

# Building the Messerschmitt Bf 110 E in 1/48 scale

Brett Green



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**Building Eduard's 1/48 scale Bf 110 E**

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Welcome to the inaugural downloadable HyperScale Resource Guide.

The aim of this document is to offer a one-stop guide for modeling a recent and interesting kit release. The focus of this first guide is Eduard's 1/48 scale Messerschmitt Bf 110 E.

A new Resource Guide will be produced every three months.

The downloadable PDF format will permit modelers to print the booklet and use it as a workbench reference while building your Bf 110.

I would like to thank Tom Tullis for his wonderful profiles, Mick Evans for the photograph of Rudolph Hess's Bf 110 D fuselage, and Eduard for supplying the sample kit.

I do hope that you will enjoy HyperScale's premiere edition Resource Guide.

Brett Green  
October 2007

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## Credits

Text and images by Brett Green  
 Colour profiles © 2002 by Tom Tullis  
 Photograph of Rudolph Hess Bf 110 fuselage by Mick Evans

## Background

The Messerschmitt Bf 110 entered the Second World War as a new and prestigious weapon of the Luftwaffe, performing the roles of bomber escort, heavy fighter and troop support during the German invasion of Poland. It performed well against Polish fighters, and put its heavy armament to effective use against ground targets after the Luftwaffe had established air superiority. The Bf 110 repeated these roles during the campaign in the West. The long range of the Bf 110 was especially useful for escorting bombers deep into France.

The twin engine Messerschmitt was more than a match for most contemporary French fighters, but early encounters with Spitfires and Hurricanes resulted in unaccustomedly heavy losses. This was an ominous indicator of the coming months over the British Isles.

In those summer months of 1940, Messerschmitt Bf 110s on long-range escort missions suffered heavy losses to British fighters. Eventually, Messerschmitt Bf 110s had to be escorted themselves by the more nimble Bf 109s.

Even if its fortunes as a pure fighter aircraft were mixed, the Messerschmitt Bf 110 had a better record as a defensive weapon.




As early as December 1939, Bf 110 C aircraft of I/ZG

76 were involved in the decimation of an armed reconnaissance patrol over the Heligoland Bight. Eight Wellingtons out of a total 22 on patrol were claimed by the Zerstörers. This single event put massed daylight bombing off the agenda until 1943, but ZG 2 and ZG 76 continued to enjoy superiority over Blenheims and Wellingtons in the following months.

Arguably the most important contribution made to the German war effort by the Messerschmitt Bf 110 was as a night fighter. The role was initially ad-hoc. From July, 1940, day fighters were simply painted black and sent aloft to deal with British bombers, now making their attacks under the relative protection of darkness. These early night fighters had no additional equipment nor ground control assistance. Enemy aircraft were held in the cone of a searchlight, and the Bf 110 would engage the bomber while it was illuminated in the beam.

The subject of Eduard's kit, the Messerschmitt Bf 110 E, was a refinement of the C and D models, beginning production in August 1940. The Bf 110 E was a versatile long distance bomber and heavy fighter. In addition to its ordnance and new gunsight, revisions were also made to the rear machine gun, and inside the cockpit. The most obvious exterior change was the addition of a rectangular air intake on the front of the top gun cowl.

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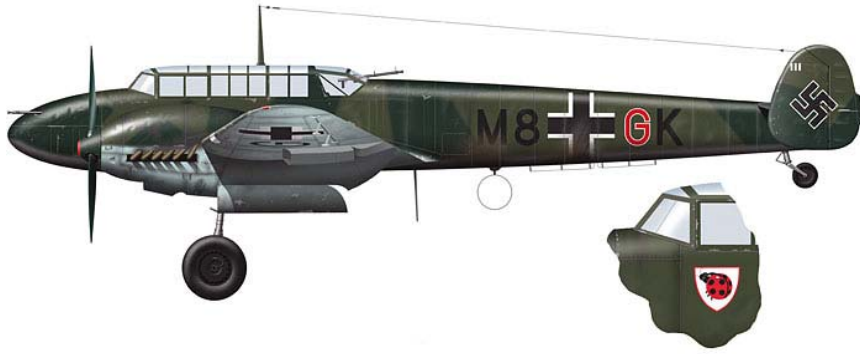
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## Messerschmitt Bf 110 C/D/E Colour Gallery

Colour artwork by Tom Tullis

Photograph by Mick Evans



A Messerschmitt Bf 110 C-1 of 2./ZG 76 flown by *Staffelkapitän* Wolfgang Falck in September 1939. This aircraft is finished in RLM 70 Black Green and RLM 71 Dark Green upper surfaces, with RLM 65 Light Blue on the bottom of the fuselage and wings. This camouflage was typically worn by the Messerschmitt Bf 110 from its introduction to service until mid 1940, although some aircraft were still in this scheme well into the Battle of Britain.



On 10 May 1941, Deputy Fuhrer Rudolph Hess took off from Messerschmitt's Augsburg factory in a brand new Bf 110 D on an ill-fated peace mission. He parachuted from the aircraft over Scotland, after which he was captured by the Home Guard and subsequently imprisoned. This is the rear fuselage of his aircraft, which crashed nearby. The Bf 110 D is finished in the camouflage scheme of the day, RLM 02 Grey and RLM 71 Dark Green on the fuselage spine and top of the wings over RLM 65 Light Blue lower surfaces. Note the high camouflage demarcation on the fuselage side. This new airframe still carries its radio codes on the fuselage,



Wolfgang Falck's Messerschmitt Bf 110 E night fighter, one of several flown while he was *Kommodore* of NJG 1. Luftwaffe night fighters of the early to mid-war period were usually painted overall black. The green letter "A" signifies the *Kommodore's* aircraft. The remaining codes are RLM 77 Grey. Falck retained the *Marienkäfer* (Ladybug) emblem from his early days with 2./ZG 76, in addition to the night fighters' *Englänblitz* shield.

## 1/48 Scale Bf 110 C/D/E Kit Summary

Brand	Variant	Comments	Item Number
Fujimi	Messerschmitt Bf 110 C/D	<b>PROS:</b> Generally accurate outline. Recessed panel lines. Many options supplied. Inexpensive. Simple parts breakdown. <b>CONS:</b> Slim rear fuselage. Poorly shaped and sized drop tanks, ETC rack, tail wheel. Very oversimplified cockpit. No wheel well detail. Poor spinners	31002
Astrokit	Messerschmitt Bf 110 C/D	Re-boxed Fujimi kit with Italian and Luftwaffe markings. Otherwise as above	48103
Eduard	Messerschmitt Bf 110 E	<b>PROS:</b> Accurate. Superb surface detail. Beautifully detailed including colour photo-etched parts. Clever engineering and very good fit. Many options supplied. High quality decals. <b>CONS:</b> Some experience and patience required.	8203

### Fujimi's 1/48 Scale Messerschmitt Bf 110 C/D

Before we examine Eduard's brand new 1/48 scale Messerschmitt Bf 110 E in detail, it may be useful to take a quick look at the only other early Messerschmitt Bf 110 offerings in this scale, Fujimi's Messerschmitt Bf 110 C/D kits.

Fujimi's 1/48 scale Bf 110 C can trace its origins back to 1973. In 1987, the kit was upgraded with additional parts to permit a Bf 110 D to be built. The revised boxing also included extra stores and improved decals.

The Bf 110 D kit comprises 120 parts in grey styrene plus 7 parts in clear. The surface features finely recessed panel lines, but recent re-releases are showing their age with some soft surface detail and disappearing panel lines, especially around the nose and the bottom of the fuselage.

One of the popular myths surrounding

this model is that it is closer to 1/50 scale. In fact, according to my measurements, the kit scales out to within 1 millimetre of length and wing span in 1/48 scale when compared to published dimensions. The wing chord is quite accurate too, but the rear fuselage is a little too slender.

Options supplied with the kit include the long "boat tail" seen on some Bf 110 Ds, the "Daschshund



**ABOVE:** Fujimi's 1/48 scale Messerschmitt Bf 110 C/D kit is quite accurate in outline, inexpensive and easy to build but is let down by its sparse interior and a number of undersized or inaccurate detail parts.

Belly” 1,200 litre centreline fuel tank, 900 litre and 300 litre drop tanks, auxiliary oil tank, ETC bomb rack and bombs. Unfortunately, many of these details are poorly shaped or lacking in detail. The drop tanks are puny and their underwing mounts are too long, amplifying the undersized impression. The tail wheel is also significantly too small. Detail on the ETC rack is half-hearted.

Other shortcomings include a very oversimplified cockpit with fictional sidewall detail, a solid floor, poor seats and a decal instrument panel; non-existent wheel well detail; undersized and inaccurate propeller spinners and pitch collars (the spinner openings are far too large as well), and simplified exhaust stacks that do not sweep up in the characteristic fashion of the real aircraft. Smaller parts such as the DF loop lack the finesse of more recent offerings.



**ABOVE:** Fujimi's Messerschmitt Bf 110 may be used as an inexpensive and simple build straight from the box, or as the basis for a superdetailing project. This Fujimi Bf 110 C has been converted to the E variant and detailed with many after market and scratch built items. The cockpit features True Details' inexpensive resin replacement. The dropped flaps are from Highflight, now long out of production. The kit's leading edge slats have been cut out and repositioned in the lowered position. Spinners and propellers have been replaced, as has the tail wheel. Correctly sized drop tanks, their mounts and the centreline ETC rack from ProModeler's Bf 110 G kit were installed. Eduard's photo-etched detail set has also been used to upgrade the wheel wells and the exterior of the model, and a Falcon vacform canopy eventually capped the cockpit.

Nevertheless, the model is fairly easy to build, quite inexpensive and certainly looks like a Messerschmitt Bf 110 when complete. Even today, Fujimi's 1/48 scale Messerschmitt Bf 110 C/D kits remain a viable option for less experienced modelers, or those on a budget.

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## Eduard's Messerschmitt Bf 110 E in the box

Eduard's box art is always attractive, but this one is my favourite to date. The illustration depicts a Zerstörer of II./ZG 1 finished in RLM 02 Grey and 71 Dark Green with the striking Wespen nose in combat over the Eastern Front.

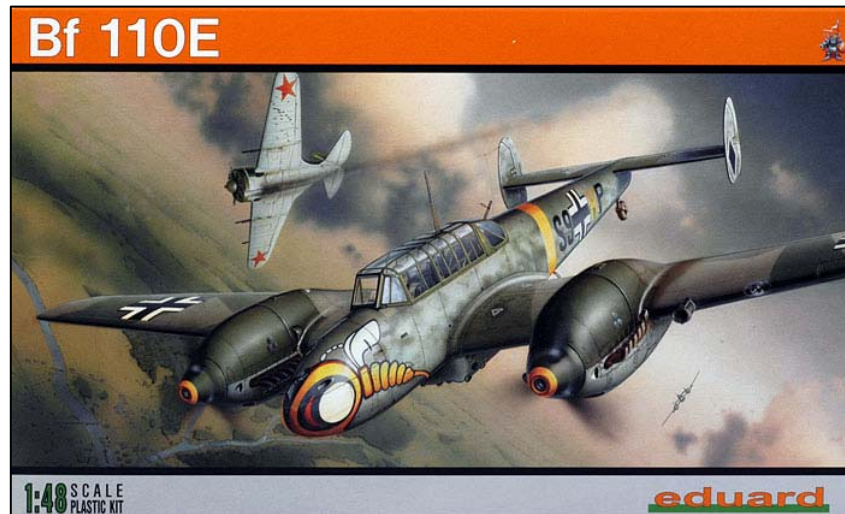
Under the evocative box art, Eduard's 1/48 scale Messerschmitt Bf 110 E comprises a staggering 314 parts in olive coloured plastic; 12 parts in clear; two parts in brown resin; one colour photo-etched fret and another fret in bare metal; a masking sheet and markings for five aircraft. This latest release continues Eduard's recent tradition of world class quality injection moulded parts, remarkable detail and colourful markings.

The styrene parts are attached to seven sprues via fine connectors. Moulding quality is superb. I could not find a single sink mark or ejector pin in any area that will be visible on the finished model.

If you have seen the beautifully restrained surface detail of Eduard's recent Fw 190 family, you will know what to expect here. Crisply recessed panel lines are partnered with incredibly subtle rows of rivets. I like the treatment of the fabric control surfaces too, with rib tape detail being the most prominent feature - no massive sagging of fabric.

The fuselage is broken down into the main halves with a separate nose (upper and lower) plus an insert for the deck immediately aft of the cockpit. The tail is moulded as a single piece so if we are going to eventually see a boat tail version, Eduard will supply an all new fuselage. In addition to the Bf 110 E nose (easily distinguished by the rectangular intake), Eduard also supplies the C/D nose.

The cockpit is beautifully fitted out with a combination of delicate plastic and colour photo etched parts. The lower fuselage cannons are visible through the fuselage floor, and plenty of spare



ammunition is provided. The rear gunner's seat can be made to swivel, while the navigator's seat may be posed up or stowed.

The nose is fully equipped with four MG 17 machine guns and ammunition feeds plus pneumatic bottles. These may be displayed by posing the separate gun cowl open.

The wings are moulded with the flaps and leading edge slats in the closed position. This may disappoint some modellers, but I did a quick check of several books and nearly half of the Bf 110s were parked with the slats and flaps up. If you really want to drop the flaps and/or slats, the kit engineering will make this task fairly straightforward with the bulges behind the nacelles moulded as part of the bottom of the kit flaps.

Ailerons are provided as separate parts. Wheel well detail is excellent.

The engine nacelles are supplied separate from the wings, suggesting that we may be in store for different variants in the future. Of particular interest, the oil cooler section at the bottom of the nacelles are separate, so we may see the deep tropical oil cooler in a future release. By the way, although the trop air filters are shown in the box art, they are not included in this particular kit. The shape of the spinners looks good, and the prominent pitch collars are moulded near the base of each propeller blade. These are clearly visible when the propeller assembly is complete.

Ample options are supplied including ETC racks, 50kg and 250kg bombs. Many other options are marked as "not for use". These include 300 litre and 900 litre drop tanks, air to air rockets and the small 75 litre auxiliary oil tank sometimes fitted to the bottom of the fuselage. The massive "dachshund" belly tank for the Bf 110 D is also included.

Two sprues of clear parts are included. The prominent glasshouse is an important part of the Bf 110's character, and Eduard has done an especially good job on the complex rear clamshell. If the rear canopy is to be depicted open, separate parts are supplied for the clamshell and the sliding top rear sections. If the canopy will be closed, a totally different part is used. A separate piece of armoured glass is also depicted, with an alternate photo-etched frame if the modeller prefers. The side and top canopy parts are also individual pieces to permit posing in the open position. Furthermore, alternate styles of rear canopy are offered - with the machine gun cutout and without. Handles and other canopy details are supplied in both photo etch and plastic. Eduard masks are also included to ease the pain of painting that maze of canopy frames.

Instructions are supplied in a colour 20 page booklet, with a historical summary on the front page followed by a parts list, 13 pages of construction steps and four pages of full-colour marking guides, each with a four-view illustration plus scrap views.

Markings are supplied for five aircraft, all with different schemes. Decals were not included with my early sample but I am sure that I will be able to pick these up this week in Anaheim.

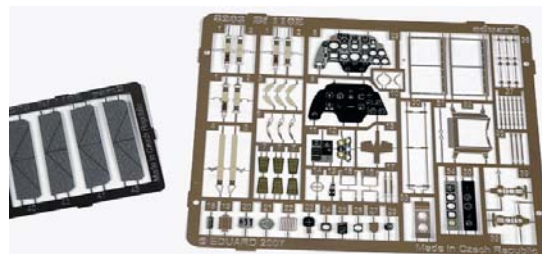
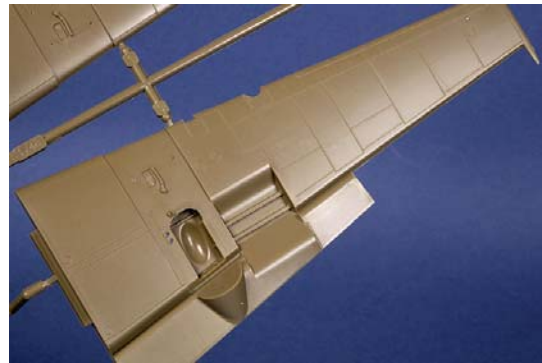
The painting instructions call out RLM 74/75/76 Greys for most of these aircraft, but I would have expected at least some of them to be finished in RLM 02/71/65. In fact, the box art appears to suggest this too. The actual colours and camouflage transition on Bf 110s is far from an exact science, but it would seem that the new RLM 74/75/76 scheme was not actually applied at the factory until well after the commencement of the Bf 110 E production run. Having been finished in RLM 02/71/65, it is unlikely that these aircraft would have been repainted until major overhauls.

The package is topped off with two resin Dachshunds in recognition of their association with 1.(Z)/JG 77. These are tiny but perfectly formed!

## Conclusion

Eduard's new 1/48 scale Messerschmitt Bf 110 E totally eclipses Fujimi's Bf 110 in every respect except price and simplicity.

This is a beautifully presented and detailed kit. The high parts count and some of the smaller and delicate parts mean that some modelling experience will be helpful before tackling this project, but there can be little doubt that Eduard's 1/48 scale kit is now the reigning champion of plastic Messerschmitt Bf 110s of any variant and in any scale.





## Building Eduard's 1/48 scale Messerschmitt Bf 110 E



Eduard's 1/48 scale Messerschmitt Bf 110 E is a sophisticated and superbly detailed kit. It really is a good idea to carefully study the 20 page instruction booklet before you commence building the model.

### Construction

I started in the cockpit. Be aware that there are some genuinely tiny components here, and extreme care is required to ensure that the parts are not launched into space when they are cut from the sprue, or broken when cleaning up. This is especially true of the oxygen equipment (parts G53 and G55), and the throttle quadrants (parts G47, 49, 50 and 51), which are all separate parts with only very shallow locating positions.

I chose to assemble and paint all the plastic and unpainted photo-etched parts before adding the colour photo-etch. I also deviated from the instructions by gluing the long sidewalls (parts C12

and C18) to the interior of the fuselage halves instead of assembling the rear cockpit as a long "tub". This made it easier to obtain a seamless paint job without the risk of join lines or glue marks. However, it does demand precise positioning of the sidewalls, otherwise the cockpit floor and bulkheads will not fit.

The instructions also suggest that the pilot's forward cockpit should be glued to the rear cockpit assembly before it is installed in the fuselage. However, I found that it was easier to align all the parts by leaving the forward and rear cockpits as sub-assemblies until the fuselage halves were joined.

Only minor trimming was required to the bottom of the sidewalls to deliver a snap-fit.

Six spare ammunition drums are supplied for each ammo rack in the back of the cockpit. I found that five on each rack was a more comfortable fit.

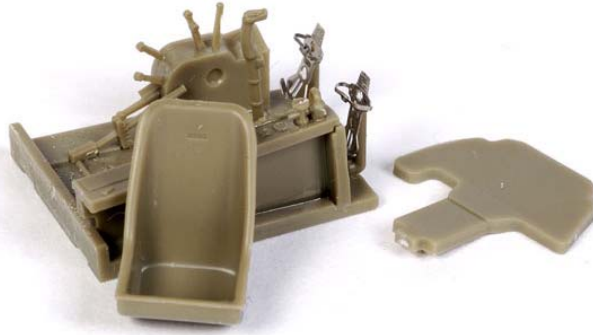
With all the plastic and bare metal painted and weathered, the colour photo-etched parts were glued in place using Micro Krystal Kleer. This white glue easily handled the lightweight photo-etched parts and permitted adjustment before the adhesive set. The colour parts really add an air of authenticity to the cabin, especially the instrument panel and harness straps.

The only after-market additions to the cockpit were a few cockpit placard decals from Reheat, positioned strategically in bare areas of the sidewalls.

One potentially troublesome area was the installation of two shell ejection panels (parts B9 and B16) between the fuselage halves. These inserts would have to be aligned at the same time as the cockpit, but the actual installation proved trouble free with minimal sanding after the parts had set to eliminate a small step.

The fuselage halves were joined and sealed with Tamiya Extra Thin Liquid Cement run sparingly along the seams, successfully trapping the cockpit and shell ejector panels. The instructions suggest that the MG 17 machine gun should be installed in the rear of the cockpit at this point, but I decided to leave this delicate sub-assembly for later assembly.

My model was destined to be displayed with the gun cowl closed, so only the parts required to mount the machine guns were installed.



**ABOVE:** Eduard's Bf 110 E cockpit combines plastic and photo-etched parts. First, the plastic parts of the forward cockpit were assembled. The various handles on the pilot's quadrant are very delicate.

**BELOW:** Even before painting and the addition of colour photo-etched parts, the cockpit detail is outstanding.



**BELOW:** All cockpit components were given an overall coat of Flat Black. This acts as a pre-shading coat, remaining in deep shadow areas after the main interior colour has been applied.



The main wheel bays are another highlight of this kit. They are authentically deep and lavishly detailed. However, assembly does require some care. Make sure that you label your undercarriage and nacelle parts before you cut them from the sprue, as most of them are handed left and right. I would also suggest that the rear nacelle bulkheads (parts J5 and J11) should be installed after the main nacelle halves have been glued and set.

Test fitting the wheel well sidewalls (parts C36, C25, C35 and C26) is advisable before you commit to glue, so that you understand exactly how they are supposed to fit. Keep in mind that the hinges moulded to the sidewalls should protrude slightly from the bottom of the nacelle if installed correctly.

The engine nacelles looked like trouble when they were dry-fitted to the wings, with gaps along the edges and behind the rear of the nacelle. I applied liquid glue then used clamps to squeeze the nacelles to the correct width, closing the gaps at the sides, but a narrow gap remained at the top rear join.

Test fitting of the wings to the fuselage revealed a potential gap. It seemed that the large flat mating surfaces on the inside of the wing and the fuselage wing root were interfering with the fit, so I ground down the plastic on the fuselage and both wings. This greatly improved the fit. Only a small gap was now present

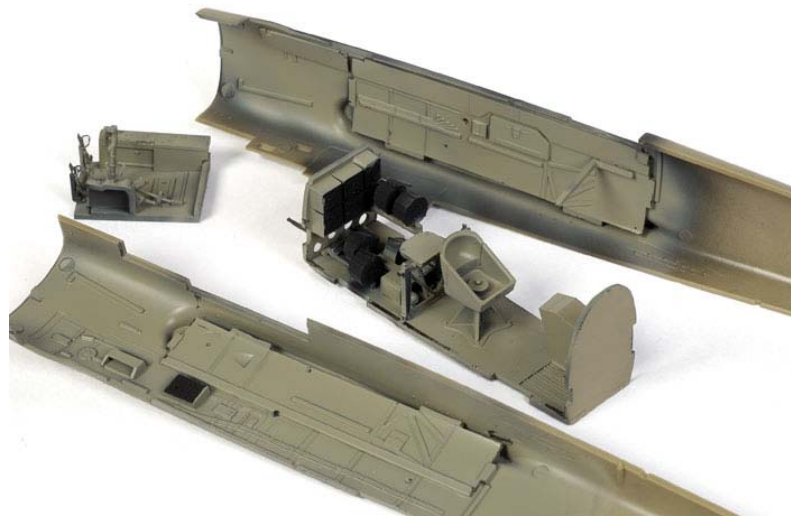
Once the wings and fuselage were assembled, the balance of construction was lightning fast. The tailplanes were almost a snap fit.

The lower nose required minor trimming of the locating ridge around the rear of the lower nose part resulted in a gap-free and stepless join with the fuselage. I did not glue the upper gun cowl (part B7) in

place until the lower nose had set. I found that the upper nose fitted better after the gun bay rear bulkhead (part C10) was removed. If you are building your Bf 110 with the gun cowl closed, you can easily omit this part during construction.

The separate ailerons were a bit tight when offered to the wings, but a few swipes on the sides with a Mastercaster sanding stick resulted in a tight and precise fit. I glued mine in the neutral position.

Once again I deviated from the instructions by skipping installation of the undercarriage, instead gluing all the other elements to the airframe including the ETC and wing bomb racks.



**ABOVE:** Contrary to the instructions, the sidewalls were glued to the inside of each fuselage before the cockpit parts were assembled. Gunze H70 RLM 02 Grey was sprayed over the black base coat. This acrylic paint was a good match for the colour of the pre-painted photo-etched parts.

**BELOW:** A wash of thinned oil paint helps the sidewall and floor detail leap out of the plastic. Although it seems overemphasized now, the advantage of this technique is that the detail will remain visible even after the cockpit is trapped between the fuselage halves.





Eduard's instructions recommend that the exhaust mounting plates are glued to the engine nacelles before the stubs are installed. I thought that this would make painting more difficult, so I glued the stubs to the plates before they were fitted to the nacelles. Although this did, indeed, make painting easier, installation of the delicate exhaust assemblies was a bit nerve racking. Next time I think I will follow the instructions!

With so few gaps and steps, puttying did not take long. I used White Milliput for the join at the top of the engine nacelle and the lower wing seam.

The fit of the fuselage was so good that it completely eliminated the centre seam which should be there. Dymo tape was used as a guide, top and bottom, to rescribe the centre panel lines.

## Painting

Camouflage of the Messerschmitt Bf 110 E is not perfectly documented, and is further confused by the fact that camouflage orders changed late in the production run of this variant. Although Eduard's instructions suggest that this subject should be finished in the mid-war grey tones, RLM 74, 75 and 76, I thought that it was more likely that the aircraft left the factory in RLM 02 Grey, RLM 71 Dark Green and RLM 65 Light Blue.

After the cockpit and wheel wells were masked, the model received a base coat of Tamiya AS-5 Light Blue (Luftwaffe). To my eye, this ambiguously labeled colour looks somewhere between RLM 65 Light Blue and RLM 76 Light Blue, but can suffice for either.

The advantage of this spray can paint is that it is a tough, fast drying lacquer. The

disadvantage is, if sprayed straight from the can, the paint can display a slight orange peel finish. This problem can be avoided by decanting the paint from the can by spraying it into a small container. The light blue paint can then be poured into a paint cup for use in your regular airbrush.

One of the appealing aspects of this scheme are the RLM 04 Yellow theatre markings. Yellow paint, however, is notorious for poor coverage. To ensure a vibrant finish, white undercoat was sprayed on the mid fuselage and lower wing tips, which were destined to receive yellow theatre markings. Once the white base coat was dry, Tamiya's spray can colour TS-34 Camel Yellow was decanted into a container and sprayed in the appropriate places. I like this high gloss, rich shade of yellow.



**ABOVE:** Fit of the cockpit parts was excellent with only minor trimming required. In this photo, the cockpit floors and bulkheads are not even glued in place.

**BELOW:** A couple of inserts on the bottom of the fuselage looked tricky at first, but ended up fitting very well. Regardless, the rear insert will be completely covered by the ETC centerline bomb rack





Full detail, including the machine guns and feed chutes, is supplied for the interior of the nose. However, I wanted to maintain the streamlined profile of the Bf 110 by closing the upper gun cowl, so not all the detail parts were required.



A little trimming around the edges of the lower nose joining lip was needed to obtain this perfect fit.



The authentic parts breakdown for the landing gear legs looks delicate, but after the engine nacelle is installed it is quite robust.



I used the same painting and weathering techniques for the wheel well as I did for the cockpit.



A few oil stains were added from the oil wash mix, and chipping was represented with a dark brown artist's pencil.



A close fit did not look hopeful while test-fitting these parts but, with the help of a couple of stout clamps, the engine nacelles mated quite successfully with the wings.

The yellow theatre markings were masked and the upper surfaces received a coat of Gunze acrylic H70, RLM 02 Grey. A few random mottles on this colour were also applied to the fuselage sides. This was quickly followed by a disruptive pattern from Gunze H64 RLM 71 Dark Green, and a further mottling of this darker colour on the fuselage sides and fins.

I was not satisfied with the look of the fuselage sides in general, and the mottling in particular. I therefore revised the mottling, first with a random overspray of RLM 65 Light Blue, then with a selective re-application of RLM 02 and RLM 71 mottling. The demarcation line of the RLM 71 Dark Green was also lowered down the fuselage. It is quite normal for me to revise a camouflage finish several times before I am finally happy with it. It is never too late to make a change!



With the basic camouflage finished, Polly Scale Gloss acrylic was sprayed over the entire model. This tough top coat serves the dual purposes of preventing damage to the soft Gunze paint, and providing a useful sheen for the application of decals.

The glass house canopy of the Messerschmitt Bf 110 would be a nightmare to paint if it were not for Eduard's die-cut, self adhesive masks. The masks, supplied with the kit, were fast to apply and conformed almost perfectly to the frames of the plastic canopy. The first paint coat was RLM 02 Grey representing the interior frame colour, followed by RLM 71 Dark Green for the exterior

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## Markings and Weathering

When I compared the deep yellow of the painted theatre markings to Eduard's decals, there was a marked difference. I decided to repaint the yellow individual aircraft letter, "H", in Camel Yellow. The yellow decal letters were surrounded by Tamiya masking tape and resprayed while they were still on their backing sheet.

The decals behaved flawlessly on application, even the complex three part Wespe decal over the

compound curves of the nose. There was, however, a gap between the top and bottom halves of the Wespe along the gun cowl join (the decal assumes that the gun cowl will be open, in which case this would not be a problem). I cut a circular mask the same size as the white of the Wespe's eye, and sprayed Tamiya XF-1 Flat White to hide the gap. While I had the airbrush loaded, I also sprayed the white of the wings to match. This left a slight overspray on the black outline, so I touched this up with a fine black Sharpie.

As long as I was redecorating anyway, I thought I should repaint the head, body and the tail of the Wespe in a yellow that would match the theatre markings and the identification letter. A fine brush was used to cover the old yellow with the new yellow, and a Sharpie was once again used to repair the black outlines as required.

Polly Scale Flat acrylic was applied once the decals had set, then weathering commenced. I only wanted a hint of weathering on the wings and fuselage, so panel lines were carefully built up with very subtle applications of a thinned black-brown mixture. This same black-brown mixture was sprayed along selected structural features. Panel lines were then treated to a thin wash of Tamiya X-18 Semi-Gloss Black paint.



## Finishing Touches

Returning to an earlier page of the instructions, I first painted then assembled the main undercarriage parts. The landing gear looks terrific, but construction is a bit tricky. A third hand would be helpful in places. Once again, try to label your parts when they are cut from the sprues as they are handed left and right.

Although the whole assembly looks delicate, it is actually quite robust when finally glued to the base in the wheel well. Just take your time and don't commit to glue until you are absolutely sure where the parts are supposed to go! Eduard offers the option of a single piece tail wheel or a three piece assembly. I took the easy path with the single piece, which looks great when painted and weathered.

The propeller assemblies are little jewels, with excellent pitch collar and starter dog detail visible through the spinner cap. It is well worth the extra time it takes to mask and spray the propeller silver to highlight these details. I also applied a dark oil wash to this area. The bombs and machine guns are equally good.

The lower part of the aerial mast was painted in a base coat of Buff, followed by a streaky application of Red Brown representing woodgrain. A thin coat of Tamiya Clear Orange sealed this miniature paint job.

The main wheel hubs received a coat of Gloss Black, while the tyres were painted with the ubiquitous black-brown shade. The sides of the tyres were "dusted up" with Tamiya pastel chalks.

Final assembly took a bit more time than I expected, mainly due to the need to accurately line up the main undercarriage legs. I had glued the gear door openers (parts J17 and J21 - I am not sure of their official designation)

to the front of the undercarriage legs earlier, but this turned out to be a mistake as they were not correctly aligned with the gear doors. The front of the gear doors should rest against the sides of these delicate parts. Next time I will install parts J17 and J18 at the same time as the gear doors.

The canopy parts fitted very well. I was especially pleased with the impression of depth provided by the separate armoured windscreen glass. This was secured to the front of the windscreen using Krystal Kleer.

I replaced the trailing FuG 25 antenna on the bottom of the fuselage with a thinner piece of brass rod.

The aerial wire was cut from a piece of smoke coloured monofilament (invisible mending thread), and secured with super glue to the starboard fin. A tiny hole was drilled into the starboard fuselage side for the aerial lead-in.

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## Conclusion

Eduard's brand new 1/48 scale Messerschmitt Bf 110 E is a gorgeous model. Its uncompromising detail does demand the modeller's attention but, with care and adequate time, even a moderately experienced modeller should obtain a very impressive result straight from the box.

What a great kit!





The large flat mating surfaces of the wing and the fuselage at the wing root were ground back using a round dental burr in my Dremel motor tool. This ensured a gap-free fit.



The bottom joints were almost completely free of gaps and steps.



After the demanding assembly of the cockpit and engine nacelles was out of the way, the balance of construction was incredibly fast and relatively trouble free.



The quality of the kit's fit may be seen here on the lower surfaces.



There was a noticeable gap between the upper rear join of both engine nacelles and wings, and a small step outboard of each nacelle. The latter may have been the result of my overly aggressive clamping!



Tailplanes fitted precisely – the fins almost snapped into place.



Milliput, a two-part epoxy putty, was used to address the engine nacelle gaps and steps, plus a few smaller alignment issues. Masking tape was used to ensure the Milliput did not spread beyond the area requiring filling.



The step outboard of the engine nacelle was also filled with Milliput.



While the putty was still pliable, the remainder was used to smooth a tiny step at the lower wing joins.



The fit of the fuselage halves was so good that the spine panel line virtually disappeared. Self-adhesive Dymo tape was used as a guide to restore this panel line.





A half an hour was spent sanding the putty and polishing the overall airframe in preparation for painting.

The canopy and wheel wells were masked using Tamiya tape to prevent unwanted overspray.



Tamiya AS-5 Light Blue (Luftwaffe) was decanted into a glass bottle, then sprayed using my Aztek airbrush over the lower and side surfaces of the model. This lacquer paint provides a tough, smooth base coat which resists fingerprints and wear.

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Yellow paint is notorious for poor coverage. To ensure a vibrant finish, white undercoat was sprayed on the mid fuselage and lower wing tips, which were destined to receive yellow theatre markings.



For the RLM 04 Yellow, Tamiya spray lacquer was once again decanted into a glass jar for application with the Aztek airbrush. I used Tamiya TS-34 Camel Yellow for this colour.

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The yellow fuselage band and lower wing tips were masked, as were the inward facing surfaces of the fins.

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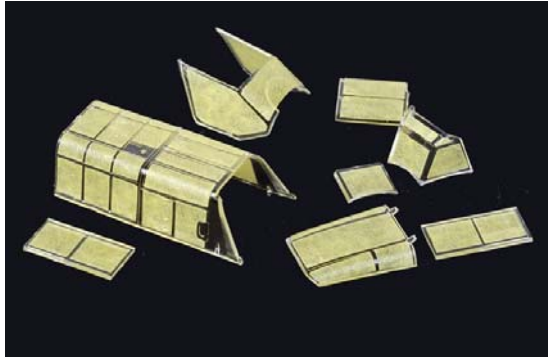
Gunze acrylic H70 RLM 02 Grey was sprayed onto the fuselage spine and the upper wings and tailplanes.



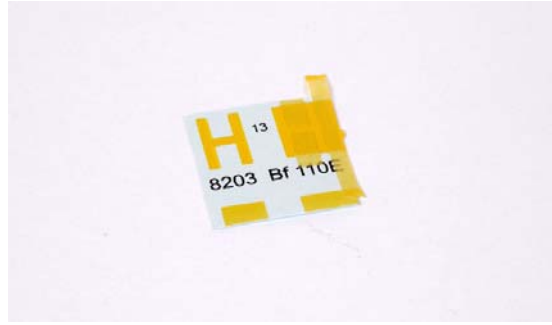
Gunze H64 RLM 71 Dark Green was used for the disruptive upper surface camouflage. The pattern was sprayed freehand in a fairly tight-edged demarcation. This view also shows the initial mottling in RLM 02.



Additional mottling has been added in RLM 71 Dark Green. The striking contrast of the yellow Eastern Front fuselage band is evident once the masking tape has been removed.



Eduard supplies self-adhesive masks for the intricate glasshouse canopy. These fit perfectly, and save some hours of tedious work.



The yellow of Eduard's decals was noticeably paler than the Tamiya Camel Yellow that I used for the fuselage and wing tip markings. The yellow individual aircraft letter was therefore carefully masked and sprayed with the Tamiya lacquer paint.



Camouflage on the fuselage sides was revised by lowering the demarcation of the RLM 71 Dark Green. Mottling was also modified by overspraying RLM 76 and lightly respraying with RLM 02 and RLM 71.

The Wespen decal on the nose of the aircraft was also touched up with yellow and white paint, followed by a fine black marker to restore the crisp black outlines



Weathering was applied over a coat of Polly Scale Flat acrylic. Panel lines were progressively built up with very subtle applications of a thinned black-brown mixture, then emphasized with thinned semi-gloss acrylic paint.



The various smaller assemblies were painted and weathered separately prior to finishing the model.





