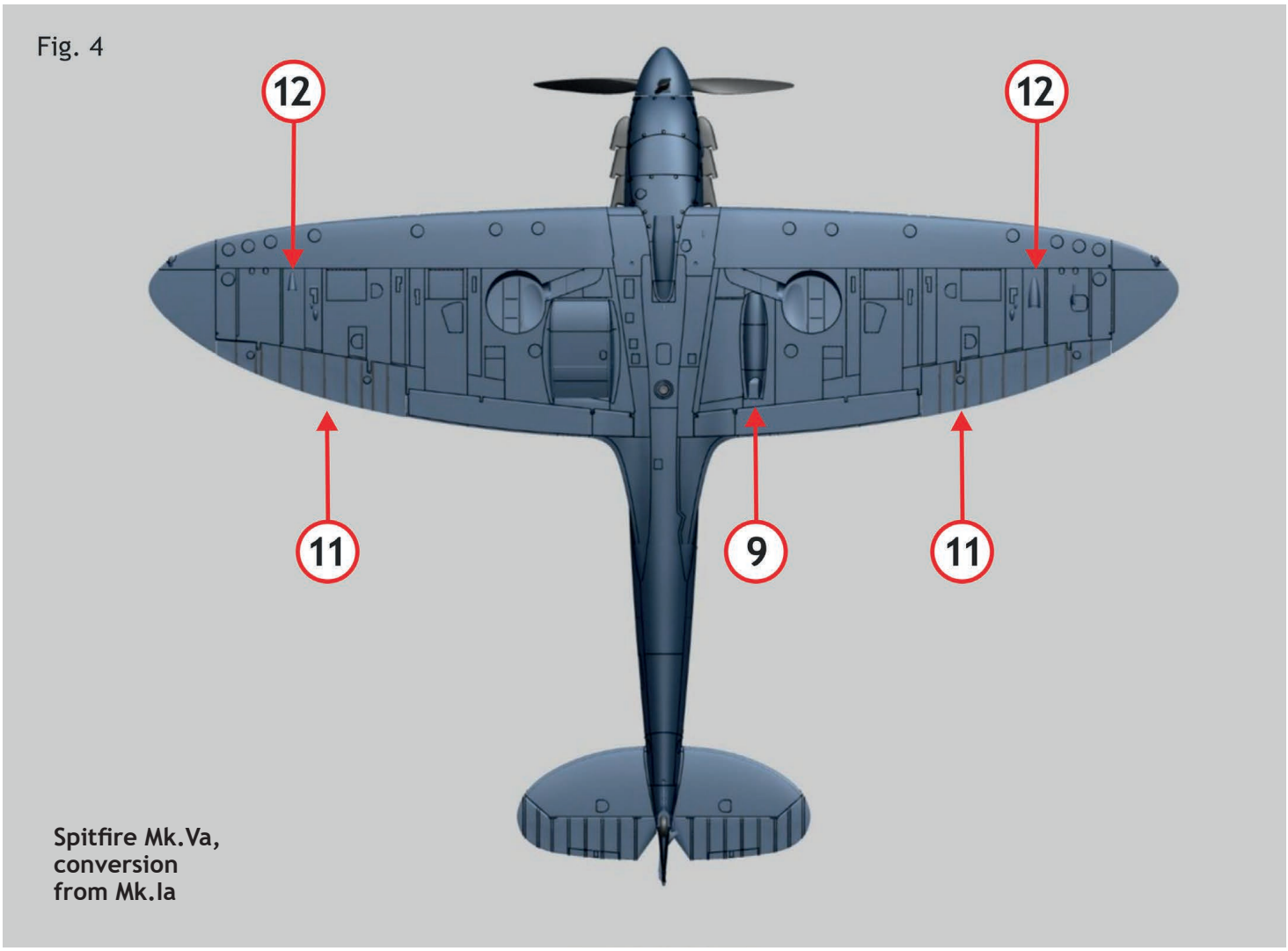
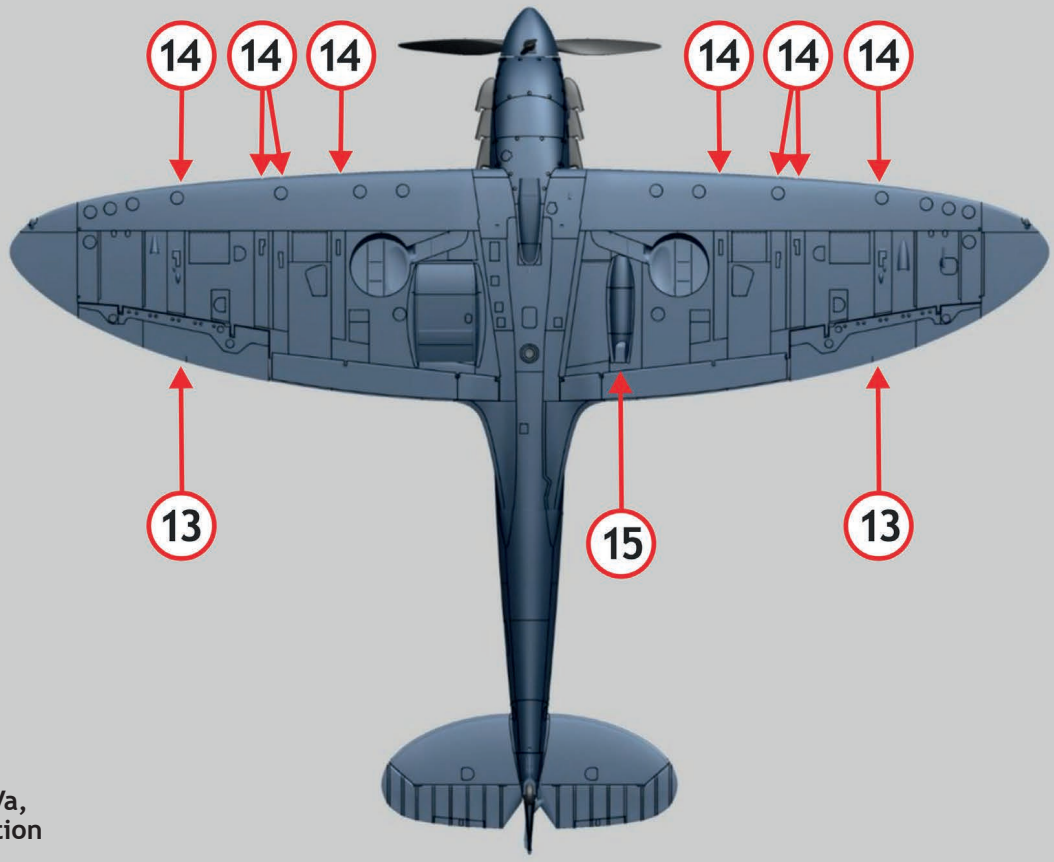


Figure 4:
9. The original smaller oil cooler with U-shaped air intake
11. Fabric covered ailerons
12. Exhausts for the weapons hot air heating

Spitfire Mk.Va with tropical filter Vokes
(photo: Simon Erland)

Fig. 5

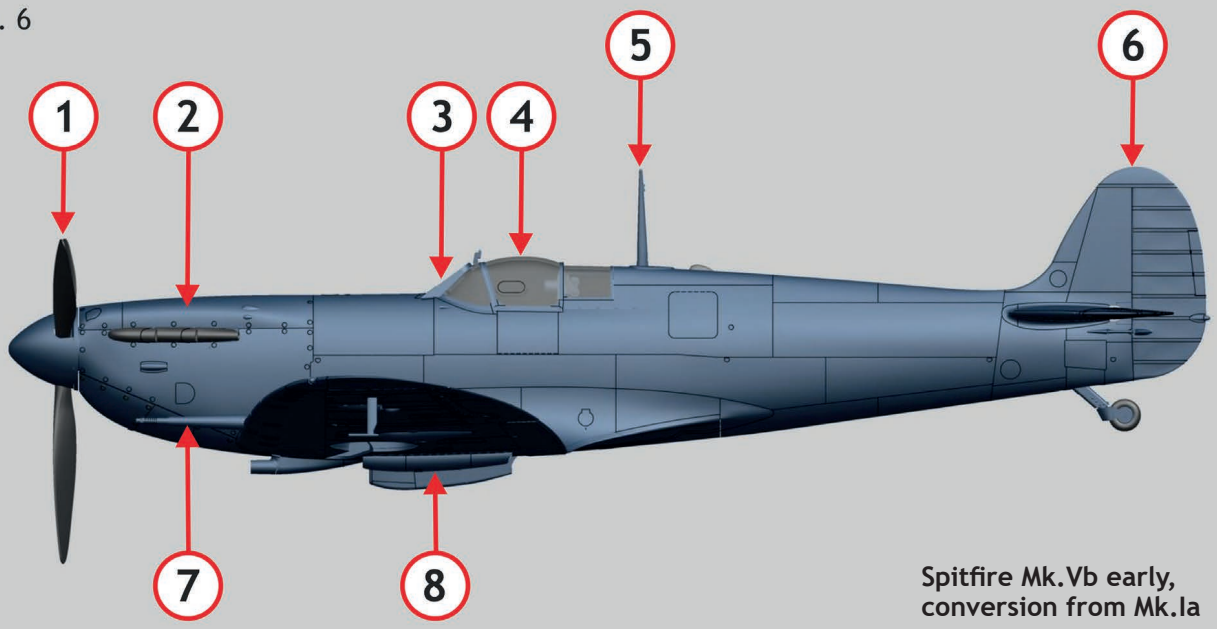


Spitfire Mk.Va,
new production

Figure 5:
13. All-metal ailerons
14. Eight 7.7 mm caliber Browning machine guns
15. Larger oil cooler with the circular air intake

Spitfire Mk.Vb early

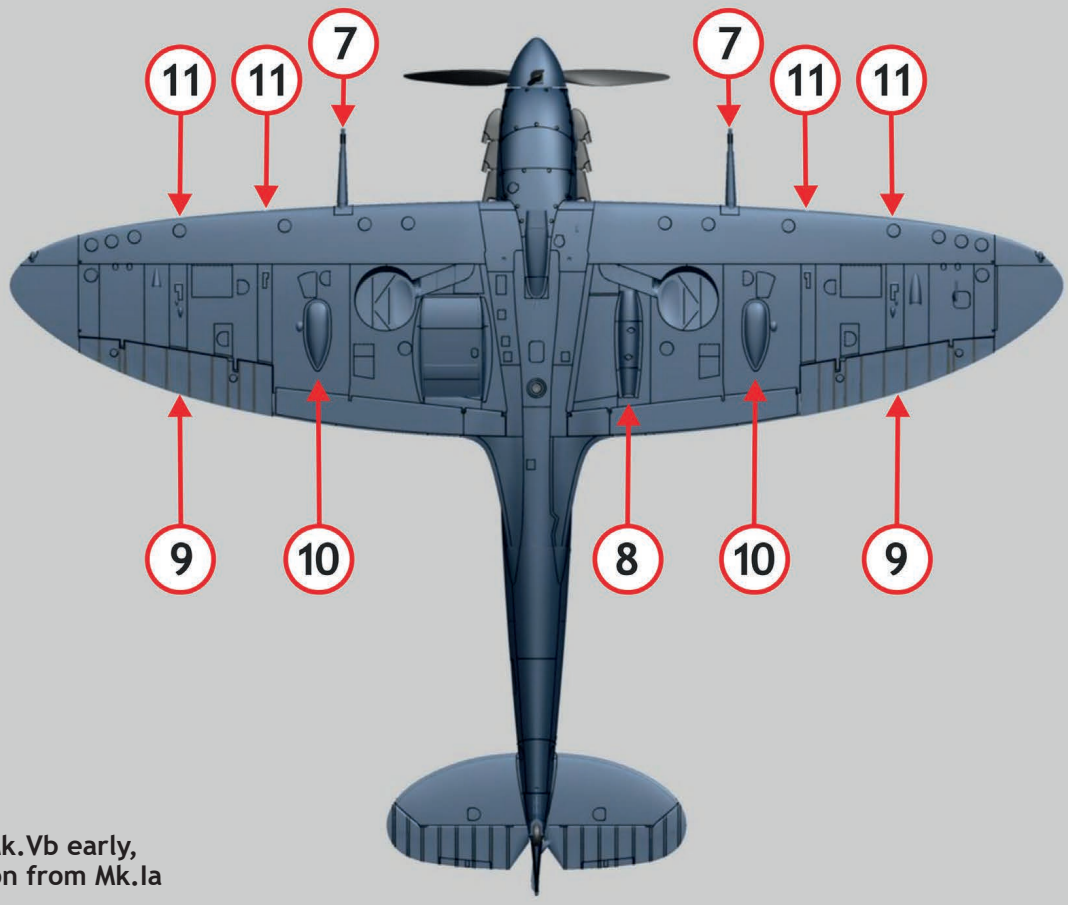
Fig. 6



Spitfire Mk.Vb early,
conversion from Mk.Ia

Figure 6:
1. Rotol RX5/24 constant speed propeller
2. Straight exhausts
3. 2 in thick outer armor glass mounted on the windshield
4. Convex sliding canopy with a ventilation opening
5. TR.1133 radio antenna mast without antenna wires
6. Rudder missing antenna mast
7. 20 mm caliber Hispano Mk.1 cannons
8. Older, smaller oil cooler with the U-shaped air intake. These coolers were replaced on the assembly lines with new, larger oil coolers with a circular air intake and were retro-fitted to the airframes initially manufactured with smaller coolers

Fig. 7



Spitfire Mk.Vb early, conversion from Mk.Ia

Figure 7:

7. 20 mm caliber Hispano cannons
8. Older, smaller oil cooler with the U-shaped air intake
9. Fabric covered ailerons
10. Longer, narrow, symmetrical bulges on the guns well lower cover
11. 7.7 mm caliber Vickers machine guns

Spitfire Mk.Vb early (photo: Simon Erland)

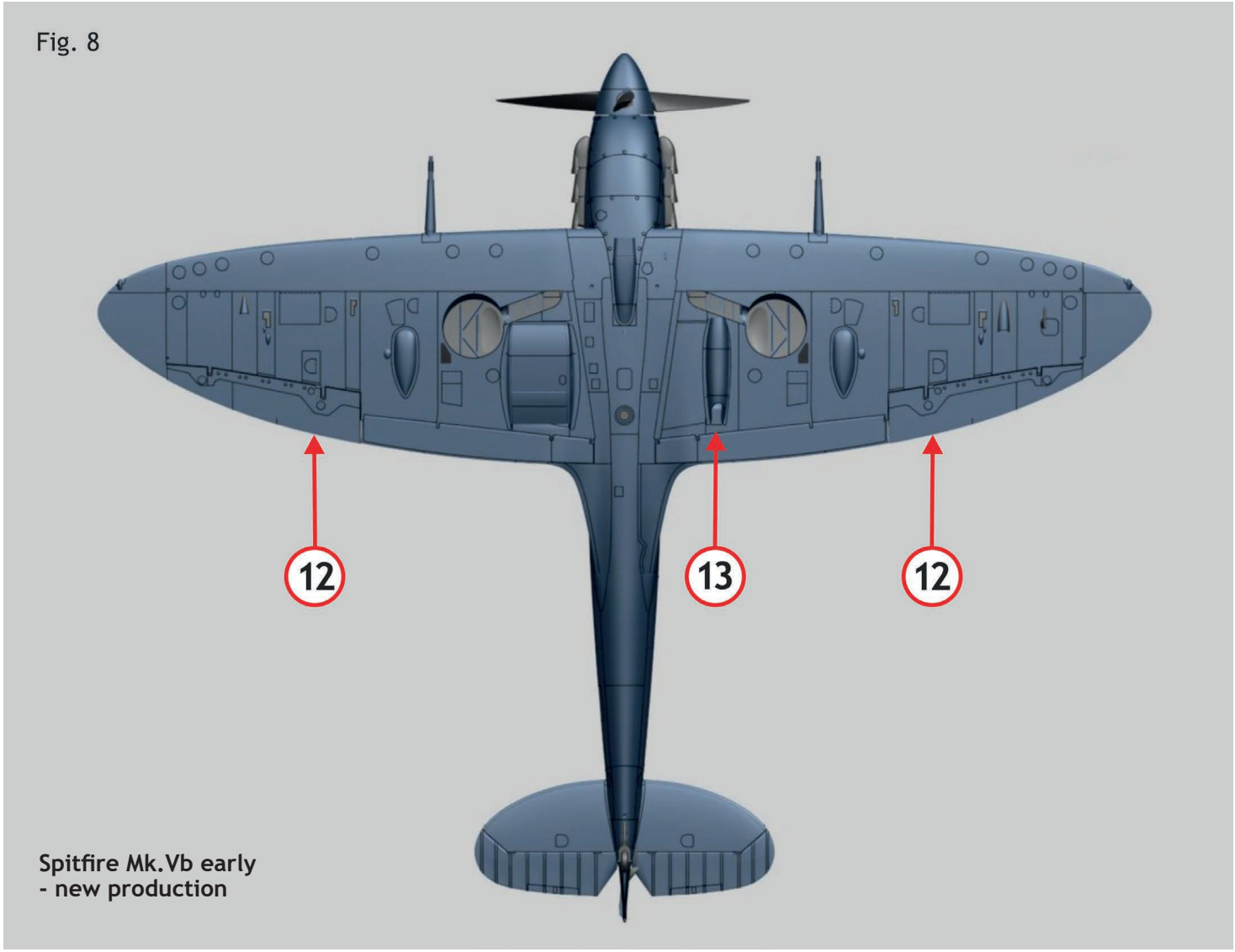


Figure 8
12. All-metal ailerons
13. Larger oil cooler with the circular air intake

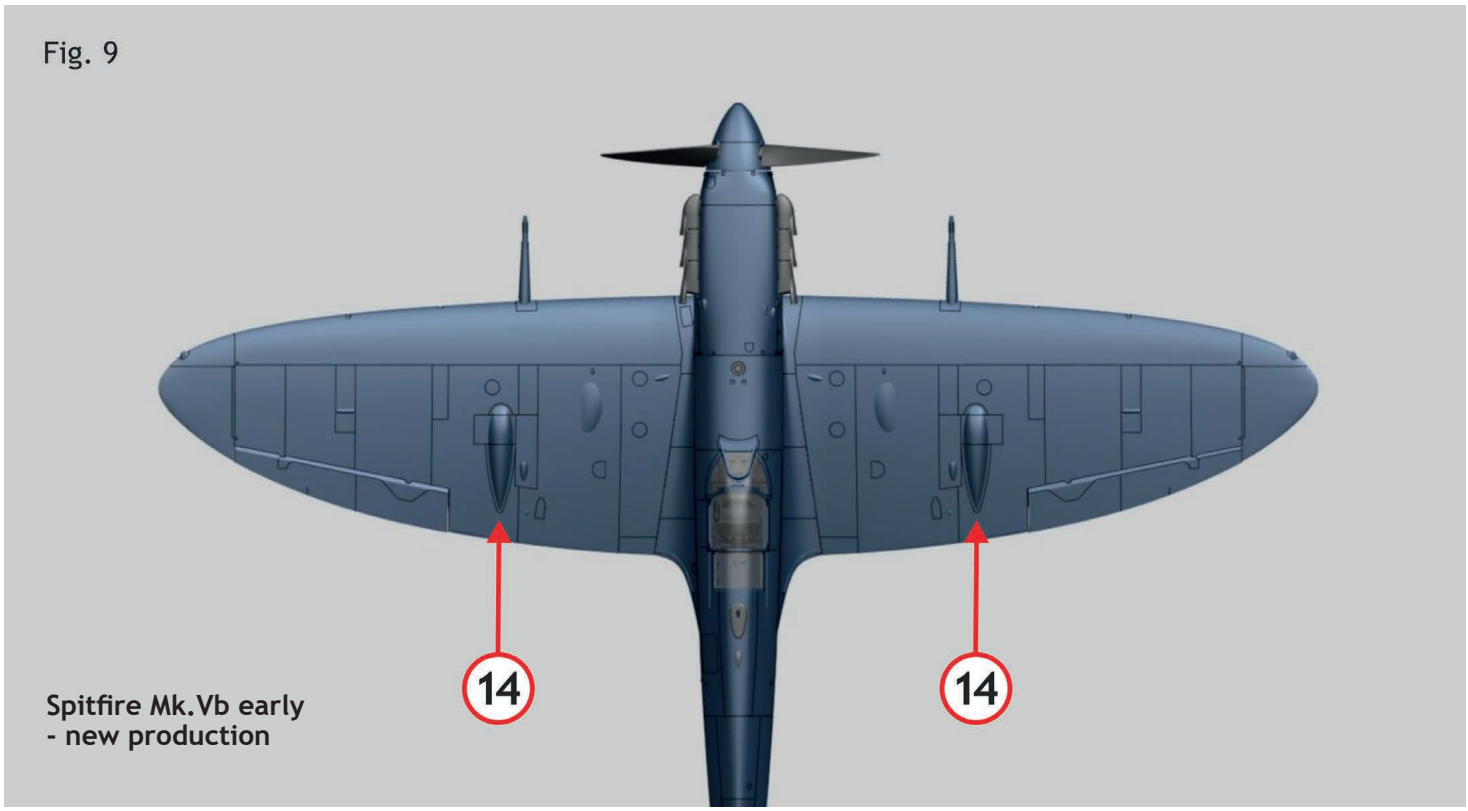


Figure 9
14. Bulges on the cannon well upper cover

Fig. 10

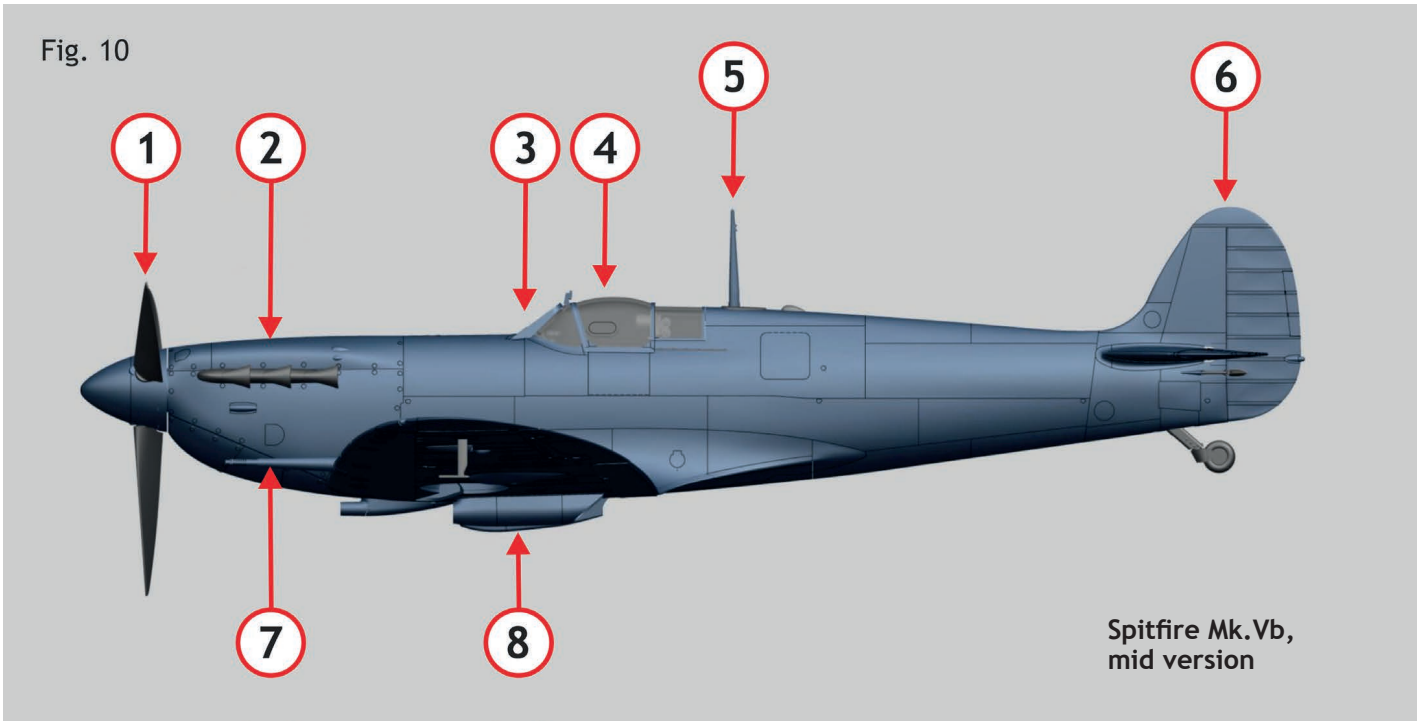


Figure 10
1. Rotol RX5/24 constant speed propeller
2. Fishtail exhausts
3. 2 in thick outer armor glass mounted on the windshield
4. Convex sliding canopy with the ventilation opening
5. TR.1133 radio antenna mast without antenna wires
6. Rudder missing the antenna mast
7. 20 mm caliber Hispano cannons
8. Larger oil cooler with the circular air intake

Fig. 11

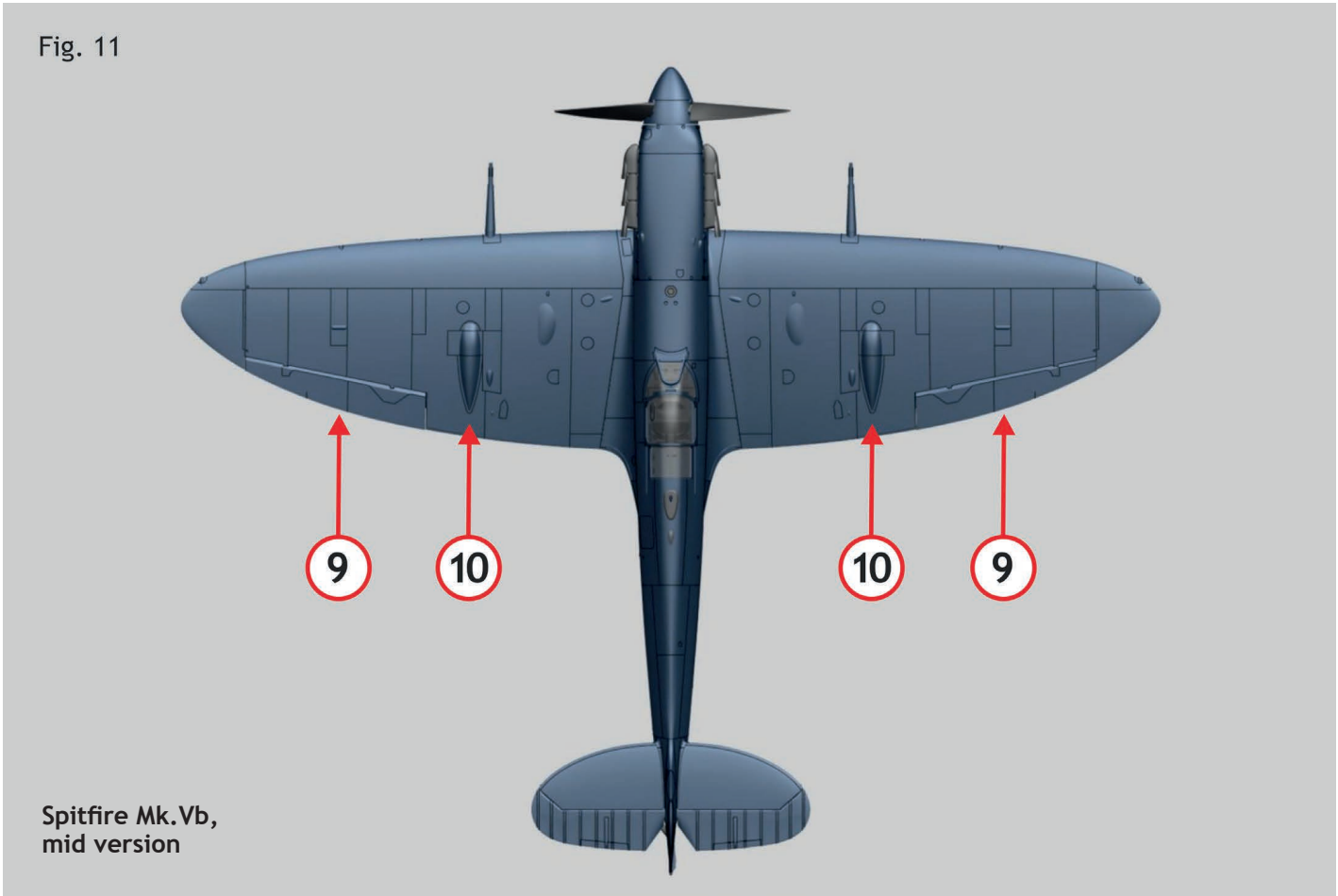
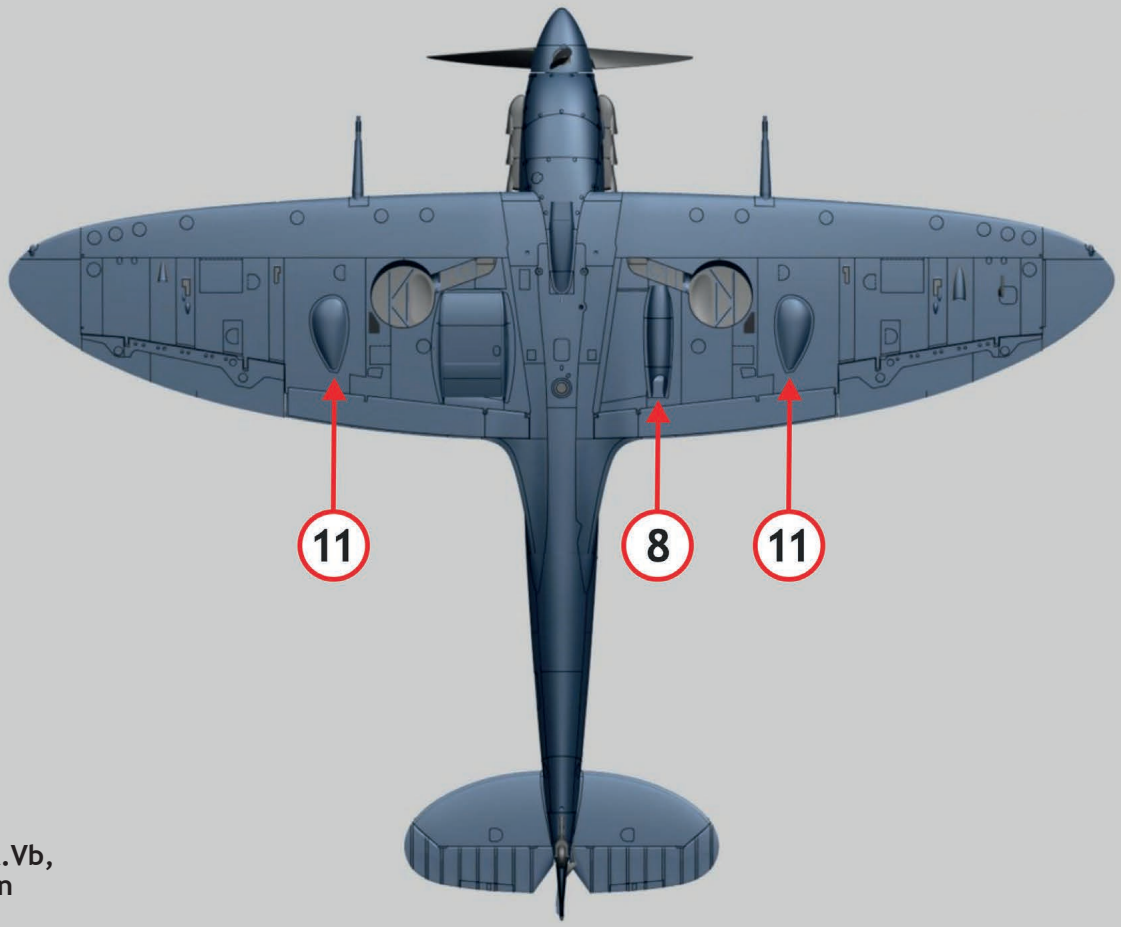


Figure 11
9. All-metall ailerons
10. Bulges on the cannons well upper cover

Fig. 12



Spitfire Mk.Vb,
mid version

Figure 12:
8. Larger oil cooler with the circular air intake
11. Asymmetrical bulges on the guns well lower cover

Spitfire Mk.Vb mid
(photo: Simon Erland)

Fig. 13

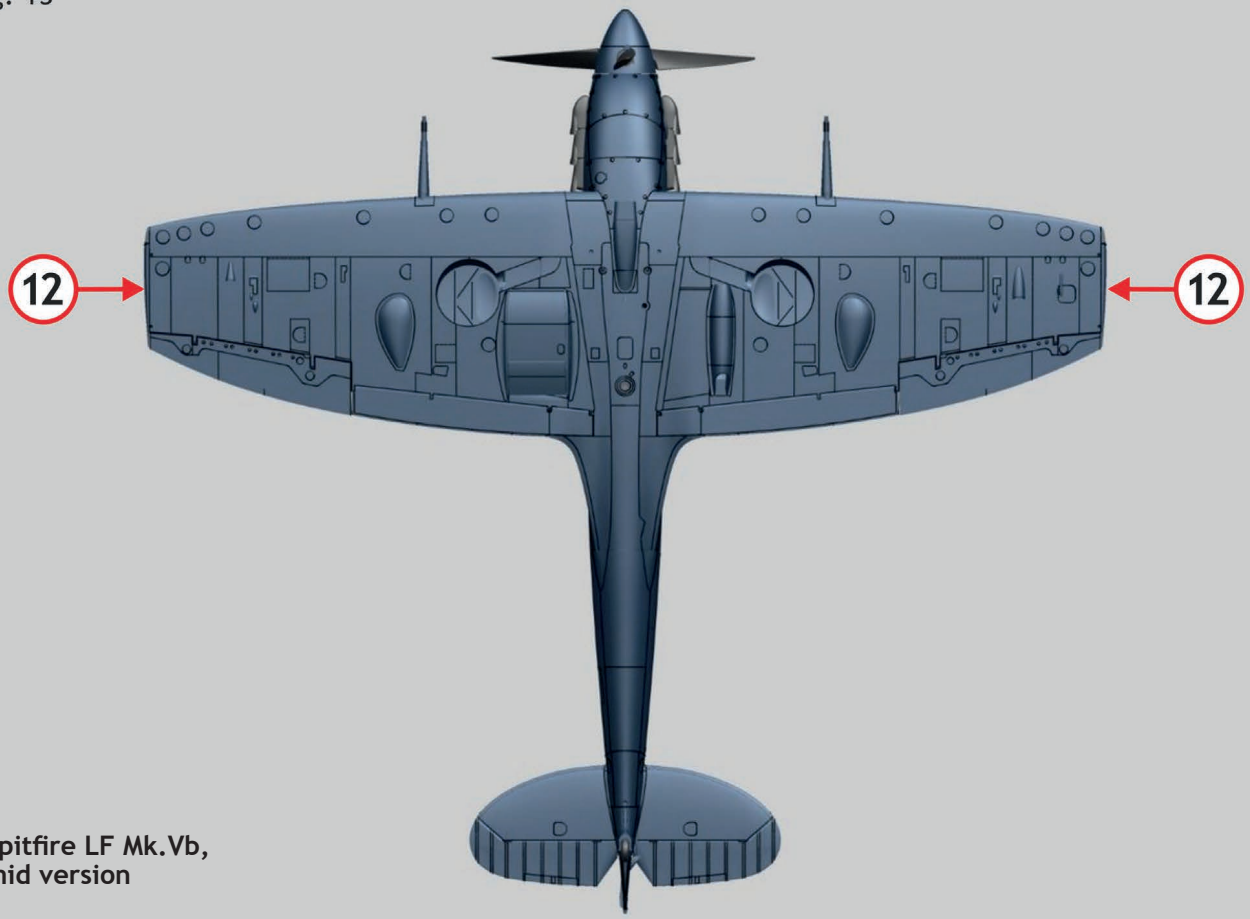


Figure 13

12. Shortened wing tips (LF Mk.Vb). They were used on all Spitfire versions.

Spitfire Mk.Vb late

Fig. 14

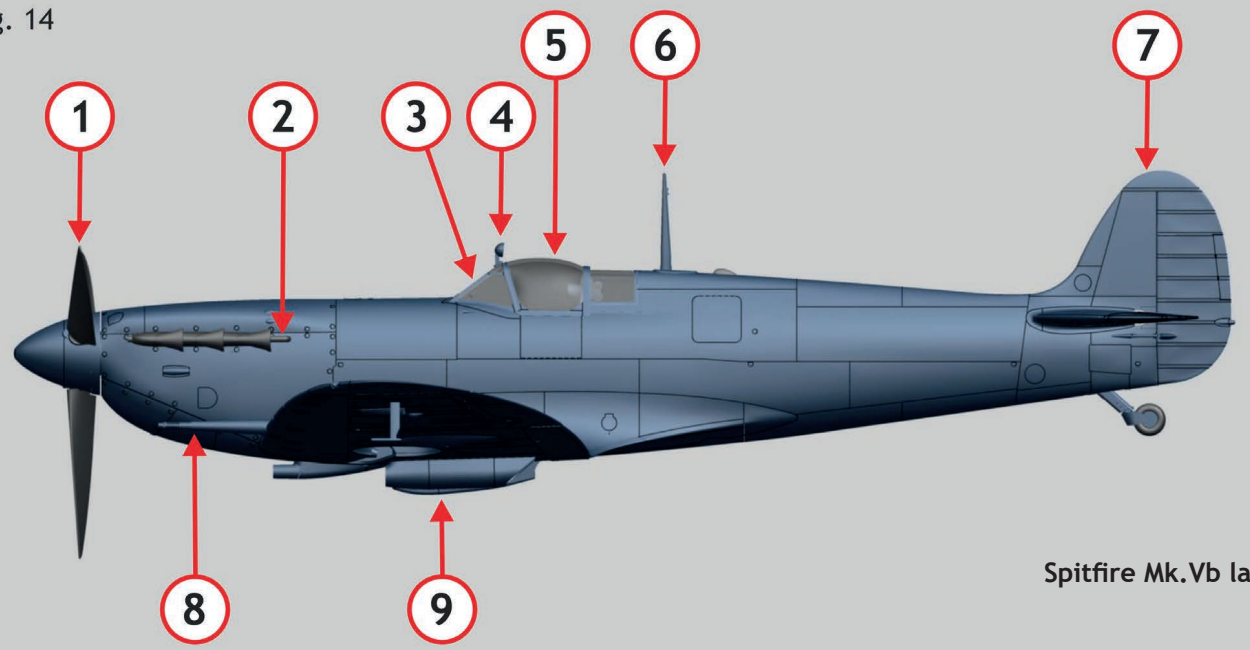
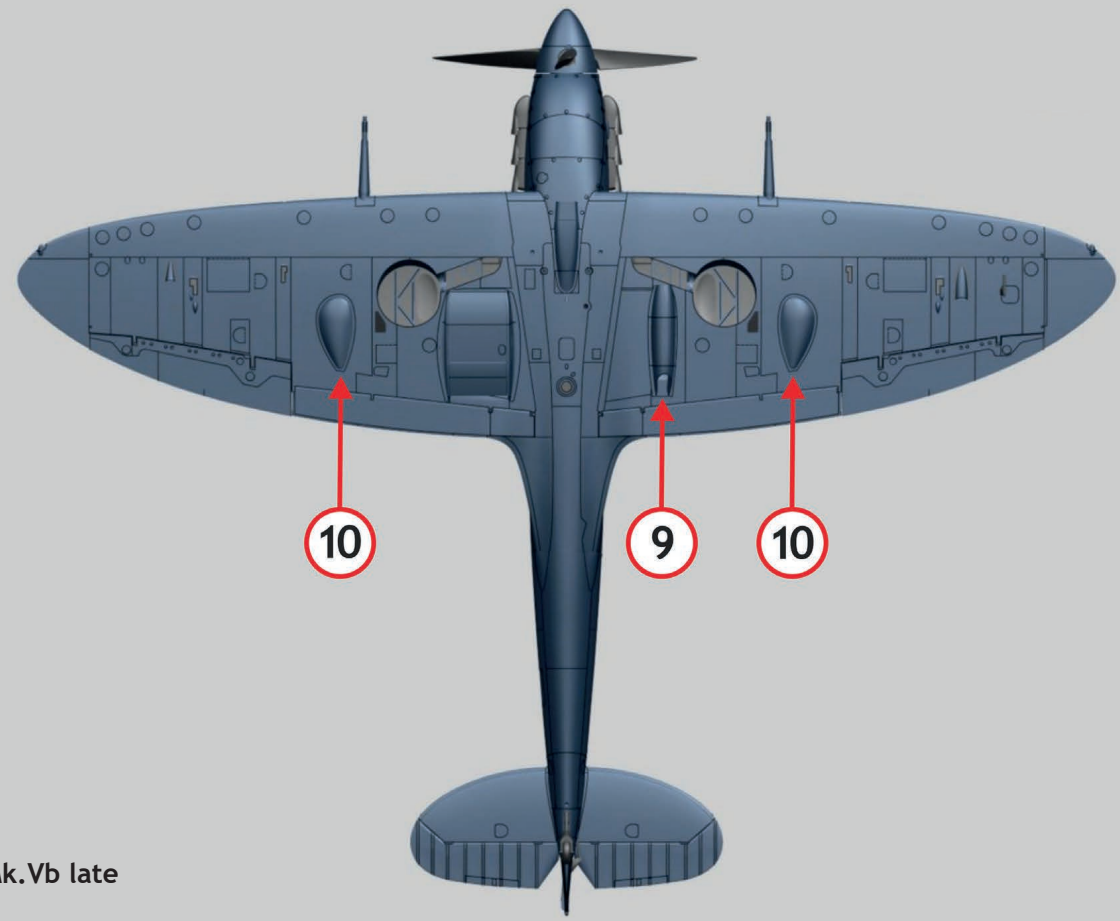


Figure 14

1. Rotol RX5/24 constant speed propeller. Various types of propellers were used.
2. Fishtail exhausts with a pipe for hot air guns heating
3. Inner (integrated) armor glass on the windshield
4. Larger rear mirror. Various types of mirrors were used.
5. Bulged sliding canopy missing the ventilation opening
6. TR.1133 radio antenna mast without antenna wires
8. 20 mm caliber Hispano cannons
9. Larger oil cooler with the circular air intake

Fig. 15

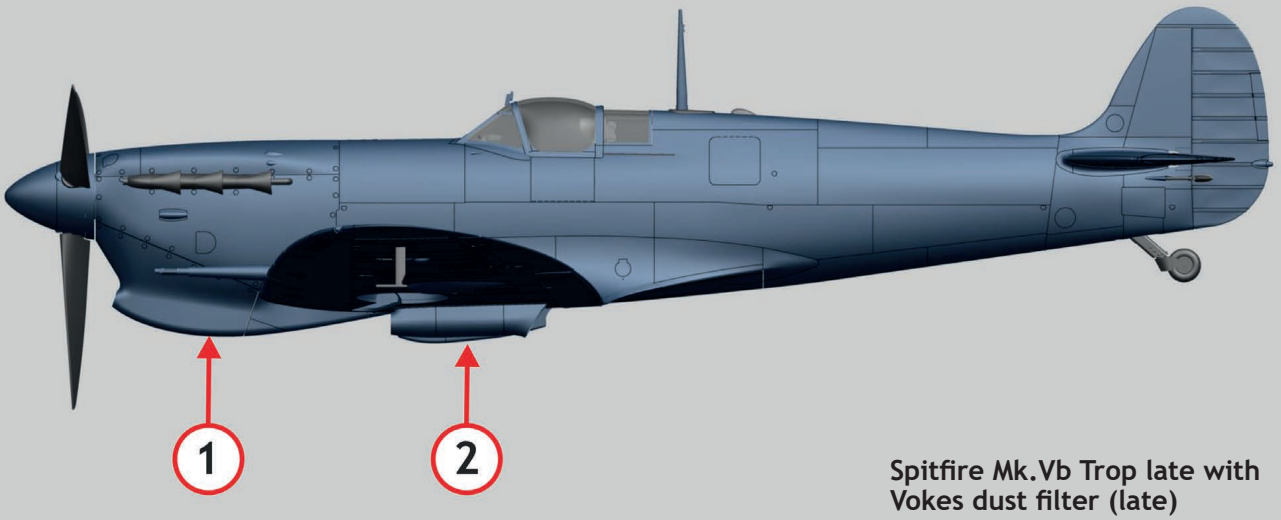


Spitfire Mk.Vb late

Figure 15:
9. Larger oil cooler with the circular air intake
10. Asymmetrical bulges on the gun well lower cover

Spitfire Mk.Vb Trop late with Vokes dust filter

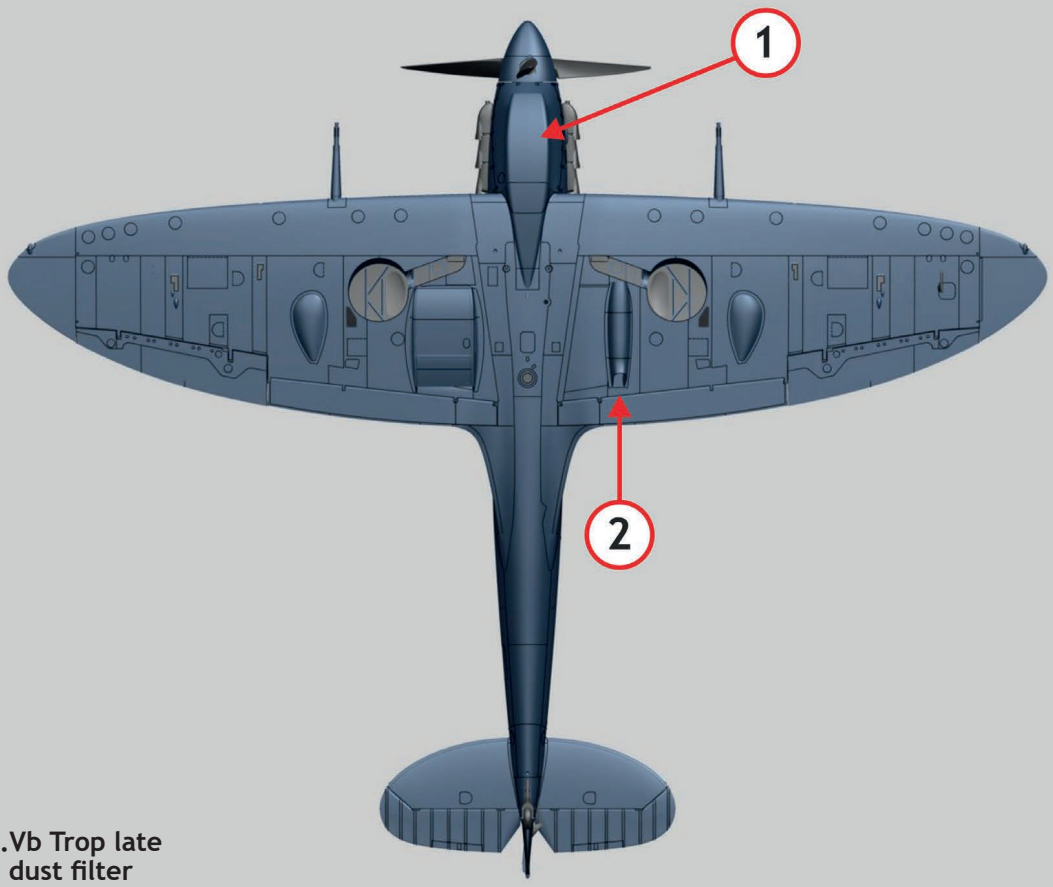
Fig. 16



Spitfire Mk.Vb Trop late with Vokes dust filter (late)

Figure 16:
1. Vokes dust filter. Vokes filters were used on all Spitfire Mk.Vb and Mk.Vc versions
2. Large tropical oil cooler.

Fig. 17

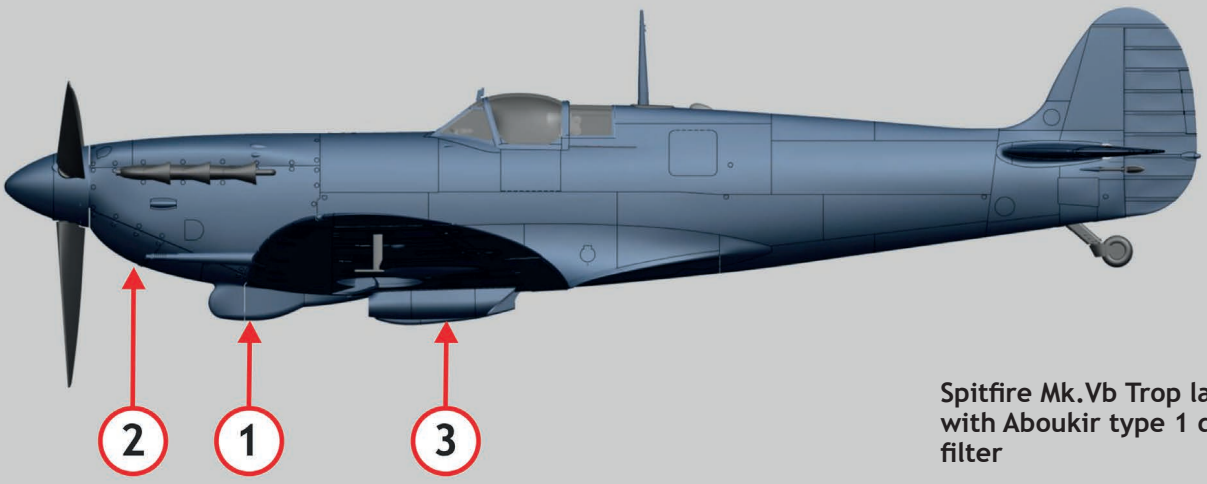


Spitfire Mk.Vb Trop late with Vokes dust filter

Figure 17:
11. Vokes type dust filter
2. Large tropical oil cooler (it is not the same as the „Larger oil cooler with the circular air intake“, see 9. on fig.14)

Spitfire Mk.Vb Trop late with Aboukir type 1 dust filter

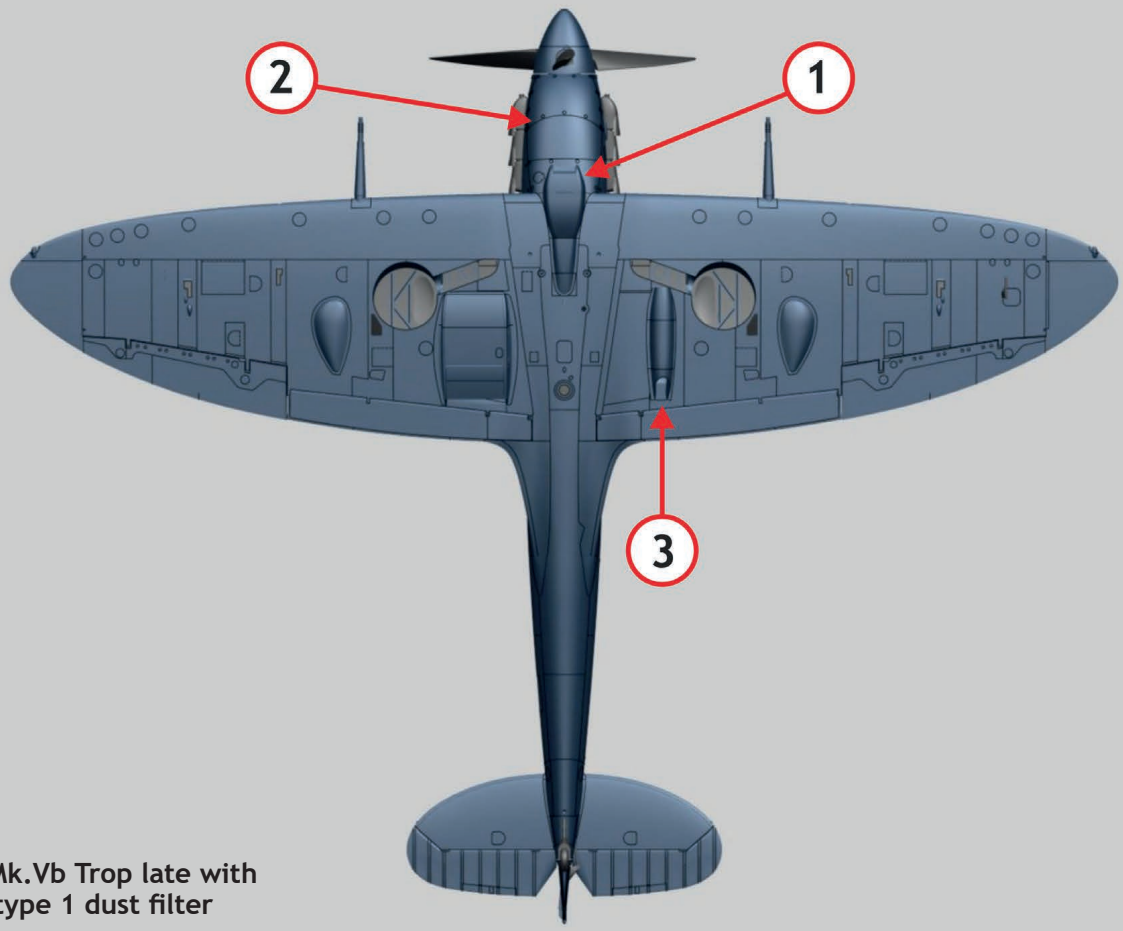
Fig. 18



Spitfire Mk.Vb Trop late with Aboukir type 1 dust filter

Figure 18:
1. Type 1 (older) Aboukir dust filter
2. Unchanged front lower engine cowling
3. Large tropical oil cooler

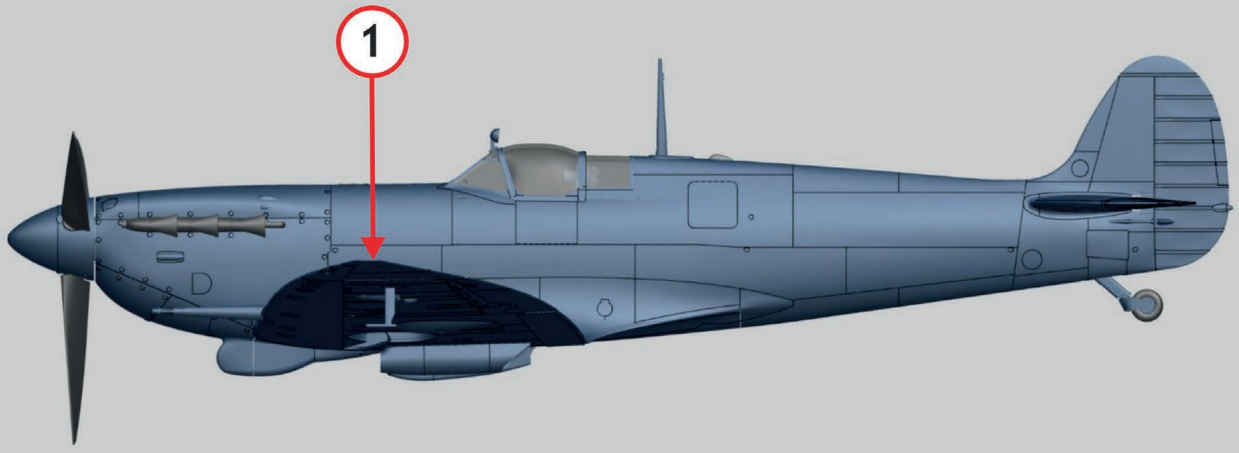
Fig. 19



Spitfire Mk.Vb Trop late with Aboukir type 1 dust filter

Figure 19:
1. Type 1 (older) Aboukir dust filter
2. Unchanged front lower engine cowling
3. Large tropical oil cooler

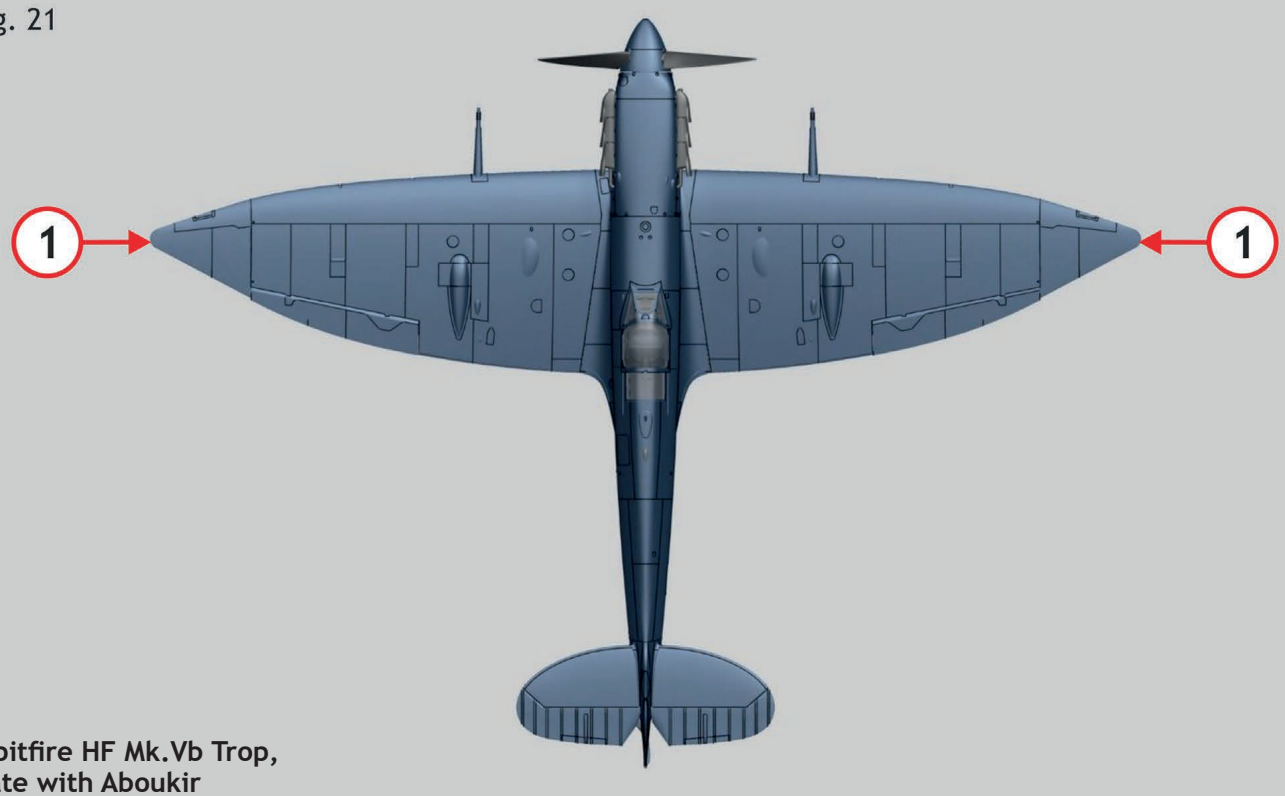
Fig. 20



Spitfire HF Mk.Vb Trop, late with Aboukir type 1 dust filter

Figure 20
1. Lengthened wing tips for high altitude operations (HF.Mk.Vb)

Fig. 21

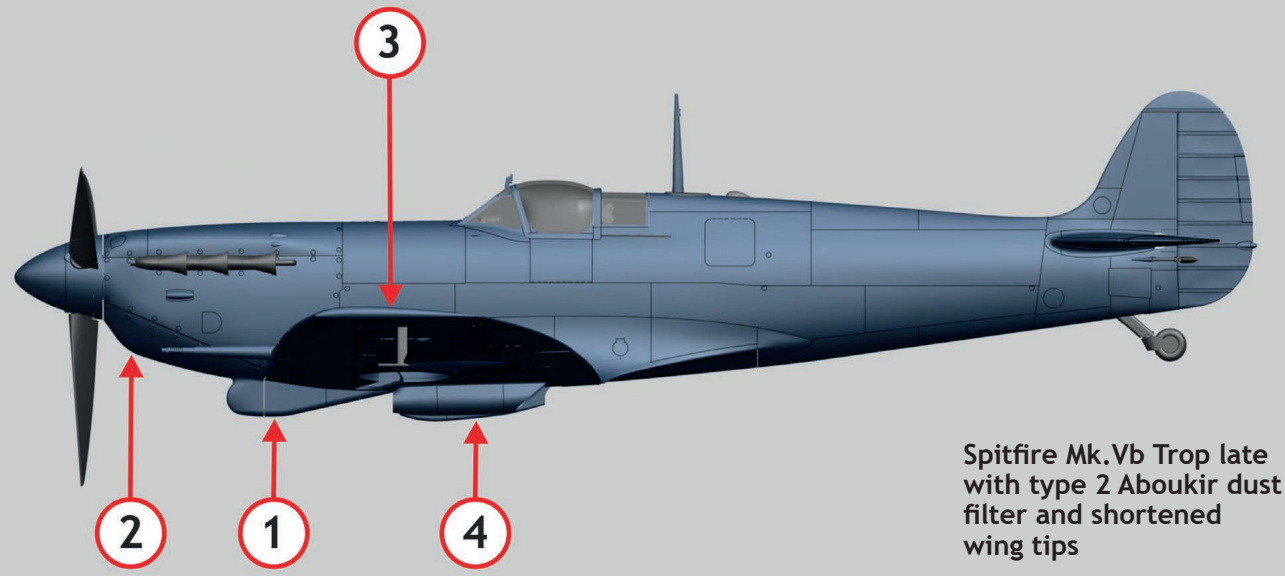


Spitfire HF Mk.Vb Trop,
late with Aboukir
type 1 dust filter

Figure 21:
1. Lengthened wing tips for high altitude operations (HF.Mk.Vb)

Spitfire Mk.Vb Trop late with type 2 Aboukir dust filter

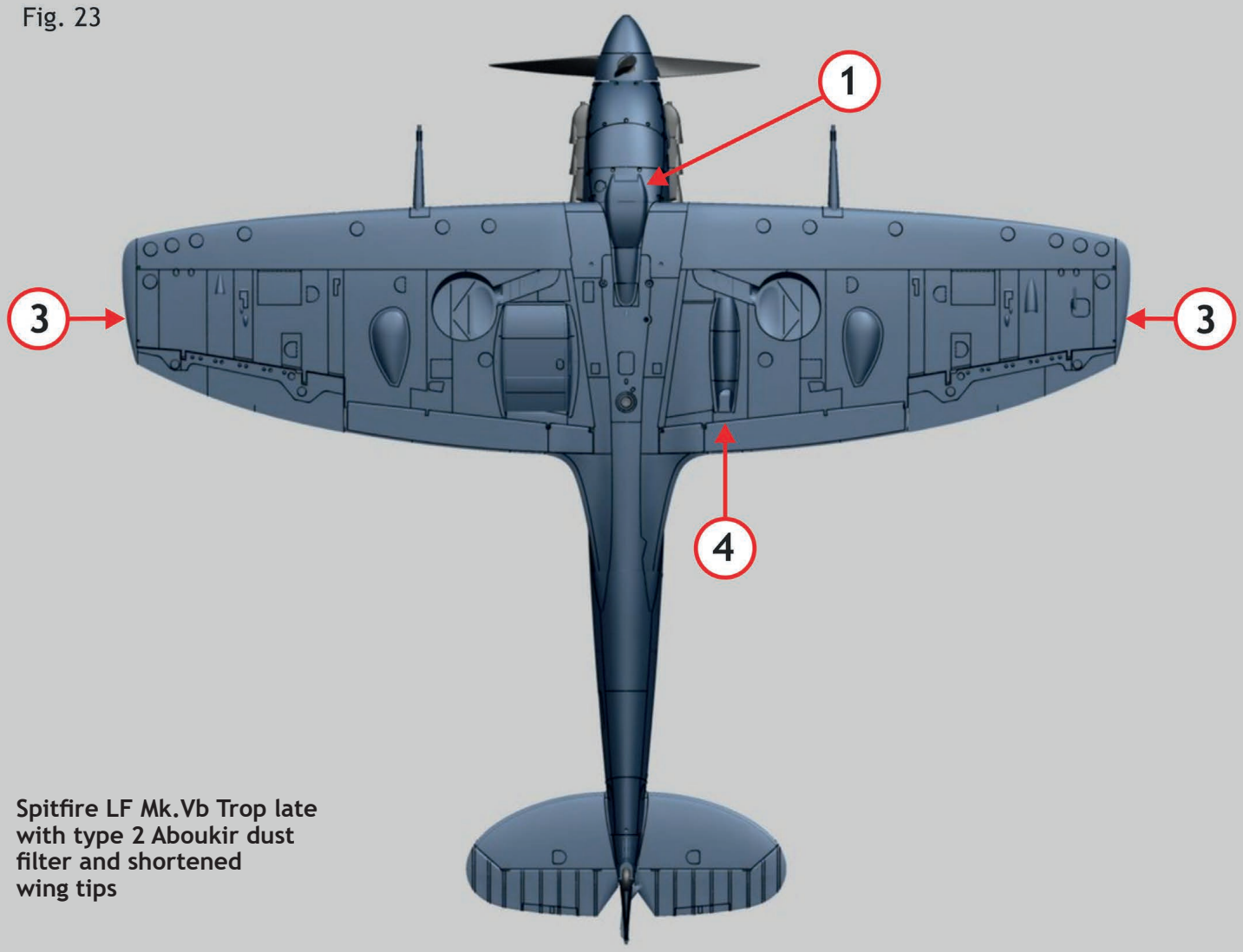
Fig. 22



Spitfire Mk.Vb Trop late
with type 2 Aboukir dust
filter and shortened
wing tips

Figure 22:
1. Type 2 (later) Aboukir dust filter
2. Modified lower engine cowling
3. Shortened wing tips for the low level operations (LF.MK.Vb)
4. Large tropical oil cooler

Fig. 23



Spitfire LF Mk.Vb Trop late with type 2 Aboukir dust filter and shortened wing tips

Figure 23:

1. Aboukir type 2 (later) dust filter
3. Shortened wing tips for the low level operations (LF.MK.Vb). Wing tips manufactured in Aboukir depot featured a specific shape and were not equipped with the position lights.
4. Large tropical oil cooler

Spitfire LF Mk.Vb with tropical filter and shortened wing tips Aboukir (photo: IWM via Wikimedia Commons)

Fig. 24

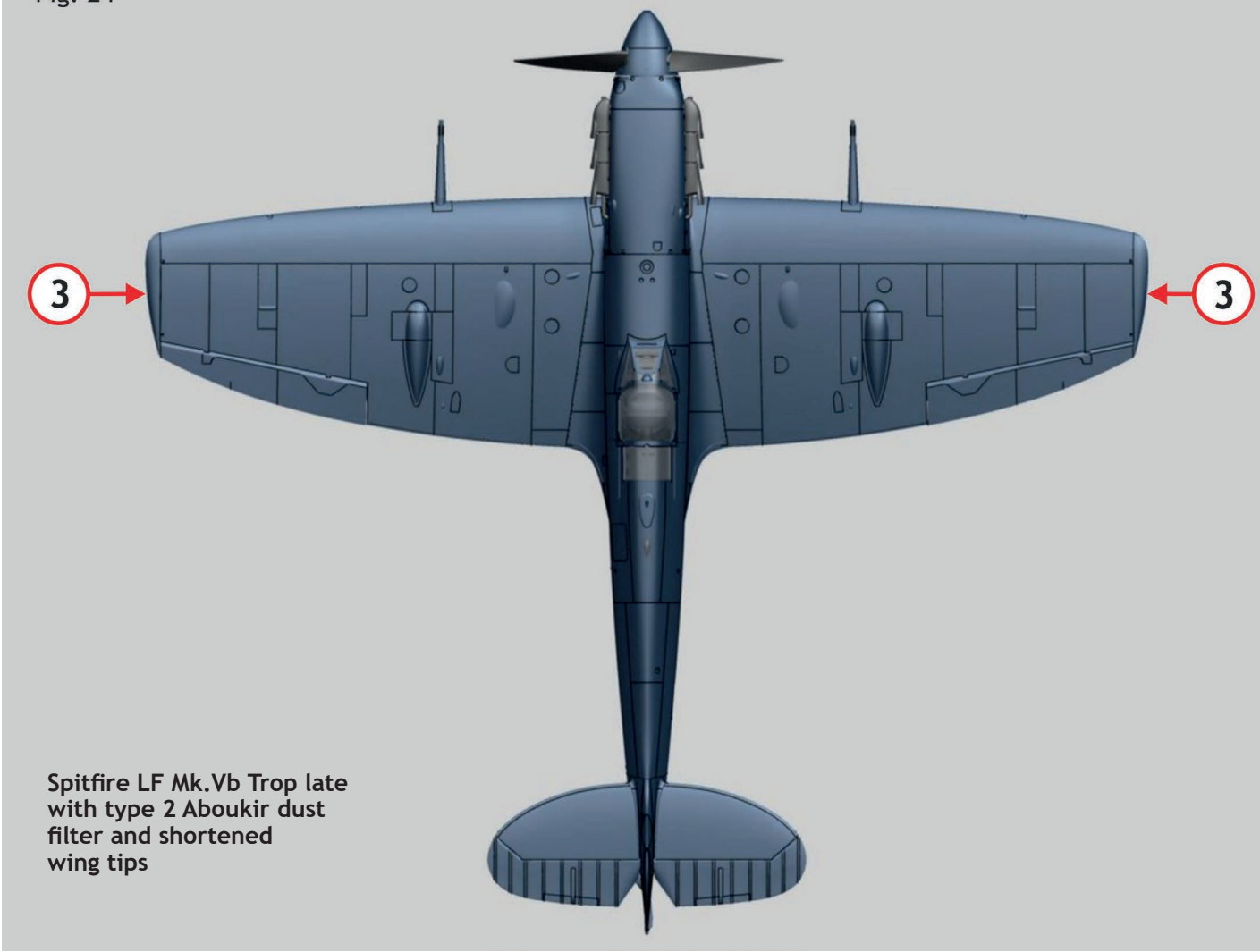


Figure 24

3 . Aboukir type Spitfire Mk.Vb shortened wing tips for the low level operations (LF.MK.Vb)

Spitfire Mk.Vc

Fig. 25

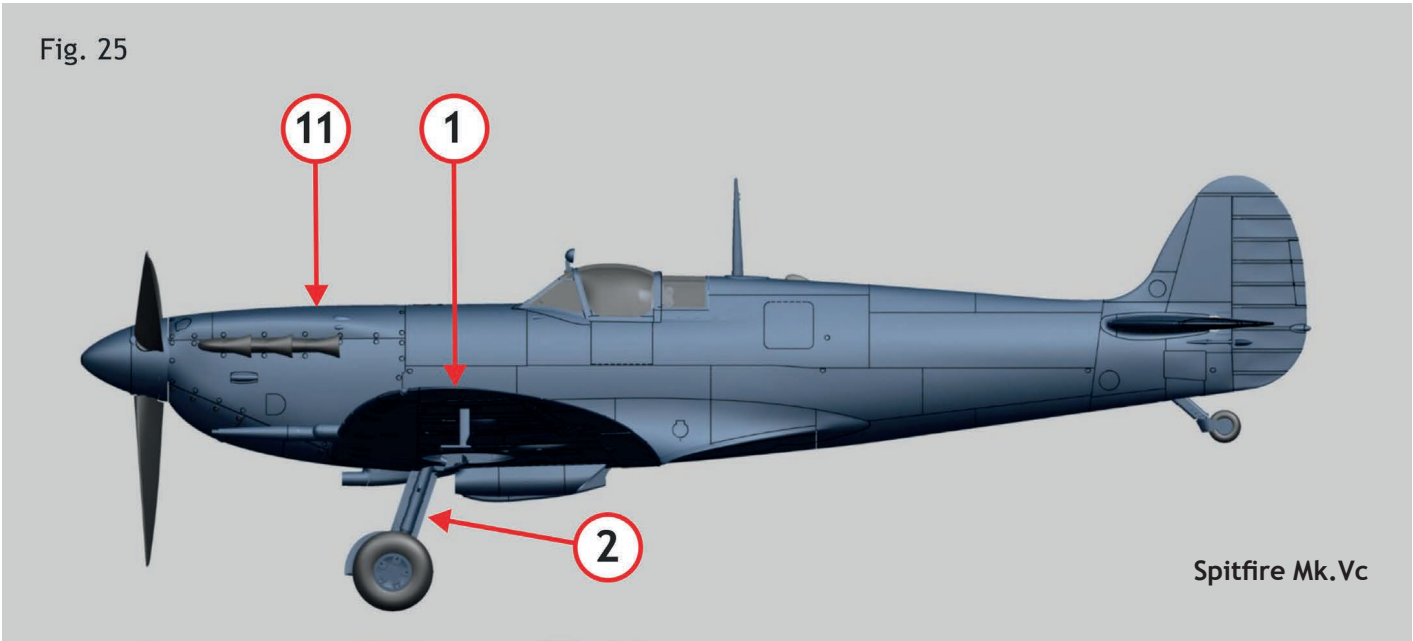


Figure 25

1. New C type wing
2. New landing gear with increased rake

11. Exhausts missing the pipe of the guns hot air heating system

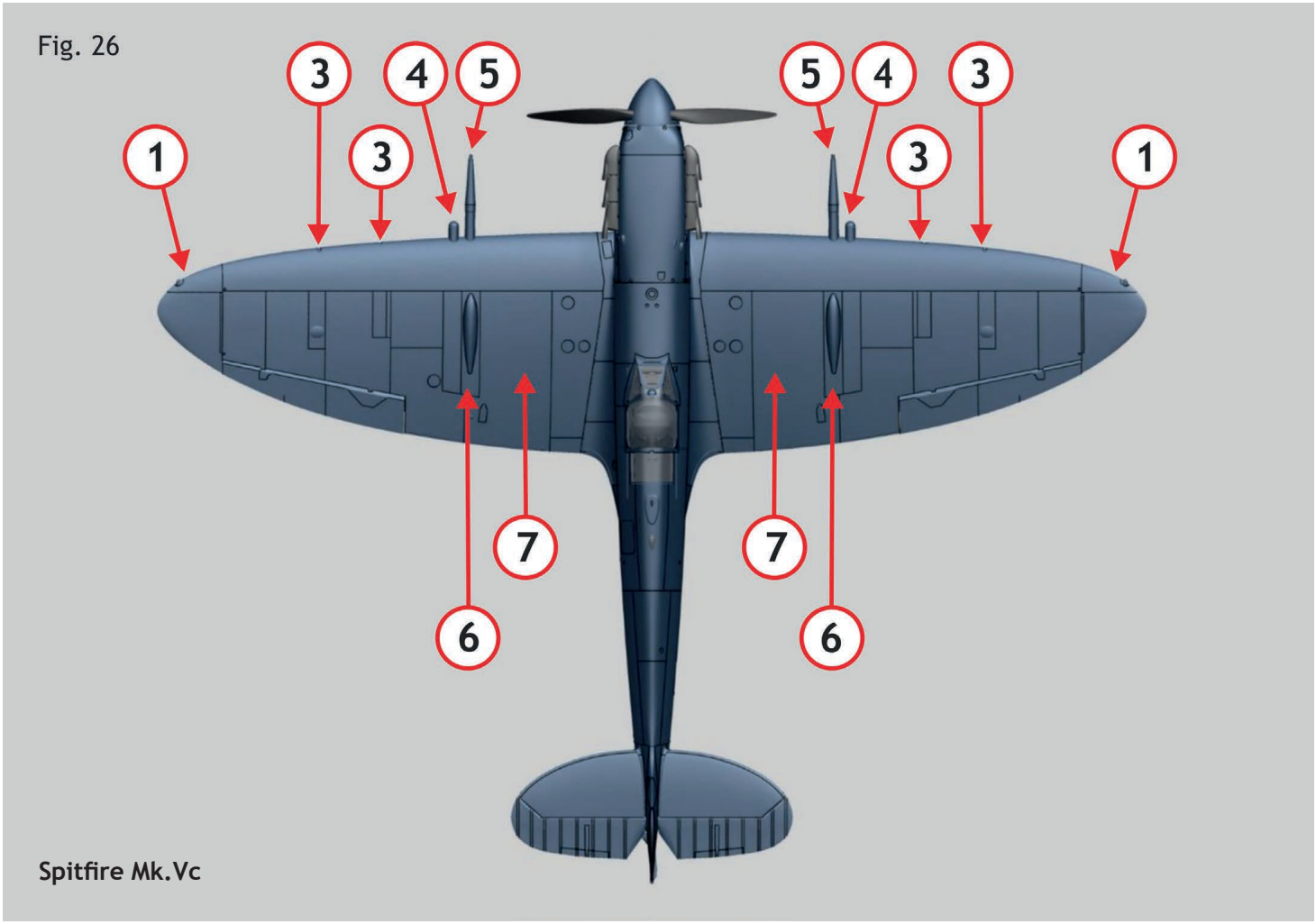


Figure 26:

1. New C type wing
3. 7.7 mm caliber Browning machine guns
4. Design to accommodate either 20 mm cannon or 12.7 mm machine gun
5. 20 mm caliber Hispano belt-fed cannons
6. Two piece gun well cover with narrow bulge on the inner part
7. Flat upper wing skin missing the bulge above wheel well

Spitfire Mk.Vc. This aircraft was manufactured by Westland factory in September 1942. (photo: Simon Erland)

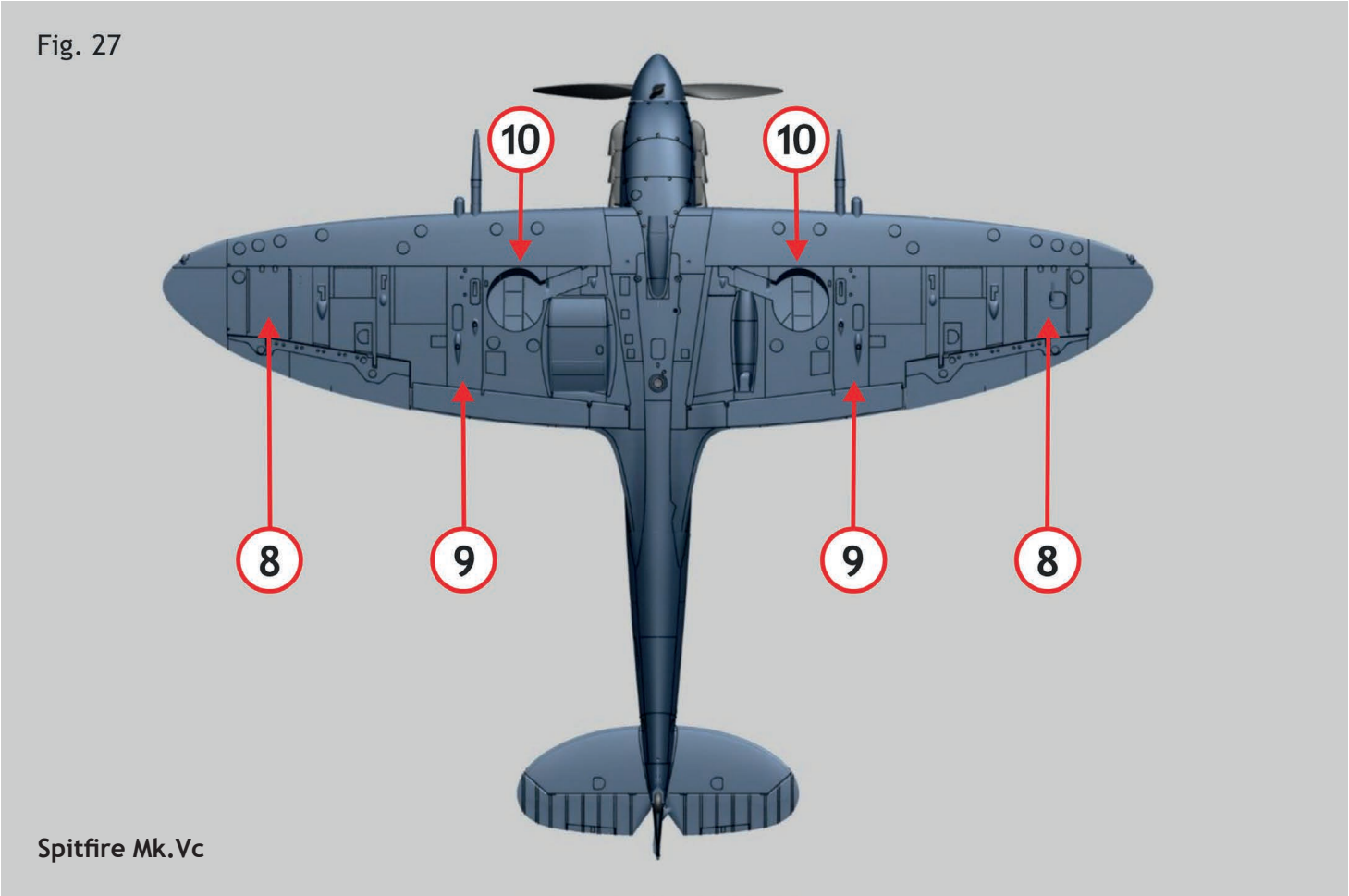


Figure 27:
8. Hot air weapons heating system replaced with the electrical one
9. Cannon wells covers missing the large bulge
10. New wheel well with slanted side walls and elliptical outline

Spitfire Mk.Vc
(photo: Simon Erland)

Spitfire Mk.Vb and Mk.Vc landing gear and wheel wells comparison

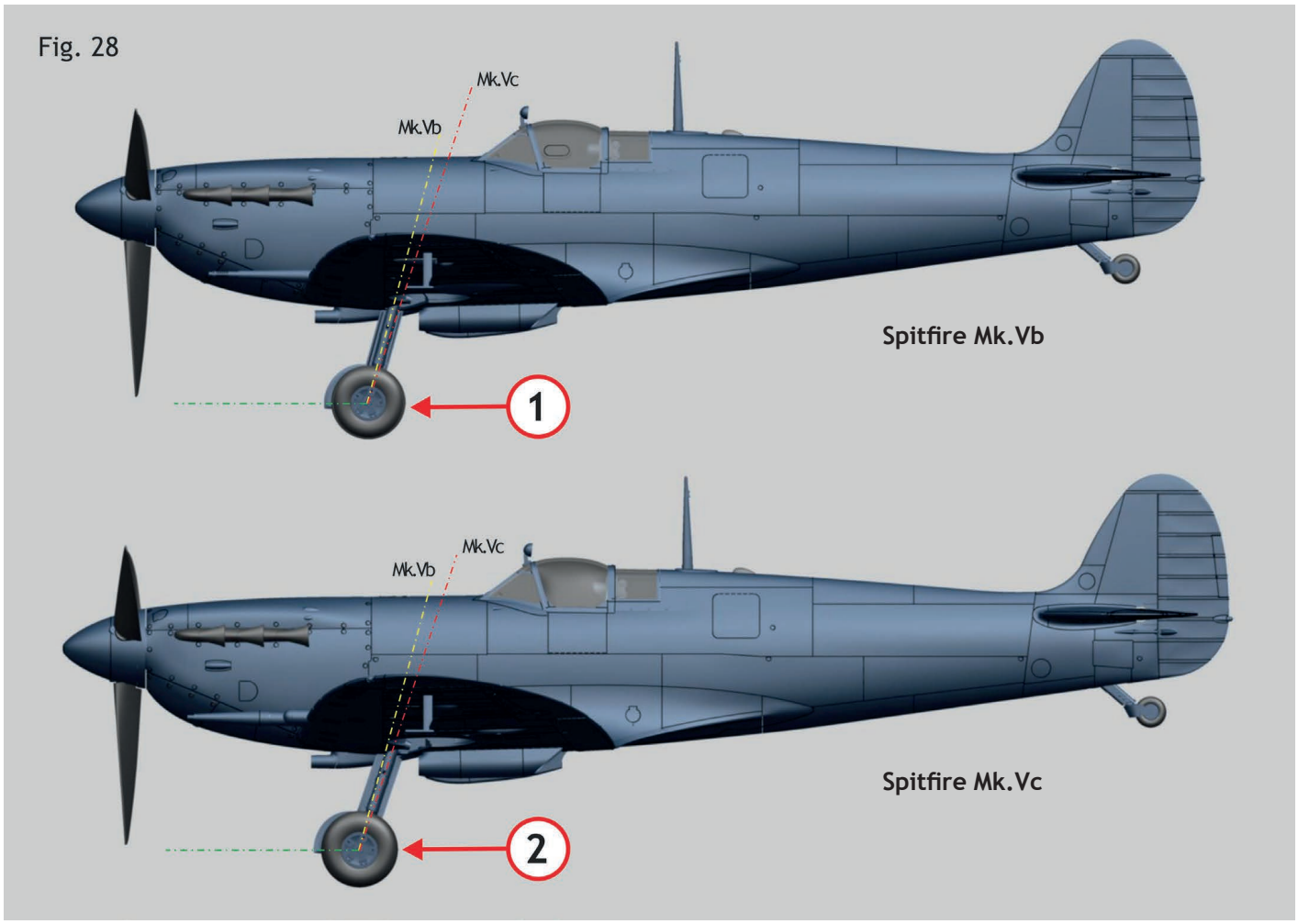


Figure 28:
1. Spitfire Mk.Vb landing gear
2. Spitfire Mk.Vc landing gear. The change in rake resulted in the wheel location 5 cm forward of the wing span axis compared to Spitfire Mk.Vb and different wheel well outline.

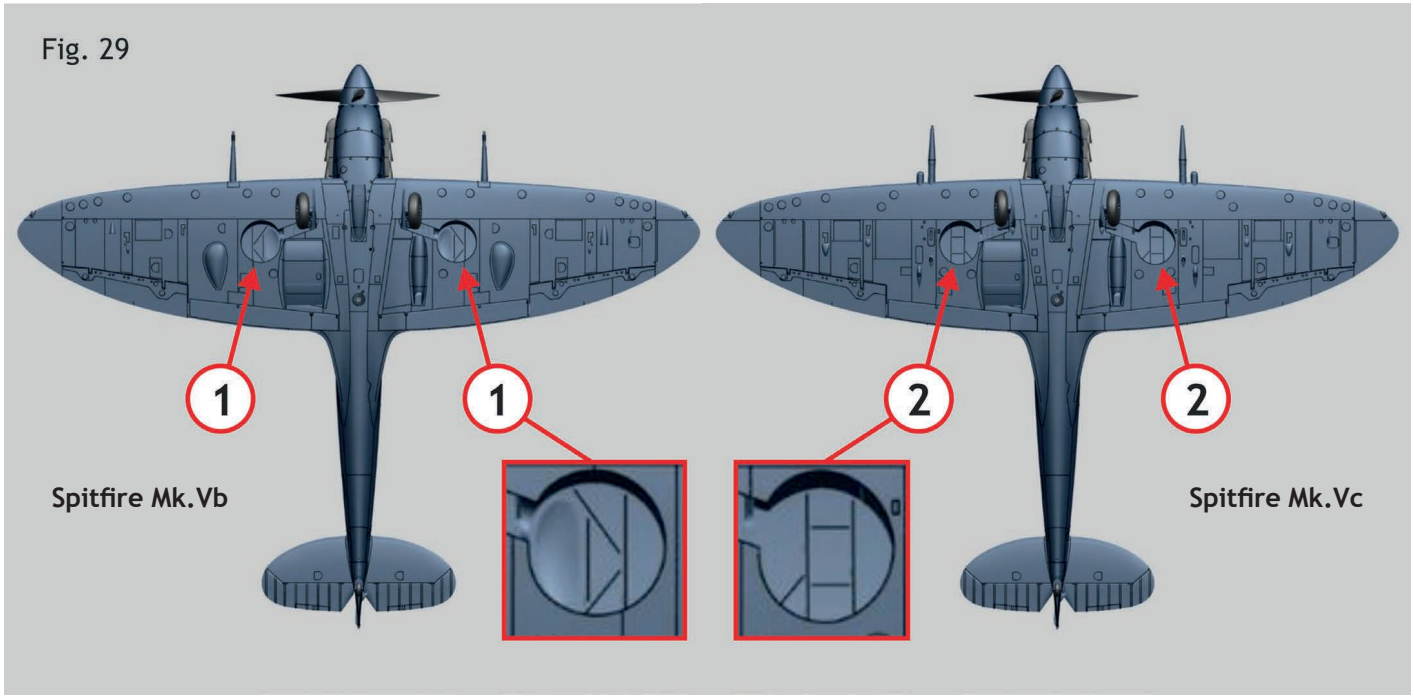


Figure 29:
1. Spitfire Mk.Vb circular outline wheel well
2. Spitfire Mk.Vc oval outline wheel well

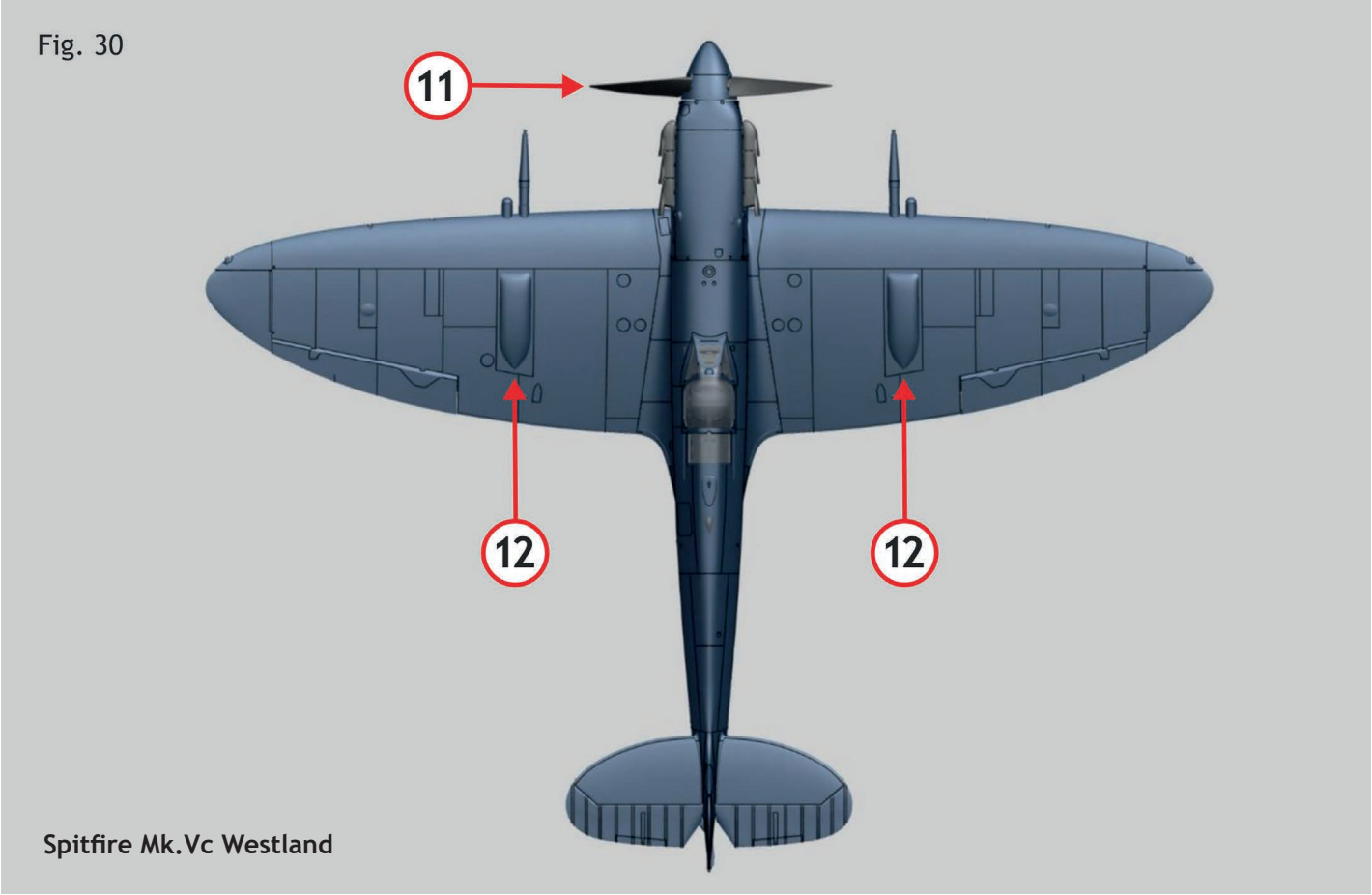


Figure 30:
1. Different versions of Rotol propeller used
12. Large pentagonal bulge over the gun well, typical for Westland, license-built Spitfires

A Westland built Spitfire Mk.Vc with large large Westland type bulges and two smal Malta type bulges on the wing upper surfaces. Note the heating pipes back to the exhaust (photo: Simon Erland).

Spitfire Mk.Vc with four 20 mm Hispano cannons

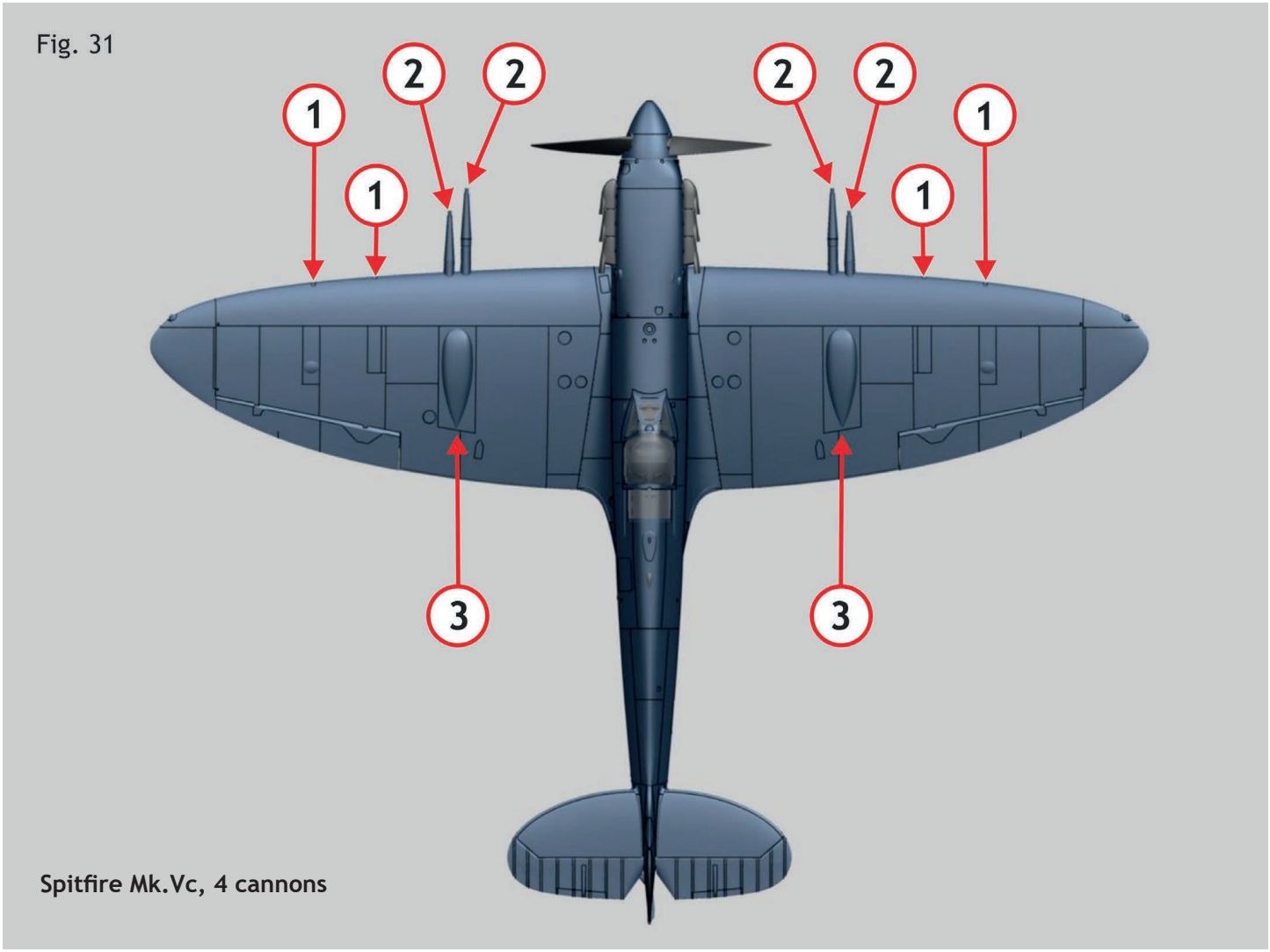
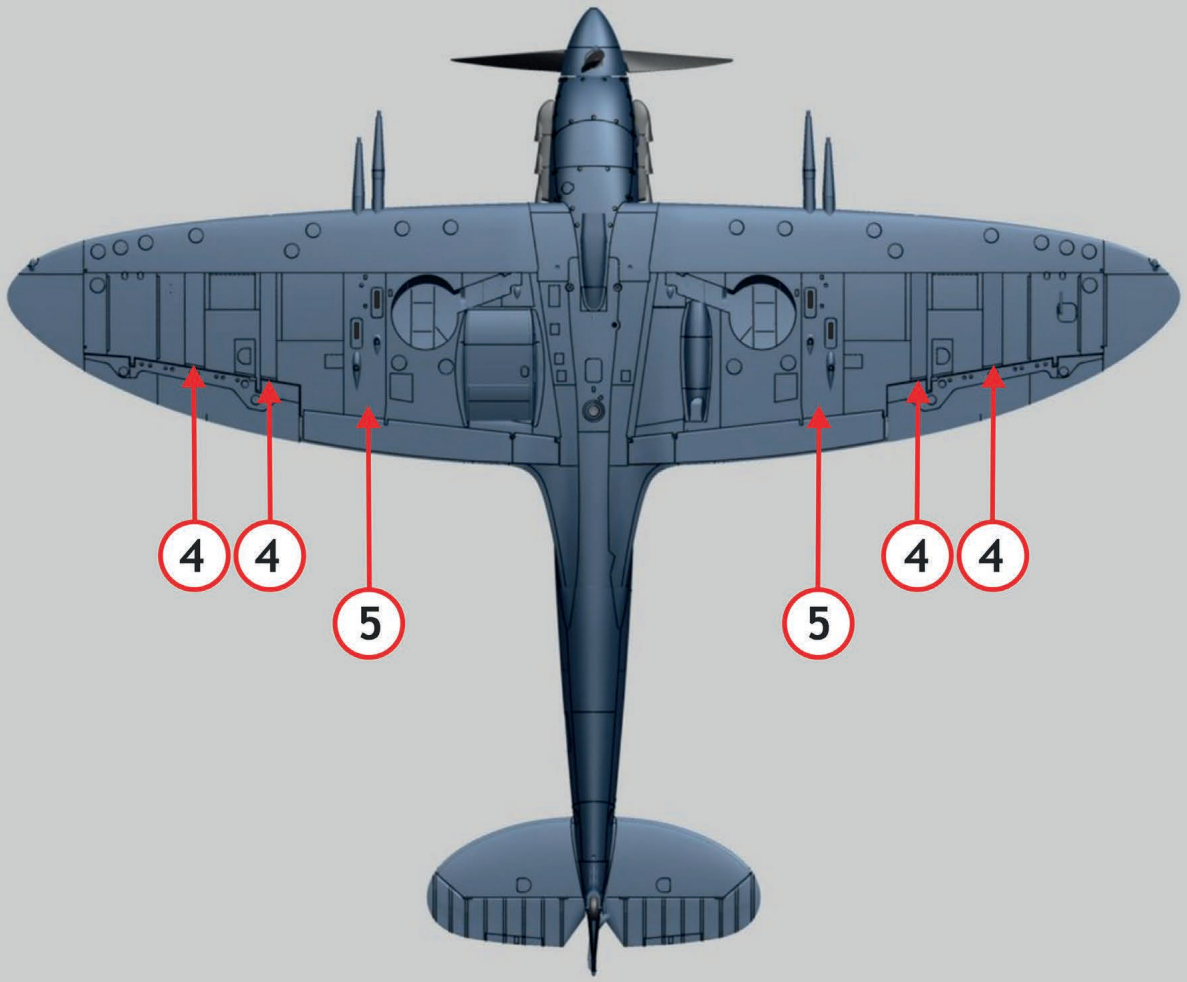


Figure 31:
1. 7.7 mm caliber Browning machine guns were not installed
2. Four Hispano Mk.2 cannons in the weapon wells
3. Weapon wells upper covers feature large oval bulge

Spitfire Mk.Vc with four Hispano Mk.II cannons (photo: Simon Erland)

Fig. 32



Spitfire Mk.Vc, 4 cannons

Figure 32:

4. Weapon wells lower covers missing little bulges and shell ejection openings

5. Weapon wells covers featuring two shell ejection openings

Spitfire Mk.Vc with four Hispano Mk.II cannons (photo: Simon Erland)

Fig. 33

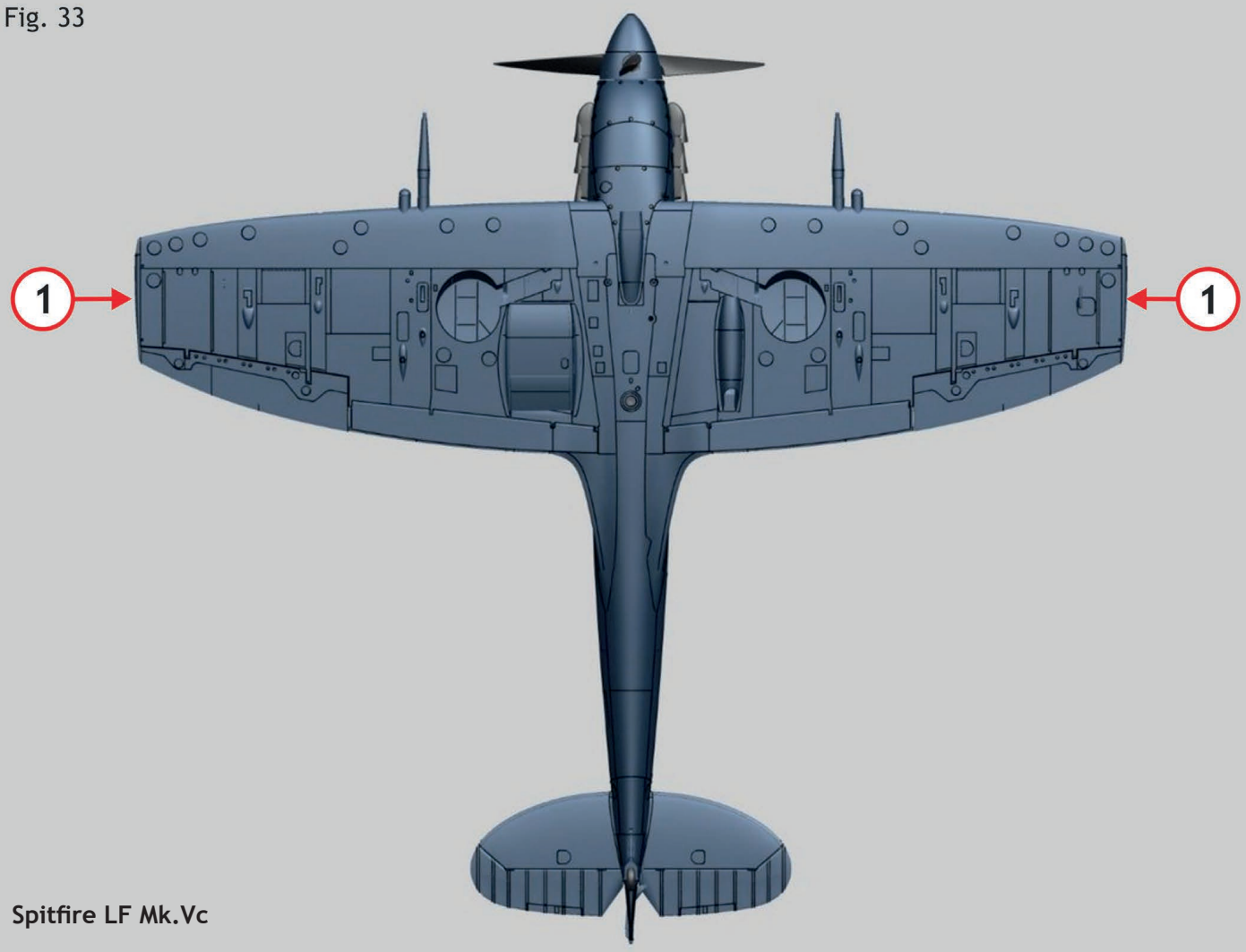


Figura 33:
1. Standard LF Mk.V shortened wing tips

Drop tanks

Fig. 34

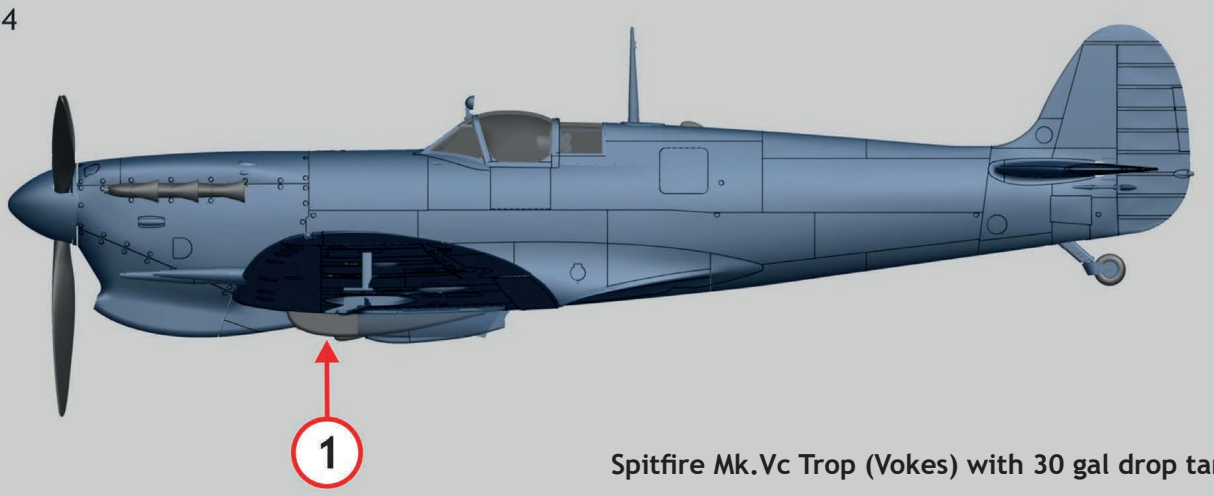
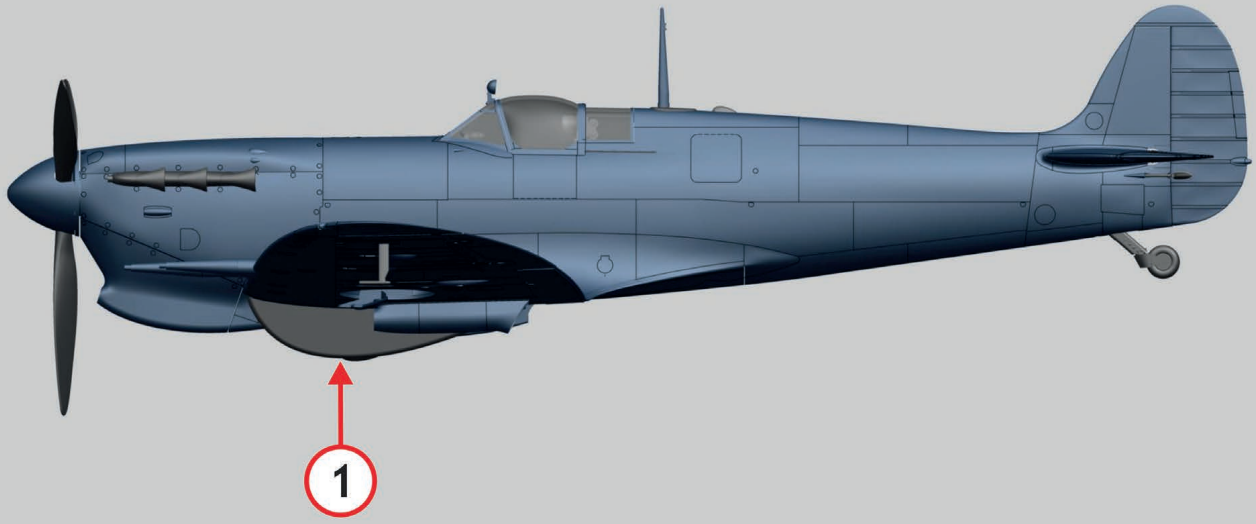


Figure 34:
1. 30 gallon drop tank. All later Spitfire versions were equipped with these tanks. Spitfire Mk.Vc in the picture features Vokes dust filter and four 20 mm Hispano Mk.2 cannons

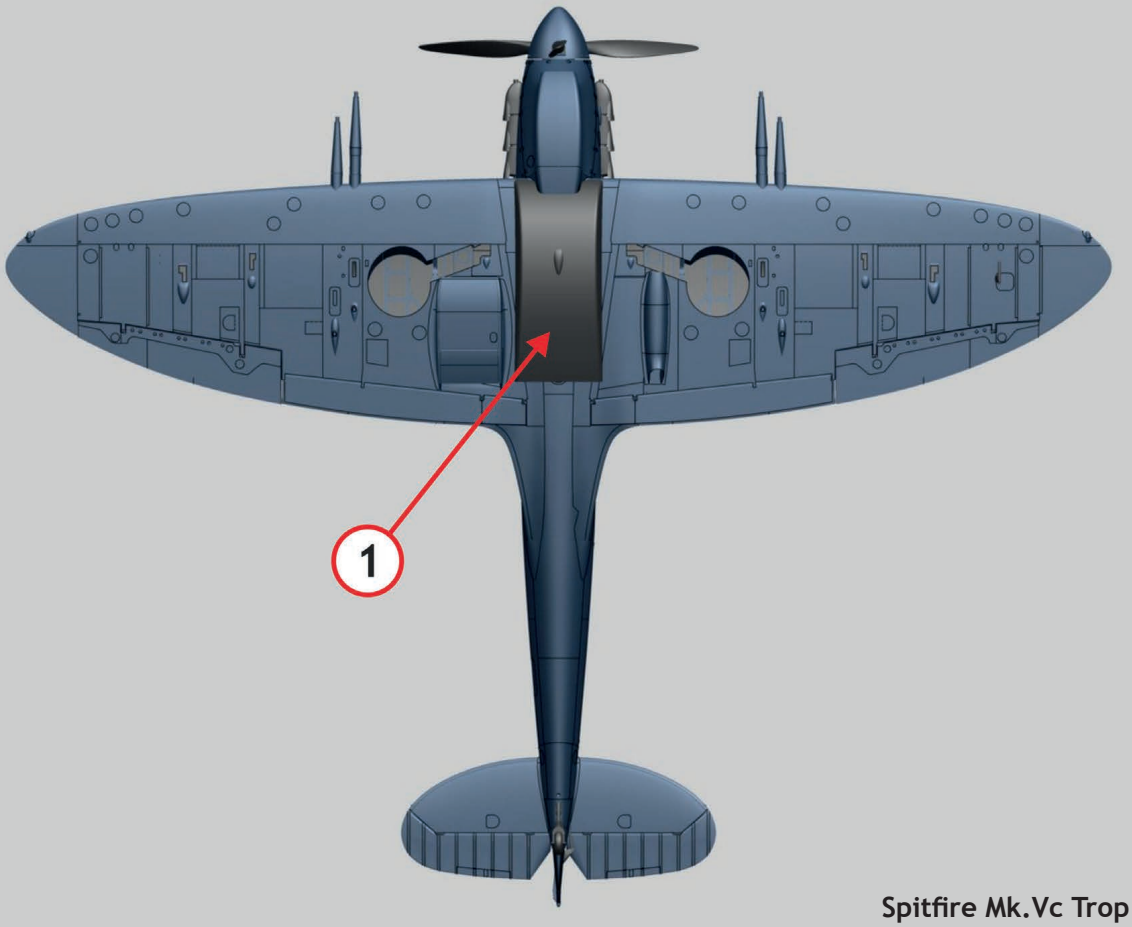
Fig. 35



Spitfire Mk.Vc Trop (Vokes) with 90 gal. drop tank

Figure 35:
1. The same aircraft with 90 gallon drop tank attached

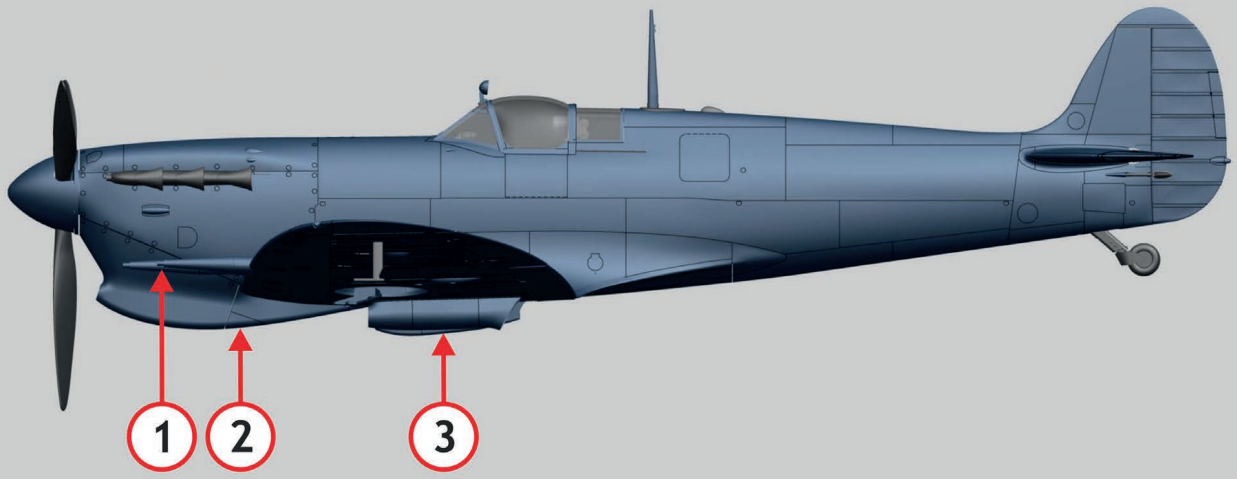
Fig. 36



Spitfire Mk.Vc Trop (Vokes)
with 90 gal. drop tank

Figure 36
1. 90 gallons drop tank

Fig. 37

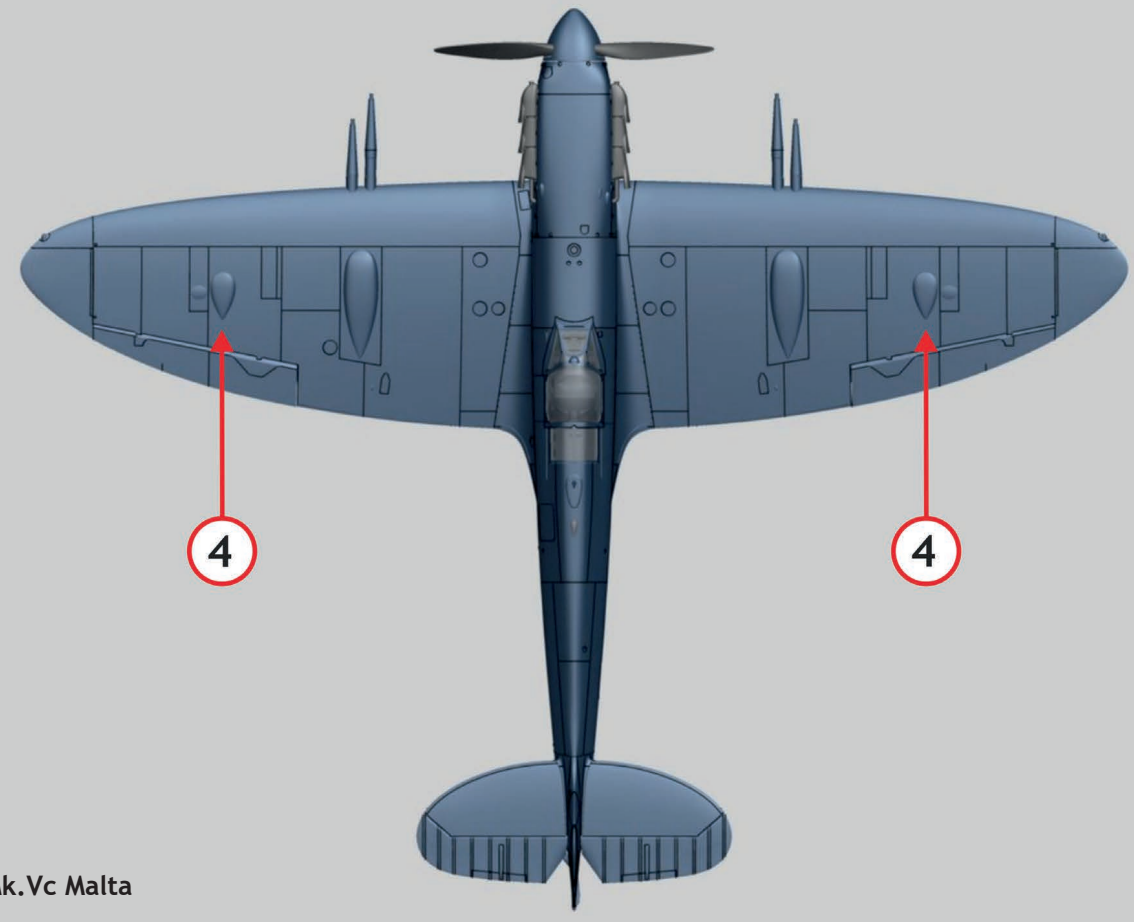


Spitfire Mk.Vc Malta

Figure 37:

1. Four Hispano Mk.2 cannons. Many MK.Vc Spitfires delivered to Malta were equipped with four cannons. During the combat deployment two cannons were usually fairly quickly removed and the aircraft operated with two cannons only. If two 7.7 mm caliber Browning machine guns were added at the same time cannot be confirmed from the available records.
2. Vokes dust filter
3. Large tropical oil cooler (not all aircraft featured it)

Fig. 38

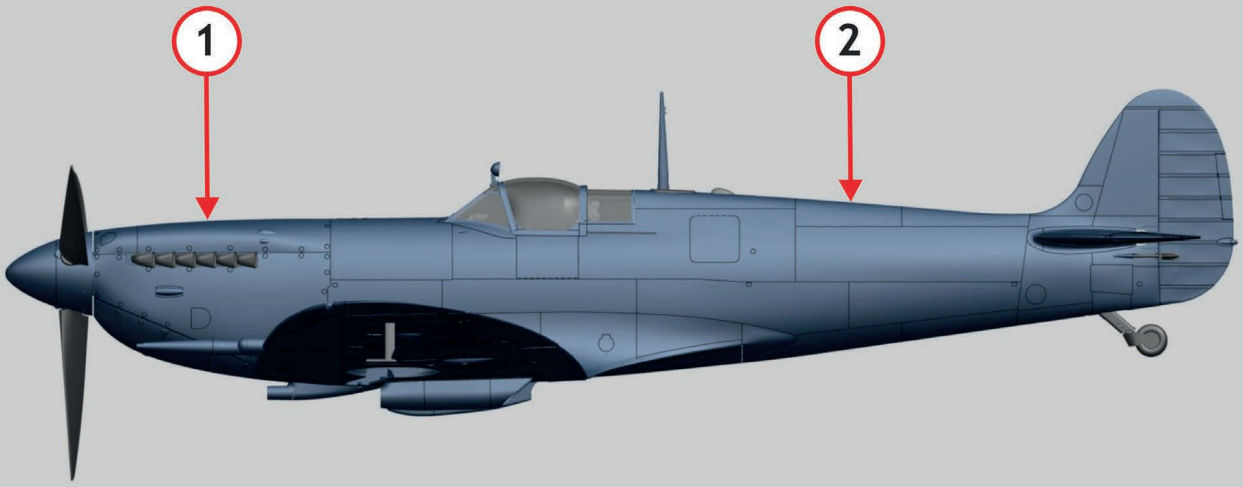


Spitfire Mk.Vc Malta

Figure 38:

4. A bulge on the upper wing skin. It was documented on several Malta deployed airframes. Their purpose remains unknown

Fig. 39

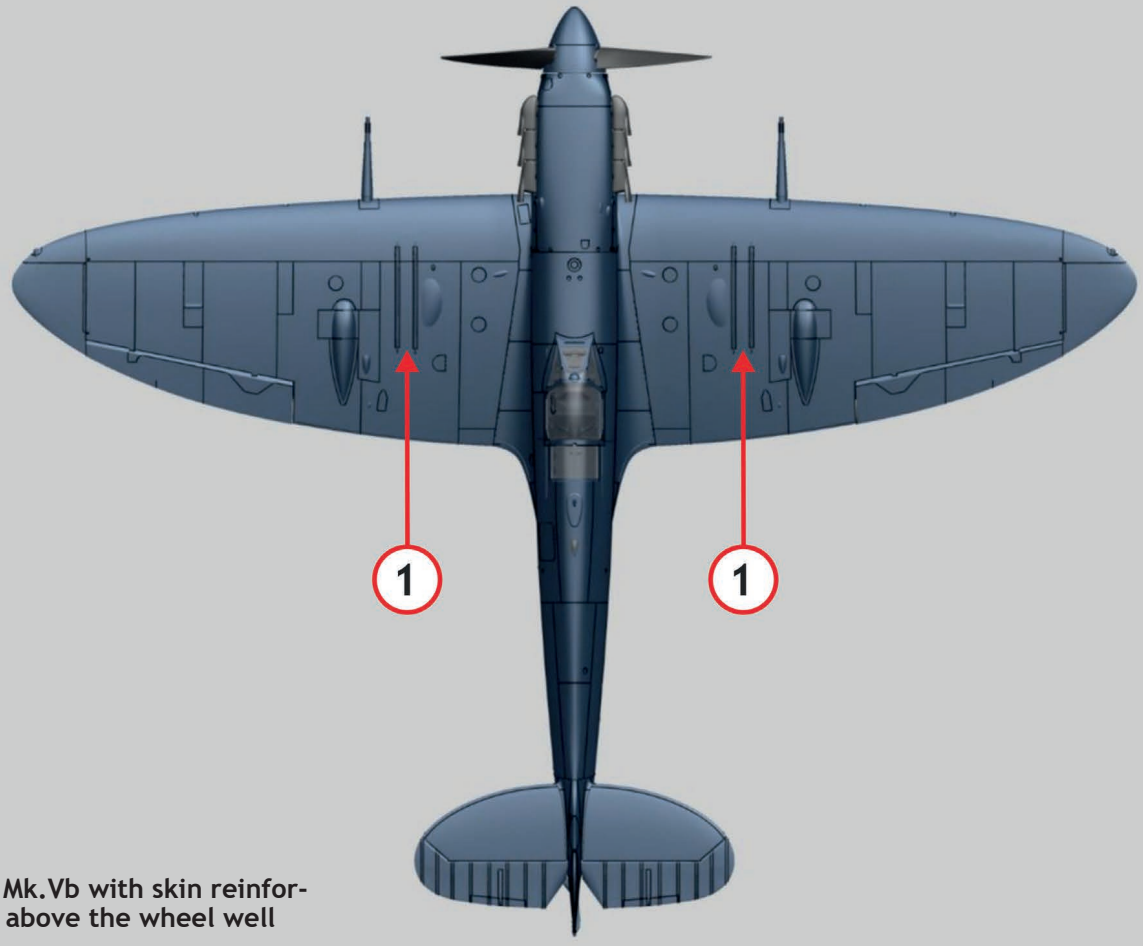


Spitfire Mk.Vc late

Figure 39:

1. Exhausts feature the individual pipes, typical for later Spitfires Mk.IXc
2. A number of Westland-built airframes featured the flush-riveted rear fuselage as opposed to the standard raised rivets used

Fig. 40



Spitfire Mk.Vb with skin reinforcement above the wheel well

Figure 40:

1. Skin reinforcement above the wheel well. These reinforcements were not only installed on Spitfires Mk.V but on the other Spitfire versions as well, typically after their overhaul having accumulated a certain number of flight hours. The skin reinforcement prevented the skin damage in the wheel well area where it was extremely stressed during the takeoffs and landings and there was a risk of its collapse due to the fatigue

Spitfire Mk.Vc with bomb attachments

Fig. 41

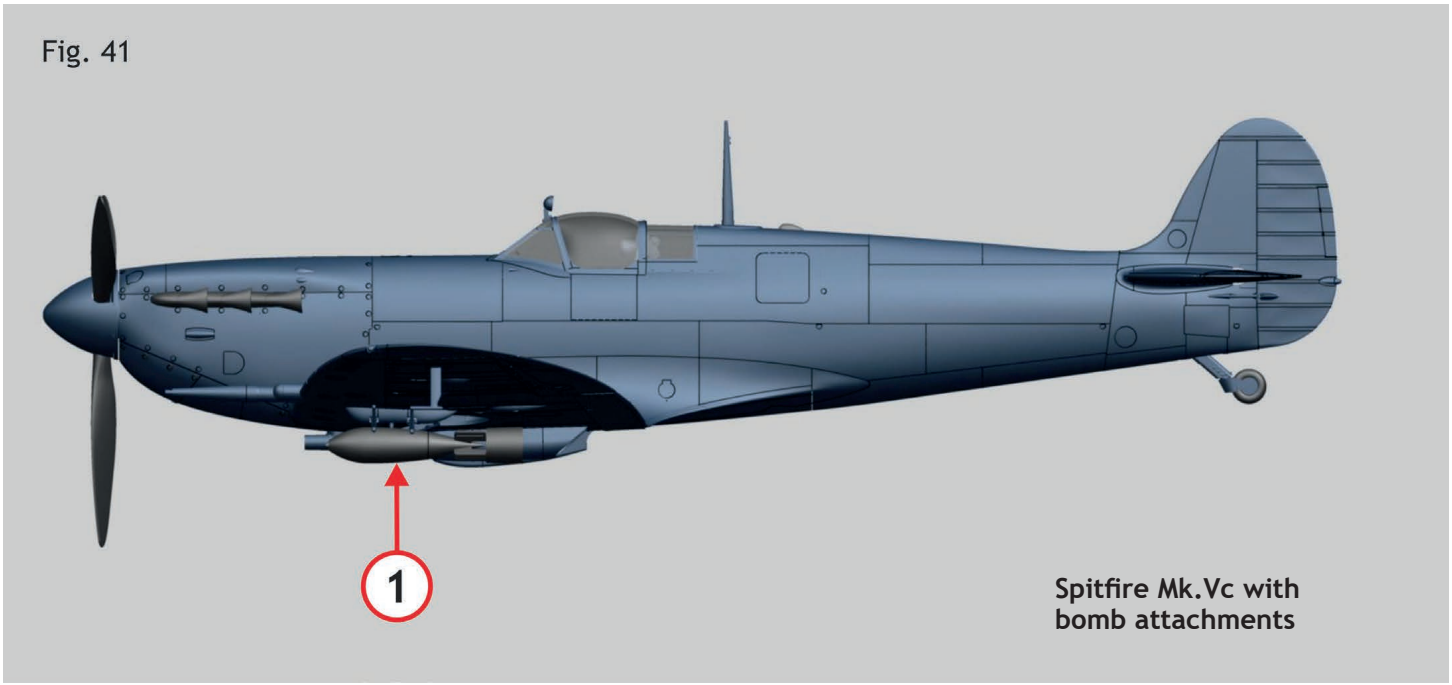


Figure 41:
1. Underwing bomb attachments with 113 kilos bombs. Under the fuselage attachment for 226 kilos bomb was also used.

Fig. 42

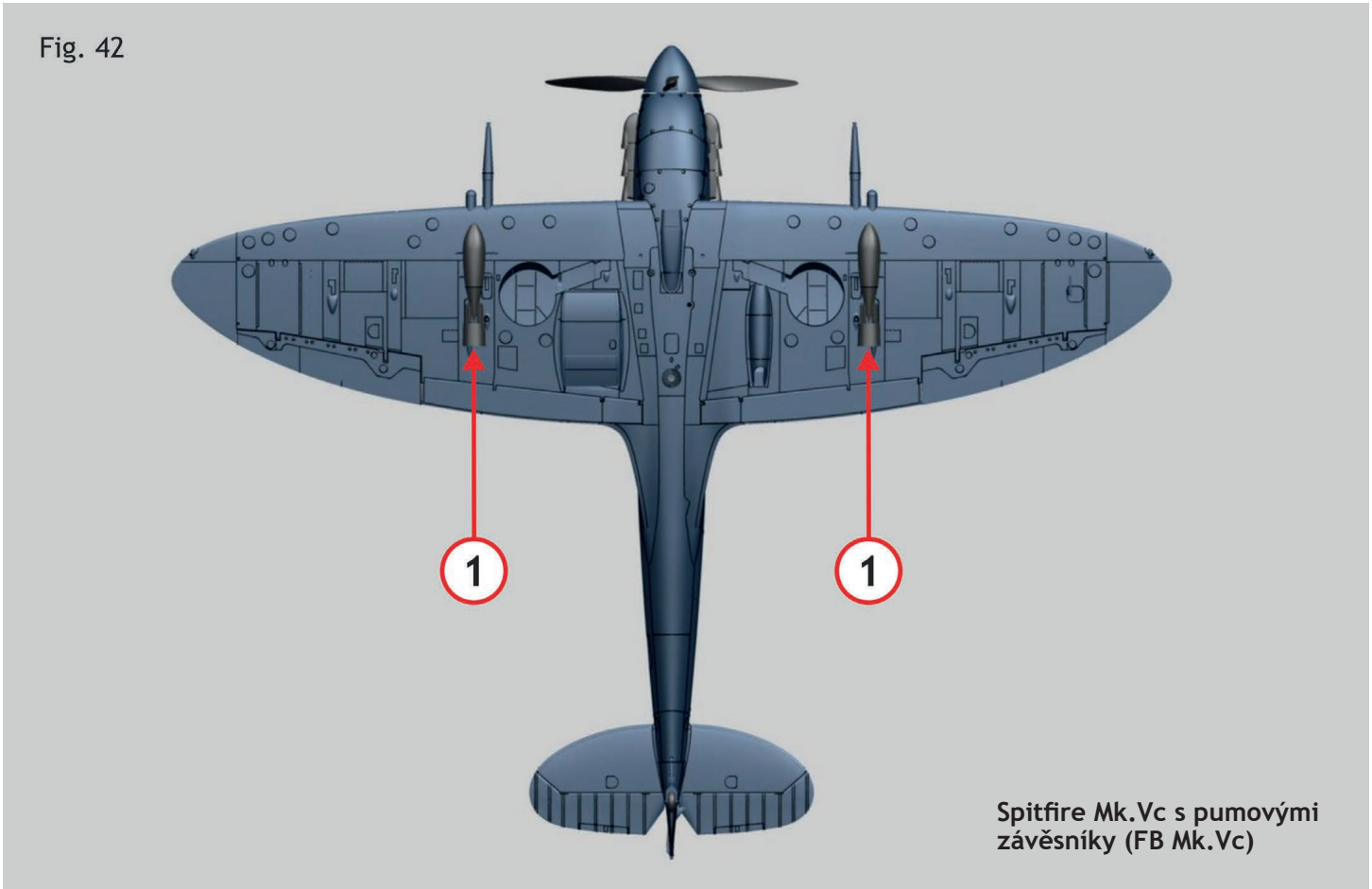


Figure 42:
1. Underwing bomb attachments with 113 kilos bombs

Spitfire Mk.Vc late with bomb attachments

Fig. 43

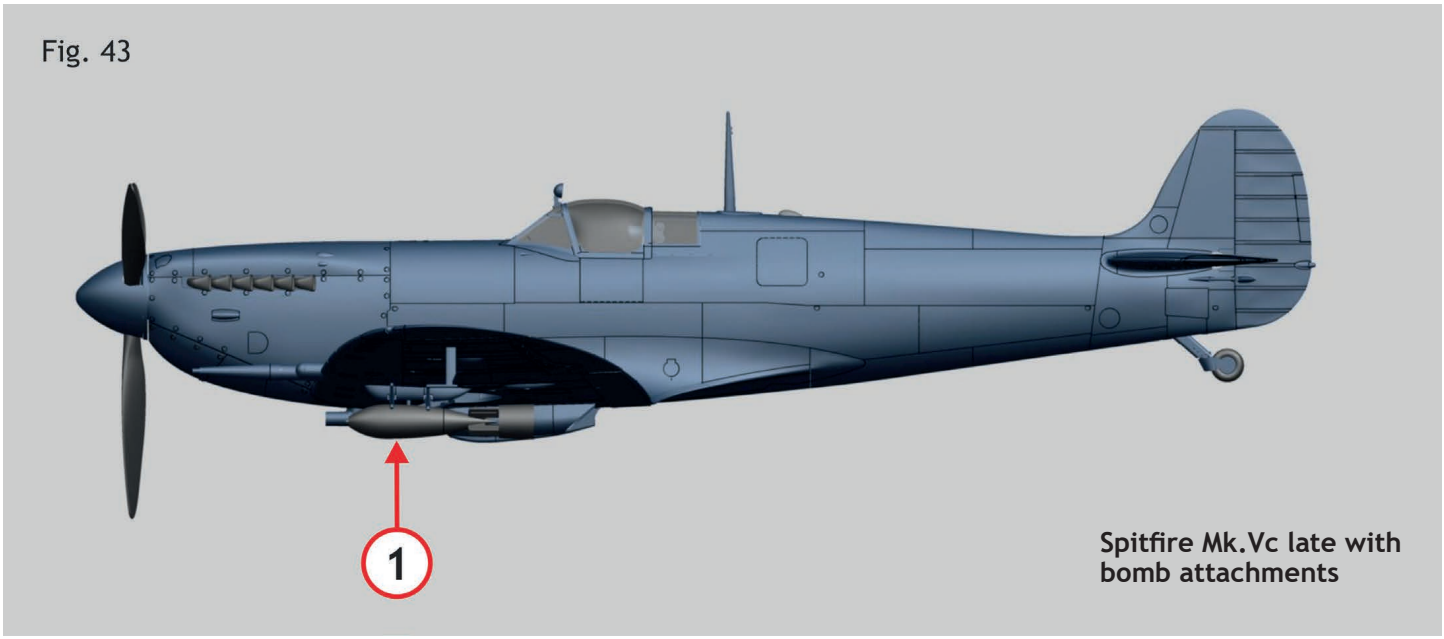


Figure 43:
1. Underwing bomb attachments with 113 kilos bombs

Spitfire Mk.Vc Trop with Aboukir type 2 dust filter

Fig. 44

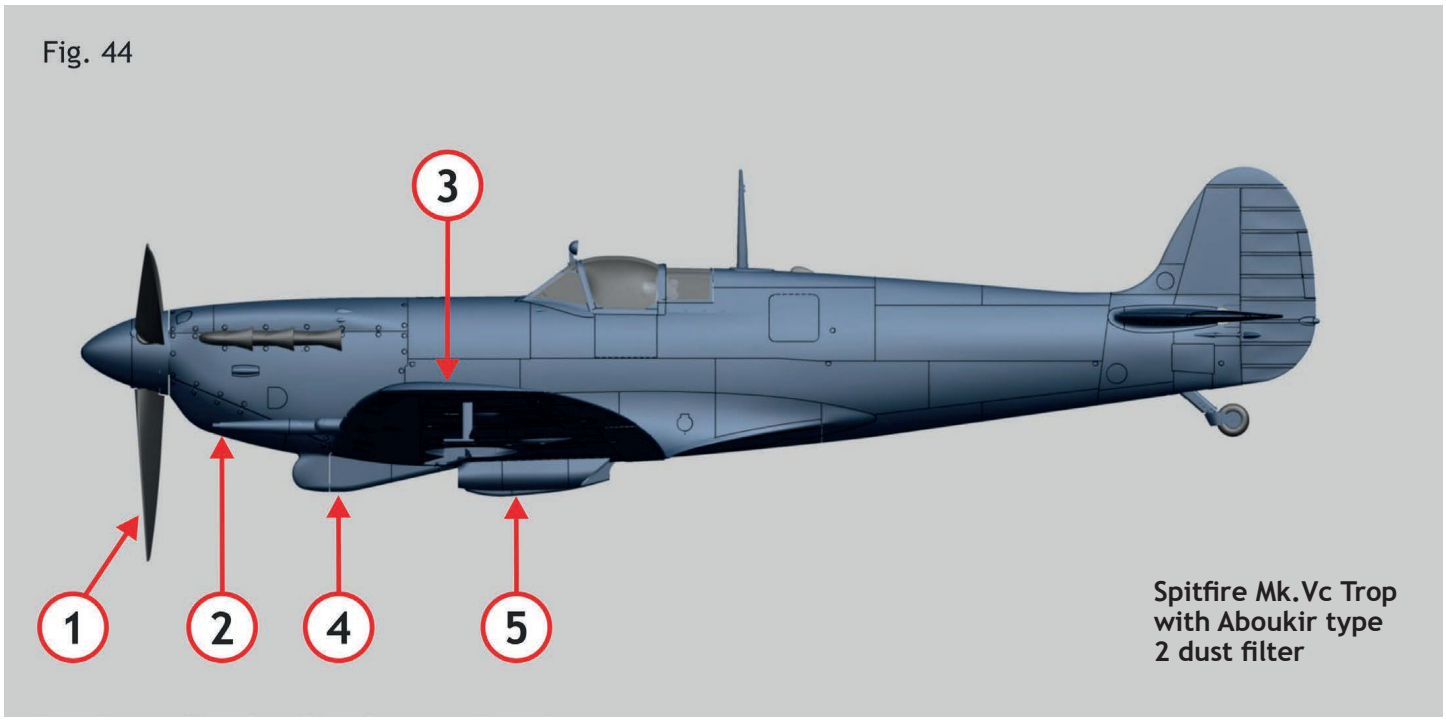


Figure 44
1. Rotol propeller
2. Lower engine cowling modified
3. Shortened wing tips for the low level operations (LF.Mk.Vb)
4. Aboukir type 2 (later design) dust filter
5. Large tropical oil cooler

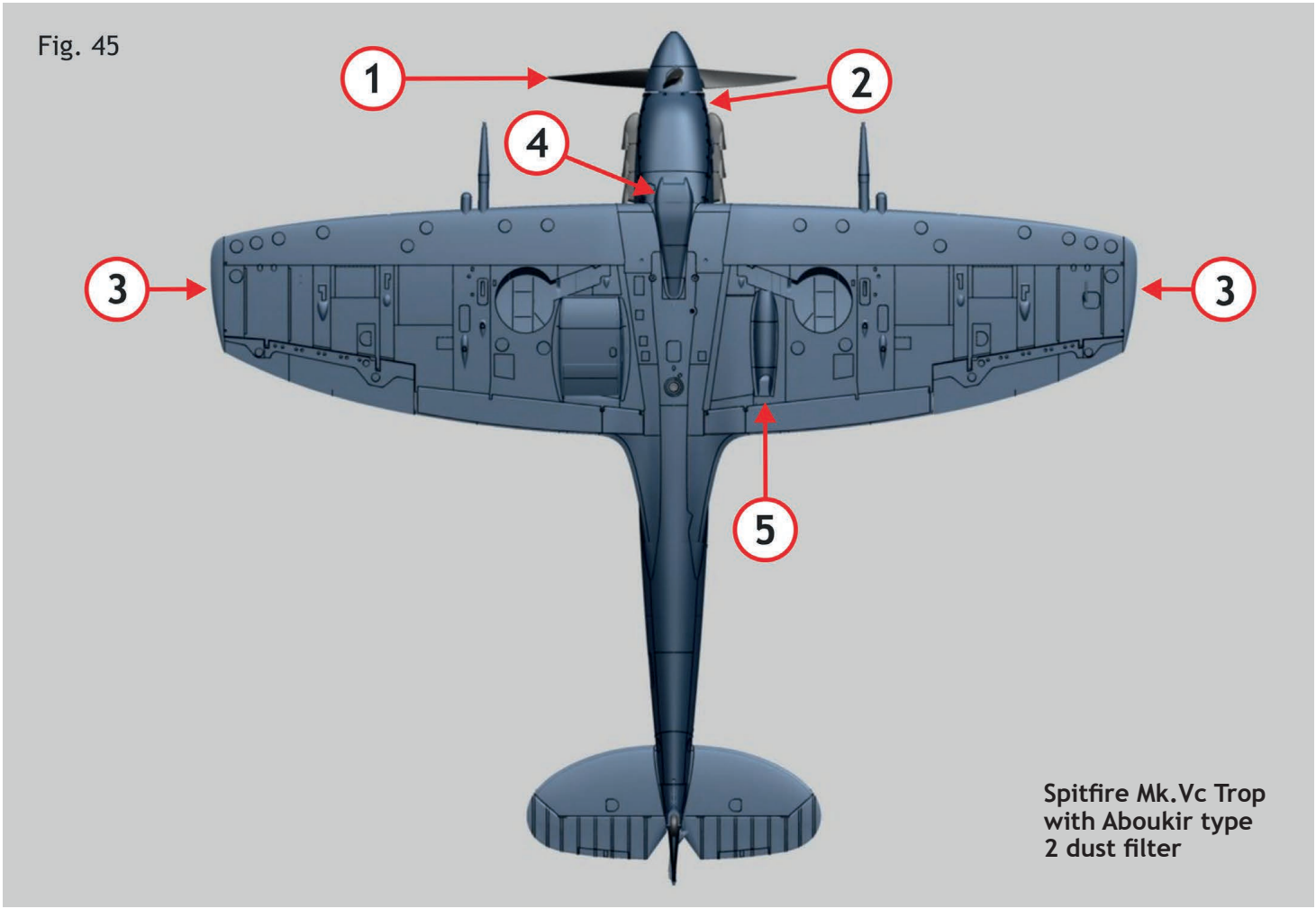


Figure 45:

1. Rotol propeller
2. Lower engine cowling modified
3. Shortened wing tips for the low level operations (LF.Mk.Vb)
4. Aboukir type 2 (later design) dust filter
5. Large tropical oil cooler

The Spitfire Mk.Vb ER622 of No. 40 Squadron SAAF was manufactured at the CBAF factory in September 1942. It served in North Africa sporting shortened wingspan fitted with Aboukir-type wingtips and Aboukir-type tropical filter. It was decommissioned from the RAF on 30 April, 1943, and was sold to Turkey in February 1945. Note the gun heating pipe behind the rear exhaust pipe, typical for the late Spitfires Mk.Vb (phto: IWM via Wikimedia Commons).

Spitfire Mk.V

Cat. No. 11149

Cat. No. 11153

SPITFIRE STORY: Southern Star

1/48 Cat. No.11157

Release 02/2022

The swag from the Houthulst forrest

TEXT: RICHARD PLOS

Photo: sbírka Jörna Leckscheida

It was a dreary, cloudy Wednesday on January 23, 1918, and a trio of Jasta 7 Pfalzs took off from the airport in Belgium Aertrycke for another of countless sorties to the nearby Houthulst forest, witness to many air brawls. Eight Camels from the 3rd Navy Squadron headed in the same direction. The German fighters were escorting four D.F.W. bombers and Brits having spotted them intended to stop their mission.

January 23, 1918, was quite an important day for the 3rd RNAS. Raymond Collishaw, already a well-known ace, assumed command of the unit replacing Lloyd Breader. Collishaw on that day seemed to be too busy with the command transfer to personally lead the unit on its mission. This task was assumed by Ft.Com. Armstrong flying the Camel B7193. Flying with him were F.Lt. Anderson (B6241), F.Lt. Hayne (B3785), F.lt. Ireland (B6242), F.S.Lt. Britnell (B3809), F.Lt. Pierce (B3858), F.S.Lt. Youens (B7184) and F.S.Lt. Bawlf (B6417). Their mission was to patrol the line Ostende, Thorout and Roulers which was some eight minutes of flight away from their base in Bray Dunes (five kilometers East of Dunkirk). They encountered the German formation at approximately four pm right over Houthulst forest.

RNAS Headquarters report later stated that: "Eight (Sopwith) Camels from No.3 Squadron (RNAS) were conducting the offensive sweep south of the line Ostende, Thorout and Roulers. Over the Houthulst forest our formation encountered seven enemy airplanes. Four D.F.W. (two-seaters) and three fighters (new type)". This mention of a "new type" may have caused a frequently repeated error. Various articles and books started to publish the information that on that day the British fighters clashed with new Fokkers D.VII. It was not possible though. At that time only prototype test flights commenced at Adlershof as a part of the first contest for the new German fighter and D.VII, the ultimate winner, did not even exist in its final configuration, only as V.11 prototype. The deployment of its successor, D.VII, took place almost four months later...

As a matter of fact, on that day the German fighters took off in their old Albatros D.Vs and newer, but not-so-new Pfalz D.IIIs and engaged in combat with Camels. The formations broke down to the individual duels. F.Lt. George B. Anderson later stated in his combat report that he had shot down one D.F.W., which was confirmed, but also that all three German fighters had been shot down. That was inaccurate since all of them returned to the base. Things were different as far as the British were concerned. One Camel was missing, and Armstrong had omitted this fact in his report... The missing aircraft, Camel serial B7184 was flown by a young, rather inexperienced F.S.Lt. Hubert St. John Edgerley Youens.

An unlucky pilot

At the time of these events Jasta 7 was without its commander. Not that he was killed. Josef Carl Peter Jacobs was one of the experienced combat fighters, and leaders who were invited to Adlershof to participate in the aforementioned contest for a new fighter aircraft which commenced on January 20 and was scheduled until February 12. In the middle of January Jacobs traveled to Adlershof then. He entrusted the leadership to his deputy and Carl Degelow was among his pilots. At that time a fairly experienced flier who joined the unit in August 1917 he could not claim a single confirmed kill to his credit as a fighter pilot. It seems he had a hard luck since he claimed several unconfirmed victories. On January 23 over Houthulst forest however he claimed a victory which he believed could not be doubted. What could be possibly a better proof than an enemy aircraft grounded behind the frontline and its captured pilot?

Photo: RNAS

Hubert St. John Edgerley Youens as a young and "green" RNAS pilot.

Degelow did have one kill to his credit from the time of his service with FA(A) 216 which was a reconnaissance unit. Many historical sources state that this claim with FA(A) 216 was not confirmed but according to Degelow's memoirs it was slightly different. Let's make a little detour at this point...

Detour nr.1: One whole out of two halves

After twenty months spent in the trenches and six months in the pilot training, on December 31, 1916, the young reserve Lieutenant (Lieutenant der Reserve) Carl Degelow was in the officers' car of the military train traveling from the training and replacement unit Flieger-Ersatz-Abteilung 6 (FEA 6) located nearby Dresden to the frontal combat unit Flieger-Abteilung (A) 216 which was the Royal Wurttemberg reconnaissance flight operating the Albatros C.V scouts in the French Somme sector. After several months of the routine flying the reconnaissance missions started to be boring for Degelow. When he was conducting another photo reconnaissance with his observer Kurten on May 22, he spotted the French twin-engine Caudron G.IV doing the same over Laon on the German side of the front. The observer however pointed his hand towards the home base.

"Again, I pointed to the French plane and, throttling back on the engine, I shouted to my comrade: "Let's go after him!" Generally, two-seater pilots were enlisted men and the observers were officers, thereby establishing a relationship in which the pilot was a "driver", while the observer was in charge of the airplane and made all major decisions on the mission. But Kürten and I were both reserve officers of equal rank, so there was little he could say if I wanted to delay going home long enough to have a look at the Caudron,"

recalls Carl Degelow in his autobiography "Black Fokker Leader".

After the observers exchanged several machine gun bursts and the French turned home, Degelow decided to engage his forward firing gun and heavily damaged the Caudron with its bullets. The final hit was delivered by Kurten's fire. The airplane crashed near the small town of Berrieux, right behind the front lines on the French side. Three days later the situation repeated itself. Again, they encountered a Caudron above the front although this time, together with Kurten, they were eager to fight. The enemy however was not looking for confrontation and fled immediately. Kurten did not get to fire his gun. As a true fighter pilot Degelow on the other hand pursued the enemy and shot it down with his forward firing gun. FA(A) 216 commander, Oblt. Creydt told Degelow that both himself and Kurten will be credited with two kills, which Degelow opposed because mathematically it would mean he destroyed four enemy aircraft. In the end each crew member was credited with two half kills i.e., one full victory.

Barely two weeks later Degelow and Kurten challenged the French scout again but this time the duel was a tie and the German crew returned home with badly damaged aircraft. This was too much for the unit's commander and strongly "recommended" they stick to their mission and not risk the loss of the precious photographic material due to the similar adventures. In the coming days Degelow did not keep his dissatisfaction with such an order for himself which resulted in another reprimand from the commander. This time he learned about the "punishment" in the form of transfer to a fighter unit. He was expected though that during the period of processing all formalities he will be a "good boy" and not engage in any further antics. "To ensure the latter, I was paired with another observer, a Regular Army Oberleutnant who was quick to inform me that he was my superior officer and, as such, definitely in charge of the airplane at all times," recalled Degelow later.

Photo: sbírka Jörna Leckscheida

Carl Degelow after being awarded Knight's Cross with Swords of the Hohenzollern House Order (Königlicher Hausorden von Hohenzollern) on August 9, 1918. It is the one on the top of Degelow's chest.

Detour nr.2 : Troubles

On a rainy Monday of June 31, 1917, Ltn.d.Res Carl Degelow boarded the open truck and wrapped in a raincoat set on the journey to Valenciennes, home of the Jagdstaffelschule I i.e., a training Jasta for the future fighter pilots. He arrived as a participant in two air victories however with a single kill to his credit...

Pilots with the prior combat experience undertook only two weeks of the fighter training so in mid-August Degelow already headed to Jasta 36 commanded by Walter von Bulow. He was on vacation at that time and his deputy Ltn.d.Res Hans Hoyer was in charge, whom Degelow described as a prototype of a stiff, cold Prussian. After only four days he kicked Degelow out of the unit... While practicing the shooting at the ground targets Degelow wounded another pilot who was at that time on the ground fixing the targets. Degelow did not perform the prescribed inspection flight over the target area as ordered (supposedly he did not hear the instructions while starting the engine) and eager to prove himself he attacked right away. The wounded pilot survived however Degelow had to pack and leave and no one from the whole flight came to say goodbye... An Inglorious return to Valenciennes awaited him. He thought his aviator's career was over but as it turned out he was only to wait there for a new assignment which was with Jasta 7 "ruled" by Josef Jacobs. Degelow reported to him on August 21 and his new commander was interested in his Caudron kills as well as a Jasta 36 incident. "We will go through this only once and will never speak about it afterwards, agreed?" Jacobs supposedly proposed to the newcomer who, much relieved, naturally agreed. According to his memoirs he was very impressed by the new commander.

A deer against the odds

Degelow's first sortie took place on the following day but success in shooting down the enemy kept escaping him. When eight Jasta 7 Albatros D.III took off for a reconnaissance mission on September 3 Degelow was among the pilots. Their formation encountered the enemy group of Bristol F.2B Fighters, Camels and Spads. Germans claimed five kills in total, one was to be credited to Degelow whose victim, Sopwith Camel, supposedly made an emergency landing West of Dixmude. Ultimately this victory was not credited to him, nor Sopwith 11/2 Strutter on December 8 which he chased together with Jacobs who claimed one Camel. Both supposedly shot down aircraft disappeared from German fighters' sight behind the front lines where they may have made an emergency landings, but they did not appear in the loss reports and so Degelow had to wait for his second kill (first as a fighter pilot) further. Only four days after Jacobs led a patrol over Houthulst forest. The Germans were outnumbered by 10 Squadron RNAS Camels and according to Jacobs' report Degelow shot down one enemy plane. "A lucky day for Jasta 7 because we shot down three enemy aircraft one of which landed undamaged in our territory. Camel pilot, Flight Sub-Lieutenant Clark, a 20 years old Canadian, was our guest that night and left a strong impression on us," wrote Jacobs in his diary. Two out of three claims were finally confirmed by 4th Army Headquarters. They were credited to Horst and Bilik. Degelow came short again and it was no surprise he was rather frustrated by this row of unconfirmed kills. To boost his confidence, and maybe to help his comrades to identify his airplane in the air as well, he had the fuselage of his new Pfalz painted black and per his request one very talented mechanic from his flight painted a white deer on both sides of the fuselage, an emblem of Weisser Hirsch quarters in Dresden where, in the local hospital, Degelow was recovering from his wounds he suffered in trenches in 1915. He flew this aircraft on January 23, 1918, when around four o'clock in the afternoon he and his comrades encountered the superior number of British Camels.

Photo: archiv autora

Wijnendale (Wynendaele) castle which at the beginning of 1918 served as comfortable accommodation for Jasta 7 pilots.

Victory! Or not?

"We were patrolling the area over Houthulst Forest, the scene of many, many aerial combats. On this day, however, the weather was not very welcoming as clouds and haze lowered the visibility. For this reason, the watchword from our flight leader was: 'Keep a sharp look out!' We had already cruised over the 'required' sector of the Front and were on our way home when, from out of the sun, a flight of British Sopwith Camels suddenly pounced on us. A number of individual duels soon developed, and I found myself engaged with a fellow who had caught me by surprise. This pilot, who did not seem too well acquainted with the location of the frontlines, belonged, as we later learned, to a group of Dunkirk-based fighter pilots whom we called the 'Armstrong Boarding School'. The fellows were all young and inexperienced, having just arrived from England. To gain frontline experience, they were assigned to various sectors of the Front and indoctrinated in the manner of an English boarding school, hence the name we gave the group. They were always welcome adversaries, as their lack of experience allowed us to trick them into situations that made them easy prey for us," recalls Degelow in his memoirs as he, according to his own words, finally forced his inexperienced opponent to land on the German side of the frontline. So the situation from December 12th repeated itself.

"As was our custom, we sent a car to pick him up and bring him to our airfield, where, in courteous fashion, he could spend the day with us as an honored guest."

It turned out that the pilot was the aforementioned, twenty years old Sub-Lieutenant Hubert St. John Edgerley Youens. His youthful look was a bit spoiled by the bloodied nose and black eyes suffered during the hard landing. Degelow went to pick his victim up personally and as he recalled during the ride to the German airfield, and then to the castle Wijnendale, the pilots' lodging, the British young man was rather depressed. However, in the castle's colorful environment and after hot soup and glass of wine he relaxed and with more glasses of wine the lively conversation developed.

"My knowledge of English, which I had improved while in America a few years before the war, and a frequent Prösticheп! (Cheers!) appeared to help him forget the sorrow of defeat. The candles were lit and soon no one could tell whether we were in a German Kasino or an English club. After the meal, our guest seemed at ease and a few shots of whisky completed the task of loosening his tongue. Mr. Youens then declared to us that he was musically inclined and performed fairly well on the violin. So, we had a violinist – but no violin. Just then, the cook, who had been following the conversation through the half open door, suddenly shouted that Monteur (mechanic) Schmitz had brought back a violin when he returned from leave. 'Let's have it,' I said and this 'Stradivarius' was brought forth. It was in relatively good condition, except that it lacked an A string. 'Never mind,' said Tommy. 'I have one right here.' With that, he drew from his wallet at least two complete sets of strings for his favorite instrument. It seems that before taking off the Englishman had put these necessary parts into his pocket to be prepared for any eventuality. Mr. Youens busied himself stringing his fiddle and I took my place at the piano to assist him in tuning the instrument. Within ten minutes the international orchestra was ready to begin and as the opening piece we played the German national anthem, 'Deutschland über Alles'. To the delight of all present, my partner played the song with as much intensity of feeling as if it were 'God Save the King'. Our guest gave us pleasure the entire evening and helped us pass the time with his musical entertainment. Eventually, we did play the British national anthem and every German in the room stood at respectful attention as a sign of comradeship beyond the bounds of national or political affiliation. Thus, a battlefield defeat was transformed into a human victory."

When the party was over Youens was escorted to his bedroom with nailed windows and in addition he was asked to surrender his suspenders and boots. To escape without boots holding your pants at the same time doesn't sound feasible... In the morning Youens had breakfast with Jasta 7 pilots and then he was picked up by a car from the Army Interrogation Unit. His visit was recorded in Jasta 7 chronicle as follows: "A double victory. On the one hand the hard-fought air battle that ended victoriously; and, on the other hand, the musical pleasure that the loser so bountifully and cordially provided us."

For Degelow however the whole event ultimately came to a bitter end. Not even the victory over Youens was credited to him because there was

Photo: archiv Simona Youense

Holzminden POW camp in which Hubert Youens was kept until the end of the war.

Photo: archiv Simona Youense

A group of British POWs in Holzminden's camp. Youens is standing at the extreme right.

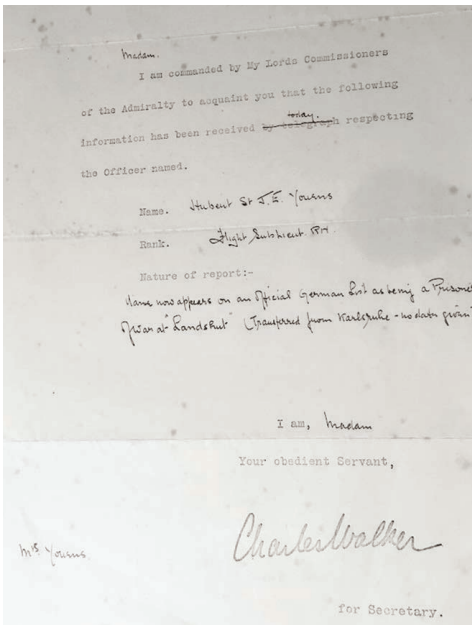


Photo: archiv Simona Youense

Madam.
I am commanded by My Lords Commissioners of the Admiralty to acquaint you that the following information has been received ~~today~~ respecting the Officer named.

Name. Hubert St J.E. Youens
Rank. Flight Sub-Lieut RN
Nature of report:-
Name now appears on an Official German List as being a Prisoner of War at Landshut (Transferred from Karlsruhe - no date given)

I am, Madam
Your obedient Servant,
Charles Walker
for Secretary.

Mrs Youens

The notice dated April 8, 1918, informing the family that Hubert Youens was captured and is alive.

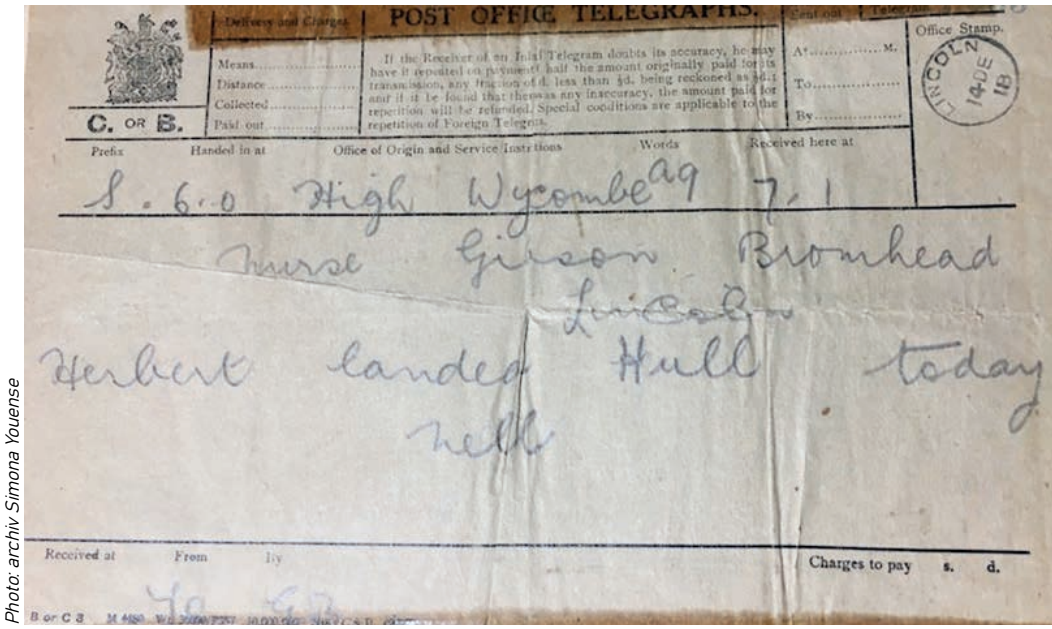


Photo: archiv Simona Youense

POST OFFICE TELEGRAPHS.
Delivery and Charges
Office Stamp.
C. OR B.
Means
Distance
Collected
Paid out
If the Receiver of an Inland Telegram doubts its accuracy, he may have it repeated on payment of half the amount originally paid for its transmission, any fraction of 1d. less than ½d. being reckoned as ½d.; and if it be found that there was any inaccuracy, the amount paid for repetition will be refunded. Special conditions are applicable to the repetition of Foreign Telegrams.
Prefix | Handed in at | Office of Origin and Service Instructions | Words | Received here at
S. 6.0 High Wycombe 29 7.1
Nurse Gibson Bromhead
Herbert landed Hull today
well
Received at | From | By
Charges to pay s. d.

A telegram announcing the home coming of the lost son.

no sufficient proof it was his fire which forced a British pilot to make an emergency landing. It's quite possible that the verdict was correct. Why? Because Hubert Youens himself recounted the whole event to his son. And he told this father´s story to his son Simon. "Grandpa supposedly said that he had landed due to the engine failure not because he had been shot down," claimed the grandson of the former fighter pilot...

In the end Degelow made up for his bad luck more than enough. Only two days later he was credited with one Bristol F.2b from 20th Squadron and till the end of hostilities the later Jasta 40 commander (since July 11, 1918) accumulated thirty victories in total.

Missing for three months

After his departure from Jasta 7 and interrogation that followed, Hubert Youens went through several POW camps until he settled at Lower Saxony camp Holzminden. His family had no information about him for three months and on April 8 they received a letter from Admiralty confirming he was alive and German POW. He returned back home in December 1918 and died in 1942 from a heart attack. His son was 19 years old at that time and only in the 1980s learned about Degelow's autobiography where one whole chapter was dedicated to his father. His grandson Simon Youens recalls: "My father was slightly irritated that Degelow referred to my grandfather as Canadian. I recently discovered why this may have occurred. Flight Commander Armstrong referred to in the combat report was the Canadian Ace F.C. Armstrong and perhaps Degelow, knowing this fact, assumed that all the pilots of the 'Armstrong Boarding School' were Canadian."

Actually, Armstrong was only a C flight leader, but the fact is that during that period of time ten out of eighteen squadron pilots were Canadian nationals. Degelow's error doesn't come as a surprise, the whole No.3 Squadron RNAS was considered Canadian by Germans. Credit goes to the author, publisher or translator to English, Peter Kilduff that in later editions of Degelow's memoirs this error was corrected and Youens is simply referred to as "Tommy" which was a general term for a British Empire soldier. The Youens family hails from High Wycombe (London's North-West outskirts) so they are English. Let's mention that you can find Youens Road in this neighborhood. However, it's not named after Hubert Youens, an aviator, but after Frederick Youens, an infantryman...

Detour nr.3, last one: A hero

Hubert Youens was not the only family member fighting in the Great War. His cousin, Frederick Youens served with the 13th company of the Durham light infantry regiment. He held a temporary rank of Sub-Lieutenant and was short of one month of his twenty-fifth birthday when he was killed on July 7, 1917. On that day, wounded himself, in the chaos following the German attack, he organized a Lewis machine gun team defense when close to firing post with crew ready to fire a German bomb (or grenade) landed. Quick witted and without hesitation Youens grabbed it and threw it over the wall where it exploded harmlessly. In a while another one landed. Youens jumped after it again and tried to throw it away to a safe distance to save his comrades. He was not lucky this time. The bomb exploded in his hands and shortly after Frederick succumbed to his wounds. For his bravery he was posthumously awarded the British highest military decoration, Victoria Cross.

Photo: Google Maps

Youens Road in High Wycombe is named after Frederick Youens.

Photo: archiv Simona Youense

Frederick Youens, Hubert's cousin who perished in Belgium trenches.

Unexpected (and undelivered) invitation

On December 12, 1970, in Hamburg Johannes Carl Gamm sat down at the typewriter. He was writing to Major A. A. Waterhouse who at that time was an officer in charge of the public relations at the British Ministry of Defense. "Dear sir, (...) I am approaching You with a request to you, which may seem rather extraordinary, but in my opinion not impossible to fulfill. The problem is as follows: I'd like to find out a whereabouts of a British First World War pilot named Youens whom a friend of mine, Herr Carl Degelow, would like to invite to his 80th birthday (...)" The celebration was to take place on January 5, 1971 in Hamburg but Hubert Youens, whom the invitation was addressed to was already deceased and the letter reached his son only in the 1980s. "Father said had he received the letter he would have attended the celebration in place of his father," said Simon Youens. In the end the celebration did not take place, Carl Degelow died on November 9, 1970, two months before his eightieth birthday... It would have been an interesting meeting for sure had it taken place. Two veterans of harsh fights who one evening forgot they were enemies with whiskey, music and candles light might repeat it again. And this time as real friends.

In the foreign service

The fate awaiting the Youen's captured Camel B7184 was the same as that of many other captured Camels. In the beginning of 1918 this aircraft was no longer a secret for IdFlieg however the Germans would not miss the opportunity to test an almost intact aircraft powered by the potent BR.1 engine. The original marking was partially left intact, partially alternated. The cockades on the wings were replaced with crosses, on the top in the white square covering the cockade. On the bottom the parts of the cockades still visible after overpainting with crosses were deleted. The fuselage cockade disappeared under the coat of white paint, same as the crosses on the top wings. The rear fuselage sides were painted black. The horizontal stabilizer was marked with black and white stripes which was Jasta 23b airplanes' marking. The engine cowling and wheel discs were left in blue color, quite possibly because this was a Bavarian unit and blue is the main color of Bavaria's emblem. The third squadron insignia, a white eagle painted on the fuselage sides right after the cockpit was preserved too. This resulted in a fairly colorful and unusual Camel appearance.

No details of this aircraft's fate shortly after the capture are available, it reappears at Jasta 23b though. When and under what circumstances this airplane showed up at this unit remains unknown as well. Many sources however state that the unit's commander, Lt.Otto Kissenberth scored one victory in it on May 16, 1918. Among many interesting facts about this important personality of the German WWI aviation the most frequently mentioned are his reading glasses which he wore while flying. He was not the only German ace to do so, the others were for example Walter Kypke, Kurt Wintgens or Fritz Otto Bernert. More interesting, and even more relevant to our story is that Kissenberth was a college-educated technician. He studied mechanical engineering first at university in Grenoble graduating at the technical university in Munich. He was very interested in aircraft design and joined aviation already in 1914. He was one of few German aces who fought from the very beginning till the very end of war and survived. Similar to Jacobs and Degelow he had his aircraft fuselage painted black and, in his case, decorated with a large alpine edelweiss. Kissenberth started his fighter pilot career in a quite impressive way when still being a member of KEK Ensisheim shot down three enemy aircraft on October 12, 1916 (two Farmans and one Breguet V). Until May 16, 1918, when he allegedly scored a victory in Camel B7184, he accumulated 18 (according to some sources 19) aerial victories. By the way, to clarify some facts let's mention the Trevor Henshaw book which claims he flew another Camel (B7230) captured on March 10, 1918.

Otto Kissenberth, Jasta 23b commander, was a college educated technician and a successful fighter pilot despite his eyesight deficiency. It's highly improbable that he ever shot down any S.E.5a flying a captured Camel.

Regardless which Camel it was, there are several reasons that make its combat deployment doubtful. The Germans had quite a lot of captured enemy aircraft in their fighter units' inventory nevertheless they were not used in combat. They were at pilots' disposal to test the enemy's aircraft flight characteristics or to develop the right tactics in the mock dogfight.

Every such flight however had to be approved

Photo: sbírka Jörna Leckscheida

A captured Camel in hands of German personnel.

by the superior command first and also the local AA gunners had to be informed because by then they would have proved their rather intimidating efficiency. The AA batteries crew recognized the aircraft by their silhouette since the national markings were often invisible due to the sunlight. Therefore, it was really important that the AA gunners were informed about the flight activity of a "friendly" Camel. The aircraft silhouette was crucial for the fighter pilots as well. At some flight attitudes or against the sunlight they were unable to recognize the national markings either. Every flight with a captured airplane from the unit close to the frontlines was rather risky and the idea of flying combat missions, even leading them in a captured Camel looks rather improbable.

Not a single combat report of the British pilots who participated in the dogfight on May 16 mentioned any Camel with German crosses. Such an aircraft would not have escaped their attention for sure. In total eight pilots from Jasta 23b engaged in combat with fifteen opponents from 64 Squadron which was by the way all this Jasta could muster at that time. Both formations clashed between Arras and Douai at 10:30 and the fight lasted approximately half an hour. It was a typical melee with many isolated duels when it was difficult or rather impossible to maintain the situational awareness. The British reported combat with twelve instead of eight Albatrosses and claimed nine (!) kills. The British reports are abundant with testimonies about the enemies in uncontrollable spins, smoking and crashing; in fact, on that day Jasta 23b lost only one pilot, Heinrich Kullmer. He crashed after his wing collapsed and it was unclear if it was due to enemy fire or excessive load during the combat maneuvers. Kullmer's Albatros crashed on the German side of the front line, near Sailly-en-Ostrevent and after the enemy aircraft withdrew Kissenberth landed at the wreck to find out if Kullmer, one of the most popular Jasta 23b members, survived. Sadly, he was dead.

Kissenberth himself claimed one S.E.5a shot down. It was Lt. S.B. Reece aircraft who managed to perform the emergency landing with his S.E.5a (C1859) on the friendly side of the the front between Tilloy and Neuville Vitasse. As mentioned above, it is highly doubtful that Kissenberth achieved this victory flying the captured Camel.

What is certain though is that two weeks later, on May 29 Kissenberth had a serious accident.

Shortly after the take off the Camel's engine failed and Kissenberth suffered the wounds which did not allow him to return to combat flying. He continued to serve though as a commander of Schleissheim Pilot School. He did not enjoy peacetime for long, on August 3, 1919, he was killed in a mountain climbing accident in Bavarian Alps. The crashed Camel B7184, manufactured by Clayton & Shuttleworth company and delivered on December 12, 1917, was completely destroyed and its career of serving two masters ended. By the way, it was in the inventory of his original unit, No.3 (N) Squadron RNAS, for nine days only and served much longer with the enemy.

Credits

My thanks to Simon Youens, Jorn Leckscheid and Jan Bobek for their advice, opinion, and reference to the relevant sources.

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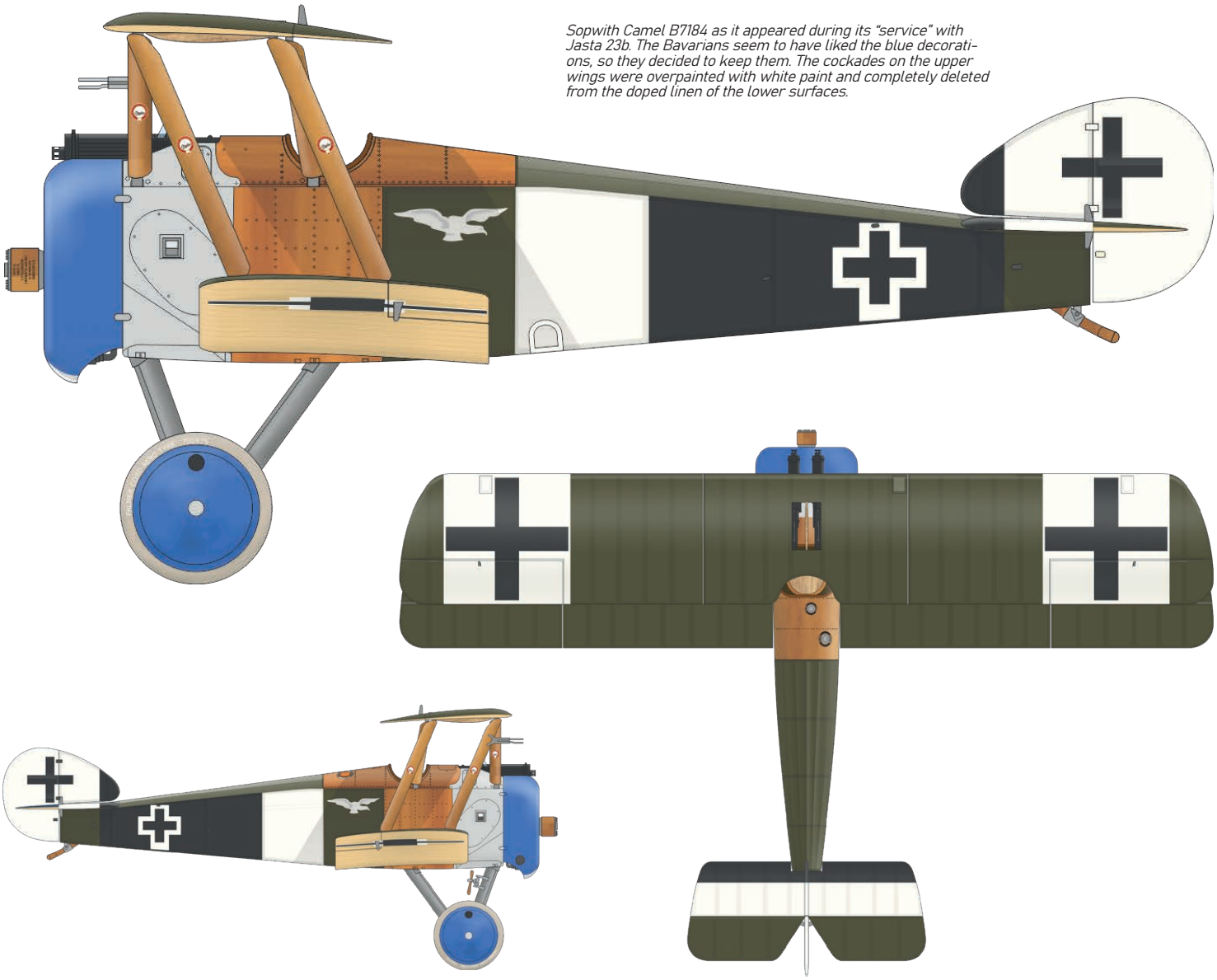


Sopwith Camel B7184 as it appeared during its "service" with Jasta 23b. The Bavarians seem to have liked the blue decorations, so they decided to keep them. The cockades on the upper wings were overpainted with white paint and completely deleted from the doped linen of the lower surfaces.

The Colors of Zero

TEXT: MARIAN HOLLY

With the surprise release of Mitsubishi A6M2 Zero plastic model in 1/48 scale by Eduard the interest in this airplane, and it can be said in Japanese WWII aviation as well, skyrocketed. One of the most frequent inquiries by the modeling community, and I dare to say worldwide, is what those correct colors applied to Zero actually were. Easy answer, isn't it? Overall grey of course! Well, yes, but there are at least hundreds of shades of grey.

So, was it a very light grey as featured in a memorable profile by Mr. Balous in "Letectví a Kosmonautika" (Aviation and Cosmonautics) magazine in 1968? By the way, a series of articles published in L+K, "Zeros over Pacific" (adopted from the book Samurai! by Martin Caidin and Fred Saito) for the next fifty years got me deeply interested in Japanese aviation and the air war in the Pacific and Far East. I am sure there were quite a few of us from that generation. At that time, and political system, the access to the information about such topics was rather restricted. Regardless, "pirate" copies of Maru Mechanics, Koku-Fans or Thorpe's books were made on xerox copiers with their stinking paper. By the way, late Donald W. Thorpe was probably the key figure in the Japanese WWII aircraft coloration and markings research in the world outside of Japan. Freelance writer, illustrator, computer engineer and an avid member of IPMS residing in California was the first in late 60s to mid-70s to introduce the system into Japanese colors and camouflage schemes Even though largely superseded nowadays, its many schemes and camouflage colors stood the test of time until today. Thorpe's nomenclature was used by other researchers, namely Robert C.Mikesh, at that time curator of National Air and Space Museum in Washington D.C. Seemingly I deviated from grey Zero. What did Thorpe conclude in this particular case then? He designated the camouflage scheme as 05 (0 for overall) and color as N10 (N for Navy) light grey which is slightly "cooler" than FS 26493 and in RGB it is a perfectly neutral grey! This was not a departure from all-grey Zero image held by the modelling community, cinema industry (movies such Tora! Tora! Tora!, Final Countdown or Midway) or the general public.

What did the Pacific war veterans, many of whom were still around and eye-witnessed Zero appea-

rance, have to say to it? Both written reports and oral accounts varied quite a bit, ranging from grey, through white to even silver colors. In fact, sightings of Zero in "mustard", "clay" or "khaki" colors were recorded. No particular attention to this seems to have been paid. Of course, there were Zero relics in US and other countries museums and in private collections. It seems however that the time for their detailed examination has not arrived. How were the things on the other side of the globe, in the birthplace of the famous Zero, Japan? I confess, in those years I did not have access to the actual, reliable information. I dare to make a rather wild guess that the consensus was very similar to that one in the West - grey, relatively light, maybe slightly bluish color. What leads me to this opinion are the color profiles in the Koku-fan, Aireview or Maru-Mechanic magazines and special issues which I could rarely put my hands on and which rather invariably represented Zero in overall grey color. I was particularly impressed by Rikyu Watanabe's artwork. As I learned much later, he was one of few very interested in the Japanese WWII aircraft colorarion. When I arrived in the USA on business in 1991, I had much improved access to the relevant information and found out that there was no ground-breaking change in the perception of Zero color i.e., grey, or whitish grey, almost white.

"Two Japanese Air Forces" and their color standards

Why was Zero, and other military aircraft for that matter, painted at all? Well, not because of the nice looks, that's for sure, military organizations are not in that business. The first reason was anticorrosive protection. After large-scale introduction of the light metal alloys into the aircraft design in the 1930s it was initially believed that they will resist the elements far better than wood and fabric designs of the recent years. However, the aggressive salty air on the board of the air carriers, extreme heat and air moisture in Asia proved it all wrong. Japan was seeking solutions which took the form of various special coatings utilizing the experiences of the aeronautical industries of the leading industrialized countries including Germany. The second purpose of painting the aircraft is its camouflage i.e., lowering its visibility both in the air and on the ground. For this purpose, the air forces of the developed industrial countries developed a range of preferred colors which, once approved, had to match the standard (etalon) within certain tolerances. It was ANA in the USA for example, or RAL in Germany, Tavola 10 in Italy or even "Albom Nakrasok" (color catalogue) in the Soviet Union. In the 1930s Japan already belonged to the group of industrialized countries and its approach to color standards was no different. It developed color standards for both of her military air forces. Yes, both, similar to the USA, Japan created the naval air force (IJNAF - Imperial Japanese Naval Air Force) and army air force (Imperial Japanese Army Air Force) as totally independent entities. Since Zero was ordered, and exclusively used by IJNAF let's take a closer look at "Kaigunkōkūkiyo Toryō Shikibetsu Hyōjun, Kariki 117 Bessatsu" i.e., Paint Identification Standard for Naval Aircraft, Supplement to Provisional Regulation 117, further kariki 117 only. By the way, IJAAF standard was named Ko-kaku 39 and colors were assigned numbers from 1 to 43. I may revisit this matter in another article. I hope for the occasion of the new 1/48 Eduard model of Nakajima Ki-43! A proposal designated 8609 was created merging both standards (similar to ANA in the USA) effective February 1945. How it was actually applied remains uncertain.

Kariki 117 is in fact a catalogue of colors grouped alphabetically, for example group B are reds, C yellows, D greens, H browns, J greys. How it actually looks you can see here.

The specific shade has its number therefore the code for "ash grey" (hai iro) for example is J3. We will talk more about this color later. If you go back to the first paragraph I wrote about the "consensus" that Zero was grey. No mention of any standards. Why? Nobody knew about them? Well, it depends, who we are talking about. Several copies had been found in Japan and some people had access to them however due to "various reasons" they did not share the discovery with the "West". Until the beginning of the 1990s the aviation enthusiast and late researcher Katsushi Owaki "revealed the secret" to fellow enthusiasts in America. Because of it he became an "outcast" in the community of the Japanese researchers. Another big problem with kariki is that up until now we don't know how exactly the IJNAF Headquarters chose the particular shades. No sufficient documentation nor correspondence have been found so far. Or we still don't know about it in our hemisphere (see "case kariki 117"). Our contemporary knowledge has to rely on the reverse approach then - after analyzing the artifacts, wrecks, secondary correspondence etc. assign the particular color from catalogue to them.

"The Great Ame-Iro Wars"

In the beginning of 1990s, the information and opinions started to appear challenging the fact that the Zero color was just ordinary "neutral" grey i.e., from black and white pigments only. In 1993 Dai Nippon Kaiga in their Aero Detail series published the monograph nr.7 on Zero fighter. The author was Shigeru Nohara, another aviation enthusiast and writer of Japanese aviation books published mostly by Model Art company. In this book, in the camouflage and markings section perhaps for the first time the kariki 117 nomenclature was used (J3 hai-iro and D1 green) but even more importantly the term "ame-iro" i.e., caramel color was used which was supposedly the result of the original J3 grey being overpainted with clear, slightly brownish varnish (caramel) for better anticorrosive protection. Since then the theory has been discarded. It doesn't make sense. Why put another protective layer over the already existing, apparently anticorrosive coat of J3?

But "the cat was out of the bag", as we will see later. Sometime in 1994, during the period of internet and personal computers explosion, a gentleman by the name Dave Pluth founded the website www.j--aircraft.com. It was a "golden age" of Japanese aviation studies. It was frequented by personalities such as James Long, Don Thorpe, Osamu Tagaya, Ryan Toews, Henry Sakaida and others. I could not wait to come back home from work to read all that information I could only dream about for the past thirty years. Among visiting researchers were also late James Lansdale, who later acquired the website, late David Aiken and Nicholas Millman. Lansdale, an avid Japanese aircraft relics collector, retired teacher living in Florida, left a strong mark on the Zero coloration research. After polishing the surface of one of the Zero skin fragments with toothpaste the color changed to darker, olive grey, "ame-iro" which led to the conclusion it had been the original paint color applied by the manufacturer. The top color of the relict was an "oxidized ame-iro", mainly severely 'chalked' top layer due to greater proportion of titanium dioxide pigment. The underlying colour, protected from UV exposure by the chalked layer is invariably slightly darker and yellower/browner than the original paint color. Lansdale contacts in Japan included Nohara. In 1998, in Model Art nr.510 he published that the original Zero color had been "ame-iro" and supported it with various photographs of the relics. He also presented a hand-brushed 1/72 Hasegawa plastic model of A6M2 painted in this color. That

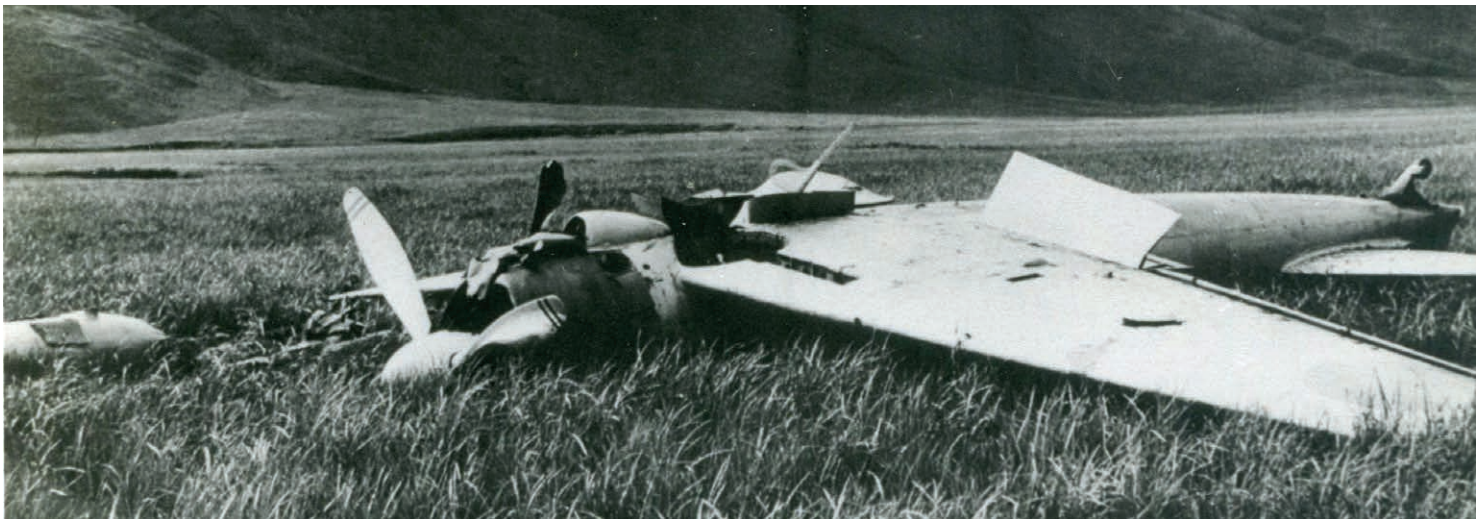


Photo: San Diego Air & Space Museum

The first Zero the Allies were able to test, was DI-108 which belonged to Fighter Squadron of aircraft carrier Ryūjō. It was manufactured on February 19, 1942, and its serial number was 4593. Its pilot, Tadayoshi Koga, was killed in crash on June 4, 1942, during the attack on Dutch Harbor in the Aleutian Islands. It was a relatively new aircraft carefully maintained and stored in the lower deck of the aircraft carrier. The American report A.I.2(g) nr. 2103, describing the captured aircraft, states that its color was "glossy grey-green".

Photo: Wikimedia Commons

The abandoned A6M3 Type 32 coded T2-157, which belonged to Kókútai 204, as captured by an Allied photographer on Munda Island in September 1943. Several interesting details can be recognized such as yellow leading edge stripe or blue-black anti-glare paint which was not only applied to the engine cowling but also to the cockpit deck and canopy frame interior surfaces.

"stirred the pot" in Japan where, as it seems, the majority of people very much preferred the image of the light grey Zero.

"The Wars" were fought over the actual color appearance and, as I said in the second paragraph, its accurate identification in kariki 117. At this place I just must mention David Aiken, the former director of the Pearl Harbor aviation museum, great Japanese aviation enthusiast for which he was given the nickname "Captain Kamikaze" by his Texas IPMS chapter fellows. For some reason David focused on Zero color description by its designer Jiro Horikoshi - hairyokushoku, literally grey--green. David fell in love with the word green. In the "wars" he claimed it was M1 from kariki 117 which is in the group of grey-green colors and similar to RAF interior grey-green. He compared Zero color to the color of pistachio nuts in direct opposition to Lansdale's theory of "yellow mustard" color. Until the last moment David promoted "grey-green" based on the teachings of his "sensei" in Japan. Many times, he was asked to share the knowledge from the "mysterious sensei" but silence was the response. I have to confess I myself challenged him to it, at least three times. David relied too much on the online images, including images of Tamiya paint bottles, rather than any analysis of actual paint. His "heritage" was preserved, however. He had managed to convince the leadership of the Pearl Harbor museum to paint the restored A6M2 (rather poorly, in my opinion) in the infamous "pistachio green".

The effort has also been made to identify "ame-iro" as I2/I3 tsuchi-iro (color of the earth) from kariki 117. These colors are literally yellow-brown ones, and the grey tone is not that apparent. In the end "The Wars" ended and peace was signed with the clause that the color was "olive-grey", somewhere between FS16350 and FS34201, but lighter (FS=-Federal Standard) and the best equivalent is RAL 7034 Gelb Grau (yellow-grey). Based on Nicholas Millman's (see below) opinion, analysis and research RAL 7034 is the closest match to the original color.

The science steps in

Namely color science. I had no idea about it all those years prior. One can learn new things through hobbies, correct? Earlier I mentioned the name Nicholas Millman. As a participant in "the wars" he was initially skeptical a bit. As a paint color and coatings specialist from the UK, a great enthusiast of the Japanese and other Asian countries' aviation (see his blog www.aviationofjapan.com) took the scientific approach. The color is a result of the pigments it contains and their binder. If we perform the chemical analysis of a well preserved sample, we will find out its pigments and binder composition and can perform "Jurassic Park" on any paint colors i.e., bring it "back to life". Nicholas was involved in the process. Largest quantity of pigment was white (titanium dioxide), then small proportions of carbon black and chrome yellow. Yellow--brown tinting of urushi-type resin binder on white pigment played a certain role as well. The paint was re-created and looked very close to the best preserved samples of the "amber grey", between FS16350 and FS34201 with a "fugitive" green cast. Why these pigments? As mentioned earlier, even though Japan possessed a well-developed paint industry, it was still learning from the other developed countries, including Germany.

Before 1940 there were problems with the binder stability and paint yellowing. It could have been a reason why Japan bought the German license for special paints for light metal alloys. It cannot be just a coincidence that "amber grey" designated J3 SP (SP = special paint for light metals, to differentiate it from the ordinary grey) by Millman, used on Zeros on the manufacturing lines, resembled the German RLM 02.

As far as I remember the articles by the leading expert on Luftwaffe colors, Michael Ullman, German paints were of high quality, did not degrade quickly (did not yellow) and also did not chip off even without a primer application. In addition to the chemical analysis, we have some written records that corroborate the existence of the specially developed paint for the light aviation metal alloys. Zero maintenance manual states: "The paints to be used are transparent paint (light blue color) for the interior and special paint for light metals (grey rat color) for the exterior and the surface is to have a polished finish". In kariki 117 there is a group L of grey colors designated "nezumi iro" i.e., rat (or mouse) color and L2 was compared to FS16350.

by the Japanese historian and researcher Ryoichi Watanabe Then we have a supporting document, Kugisho report nr.0266 (Kugisho=Kaigun Kōkū Gijutsu-sho, Navy Air Technical Arsenal based in Yokosuka) about Zero camouflage trials which "Arsenal" conducted in cooperation with Yokosuka Kōkūtai (kōkūtai=IJNAF unit) between November 1941 and February 1942. The report states that "the paint color currently in use for the Type 0 KanSen is J3 (hai iro, ash or grey color) leaning slightly toward amber color (Ameiro)..." and "ame-iro" is mentioned at least six times throughout the text. Therefore, we are led to the existence, and mass application of the amber grey (J3 SP) by the following triangulation:

1. Examination of actual paint samples from many A6M2 and A6M3 model 32
2. Evidence of the Kugisho report - consistent with

the appearance of samples; and
3. Evidence from contemporaneous eyewitness descriptions - consistent with appearance of samples and the Kugisho report.

Return of grey Zero?

Sometime in the beginning of 2018 anime director, illustrator and Japanese aviation colors researcher, Sunao Katabuchi published in Rekishi Gunzo nr.147 an article where he quotes the paint color specifications for the aircraft manufacturing under IJNAF contract. Five colors from kariki 117 were approved including J3 hai-iro which can be described as neutral grey. Katabuchi considers this color as generally and widely applied and its "ame-iro" appearance as a result of the aging or chemical instability. No one seems to doubt the J3 application on Zeros. It was applied on one Zero (Yo-105) during the Kugisho camouflage experiments. The Zero units "in the field" must have had some stocks of this paint and it cannot be excluded that it was used after repairs. The chief Zero designer, Horikoshi, however described the paint as "dimly shining green ash".

Mr. Kenji Miyazaki and Taizō Nakamura collaborate with Mr. Katabuchi. You can find both of them on Facebook, where Mr. Nakamura in particular is very active being an avid Zero relics collector as well. It seems he was involved in the laboratory analysis of the surviving Zero color samples. He posted a lot of photographs and opinions which may be well worth checking. In 2007 Mr. Miyazaki wrote about shades of grey on Zeros but was not too specific. He doesn't exclude the possible existence of "ame-iro" or some other "khaki toned grey" applied on Zero but seems to prefer J3 grey as the only officially applied paint color for Zeros. He thinks it's more probable that the color changed (yellowed) due to aging. In Kugisho report 0266 however "currently used hai-iro leaning toward ame-iro" is mentioned multiple times. Mr. Nohara, I mentioned earlier, stands behind his original opinion from 1998 i.e., amber grey was Zero factory finish.

A strong supporter of Katabuchi's theories lives on the opposite side of the globe. Tom Hall from California (a very active member of j-aircraft.com in its beginnings) wrote a series of short articles on Facebook where he's rather skeptical about Lansdale's and Millman's research. His supposed fluency in Japanese may give him an edge in obtaining some first-hand information from Japan. On the other hand, his opinion that "the color changed in the hangar at sunset" can be surprising. Regardless, the fact is that the current preference of Zero image in neutral grey caught "the second breath" and the further development will be interesting to follow. For example, in January 2022 a book by Miyazaki and Nakamura will be released focusing on Zero colors analysis. Good news is that the subtitles will be in English.

What color for Zero then?

First, do not get overwhelmed by the deluge of information in cyberspace. For example the fairly numerous Japanese aircraft interest groups on Facebook are a cesspool of unreliable information. This article is an attempt at giving the Zero enthusiast a hand in sorting out this information and showing them the who, when, how and why. The treasure trove of the information, and not only on Zero, can be found on Nicholas Millman's blog www.aviationofjapan.com. The high value reference is his PDF "Painting the Early Zero-Sen" email Nicholas to purchase it.

This is followed by Combat Colors No.9 which is an illustrated guide to Zero color schemes and markings. Published in 2017 by Guideline Publications in the UK may be rather hard to find these days.

Especially valuable is Millman's specialist interest in color science and coatings. In the end the decision how to paint your Zero is only yours. Despite all that research, science and facts Nick stated once: "Hardly ever any of us will be looking at factory fresh Zero on a sunny day"...

But let's not forget. Zero was not made entirely out of metal. All control surfaces (rudder, elevators and ailerons) were covered with fabric. Their paint color coating was of different chemical composition resulting in slightly different color shade, similar to FS 36307, we may say J3 from kariki 117. Nakajima-built Zeros had these surfaces in slightly more bluish tone, close to FS 26314. I am aware that not everyone has access to Federal Standard 595B color swatches I frequently refer to. It's not easy to obtain a set these days. From $25 I paid thirty years ago, the price went up to hundreds of US dollars with a reduced number of swatches.

From the practical point of view then let me propose some hobby paint mixes which appear to be close to amber grey (FS 16350/34201 but lighter). My personal preference is GSI Creos (Gunze) Mr. Color, C336 Hemp + C12 US Olive Drab, 25:1. One of the mixes Millman recommends is GSI Creos (Gunze) Aqueous Hobby, H336 Hemp + H70 RLM 02, 1:1, and it looks very authentic. Mission Model Paints MMP110, J3 SP is supposedly a great match to amber grey. I have no personal experience with this brand. For those control surfaces, especially for Nakajima-built Zeros, Mr.Color C35 IJN Grey looks very suitable.

If you use other hobby paint brands, ask your modeling buddies for a sample of these mixes and you make your own shade. It is not necessary to be too pedantic, the goal is to replicate the "character" of the desired color.

A picture from Atsugi base in Japan, taken in September 1945, captures Kókútai 302 aircraft. Even though the camouflage paint on some aircraft shows considerable weathering, the national insignia's red is in excellent condition. This paint was of high quality. During WWII there were at least three different shades of red, produced and applied to the national insignias and the units' markings.

Photo: Fold3

TEMPEST OVER ANTARCTICA

Jan Bobek

We have written about the Czech aviator Eduard Kleinkönnig several times on the pages of Eduard INFO magazine. He fought against giant birds in a Messerschmitt Bf 109 and a Curtiss P-40 in the Arctic Circle. Later, with the MiG-15 „Bunny Racer“ he searched for dinosaurs during races around Africa. And finally, he fought in the legendary „War of the Carrot“ with the MiG-21 „Bunny Fighter“. We unexpectedly tracked down this machine in Hungary about ten years ago. A hitherto unknown chapter of Kleinkönnig‘s aviation career is his service in Tempest fighters aboard an aircraft carrier.

■ *Tempest „Bunny Lady“ on patrol off the Antarctic coast in the summer of 1946/1947. In this form it was piloted by Ensign Eduard Kleinkönnig after the incident with the killer whales.*

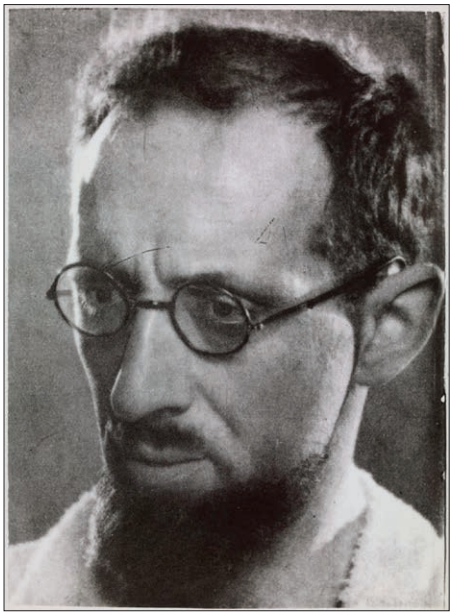
Photo: IWM, retouched by Kateřina Borecká

Mar del Plata, November 1945

The American admiral hurried on to the pier with a Secret Service agent and an Argentine escort at his heels. He stared in disbelief at the rusting submarine being towed into the harbour by a US Navy destroyer.
„Another U-Boot XXI! Shall I guess? Armament dismantled, commander and crew refuse to talk.“
„Exactly, Admiral. Like all previous cases...“
„And where did we find them?“
„They had an engine failure. They were off the island of South Georgia.“
„Damn, that doesn‘t make any sense, what is everyone doing down south?“
„Like the others we intercepted, it looks like they were carrying cargo and unloading it somewhere. Just like the Japanese did last month.“
„Was that the submarine with the hangar on the bow?“
„Yes, and she wasn‘t the only one. We think it was just the tip of the iceberg.“
„Don‘t even talk to me about icebergs, have you heard what the British are building in Canada?“
„Yes sir.“
„Looks like they‘re all going crazy and going on dates down here in the south!“

Moscow, June 1946

The atmosphere in the office of the military attaché at the British Embassy was rather gloomy.
A British diplomat and his New Zealand colleague in Air Force uniform were reading intently from a file on the desk. Occasionally they glanced briefly at the visitor sitting in front of them, and then they looked at each other in disbelief. The visitor was beginning to look a bit uncertain.
„Um, so you were at the base outside the Arctic Circle, right?“ the British officer finally asked.
„Yes, sir, on the island of Kolguyev. „
„Hmm... how long were you there?“
„From the end of 1944, that‘s when the airfield was set up and we were there until April this year. Then the Russians occupied us.“
„But you weren‘t taken prisoner, were you?“
„No, they didn‘t, we thought we were meant to Siberia, but they needed us because... Well, there were some big animals there, they needed to get rid of them. We had been killing them for almost two years already. So the Russians sort of kept us busy and let us fly for a few more months.“
„And what kind of animals were they? Polar bears?“
„No sir, something else, you know, I don‘t really want to explain it, it would sound strange. There were walruses, the occasional polar bear, but that was easy to handle. The Soviets are doing some experiments with those walruses to breed them. And then there were some big animals, there were difficulties with them. They also killed the commander.“
„Look, sir, sir...“
„Kleinkönnig, sir, Eduard Kleinkönnig.“
„Kleink... I can‘t even pronounce it properly. You‘re German, right?“
„No sir, I am Czechoslovak. From Žatec.“
„Well, I can‘t pronounce that either. You have a German name and you‘re Czech?“
„Yes, many Czech people have it like that.“



■ *Geoffrey Nathaniel Joseph Pyke was an English journalist, educationalist, and inventor. During the Second World War, Pyke proposed the newly invented material, pykrete, for the construction of the bergship Habakkuk (Habbakuk). He even proposed several inventions based on the use of pykrete and super cooled water. Due to Pyke's earlier disagreements with American personnel on Project Plough, he was excluded from the planning for Habakkuk in an effort to secure American participation.*

Photo: State Library Victoria

„James, there's something strange about the name, isn't it?"
But the New Zealand officer didn't find it strange.
„Sir, the best Czech fighter was called Kuttelwascher, he flew in the first squadron of the RAF. „
„Oh my God, really? I can't even pronounce that, I'd break my tongue."
„That's why he's called Kut. And this Clostermann, whom I met in Paris last month, he is a Frenchman. From Brazil..."
„Oh! Those continental nations have always been opaque. Well, then, I'll call you Eduard, if you do not mind. Look, since the Soviets have made you available that means they're no longer interested in you. You didn't end up in Siberia, and you're not a spy. We've checked that. You're Czechoslovakian, so you're our ally. I'm suggesting that you needn't be afraid to tell us more or less anything about what you saw and did in the North. Let's start with what you flew there. Tell me..."
„Nothing extraordinary sir, first the Messerschmitt 109 and when the Russians came they gave us the Curtiss P-40."
„So you have experience with both German and Western equipment and you lasted two years in polar conditions? That's good for us. How come you joined the Luftwaffe?"
„After the occupation, Žatec was a German border town, and I signed documents as a factory pilot for my job that contained something I didn't understand properly, and then it went quickly."
„Where did you get military flight training?"
„In the Protectorate, sir, basic and fighter."
„You speak decent English, where did you study?"
„Self-Study. When you're up north for two years, half the year the sun is shining and half the year it's night, you have to keep yourself busy somehow so you don't go crazy. We were also catching the radio from northern Canada."
„You didn't miss German radio?"
„No, it was unbearable to listen to. There was always someone shouting madly that the Reich would win, that it had wonder weapons. And then when that bird killed our commander, I took over and we tuned to Canada. We also listened to Moscow, where at least it was clear where the front was. And we also caught Finnish radio, but nobody understood them."
„Well, you'll soon get to know the Finns. You mentioned wonder weapons, do you know anything about them?"
„No sir, just what Goebbels kept shouting at us from the radio."
„I read here that you were a factory pilot in Prague. Did you see anything unusual at the airports there?"
„And what would something unusual look like, sir? A Messerschmitt Schwalbe or a Komet is in every magazine a year after the war."
„Maybe something like a big flying disc..."
„Disk? No, I haven't seen anything like that at Avia."
„Very well, James will help you deal with the formalities. I think I'll make you happy, you're going to Canada. And the war isn't quite over yet. But you'll find out soon enough. „

Downing Street number 10, July 1946

Churchill finished reading the report and looked at the Foreign Secretary.
„So the Americans don't want to use the atomic bomb and the Russians won't send us reinforcements. Don't they realize what's going on?"
„Mr Prime Minister, the Russians are having enormous difficulties with supplies, they have deployed the army. They have no one to send us."
„So we've been sending materials and supplies to the Russians all through the war, and now we're on our own like in 1940."
„Prime Minister, we must take into account that Russia is again facing famine. The drought has destroyed their crops. We may have to supply them again. But they have made some foreign pilots available to us for those new aircraft carriers. We're also trying to get volunteers from every country, like in 1940."
„Hmmm, what about the Americans? What did Truman's people say about the bomb? It would have solved it in one fell swoop. Do they understand that time is playing against us?"
„They understand, Prime Minister. They will make available what they can. But the problem is that the war is officially over and they have released a lot of people into civilian life. A lot of vessels have started to be dismantled. „
„Then let them drop the damn bomb!"
„They say it could raise ocean levels, there's a lot of snow and ice. And they also don't know exactly where it's going to topple. They've lost almost all the reconnaissance planes they sent out there. „
„Do we have any decoded enemy dispatches from ULTRA yet?"
„Unfortunately not, Prime Minister. What was intercepted in the South cannot be safely sent over here."
„So Bletchley Park is basically useless to us now and we don't really know anything."
Churchill, in his dressing-gown, leaned back against the arm of his chair and watched the glass of whisky as the ice cubes melted in it.
„The Prime Ministers of Australia and New Zealand call me on the phone every day, everything is upside down there. They are horrified and I don't blame them at all. Bloody bastard, that Hitler. He's done it. Too bad Attlee didn't win the election last year, I wonder what he would have done with this, a civilian!

Lake Patricia, Canada, August 1946

The seamen ashore loaded a large-caliber machine gun. The officer supervising them looked towards the large wooden vessel, then turned towards the international group of airmen.
„Get down!"
He also hid with them behind a rampart.
„Fire!"
There was the booming sound of a half-inch machine gun and the barrel began to spit glowing projectiles into the side of the ship. But the bullets bounced back. Some sent a geyser of water into the air or took to the sky with a scream, others ended up in the protective wall on the shore or whizzed over the airmen's heads into the forest. The roaring stopped.
„Stand up!"
The astonished group rose from the grass and dusted off their uniforms.
„What you just saw is a demonstration of the resilience of a ship made of pykrete," the officer announced, enjoying the puzzled expressions on the faces of his temporary subordinates. Then he added: „Pykrete is a mixture of ice and sawdust. „
There were surprised comments in several languages.
„Pykrete," the officer continued, „has about half the compressive strength of concrete, but three times the tensile strength! Questions? Yes, Ensign Kleinkönnig?"
„Sir, but a ship made of ice can't work, it would melt!"
„And what do you see here on the lake, Ensign? Noah's Ark? Pykrete has excellent insulating properties. Now, let's move back to the classroom..."

■ *A block of pykrete. The image shows a 50 mm (2 inch) thick 50% mixture (by volume using shredded wood mulch) hit by a single 7.62 x 39 mm rifle round (lower impact mark) fired from 10 m (30 feet) which bounced off the surface. It took an additional 7 rounds (upper penetration mark) of 7.62 x 39 mm fired from 5 m (15 feet) to penetrate the block.*

Photo: Wikimedia Commons

Downing Street number 10, August 1946

„Admiral Cunningham, are you telling me that the giant carrier has a top speed of seven knots and so do the two sister bergships?“
„Yes, Prime Minister, we see this as a problem. We didn‘t count on her sailing south, across the equator, we‘re afraid she‘ll soften up a bit during the voyage.“
„But the designers assured me that the material, the pykrete, is heat resistant and there are cooling units inside...“
„You know designers, sir, they mainly counted on it operating only around the Arctic Circle. We‘re quite worried that HMS Habbakuk will shrink along the way and make the deck a swimming pool. There will be 200 aircraft on the ship, all fighters or bombers, but no seaplanes. „
Churchill thoughtfully moved the ashtray a bit with a cigar.
„Admiral, have you ever pushed an aircraft carrier with one battleship while simultaneously towing it with the another one?“
„Sir, I‘ve never really done that. Especially not a 2,000-foot aircraft carrier made of iceberg.“
„Then make it happen! You just have to cross the equator fast! We‘ve got HMS Vanguard completed, she‘s doing thirty knots. If you don‘t dare, I‘ll ask the US Navy! Summer starts in Antarctica in a few months, we‘ve got to be there in time to get the bastards. „

Aircraft carrier HMS Habbakuk, south of Newfoundland, September 1946

The executive officer felt that he was about to break something in anger. „Clostermann really pisses me off. I think we‘ll drop him back in Brazil. Try explaining to him again that he‘s not a Wing Commander, and he‘d better write that book of his on his time off. So what‘s next for you, John.“
„The Canadians are arguing with the Dutch. One wants to play hockey on board, the other is pushing for ice-skating competitions and has been discussing it for a long time. The Canadians hit the head of the commander of the American volunteers with the puck. He‘s in the infirmary, raving and talking about some Pittsburgh Penguins...“
„They‘re going to see a lot of penguins soon. Okay, anything else?“
„Finns protest that they have too small daily doses of coffee and want a sauna. The Norwegian mechanics have started building several igloos on board.“
„What, igloos?“
„Yes sir, they say to make the road to the equator more, please wait, to say it right... To make the road more hygge. They promised to dismantle them again before combat deployment.“
„Any normal news?“
„The New Zealand squadron with Tempests has finished painting the planes to the naval scheme, they are asking permission to paint rabbit skulls on the machines. They have the Czech Ensign Kleinkönnig with them, they seem to like him, they say it‘s in his honour. In his spare time he makes carrot spirit for them. He smuggled a lot of carrots and a distillation column on board. He says they can distill anything in his country.“
„OK, that‘s actually the first normal request I‘ve heard today, even though it sounds goofy. Let them paint it. But they have to save the white paint. We don‘t know what it will look like over Antarctica, we may have to paint the machines white. I‘m sure the Germans will do it, they said they did it each winter on the eastern front during the war.“
Suddenly things on the desk shifted a few inches and the furniture in the cabin creaked. It was as if the ship had been rocked by something big... Both men froze. The executive officer shook his head and pursed his lips in displeasure.
„John, can you please ask the Vanguard bridge again, and emphatically, not to poke us from behind? I understand that they‘re one knot faster than King George V, who is towing us, but it‘s really getting on my nerves. I‘d like the captains of both ships to come to an agreement. We need to get this international circus in order. Otherwise we won‘t survive the two weeks south. „

White House, September 1946

President Truman was leaning against a large desk, looking at photographs taken by aerial reconnaissance. Around him were advisers, the Secretary of Defense, the Secretary of State, the Commander of the Air Force, General Spaatz, and Admiral Nimitz.
Spaatz put on the table another picture of the landscape showing ice and snow.
„Mr President, we have not yet reliably identified this object, but it is very large. My colleagues have some estimates of what it might be. „
„Is it possible that it flies?“
„We‘ve found a few of them, they look like airships, but they‘re much longer. We don‘t know exactly yet.“
„What about those disks you were talking about last time?“
„They are flying for sure, we have clear photos of them. We know they don‘t need an airport. But we don‘t know what kind of propulsion they use. Maybe it‘s a combination of propellers for vertical takeoff and jet propulsion for forward flight. We‘re not sure yet. They‘re probably the same objects we‘ve seen over Europe. Foo Fighters. „
„And rockets?“
„They have several types of missiles, bigger than the V2. We‘ve even recorded flights above stratospheric level. Von Braun is successfully continuing development.“
„Why do we still know so little?“
„Images are difficult to obtain. They‘ve got new anti-aircraft missiles, they‘ve shot down a few of our reconnaissance RB-29s, and the area is huge. We're looking for a needle in a haystack. They seem to be mainly close to the coast in New Swabia, because of logistics.“
Nimitz placed the folders on the table, opened them, and spread out the other slides.
„We got this from our colleagues in the Air Force, probably something like a production hall or hangar. It's huge and well camouflaged from above. Look here, there‘s an ice sheet leading to it. We think they‘re transporting supplies by submarine under the ice. This area is important. It's somehow connected to the giant objects. „
„Do you at least have a theory as to what these objects are for?“
Nimitz and Spaatz looked at General Leslie Groves of the Manhattan Project.
„Mr President, I have consulted, confidentially of course, with the people from our project. Also with Mr. Einstein. And it‘s possible that... I mean, they believe these are spacecraft. While the war was going on, they managed

Canadian Prime Minister Mackenzie King, with President Franklin D Roosevelt, and Winston Churchill during the Quebec Conference, 18 August 1943. It included a demonstration of the pykrete‘s resistance to gunfire as part of a presentation of the HMS Habbakuk project. Churchill was enthusiastic about the project.

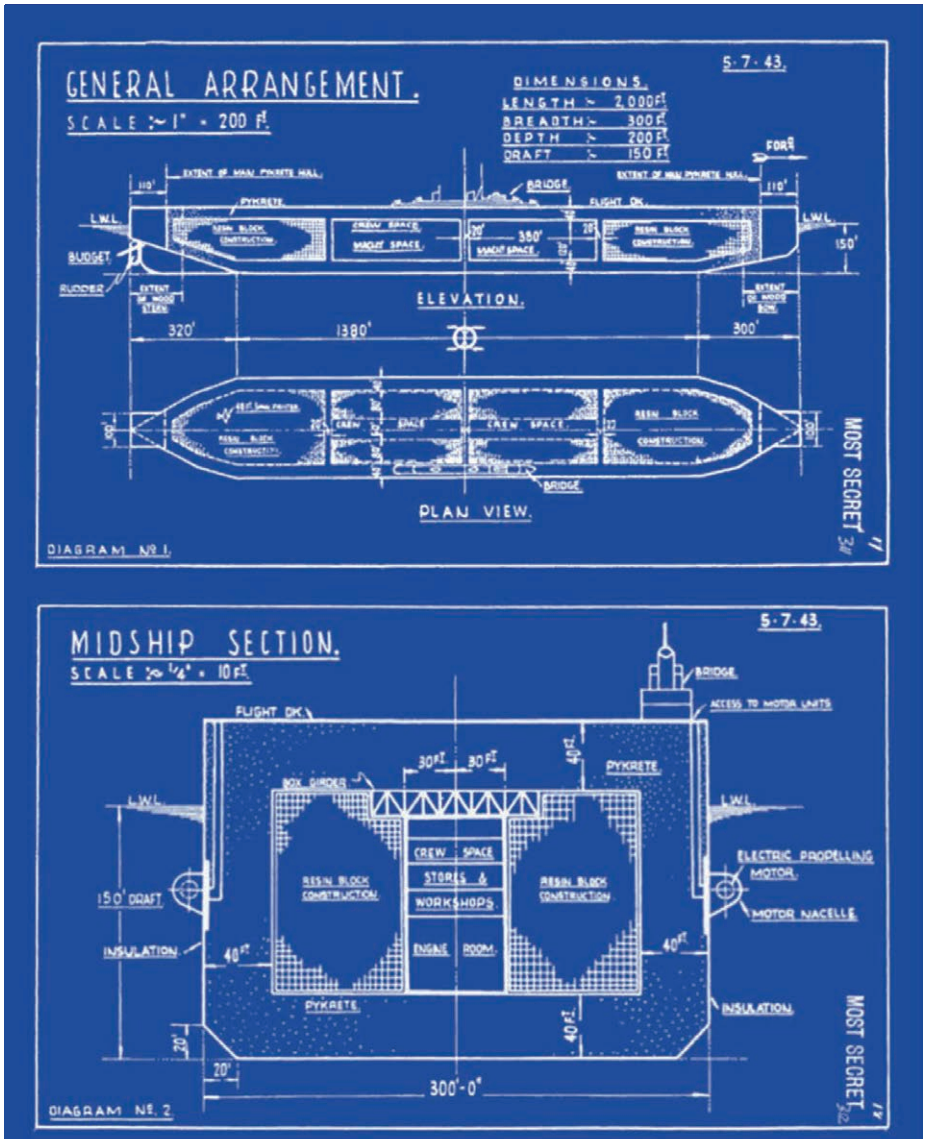
Photo: IWM

Admiral Ernest J. King, USN, Commander in Chief, U.S. Fleet and Chief of Naval Operations, 1944 photo. King was glad to have survived the demonstration shooting at the pykrete block at the Quebec conference. He was intolerant and suspicious of all things British, especially the Royal Navy. The Quebeck incident did not improve his opinion.

Photo: U.S. Navy Photograph

Admiral Lord Louis Mountbatten sitting at his desk, 1943. He was a great supporter of the construction of HMS Habbakuk and the use of pykrete. At the Quebec Conference in 1943 Lord Mountbatten brought a block of pykrete along to demonstrate its potential to the admirals and generals who accompanied Winston Churchill and Franklin D. Roosevelt. Mountbatten entered the HMS Habbakuk project meeting with two blocks and placed them on the ground. One was a normal ice block and the other was pykrete. He then drew his service pistol and shot at the first block. It shattered and splintered. Next he fired at the pykrete to give an idea of the resistance of that kind of ice to projectiles. The bullet ricocheted off the block, grazing the trouser leg of Admiral Ernest King, and ended up in the wall.

Photo: IWM



Conceptual design of the aircraft carrier HMS Habbakuk. The ship was constructed from iceberg and covered with a 12 metre thick layer of pykrete. The bergship was to have a high resistance to enemy fire as well as to the temperature of sea water. A 1/50th scale model of her was built in Canada in 1944.

Foto: Wikimedia Commons

to develop and manufacture these vessels and the antigravity drive here in seclusion."

„Gentlemen, that changes the situation! It looked like a couple of bases of some German troops, but what you're saying is a major global threat!"

„We didn't have enough information Mr. President, it's only since the last few weeks that we've gotten images that changed our minds. „

„And the British know about this? They're sending a fleet south. Byrnes, what do you know at the Foreign Office?"

„Currently, Mr. President, Churchill thinks Hitler may have an atomic bomb there. That's why he's so nervous. He hasn't heard of the space program."

„That'll give Winston a heart attack! And they have a bomb?"

„We don't know, we found some objects with radioactivity in Germany, but we're not sure."

Truman looked around. The atmosphere in the room was so thick it could have been cut. Finally, he looked at Nimitz.

„Who did you send south?"

„The aircraft carrier USS Franklin D. Roosevelt, commanded by Rear Admiral Apollo Soucek. Until now, we assumed we'd make a few targeted raids with the British and be done with it."

The President shook his head in disbelief.

„What are the British sending there?"

„Ten of their regular carriers, each with about fifty aircraft. But they are counting on some of them being out of commission because of the climate. In addition, they have sent three huge bergships made of icebergs. They are called HMS Habbakuk, HMS Nahum and HMS Zephaniah, each with two hundred aircraft on board, including Tempests and Meteors."

„Gentlemen, send in everything we have available in the Pacific, deploy jet fighters as well. „

Aircraft carrier HMS Habbakuk, north of the Antarctic coast near the zero meridian, October 1946

The intelligence officer walked into the briefing room and headed straight to the front between the rows of seats where the pilots were sitting. As he passed them, the conver-

sation gradually died down. He walked over to the board with the launch schedule for each patrol and hung a roll of paper with the layouts on top. It had wooden strips at the top and bottom, and so it unfolded easily on its own. The room hummed in surprise.
„Gentlemen, we have approached the coast of New Swabia. Our ship is part of the Royal Navy fleet that has joined the international forces in the secret allied operation Ice Age."
I'll make it short and clear: There are Nazis in Antarctica. We don't know how long they've been there. But we know they're up to something dangerous, and we have to stop them. Allied aircraft carriers and their escorts are cruising the entire Antarctic coastline looking for them. Unfortunately, we don't get much from American high-altitude aerial reconnaissance. The enemy has anti-aircraft missiles, effective even at high altitudes, and this has gotten our American colleagues into trouble. That's why it's your turn. We think the Nazis don't have enough conventional anti-aircraft weapons, so you have more chances to gather intel and get back.
You must examine every inch of our sector. Colleagues from units in Canada, Alaska, Norway, Finland and others who have experience in Arctic conditions are important. That's why we've assigned them to individual squadrons. Keep your eyes peeled! Report the slightest anomaly. As you can see, the enemy has air assets you don't know yet. I'll get to that in a minute.
Here is a Messerschmitt P.1101 jet, this is a Focke-Wulf Ta 183 and this is what a Heinkel P.1079 night fighter and a Gotha P.60 bomber look like. Unfortunately, we haven't yet found the airfields from which they operated. So we can't rule out such vertical take-off machines with rotating gondolas with jet propulsion. But you can also see other types.
What we are sure of, however, are the flying discs that have so intrigued you. They are called Hauneburg-Geräte, or Haunebu for short. We have pictures of them in our area. Here, take them, let them circulate.
The larger ones have a wingspan of several tens of metres, we don't know where they take off from and we don't know their speed, climb rate or armament. So you'll be flying patrols armed with rockets. We don't know how armoured the Haunebu are, so don't hesitate to use rockets. You have standard survival gear for polar conditions. Our submarines and other vessels are cruising the area. Commandos have already landed on the coast. If you're shot down, we'll do everything we can to get you to safety. Our task force is on a southwest course to get closer to this mountain range. That's where the enemy is said to be most active. The daytime temperature off the coast is about minus ten degrees Celsius. This time of year is summer here. The sun rises before 4:00 a.m., sets before 9:00 p.m. There's a 24-hour patrol schedule. Any questions? No questions? All right. Good luck, gentlemen!"
The pilots began to rise from their chairs and the room filled again with the noise of conversation. The intelligence officer turned to one of the groups.
„Gentlemen of the 486th Squadron, ‚Bunny' Kleinkönnig and ‚Eikka' Luukkanen, please come here. We have some questions for you. We've picked up enemy radio traffic. Come and see if you recognize the call codes of any of your former Luftwaffe colleagues, so we know who we're dealing with. One of their commanders is on the radio as Eismeer 1."
Kleinkönnig and Luukanen looked at each other without a word.
„Perkele..."

Ice being cut for research on scale model of HMS Habbakuk. The construction was performed at Patricia and Jasper Lakes in Alberta, Canada.

Photo: Library and Archives Canada

Mountain base Cäsar III, mountains in New Swabia, October 1946

The completed 1/50th scale model of HMS Habbakuk was disguised as a house on a lake. The pykrete was so temperature resistant that the ship lasted three summers before it melted. Pykrete is still used today for the surfaces of Canadian airfield runways located above the Arctic Circle.

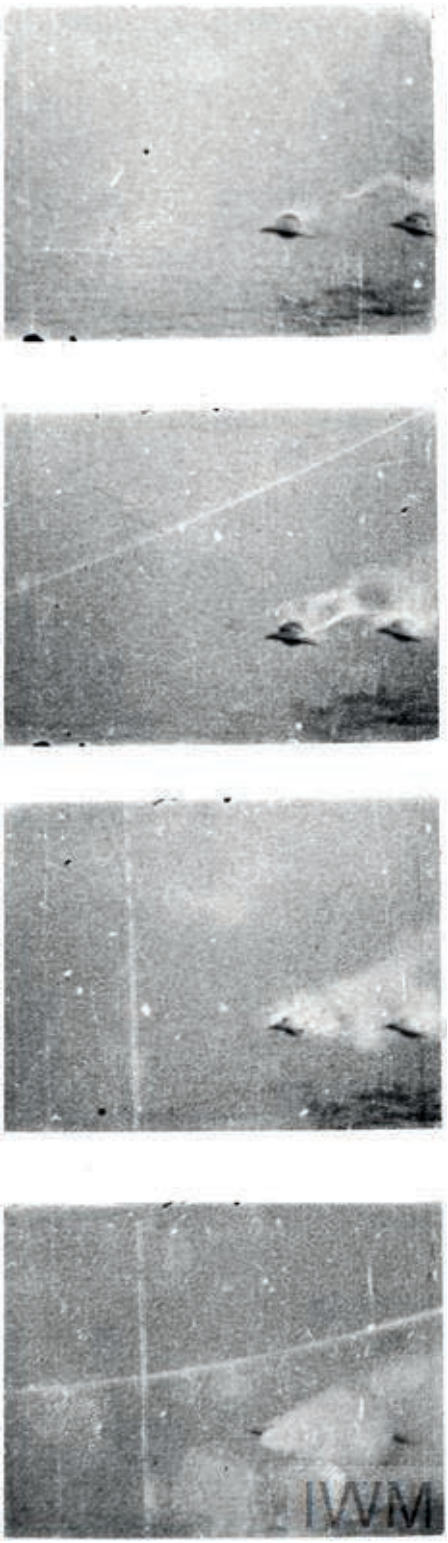
Photo: Library and Archives Canada

In the vast concrete hall, red lights flashed on the floor along the walls. Some of the mechanics were running to their shelters behind the armor plates. The heavy concrete door, as wide as the entire hall, began to lift with a creak, letting in cold air from the Antarctic valley. Finally, with a groan, it stopped at the ceiling. Outside, the floor of the hall became a platform several dozen meters long.
The pilot's voice came from the wall-mounted speakers, transmitted from a fighter flying nearby.
„This is Späte, approaching from the South Pole direction, on the opposite side of the valley, speed two hundred, height six hundred, descending slightly. Make ready the arresting device."
The mechanics set in motion two hydraulic jacks and erected a huge structure in the centre of the hall across its entire width, it looked like a gate with a large number of vertical strips of flexible fabric.
„I'm dropping to five hundred, landing gear extended, speed one hundred and fifty, deploying flaps. Visual contact with the hangar. Is the Landungssignaloffizier in position? I don't see him."
The LSO had just run to a station that was located outside at the edge of the platform.
„Major, the LSO is in position, wind speed two metres per second, blowing southeast."
„I'm making visual contact, turning left towards the runway, slowing down to one hundred and thirty."
High above the wide valley, the slender fighter seemed to be driving on an invisible bridge towards the rock.
The LSO was giving flags instructions for landing maneuver corrections. The Horten jet powered flying wing landed smoothly on the platform and passed into the bowels of the hangar through the opening under the huge doors. It began to close immediately afterwards.
Inside, the Horten stopped with a distinct yo-yo effect against the restraint strips, and then the elastic bands pushed it back a little. The mechanics shouted with undisguised joy, „Goal!"
Major Späte lifted the cockpit canopy and the ground crew provided him with a ladder. But Späte stood up in the cockpit and shouted loudly: „I've got my first kill!"
Another wave of cheers and an avalanche of questions about where and how it happened.
„It was a classic, I saw two Meteors, they weren't flying very high, they looked like they were on a reconnaissance. I guess they were tired, or a little dazzled from the white all around here. I attacked his wingman from an elevation change, he took a close range hit from me on his left engine, immediately caught fire, rolled over to the left and Tommy jumped out. The other one got away in a dive. They're good at this, I already had plenty of speed

and I didn't dare go over a thousand."
After the Major's words, there was cheering and applause, and someone promptly opened a bottle of champagne.
„Major, Lieutenant Woidich and Haunebu Two are about to arrive!"
„Then I'll be glad to see that," Späte replied, toasting the mechanics.
With a few pilots he walked across the hall where mechanics were untangling the twin-engine flying wing from the arresting belts. The staff opened an armoured door in the wall leading to the next hangar. It was already bustling with activity.
Surprisingly, the safety device was not erected, the gate was already up and snow was flying inside.
„This is Woidich, I have visual contact with the LSO," came from the speakers
„Sir, but the LSO reports he can't see you!"
Woidich laughed loudly into the radio. The personnel on the platform looked for him in vain in the valley.
„Of course they can't see me, because I'm above you!"
Surprised, the LSO looked up with the other men and the signal flags fell from his hands. A few dozen meters higher, a huge grey-blue flying saucer slowly emerged from behind a rock massif. It could have been twenty meters in diameter. It made a dark, metallic resonating sound, and there was an ozone smell all around. No roar of piston or jet engines.
You could see where the disc had a cabin with a downward view. The machine slowly descended under the pilot's experienced steering, while turning 180 degrees on a vertical axis so Woidich could see into the hangar. It was slowly moving inward only about two meters above the surface. When the hulking machine was in the middle of the hall, the LSO backing in front of it signalled with flags to reach a parking position. The landing gear legs slid out of the bizarre machine and the disc landed lightly on them. Then the resonating sound of the anti-gravity drive faded away and the machine loaded its full weight on the landing gear with a heavy metallic screech.
From the bottom of the flying saucer, a ramp on the side swung down, and Lieutenant Woidich, two technicians and several scientists climbed out.
„Major, I report successful completion of another test. We reached a speed of one thousand eighty kilometres per hour in level flight, but we did not break the sound barrier. That cabin up there needs a more aerodynamic shape and then it might be good."
Späte shook his head appreciatively.
„During today's flight we reached a flight level of fifty kilometres without any problems, it was something incredible to see." Then Woidich added: „It's definitely a world record."
„That gives our JG 400 something to celebrate. Weissenberger and his Geschwader ‚Nowotny' will be envious," Späte replied, and Woidich enthusiastically added: „We will be happy to celebrate! And tomorrow we have weapons tests."
„All right, Woidich, I'll join you later, I'm still going to the meeting at Raumfahrt-Hauptquartier. I wonder if they've got the big ship up in the air yet."

The next day, Cäsar III base area

Four Tempests of New Zealand's 486th Squadron with rockets took off from the aircraft carrier. The formation flew over the valley at an altitude of 3,000 metres, searching for enemy activity on snow and ice and for suspicious structures in the rocks. It was led by Squadron Leader Sheddan with Clostermann as wingman. Behind them flew Luukkanen and Kleinkönnig as altitude protection. Their machines wore individual letters S, C, L and K and the traditional stylized rabbit skulls. Kleinkönnig's machine also had the inscription BUNNY LADY on the nose with a painting of a pin-up rabbit model.
„Rabbit 1, I see Sand Cake down at 11 o'clock, distance 5000 meters. My pair is attacking, you cover us."
The first two Tempests headed down to the suspected bunkers. Luukkanen and Kleinkönnig, with the experience of the previous encounters, split up, now flying about 300 meters apart and carefully observing the area above and below them.
„Rabbit 1, missiles launched, target must have been deceptive."
High geysers of snow, earth and rocks rose into the air. No explosion of stored ammunition or anything like that. Instead, 20 and 37 millimeter flak came down the valley side. After a while, unguided 40 mm rockets joined in.
„Rabbit 1, get out of here, Rabbit 2 follow me. Rabbit 3 and 4 stay up, watch out for rockets!"
Kleinkönnig suddenly saw a shadow in the shape of an arrow-winged plane silhouette behind the leading pair. It was approaching fast. Now he could see the plane too. It was obviously painted white, but the sun's rays were reflected off the cockpit overlay.
„Rabbit 4 to Rabbit 1, you've got Jerry behind you on your six. About five hundred yards behind you.
„Rabbit 3, attacking, Rabbit 4 cover me. We're going after him. Saatana!"
Two Tempests, with sporadic flak salutes, raced low over the terrain through the valley towards the coast. A sleek Messerschmitt P.1101 was approaching from behind, while the two other Tempests were coming at full power from above.
The planes were already above the frozen sea surface and Luukkanen got the Messerschmitt in his sights and shouted, „Break!"
Several things happened at that moment.
Luukkanen damaged the enemy´s wing with his fire, but not seriously. Sheddan dodged sharply to the left, Clostermann to the right. The Messerschmitt turned behind Clostermann and hit him several times in the engine area and in the wing. The Tempest lost a little altitude, wobbled, but kept flying.
„Rabbit 2, how are you?" came over the radio from Sheddan, who was making a right turn low over the terrain towards his wingman.
„I've been worse. He's after you, I'll try to pepper him!"
Luukkanen, who had gained height with Kleinkönnig for the second attack, was unexpectedly hit on the wing. A 30 mm grenade tore a large part of the covering on the right wing and the machine started to roll to the right. He thought he had been hit by flak, but then he heard a surprised Kleinkönnig: „Rabbit 4 to Rabbit 3, we've been attacked by Haunebu from the sun! He's already below us, but he's climbing again!"
Down in the valley, the P.1101 pilot took a steep climbing turn and got into a good position to shoot at Sheddan.
„Rabbit 1 to Rabbit 3 and 4, get out of here and try to lure that Foo Fighter away! We'll sort it out down here."
Clostermann was just trying to get his damaged Tempest behind the intruding Messerschmitt. He was going to hit it with deflection shot in right turn. But the German accelerated, tightened the turn and got away from him on a slight climb.
„Rabbit 4 to Rabbit 3, how are you doing with the wing damage?"
„Perkele, saatana, jumalauta!"
„I see..."
„Rabbit 1 to Rabbit 2 and 3. Return to the carrier. Rabbit 4 will join me."
Clostermann's engine began to leave a thickening smoke trail.
The Messerschmitt pilot had the upper hand over the allied aircraft and he turned them into practice targets for the Haunebu's pilot with his 30-mm cannons.
The fighting planes were now over the ice



Shots from Eduard Kleinkönnig's Tempest gun camera during a battle with torpedo carrying Haunebu flying saucers in October 1946.
Photo: IWM, retouched by Kateřina Borecká

floes. Nearby were Allied vessels, which had come into play and began to honour the Germans with a nasty and dense barrage of their Bofors. Although reluctantly, the two German airmen packed up for home in their Wunderwaffen.
Luukkanen was in the worst situation after the fight. His aircraftperformance was decreasing and it was very difficult to control. „I'll have to land on the water!"
„Good luck Eikka!"
„Thanks, Bunny. It'll be like home after the sauna. No worries!"
Finn landed his Tempest expertly on the water. His mae vest inflated immediately and the lifeboat quickly filled with air too. Everyone was relieved to have the Finnish colleague in the raft.
But no one expected a group of killer whales, which started to show great interest in the boat. Luukkanen had to use his gun to scare them off, but they were soon back.
It was getting serious, the curious cetaceans tried to capsize the boat first and then one of them just bit through it. So Luukkanen ended up back in the water, trying to get to the nearest floe as quickly as possible. He succeeded, but the killer whales kept attacking. They must have mistaken the man in the suit for a seal. They even jumped up on the ice pack to tilt it and knock their prey down. Luukkanen stuck his knife into the crust to keep himself from sliding down.
It was clear to Kleinkönnig that rescue, in the form of a torpedo boat, was coming too slowly, so he decided to intervene. He started shooting at the killer whales. If he'd fought giant man-eating penguins in the past, why not killer whales... The group of hungry marine mammals were spooked by the gunfire and retreated to a distance,still waiting attentively.
But the boat crew soon picked up the pilot and returned him to the aircraft carrier, cold, wrapped in blankets and with a cup of rum. He complained that he had not been given enough coffee. One or two sailors asked him to sign a newspaper with his picture on it.
In the evening Squadron Leader Sheddan nodded his head in acknowledgement. „So from today on, you have the nickname „Lucky" Luukkanen! And you, Kleinkönnig, get a killer whale's mouth painted on the bow of the Tempest. You've really done a good job of that, considering the circumstances. We'll be flying joint patrols with Meteors of „Smoky" Shraeder for future events. We gotta come up with something on those Germans. We'll also be joined by the USS Franklin D. Roosevelt. They've got Bearcats and Phantom jets.

Commissioning of the U.S. Navy aircraft carrier USS Franklin D. Roosevelt (CVB-42) at the Brooklyn Navy Yard, New York City, on Navy Day, 27 October 1945. Crew and visitors crowd her flight deck, as the crews of other ships present man their ship's rails in her honour. The aircraft carrier on the opposite side of pier is USS Franklin (CV-13), under repair for battle damage received earlier in the year.

Photo: U.S. Navy Naval History and Heritage Command

A United Service Organizations troupe posing with a Messerschmitt P.1101 at the Oberbayerische Forschungsanstalt, Oberammergau, Germany, in 1945. It was also with these fighters that Kleinkönnig and his fellow pilots clashed over Antarctica in 1946 and 1947.

Photo: Wikimedia Commons

Cäsar III base, after the battle with the Tempests

Messerschmitt P.1101 stopped in a rock hangar. The turbine was slowly running down and the mechanics began to swarm around the blue and white machine. An officer climbed out of the cockpit and inspected the hits in the wing from 20 mm Tempest shells.
The disheveled and smiling Haunebu pilot approached from the next hall. He saluted impeccably and clicked his heels together. „Lieutenant Woidich, Colonel, welcome to our base and congratulations on your kill! I saw your Tommy land on the surface. I suspected that Eismeer 1 was you."
Theo Weissenberger shook his head. „Thank you, but I also saw yours fall into the water. I was already quite far away, but I definitely saw a geyser of water when he hit the surface. Congratulations!"
„Your Tempest today was the first Geschwader ´Nowotny´ s victory in New Swabia?"
„No, we've already taken out a couple of B-29s and seaplanes."
„When are you switching to Haunebu? It's an incredible machine!"
„Perhaps next month. Our friends in the factories down there are doing great. Can I see the flying wonder?"
„Of course, come on, I'll explain everything. We've designed some aerodynamic modifications for the new Haunebu III. This is the anti-G suit and here is the spacesuit..."

Aircraft carrier HMS Habbakuk, north of the Antarctic coast, November 1946

Between the carrier group and the coast of Antarctica, which loomed on the horizon, a curtain of flak bursts alternately thickened and thinned. By the third day, attacks on German mountain airfields were under way, and Allied pilots were in the air several times a day. However, the Luftwaffe persistently attacked the alliance and sank several ships. Now and then a hit aircraft crashed into the sea, or a geyser of water rose into the air from an aerial bomb or torpedo.
The deck of the giant aircraft carrier was filled. This time, Tempests from several squadrons were tasked with bombing additional landing platforms in the rocks. Meteors provided fighter escort. There wasn't much chance of rockets and bombs making their way inside the hangars, but they managed to at least cover the surrounding area with rocks and damage the platforms. This also made life difficult for the Luftwaffe.
Kleinkönnig started as Rabbit 5 with the young Norwegian wingman Torgeir. The squadron gathered in formation in a circle around the aircraft carrier and, under Sheddan's guidance, climbed to five thousand meters. It then headed south. Fairbanks' meteors patrolled a thousand meters above them.
As the British formation passed the coast, in the opposite direction, Helldivers, Bearcats and Phantoms from the US Navy flew at lower flight levels. Some obviously damaged and lagging behind the others. Then the radio went into a chaotic scream of American swear words. It turned out that German jets and a few Haunebus were heading towards

the task force. The US Navy fighters were not in an advantageous position to attack and did not want to abandon their brothers. Heavy anti-aircraft fire was launched from the ships of the task force. The 486th Squadron was closest to the enemy, and Wing Commander Mackie, commander of the entire British formation, ordered Sheddan to attack with his squadron. The rest of the Tempests and escorts continued to the target.

The New Zealand Tempests raced towards the surface, just above which the attacking Germans were coming. Sheddan first split the squadron into four flights and then allowed attacks in pairs. The enemy were heading for the aircraft carriers HMS Habbakuk and USS Franklin D. Roosevelt.

Kleinkönnig alternated between checking the position of his enemies, the altimeter and the speedometer during the descent. The engine roared and the plane shook. At 3,000 metres, the speedometer needle was approaching 800 kilometres per hour. Torgeir held on bravely a few hundred metres behind.

Kleinkönnig carefully leveled off but missed two bombing Gotha's that were flying left to right with torpedoes under their wings. In his rear-view mirror he noticed that some British colleague had opened fire on them. He continued towards the ships. The flak fire had thickened to the point that it was perhaps walkable. One Haunebu and two Gotha were violently spinning into the sea after the hits from ship guns.

Around Kleinkönnig, his own flak was already exploding, and he heard a few bangs as if a hammer had hit the plane.

„Rabbit 6 to Rabbit 5, there's a Messerschmitt down at 10 o'clock!"

Indeed! The P.1101 flew the same course. „He can't just be here alone, he's covering someone," thought Kleinkönnig. „Rabbit 5, I'm going to attack, watch your surroundings and watch out for bombers!"

Kleinkönnig already had a target in his sights. Occasionally it was partially obscured by puffs of flak, but he was quickly approaching the Messerschmitt from above and its 5 o'clock. The German spotted the danger at the last moment and tried to roll to the right, but it was too late. The hits of Kleinkönnig's guns tore off his wing and the Messerschmitt jet disappeared in a tumble in the depths.

„Good show!" the wingman echoed.

„Rabbit 5 to Rabbit 6, check the area, lest we end up like that mule."

Then Kleinkönnig noticed two shadows over the water, moving in the same direction as him. At first he thought it was the shadow of his pair, but then he realized how low the sun was and looked down on the other side. Two Haunebu with white and grey camouflage were flying towards the carriers.

„Tally-ho!"

The speedometer needle passed the 800 mark.

The Haunebu had torpedoes hanging from her bottom, Kleinkönnig knew they would have to slow down and stay on course for the target in order to drop their cargo. He was closing fast on both saucers. Flak of smaller calibers was already firing from nearby ships. The outlines of the carriers were rapidly increasing in size.

The flying saucers suddenly turned sharply to the left. Kleinkönnig didn't expect that and pulled Tempest up the climb. He went into a sharp bank to see what was happening. Then he realised that the German pilots had to reduce their speed considerably and there was no other way to do it than to reduce power and brake in a tight turn.

Both Haunebu's performed a 360 degree turn during the break off and re-set course for the carriers, this time at the correct speed for torpedo drops. Kleinkönnig had not yet met the Haunebu bombers, but he suspected that they might have at least a rear firing guns.

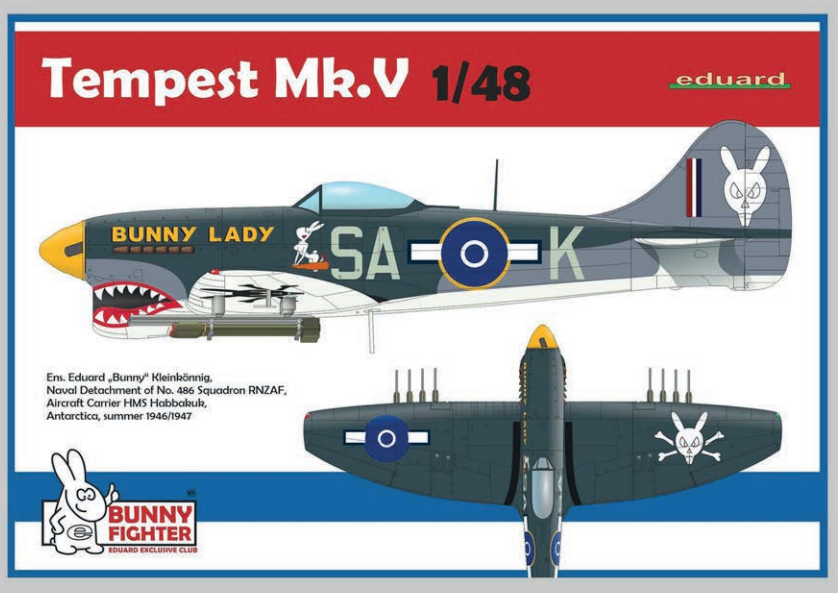
He wasn't wrong, the German machines went into a slight descent and from their sterns red tracers with smoke trails began to converge towards the pair of Tempests.

Torpedoes could be in the water any second. Kleinkönnig opened fire, and flashes and puffs of smoke began to appear on the surface of the flying disc. Two geysers of water rose below, the torpedoes were on their way. The disk began to leave gray smoke behind it, but it hadn't had enough yet. But Torgeir took aim.

Kleinkönnig targeted the second machine with fire and when he ran out of ammunition, he came even closer and fired rockets. The disc exploded in a deafening detonation. Kleinkönnig looked back to find his wingman and saw the first flying saucer hit the water.

From the reports on the radio it was clear that Sheddan, Clostermann, Luukkanen and others had shot down several torpedo bombers. HMS Habbakuk had taken two hits, but a layer of pykrete protected the ship. USS Franklin D. Roosevelt was more severly hit, listing on her side. Her crew managed to right the tilt, but eventually Rear Admiral Soucek decided to drive between the ice floes to the shallow water and make the ship a stationary base off the part of the coast in Allied hands. The danger from enemy submarines was too great on the high seas.

To be continued



Ens. Eduard „Bunny" Kleinkönnig, Naval Detachment of No. 486 Squadron RNZAF, Aircraft Carrier HMS Habbakuk, Antarctica, summer 1946/1947

This machine was flown by the legendary Czech pilot in the international crew of the aircraft carrier HMS Habbakuk during the battles against the Luftwaffe over Antarctica in the summer of 1946-1947. The letter K is the individual designation of Kleinkönnig's machine. He had his girlfriend painted on the side of the aircraft. The sharkmouth was added to the aircraft later, as a reminder of the rescue of Kleinkönnig's flight leader. After being shot down into the sea, he was attacked by killer whales, but Kleinkönnig fought off the predators. The naval scheme was painted on the unit's machines during the voyage to Antarctica. Rabbit skulls were painted on all of the unit's machines in honor of Kleinkönnig. The machine was equipped with missiles for attacking od enemy jets during take-off.

Bunny Lady was inspired by Kleinkönnig's girlfriend. His colleagues proposed the painting of carrot as part of the „nose art", as a reminder of the distilled carrot juice produced by Kleinkönnig.

A6M2 Zero Type 21

1/48 Cat. No. 82212

- Plastic parts Eduard
- Photo-etched set
- Paiting mask
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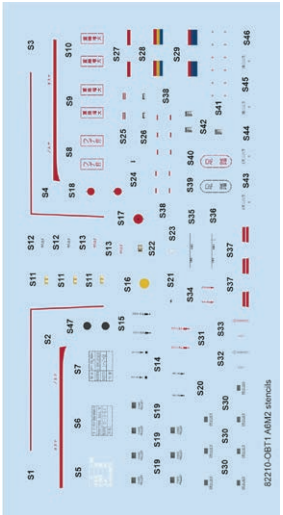
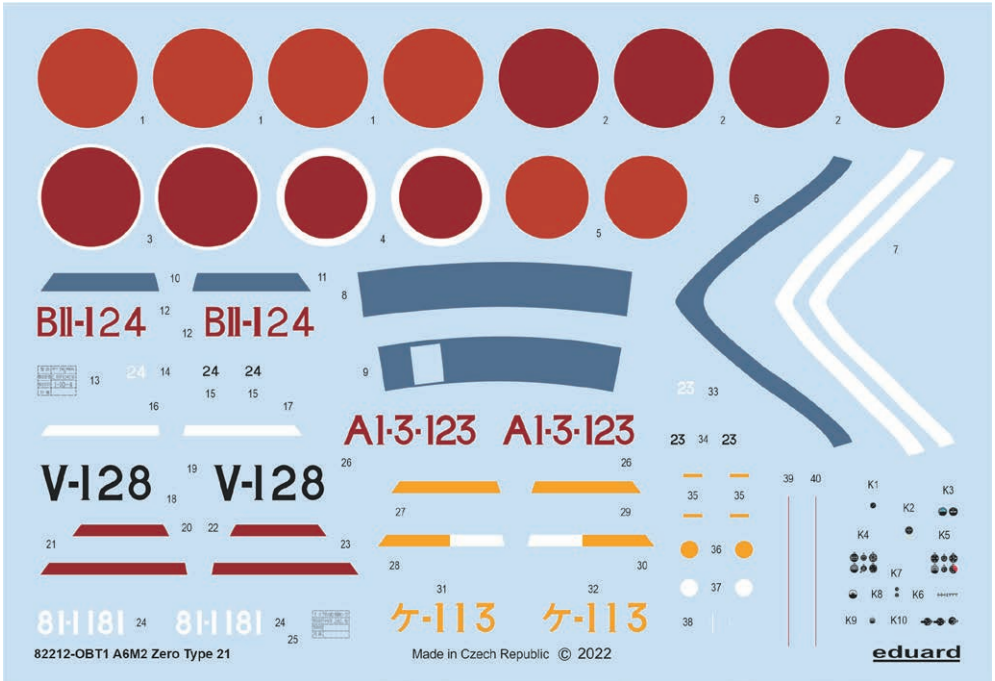




c/n 5379, PO1c Tsuguo Matsuyama, Hiryū Fighter Squadron, aircraft carrier Hiryū, December 7, 1941

During second attack against Hawaii the Hiryū aircraft carrier sent nine Zeros under the command of Lt. Sumio Nōno. His pilots attacked Kaneohe and Bellows bases, claiming two destroyed aircraft and one car. Third Shōtai was led by PO1c Matsuyama, who shot down in coopeartion with his wingman P-40s piloted by 2nd Lieutenants George Whiteman and Samuel Bishop of the 44th Pursuit Squadron. Matsuyama had combat missions with the 13th Kōkūtai in China on his account already. On February 25, 1938, as wingman of the legendary Sadaaki Akamatsu, he participated in shooting down four aircraft. During the raids on Ceylon on April 9, 1942, Matsuyama's shōtai shot down a Blenheim Mk.IV, probably of S/Ldr Kenneth Ault´s crew, who was leading formation of No. 11 Squadron RAF in an attack on Japanese ships. Matsuyama later served on the aircraft carrier Hiyō and was killed on April 7, 1943 in combat with the Wildcats off Guadalcanal. The airplane BII-124 was shot down on February 19, 1942 during the raid on Darwin. After being hit by anti-aircraft fire, Seaman 1st class Hajime Toyoshima landed on Melville Island and was captured by Aboriginal Matthias Ulungura. Toyoshima was the first captured Zero pilot and used alias "Tadao Minami". He became one of the organizers of the largest prisoner escape in World War II. On August 5, 1944 at Cowra POW Camp he gave signal to escape. Total of 1,104 POWs attempted to espace, 231 were killed and four Australians lost their lives as well. Toyoshima was mortally wounded, so he lighted a cigarette and committed suicide.

PO1c Saburō Sakai, Tainan Kōkūtai, Lakunai airfield, Rabaul, New Britain island, August 1942

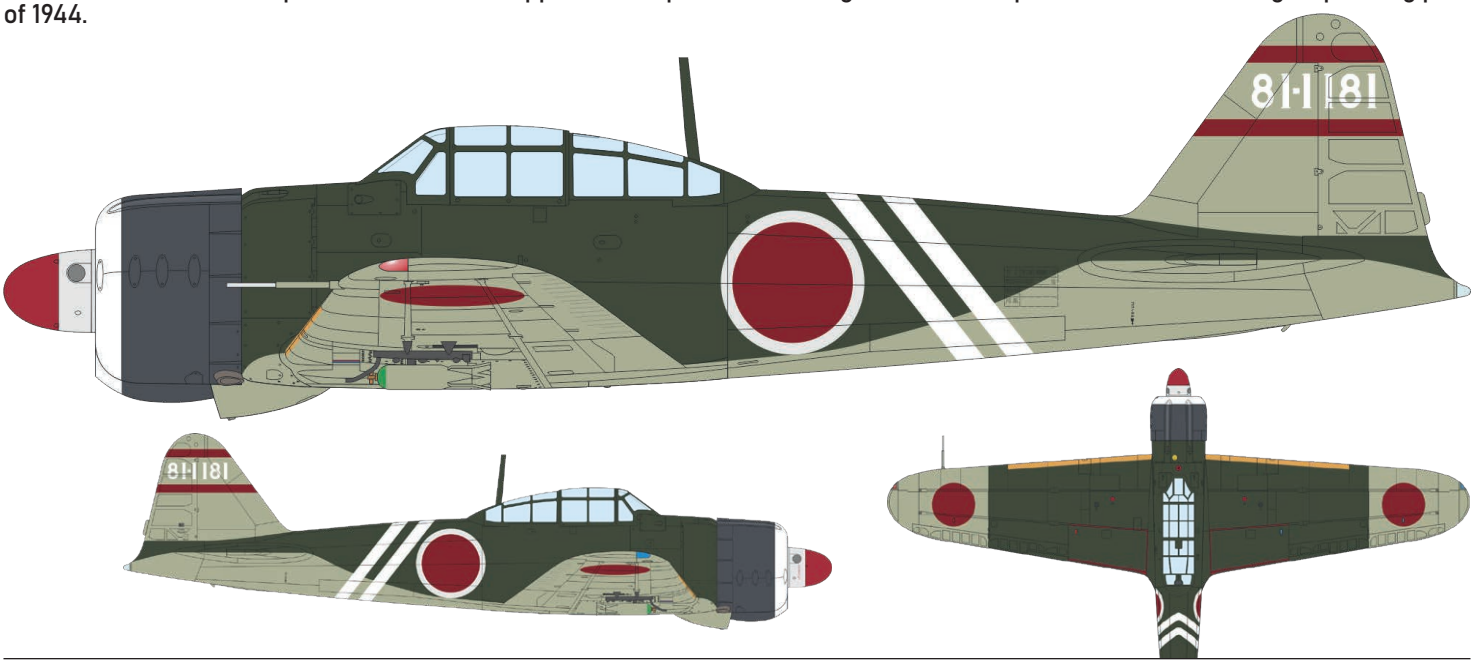
Saburō Sakai is best known Japanese fighter pilot, thanks to his memoirs and meetings with Allied airmen after World War II. He was born in 1916 and served from September 1938 with the 12th Kōkūtai in China. In October 1941, he was assigned to the newly organized Tainan Kōkūtai in Taiwan and took part in campaign heading South until he was wounded on August 7, 1942 off Guadalcanal. After recovering, he served as an instructor with Ōmura Kōkūtai, and later, despite bad eyesight, was combat deployed with Yokosuka Kōkūtai on Iwo Jima. At the end of war he served with Kōkūtai 343 (II) and Yokosuka Kōkūtai. He is listed as an ace with 64 victories, but Sakai himself claimed the number of his victories was lower. With the first two units he actually achieved 12 individual victories, 8 shared and 4 probables. The V-128 was also flown by PO2c Arita and PO1c Hiroyoshi Nishizawa, who is credited with 87 victories. The color of the stripes is chosen from Sakai's recollection, but there are other interpretations, such as a black or yellow stripe on the fuselage. During a fighter escort to Guadalcanal on August 7, Sakai shot down Wildcat "F12" from VF-5 piloted by "Pug" Southerland in an epic dogfight. Sakai was later severely wounded in the face by fire from VB-6 Dauntless near Tulagi Island. After nearly five hours and more than 1,000 km, he managed to land back at Rabaul. Sakai died in 2000 after formal dinner with members of the US Navy.

PO2c Kōtarō Koyae, Zuihō Fighter Squadron, Rabaul, New Britain island, April 1943

Petty Officer 2nd Class Koyae was born in 1923 in Miyazaki Prefecture and completed his flight training in November 1942. He was than assigned to the fighter unit of the aircraft carrier Zuihō in March 1943. In April, the unit moved to Rabaul and Koyae flew the aircraft during Operation I-gō. In this period, green paint was applied to Zeros in field conditions. It was usually painted by hand, the edges of the green fields being softened with thinner sometimes. However, according to the unit log, Koyae did not fly combat sorties in April 1943. In fact he did not encounter the enemy until November 1943 over Rabaul. During the same month he was transferred to Kōkūtai 253 at Rabaul and by early 1944 he was undergoing intense fighting. Upon his return to Japan, he was assigned to the Ōmura Kōkūtai. While on leave, on February 17, 1944, he spotted a Japanese bomber circling in the rain at night over the village of Goda, Miyazaki Prefecture. Koyae, with the help of the villagers, established a navigation signal and after some time he managed to guide the crew to right heading. For this achievment he received a written commendation from commander of Ōmura Kōkūtai. In July 1944, Koyae was assigned to Hikōtai 701 and fought in the defense of the Philippines. After returning to Japan, he was assigned to Hikōtai 701 (II) and served with Ōmura Kōkūtai at the end of the war. After the war he worked as a fireman and published his memories. According to the local press, he achieved 20 victories, but these may be victories achieved by fighter formations in which he took part.

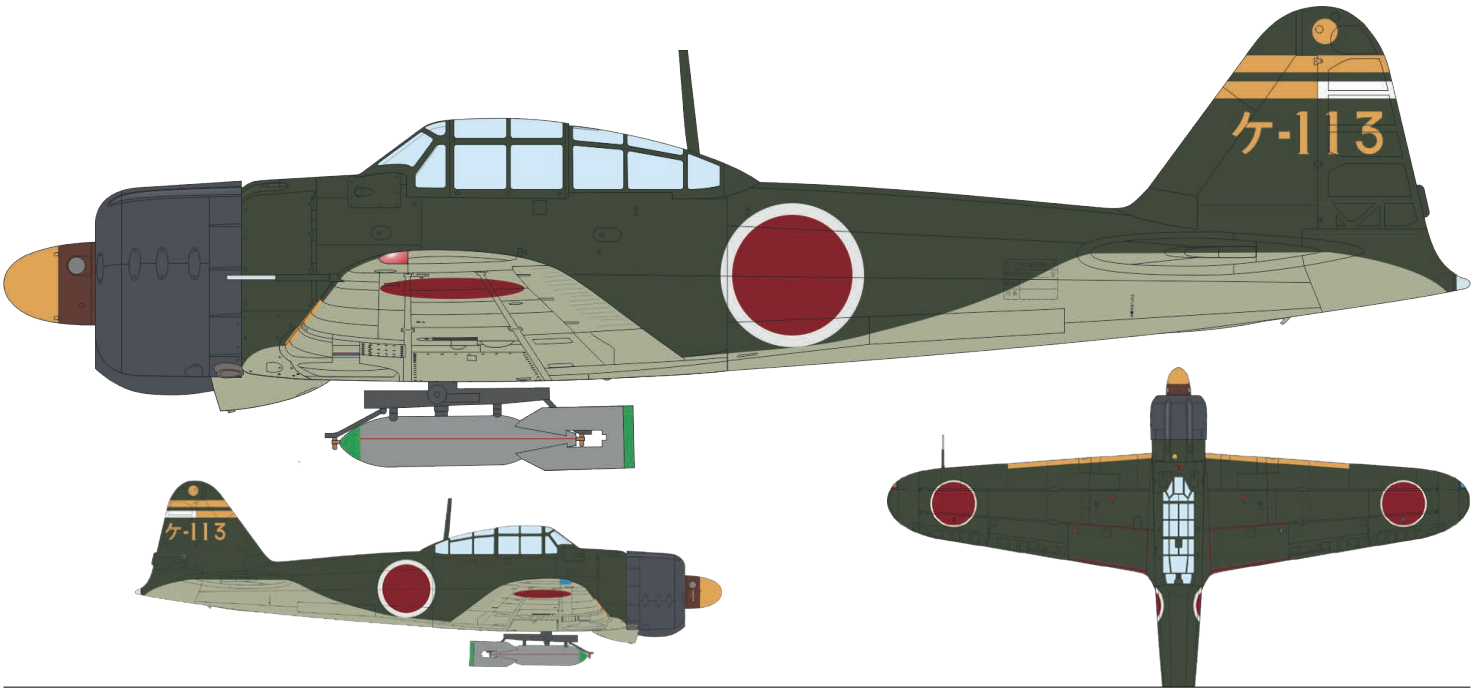
Lt. Kunio Kanzaki, CO of Hikōtai 311 of Kōkūtai 381, Kendari airfield, Celebes island, May 1944

Kōkūtai 381 was established in October 1943 at Kendari Base on the island of Celebes. It was a mixed Kōkūtai with 48 fighter--bombers (Hikōtai 602), 24 night fighters (Hikōtai 902) and 48 fighter aircraft in Hikōtai 311, the latter commanded by Lt. Kanzaki. During the 1944 he operated from bases on islands in Indonesia and the Philippines. Their most frequent opponents were U.S. Army aircraft. Kanzaki's unit used special phosphorus anti-aircraft bombs to attack enemy bombers. Kanzaki's aircraft, manufactured by the Nakajima company, has been reconstructed in the past with various color markings. It is assumed that the vertical tail surfaces and part of the upper wing surfaces were painted the same color like lower surfaces. The front part of the engine may also have been painted grey or yellow. It is not entirely clear from the photograph of the aircraft whether the white stripes on the lower fuselage are joined. It may have been designed to improve the mutual identification of Army and Navy aircraft when fighting Allied fighters. Another reason for this camouflage may have been for easier identification during night fighter flights. For example, Lt. Kanzaki and his wingman shot down a B-24 of the 380th BG over Balikpapan on the night of January 12-13, 1944. Some aircraft of Kōkūtai 331 were also painted in the same upper and tailplane camouflage. Both units operated in one tactical group during part of 1944.



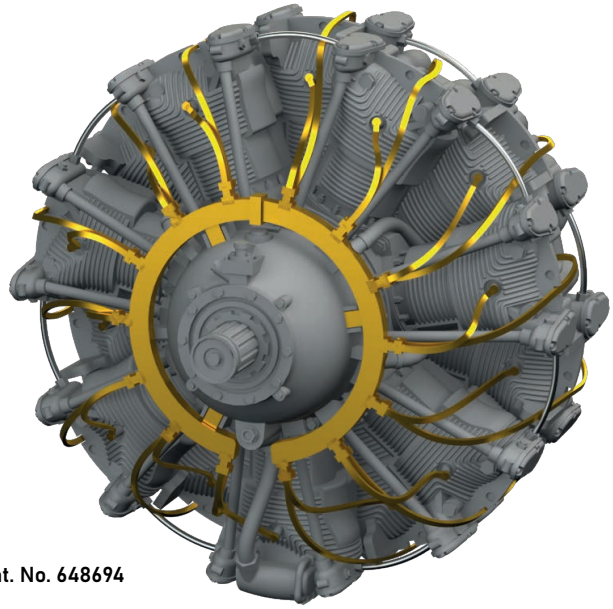
Lt. Nobuo Miyatake, Kamikaze Tokubetsu Kōgekitai, 1. Shichisei-tai, Kanoya airbase, Japan, April 1944

From the April 3, 1945 a total of eight special attack units with the battle name "Shichisei" were organized from the airmen serving in Genzan Kōkūtai (II) and Hikōtai 306 (part of Kōkūtai 721). Lt. Miyatake, who was 24 years old at the time, led the 1st Shichisei-tai in an attack on a convoy off Okinawa on April 6, 1945. During that day, eleven other airmen from Genzan Kōkūtai (II) sacrificed their lives along with him. They took off successively in four formations. Their formation was part of the 524 aircraft of special attack units and escort fighters from IJN and IJA sent against Allied vessels off Okinawa as part of Operation Kikusui I. The U.S. Navy lost destroyers USS Bush and Colhoun and other ships were severely damaged. "Shichisei" units were sent against ships off Okinawa, Yoronjima, Kikai, and Tanegashima islands in several missions till May 14. Only one of them returned to base due to bad weather. Lt. Miyatake was born in Kagawa Prefecture and graduated from the Etajima Naval Academy in 1942. Before the mission, he wrote farewell letters to his mother and three sisters. His father was interned in Siberia at the time. Nobuo Miyatake was posthumously promoted to the rank of Commander. His aircraft from Nakajima production is designated "Ke-113".



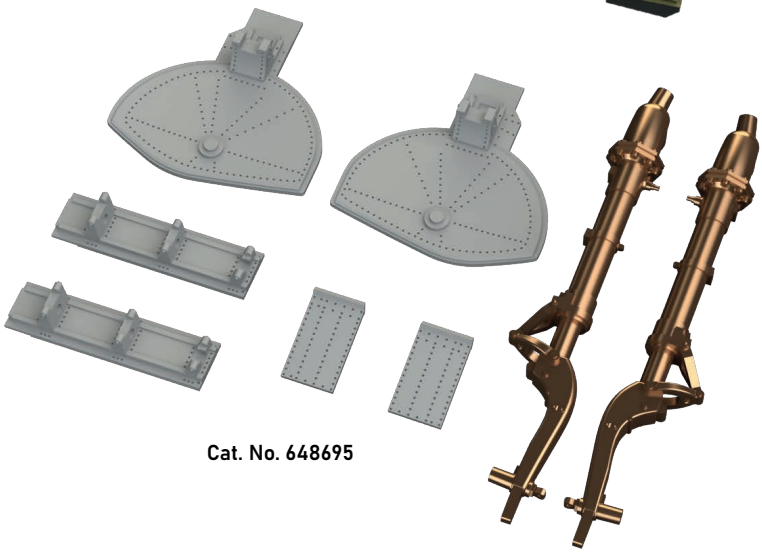
Recommended for A6M2 Zero Type 21

481076	A6M2 landing flaps (PE-Set)
FE1238	A6M2 seatbelts STEEL (PE-Set)
644128	A6M2 LööK (Brassin)
648693	A6M2 wheels (Brassin)
648694	A6M2 engine PRINT (Brassin)
648695	A6M undercarriage legs BRONZE (Brassin)
648698	A6M2 seat PRINT (Brassin)
3DL48050	A6M2 SPACE (3D Decal Set)
EX821	A6M2 TFace (Mask)



Cat. No. 648694

Cat. No. 644128



Cat. No. 648695

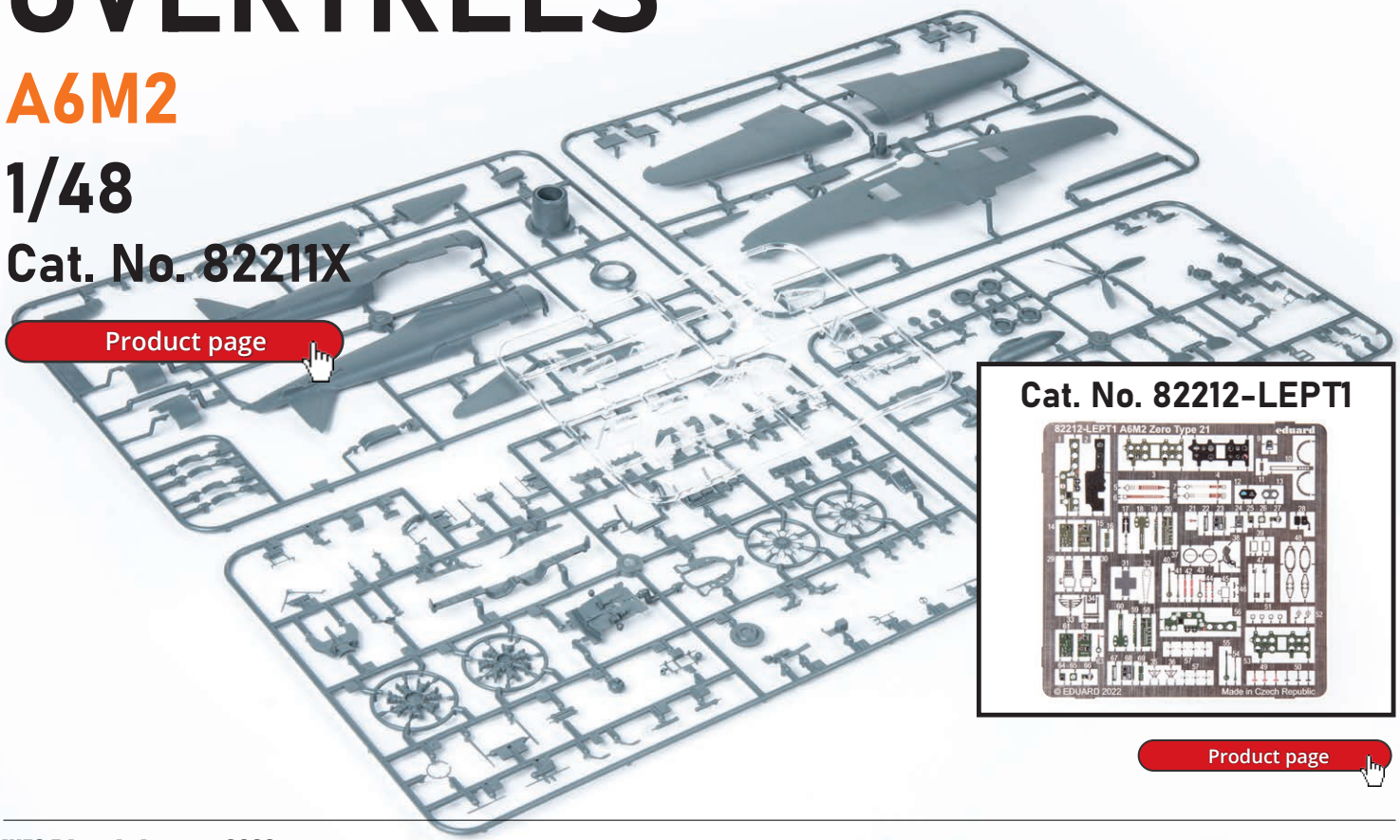
OVERTREES

A6M2

1/48

Cat. No. 82211X

Product page



Cat. No. 82212-LEPT1

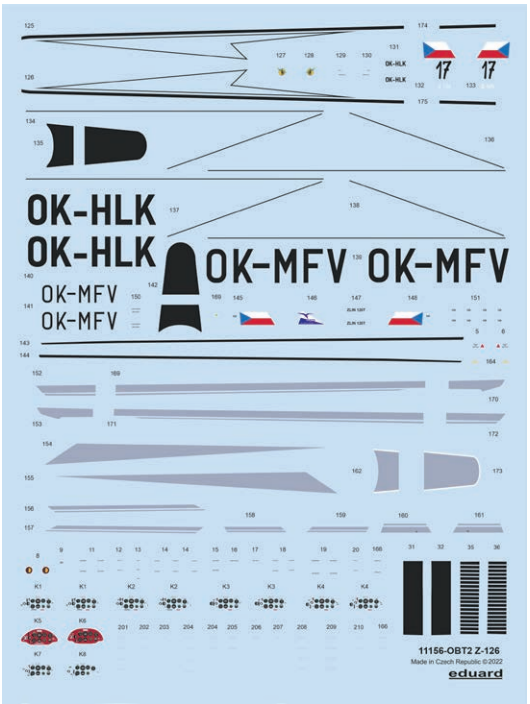
Product page

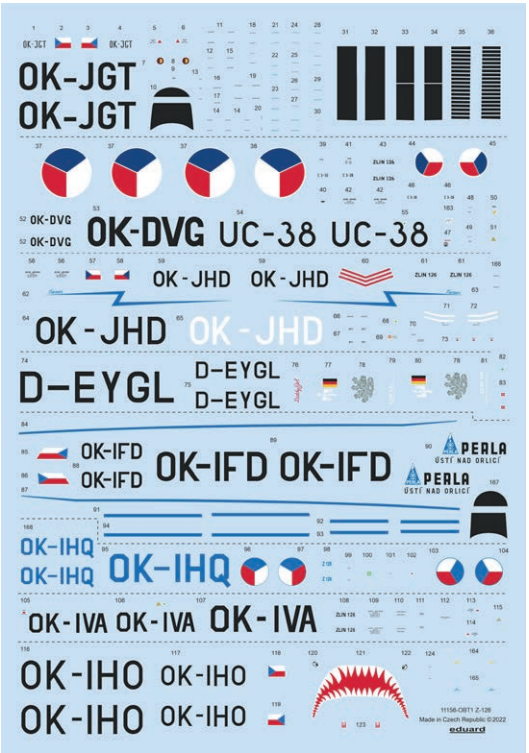
Z-126 Trenér Dual Combo

1/48 Cat. No. 11156

- Plastic parts Eduard
- Photo-etched set
- Paiting mask
- 10 markings

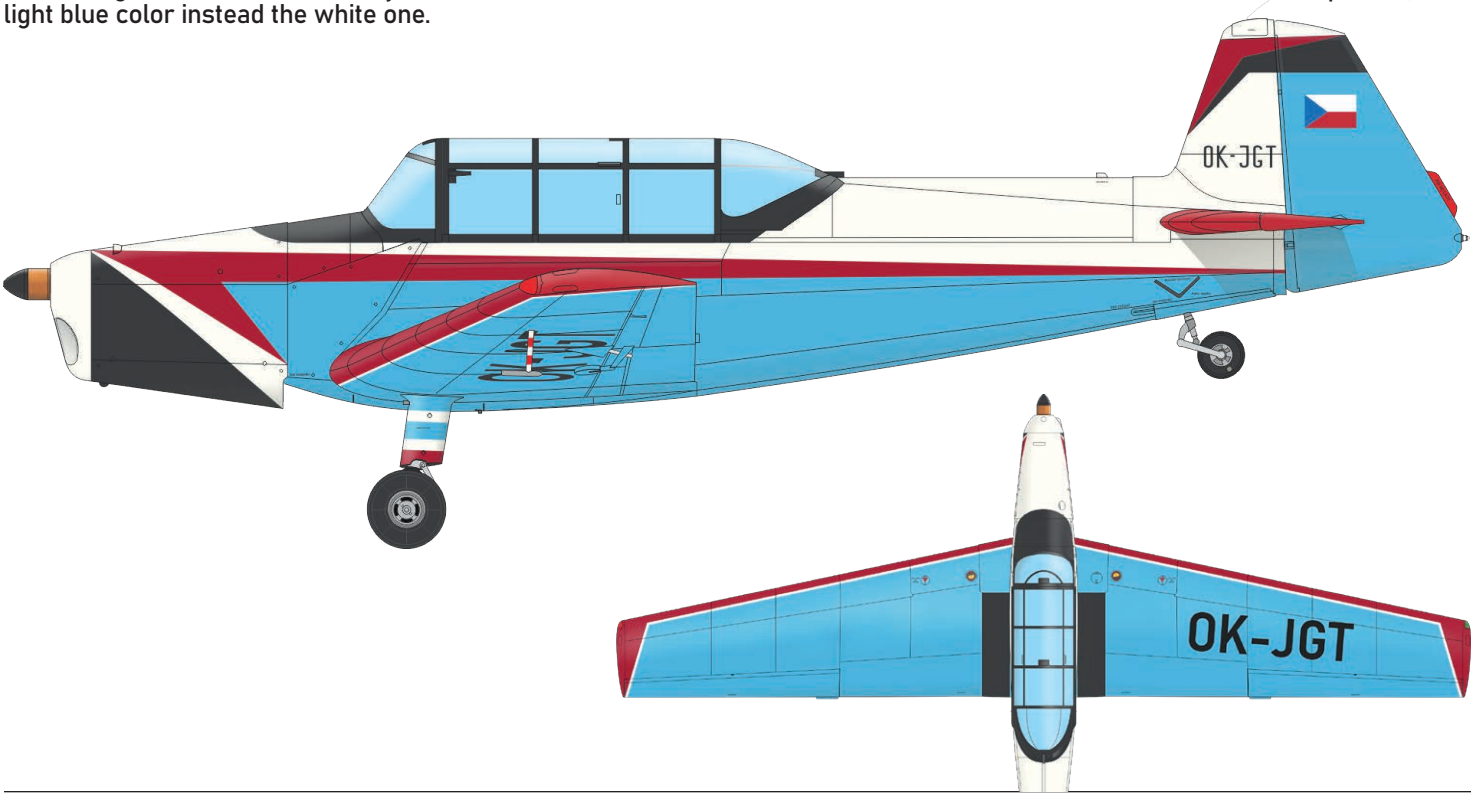
Product page





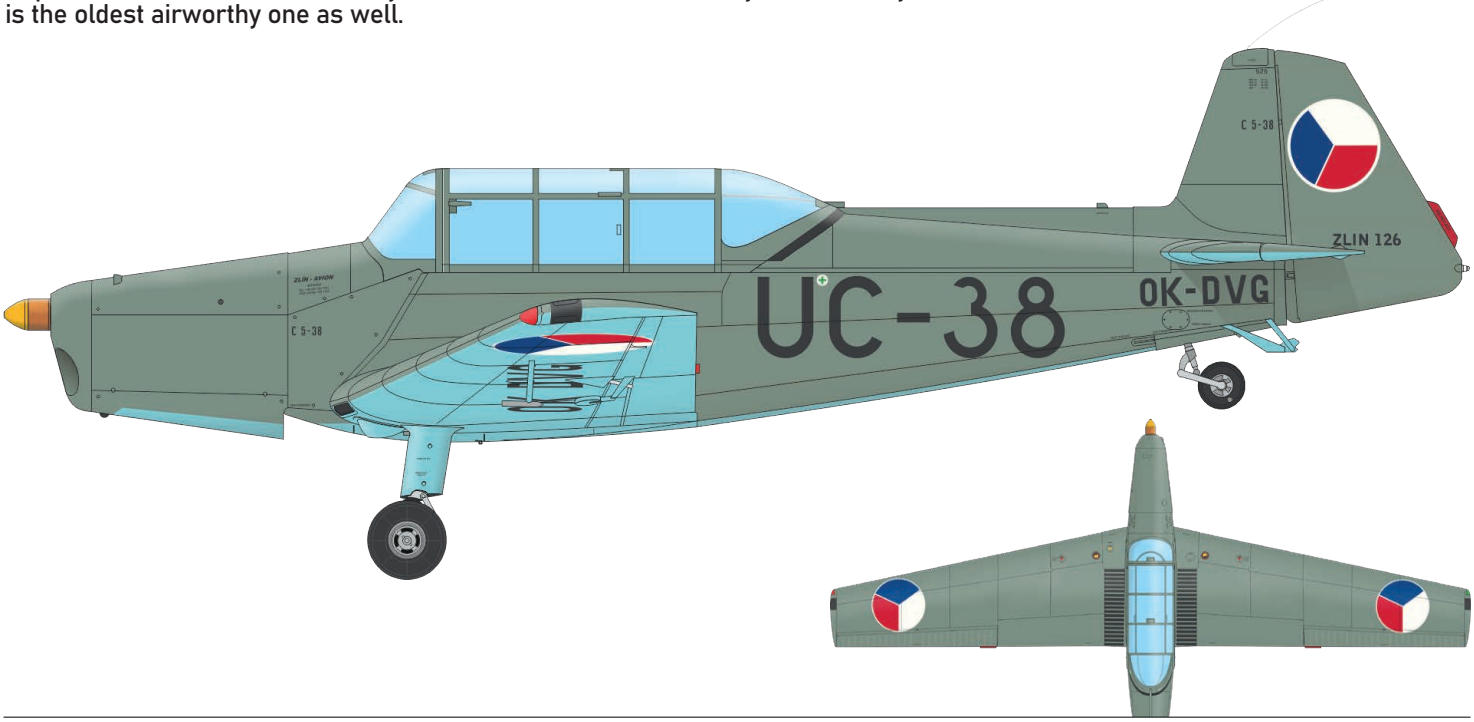
Z-126, OK-JGT, No. 804, Ruzyně Aero Club, 1960

The "Yoghurt", as the aircraft is nicknamed due to its matriculation, was manufactured in 1954 and on February 15, 1955 it was handed over to the Ministry of Defence for pilot training purposes. Later was handed over to the Svazarm organization (Union for civilian cooperation with army) and was operated mainly by Aero Clubs of Zbraslavice, Ruzyně or Letňany. Its career as Z-126 version ended in 1982 and it was stored disassembled in the Letňany hangar. In 1998, OK-JGT underwent general overhaul and was also upgraded to the Z-226MS version by ZLIN-AVION Service company. At that time, "Yoghurt" also received a livery with yellow--red triangles. The historical livery of OK-JGT as Z-126 was based on the scheme used for the Z-226A/AS aerobatic specials, with light blue color instead the white one.



Z-126, OK-DVG, No. 525, Příbram Aero Club, September 2021

This aircraft was produced as Z-26 on August 30, 1950. As it was 38th aircraft of this type manufactured, it got military marking code UC-38 and served with military from 1950 to 1954. After that the aircraft was assigned to the Liberec Aero Club, converted to the Z-126 version and registered as OK-DVG on April 22, 1955. It flew like this until 1966, when it was considered too old and put out of service. Eventually it was noticed by František Altner, a Czechoslovak Airlines pilot, who brought the incomplete aircraft. He made overhaul of it on his own and registered it as OK-EKA at the end of 1970. When Ladislav Bezák emigrated at the end of 1971, however, Altner was banned to use the aircraft and sold it to the Svazarm (Union for civilian cooperation with army). In 1976, the aircraft underwent another overhaul and flew with the Aero Clubs in the Central Bohemia region, mainly at the airfields of Točná, Kladno and Příbram until 1981, when it was de-registered again due to its age. Thanks to the efforts of the members of Příbram Aero Club it was overhauled again in the mid-1990s by ZLIN-AVION Service and got its original markings. It was test-flown on September 2, 1997 and is in use by Příbram Aero Club until today. It is the only Trener that has retained manual crank start and is the oldest airworthy one as well.

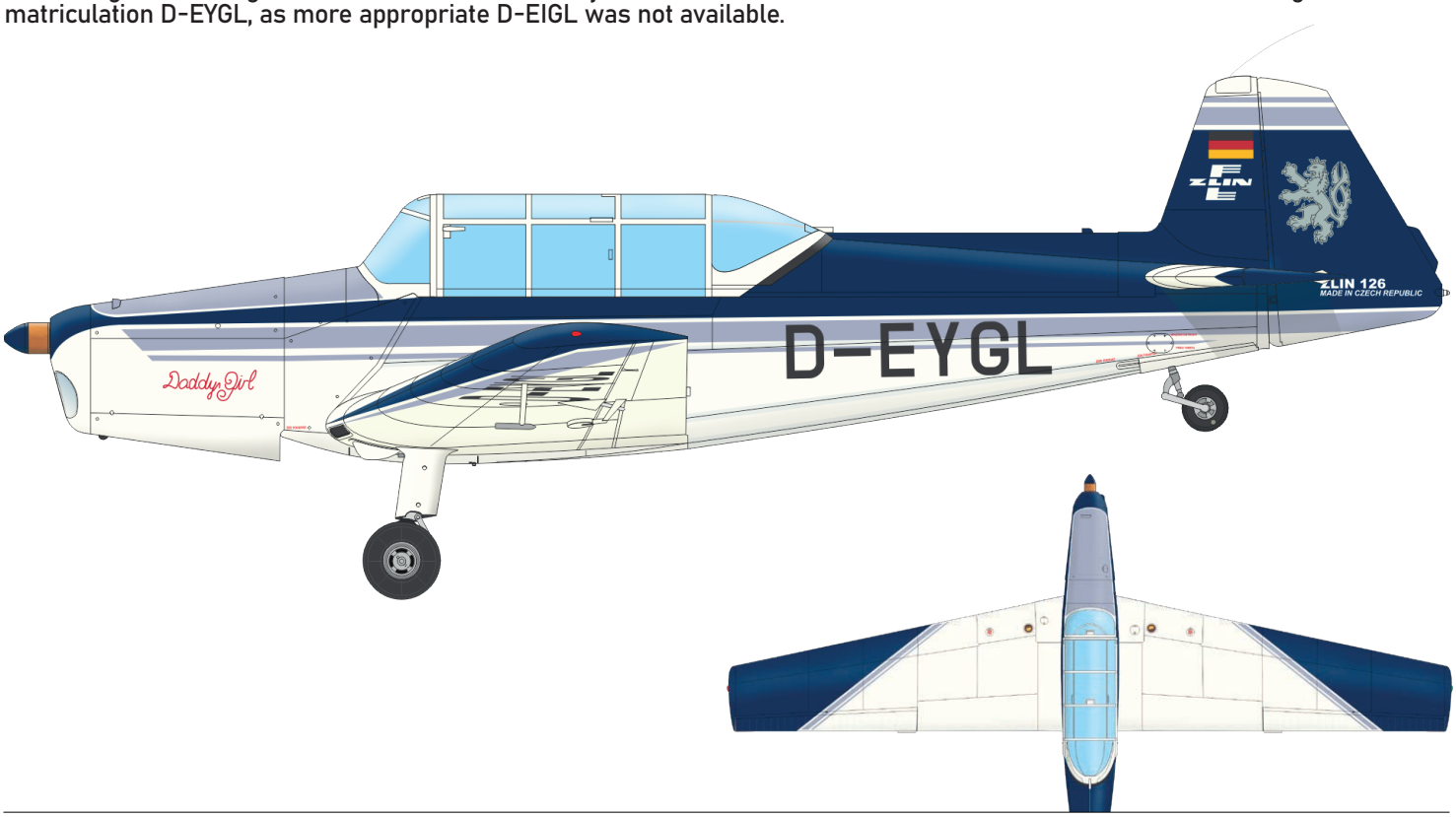


Z-126, OK-JHD, No. 817, private owners, Chotěboř airfield, 2021

This Z-126 was test-flown on March 3, 1955 and stored afterwards until February 1, 1957. At that time it was given the OK-JHD matriculation, and the military commission took over this trainer a week later. It was then used by Regional Aero Club Liberec. Due to its intense service, it had to undergo its first overhaul in 1959 by LOTN (Trenčín Aircraft Repairs). The second overhaul followed in 1966 and the third in 1974, this time at Aerotechnik Kunovice, where the aircraft received a brick orange livery with a dark red stripe. In this form it was serving until September 1979. A year later it was deleted from the register and remained disassembled in the hangar of the Liberec Aero Club where over the years became a spare parts source. Then, two members of the Chotěboř Aero Club found it there some 20 years later and decided to buy it and make it to fly again. They also wanted their Trener to be given a historically accurate marking. Their first choice was the design in which the Z-126 OK-IMB flew in the 1970´s in Chotěboř and neighbor Aero Clubs. However, as they lacked good reference materials, the choice fell on the color scheme based on the coloring of the aircraft of the famous Olomouc woman aerobatic group which was flying in 1957. The OK-JHD was test-flown in this form on October 13, 2007 in Otrokovice. Since then, it has been operated on the Chotěboř airfield and used not only by its owners but also by other pilots of the local Aero Club.

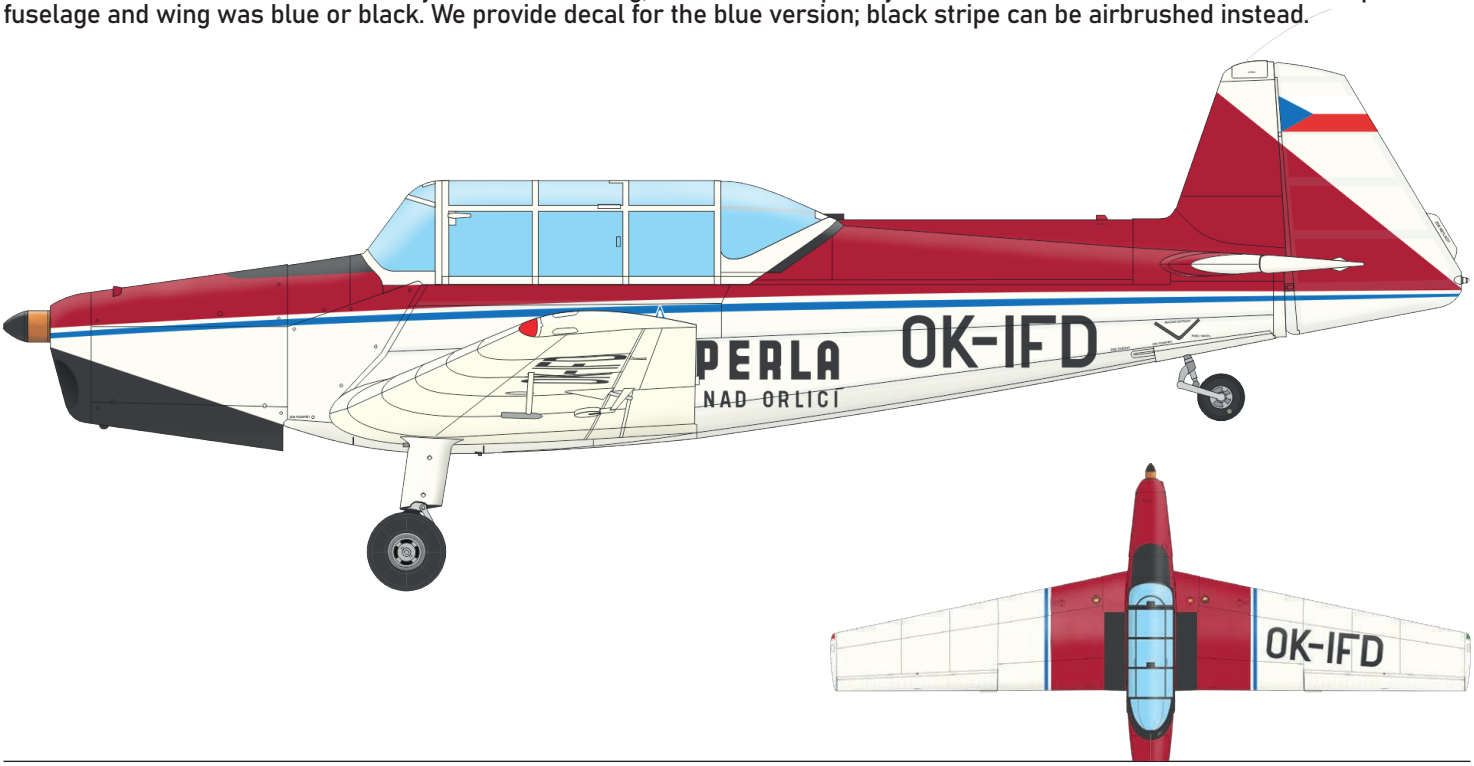
Z-126, D-EYGL, No. 796, private owner, Straubing Airport, Germany, 2020

The aircraft was manufactured in 1954 with wooden tail surfaces, but already as Z-126. It was handed over to the Svazarm (Union for civilian cooperation with army) on December 17 the same year. From that time on it was serving with Kralupy nad Vltavou, Gottwaldov and Holešov Aero Clubs (there until 1978). In 1992 it was bought by Emmax Uherské Hradiště company and a year later sold to a private owner from Strážnice. After overhaul by ZLIN-AVION Service in 1994, the OK-IGL was operated at Kunovice airfield and changed hands again around 2000. After a few years the owner sold it to German taker and the aircraft was given German matriculation D-EYGL, as more appropriate D-EIGL was not available.



Z-126, OK-IFD, No. 739, Ústí nad Orlicí Aero Club, 1969

OK-IFD was first flown on July 26, 1954 and then headed to AK Liberec, where it was used for pilot training and glider towing. Subsequently it was also used in Ústí nad Labem and Most, from where it was bought by AK Ústí nad Orlicí. However, the aircraft had to be transported by land, as it was at the end of its lifetime period. It was overhauled by the LOTN (Trenčín Aircraft Repairs) and the original military green color was replaced by a more colorful marking. At the same time, a large logo of the then textile factory Perla, which sponsored the overhaul, appeared on the sides of the fuselage under the canopy. Overhauled OK-IFD was test-flown on September 1, 1970, but after Vlastimil Macek emigrated to Austria on a glider in July 1973, the Aero Club had to hand its Trener over. The OK-IFD then travelled through several Aero Clubs, changed colors several times, and finally ended up in Holešov Aero Club in 1982. There is one uncertainty with this marking, as the contemporary witnesses can´t decide whether the stripe on the fuselage and wing was blue or black. We provide decal for the blue version; black stripe can be airbrushed instead.

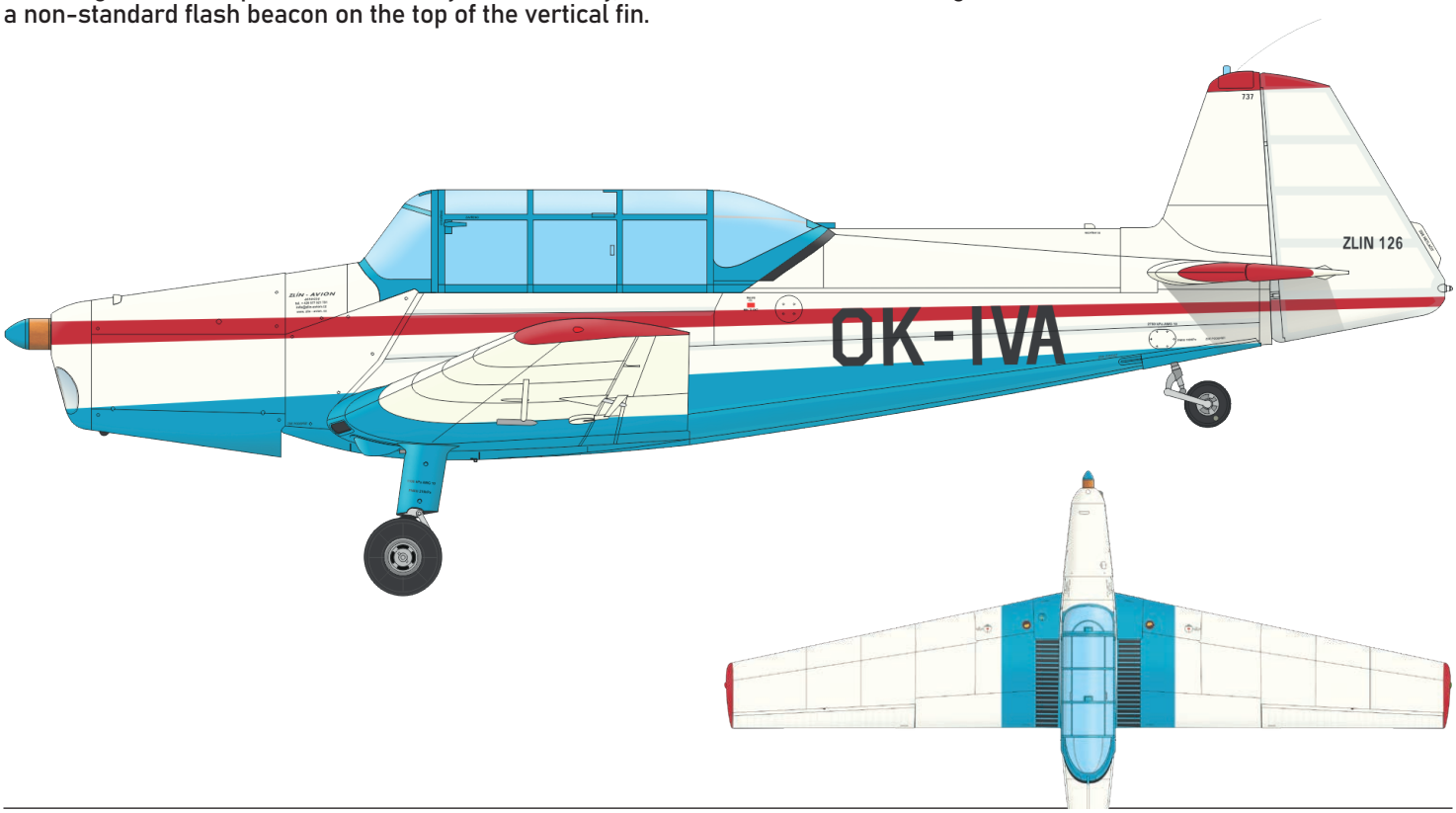


Z-126, OK-IHQ, No. 778, private owners, Letňany airfield, 2021

This Z-126 was handed over to Ministry of Defence on February 21, 1955 as a C 105-243. On September 12, 1959, it was entered to the civil register under the OK-IHQ matriculation and put into service with the Svazarm Aero Clubs in Hořice, Plasy and Jičín. The latter used it until 1999. Later it was bought by private owners and the aircraft was given the livery of a 1950s military trainer as a part of an overhaul. Interestingly, the dashboards are painted red, and the aircraft has impressive radio equipment. OK-IHQ is based at the Letňany airfield nowadays.

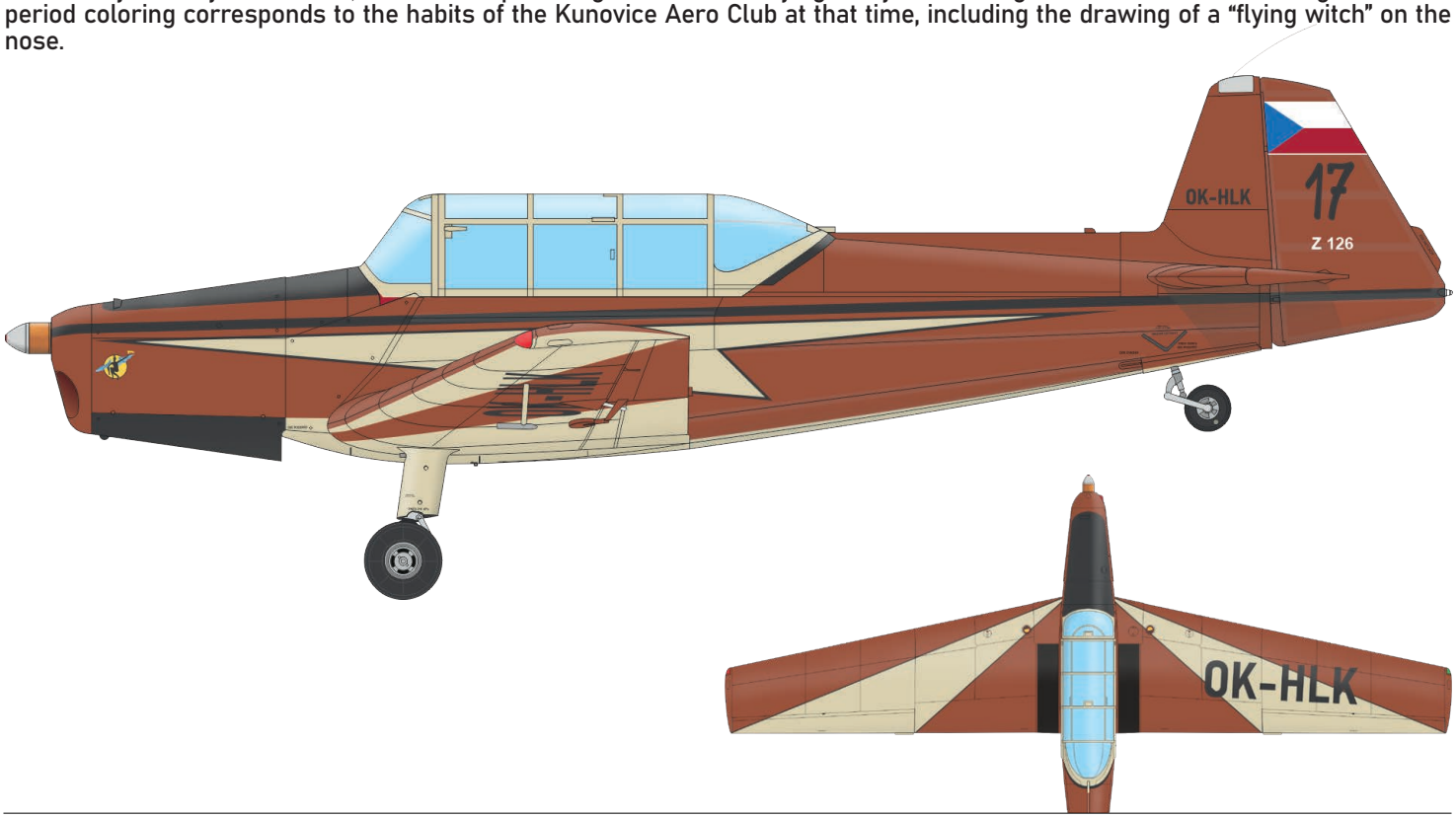
Z-126, OK-IVA, No. 737, private owner, Slaný airfield, 2021

This aircraft was produced in 1954 and received the OK-IFB matriculation. It served with the Košice Aero Club from May 15, 1954 and subsequently was used at Nitra airfield as a training aircraft for students of the College of Transportation in Žilina. After that, it was used by the Holíč Aeroclub. In 1992 the aircraft was at the end of its technical lifespan and transferred to Slušovice, where it was stored. Subsequently it was moved to Kunovice. Since 1998 it is in private hands. During 1999 - 2000 period it underwent a major overhaul at ZLIN-AVION Service and after that it was sold and operated again at the Kunovice airfield. In 2017, it changed hands again and is operated from Slaný airfield today, where it is stored in the hangar of the Točná Aero Club. The aircraft has a non-standard flash beacon on the top of the vertical fin.



Z-126, OK-HLK, No. 722, Kunovice Aero Club, 1970

This Trener served with the army from February 5, 1954, when the Ministry of Defence took it over and used it as C 105-220. Later it was transferred to Uherské Hradiště and flew in Kunovice Aero Club, where in 1969 the powered flying was re-established. After reaching its technical life limit, it was stored in the depository of the Technical Museum Brno and handed over to the Brno company Šperlík later. Thanks to the company´s efforts, it was overhauled in Aerotechnik Kunovice. In August 2007, the aircraft had a severe crash in Vysoké Mýto. However, but it was repaired again and is still flying today in new elegant white and blue coloring. Attractive period coloring corresponds to the habits of the Kunovice Aero Club at that time, including the drawing of a “flying witch” on the nose.

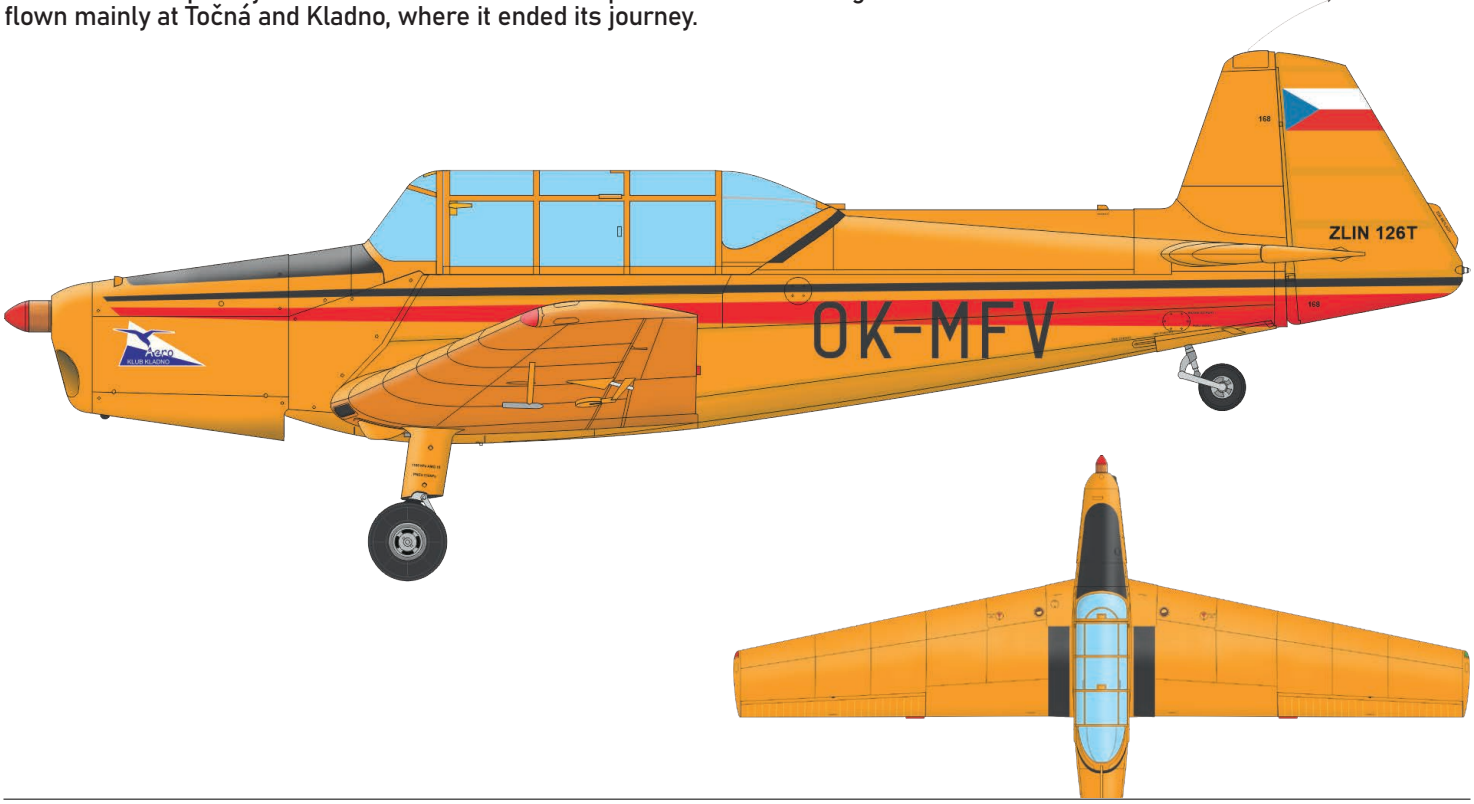


Z-126, OK-IHO, No. 705, Brno-Slatina Aero Club, spring 1977

The Z-126 of serial number 705 served with the army as C 105-234 from March 30, 1954. It was entered into the civil register on December 18, 1958 and served with the Brno Aero Club for many years. In the spring of 1977, it had only about five flying hours left in its service life, so the members of the Aero Club decided to "decorate" the aircraft a little. The shark's mouth motif was chosen, but when the then regional chief technician engineer of the Svazarm (Union for civilian cooperation with army) saw the work, he was not impressed and demanded the painting to be removed. However, the situation was saved by the regional chief of Svazarm, Colonel Holubář, who immediately declared that he wanted to fly the painted Trener first. And so, the new design was approved... Finally, this Trener was removed from the register on July 21, 1977.

Z-126T, OK-MFV, v. no. 168, Aeroklub Kladno, 2020

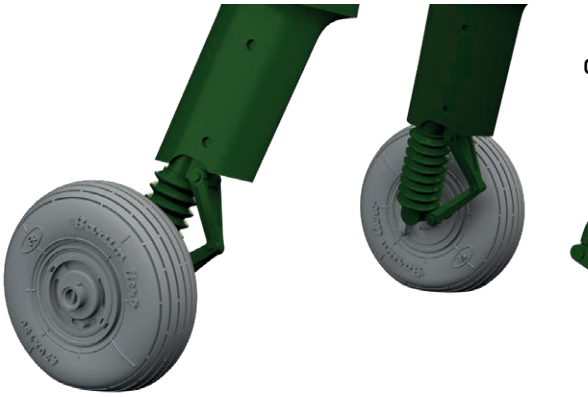
When the OK-JHA Z-126 Trener ended its service with Kladno Aero Club due to the end of its technical lifespan in November 2013, its engine together with the propeller and engine cowls were transported to ZLIN-AVION Service company in Otrokovice. In the same direction, the Z-226MS airframe of the OK-MFV matriculation headed to mate with OK-JHA´s parts to create new Z-126T. As part of this conversion, the newly built aircraft also received the original livery and OK-MFV matriculation. It was test-flown in January 2014 and is still flying with Kladno Aero Club. The "donor" of the engine and of other parts, OK-JHA, was manufactured in 1955 and subsequently stored at the manufacturer´s premises before being handed over to the Svazarm on March 1, 1957. It was flown mainly at Točná and Kladno, where it ended its journey.



Recommended for Z-126 Trenér

FE1219	Z-126/226 seatbelts STEEL (PE-Set)
644119	Z-126 Trenér LöökK (Brassin)
648679	Z-126/226 Trenér wheels (Brassin)
3DL48044	Z-126 SPACE (3D Decal Set)
EX827	Z-126 TFace (Mask)

Cat. No. 648679



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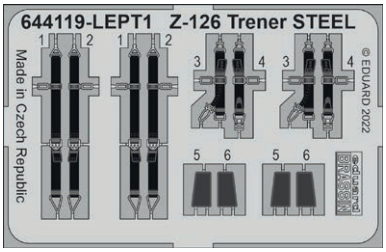
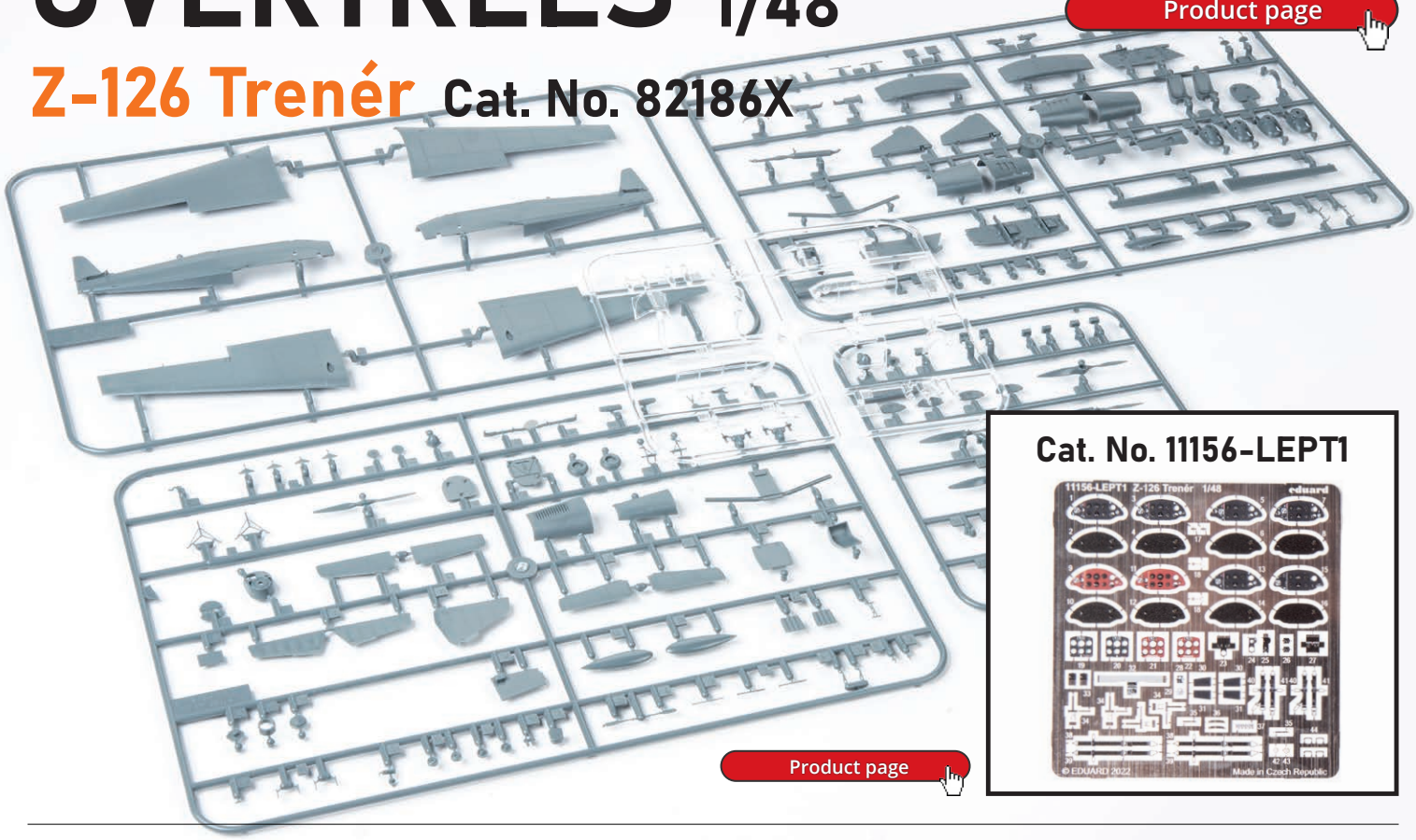


OVERTREES 1/48

Z-126 Trenér Cat. No. 82186X

Product page



Product page

Cat. No. 11156-LEPT1

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Spitfire Mk.Ia

1/48 Cat. No. 84179

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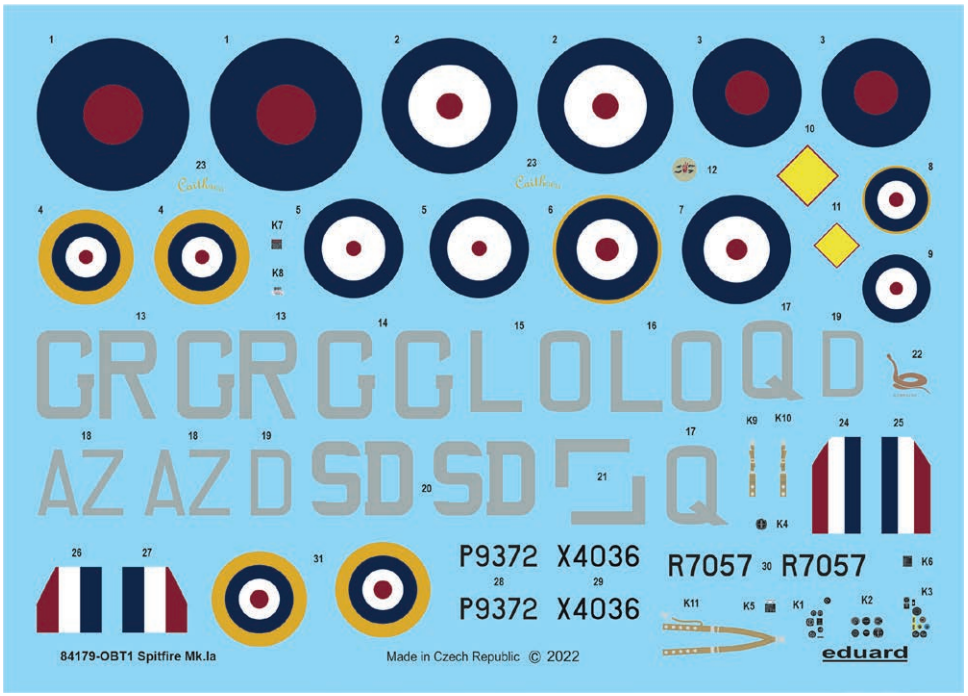
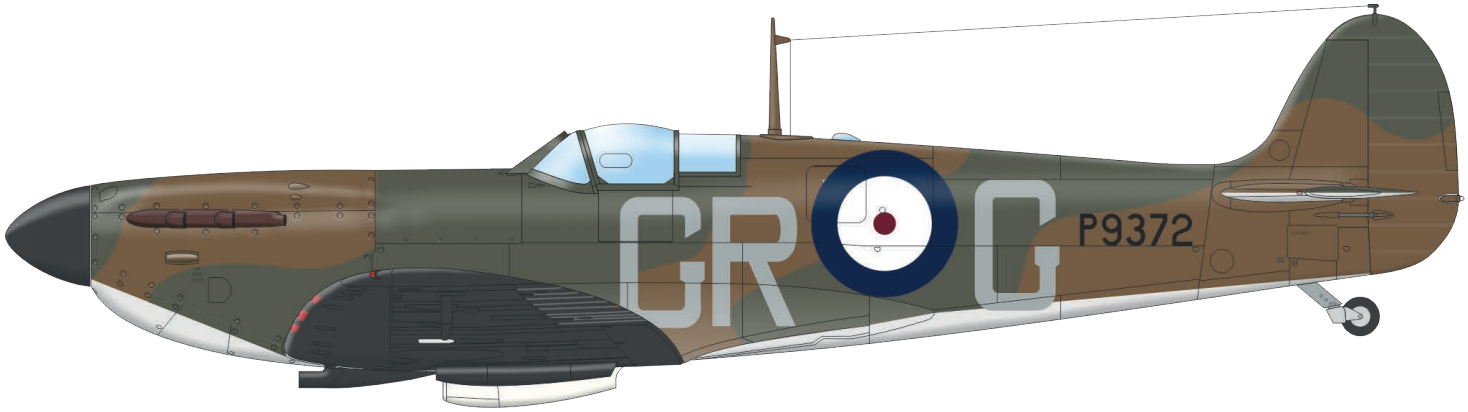


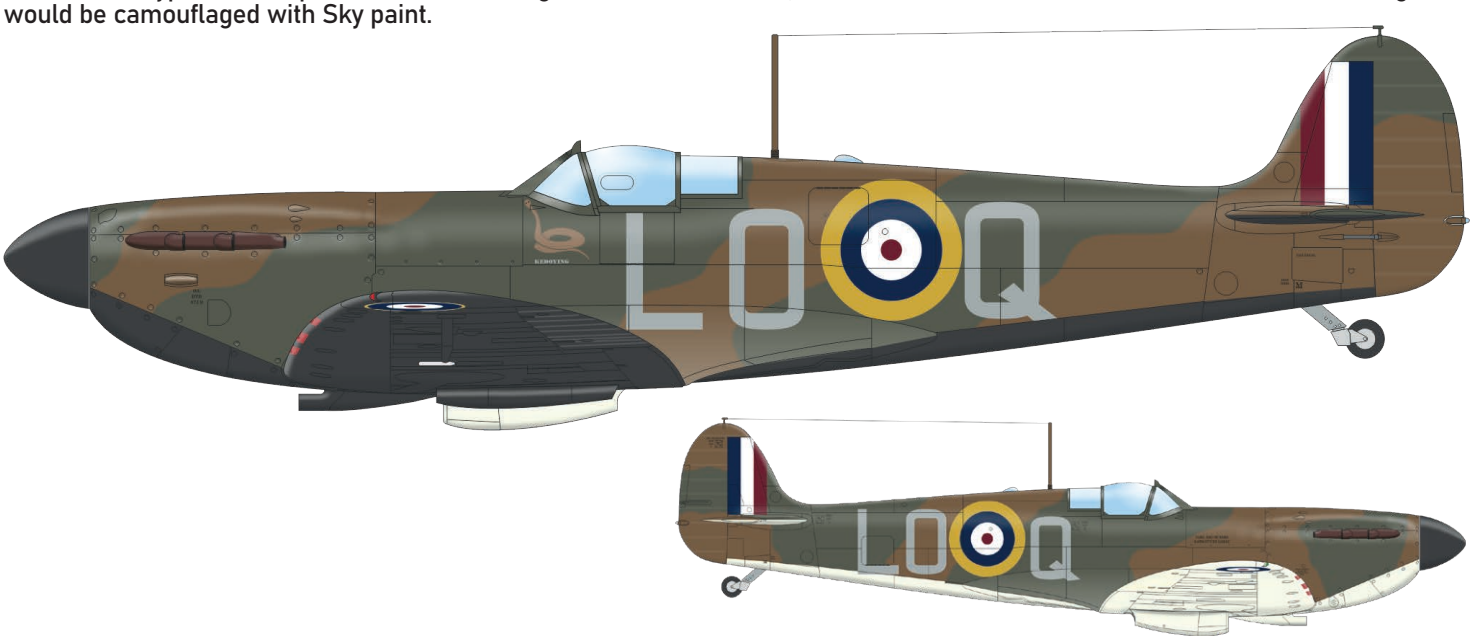
P9372, P/O Antony C. Bartley, No. 92 Squadron, RAF Croydon, Great Britain, March – April 1940

Spitfire P9372 served with No. 92 Sqn from March 1940, when the unit changed their Blenheims Mk.If to Spitfires. Along with it, it took part in the evacuation from Dunkirk, when it was flown by Antony Charles Bartley, among other airmen. A native of Dhaka in what was then British India, he joined the RAF in 1939 and after training he was posted to No. 92 Sqn, with which he took part not only in covering the evacuation of the British Expeditionary Force but also in the Battle of Britain. In March 1941 he was transferred to No. 74 Sqn for two months, where he had been training new pilots. He later flew as a test pilot with Supermarine and from August 1942 commanded No. 111 Sqn during its deployment to North Africa. He subsequently served as a staff member of No. 83 Group and from October 1944 he took post at RAF Transport Command in the Far East. At the end of the war his score was 12 + 1 destroyed, 5 probables and 8 damaged aircraft. After the war he held various positions in the British film and television industry and died on April 18, 2001. Spitfire P9372 served with No. 92 Sqn until September 9, 1940 when it was shot down near East Guildford. P/O W. C. Watlings, althoug injured, managed to rescue himself on parachute. The wreckage of the Spitfire was excavated from the crash site and displayed at Tonbridge Battle of Britain Museum. The parts were then acquired by noted Spitfirologist Peter R. Monk of Biggin Hill Heritage Hangar Ltd. There they have been on display on the hangar wall since 2016. On August 5, 2019, the project to restore P9372 to airworthy condition commenced and it was subsequently officially registered under the G-CLIH matriculation.



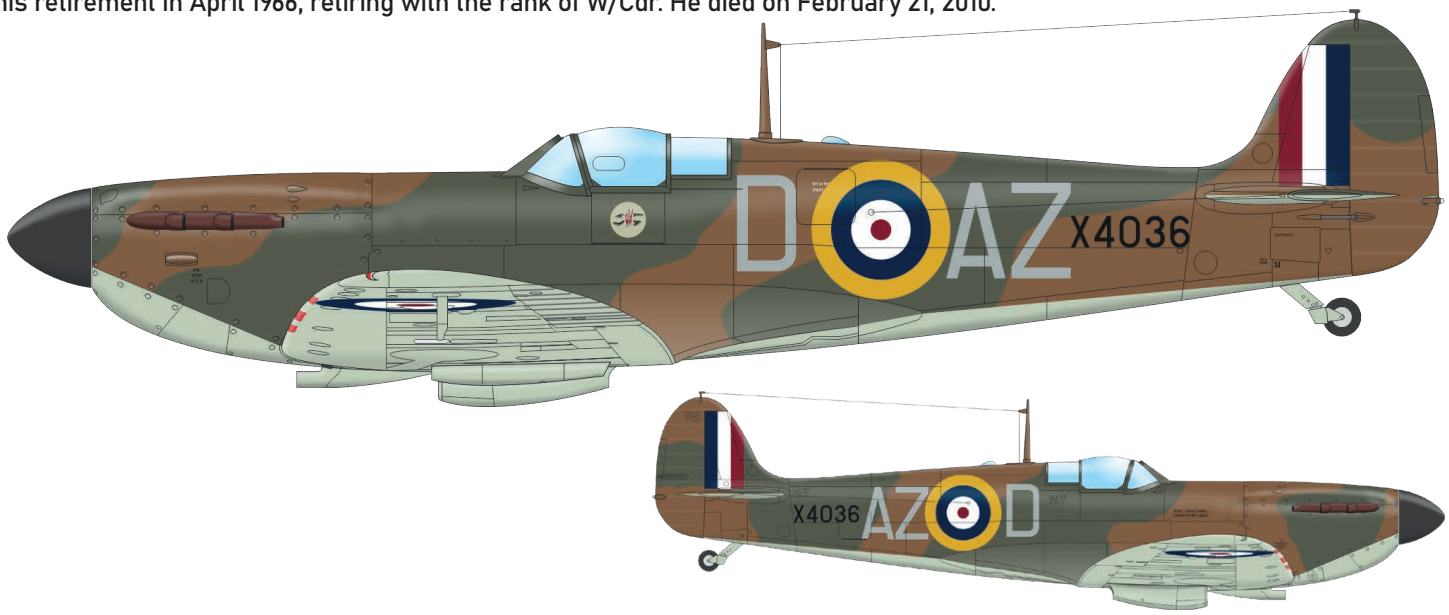
L1004, F/Lt Alexander V. R. Johnstone, No. 602 Squadron, RAF Drem, East Lothian, Great Britain, May 1940

Alexander Vallance Riddell Johnstone, better known as "Sandy" Johnstone, achieved his first combat successes in the cockpit of L1004 in late June and early July, when he shot down a He 111, a Ju 88 in cooperation and also damaged a Do 17. On July 12, he took command of No. 602 Sqn and increased his score by a further seven kills. In September 1941 he took command of No. 263 Wing in Beirut and in April 1942 became sector commander in Haifa, Palestine. As early as September 1942, however, he moved to Malta, where he became commander of Luqa airfield. In January 1943 he returned to operational flying as commander of Krendi Wing with Spitfire Mk.Vc. He commanded the Wing until the end of March 1943, then returned to Britain where he held various command posts until the end of the war. He ended the war with nine kills (7 + 2), 1 probable and 7 enemy aircraft damaged. Tests of the 1,645 hp Merlin 32 engine were carried out on Spitfire Mk.I L1004 in late 1942. The tests were successful and the decision was made to install this powerplant in the existing Seafire Mk.IIC aircraft. The colour profile shows the appearance of the aircraft in the second half of May 1940, when the undersurfaces of the RAF fighters were painted black and white. A tricolour was added to the tail and cockades of type A1 were painted on the fuselage sides. From June 6, 1940 it was ordered that the undersurfaces of RAF fighters would be camouflaged with Sky paint.



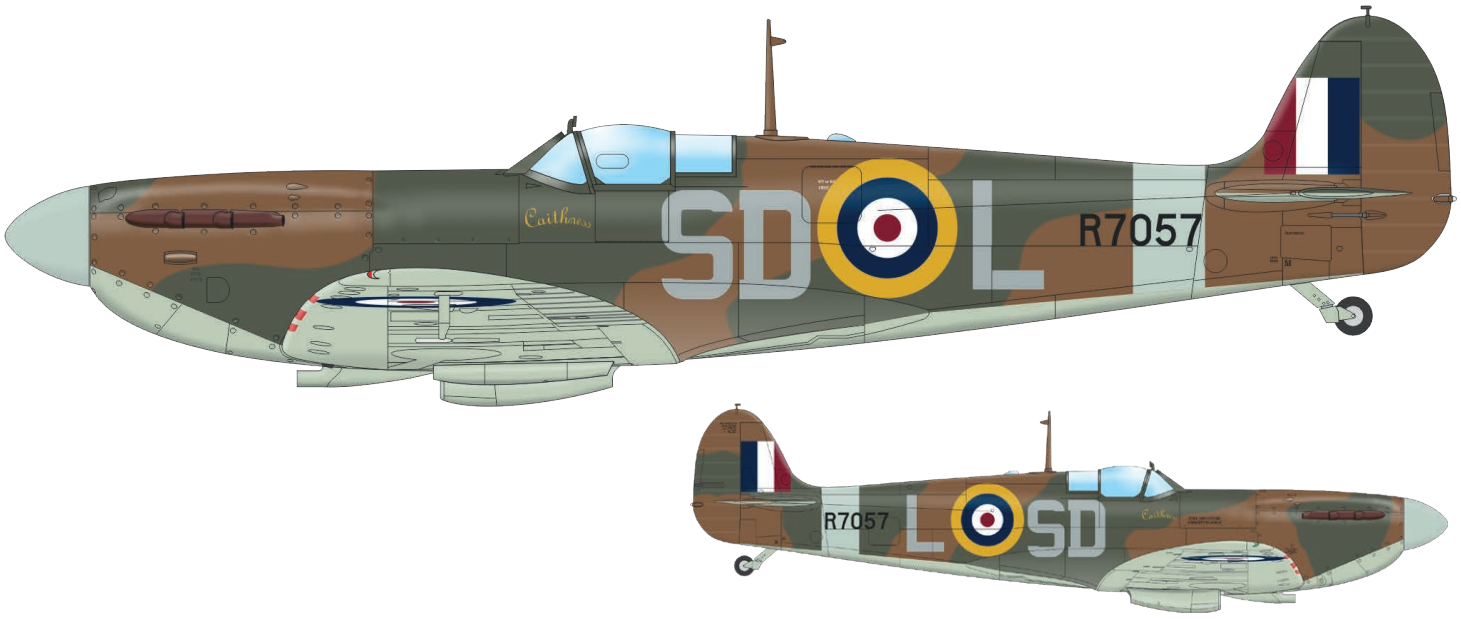
X4036, P/O Robert F. T. Doe, No. 234 Squadron, RAF Middle Wallop, Hampshire, Great Britain, August 1940

Robert Francis Thomas Doe, a native of Reigate, Surrey, joined the RAF at the age of fresh 18 in March 1938. Training was followed by service with No. 234 Sqn from November 1939, with which he flew until almost the end of the Battle of Britain. On August 27, 1940 he was transferred to No. 238 Sqn, with which he flew as Flight Leader in Hurricanes. On his return from rest, when he was training new pilots with No. 57 OTU, further activity followed, this time in faraway Burma with No. 613 Sqn. However, he flew with this unit for only two months, until December 1943, when he was commissioned to form No. 10 Sqn of the Indian Air Force. There he also served to the end of World War II. In September 1946, Robert Doe returned to the UK and held staff posts in the RAF until his retirement in April 1966, retiring with the rank of W/Cdr. He died on February 21, 2010.



R7057, P/O James H. Lacey, No. 501 Squadron, RAF Colerne, Wiltshire, Great Britain, May 1941

After the rearmament of No. 501 Sqn from Hurricanes to Spitfires in May 1941, Spitfire R7057, bearing the donation inscription "Caithness" (drawn on both sides probably in yellow) became the personal aircraft of "Ginger" Lacey, one of the RAF's most successful pilots with 28 kills to his credit. Czech pilot Sgt. Antonín Dvořák also flew several operational flights in its cockpit. From July this Spitfire served with No. 53 OTU RAF in Llandow. On August 12, 1941, R7057 and its pilot Colin Day were lost in an air crash near Glynneath.

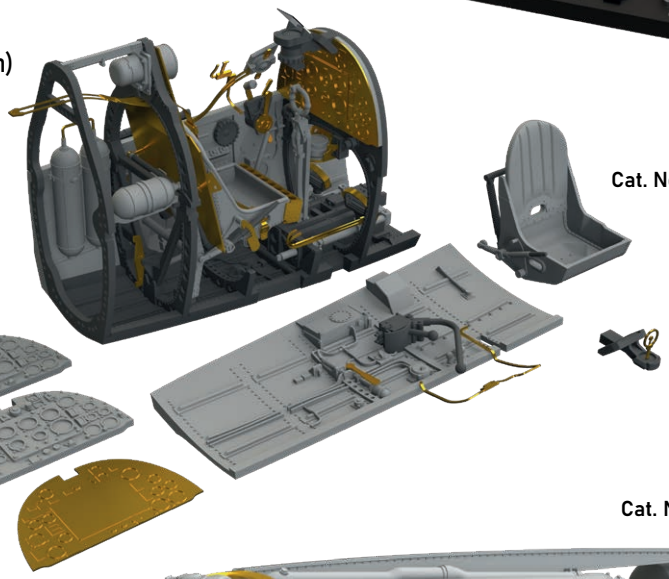


Recommended for Spitfire Mk.Ia

481026	Spitfire Mk.I landing flaps (PE-Set)
FE1112	Spitfire Mk.I seatbelts STEEL (PE-Set)
644063	Spitfire Mk.I early LööK (Brassin)
644064	Spitfire Mk.I late LööK (Brassin)
644066	Spitfire Mk.I early LööKplus (Brassin)
644067	Spitfire Mk.I late LööKplus (Brassin)
648578	Spitfire Mk.I cockpit (Brassin)
648579	Spitfire Mk.I wheels (Brassin)
648580	Spitfire Mk.I exhaust stacks (Brassin)
648581	Spitfire Mk.I gun bays (Brassin)
648582	Spitfire Mk.I engine (Brassin)
648589	Spitfire Mk.I undercarriage legs BRONZE (Brassin)
SIN64868	Spitfire Mk.I ESSENTIAL (Brassin)
SIN64870	Spitfire Mk.I ADVANCED (Brassin)
3DL48005	Spitfire Mk.I early SPACE (3D Decal Set)
3DL48006	Spitfire Mk.I late SPACE (3D Decal Set)
D48053	Spitfire Mk.I national insignia (Decal Set)
D48064	Spitfire Mk.I stencils (Decal Set)
EX709	Spitfire Mk.I TFace (Mask)
EX713	Spitfire Mk.I (Mask)

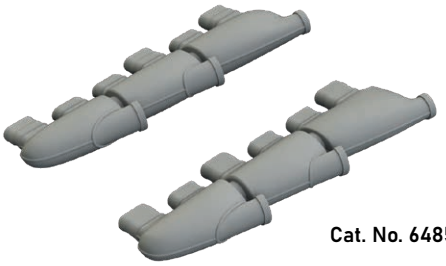
Cat. No. 644063

Cat. No. 648579



Cat. No. 648578

Cat. No. 648580



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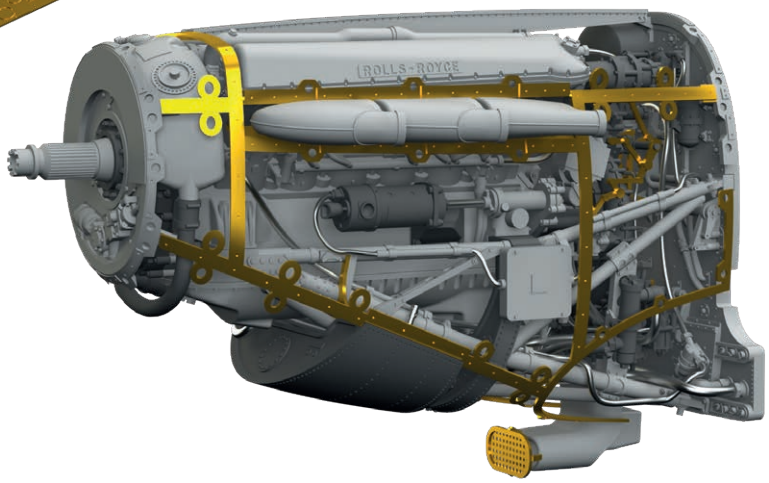

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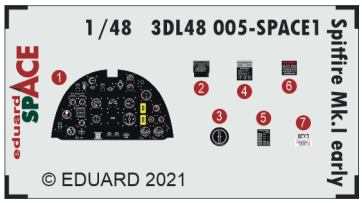
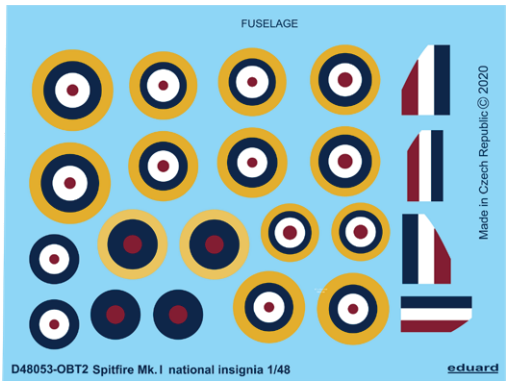
Cat. No. 3DL48005





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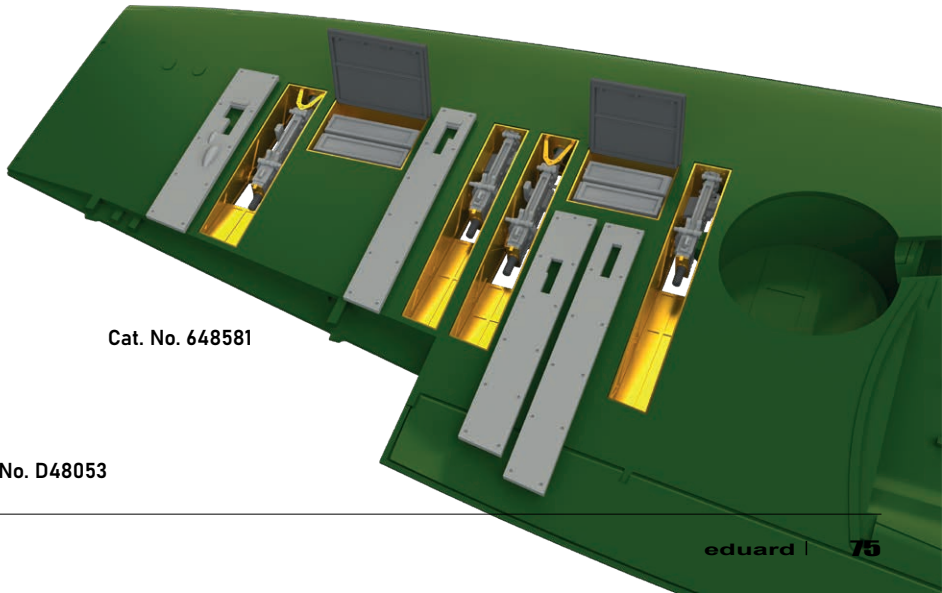


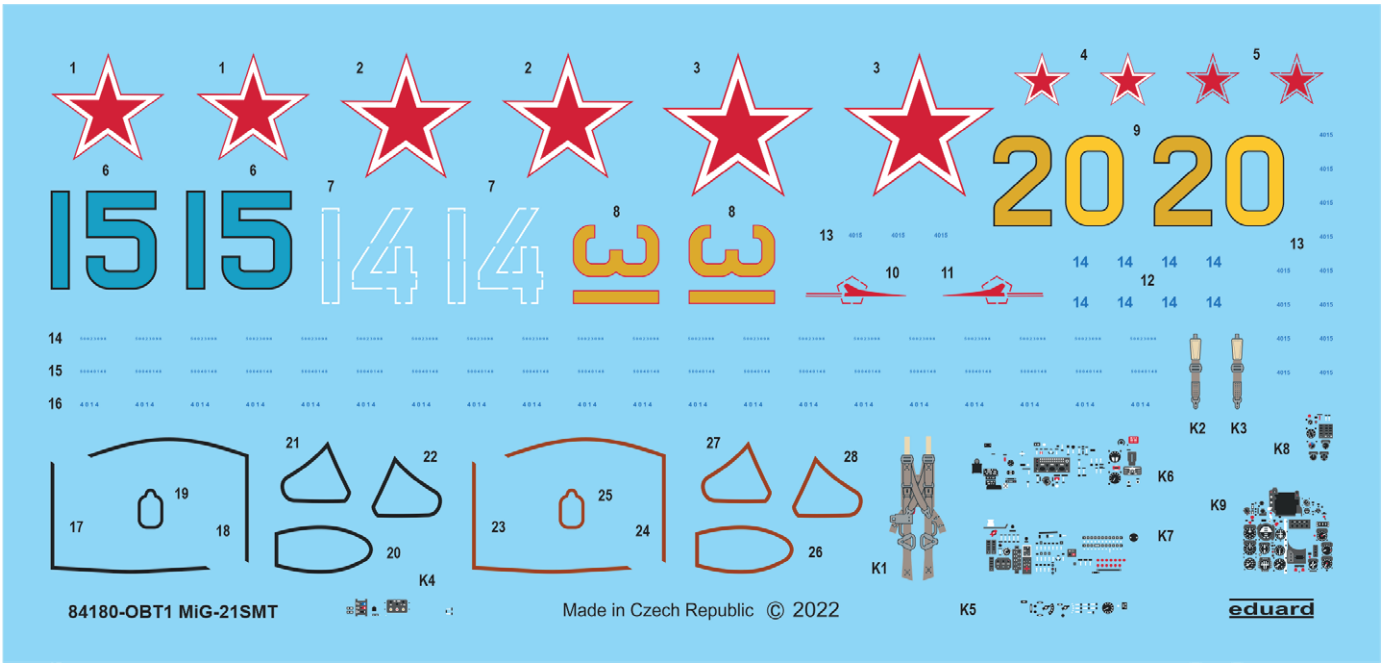
Cat. No. 648581

MiG-21SMT

1/48 Cat. No. 84180

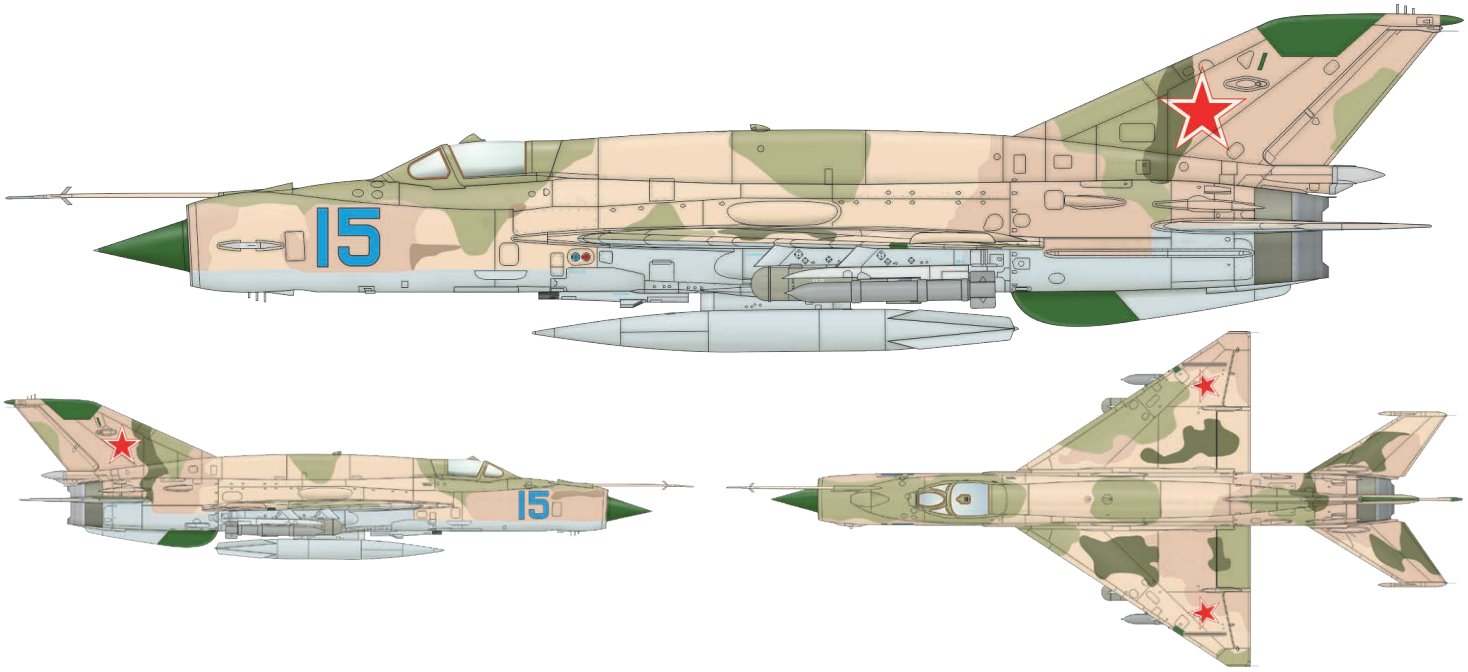
- Plastic parts Eduard
- 4 markings

Product page



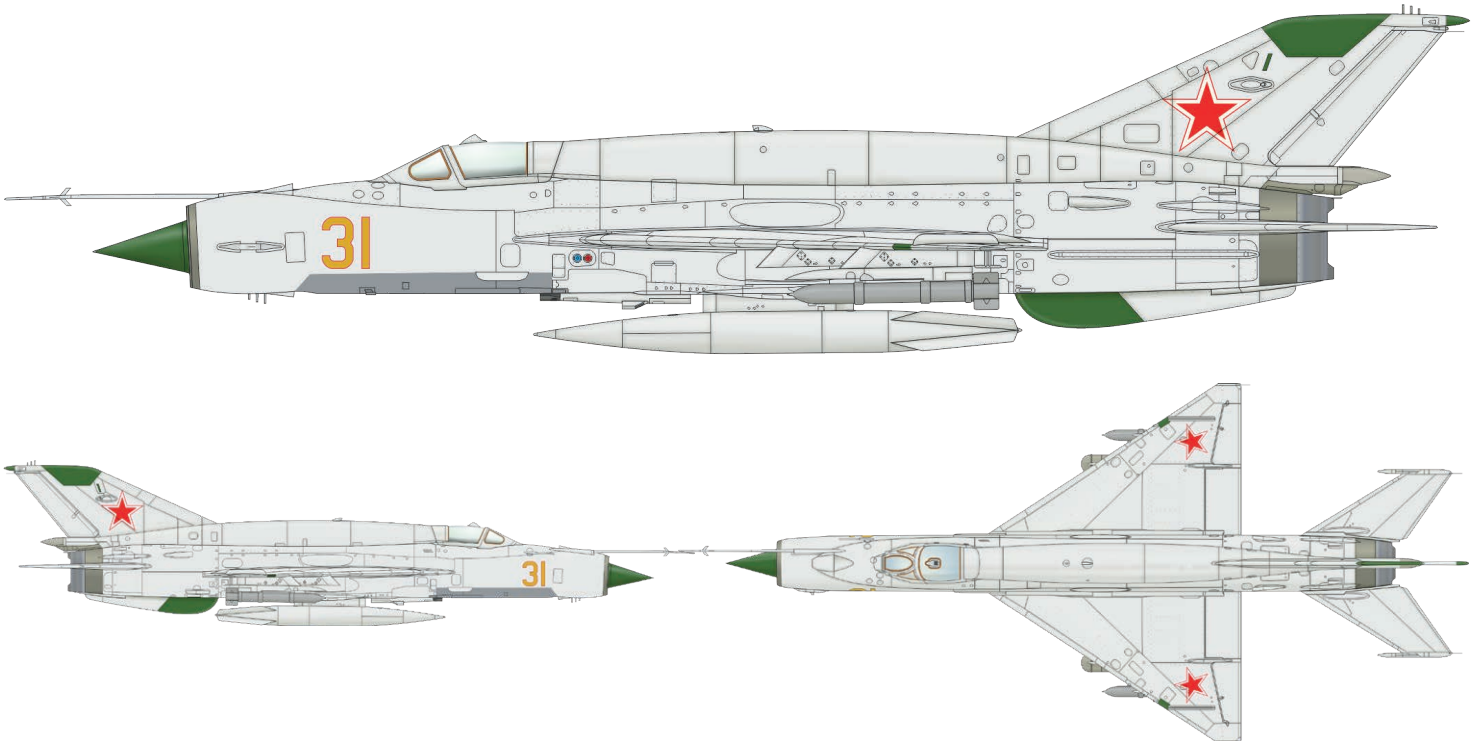
MiG-21MT, No. 96.40.15, Dolgoye Ledovo, Russia, early 1980´s

This aircraft can be currently found at Dolgoye Ledovo on display, but the unit it served with is uncertain. The MiG-21MT (NATO code Fishbed K) was produced by the Moscow plant Znamya Truda in 1971, but only 15 of these aircraft were built, because pilots were very unsatisfied with performance and flying characteristics of the plane. It was developer as a response to foreign customers calling for longer operational range. More powerful R-13F-300 engine was installed as well as a big internal fuel tank of 900 liters volume in the fuselage ridge. This gave the MiG-21MT its characteristic hump appearance. Although the MT version was intended to be an export version, no customers were ever found.



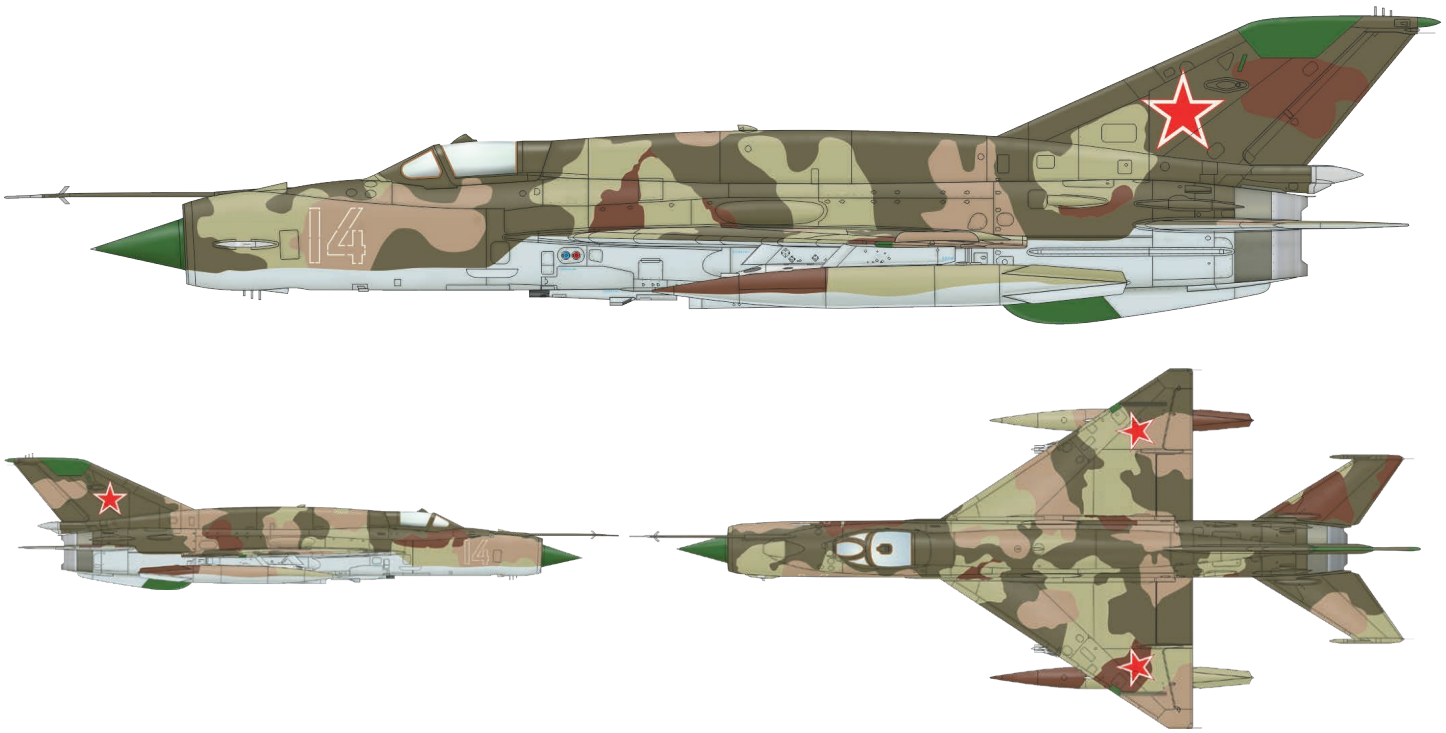
MiG-21SMT, 515 IAP, Tököl, Hungary, late 1970´s

Yellow 31 was serving with the 515 Fighter Regiment in Tököl. The aircraft was delivered in natural metal finish, later on the aircraft of the unit were given camouflage and the tactical numbers were painted with white outline only. The aircraft was given protective grey painting on the bottom of the front section of the fuselage and was presented to delegation of Hungarian pilots, who were undergoing training for usage of special bombs at the time.



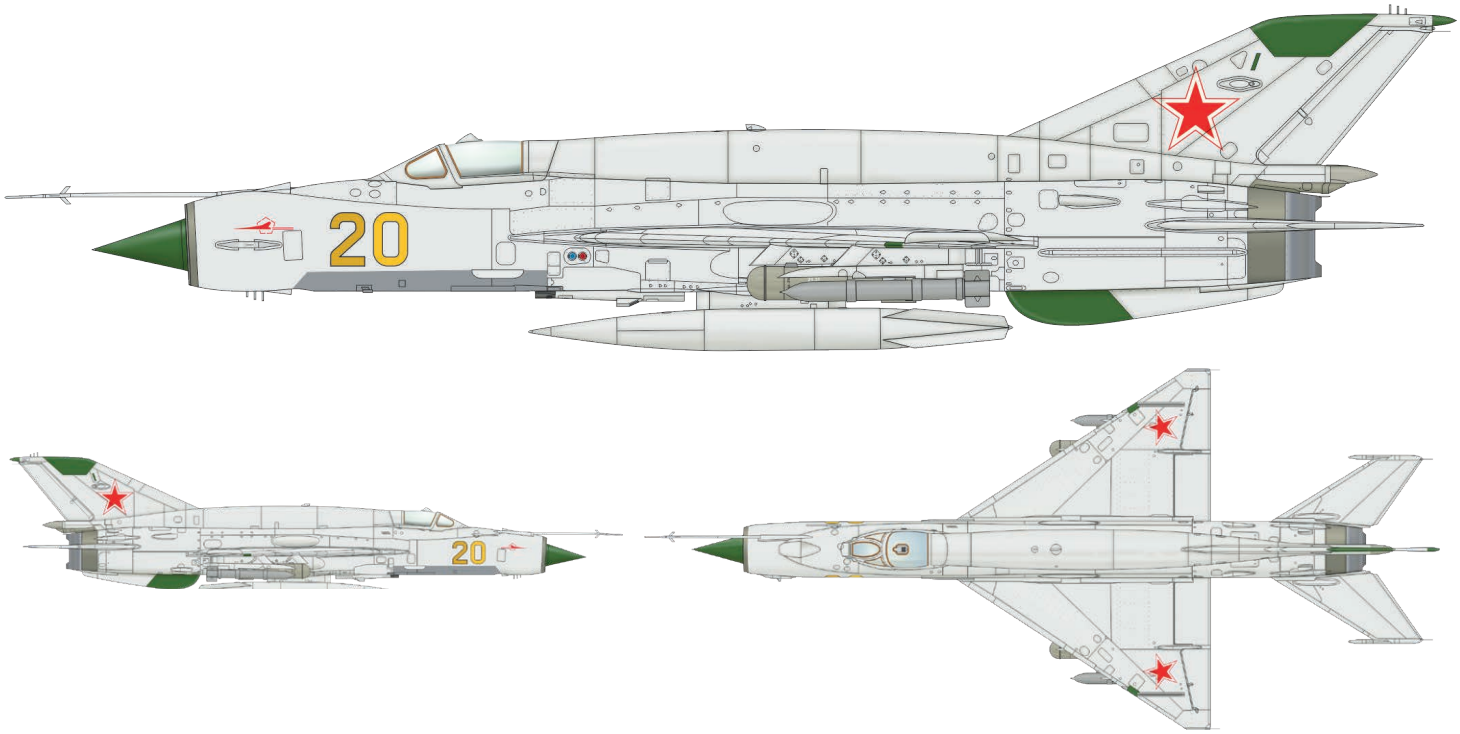
MiG-21MT, No. 96.40.14, Dolgoye Ledovo, Russia, mid 1980´s

Aircraft of serial number 96.40.14 was one of only fifteen MTs produced (factory designated "Izdelye 96B"). Some 12 of them were probably used by 66 APIB (Fighter-Bomber Air Regiment) based at Veshchevo, while three remaining were based at Kubinka Air Base for display to foreign delegates. It is possible that these aircraft also served with the No. 4 escadrille of 234 GIAP (Guards Fighter Air Regiment). This aircraft can be found at the airfield at Dolgoye Ledovo near Moscow today as a didactic aid and is part of the military department of MEI (Moscow Energy Institute - Technical University).



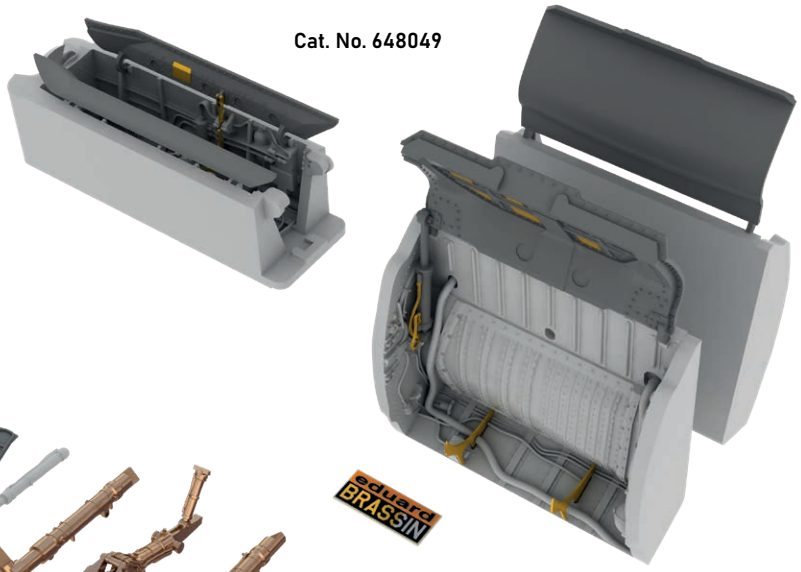
MiG-21SMT, 582 IAP, Chojna, Poland, late 1970´s

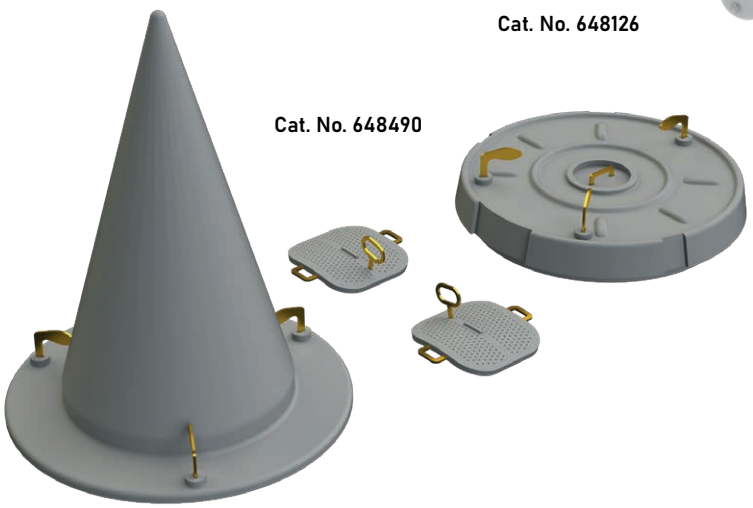
The "Yellow 20" was serving with the 582 IAP located at Chojna Air Base in Poland. Aircraft of this unit were delivered in natural metal finish, later, during 1980´s they got camouflage markings. The aircraft was given protective grey painting on the bottom of the front section of the fuselage. The tactical number has slightly different outline for each digit. The aircraft sports also red badge indicating "outstanding maintenance".

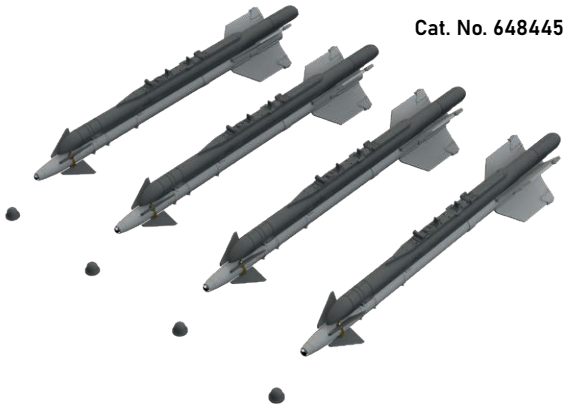


Recommended for MiG-21SMT

48704	MiG-21 ladder (PE-Set)
648025	Rocket launcher UB-16 and UB-32 (Brassin)
648026	MiG-21 wheels (Brassin)
648030	MiG-21 seat late (Brassin)
648038	MiG-21SMT interior (Brassin)
648040	RS-2US / AA-1 Alkali (Brassin)
648049	MiG-21 wheel wells (Brassin)
648064	MiG-21 late airbrakes (Brassin)
648080	MiG-21 undercarriage legs BRONZE (Brassin)
648082	R-60 / AA-8 Aphid (Brassin)
648125	R-3S / AA-2 Atoll-A (Brassin)
648126	OFAB-100 Soviet bombs (Brassin)
648127	OFAB-250 Soviet bombs (Brassin)
648136	S-24 rocket (Brassin)
648490	MiG-21 F.O.D. (Brassin)
648445	R-13M missiles (Brassin)
EX526	MiG-21MF w/ canopy seal (Mask)
EX636	MiG-21MF TFace (Mask)







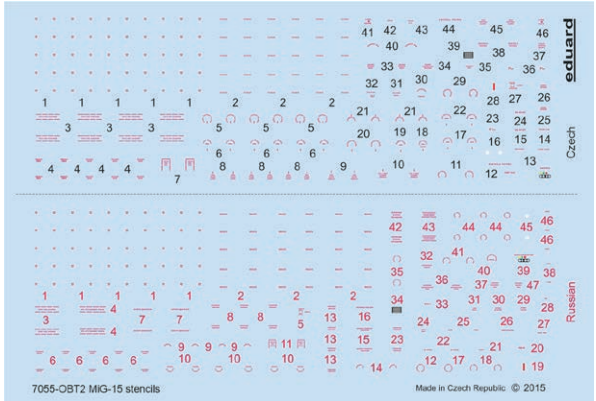
MiG-15bis

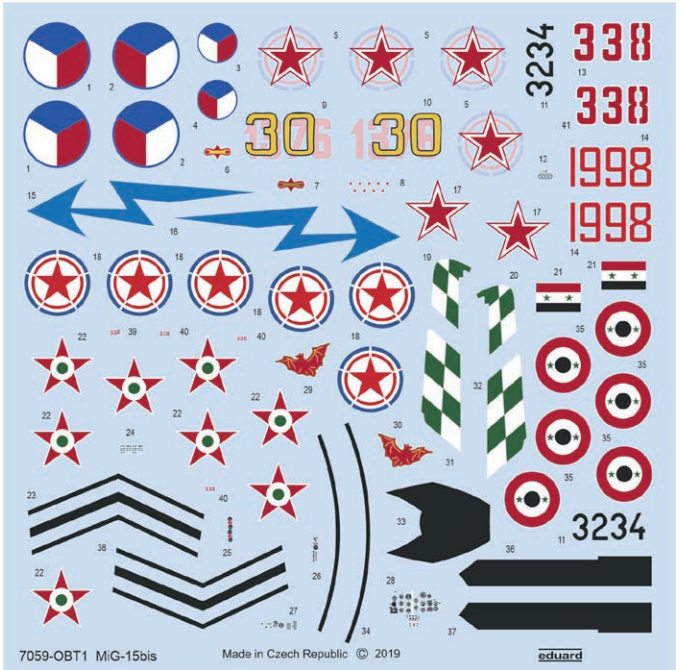
1/72 Cat. No.7059

- Plastic parts Eduard
- Photo-etched set
- Paiting mask
- 5 markings

Re-release

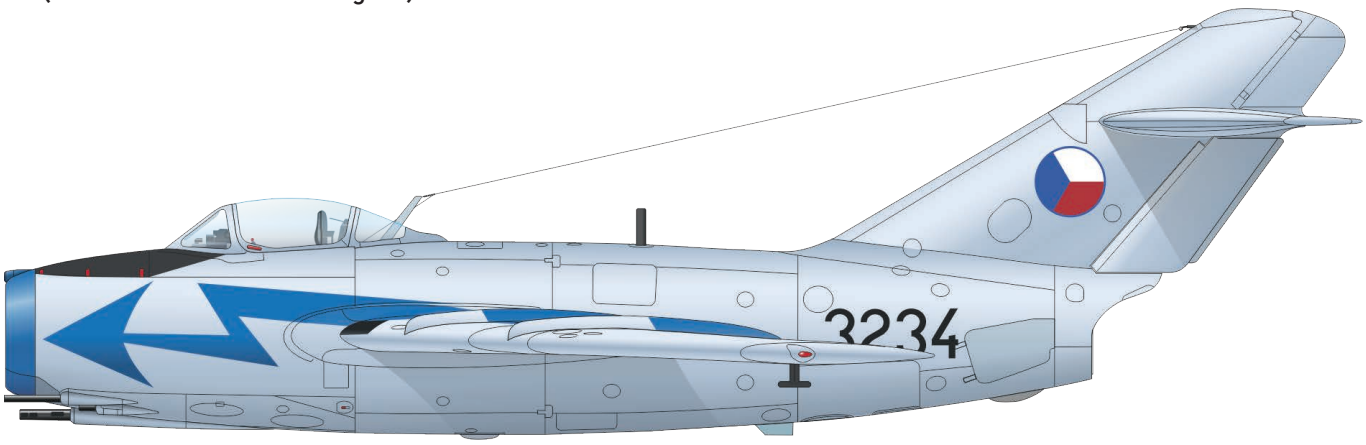
Product page





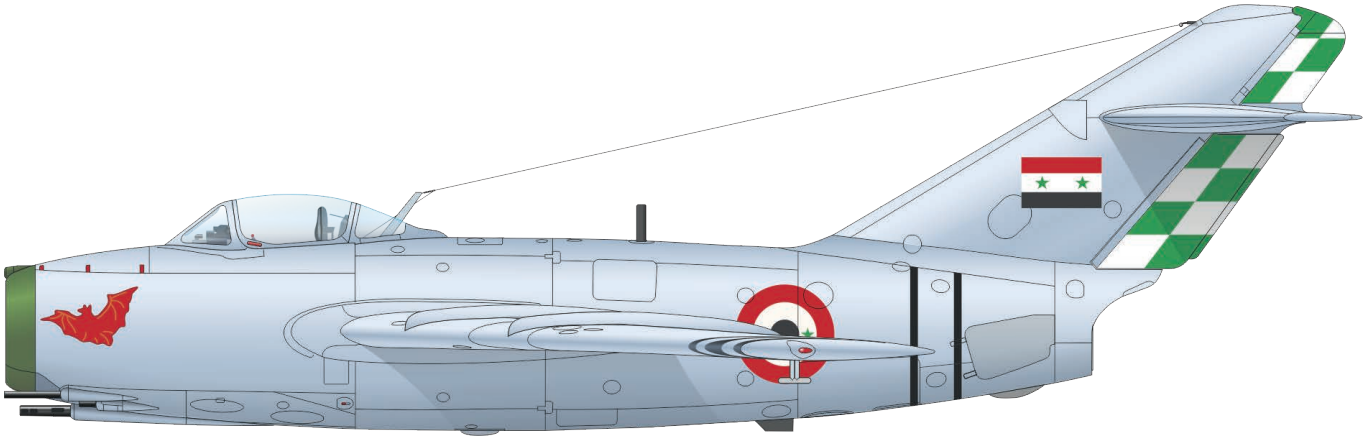
c/n 613234, kpt. Oldřich Paldus, 15th Fighter Regiment, Czechoslovak Air Force, Cottbus Airfield, German Democratic Republic, August 30, 1957

A group of three MiGs-15bis of 15 Fighter Regiment from Žatec Air Base took part in the 2nd Cultural and Sport Celebration organized in Cottbus, German Democratic Republic from late August to early September 1957. The distinctive blue marking was applied on these aircraft especially for this event. During the display two aircraft, this No. 3234, and another MiG-15bis No. 3233 collided. No. 3234 lost the tip of its left horizontal stabilizer, but the pilot managed to keep control of the aircraft and was able to land safely. After the 15th FR was disbanded, two pilots of its display team, Oldřich Paldus and Václav Polášek were transferred to 11 FR in 1958. Capt. Jaromír Palečný joined them in 1959 and as all of them were not tall at all, the display team was unofficially dubbed "Trio Prckos"("The Three Shorties" in English).



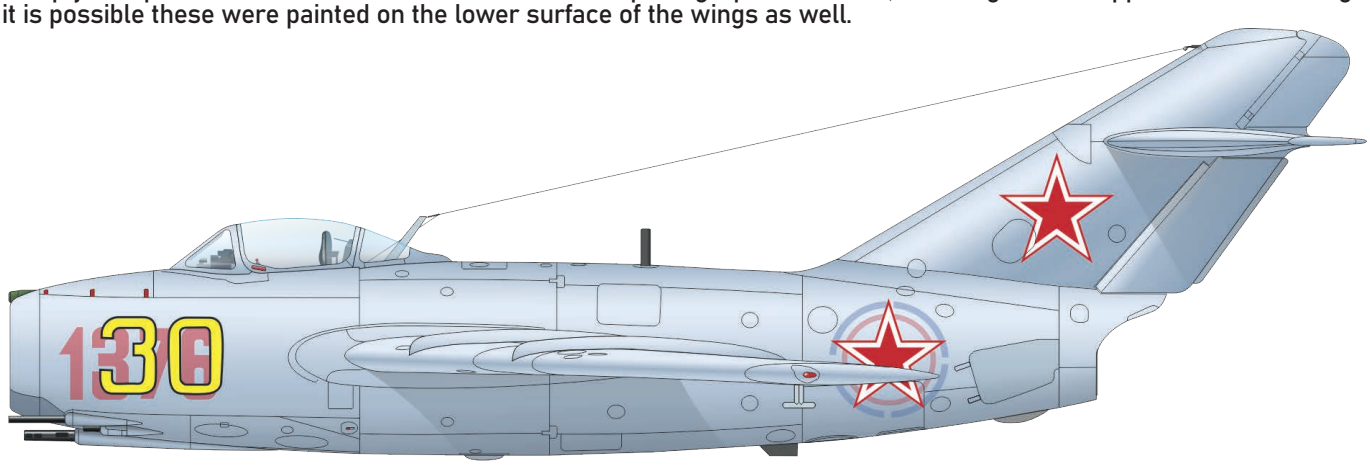
No. 20 Squadron, Egypt., Late 1950s / Early 1960s

Egypt purchased a total of 110 MiG-15bis aircraft from Czechoslovakia. This particular one served with No. 20 Squadron of the United Arab Republic Air Force. The United Arab republic was a federation of Egypt and Syria that lasted from 1958 to 1961. Egypt kept this name untill 1971. No. 20 Squadron was based at Deversoir, El Qabrit and Inshas air bases.



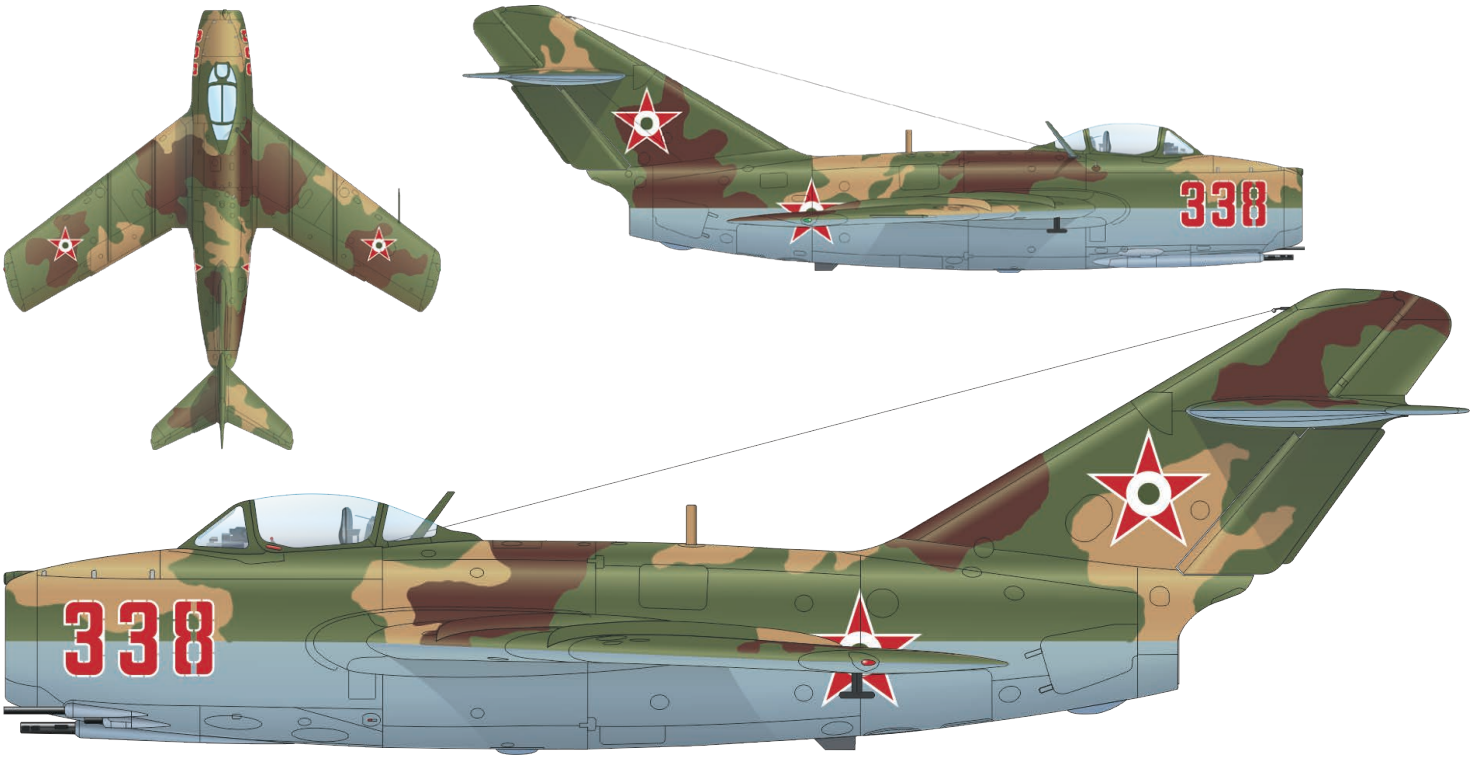
c/n 1315376, ex 64th IAK, Soviet Union, Mid 1950s

This aircraft took part in the Korean War – the communist attempt to occupy the entire Korean peninsula. At the time it was marked with red number 1976 on its fuselage. Back in the USSR, the number was simply overpainted with the yellow 30, as well as the fading North Korean insignia was freshly overpainted. As the North Korean national insignia was simply an extension of the Soviet red star, removing the white outline and adding the red and blue circles, only these circles (rather faded) were visible. The original star was simply overpainted with fresh outlined one. Based on photographic evidence, the insignia was applied on the fuselage only, but it is possible these were painted on the lower surface of the wings as well.



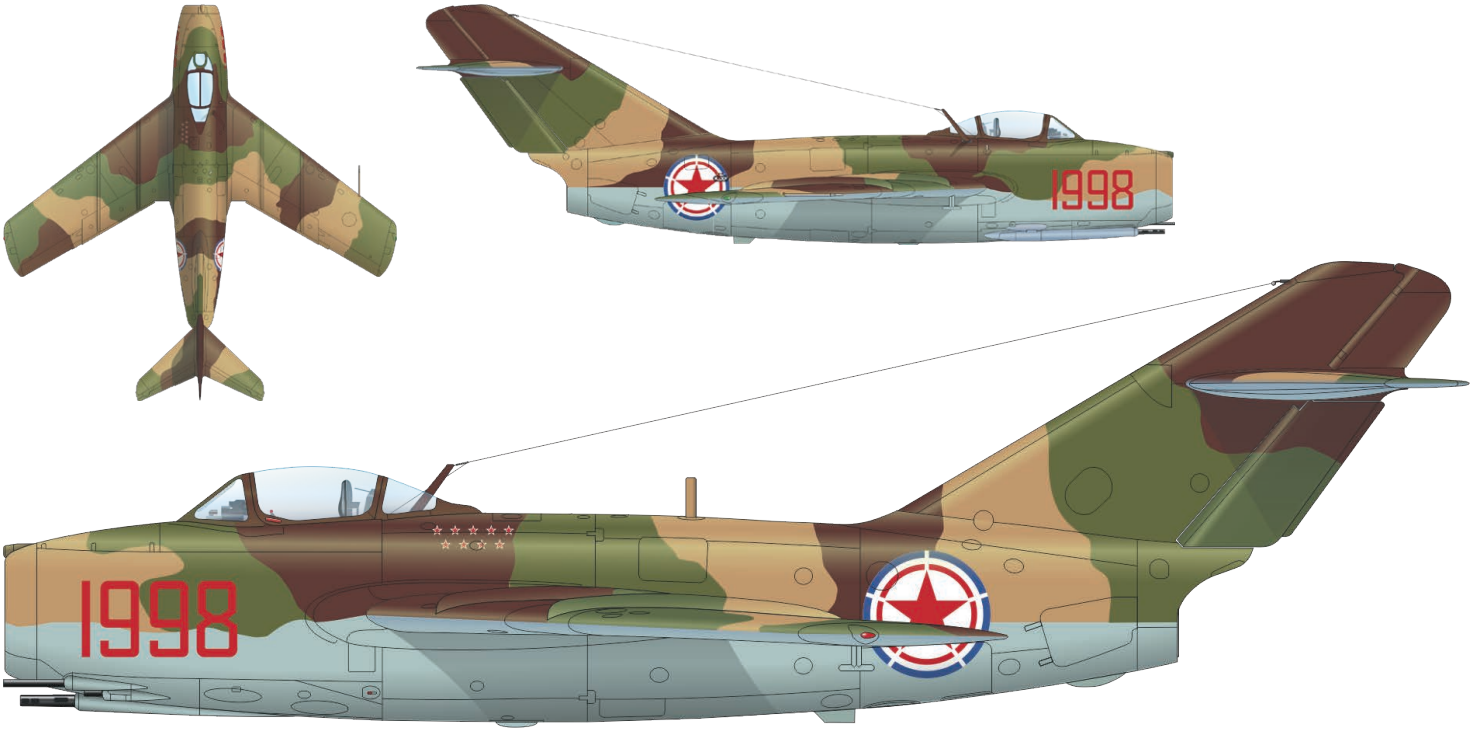
c/n 0320138, 1st Squadron, 101st Reconnaissance Regiment, Szolnok, Hungary, 1972

This MiG was delivered together with another 29 aircraft in April 1962. These originally served with the Soviet Air Force and after the overhaul were supplied in the natural metal finish to Hungary. During the overhaul the aircraft c/n 0320138 had the upgraded wing installed featuring the landing light located at the left wheel well. The light was later covered with a sheet aluminum.
In August 1968 this particular airplane participated in the Warsaw Pact armed forces invasion (except Romania and Albania) to, at that time, Czechoslovakia. Before the invasion it was marked with the red stripes which were later deleted. In March 1970 the aircraft was overpainted in the camouflage colors including all stencils. In September 1975 the airframe was struck off charge having logged 1535 flight hours and was abandoned at the Szolnok airbase.



Maj. Mikhail Ivanovich Mikhin, 518th IAP, North Korea, May 1953

Mikhail Mikhin was born on October 25th, 1923 and right after the graduation from the high school he started his pilot training finishing it in the end of 1944. He did not manage to participate in any combat during the World War Two, however he participated in the air combat over Korea where he was deployed in July 1952 with the entire 518th IAP. The unit remained in the combat zone until the end of hostilities, Major Mikhin shot down 9 enemy aircraft in total (7 x F-86, 2 x F-84) for which accomplishment he was awarded the title Hero of the Soviet Union on July 14, 1953. He remained in the active service of the Red Army Air Force after the Korean War and retired with the rank of Major General in 1980. He passed away on March 25, 2007 in St. Petersburg.

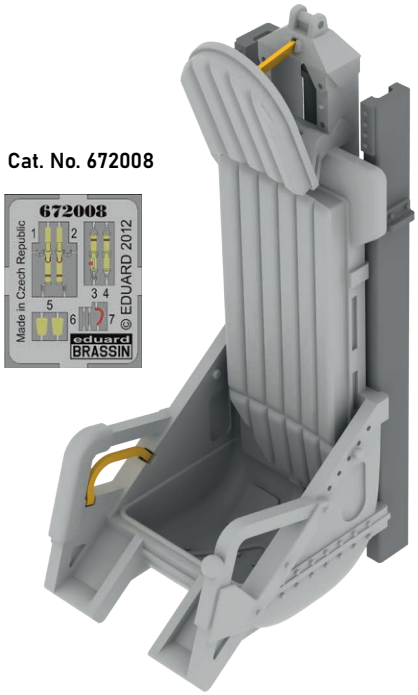


Recommended for MiG-15bis

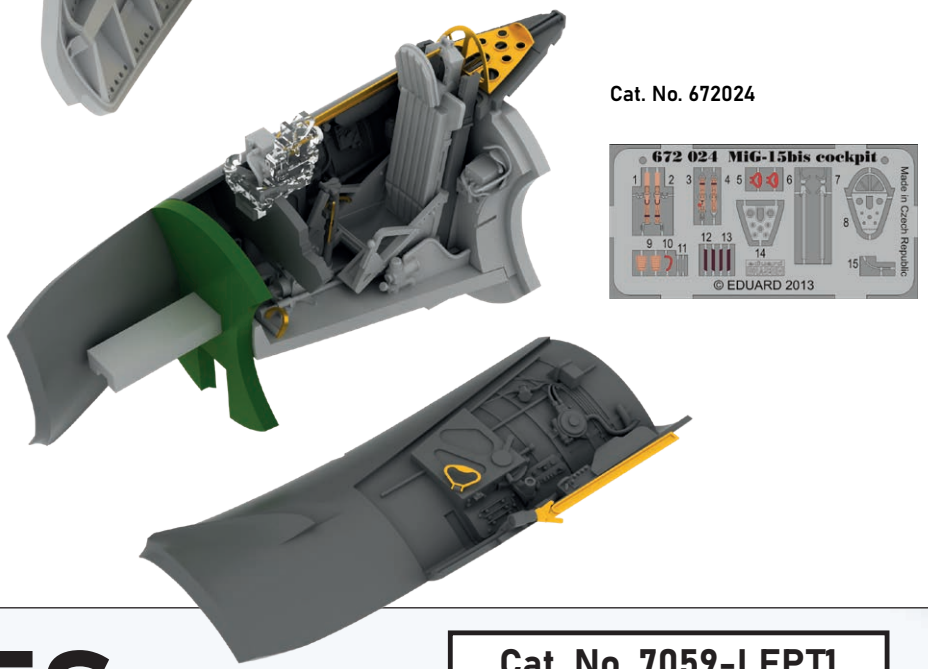
72574	MiG-15 landing flaps (PE-Set)
72575	MiG-15/MiG-15bis exterior (PE-Set)
672007	MiG-15 wheels (Brassin)
672008	MiG-15 ejection seat (Brassin)
672020	MiG-15bis airbrakes (Brassin)
672024	MiG-15bis cockpit (Brassin)
D72007	MiG-15 / MiG-15bis stencils (Mask)

Cat. No. 672020

Cat. No. 672008



Cat. No. 672024



OVERTREES

MiG-15bis

1/72

Cat. No. 7059X

Product page

Cat. No. 7059-LEPT1

Product page

WEEKEND edition

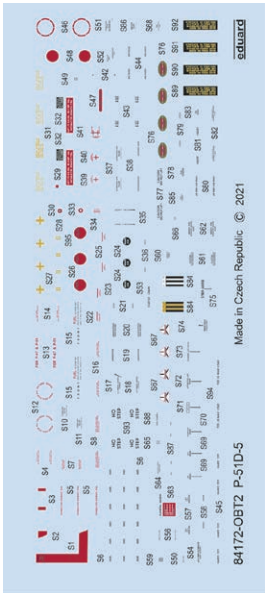
P-51D-5 Mustang

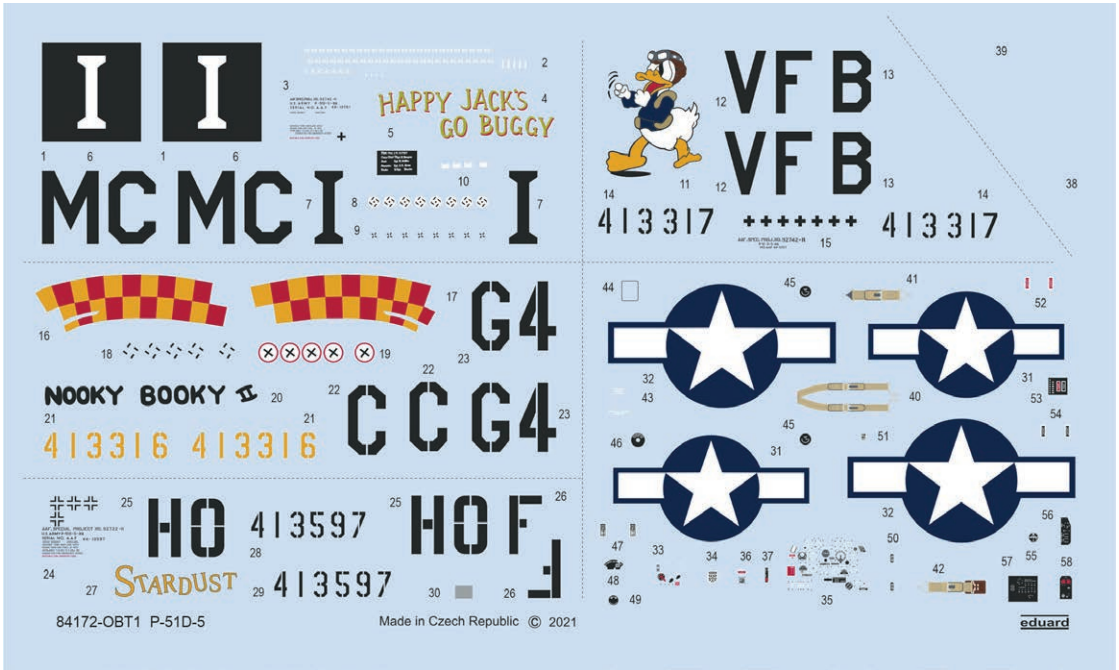
1/48 Cat. No. 84172

Re-release

- Plastic parts Eduard
- 4 markings

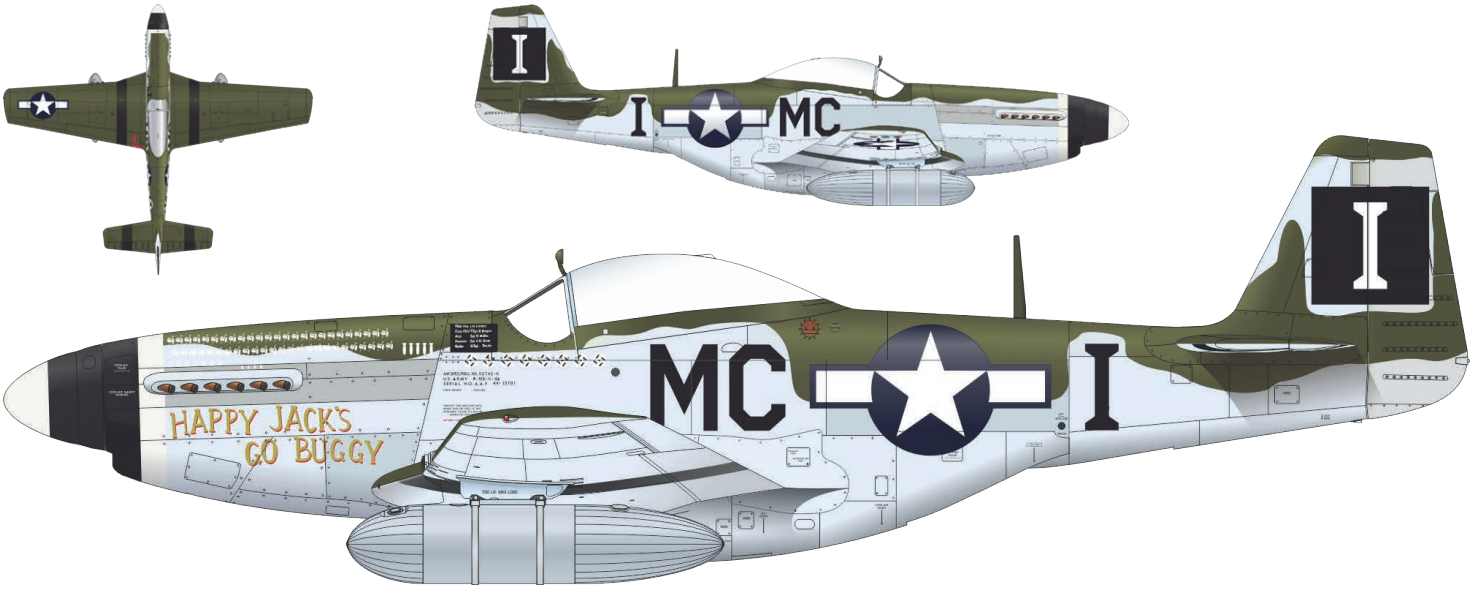
Product page





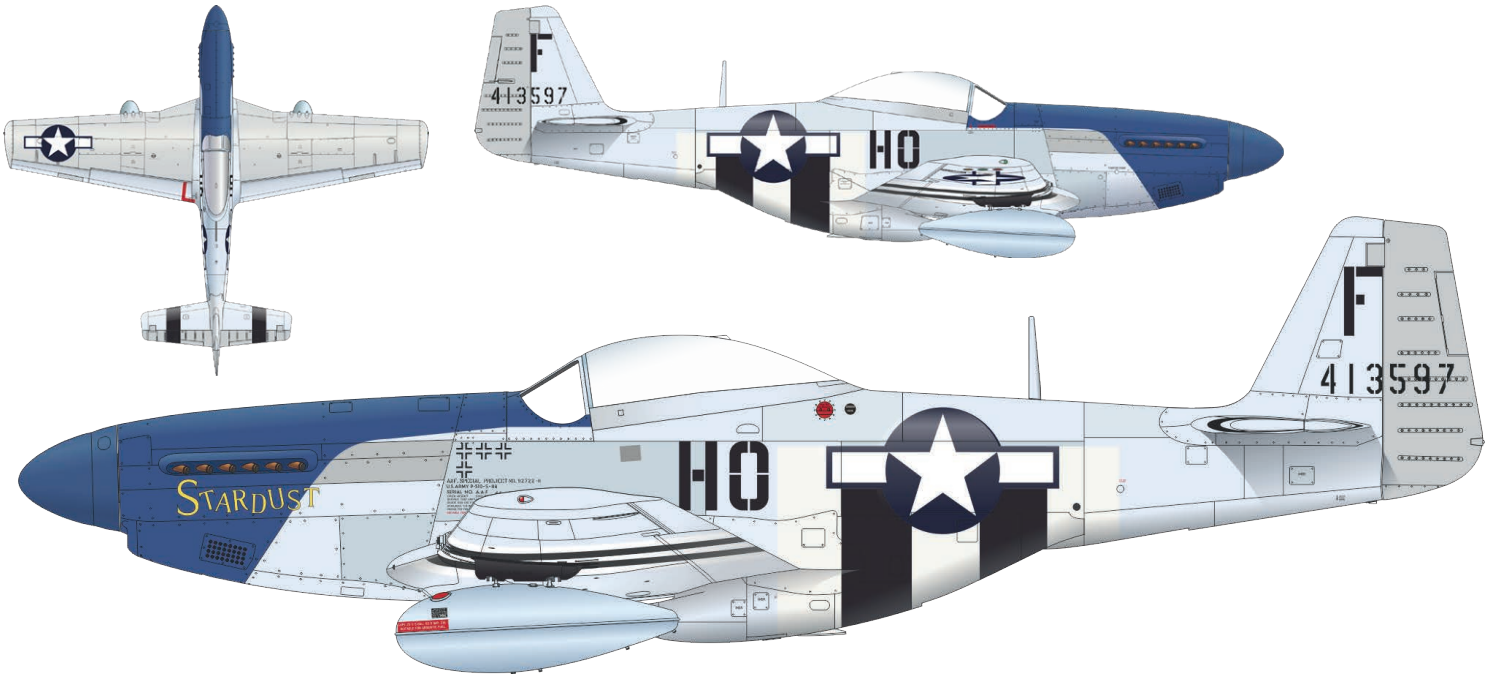
44-13761, flown by Capt. Jack M. Ilfrey, 79th FS, 20th FG, 8th AF, USAAF Station 367 Kings Cliffe, Northamptonshire, Great Britain, Autumn 1944

Captain Jack Ilfrey became an ace in North Africa, where he claimed 5½ kills (and 2 damaged) while flying P-38F "Texas Terror". He joined 20th FG, 79th FS at USAAF Station Kings Cliffe in England on April 20, 1944, serving as Ops Officer from June 14, 1944. He claimed two more Bf 109Gs on May 24, flying P-38J "Happy Jack´s go Buggy". He was shot down behind enemy lines in France on June 12, but he successfully evaded capture walking and cycling 150 miles to Allied lines in Normandy with help of French civilians. He became 79th FS CO on September 7, leading the unit until December 9, 1944. He completed 142 combat missions over ETO and MTO. The 20th FG did not replace their P-38Js with P-51Cs until July 1944, changing them for P-51Ds shortly afterwards. The early Mustangs of the 20th FG are known to have upper surfaces overpainted with green color, probably with RAF Dark Green, with irregular splitting line between green upper surfaces and silver/natural metal bottom surfaces. The 20th FG was nicknamed "Loco Busters" because made significant number of attacks against railroad network.



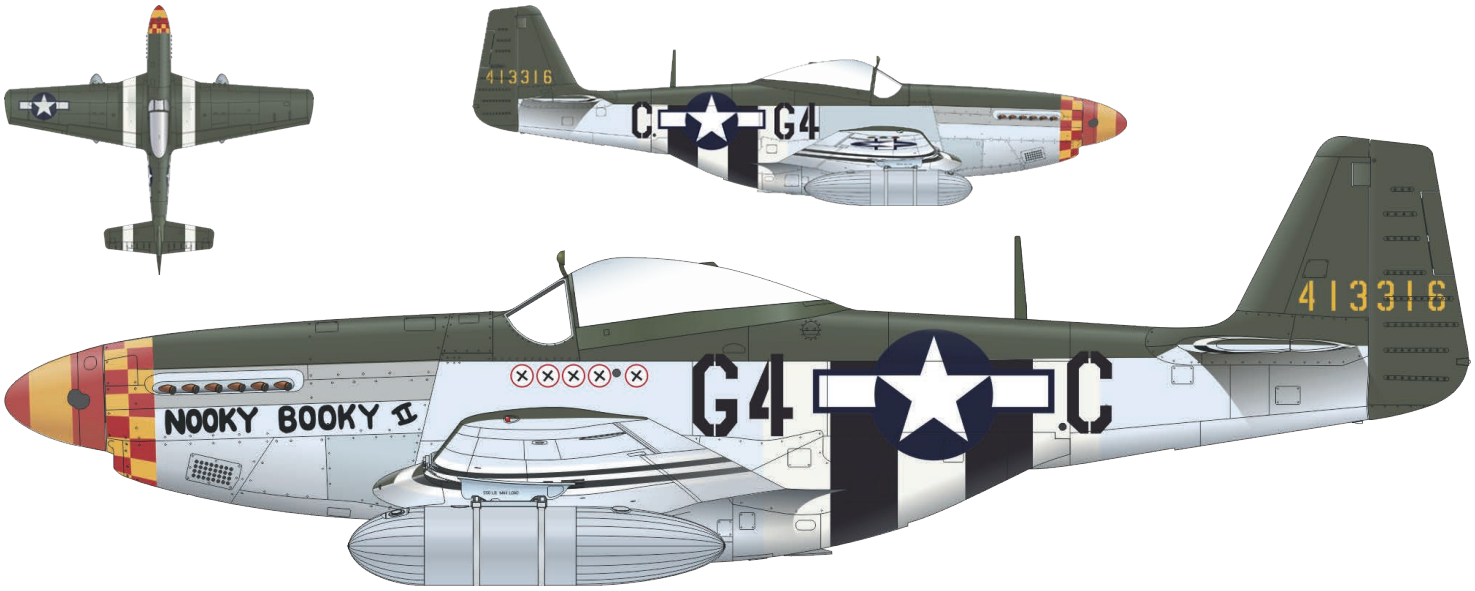
44-13597, flown by Lt. William E. Fowler, 487th FS, 352nd FG, 8th AF, USAAF Station 141 Bodney, Norfolk, Great Britain, September 1944

Lt. Col. John C. Meyer, acting CO of the 487th FS and the ace credited with 37½ destroyed enemy aircraft, claimed four of his 24 aerial victories in cockpit of this mount on September 11, 1944. Stardust was originally a personal aircraft of Lt. William E. Fowler, nicknamed „Flaps", who ended his combat tour just three days before Meyer´s four-victory raid. The Stardust was than assigned to Lt. Jack „Moose" Landrum, who renamed it „Moose". He was shot down and killed on October 24, 1944, while strafing at Hannover. The 352nd Fighter Group, based at USAAF Station Bodney, was fourth most successful FG of the 8th USAAF with 519 enemy planes destroyed in the air and 287 on the ground, with 119 losses of their own. All three squadrons painted noses of their Mustangs with blue colour. In September 1944, the paint of the noses was changed from Medium Blue to the Dark Blue, which remained the Group´s color until end of the War. Note the light area over the fuselage national insignia of the Stardust, which is clear natural metal surface after the washing of the invasion stripes on the upper surfaces including the upper surfaces of the wings.



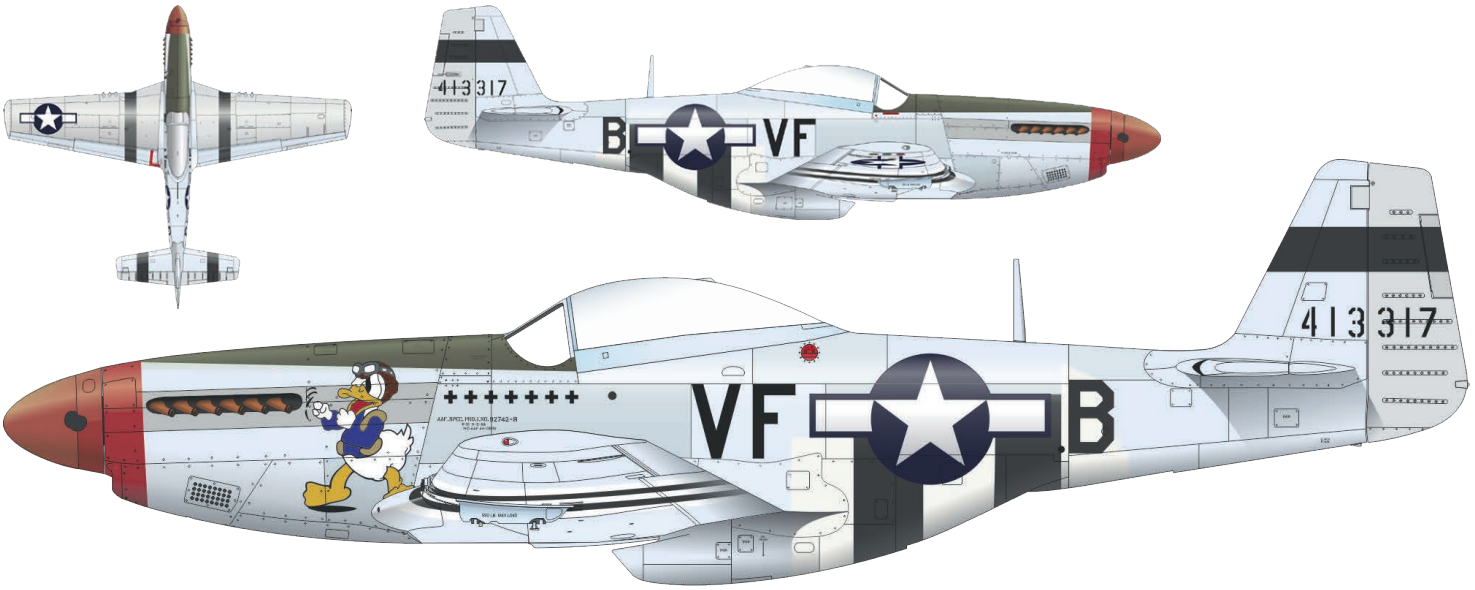
44-13316, flown by Leonard K. Carson, 362nd FS, 357th FG, 8th AF, USAAF Station 373 Leiston, Suffolk, Great Britain, June 1944

The second top scoring Fighter Group of the 8th USAAF and the top scoring FG equipped with P-51D Mustangs was 357nd FG, credited with 609 German aircraft destroyed in the air and 106 on the ground, with their own losses of 128 aircraft. The unit had 35 aces, led by Major Leonard „Kit" Carson with 18½ aerial victories. He became 362nd FS CO on April 8, 1945. The key to the success of the unit was its fighting academy, called Clobber College, where the experienced pilots taught the newcomers the fighting tactics. The 362nd FS received their P-51Ds just a few days before D-day. Most of the unit´s early Mustangs had upper surfaces camouflaged Dark Green with Neutral Grey bottom surfaces, or Dark Green upper surfaces over the aluminium/natural metal bottom surfaces with narrow border between green and NMF surfaces high on fuselage sides. The colors were probably RAF paints overtaken from RAF stock. The "Nooky Booky II" wears full D-day stripes, as the aircraft was delivered to the unit probably around June 6, 1944. The previous name of this plane was "Mildred".



44-13317, flown by Capt. Donald R. Emerson, 336th FS, 4th FG, 8th AF, USAAF Station 356 Debden, Essex, Great Britain, September 1944

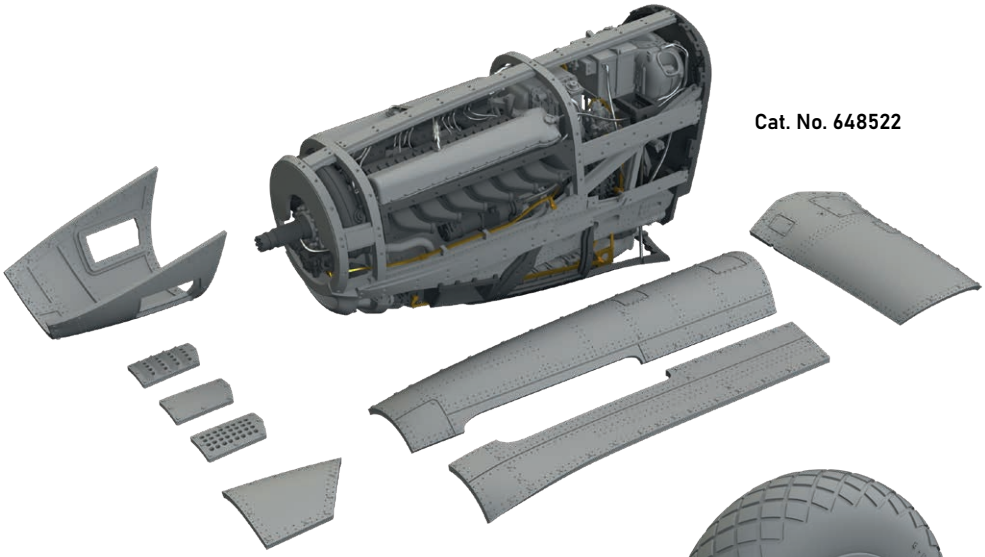
The 4th FG was nicknamed Debden Eagles thanks to its home base and origins, as it was formed from RAF Eagle squadron (71st, 121st and 133rd squadrons). After the incorporation into 8th AF the squadrons were re-named to 334th FS, 335th FS and 336th FS. As of April 1, 1943 their Spitfires were replaced by P-47s and in February 1944 these were changed for P-51s. Donald Emerson joined the ranks of 4th Fighter Group on March 9, 1944 and during the following eight months of duty he flew 89 sorties during which he was credited with 4½ enemy aircraft shot down. On December 25, 1944 he perished returning from the bomber escort mission when he spotted six Bf 109s. During the ensuing combat he descended close to the terrain and was hit by the anti-aircraft fire over the front. Pilot was probably killed, and his aircraft crashed nearby the town of Sittard in The Netherlands. However, he had managed to shoot down two of his opponents. Capt. Emerson had the fuselage port side of his Mustang decorated with boxing Donald Duck in resemblance to his first name. There are seven kill markings painted under the windshield. From the beginning of September, the invasion stripes on the upper wings and fuselage sides surfaces of the allied aircraft were deleted and left on the lower surfaces only.



Recommended for P-51D-5

FE1021	P-51D seatbelts STEEL (PE-Set)
648485	P-51D exhaust stacks (Brassin)
648486	P-51D exhaust stacks w/ fairing (Brassin)
648487	P-51D Hamilton Standard propeller (Brassin)
648494	P-51D wheels diamond tread (Brassin)
648495	P-51D undercarriage legs BRONZE (Brassin)
648503	P-51D wheels oval tread (Brassin)
648504	P-51D wheels cross tread (Brassin)
648505	P-51D wheels block tread (Brassin)
648511	P-51D wheels diamond tread 2 (Brassin)
648512	P-51D wheels rhomboid treat (Brassin)
648513	P-51D wheels pointed cross tread (Brassin)
648514	P-51D wheels grooved (Brassin)
648517	P-51D gun bays (Brassin)
648522	P-51D cockpit (Brassin)
648555	P-51D engine (Brassin)
648570	P-51D gun sights (Brassin)
648571	P-51D 75gal drop tanks (Brassin)
648572	P-51D 108gal drop tanks (Brassin)
SIN64865	P-51D ESSENTIAL (Brassin)
SIN64869	P-51D ADVANCED (Brassin)
D48033	P-51D national insignia (Decal Set)
D48034	P-51D stencils (Decal Set)
EX663	P-51D TFace (Mask)

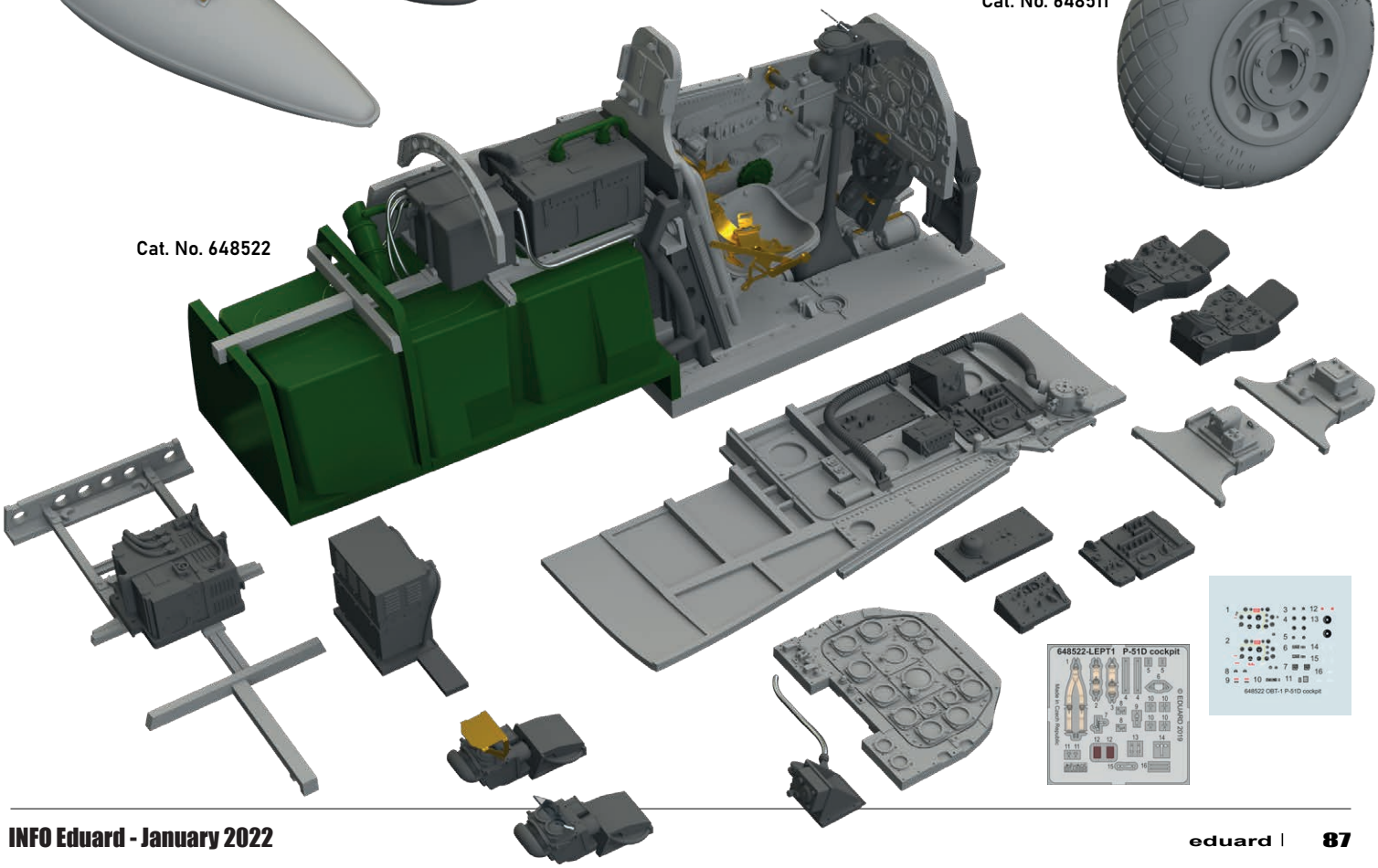
Cat. No. 648495



Cat. No. 648522

Cat. No. 648571

Cat. No. 648511



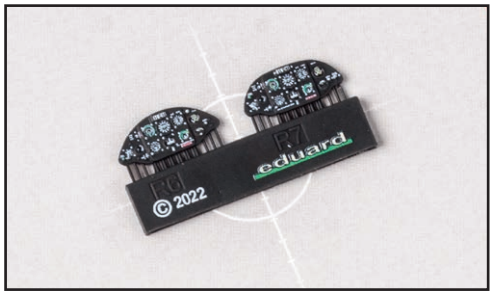
Cat. No. 648522

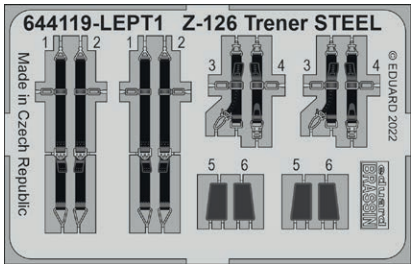
644119
Z-126 Trener LööK
1/48 Eduard

LööK set - Brassin pre-painted dashboard
and STEEL seatbelts for Z-126 Trener in 1/48 scale.
Easy to assemble, replaces plastic parts.
Recommended kit: Eduard

Set contains:
- resin: 2 parts
- decals: no
- photo-etched details: yes
  pre-painted
- painting mask: no

Product page



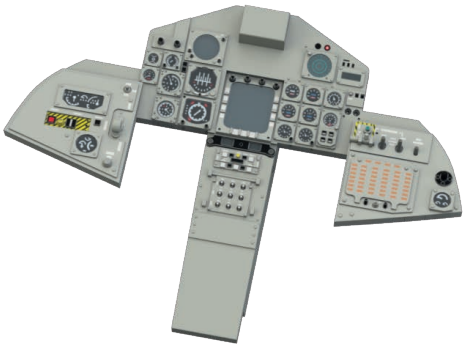


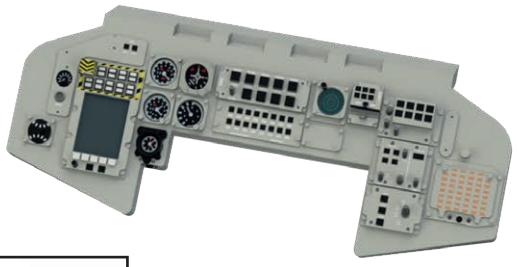
644136
Tornado ECR LööK
1/48 Eduard/Revell

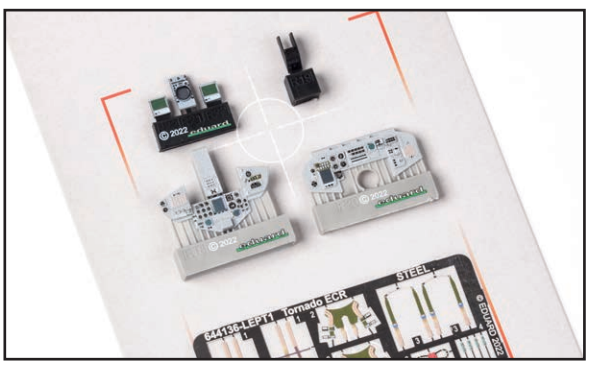
LööK set - Brassin pre-painted dashboard and
STEEL seatbelts for Tornado ECR in 1/48 scale.
Easy to assemble, replaces plastic parts.
Recommended kit: Eduard / Revell

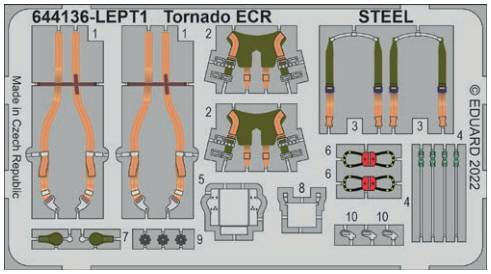
Set contains:
- resin: 6 parts
- decals: no
- photo-etched details: yes, pre-painted
- painting mask: no

Product page







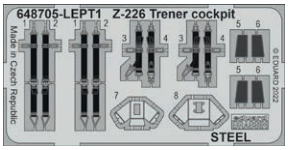


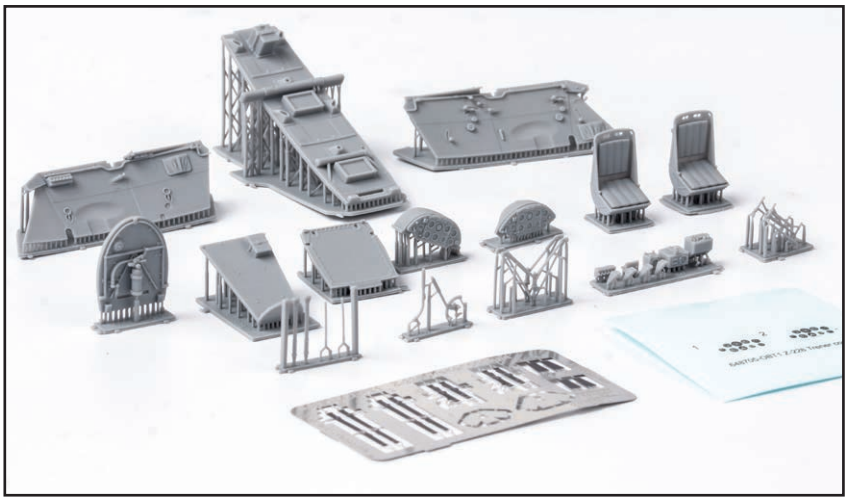
648705
Z-226 Trener cockpit PRINT
1/48 Eduard

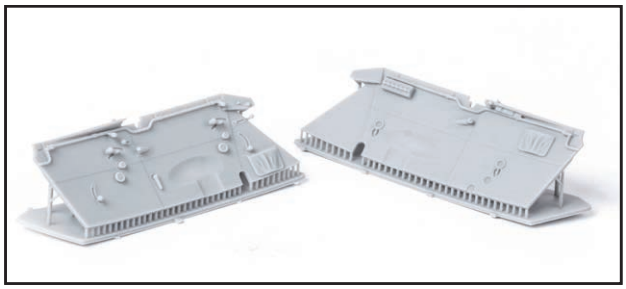
Product page

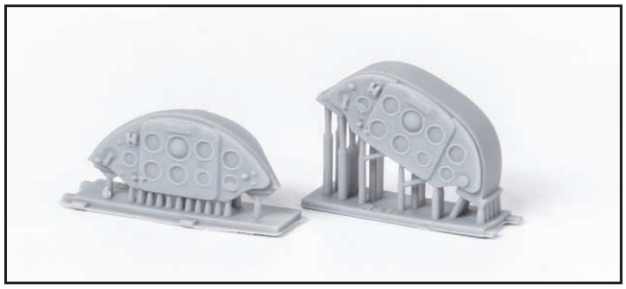
Brassin set - cockpit for Z-226 Trener in 1/48 scale. Made by direct 3D printing.
Recommended kit: Eduard

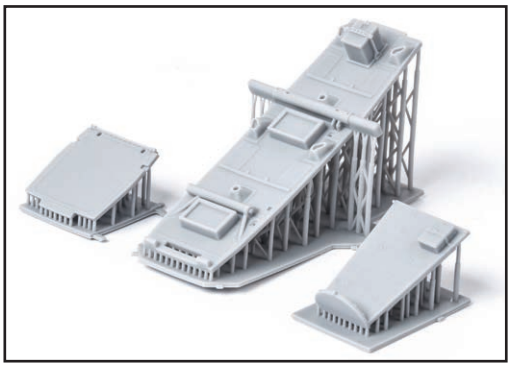
Set contains:
- 3D print: 20 part
- resin: 13 parts
- decals: yes
- photo-etched details: yes, pre-painted
- painting mask: no

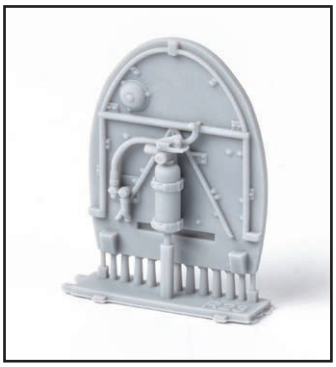










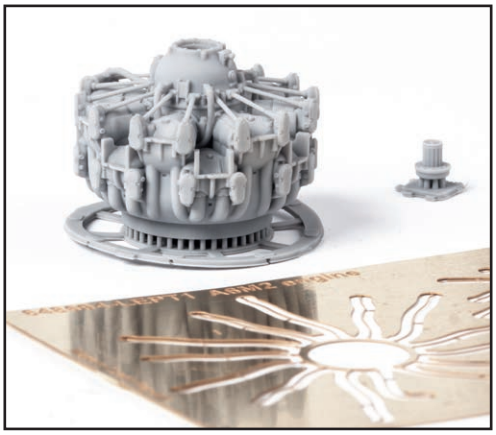


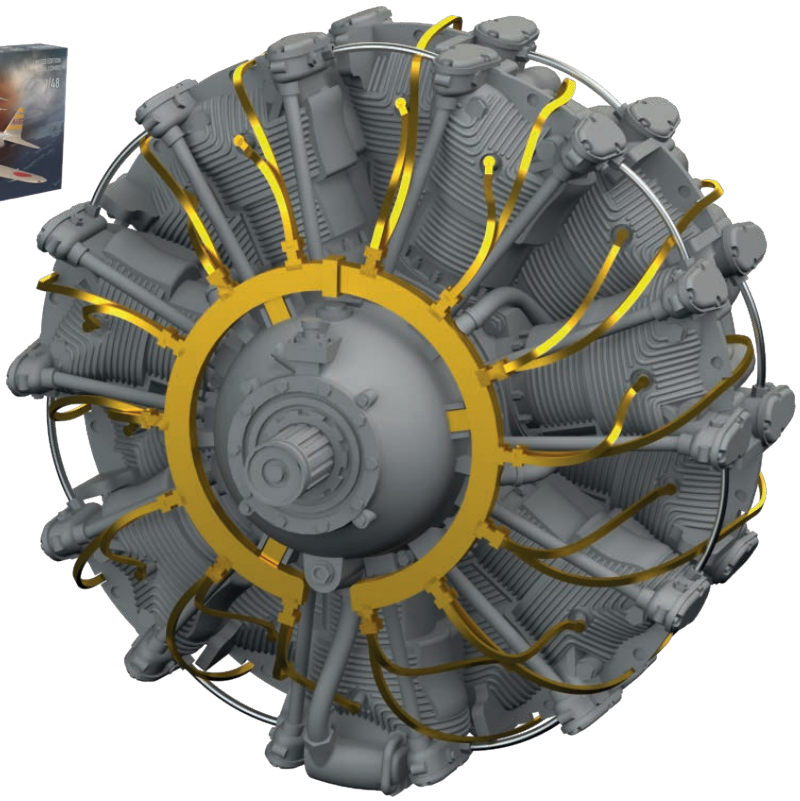
648694
A6M2 engine PRINT
1/48 Eduard

Product page

Brassin set - the engine for A6M2 in 1/48 scale. Made by direct 3D printing.
Recommended kit: Eduard

Set contains:
- 3D print: 1 part
- decals: no
- photo-etched details: yes
- painting mask: no



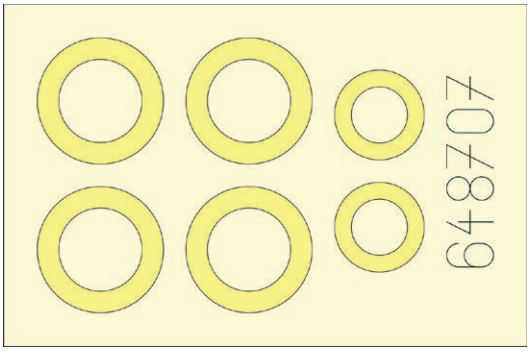


648707
F-16 wheels early
1/48 Tamiya

Brassin set - the early undercarriage wheels for F-16 in 1/48 scale. The set consists of the main wheels and a nose wheel. Easy to assemble, replaces plastic parts.
Recommended kit: Tamiya

Set contains:
- resin: 3 parts
- decals: no
- photo-etched details: no
- painting mask: yes

Product page

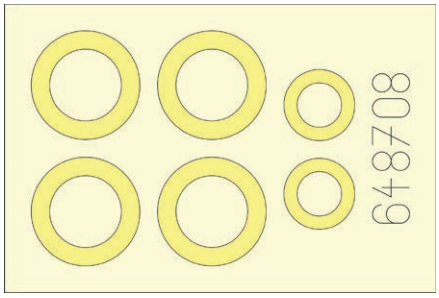


648708
F-16 wheels late
1/48 Tamiya

Brassin set - the late undercarriage wheels for F-16 in 1/48 scale. The set consists of the main wheels and a nose wheel. Easy to assemble, replaces plastic parts. Recommended kit: Tamiya

Set contains:
- resin: 3 parts
- decals: no
- photo-etched details: no
- painting mask: yes

Product page



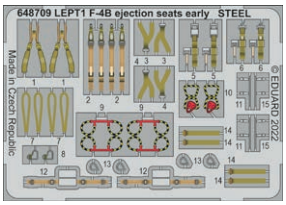
648709
F-4B ejection seat early PRINT
1/48 Tamiya

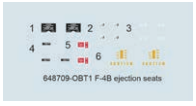
eduard BRASSIN Print

Brassin set - the ejection seats for F-4B in 1/48 scale. Made by direct 3D printing. Easy to assemble, replaces plastic parts.Recommended kit: Tamiya

Set contains:
- 3D print: 8 parts
- decals: yes
- photo-etched details: yes, pre-painted
- painting mask: no

Product page



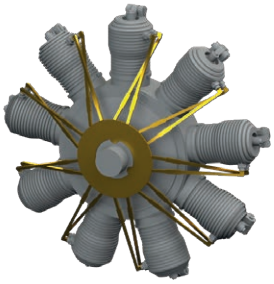


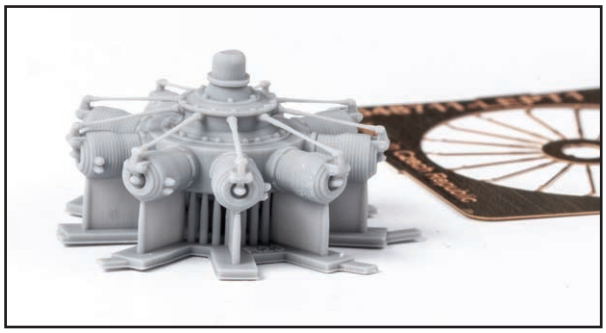
648711
Sopwith Camel Gnome engine PRINT
1/48 Eduard

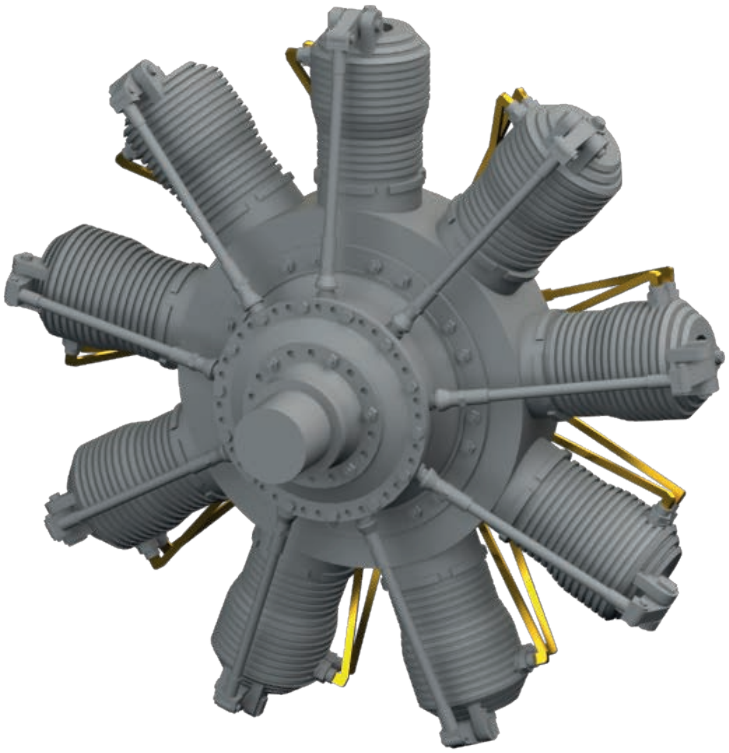
Brassin set - the engine for Sopwith Camel in 1/48 scale. Made by direct 3D printing. Easy to assemble, replaces plastic parts.
Recommended kit: Eduard

Set contains:
- 3D print: 1 part
- decals: no
- photo-etched details: yes
- painting mask: no

Product page





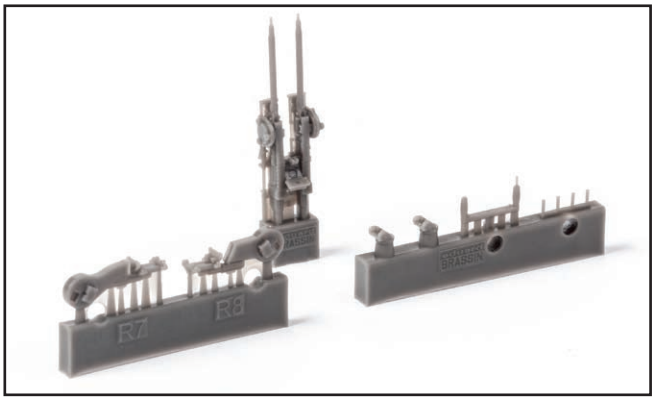


648712
SBD-5 twin machine gun
1/48 Accurate Miniatures/Revell

Brassin set - a twin machine gun for SBD-5 in 1/48 scale. Recommended kit: Accurate Miniatures / Revell / Academy

Set contains:
- resin: 8 parts
- decals: no
- photo-etched details: yes
- painting mask: no

Product page

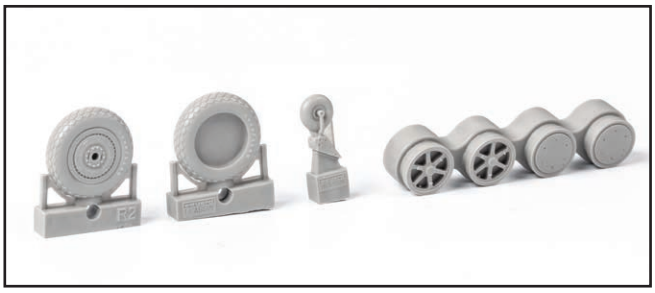


648713
SBD-5 wheels
1/48 Accurate Miniatures/Revell

Brassin set - the undercarriage wheels for SBD-5 in 1/48 scale. The set consists of the main wheels ans a tail wheel.
Easy to assemble, replaces plastic parts.
Recommended kit: Accurate Miniatures / Revell

Set contains:
- resin: 7 parts
- decals: no
- photo-etched details: no
- painting mask: yes

Product page



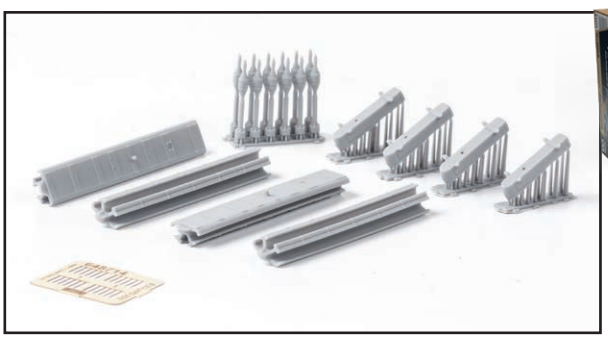
648714
Panzerschreck 1 for Fw 190F PRINT
1/48 Eduard

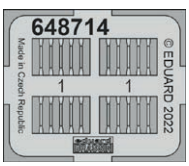
eduard BRASSIN Print

Brassin set - the Panzerschreck 1 rockets for Fw 190F in 1/48 scale. The set consists of 4 rockets and launchers. Made by direct 3D printing. Recommended kit: Eduard

Set contains:
- 3D print: 20 parts
- decals: no
- photo-etched details: yes
- painting mask: no

Product page



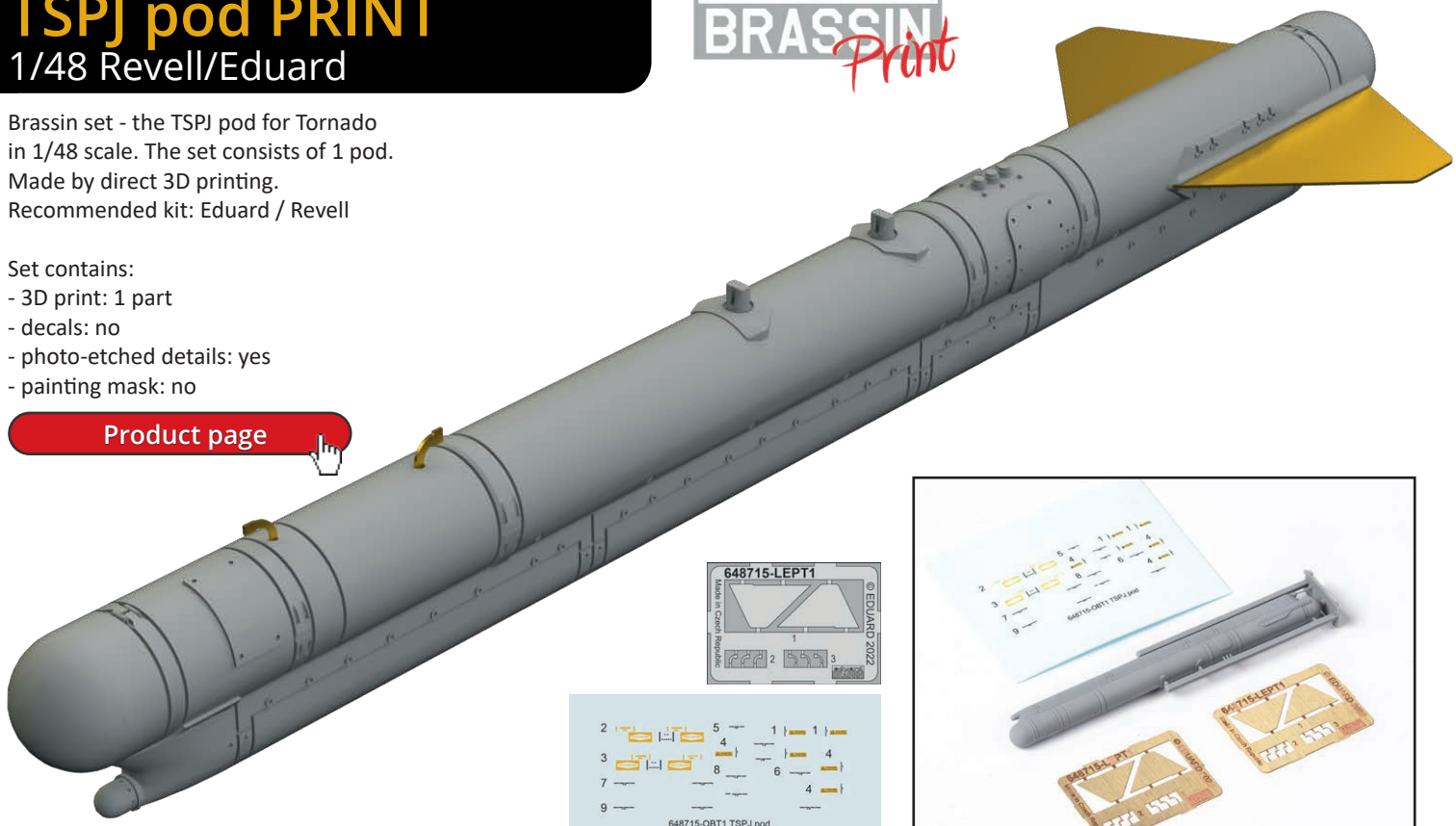


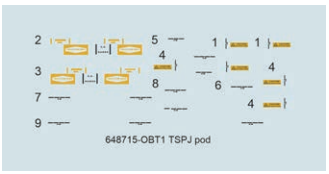
648715
TSPJ pod PRINT
1/48 Revell/Eduard

Brassin set - the TSPJ pod for Tornado
in 1/48 scale. The set consists of 1 pod.
Made by direct 3D printing.
Recommended kit: Eduard / Revell

Set contains:
- 3D print: 1 part
- decals: no
- photo-etched details: yes
- painting mask: no

Product page



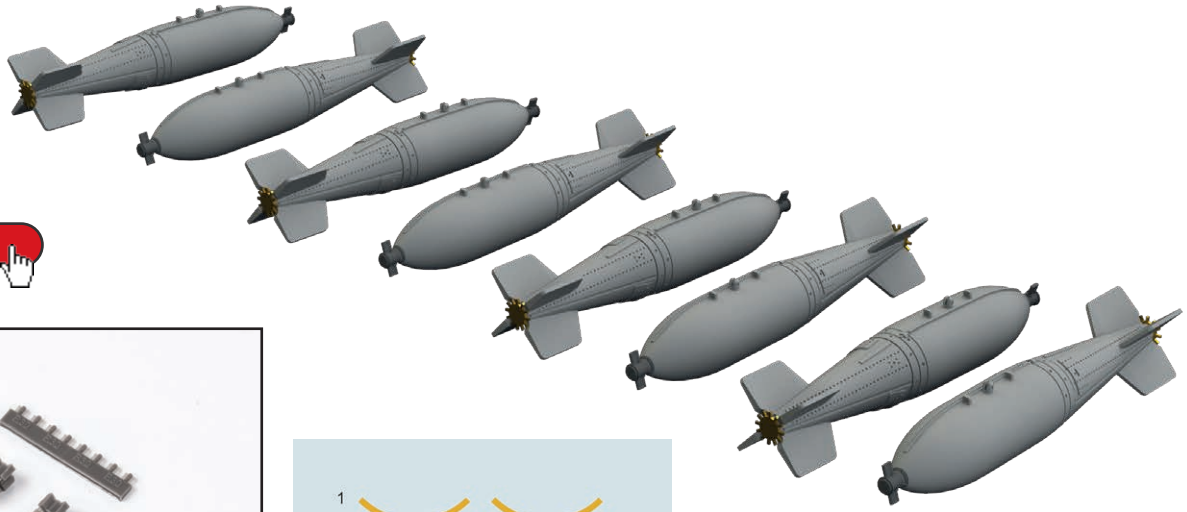


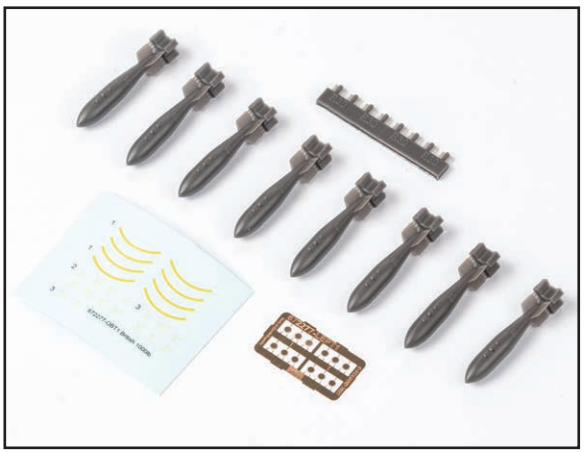
672277
British 1000lb retarded bombs
1/72

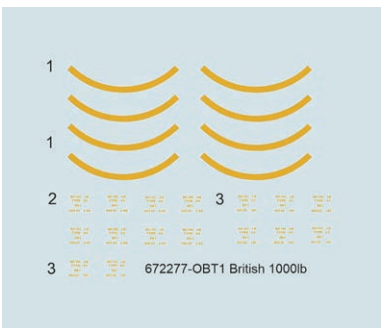
Brassin set - British 1000lb retarded bombs
in 1/72 scale. The set consists of 8 bombs.

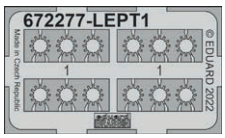
Set contains:
- resin: 16 parts
- decals: yes
- photo-etched details: yes
- painting mask: no

Product page







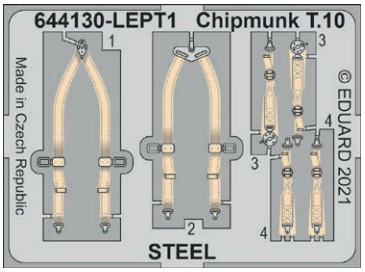


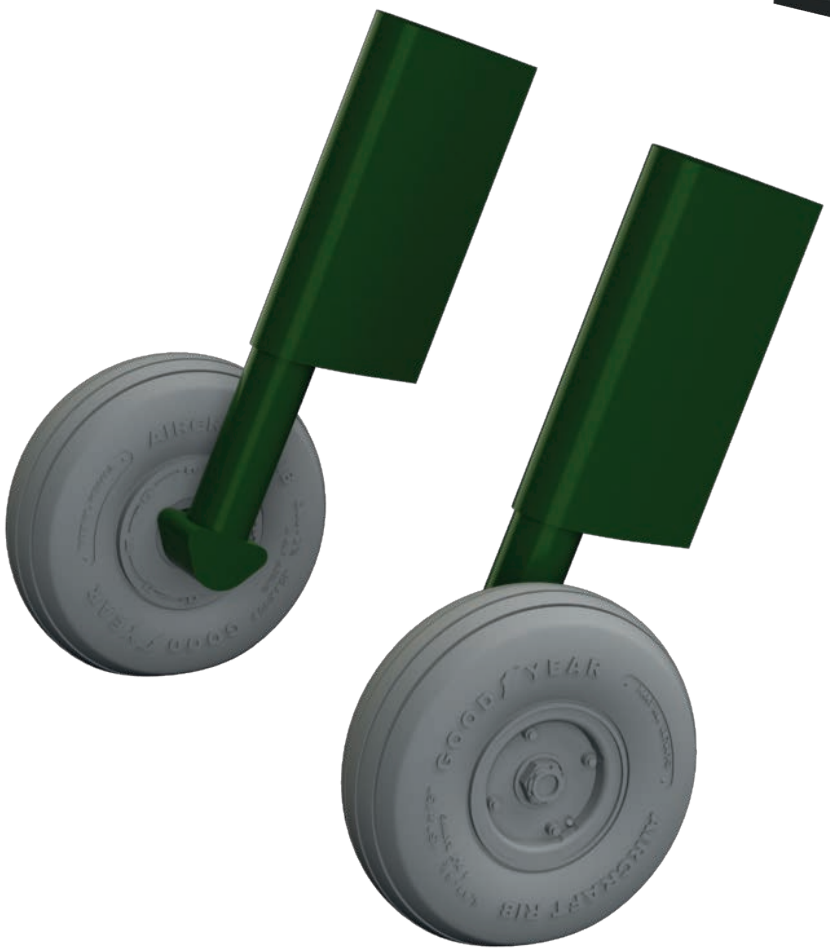
644135
Chipmunk T.10 LöökPlus
1/48 Airfix

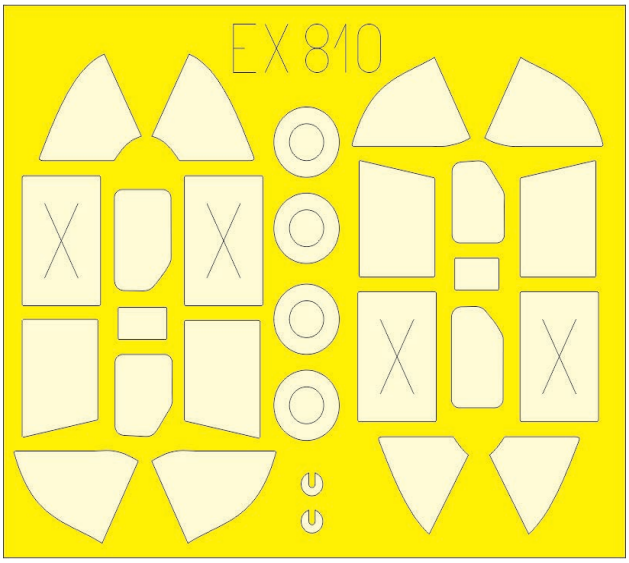
Collection of 3 sets for Chipmunk T.10 in 1/48 scale.
Recommended kit: Airfix

- LöökK set (pre-painted Brassin dashboards & Steelbelts)
- TFace painting mask
- undercarriage wheels

Product page





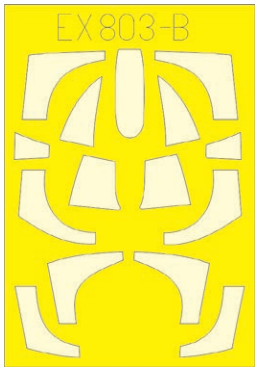


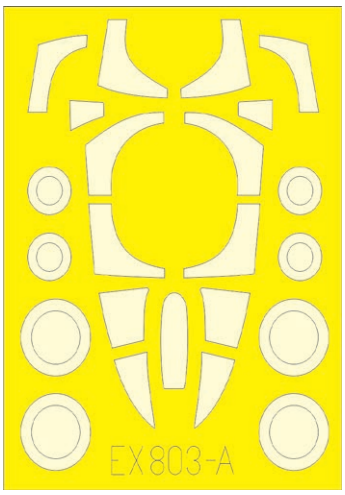
644137
F-4B LööKplus
1/48 Tamiya

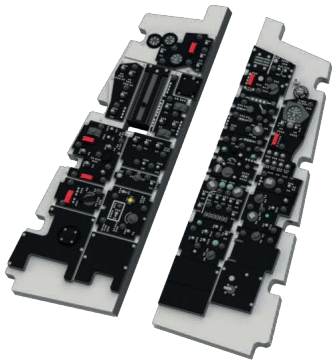
Collection of 3 sets for F-4B in 1/48 scale.
Recommended kit: Tamiya

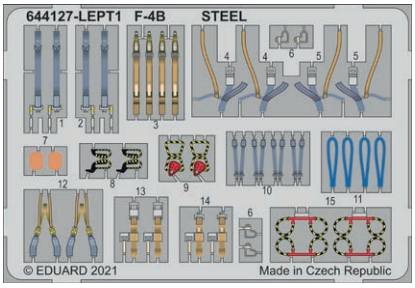
- LööK set (pre-painted Brassin dashboards & Steelbelts)
- TFace painting mask
- undercarriage wheels

Product page









SIN64878
Spitfire Mk.Va/b ESSENTIAL
1/48 Eduard

Collection of 4 sets for Spitfire Mk.Va/b in 1/48 scale.
Recommended kit: Eduard

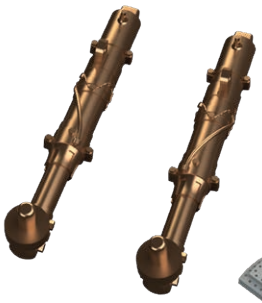
- cockpit
- undercarriage wheels
- exhaust stacks
- undercarriage legs BRONZE

All sets included in this BIG SIN are available separately, but with every BIG SIN set you save up to 30%.

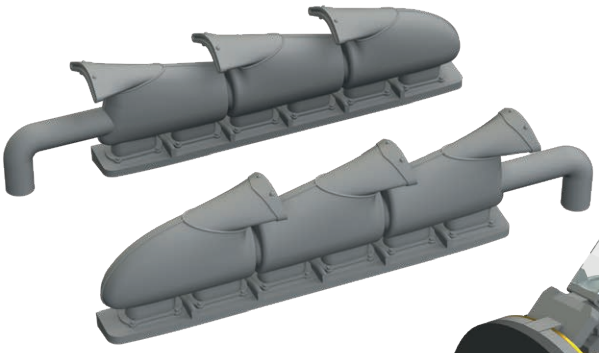
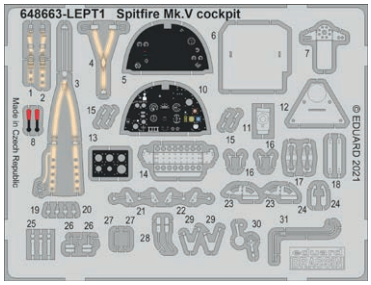
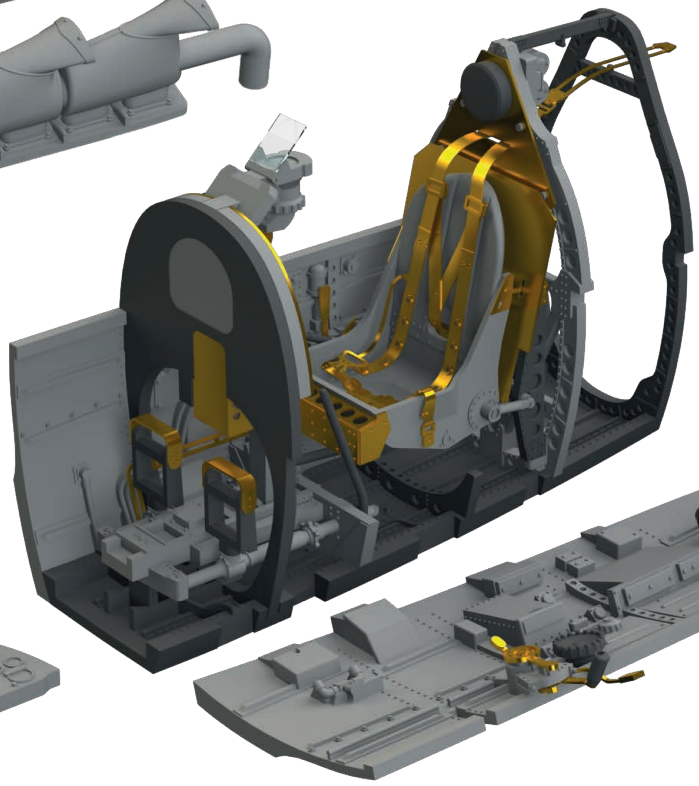
Product page







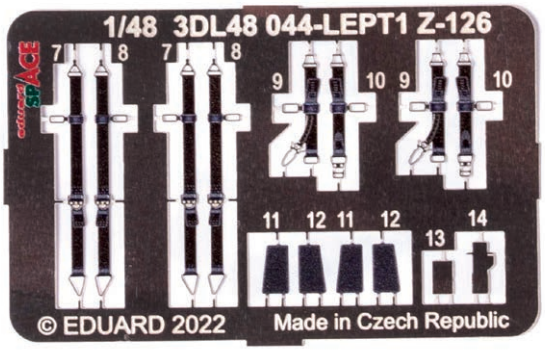



3DL48044 Z-126 SPACE

1/48 Eduard

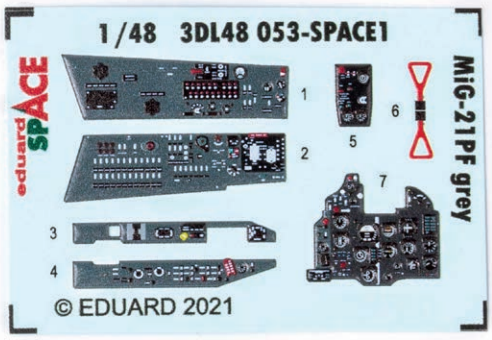
Product page

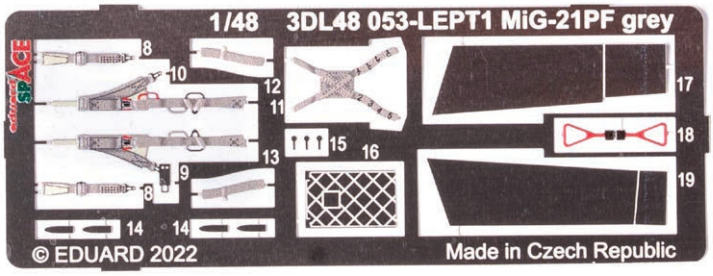


3DL48053 MiG-21PF grey SPACE

1/48 Eduard

Product page

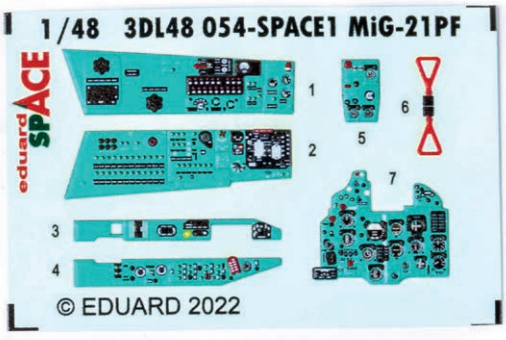


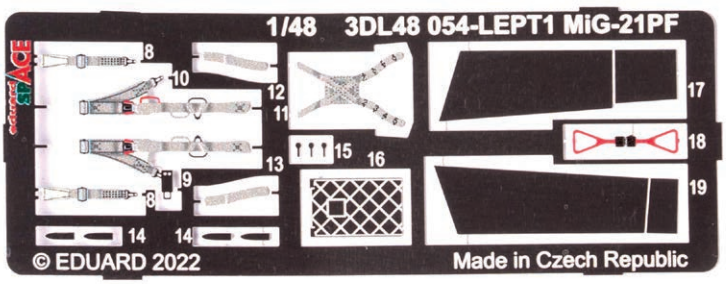


3DL48054 MiG-21PF SPACE

1/48 Eduard

Product page

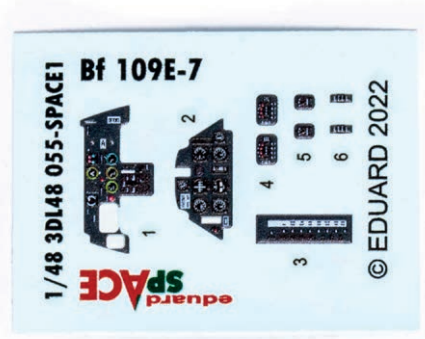


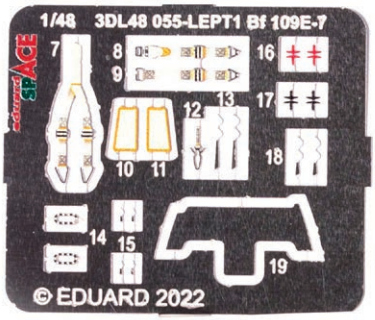


3DL48055 Bf 109E-7 SPACE

1/48

Product page

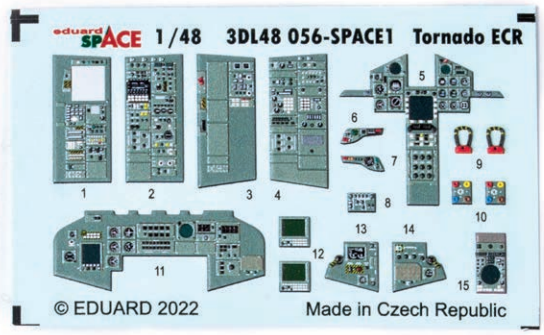


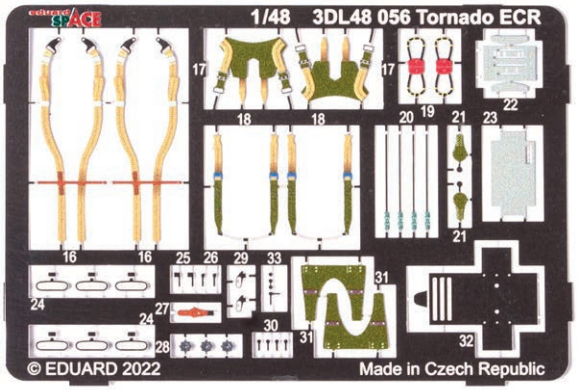


3DL48056 Tornado ECR SPACE

1/48 Eduard/Revell

Product page

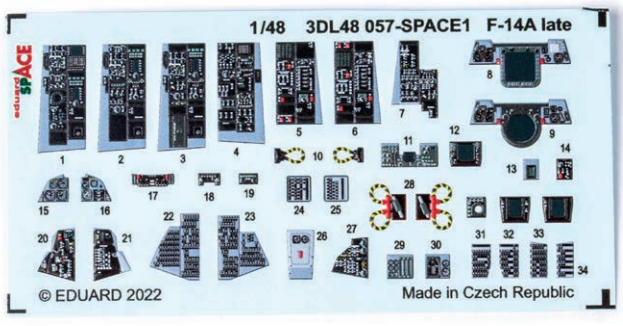


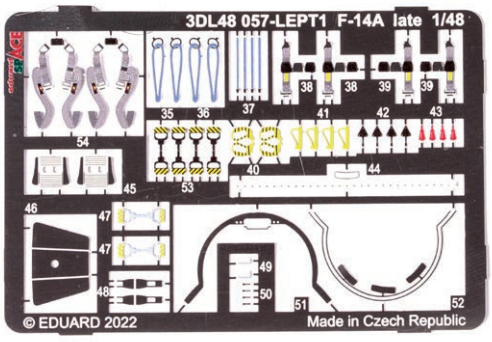


3DL48057 F-14A late SPACE

1/48 Tamiya

Product page





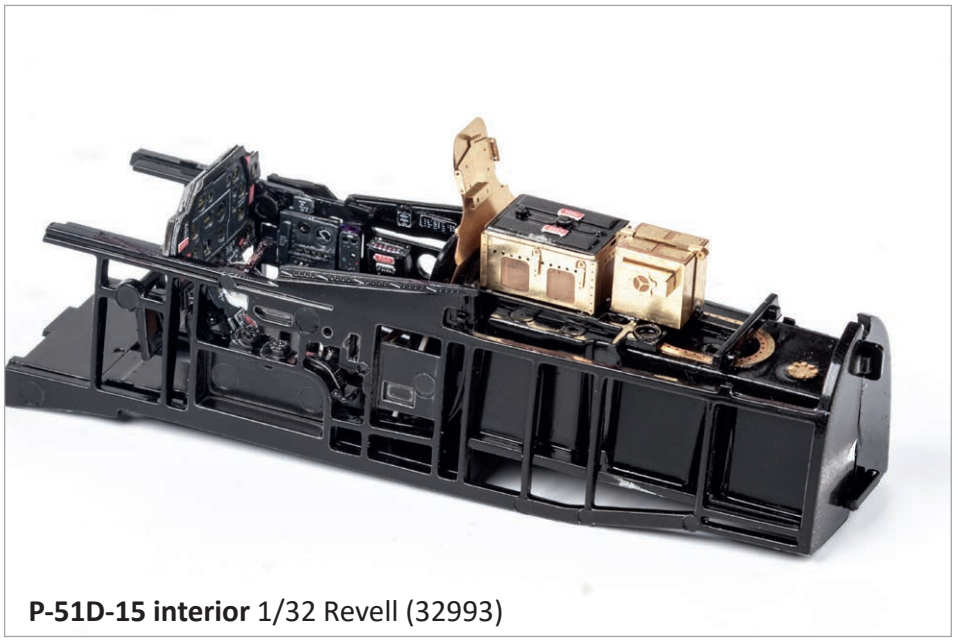
P-51D-15 1/32 Revell

P-51D-15 exterior 1/32 Revell (32475)
P-51D-15 interior 1/32 Revell (32993)
P-51D-15 1/32 Revell

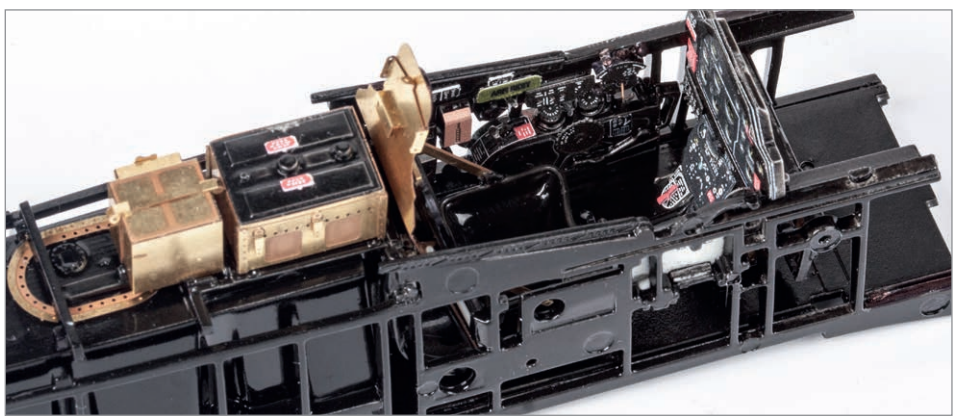
P-51D-15 1/32 Revell (32475)

P-51D-15 interior 1/32 Revell (32993)

P-51D-15 1/32 Revell (33292)

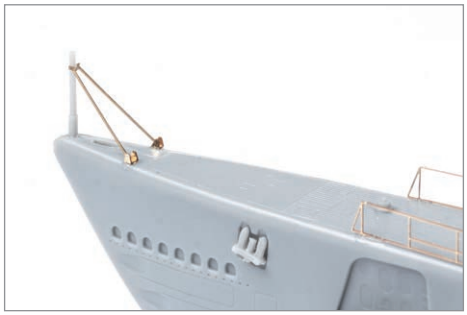


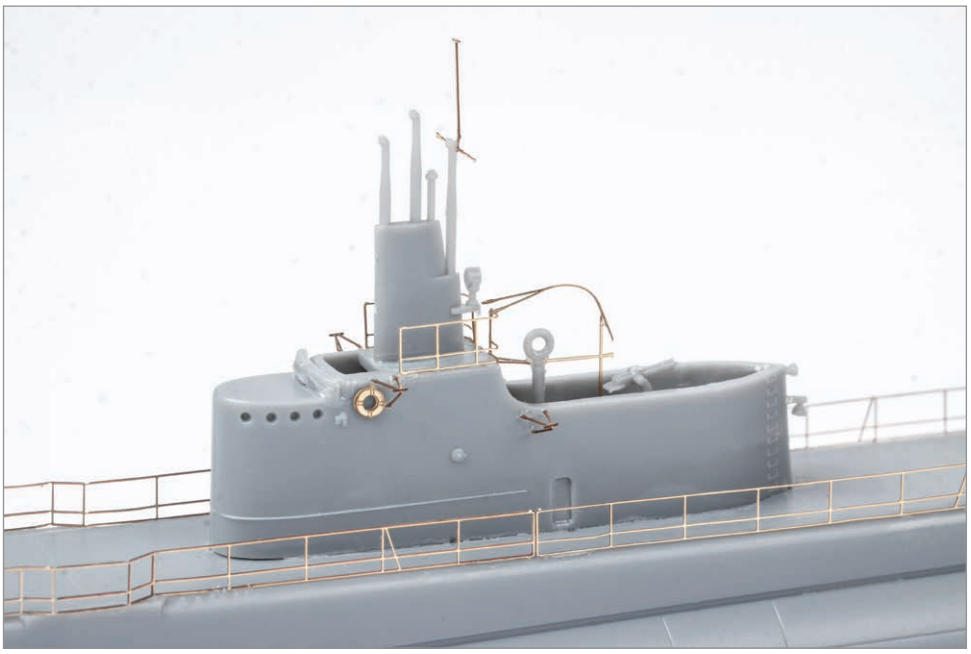
P-51D-15 interior 1/32 Revell (32993)

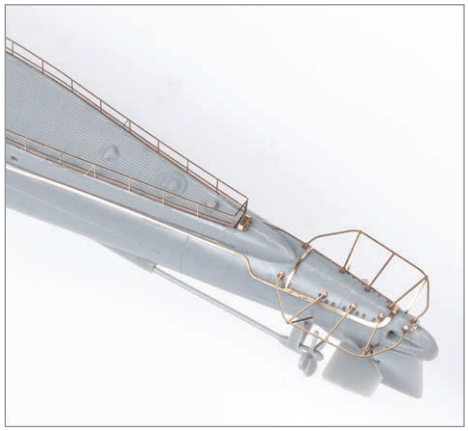


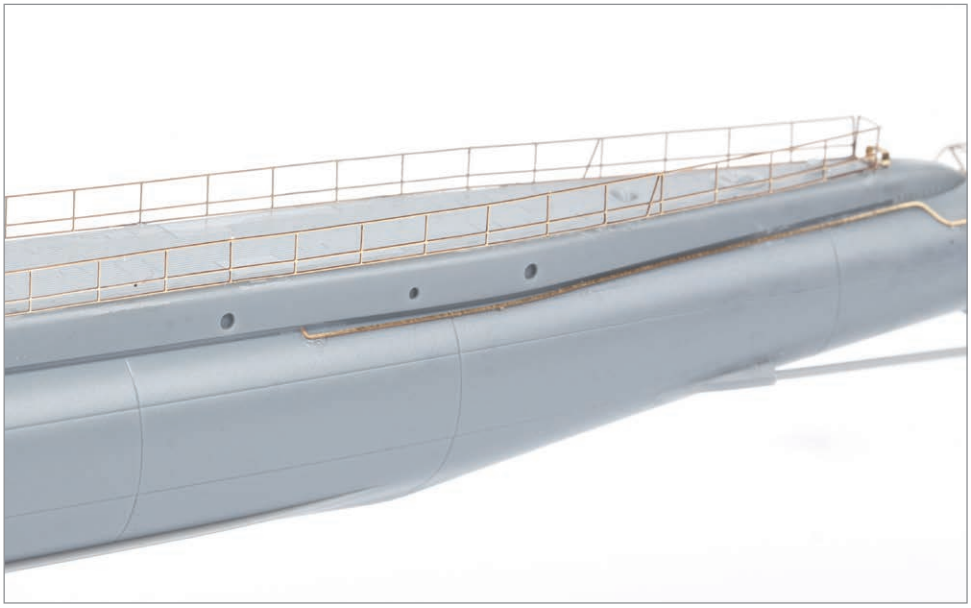
USS Gato SS-212 1941
1/350 Hobby Boss

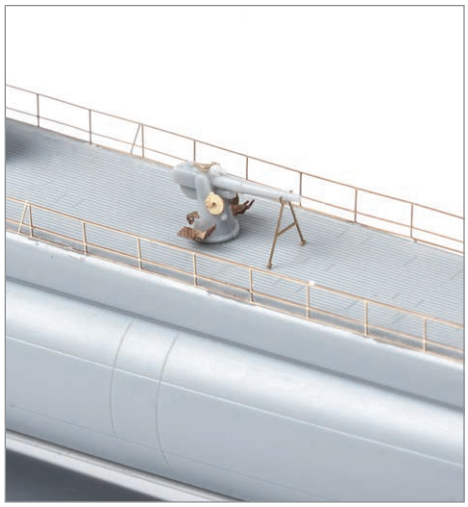
(53278)





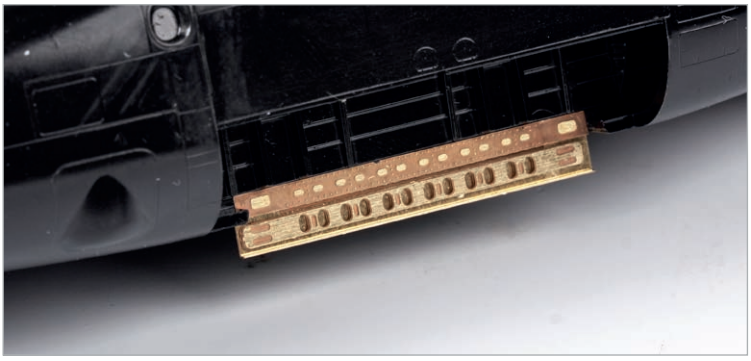


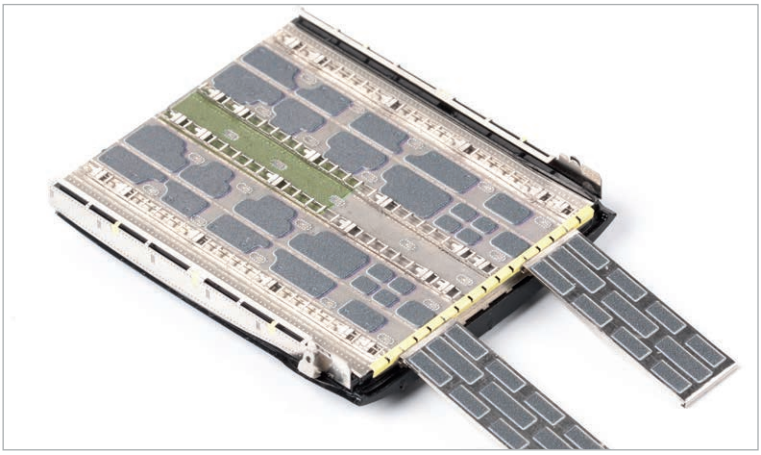


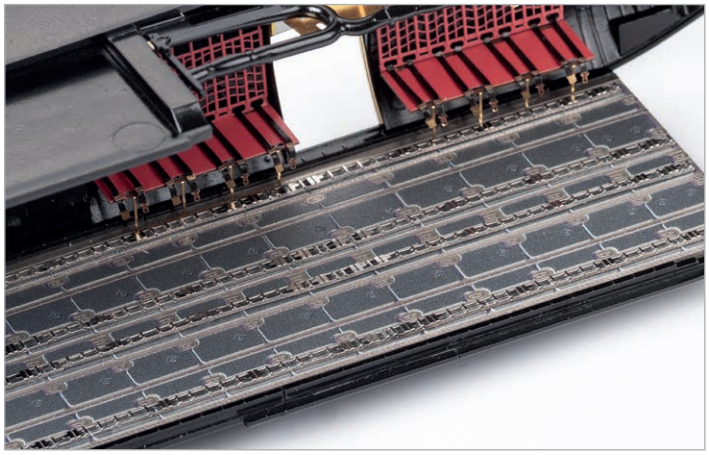


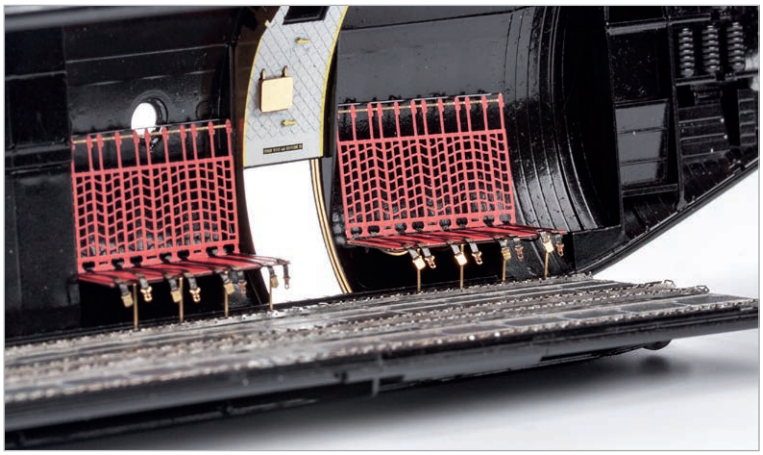
C-130J-30
1/72 Zvezda

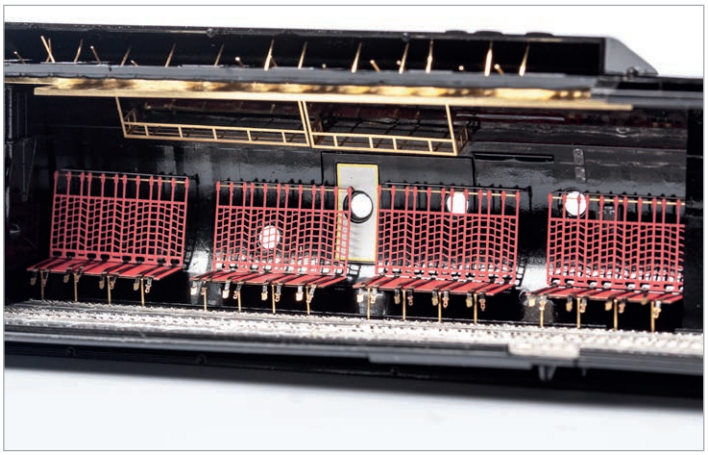
C-130J-30 exterior 1/72 (72718)
C-130J-30 interior 1/72 (73759)
C-130J-30 cargo floor 1/72 (73760)
C-130J-30 cargo seatbelts 1/72 (73761)
C-130J-30 cargo interior 1/72 (73762)

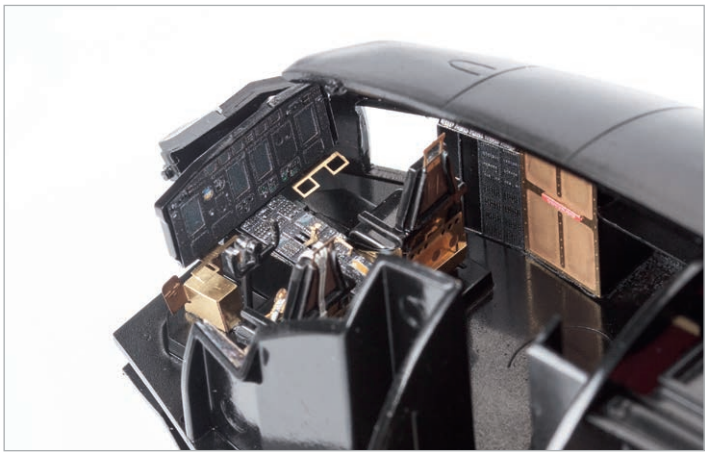


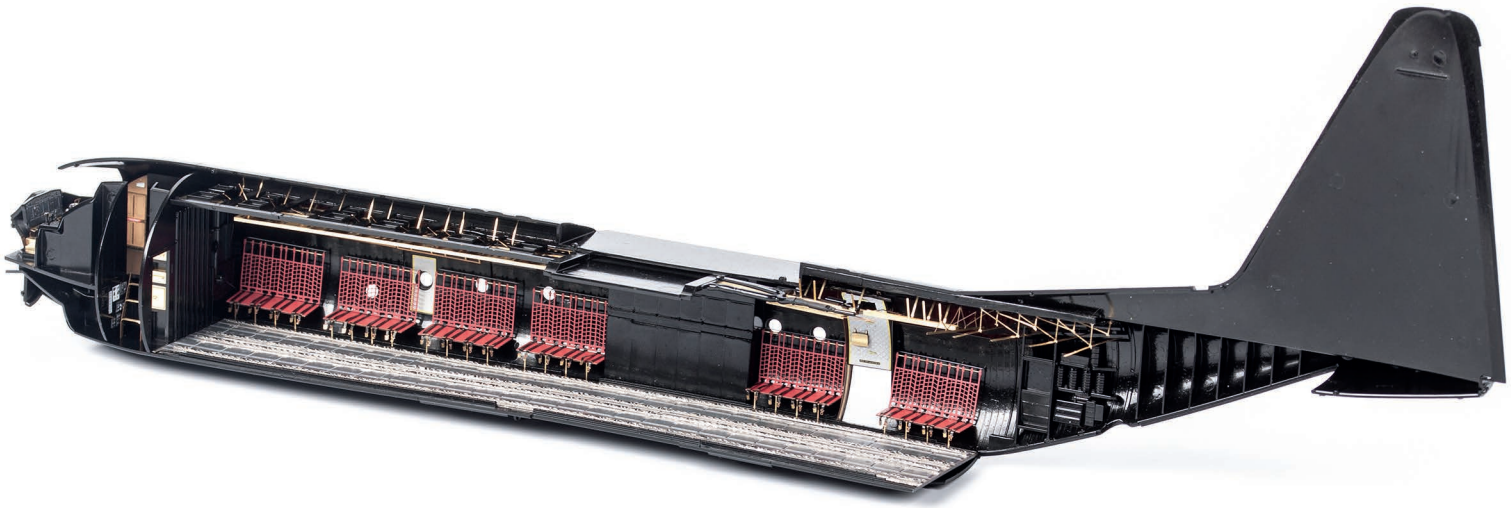












Mosquito B Mk.XVI 1/72 Airfix

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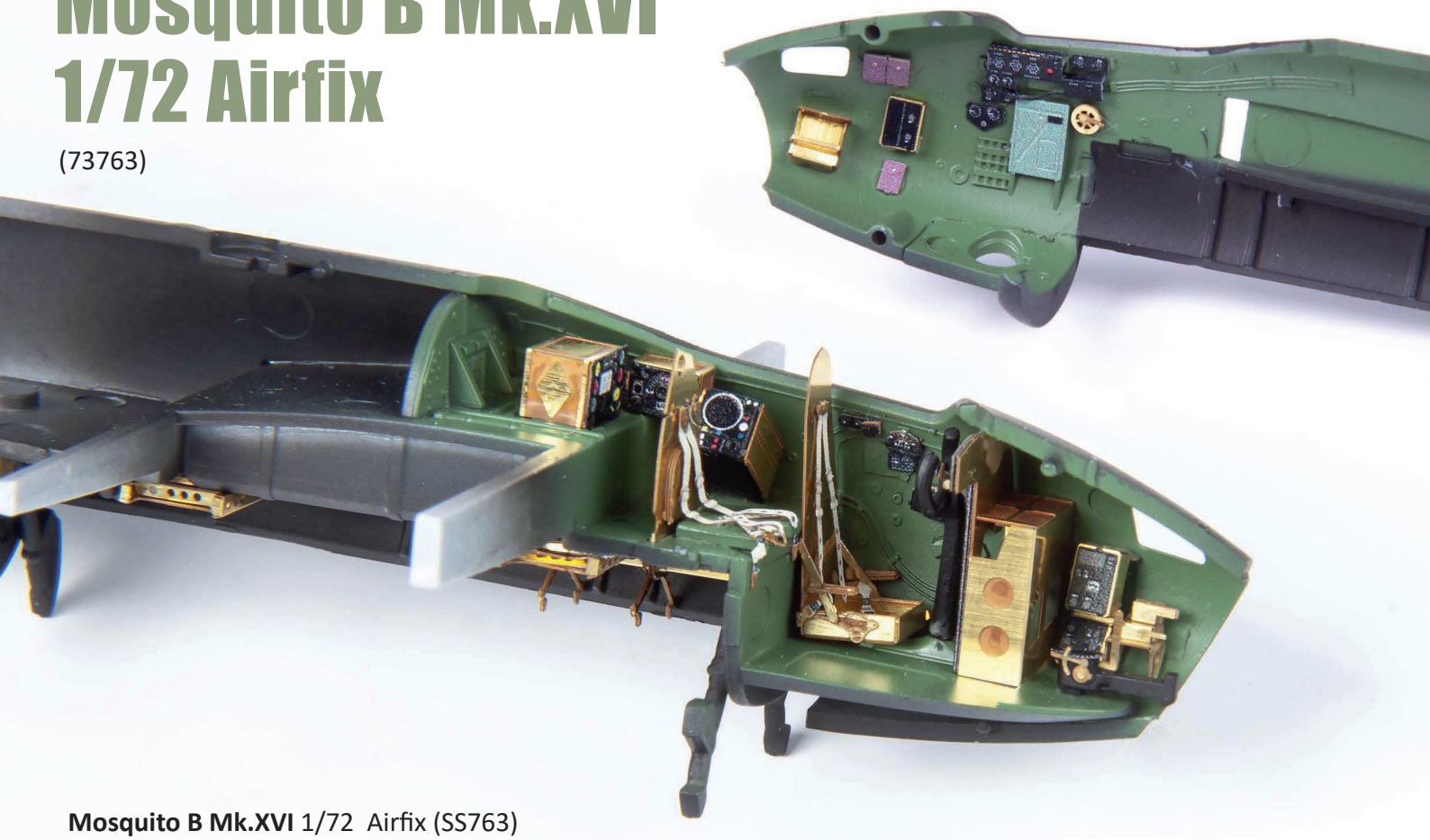
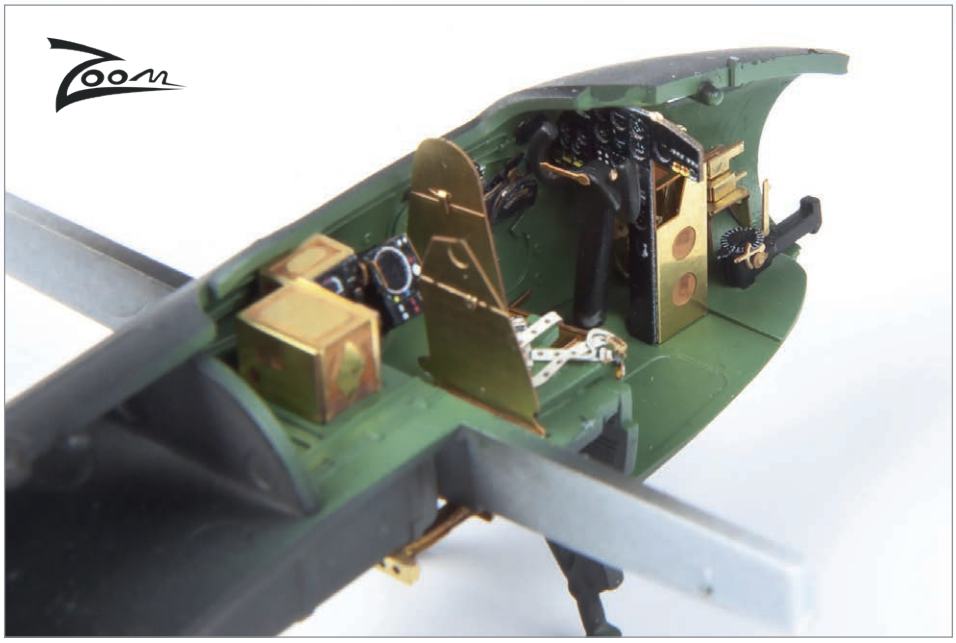


Mosquito B Mk.XVI 1/72 Airfix (SS763)



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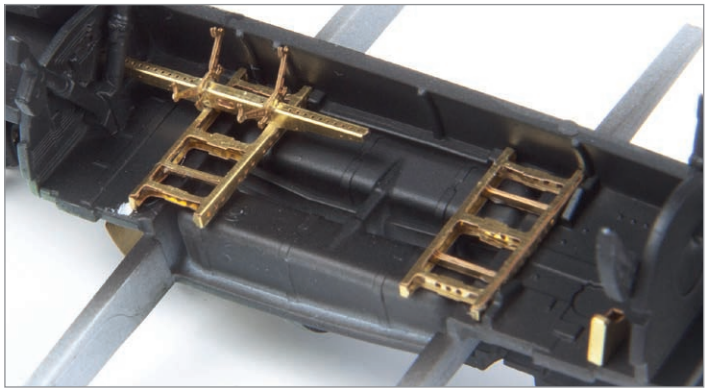
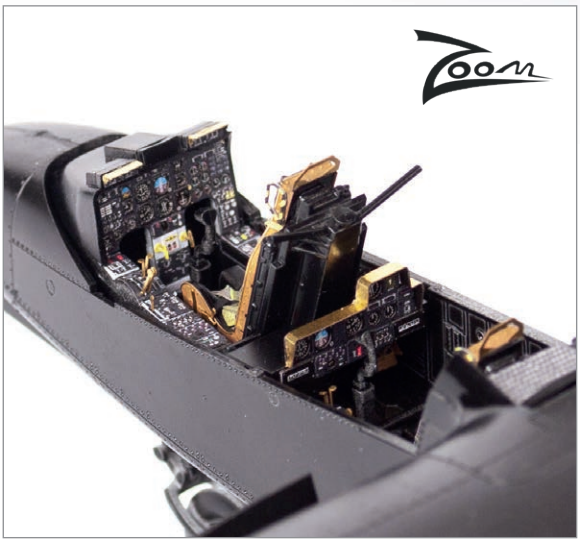


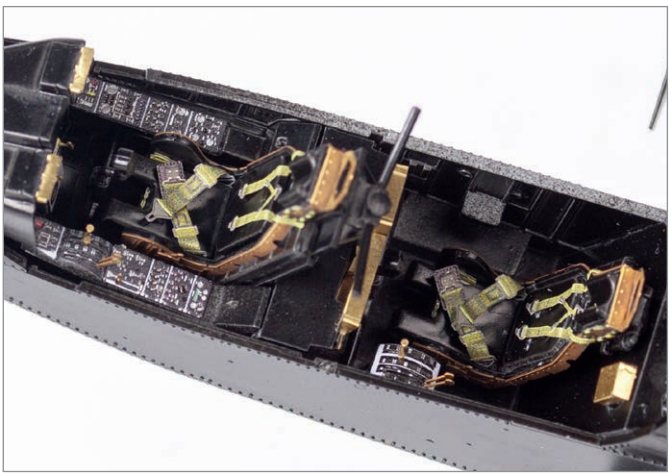
OV-10A 1/48 ICM

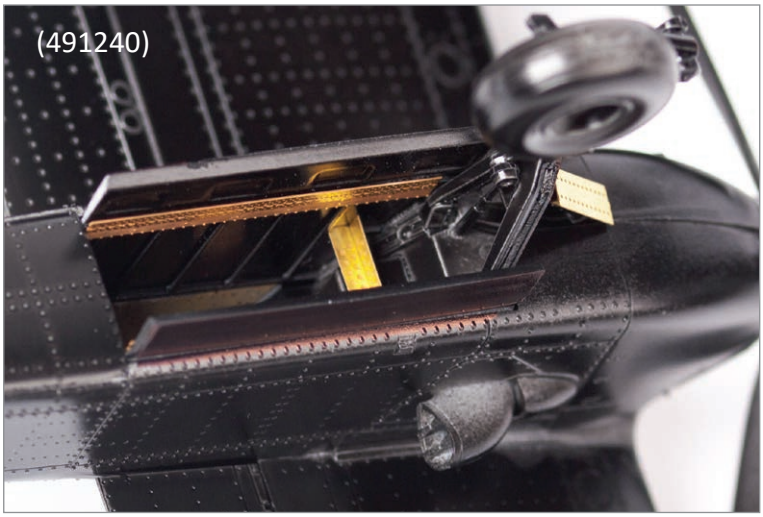
(491240)

OV-10A 1/48 ICM (FE1240)



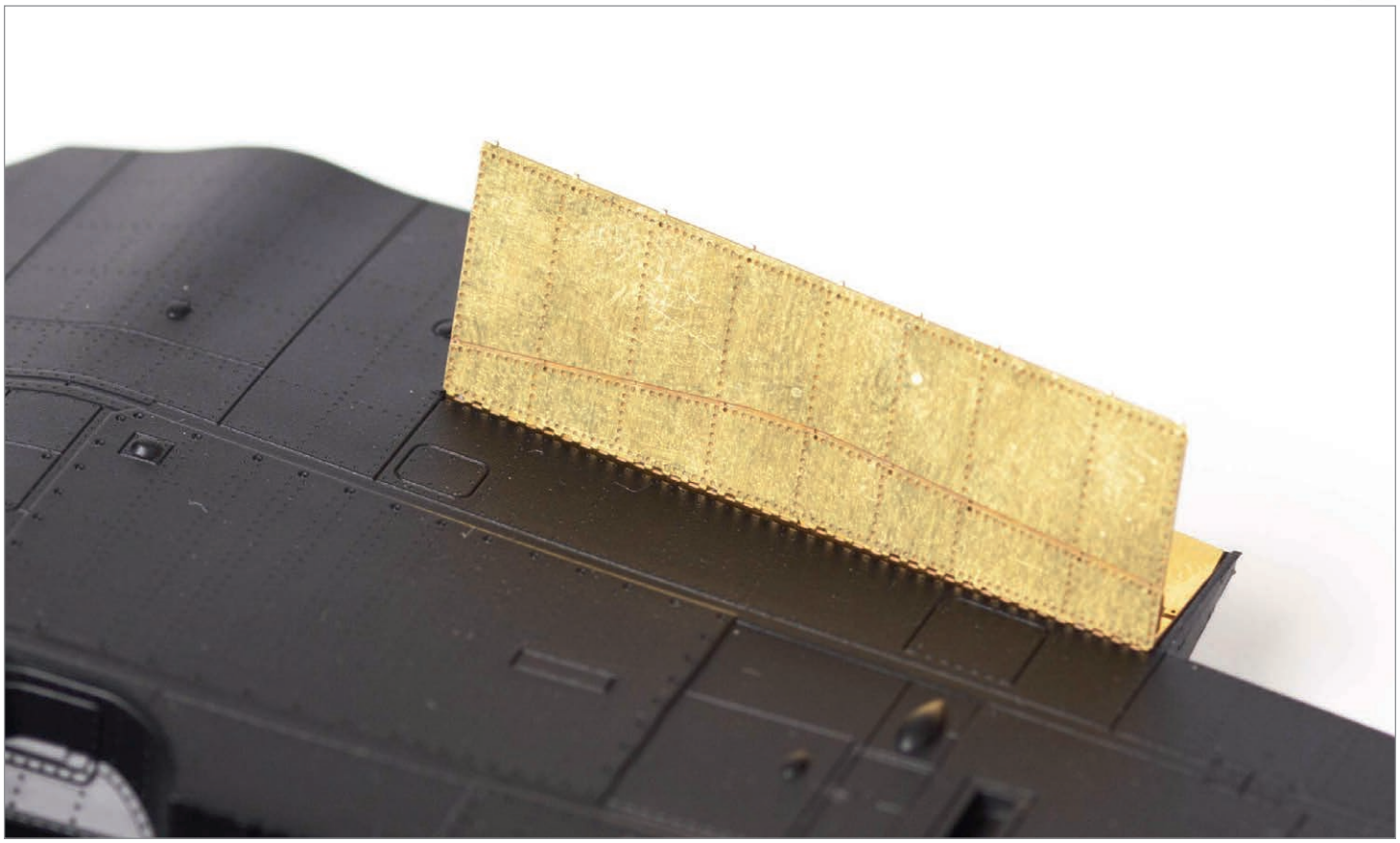
OV-10A seatbelts STEEL 1/48 ICM (FE1241)





A6M2 landing flaps 1/48 Eduard

(481076)

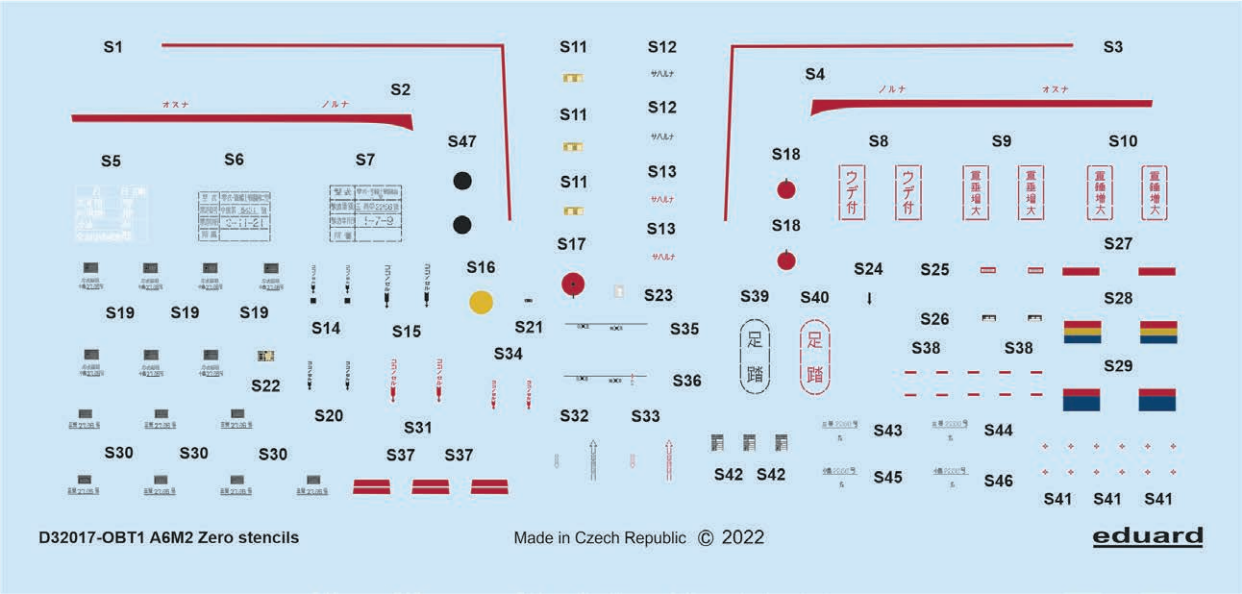


A6M2 stencils

Cat. No. D32017

1/32 Tamiya

Product page

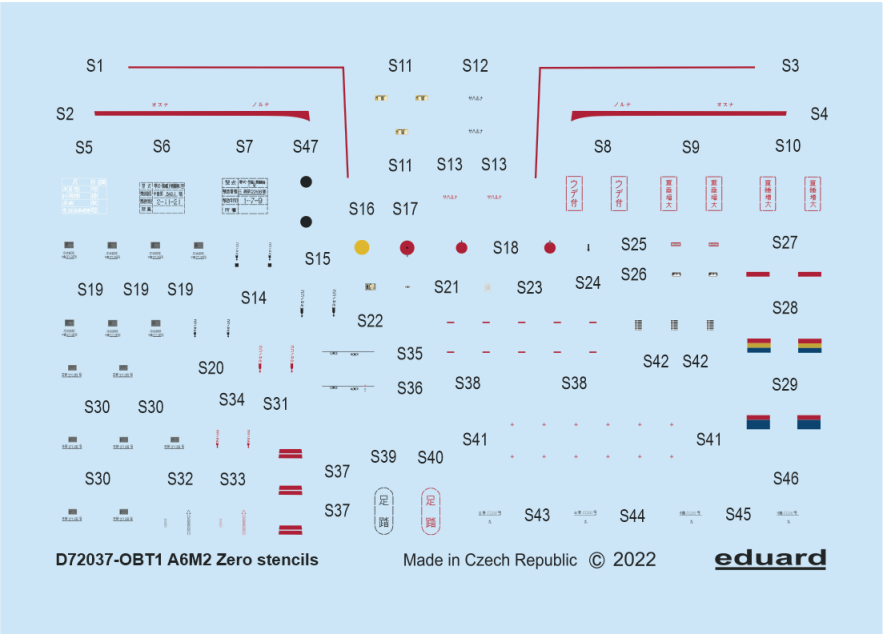


A6M2 stencils

Cat. No. D72037

1/72 Tamiya/Airfix/Hasegawa

Product page



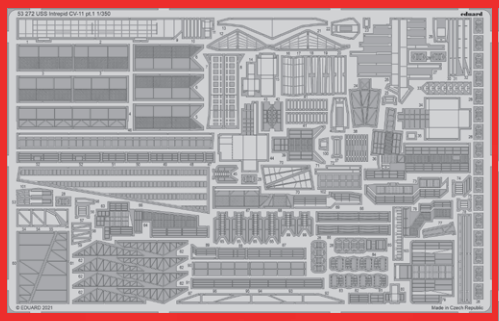
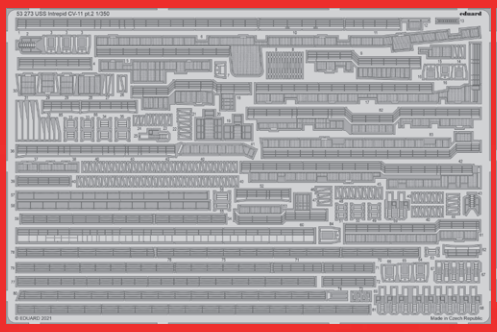
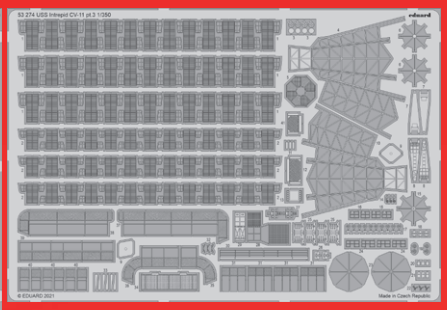
All sets included in this BIG ED are available separately, but with every BIG ED set you save up to 30%.

BIG ED

BIG5363 US Intrepid CV-11 PART I 1/350 Trumpeter

Product page

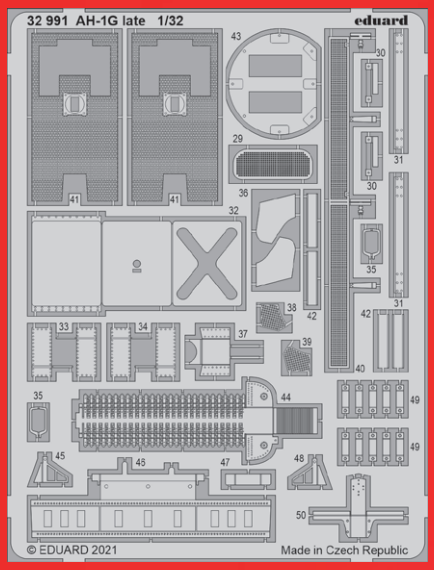
53272 USS Intrepid CV-11 pt.1 1/350
53273 USS Intrepid CV-11 pt.2 1/350
53274 USS Intrepid CV-11 pt.3 1/350

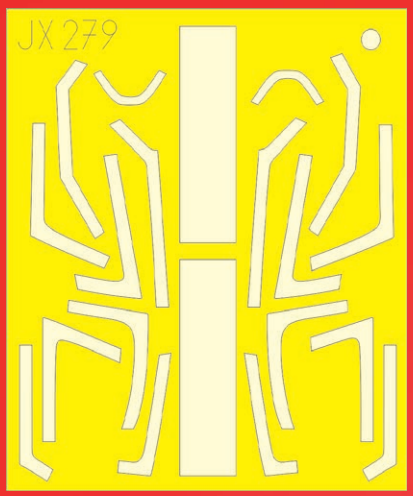




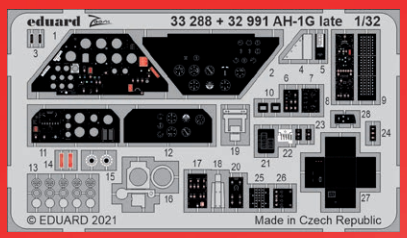
BIG33139 AH-1G late 1/32 ICM

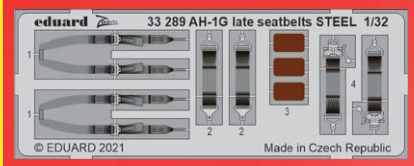
Product page

32991 AH-1G late 1/32
33289 AH-1G late seatbelts STEEL 1/32
JX279 AH-1G 1/32





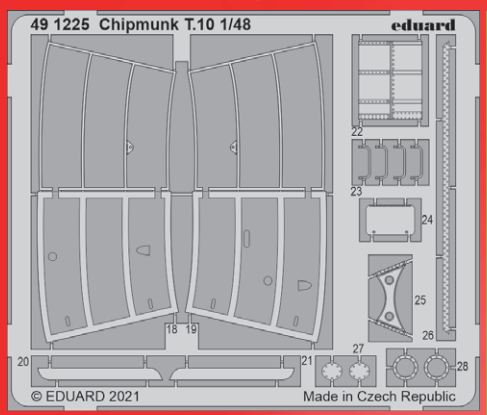


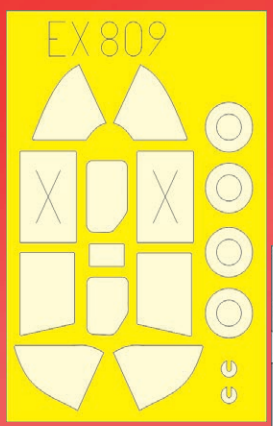


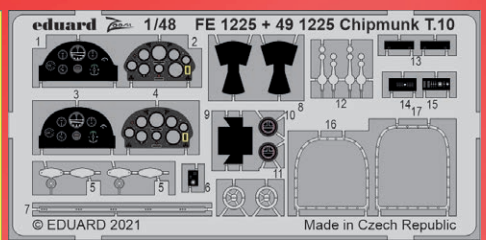
BIG49312 Chipmunk T.10 1/48 Airfix

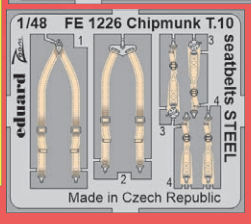
Product page

491225 Chipmunk T.10 1/48
FE1226 Chipmunk T.10 seatbelts STEEL 1/48
EX809 Chipmunk T.10 1/48









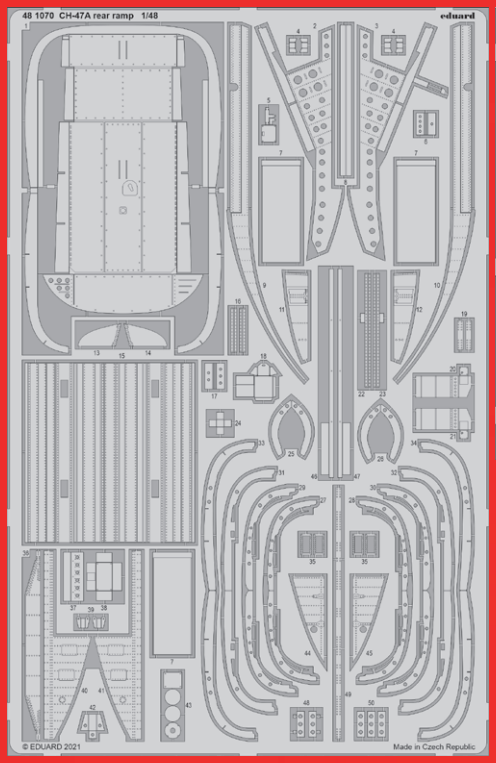
All sets included in this BIG ED are available separately, but with every BIG ED set you save up to 30%.

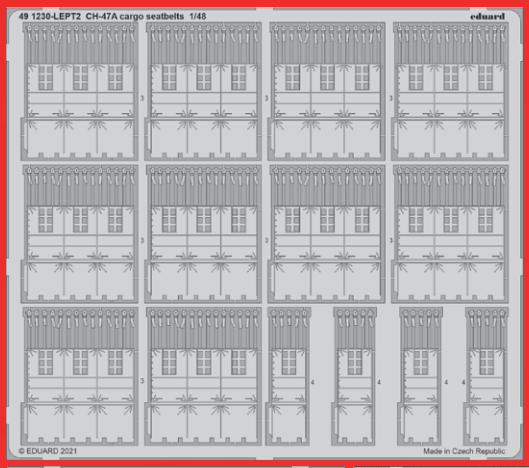
BIG ED

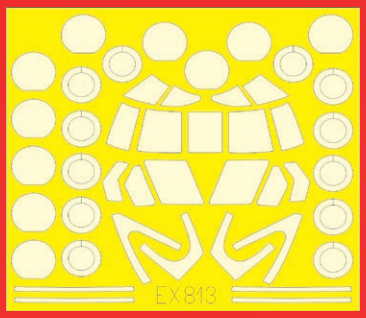
BIG49311 CH-47A 1/48 Hobby Boss

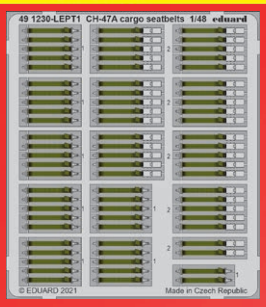
Product page

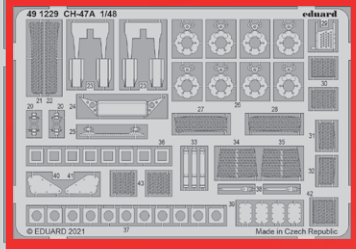
481070 CH-47A rear ramp 1/48
491229 CH-47A 1/48
491230 CH-47A cargo seatbelts 1/48
FE1230 CH-47A seatbelts STEEL 1/48
EX813 CH-47A 1/48







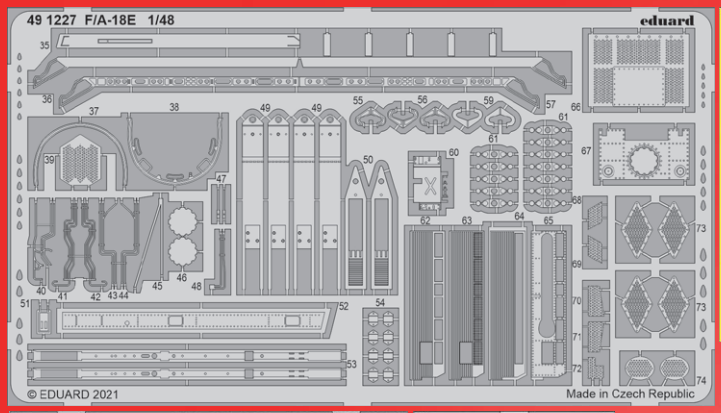


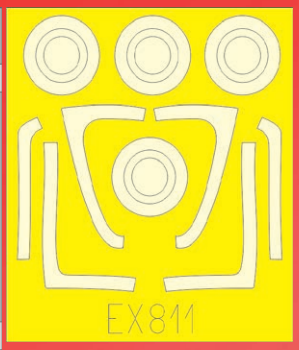


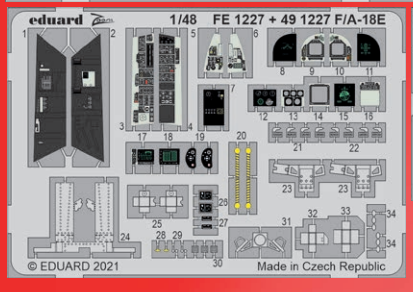
BIG49313 F/A-18E 1/48 Hobby Boss

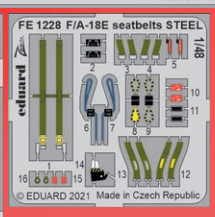
Product page

491227 F/A-18E 1/48
FE1228 F/A-18E seatbelts STEEL 1/48
EX811 F/A-18E 1/48



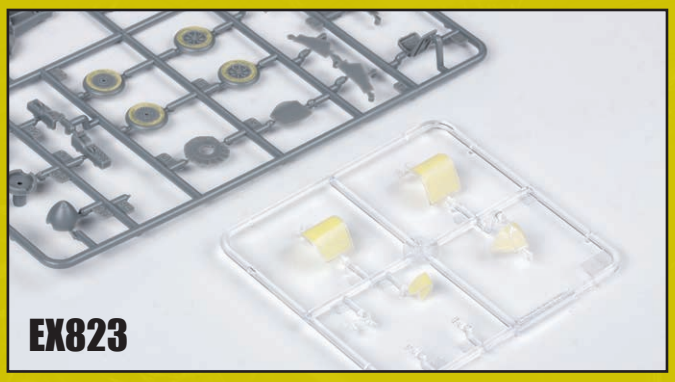


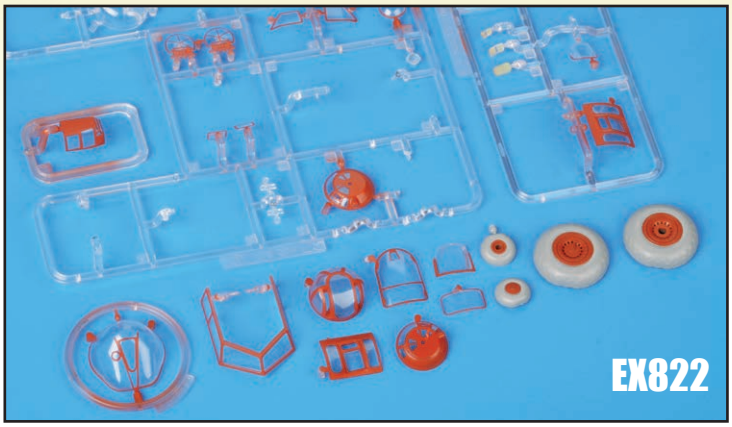


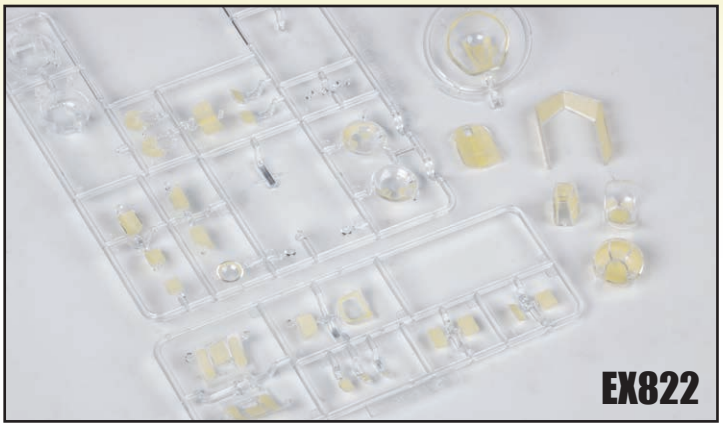


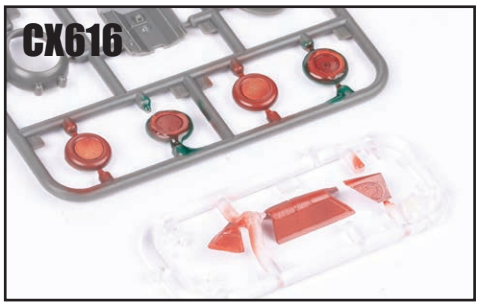
EDUARD MASK IT FITS!

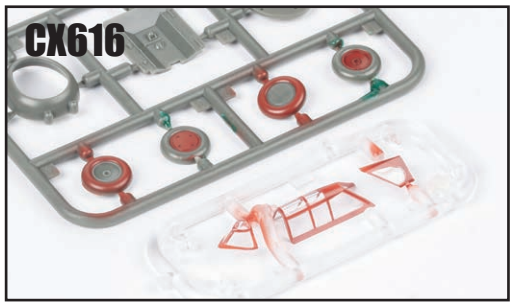
JX284 P-51D TFace 1/32 Revell
EX822 B-17G TFace 1/48 HKM
EX823 La-11 1/48 Hobby Boss
EX824 Tornado ECR TFace 1/48 Eduard/Revell
EX825 OV-10A 1/48 ICM
EX826 OV-10A TFace 1/48 ICM
EX827 Z-126 TFace 1/48 Eduard
CX616 P-43 1/72 Dora Wings
CX617 C-130J-30 1/72 Zvezda
CX618 Mosquito B Mk.XVI 1/72 Airfix

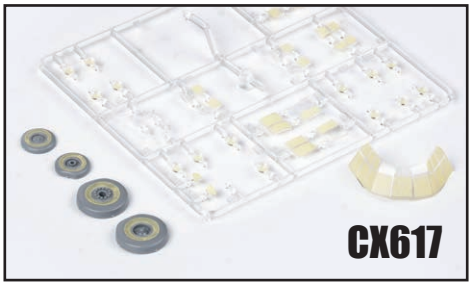


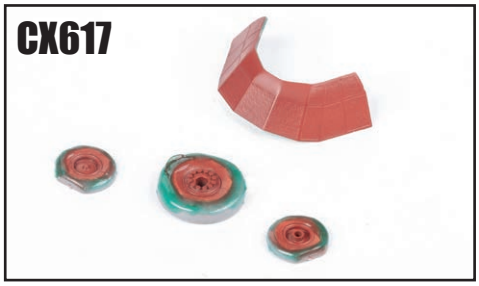


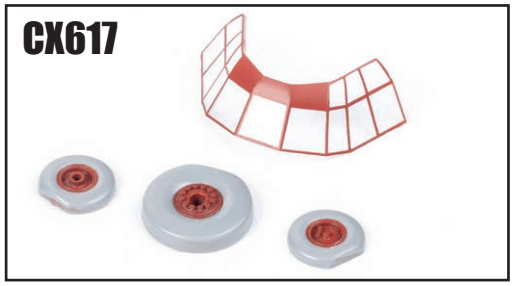












January 2022

KITS

82212	A6M2 Zero Type 21	1/48	ProfiPACK
11156	Z-126 Trenér	1/48	Limited edition
84179	Spitfire Mk.Ia	1/48	Weekend edition
84180	MiG-21SMT	1/48	Weekend edition
7059	MiG-15bis (reedice)	1/72	ProfiPACK
84172	P-51D-5 (reedice)	1/48	Weekend edition

PE-SETS

53278	USS Gato SS-212 1941	1/350	Hobby Boss
32475	P-51D-15 exterior	1/32	Revell
32993	P-51D-15 interior	1/32	Revell
481075	F-14A late exterior	1/48	Tamiya
481076	A6M2 landing flaps	1/48	Eduard
491239	F-14A late interior	1/48	Tamiya
491240	OV-10A	1/48	ICM
72718	C-130J-30 exterior	1/72	Zvezda
73759	C-130J-30 interior	1/72	Zvezda
73760	C-130J-30 cargo floor	1/72	Zvezda
73761	C-130J-30 cargo seatbelts	1/72	Zvezda
73762	C-130J-30 cargo interior	1/72	Zvezda
73763	Mosquito B Mk.XVI	1/72	Airfix

ZOOMS

33292	P-51D-15	1/32	Revell
FE1239	F-14A late	1/48	Tamiya
FE1240	OV-10A	1/48	ICM
FE1241	OV-10A seatbelts STEEL	1/48	ICM
SS759	C-130J-30	1/72	Zvezda
SS763	Mosquito B Mk.XVI	1/72	Airfix

MASKS

JX284	P-51D TFace	1/32	Revell
EX822	B-17G TFace	1/48	HKM
EX823	La-11	1/48	Hobby Boss
EX824	Tornado ECR TFace	1/48	Eduard/Revell
EX825	OV-10A	1/48	ICM
EX826	OV-10A TFace	1/48	ICM
EX827	Z-126 TFace	1/48	Eduard
CX616	P-43	1/72	Dora Wings
CX617	C-130J-30	1/72	Zvezda
CX618	Mosquito B Mk.XVI	1/72	Airfix

BIGEDS

BIG5363	US Intrepid CV-11 PART I	1/350	Trumpeter
BIG33139	AH-1G late	1/32	ICM
BIG49311	CH-47A	1/48	Hobby Boss
BIG49312	Chipmunk T.10	1/48	Airfix
BIG49313	F/A-18E	1/48	Hobby Boss

BRASSINS

644119	Z-126 Trener LöökK	1/48	Eduard
644136	Tornado ECR LöökK	1/48	Eduard/Revell
648694	A6M2 engine PRINT	1/48	Eduard
648705	Z-226 Trener cockpit PRINT	1/48	Eduard
648707	F-16 wheels early	1/48	Tamiya
648708	F-16 wheels late	1/48	Tamiya
648709	F-4B ejection seats early PRINT	1/48	Tamiya
648711	Sopwith Camel Gnome engine PRINT	1/48	Eduard
648712	SBD-5 twin machine gun	1/48	Accurate Miniatures/Academy/Revell
648713	SBD-5 wheels	1/48	Accurate Miniatures/Academy/Revell
648714	Panzerschreck 1 for Fw 190F PRINT	1/48	Eduard
648715	TSPJ pod PRINT	1/48	Eduard/Revell
672277	British 1000lb retarded bombs	1/72	

LookPLUS

644135	Chipmunk T.10 LöökPlus	1/48	Airfix
644137	F-4B LöökPlus	1/48	Tamiya

BIGSIN

SIN64878	Spitfire Mk.Va/b ESSENTIAL	1/48	Eduard

DECAL SET

D32017	A6M2 stencils	1/32	Tamiya
D72037	A6M2 stencils	1/72	Tamiya/Airfix/Hasegawa

SPACE

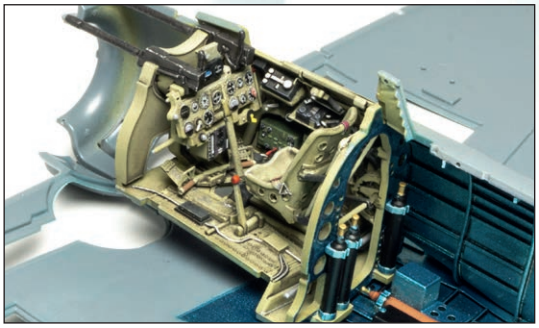
3DL48044	Z-126 SPACE	1/48	Eduard
3DL48053	MiG-21PF grey SPACE	1/48	Eduard
3DL48054	MiG-21PF SPACE	1/48	Eduard
3DL48055	Bf 109E-7 SPACE	1/48	Eduard
3DL48056	Tornado ECR SPACE	1/48	Eduard/Revell
3DL48057	F-14A late SPACE	1/48	Tamiya

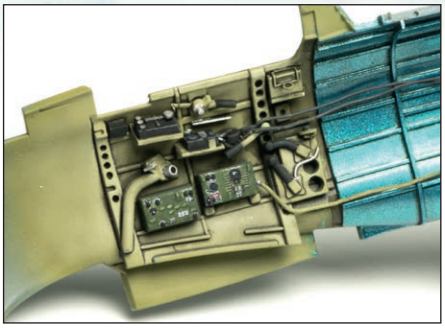
January releases

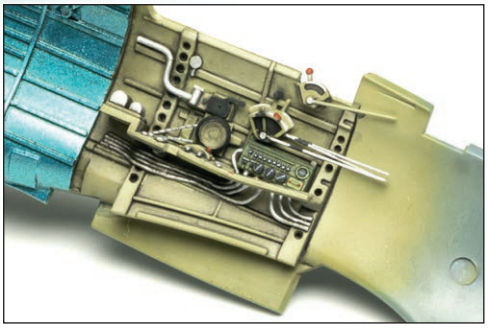
eduard
LIMITED EDITION

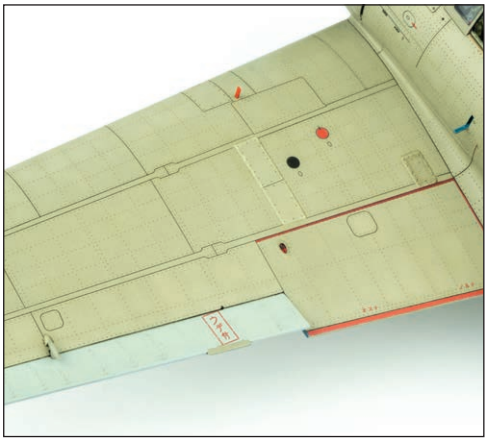
TORA TORA TORA! 1/48

Cat. No. 11155
marking H
built by Josef Blažek









Lt. Saburō Shindō, Akagi Fighter Squadron, second attack wave

During the second wave, fighter escort of thirty-six Zeros was led by Lt. Shindō. Nine Akagi Zeros met no resistance in the air and destroyed two aircraft at Hickam. Shindō was born in 1911 and graduated from the Naval Academy in 1929. He was assigned to the Omura Kōkūtai in 1935 and a year later went to the aircraft carrier Kaga. In 1940, he served in China with the 12th Kōkūtai during combat trials of the A6M2 fighter. Under his command, the first combat engagement occurred on September 13, resulting in 27 victories without loss. In November 1940, Shindō was transferred to the 14th Kōkūtai in Hanoi. From April to December 1941 he was the Buntaichō of the Akagi fighters, but had to be hospitalized after the attack on Pearl Harbor. After recovering, he was appointed commander of Tokushima Kōkūtai in April 1942. From November 1942, as Hikōtaichō at Kōkūtai 582, he was involved in the fighting over Guadalcanal. From July 1943, he was Hikōtaichō with the Kōkūtai 204 in the same area. In late 1943 and early 1944, he led fighters of the aircraft carrier Ryūhō and later served with Kōkūtai 653 and 203 in the defense of Taiwan, the Philippines, and Japan. At the end of the war, he was Hikōtaichō at Tsukuba Kōkūtai. Shindó passed away in 2000.

Product page

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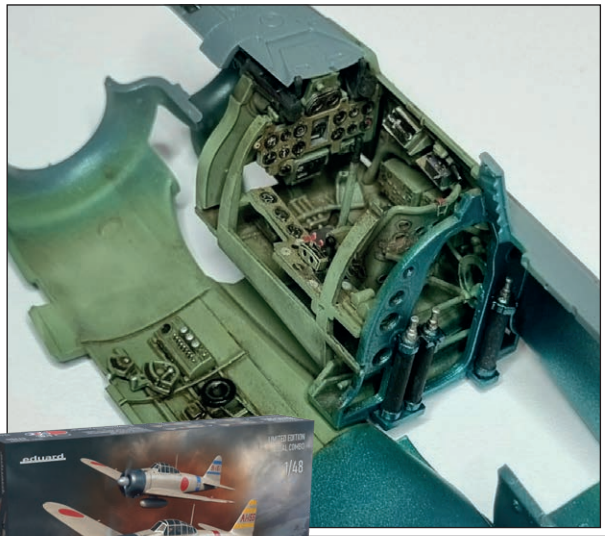
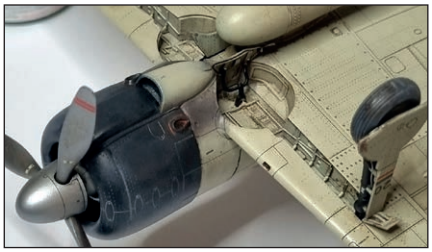
TORA TORA TORA! 1/48

c/n 2266, PO1c Shigenori Nishikaichi, Hiryū Fighter Squadron, second attack wave

Hiryū sent nine Zeros under the command of Lt. Sumio Nōno. His pilots attacked Kaneohe and Bellows bases, claiming two destroyed aircraft and one car. Zero of PO1c Nishikaichi was running low on fuel and he was looking for a rescue submarine off Niihau Island without success. After belly landing he was captured by a Hawaiian native who took his papers and weapon. The pilot persuaded several residents of Japanese descent to cooperate and managed to get free. He dismantled machine gun from the aircraft, set the machine on fire and threatened to kill the natives to force the return of the secret documents. During the December 13, he and a helper captured Mr. Benjamin Kanahele and his wife. A scuffle ensued during which Kanahele was shot three times by the pilot, but became so enraged that he killed him against a wall. The pilot's helper, Mr. Harada, committed suicide. It is known as the Niihau Incident. Mr. Kanahele received the Purple Heart and the Medal of Merit from the President of the United States. Nishikaichi, whose fate was unknown to the Japanese side, was posthumously promoted two grades. Parts of Zero are on display at the Pacific Aviation Museum Pearl Harbor. On the engine cover there was a service plate with the name of the mechanic PO3c Akimoto painted.

built by Paolo Portuesi **Cat. No. 11155**





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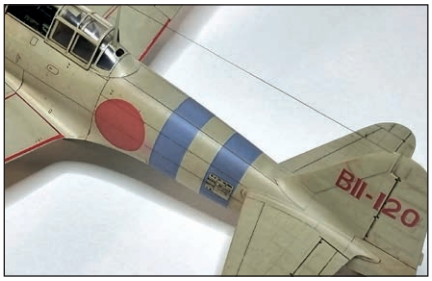


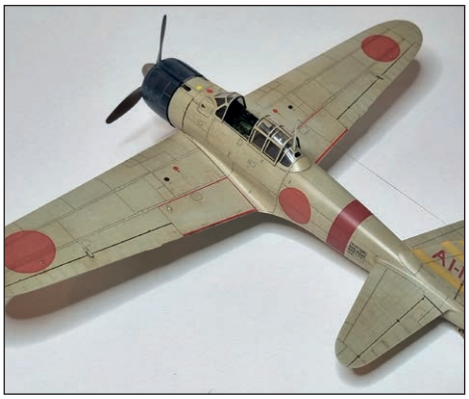
TORA TORA TORA! 1/48

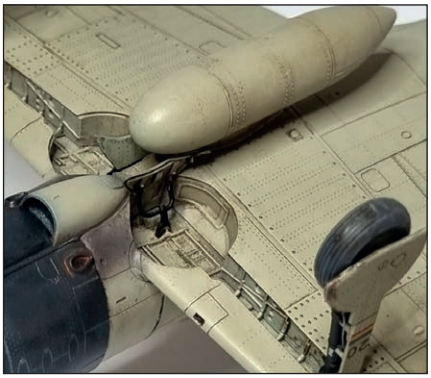
Lt. Cdr. Shigeru Itaya, Akagi Fighter Squadron, first attack wave

During the first wave Itaya led 43 Zero fighters, including 9 from Akagi. Itaya's own Akagi formation shot down one sightseeing and three training aircraft. Then, at Hickam and Ewa bases, they destroyed about 25 aircraft and also attacked incoming B-17s. Itaya's wingmen damaged and set fire to a B-17C from 7th BG of Capt. Swenson´s crew with one passenger who did not survive the attack. Itaya's wingman, PO1c Hirano, was hit by anti-aircraft over Fort Kamehameha and hit an obstacle while flying low over the ground, killing himself and four American soldiers. Itaya was born in 1909 and graduated from the Naval Academy in 1929. From November 1936, he was the Buntaichō of the Ryūjo Fighter Squadron for one year. He then served with the 15th and 12th Kōkūtai and from January 1940 he was Buntaichō of the Hiryū Fighter Squadron. In November 1940 he took over this position on the aircraft carrier Akagi, in April 1941 he was appointed Hikōtaichō and remained in this position until the Battle of Midway. He was killed on July 24, 1944 in the Kuril Islands, at that time serving as a member of the staff of the Naval 51st KōkūSentai. He was flying aboard a G3M bomber towards Paramushir and was accidentally shot down by a Ki-43 fighter.

built by Paolo Portuesi **Cat. No. 11155**

Product page





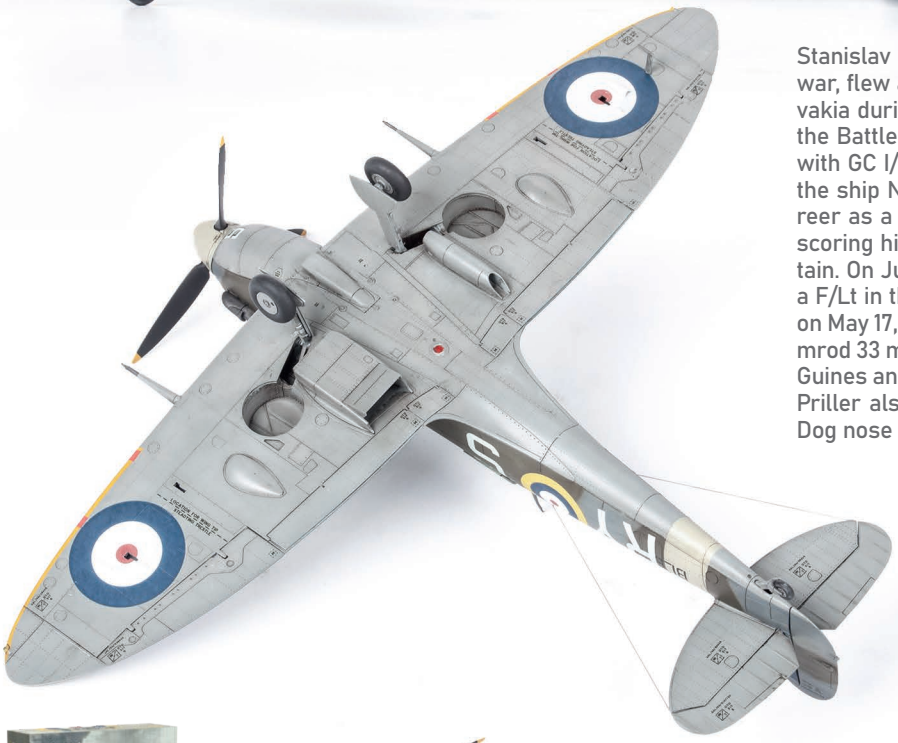
eduard
LIMITED EDITION

Spitfire Story: The Sweeps

1/48

Cat. No. 11153
marking C
built by Patrik Pěcha

BL973, F/Lt Stanislav Fejfar, No. 313 (Czechoslovak) Squadron, RAF Hornchurch, Great Britain, March – May 1942



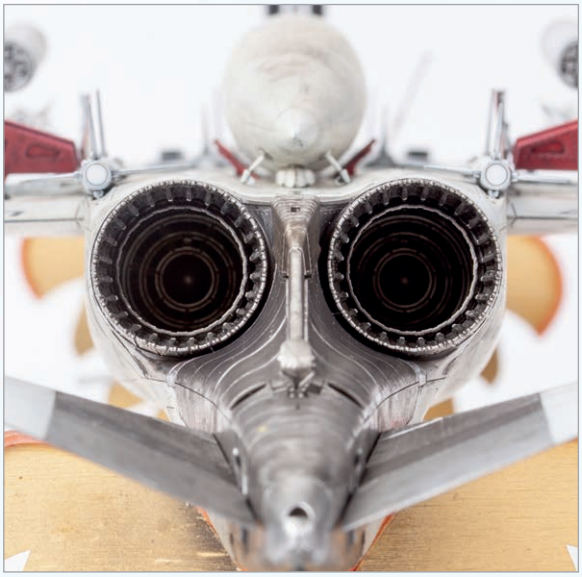
Stanislav Fejfar, a member of Czechoslovak Air Force before the war, flew as a commander of 45th Fighter Squadron based in Slovakia during the Munich crisis. He scored his first two kills during the Battle of France as a member of Armee de l'Air flying MS.406 with GC I/6. On July 12, 1940 he arrived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

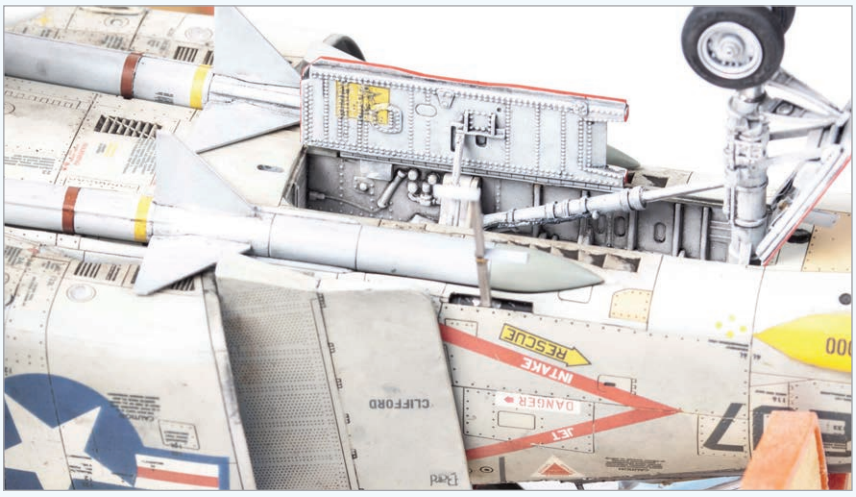
Product page

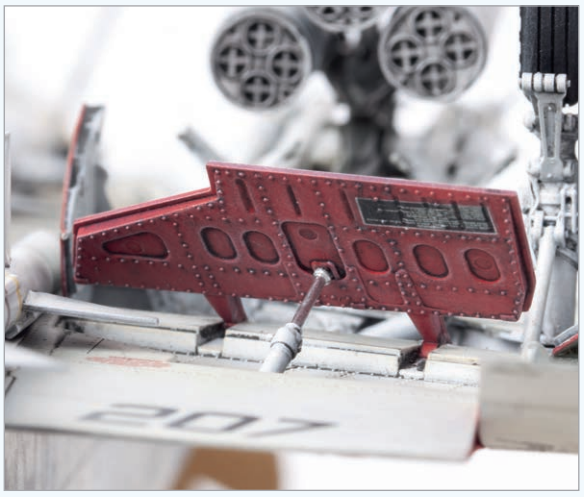
F-4B

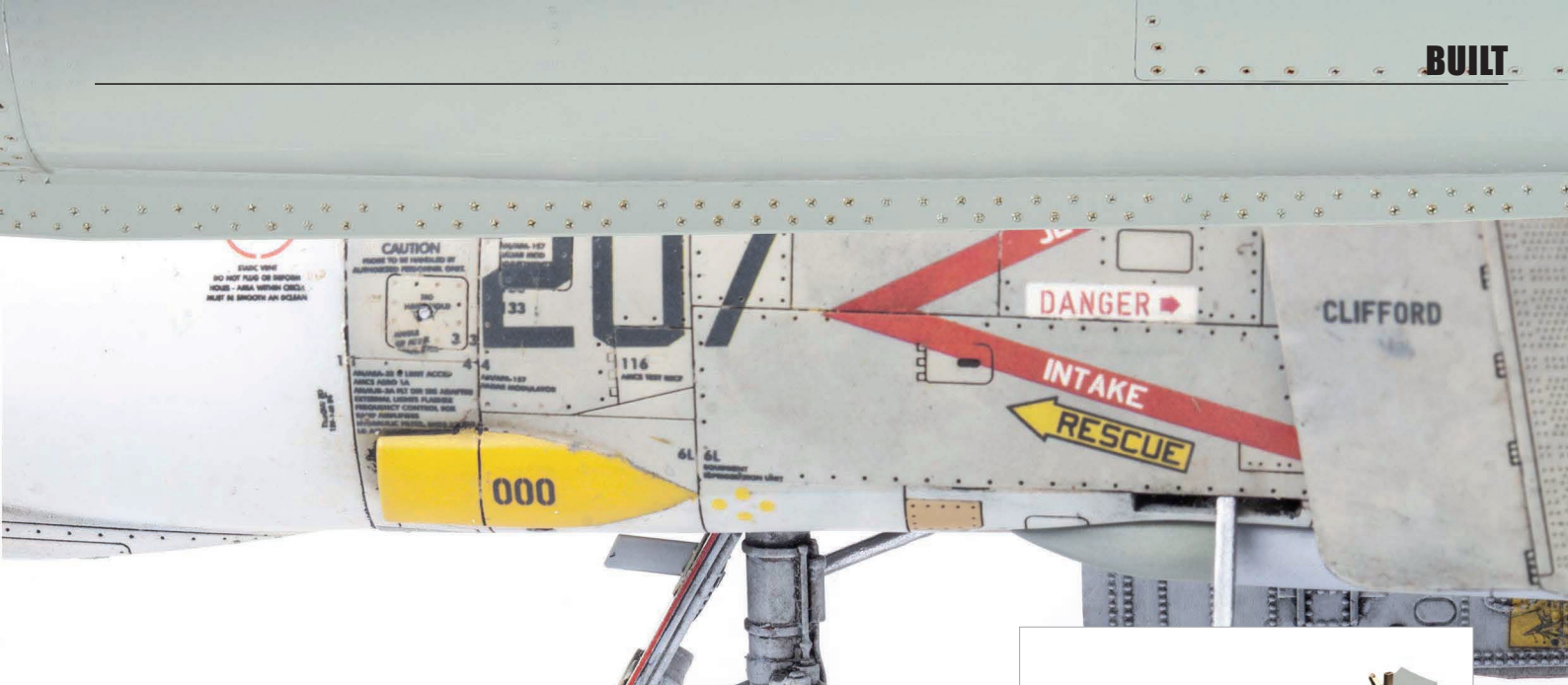
1/48 Tamiya

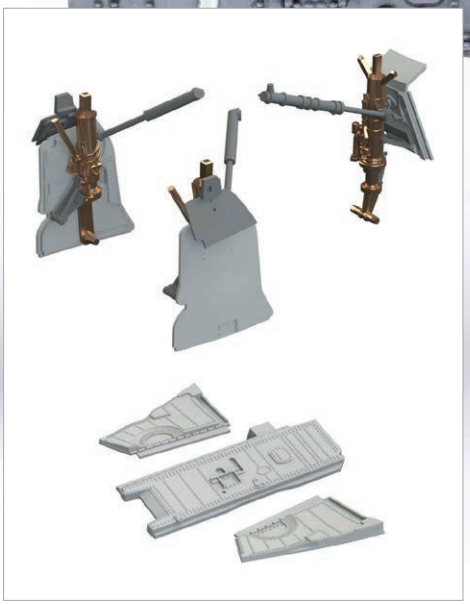
postavil Jan Novotný





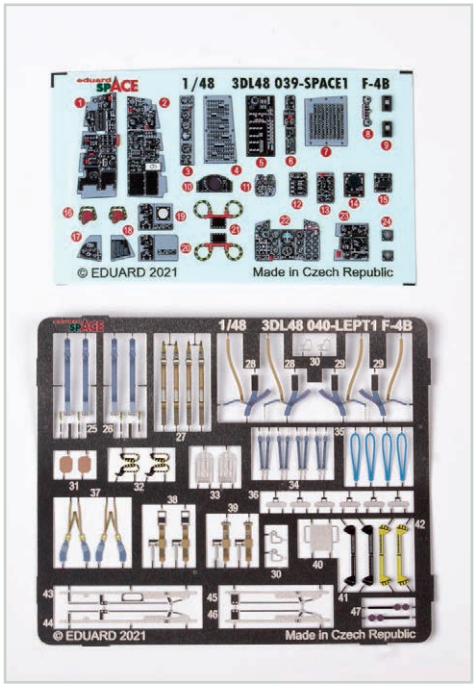




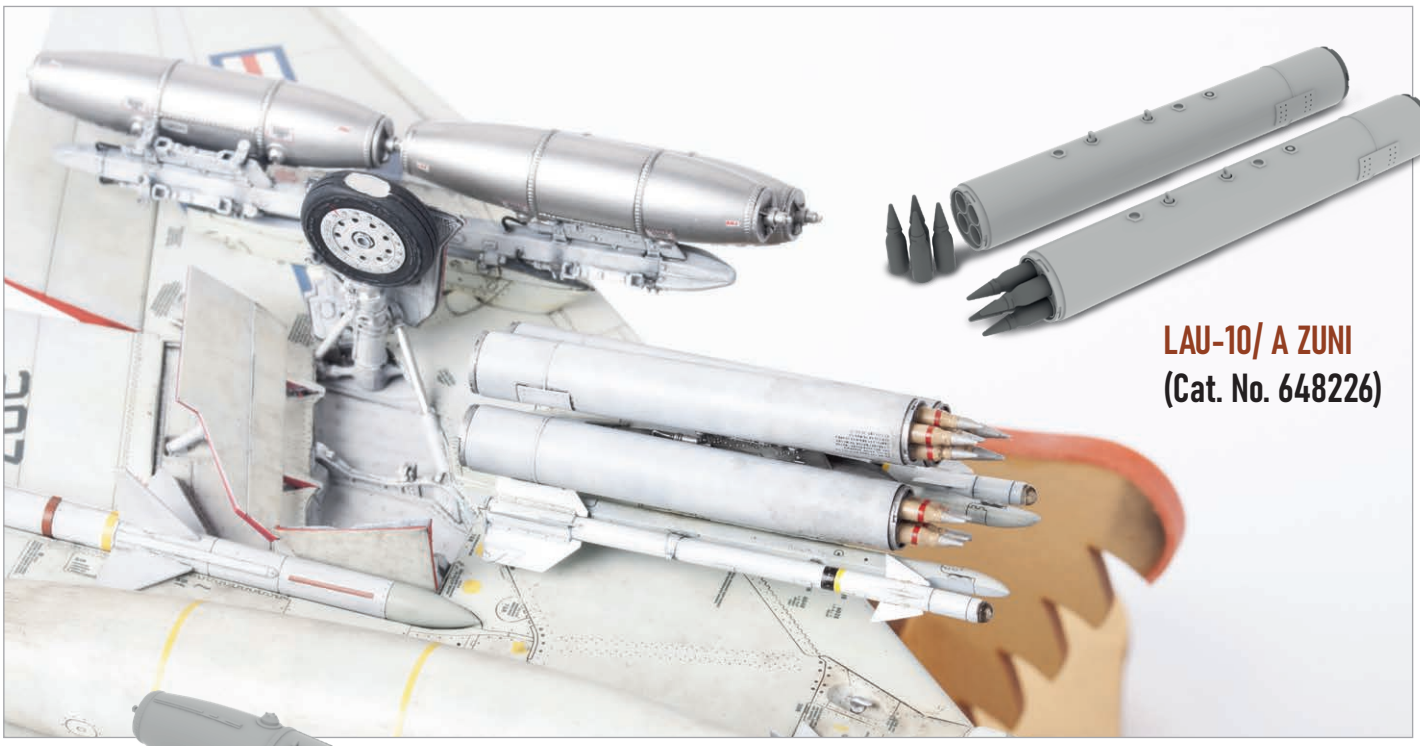


F-4B undercarriage legs
BRONZ (Cat. No. 648700)

F-4B wheels (Cat. No. 648682)



F-4B SPACE (cat.no. 3DL48040)

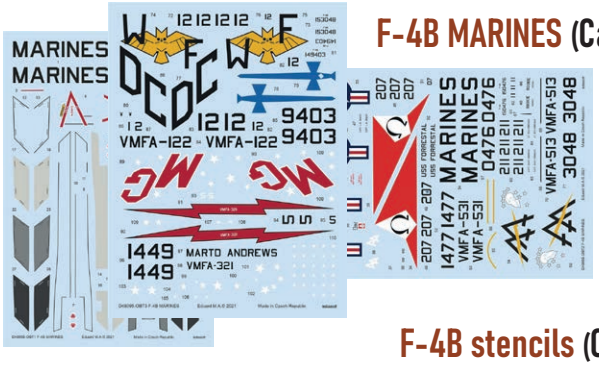


LAU-10/ A ZUNI
(Cat. No. 648226)

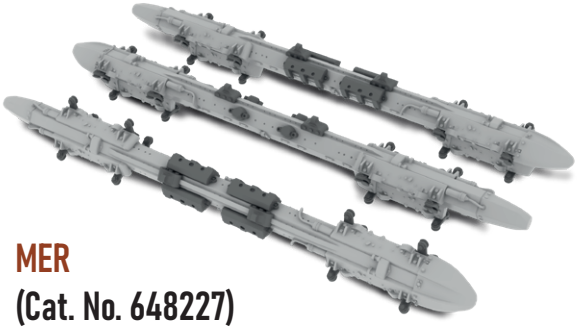
Mk.77 bombs
(Cat. No. 648223)

AIM-9B Sidewinder
(Cat. No. 648028)

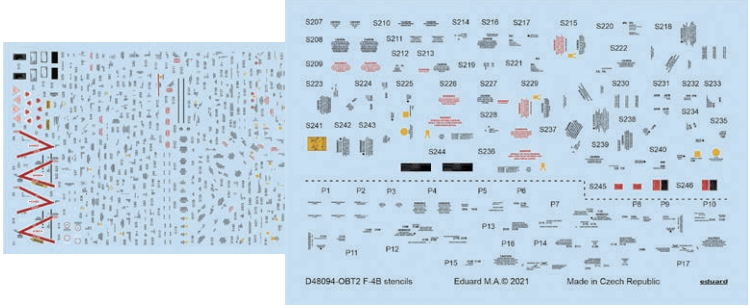
TER
(Cat. No. 648232)



F-4B MARINES (Cat. No. D48095)



MER
(Cat. No. 648227)



F-4B stencils (Cat. No. D48094)

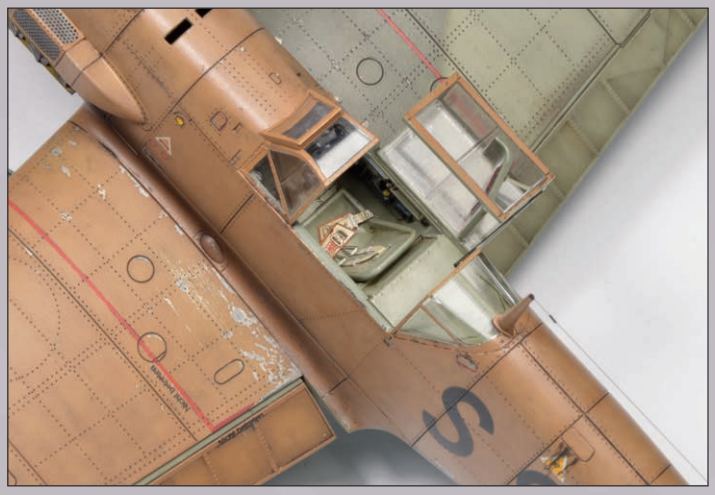
Bf 109E-7

1/48

built by **Robert Szwarc**

Cat. No. 8264

This marking is not inclueded in this kit.

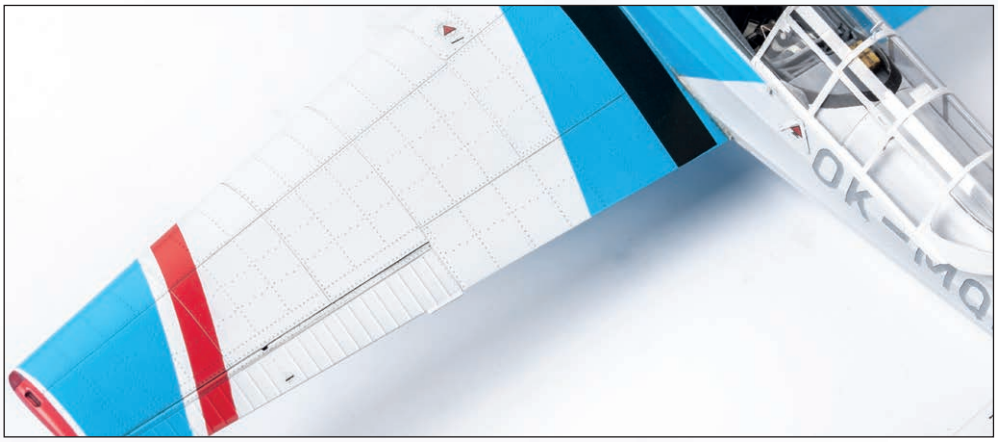


eduard
LIMITED EDITION

Trenér

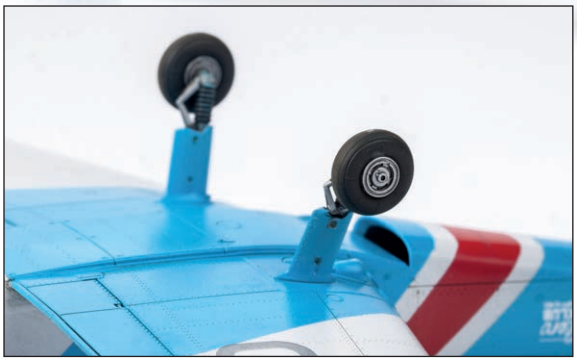
1/48

Cat. No. 11152
marking G
built by Luboš Zach



Z-226B, OK-MQL, No. 283, Aero Club Kralupy nad Vltavou, Czech Republic, 2010

This aircraft was manufactured as a Z-226B, it was operated as the Z-226B and still flies as the Z-226B... The aircraft of the serial number 283 was registered on April 10, 1959, and is unique because it has not undergone any conversion to different version. Incidentally, it is the last airworthy „Bohatýr", as the Z-226B was nicknamed (meaning something as a strong hero). The OK-MQL served for many years in the Aero Club Kralupy nad Vltavou and was operated at the Sazená airfield. In 2015, it was bought by private Ikarus Gliding Club organisation and has its home at the airport in Dvůr Králové.



Tempest Mk.II late version

Cat. No. 82125
built by Matthias Becker

Product page

PR782, No. 16 Sqn, F/O D. W. Baldock, RAF Fassberg, Germany, 1948

After the 2nd TAF was renamed British Air Forces of Occupation (BAFO), the main task for units deployed in Germany changed from keeping an eye on former enemy to safeguarding the West from its former allies in the east. In a period of great reorganization, a Spitfire fighter-reconnaissance unit, No. 16 Squadron, was disbanded at Celle (Germany) on April 1, 1946, but was reformed at RAF Fassberg on the same day, by renumbering No. 56 Squadron. The unit used Mk.V Tempests until August 1946, when they began conversion to the Tempest Mk.II. On August 6, F/O D. W. Baldock flew his Tempest V, EG-V, back to the UK and collected a brand new Tempest II, PR782 which he flew back to Fassberg, via Eindhoven, the next day; it would also be coded EG-V, his allocated aircraft. On September 14, he flew it back to the UK, along with eight other Tempests from his squadron, to take part in a massive Battle of Britain commemorative fly-past over London. PR782 would serve with the squadron through to December 1948 when it was replaced by a De Havilland Vampire jet. PR782 then flew for three months with No. 26 Sqn before transfer to No. 33 Sqn, who took it to Malaya in August 1949; it was scrapped there following a flapless landing at Butterworth when it overshot the runway and the undercarriage collapsed.

Fw 190A-5/U12

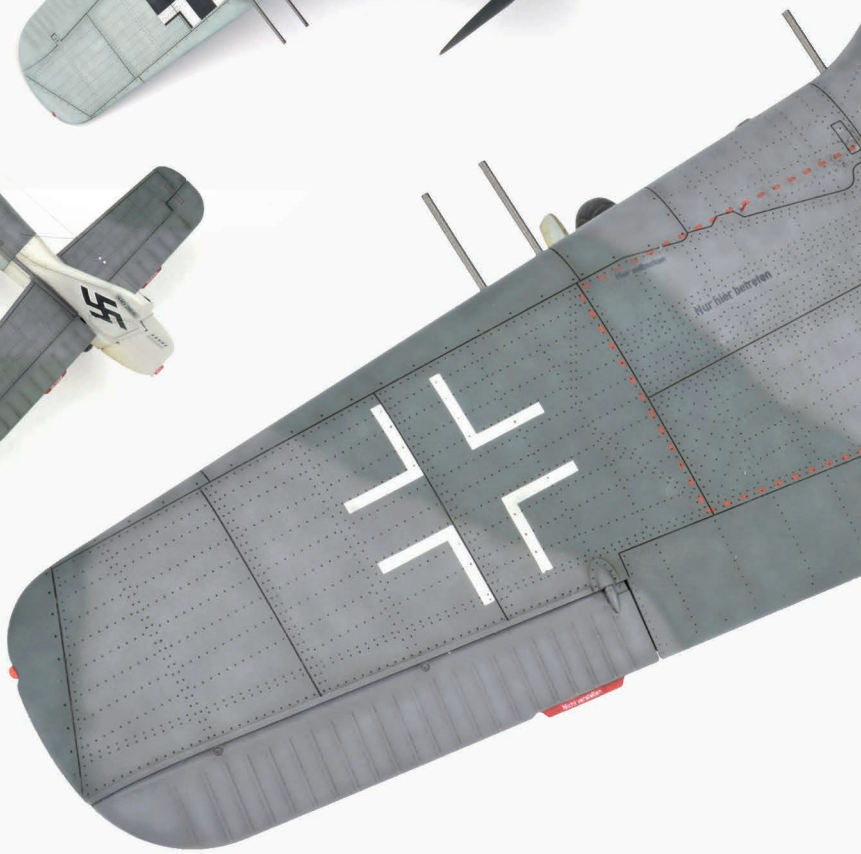
1/48

Cat. No. BFC036

built by **Jan Baranec**

BUNNY FIGHTER
EDUARD EXCLUSIVE CLUB

Fw 190A-5/U12 W. Nr. 410266, Lt. Erich Hondt, CO of 2./ JG 11, Husum, Germany, October 1943



Spitfire Story: Tally Ho!

Spitfire Mk.II 1/48

built by **Robert Szwarc**

Cat. No. 11146

Spitfire Story: Tally Ho!

P8342, Sgt. Marcin Machowiak, No. 306 (Polish) Squadron, RAF Northolt, Great Britain, August 1941

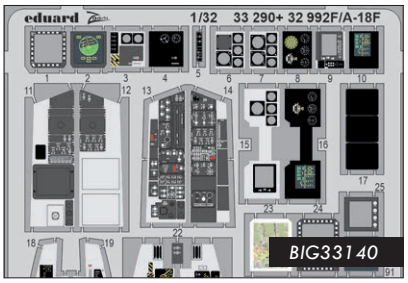
No. 306 (City of Torun) (Polish) Squadron, one of ten Polish fighter squadrons in the RAF, was formed on August 28th, 1940 at RAF Church Fenton. The squadron was formed with the personnel and traditions of the pre-war Polish Toruński Dywizjon Myśliwski. The unit received the Spitfire Mk.IIb in mid July 1941 to replace its Hurricane Mk.IIa aircraft. The nose art and name CERAM on P8342 are probably a remnant from previous service with No. 145 Squadron. The aircraft was heavily damaged shortly after being repainted in accordance with the Day Fighter Scheme requirement, when Sgt. Machowiak made a forced landing at RAF Biggin Hill on August 28th , 1941, after combat with a Bf 109F. Sgt. Machowiak achieved a kill of another Bf 190F during the Circus 88 operation. He later became a member of the Polish Fighting Team, also known as the Skalski Circus, which was actually C Flight of No. 145 Squadron in North Africa.

Product page

ON APPROACH

BRASSIN

FEBRUARY 2022



BIG ED (February)

BIG5364 USS Intrepid CV-11 PART II 1/350 Trumpeter
BIG33140 F/A-18F 1/32 Revell
BIG49314 SBD-5 1/48 Revell
BIG49315 TBF-1C 1/48 Academy
BIG49316 P-40N 1/48 Academy

BRASSIN (February)

634025 P-51D-15 LöökK 1/32 Revell
644129 F/A-18E LöökK 1/48 Meng
644138 Su-27 LöökK 1/48 Great Wall Hobby
648680 Z-126 Trener cockpit PRINT 1/48 Eduard
648696 Mi-24V cockpit 1/48 Zvezda
648710 F-4B ejection seat late PRINT 1/48 Tamiya
648717 Su-27 ejection seat 1/48 Great Wall Hobby
648718 A-4 ejection seat 1/48 Hasegawa
648719 Pe-2 wheels 1/48 Zvezda
648720 Bf 109G-4 wheels 1/48 Eduard
648722 A6M2 exhausts PRINT 1/48 Eduard
648723 A6M2 cannon barrels & cockpit guns PRINT 1/48 Eduard
648724 A6M2 landing flaps PRINT 1/48 Eduard
672276 British 1000lb free fall bombs 1/72

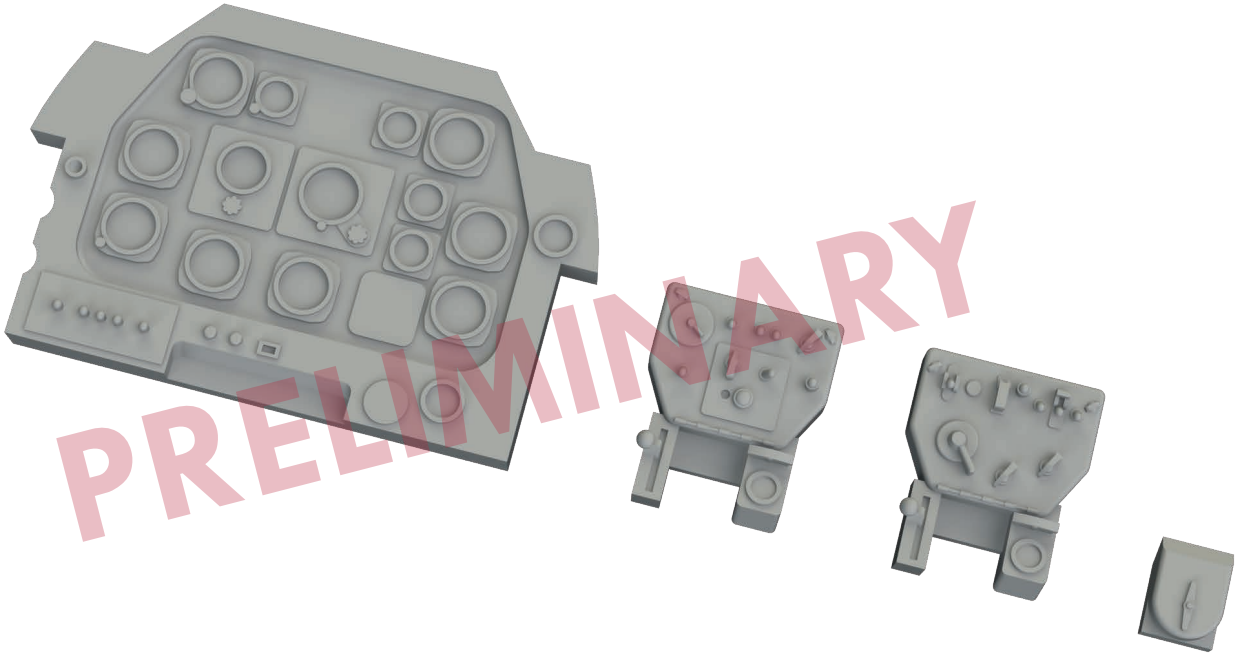
LöökPlus (February)

644134 A6M2 LöökKplus 1/48 Eduard
644139 Z-126 Trener LöökKplus 1/48 Eduard

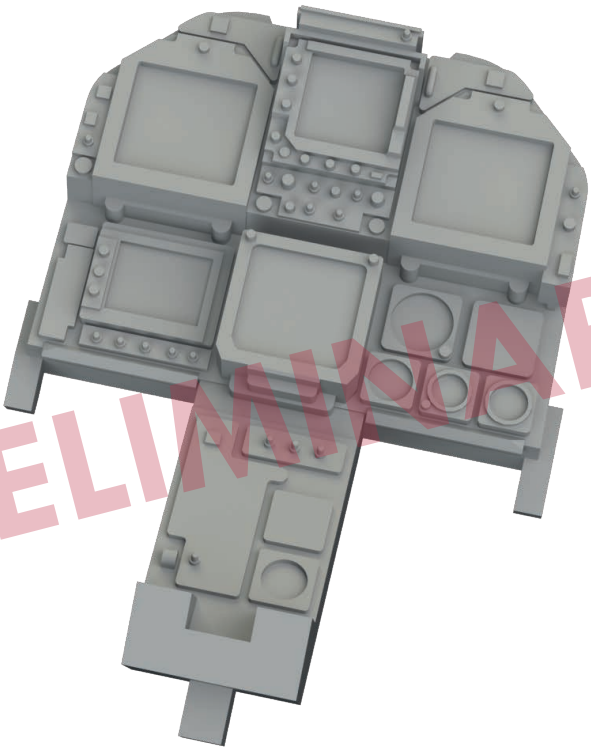
BIGSIN (February)

SIN64879 Spitfire Mk.Vc ESSENTIAL 1/48 Eduard

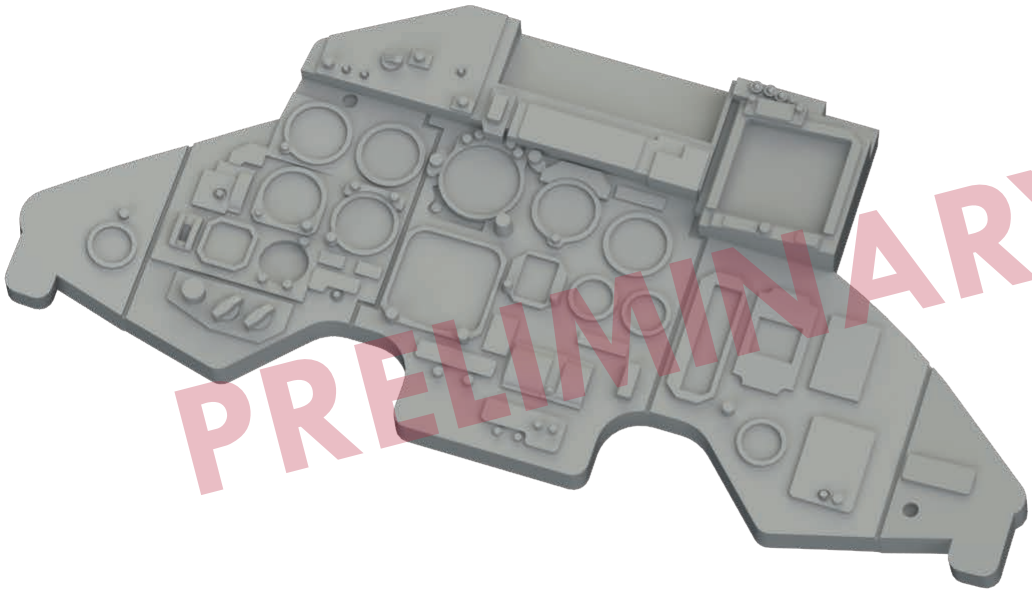
634025 P-51D-15 LöökK 1/32 Revell

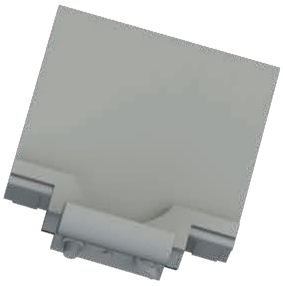


644129 F/A-18E LöökK 1/48 Meng

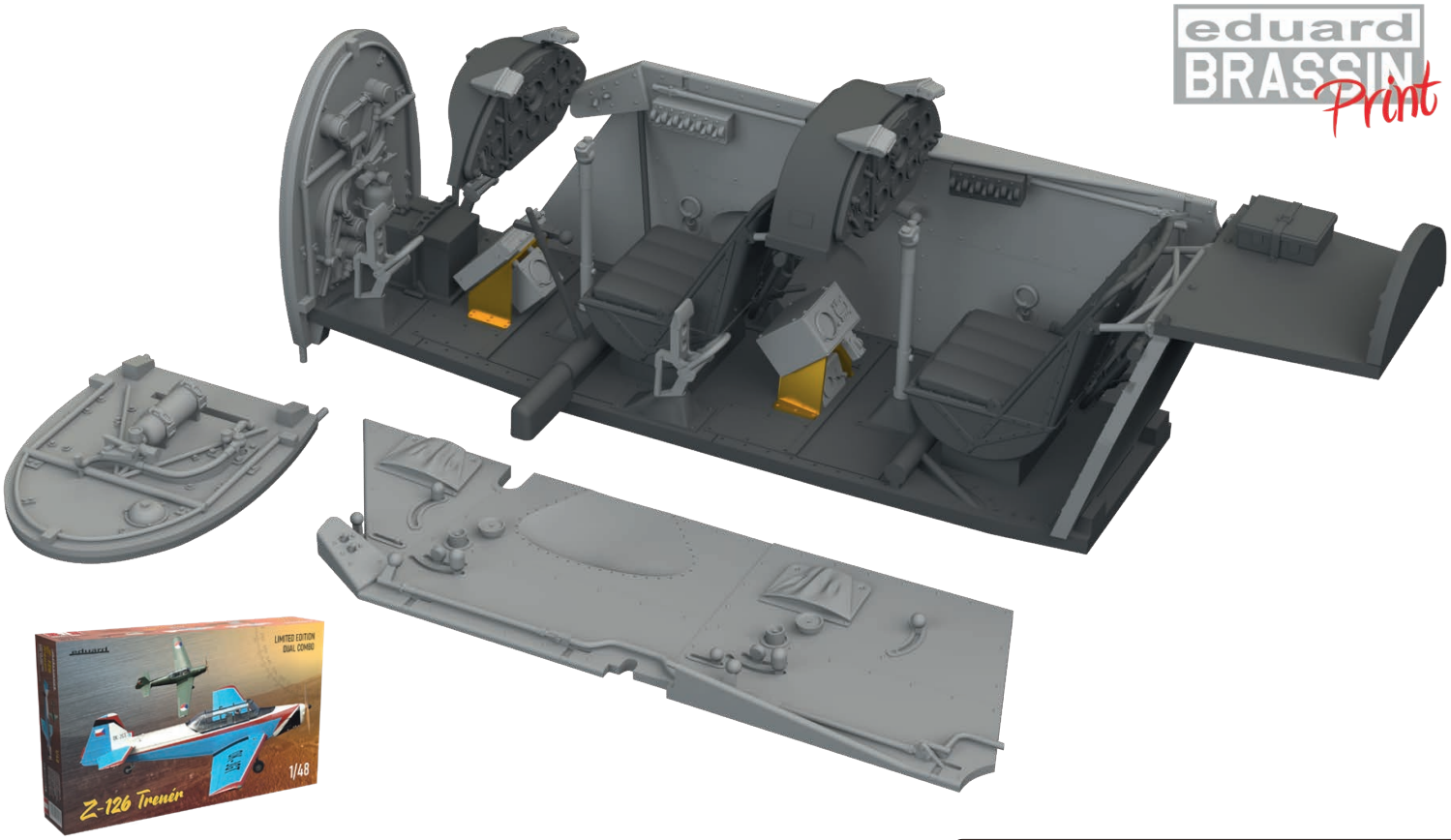


644138 Su-27 LöökK 1/48 Great Wall Hobby

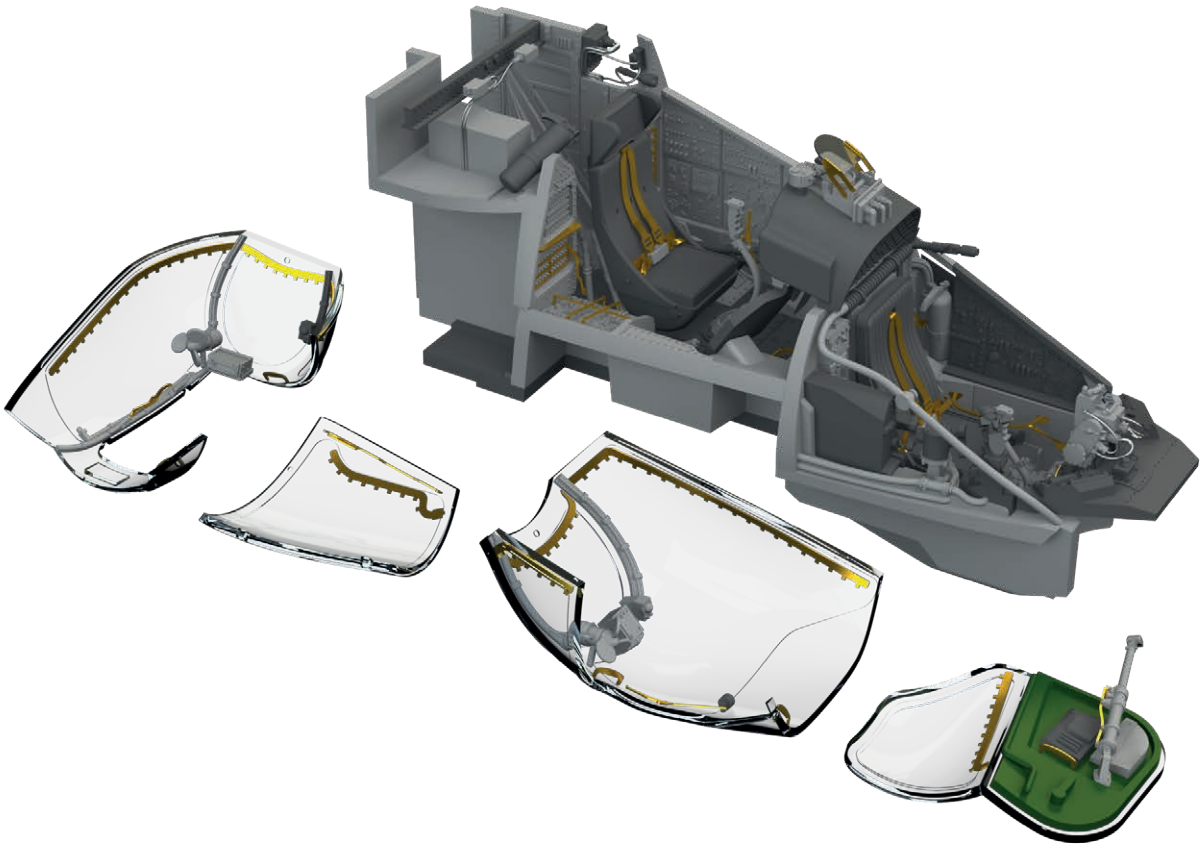




648680 Z-126 Trener cockpit PRINT 1/48 Eduard

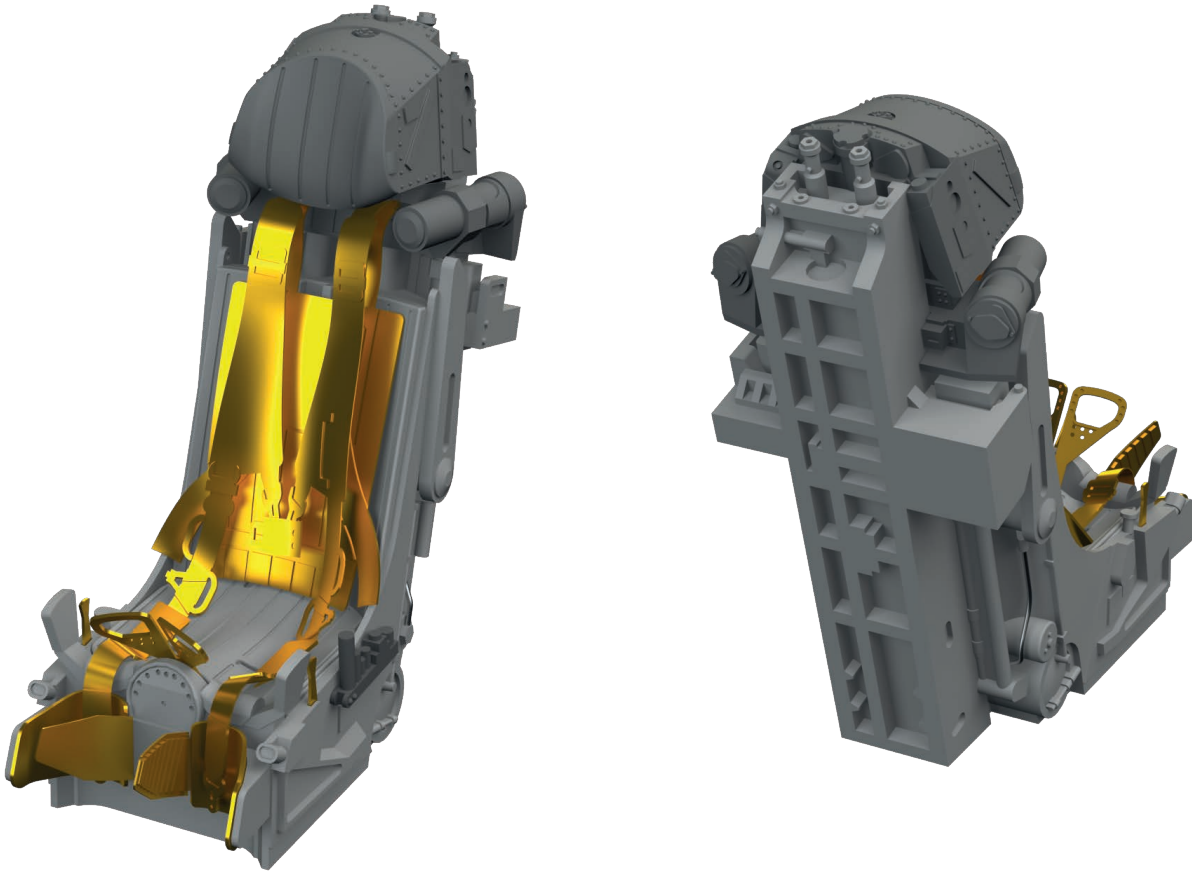


648696 Mi-24V cockpit 1/48 Zvezda



648710 F-4B ejection seat late PRINT 1/48 Tamiya

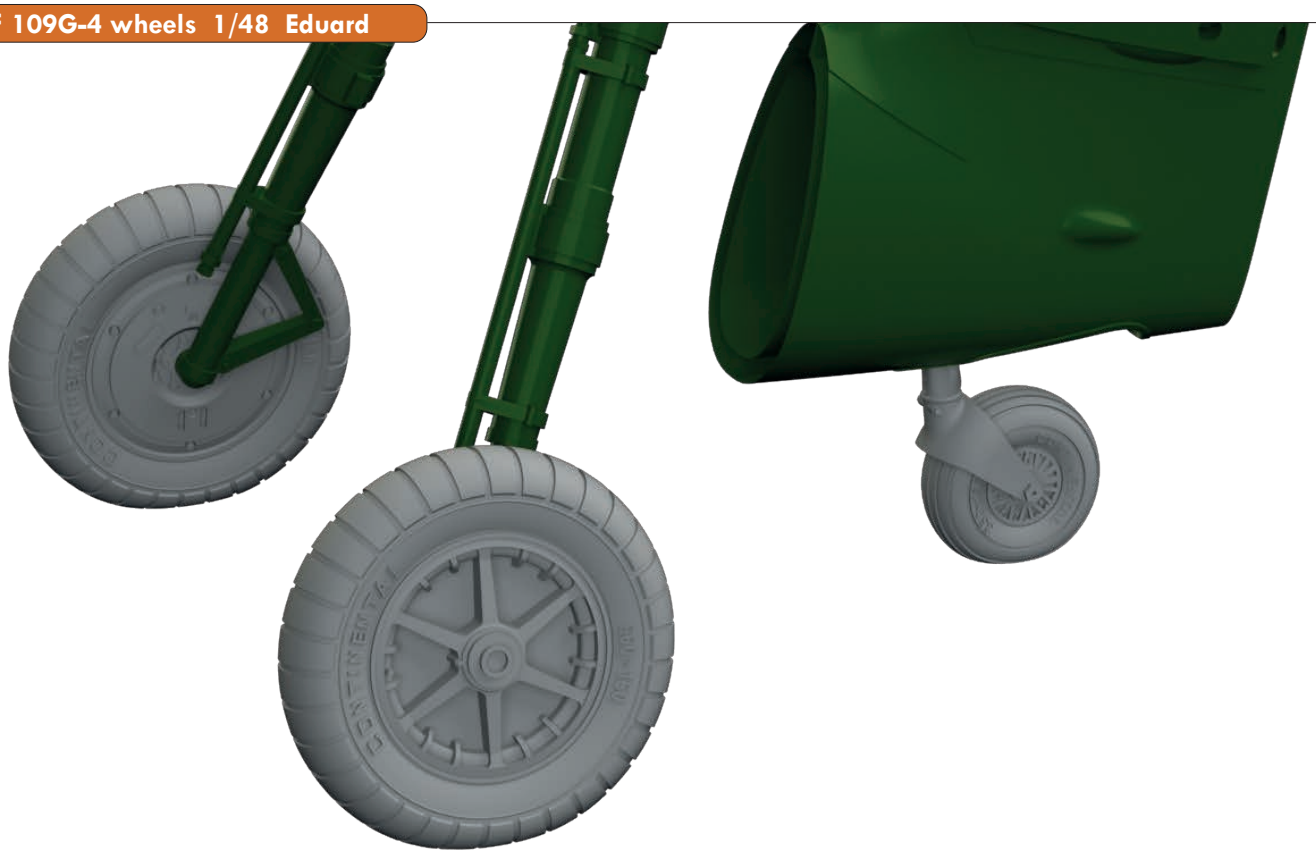
648717 Su-27 ejection seat 1/48 Great Wall Hobby



648718 A-4 ejection seat 1/48 Hasegawa

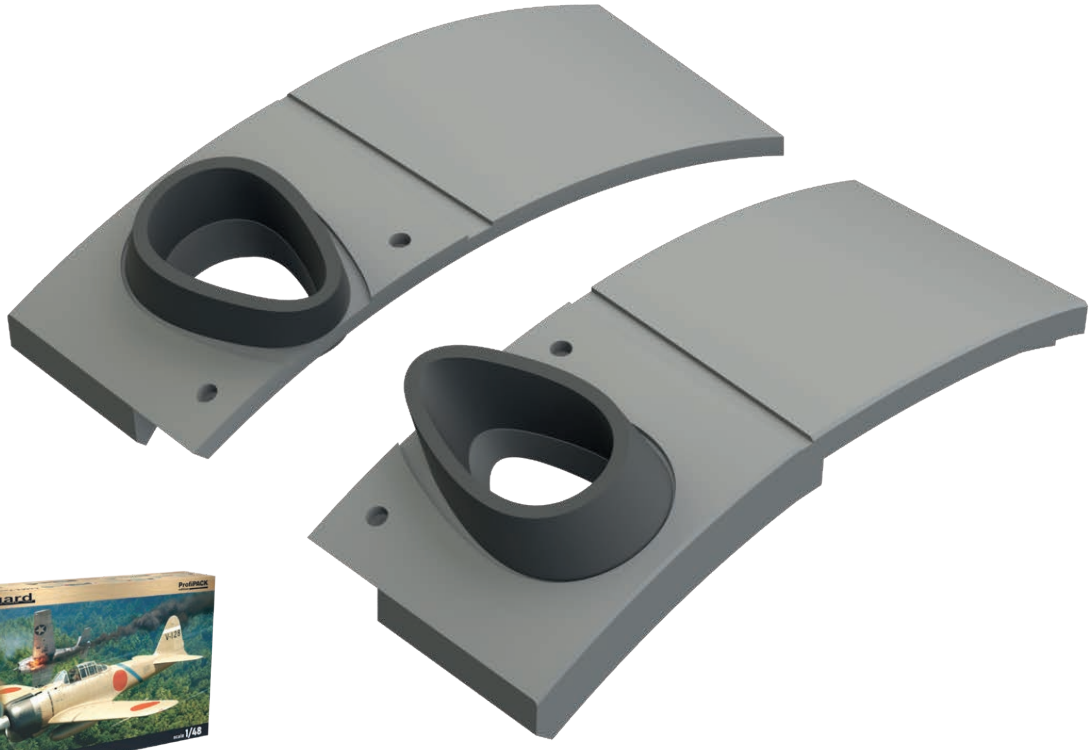
648719 Pe-2 wheels 1/48 Zvezda

648720 Bf 109G-4 wheels 1/48 Eduard



648722 A6M2 exhausts PRINT 1/48 Eduard

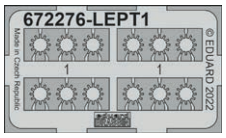
eduard BRASSIN Print

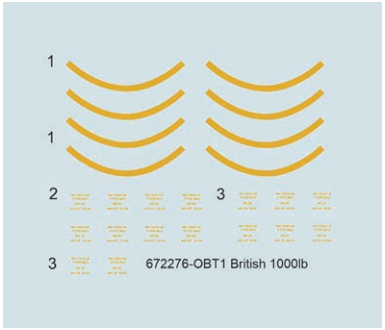


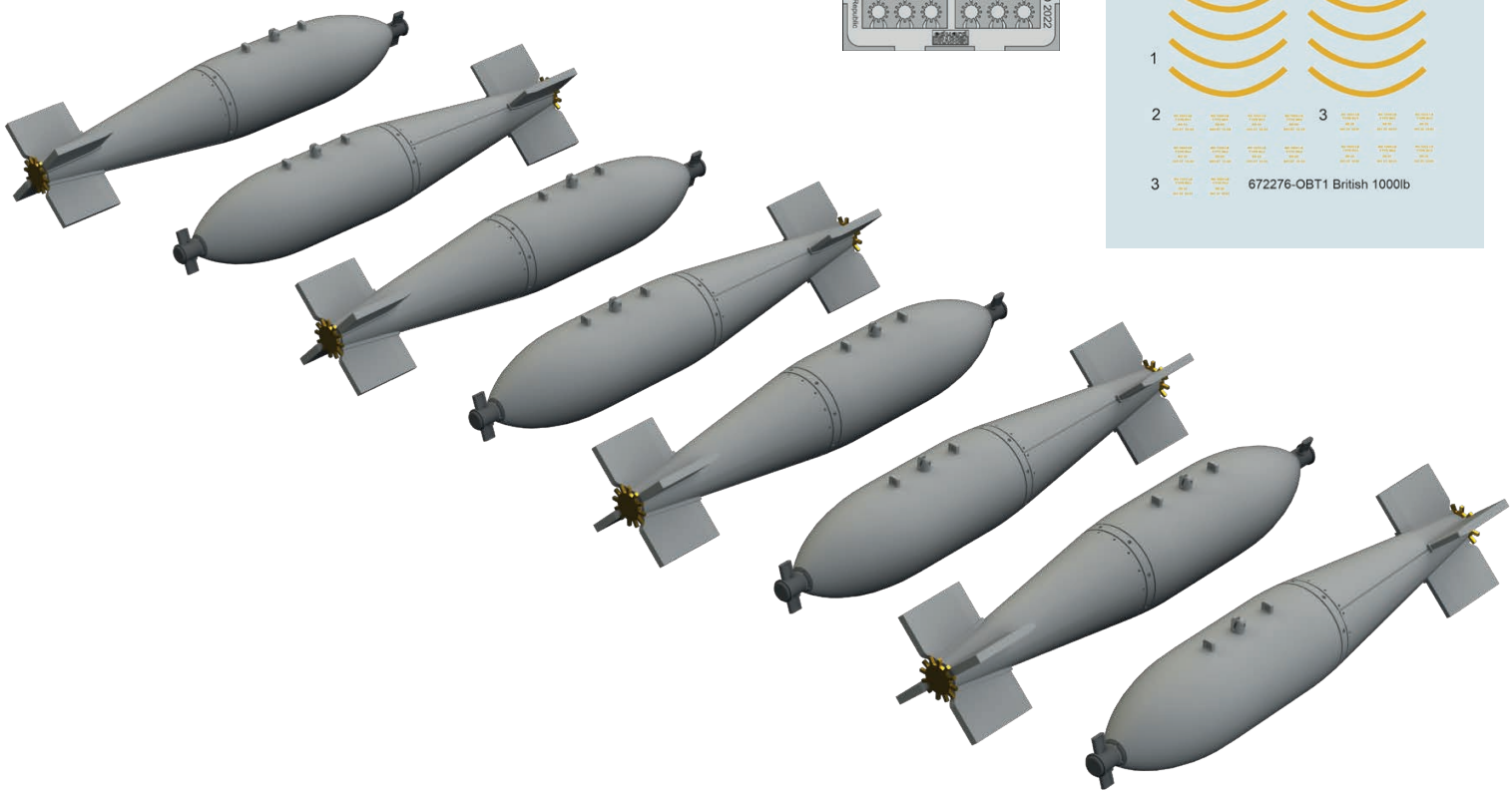
648723 A6M2 cannon barrels & cockpit guns PRINT 1/48 Eduard

648724 A6M2 landing flaps PRINT 1/48 Eduard

672276 British 1000lb free fall bombs 1/72



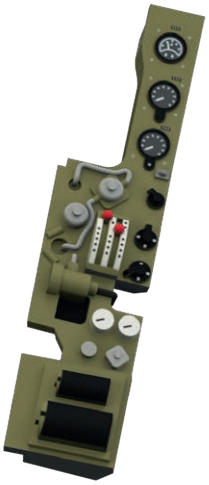


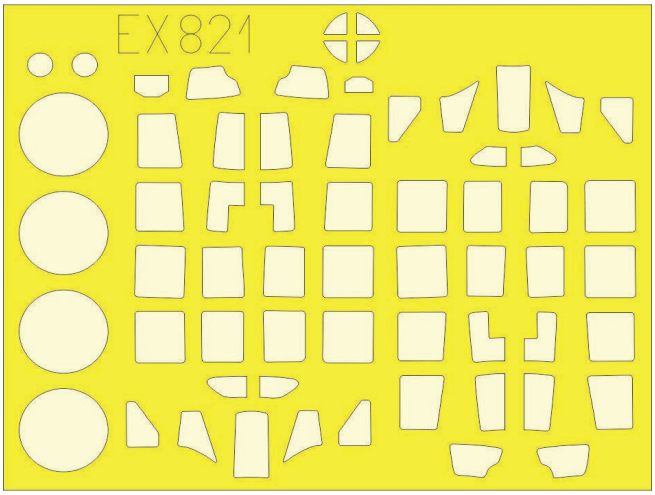


644134 A6M2 LööKplus 1/48 Eduard

Collection of 4 sets for A6M2 Zero in 1/48 scale.
Recommended kit: Eduard

- LööK set (pre-painted Brassin dashboards & Steelbelts)
- TFace painting mask
- undercarriage wheels
- the seat PRINT

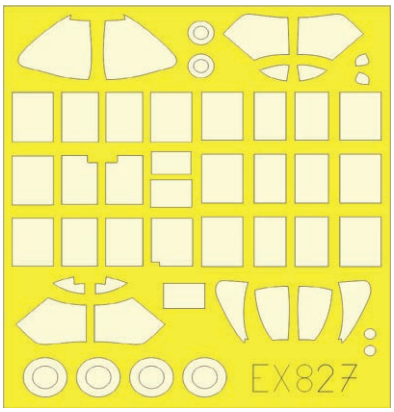


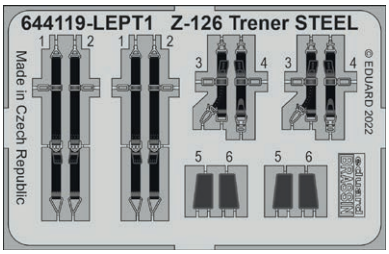


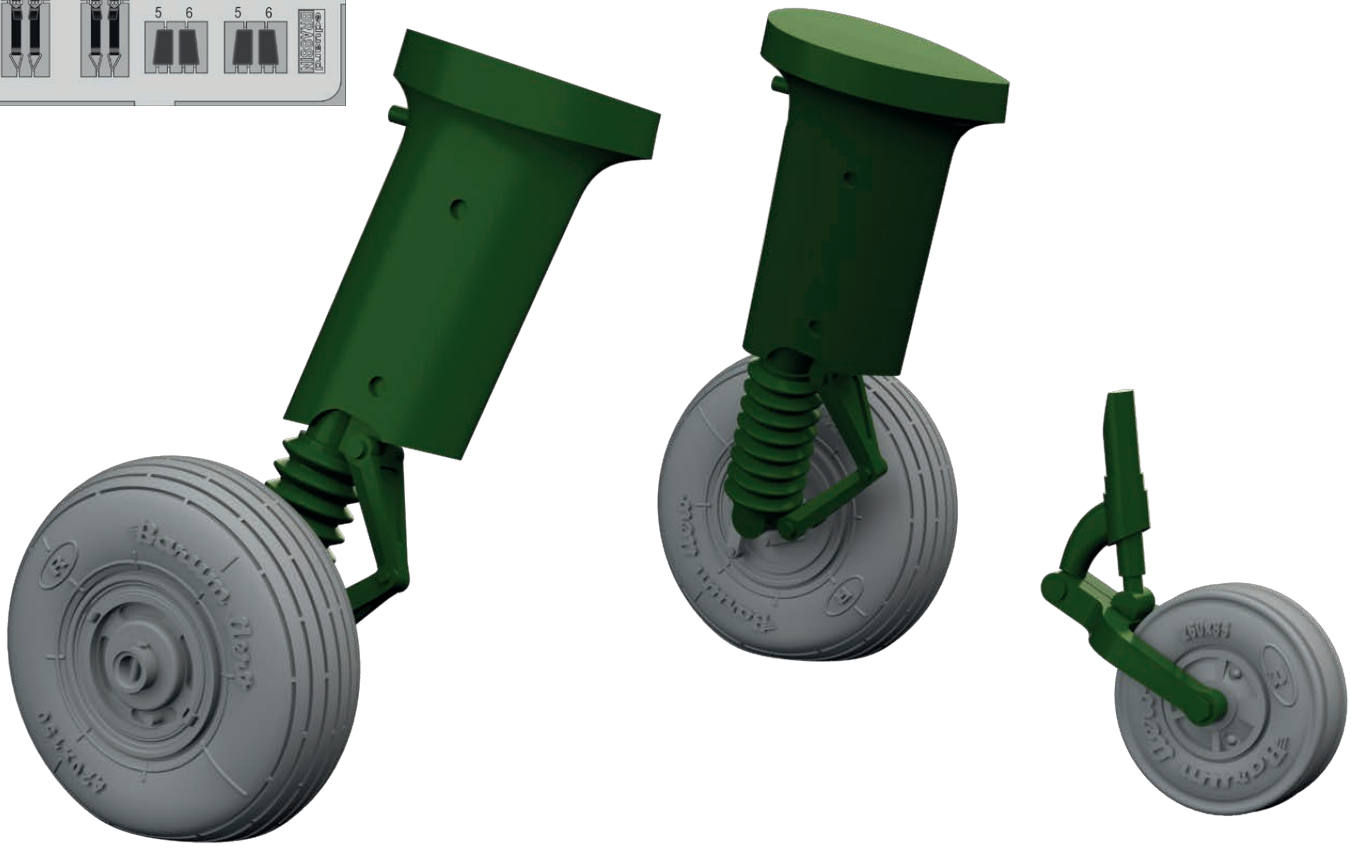
644139 Z-126 Trener LööKplus 1/48 Eduard

Collection of 3 sets for Z-126 Trener in 1/48 scale.
Recommended kit: Eduard

- LööK set (pre-painted Brassin dashboards & Steelbelts)
- TFace painting mask
- undercarriage wheels





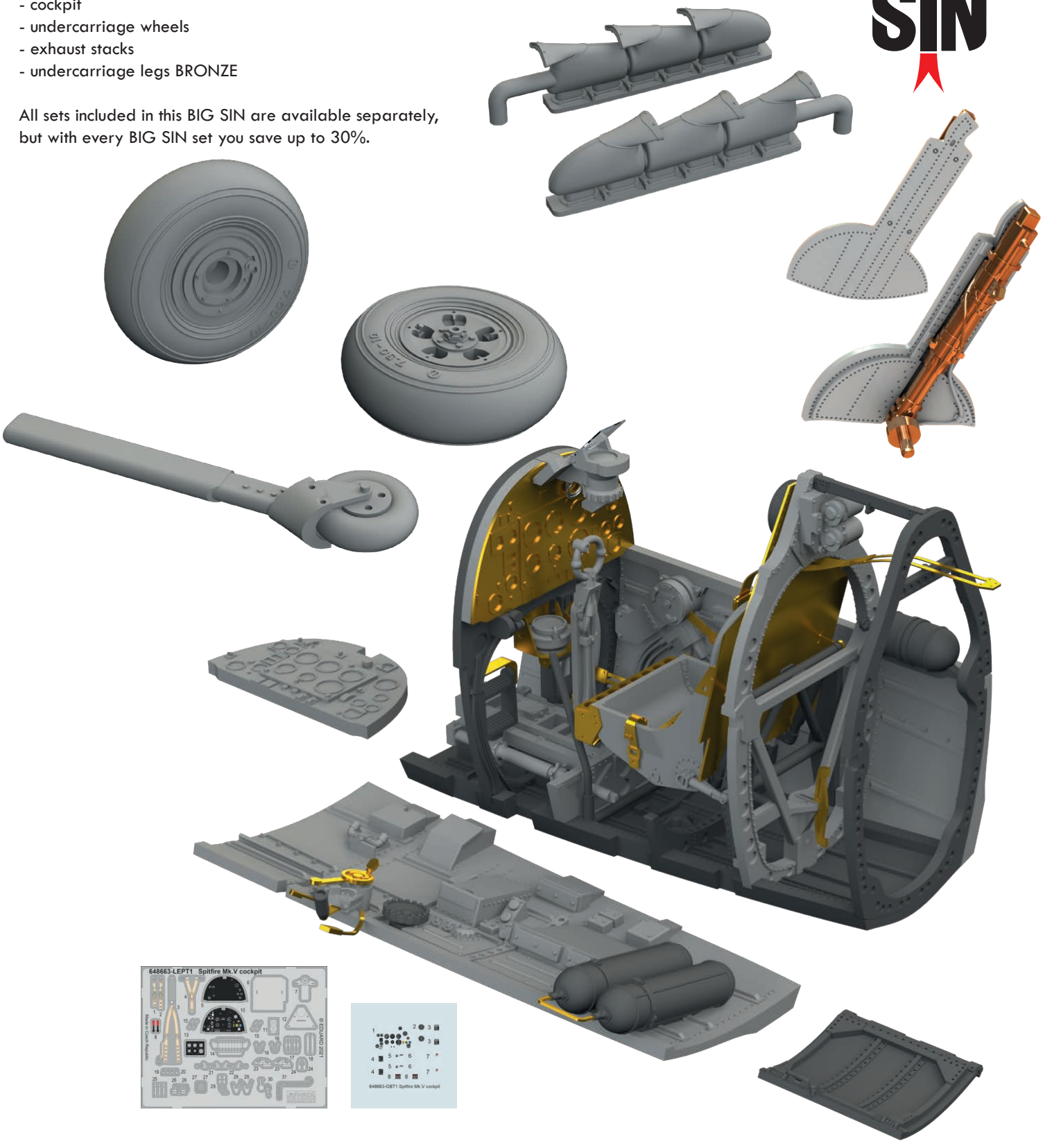


SIN64879 Spitfire Mk.Vc ESSENTIAL 1/48 Eduard

Collection of 4 sets for Spitfire Mk.Vc in 1/48 scale.
Recommended kit: Eduard

- cockpit
- undercarriage wheels
- exhaust stacks
- undercarriage legs BRONZE

All sets included in this BIG SIN are available separately, but with every BIG SIN set you save up to 30%.



ON APPROACH

FEBRUARY 2022

PE-Sets, Masks, Decal sets and SPACE

PE-SETS

32476	Tornado ECR exterior	1/32	Italeri
32477	B-25H exterior	1/32	HKM
32994	Tornado ECR interior	1/32	Italeri
32995	Tornado ECR undercarriage	1/32	Italeri
32996	B-25H interior	1/32	HKM
36476	T-62	1/35	Zvezda
481077	A6M2 Zero	1/48	Eduard
491244	F-104S	1/48	Kinetic
491245	F-104S ASA	1/48	Kinetic
491246	F-104S ASA-M	1/48	Kinetic
491248	Hs 129B	1/48	Dora Wings

ZOOMS

33293	Tornado ECR	1/32	Italeri
33294	Tornado ECR seatbelts STEEL	1/32	Italeri
33295	B-25H	1/32	HKM
33296	B-25H seatbelts STEEL	1/32	HKM
FE1242	MiG-21SMT Weekend	1/48	Eduard
FE1243	Spitfire Mk.Ia Weekend	1/48	Eduard
FE1244	F-104S	1/48	Kinetic
FE1245	F-104S ASA	1/48	Kinetic
FE1246	F-104S ASA-M	1/48	Kinetic
FE1247	F-104S seatbelts STEEL	1/48	Kinetic
FE1248	Hs 129B seatbelts STEEL	1/48	Dora Wings

MASKS

JX285	Tornado ECR	1/32	Italeri
JX286	Tornado ECR TFace	1/32	Italeri
JX287	B-25H	1/32	HKM
JX288	B-25H TFace	1/32	HKM
EX828	Hs 129B TFace	1/48	Hobby 2000/Hasegawa
EX829	F-104S	1/48	Kinetic
EX830	F-104S TFace	1/48	Kinetic
EX831	P-35	1/48	Dora Wings
EX832	P-35 TFace	1/48	Dora Wings
CX619	Wellington Mk.II	1/72	Airfix

DECAL SETS

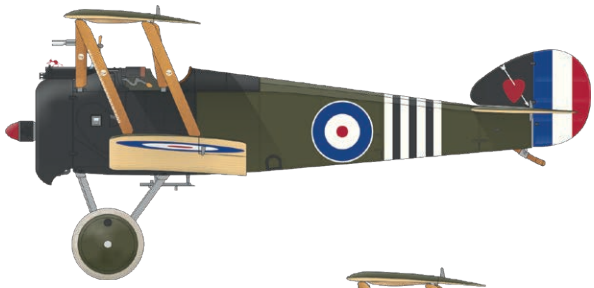
D32018	TORA TORA TORA!	1/32	Tamiya
D48099	F-14 stencils	1/48	Tamiya

SPACE

3DL32003	B-25H SPACE	1/32	HKM
3DL32004	Remove Before Flight (white) SPACE	1/32	
3DL32005	Remove Before Flight (black) SPACE	1/32	
3DL48058	OV-10A SPACE	1/48	ICM
3DL53003	IJN ensign flag WWII SPACE	1/350	

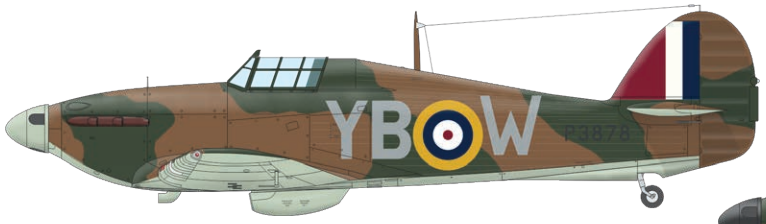
Sopwith F.1 Camel (Clerget)

ProfiPACK edition



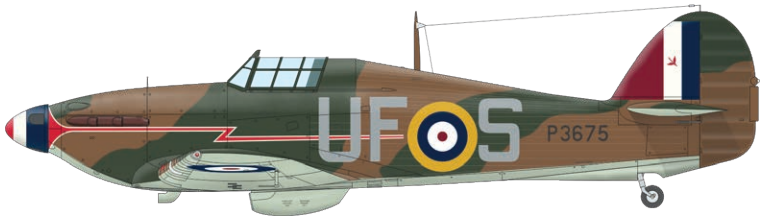
Hurricane Mk.I

ProfiPACK edition

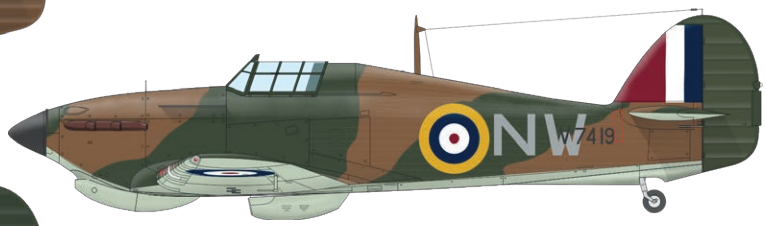


P3878, F/O Harold A. C. Bird-Wilson, No. 17 Squadron, RAF Debden, Great Britain, July 1940

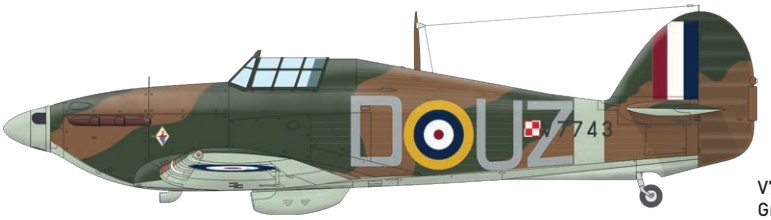
P3143, No. 310 (Czechoslovak) Squadron, RAF Duxford, Cambridgeshire, Great Britain, September 1940



P3675, F/Lt Michael L. Robinson, No. 601 Squadron, RAF Tangmere, West Sussex, Great Britain, September 1940



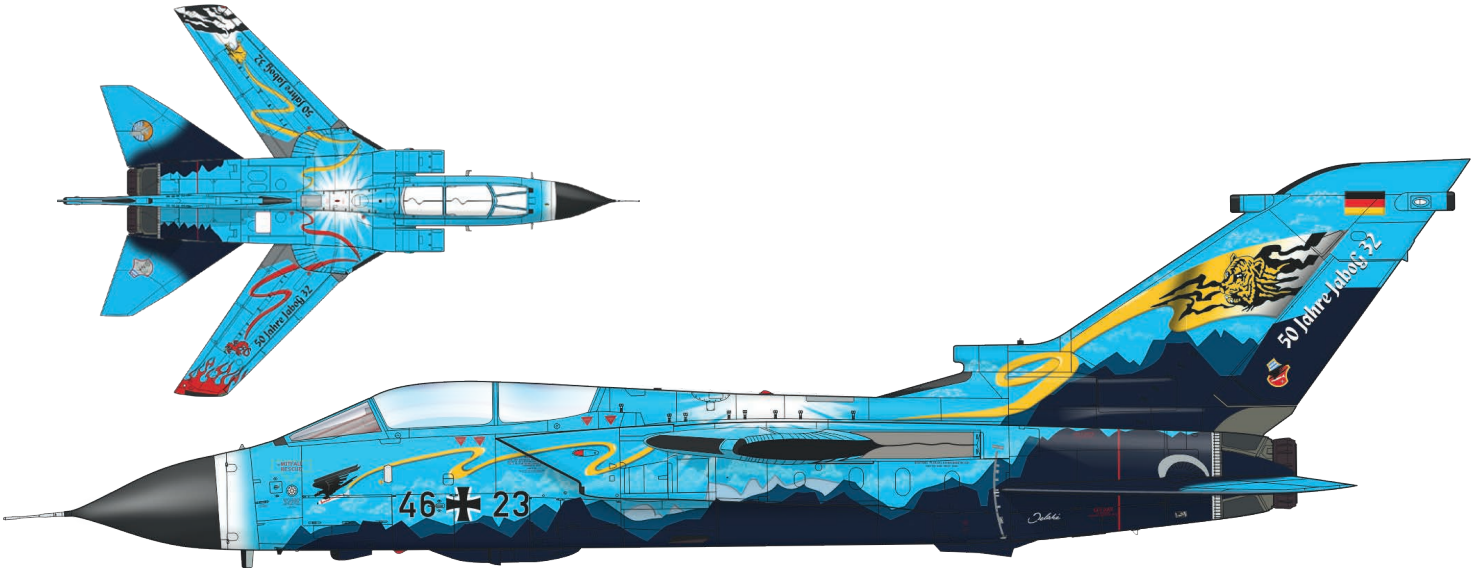
V7419, S/Ldr Marmaduke Thomas St John Pattle, CO of No. 33 Squadron, Larissa, Greece, March–April 1941



V7743, No. 306 (Polish) Squadron, RAF Ternhill, Shropshire, Great Britain, March 1941

TORNADO ECR

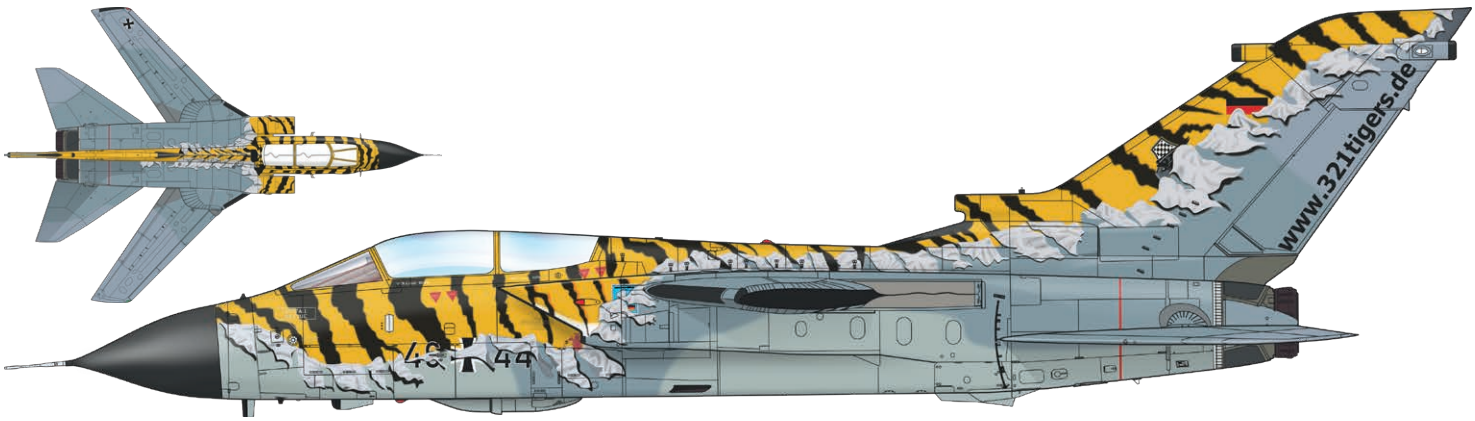
eduard
LIMITED EDITION



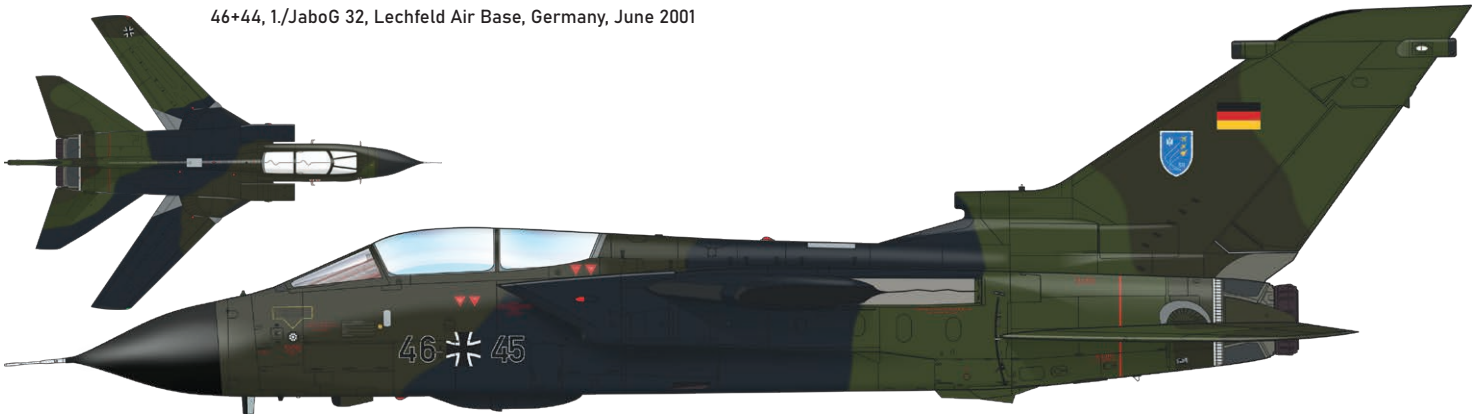
46+23, JaboG 32, Lechfeld Air Base, Germany, July 2008

TORNADO ECR

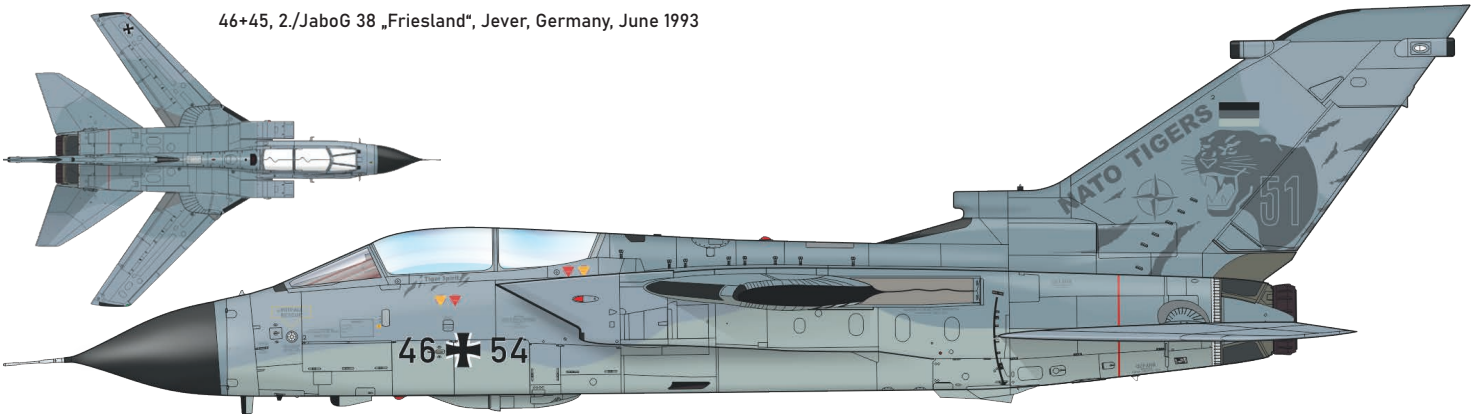
eduard
LIMITED EDITION



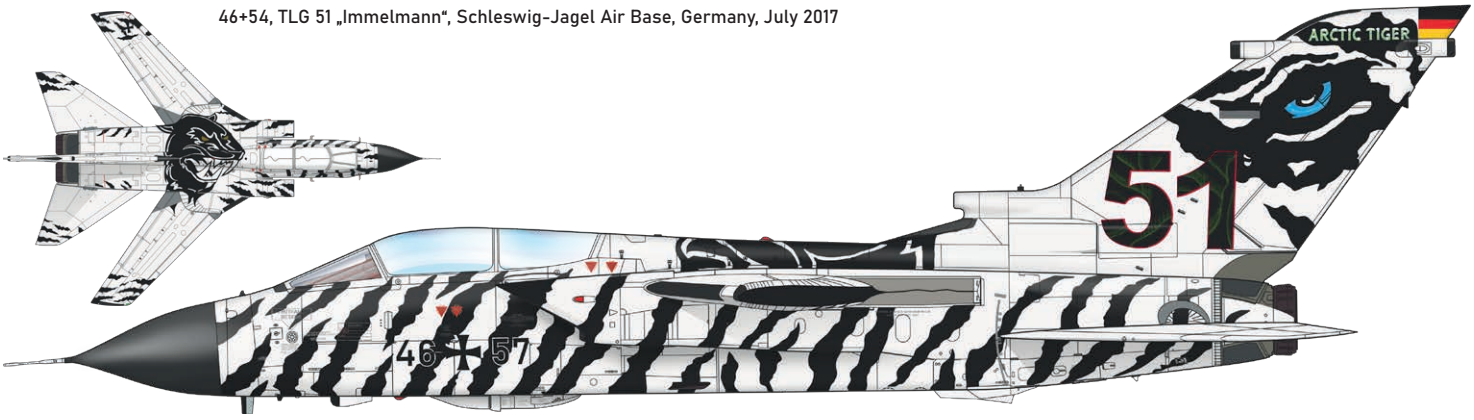
46+44, 1./JaboG 32, Lechfeld Air Base, Germany, June 2001



46+45, 2./JaboG 38 „Friesland", Jever, Germany, June 1993



46+54, TLG 51 „Immelmann", Schleswig-Jagel Air Base, Germany, July 2017



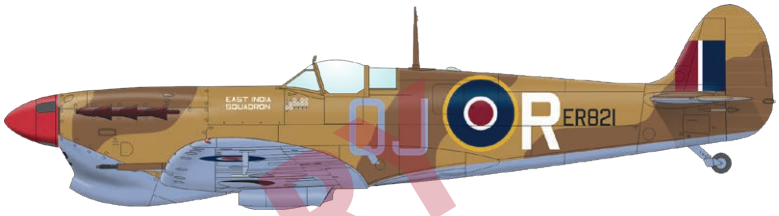
46+57, AG 51, Schleswig-Jagel Air Base, Germany, July 2013

SPITFIRE STORY: Southern Star

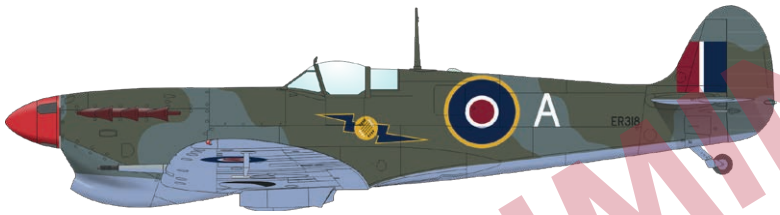
eduard LIMITED EDITION

Cat. No. 11157

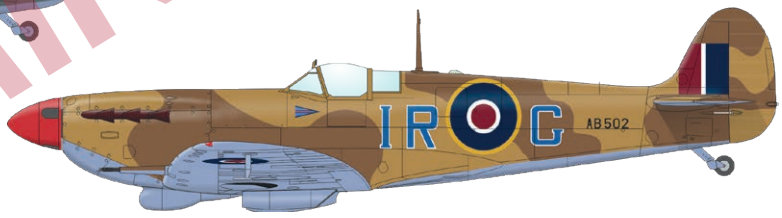
1/48



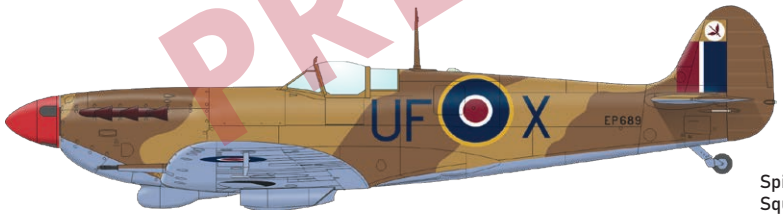
Spitfire Mk.Vb trop, ER821, F/Lt Neville F. Duke,
No. 92 Squadron, Bou Grara, Tunisia, January-March 1943



Spitfire Mk.Vb trop, ER318, P/O C. R. Furtney,
No. 274 Squadron, Termoli, Italy, March 1944



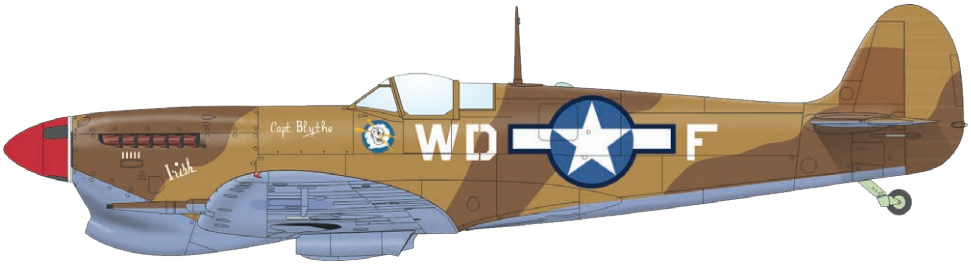
Spitfire Mk.Vb trop, AB502, W/Cdr Ian Richard Gleed,
CO of No. 244 Wing, Bou Grara, Tunisia, March-April 1943



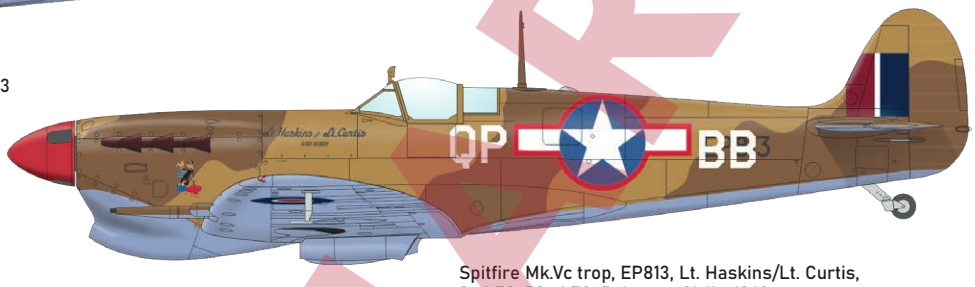
Spitfire Mk.Vb trop, EP689, S/Ldr Stanislaw Skalski, CO of No. 601
Squadron, Pachino, Italy, July 1943

SPITFIRE STORY: Southern Star

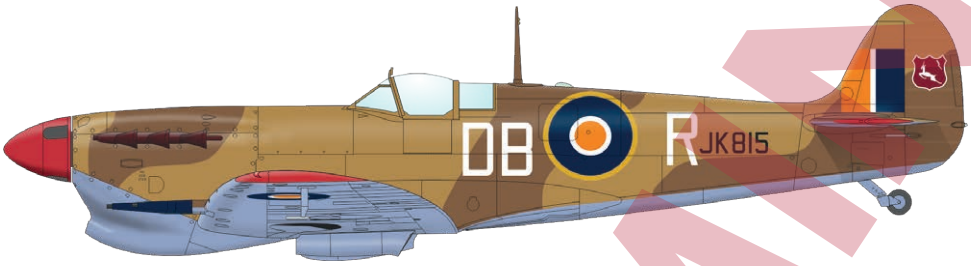
eduard LIMITED EDITION



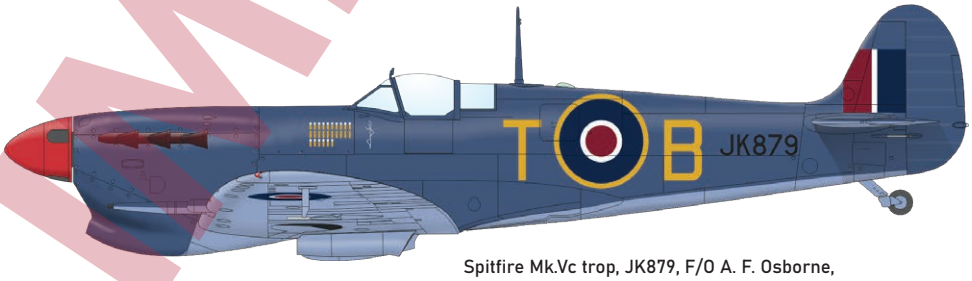
Spitfire Mk.Vc trop, Capt John K. Blythe,
4th FS, 52nd FG, 12th AF, North Africa, February 1943



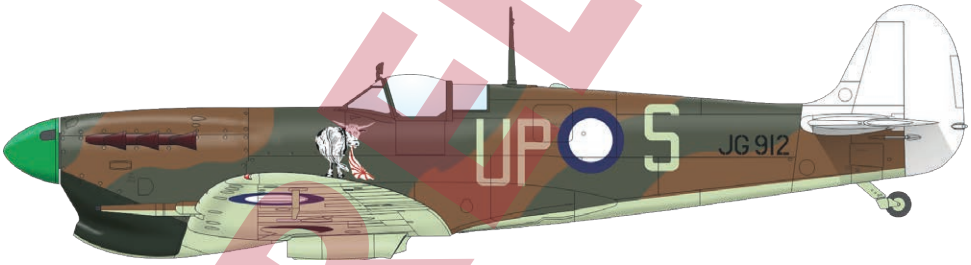
Spitfire Mk.Vc trop, EP813, Lt. Haskins/Lt. Curtis,
2nd FS, 52nd FG, Palermo, Sicily, 1943



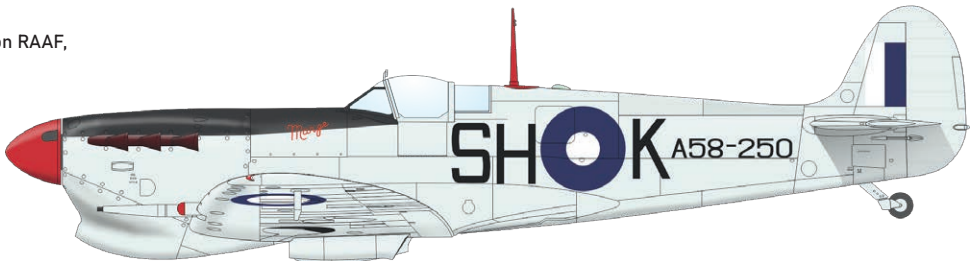
Spitfire Mk.Vc trop, JK815, No. 2 Squadron SAAF,
Gioia del Colle, Italy, October 1943



Spitfire Mk.Vc trop, JK879, F/O A. F. Osborne,
No. 249 Squadron, Qrendi, Malta, May-June 1943



Spitfire Mk.Vc trop, A58-180 (JG912), No. 79 Squadron RAAF,
Kiriwina, Trobriand Islands, October 1943



A58-250 (MH586), No. 85 Squadron RAAF, Pearce,
Australia, May 1945

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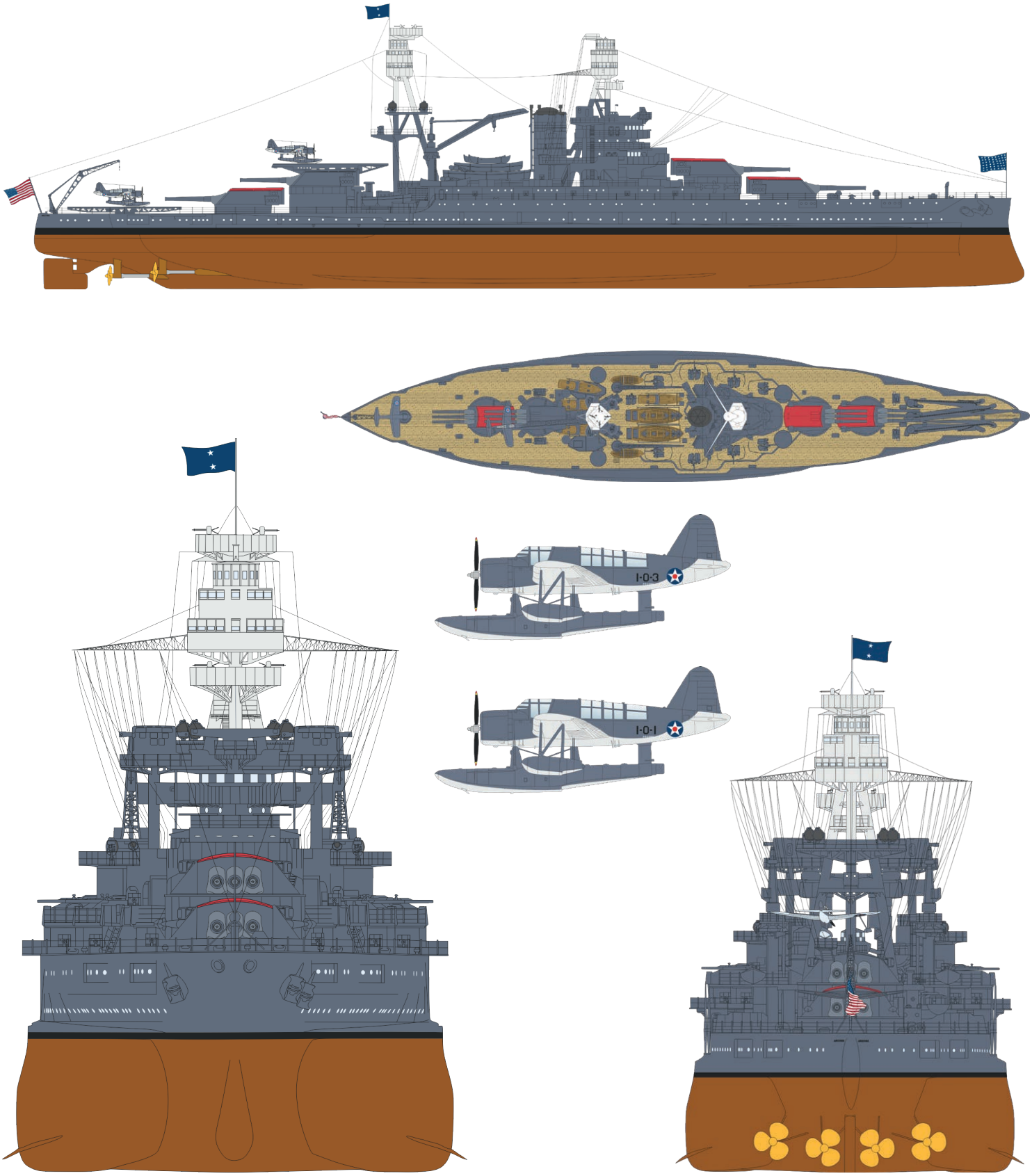

MiG-15

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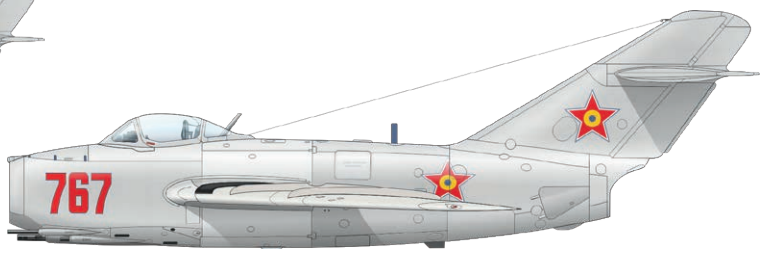
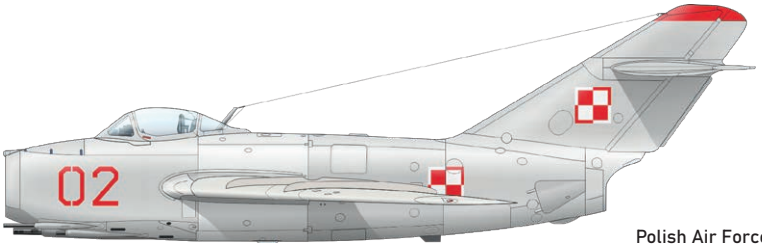
c/n 120077, Major Alexei A. Mikoyan, the Deputy CO of 274th IAP, Kubinka Air Base, Soviet Union, early fifties

29th GIAP, Dachang Air Base, Shanghai, China, spring - summer 1950

c/n 108023, 176th IAP, Antung Air Base, Korea, April 1951



c/n 231767, Romanian Air Force, Deveselu Air Base, Romania, 1962



Polish Air Force, 1st PLM, Warszawa - Babice Air Base, Poland, 1951

P-51D

ProfiPACK edition

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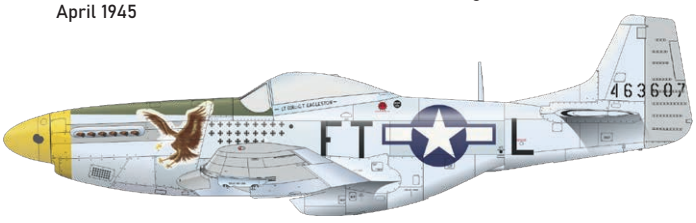
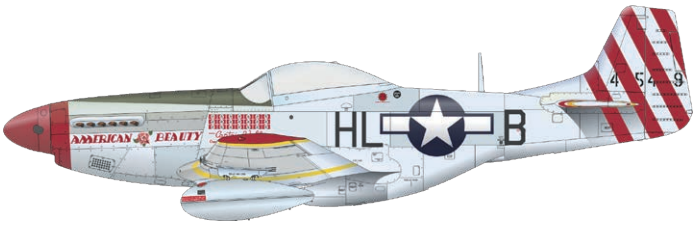
Re-release

P-51D-15, 44-15041, flown by Lt Col. John C. Meyer,
352nd FG, 8th AF, Y-29 Asch, Belgium, December 1944

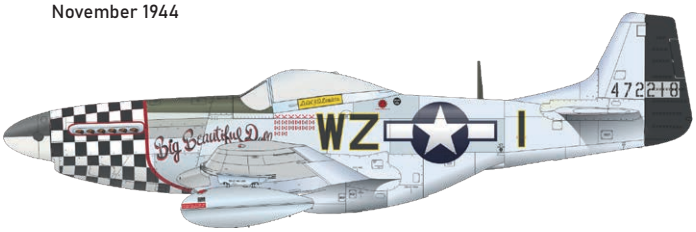
P-51D-10, 44-14221, flown by Maj. Pierce W. McKennon,
CO of 335th FS, 4th FG, 8th AF, Debden, United Kingdom,
April 1945



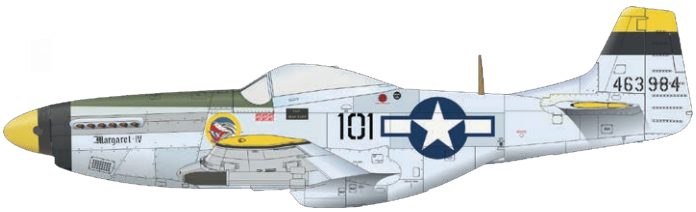
P-51D-20, 44-63607, flown by Lt Col. Glenn T. Eagleston,
CO of 353rd FS, 354th FG, 9th AF, Y-64 Ober Olm, Germany,
April 1945



P-51D-15, 44-15459, flown by Capt. John J. Voll,
CO of 308th FS, 31st FG, 15th AF, San Severo, Italy,
November 1944



P-51D-20, 44-72218, flown by Lt Col. John D. Landers,
CO of 78th FG, Duxford, United Kingdom, March 1945



P-51D-20, 44-63984, flown by Maj. James B. Tapp,
CO of 78th FS, 15th FG, 7th AF, Iwojima, May 1945

Tail End Charlie

A MOMENT OF AWAKENING

I've only been to Japan once. And I didn't like it, to be honest... My most distinctive memory, apart from the actual purpose of the trip, which was the Japanese F1 Grand Prix, was the big hall I mistakenly considered was a warehouse. It was not. In fact, it was gambling hall where managers and clerks with their loosen neckties were trying to ease their exhaustion with poor steel balls in a game called Pachinko. The sight of the long lines of these surely hard-working and snowed under people made me to feel quite uneasily, the feeling which only disappeared after a visit to a restaurant serving Wagyu and Kirin...

I never cared for Japanese planes either. I didn't care about them at all, and the Zero was no exception. I thought about it as if it was the kind of flimsy little plane that served American pilots of Corsairs and Hellcats as a kind of just a little bit more tricky training target. I never read the "Samurai!" story, and for a short time had only one single "meatball" kit in my stash, the Hasegawa's 1/32nd Hayate. Oh, how foolish I was!

Although the Zeros were really falling like flies at some point of the war under the domination of the latest American designs, the aircraft, which completed its first combat sortie in August 1940 and fought almost unchanged until the end of the war, deserves real recognition. I wonder what it would have looked like if the Germans were flying in 1945 with, say, just a little bit upgraded Messerschmitt Bf 109E-4s. That would be really like a snowball's chance in hell... Unsurprisingly, American intelligence officials dismissed the initial and sketchy reports of the new Japanese fighter as aerodynamic impossibility.

When I joined Eduard, Project Voldemort, as the development of the quarter scale Zero was reported internally in the interest of secrecy, was already at an advanced stage of development. So, I therefore had virtually nothing to do with it. But as we were going to produce it, I should know something about it, right? Eduard has some great experts in Japanese aviation and even people who speak Japanese, but I certainly couldn't use their knowledge to hide my total ignorance, however much they help us in the model preparation department with the Zero. I've read the first book about the Zeke, the second, I'm starting the third... My opinion of the Zero is changing dramatically. And especially of its role as a "training target". What kind of a training target is it if, at the end of the war, its pilots can routinely shoot down the enemy's newest and most powerful machinery? Although Sadaaki Akamatsu did not shoot down four Hellcats in a Zero, as reported somewhere, but in Raiden during the well-known combat on February 17, 1945, other Japanese pilots routinely claimed success in the A6M until the end of the war. I can't quite imagine the aforementioned Bf 109 E-4 regularly shooting down, say, the latest Mustangs or Tempests...

Of course, in the context of my process of searching for information I could not avoid the issue of Zero coloring. Here, too, my original ideas were very naive: It simply was light grey and that was it... But the issue of "ame-iro" color compares to a good detective story, as you can read in an interesting article by Marian Holly in this issue. Connoisseurs argue, modelers lean towards one side or the other, and arguments about one shade or another are not unlike disputations on the meaning of life, the universe and everything. Personally, I am very tolerant and free-thinking when it comes to the right color for the kit. I take it that color means light (Sic!) and in the case of color photographs, also the photographic material used (talking about good old days we were using it). And the lighter the color, the more it tends to look different under different light conditions. So, one shade of grey, photographed on one kind of photographic material under one light condition, compared to another one picture taken on different material under another light condition will bring substantially different shades when the photos are developed. It really can develop a headache...

Even experiments with chemical analysis of the color taken from the remains of the original Zeros have not been conclusive. In two cases, these researchers got two different results. I don't think I can bring it down to the light conditions in this case off course, but I can imagine how during the war perhaps the paint production formula changed, or some ingredient of the color produced by factory A were changed for with an ingredient of similar (but not exactly the same) composition from factory B. And there are for sure many other variables that could have affected the outcome. It is possible that we may not find out until the end of time exactly what the "ame-iro" looked like. Or, better to say, what it looked like when it was new. We're in a similar position with the color of the Hinomaru as well. Even being just partly educated in these cases I have come to understand that any authoritative statement in this area is to disgrace oneself to those who really know something. Occasionally, such an "authoritative" poster, who obviously was there, when "ame-iro" was mixed, will pop up on the forums. We all know them: "This is too dark, this is too green, this is too ochre. And this sour jelly is too sour..." Well, are you kidding me? Personally, I mix colors to make a model to look plausible and appealing in my own eyes, and I feel the same way about the kits of others. We have different eyes and feelings, not to mention the scale effect and so on... It's different when we work on kit preparations here at Eduard off course, yet we often have no choice but to rely on a certain amount of modelers perspective. For example, in "ame-iro", where even the world's top experts cannot agree on a result, and we have to choose somehow...

To conclude with the Zero theme, I really think today that it was an exceptional design of exceptional man Jirō Horikoshi. I'm sure he worked very hard and under pressure (he even paid for that with his health), but I don't think he was playing Pachinko then. Even though it comes from 20´s , it was more of a children's game before the war. There was even a movie made about Mr. Horikoshi in 2013. It is a cartoon movie "The Wind Rises" (Kaze tachinu). I finally got it and have it ready for this weekend to watch. But until then, I have some work to do. Among other things, the Hermione. That's the code name for our new project. And that's gonna be a lot of fun, too!

Richard Plos