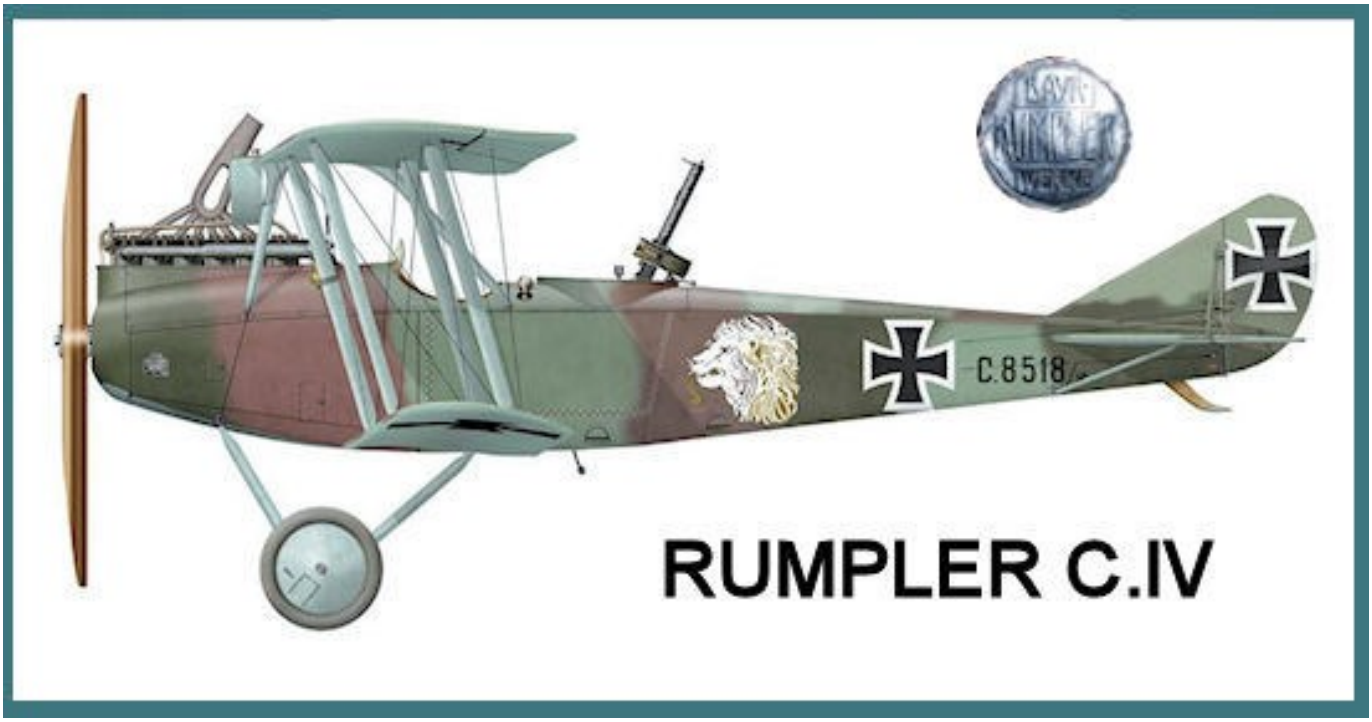


World War One Aircraft Models

I have always held a fascination with early military aircraft. After serving for 27 years in the Royal Air Force, I became a Military Aerospace Technical Author. Although, as most modelers, I got involved in the world of construction kits at an early age, I stopped for most of my service career and for some years afterwards.

I started modeling again a few years ago and now enjoy the challenge of building aircraft of World War One. Since posting photographs of my completed models online, several people have asked if I would create a 'build log' for future builds.

I don't consider myself a 'master' of this craft, but hope to be able to pass on what I have learned. As such, here is my build log, covering the 1:32 scale model of the 'Rumpler' C.IV from 'Wingnut Wings'.

Mike 'Sandbagger' Norris

https://mikesww1aircraftmodels.com
sandbaggeruk@sky.com

Completed: June 2025

CONTENTS

INTRODUCTION

Before I start with the build log, I'd like to show how I've set up my work area. I prefer to keep the work area as clear as I can (I've lost too many small items in the past). I think it's important to have the tools etc you need ready to hand and other, non-essential stuff tucked out of the way until needed. I'm lucky in that I have my 'man cave', which is sorted into a modelling area, airbrush spray booth in addition to my work station PC and gaming PC

AFTER MARKET

AFTER MARKET

Figures

‘Aviattic’ WW1 Fuel Cart (ATTRES 021),
‘Aviattic’ WW1 German refuelling crew (ATTRES 014).

Propeller

‘Proper Plane’ laminated wood ‘Wolff’ propeller (WP-060).

Decals

‘Aviattic’ Linen Weave Effect (ATT32236).

Fuel line

‘ANYZ’ Braided Line black 0.5 mm (AN011).

Rigging accessories (as required)

‘GasPatch Elite Accessories’ metal Turnbuckles and Anchor Points (1/48 or 1/32nd scale),
‘Albion Alloy’s’ Micro-tube (Brass or Nickel Silver - various diameters),
‘Steelon’ or ‘Stroft GTM’ Mono-Filament (0.08 and 0.12 mm diameter),
‘Modelkasten’ 1:48th scale 0.2 mm diameter black line (marked as 1.5),
‘EZ’ black stretch line (Fine) .

Resin

‘AYYZ’ Cockpit handles (SKU AN030).

Paints (as required)

‘Tamiya’ Acrylic, ‘Humbrol’ Acrylic, ‘AK Interactive’ Primer (Grey AK758, White AK759),
‘Alclad II’ Lacquers, ’Tamiya’ Fine Surface Primer (Grey/White), ‘Mr. Metal Colour’,
‘Mig’ A-Stand Aqua Gloss (A.Mig-2503), ‘MRP’ acrylic lacquers, ’Citadel Colour’.

General sundries (as required)

‘Mr. Surfacer’ 500/1000/1200, ’Mr. Colour’ Levelling Thinners 400, ‘Mig’ Ochre filter (0822),
PVA Adhesive (e.g. ’MicroScale’ Micro Krystal Clear), ‘PlusModel’ lead wire, ‘Black-It’ solution,
‘MicroScale’ MicroSol/MicroSet decal solutions, ‘VMS Fleky’ CA adhesive (Slow and Thin),
‘Perfect Plastic Putty’, ‘White Spirits/Odourless Thinners’, ‘Ammo’ Acrylic filters, ‘Windsor & Newton’
Griffin Alkyd oil paint, ‘VMS’ Metal Prep 4K, ‘MFH’ 0.4 mm flexible tube (P-961).

Weathering mediums (as required)

‘Flory Models’ Clay washes or Pigments, ‘AK Interactive’ wash (Kerosene AK-2039, Oil AK-2019),
‘Tamiya’ Weathering Master (Set C, D and E).

Display Base

‘Lars op’t Hof Scenery’ Pasture Autumn,
‘Inperspective’ custom made Acrylic base and cover,
Information plaque from ‘TLS Engraving Ltd’.

THE AIRCRAFT

THE AIRCRAFT

References:

'Wingnut Wings' instruction manual and web site.
Windsock Date File 149 - Rumpler C.IV at War (Ray Rimmel).
Windsock Date File 35 - Rumpler C.IV (Peter M Grosz).
Online resources.

The aircraft modelled is Rumpler C.IV, Serial No.8518/16 of Flieger-Abteilung (FA) 209 during 1917.

Aircraft:

General:

NOTE: *The following text is that from the 'Wingnut Wings' instruction manual.*

The 260hp (Rumpler Flugzeugwerke Type 6A7) Rumpler C.IV appeared in the war torn skies of Europe in February 1917 and immediately proved itself to be very capable in its intended roles of reconnaissance, artillery spotting and light bomber. Rumpler's C.IV was proceeded by their successful 1915 two-seat 150/160hp C.1 (Type 5A2), which at the time was faster than the legendary single seat Fokker E.III, and the 1916 200hp C.III (Type 6A5). Whether fitted with a camera for reconnaissance, radio for artillery spotting or a load of bombs the C.IV impressed with its great speed, long range and high ceiling which, for a time, allowed it to operate deep in enemy territory without risk of interception. Of course all of this great performance came at a cost and the lightweight fuselage suffered structural fractures under the harsh operating conditions of a front line unit, resulting in the rear fuselage being reinforced with heavier 'struts' and ply panels. Concern was also raised about the heavy aileron controls so the initial stick control column was replaced by a wheel type relatively early in production. Another improvement was removing the sleek propeller spinner in favour of a blunt rounded nose which, contrary to appearances, was more aerodynamically sound and improved performance by 10-15kph. It would appear that many of these improvements were retrofitted to older machines as the opportunity arose.
Records are incomplete and sometimes contradictory so a level of confusion reigns as to the correct designations for the various Rumpler C.IV sub-types. Most Rumpler C.IVs were powered by a 260hp Daimler-Mercedes D.IVa engine and fitted with an internal bomb rack, radio and/or (eventually) various cameras. Airframes fitted with specific equipment or different engines were initially all called 'Rumpler C.IV' although eventually they would be allocated different designations along these lines. Fitted with a 270hp Maybach Mb.IVa it could be designated simply 'Rumpler C.IV' or 'Rubild Mb' or 'Rumpler C.VII'. With a 300hp Basse & Selve BuS.IVa engine it became the 'Rumpler C.IV (BuS)'. A 260hp D.IVa powered license built trainer version (with 4 ailerons) made by Pfalz was initially called the 'Pfalz C.1' but was later designated the 'Rumpler C.IV (Pfal)'. Aircraft built under license at Bayerische Rumpler Werke were designated 'Rumpler C.IV (Bayru)' and 'Rumpler C.IV (Bayru) BuS' depending on the engine. Another trainer version powered by a 180hp Argus As.III engine was the 'Rumpler C.VIII'. Contemporary references to a 'C.V' appear to also refer to the 260hp D.IVa powered Rumpler C.IV while the distinguishing features of a 'C.IX' (referenced in Rumpler factory drawings) remains a mystery. Interestingly no photo showing a Rumpler marked 'C.V', 'C.VII' or 'C.IX' is known to us.

Specifications:

Wingspan - 12.66m (41.53ft)

Length - 8.4m (27.55ft)

Maximum weight - 1630kg (3593lb)

Maximum speed - 175kph (109mph)

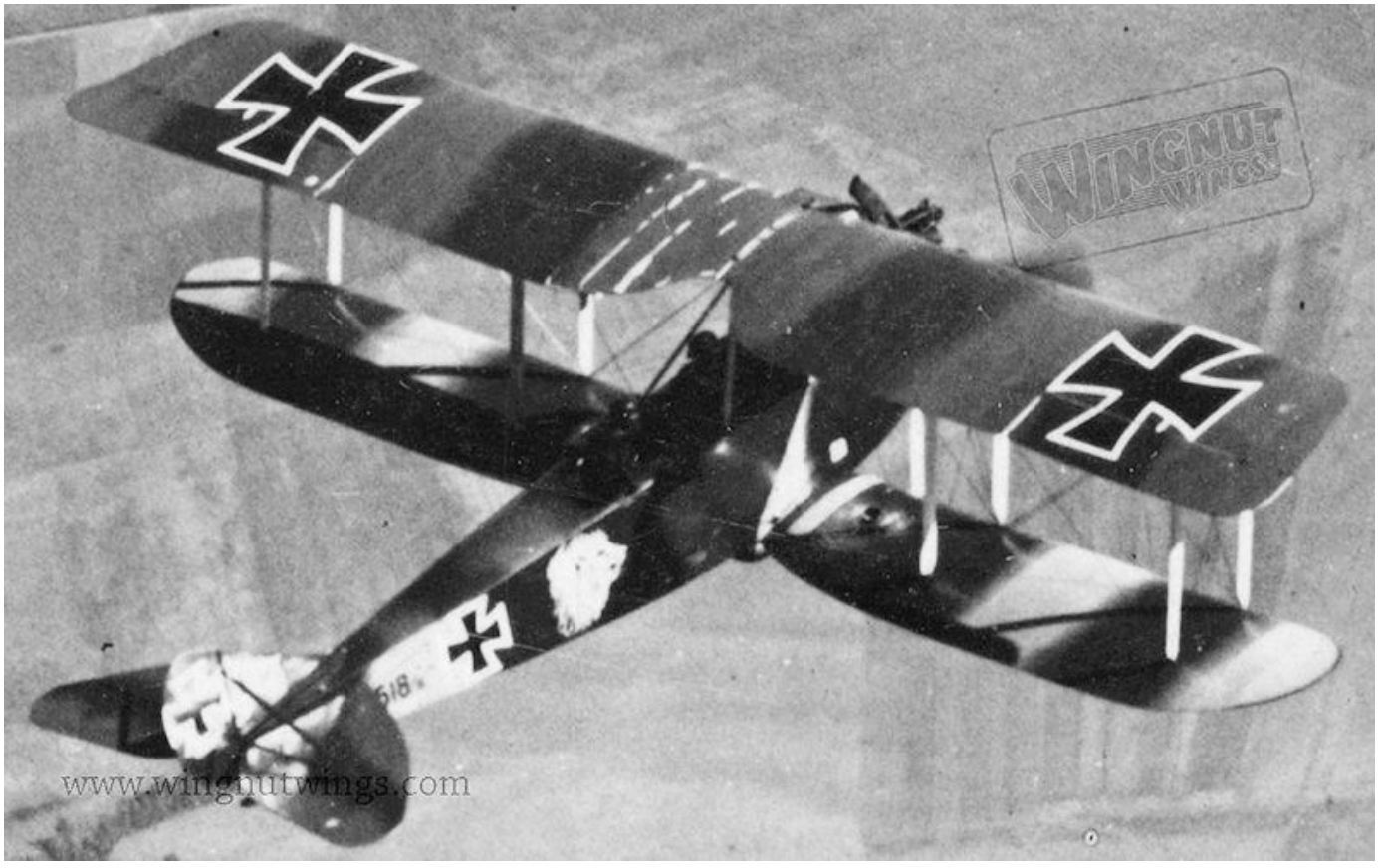
Ceiling - 7000+m (23,000+ft)

Engine - Daimler-Mercedes 260hp D.IVa inline six cylinder.

Weapons - A 7.92mm IMG 08 'Spandau' and 'Parabellum' LMG 14 machine gun and 50+kg of bombs.

Rumpler C.IV, Serial No.8518/16 during 1917

Flieger-Abteilung (FA) 209 was a German observation and reconnaissance unit during World War I and was primarily focused on working with artillery. They were part of the Luftstreitkräfte, the German Air Service. Specifically, FA 209 was active on the Western Front, including operations around Verdun.




C.8518/

PART 1
MODEL
DESCRIPTION

PART 1 - MODEL DESCRIPTION

'Wingnut Wings' - Rumpler C.IV (early) (32023)

Normally I would write a general review of the kit in this part of the build log. However, many reviews have already been published, including this review by Stephen T. Lawson on 'Aeroscale'.

His review covers in detail everything the kit has to offer and is worth reading. The link to the review is below.

https://archive.aeroscale.net/review/7606/index.htm

PART 2
WOOD EFFECTS
(General)

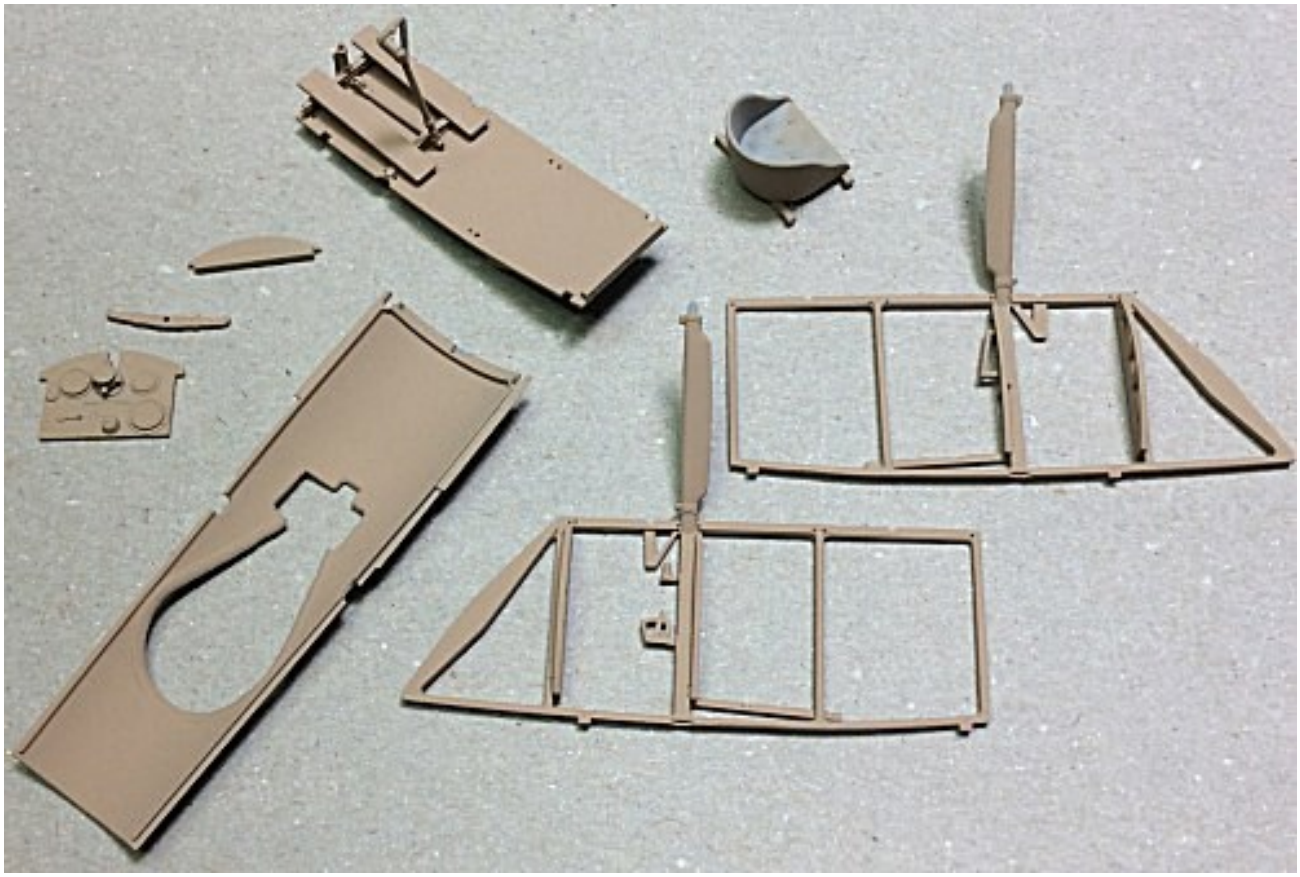
PART 2 - WOOD EFFECTS (General)

Parts of the model that are supposed to be made of wood can prove to be a challenge to replicate a wood finish to the part. Some after market companies produce accurate wood decals, which can be used to cover larger areas, such as cockpit decking and fuselage panels. However, decals can't easily be used to create realistic wood finish to smaller items or parts that don't lend themselves to having decals applied. To do this requires brush painting, using such as oil paints, which can be enhanced with various washes or filters.

The first thing to do is to ensure the model parts are cleaned, normally with warm water with washing up fluid and something like an old tooth brush. Once cleaned and thoroughly dried, the primer coat can be applied. I use 'AK Interactive' Grey (AK758) or White (AK759) primer.
Once the primer is dry, you can start applying the wood effect to the applicable cockpit items, such the cockpit framework, decking, seat supports, rudder bar, instrument panel and of course, the wing struts. With practice, this method can also be used on fuselage panels and propellers.

To start, apply a suitable base colour. For most painting I use an airbrush and only resort to brush painting when dealing with small items, when I add a few drops of 'Mr. Colour' Levelling Thinner', which aids brush painting. For most wood effect, I airbrush 'Tamiya' Wooden Deck Tan (XF78) or Dark Yellow (XF60), suitably thinned with 'Tamiya' Thinners (X20A). Allow this base coat to fully dry (if you can't smell the paint, then it's dry).

Example of base coat using 'Tamiya' Wooden Deck Tan (XF78).



Wood effect - Method 1:

DecoArt Crafters Acrylic' paints:

For the next step I use 'DecoArt Crafters Acrylic' paints, either Burnt Umber or Burnt Sienna. These are similar to standard acrylic oil paints, but are water based instead of oil based. This paint is not as thick as oil based paint and is more creamy, so can be brushed and controlled more easily. Also, as it is water based, it's easy to clean your brushes, and if really necessary, can be thinned slightly with water.

In addition, the paints dry as quickly as normal acrylic paints, avoiding the disadvantage of using true oil paints, which can take days to fully dry.

Place a small amount of the oil paint onto a non-absorbent surface and using a suitable oil paint brush (I use a slightly curved brush), wipe a small amount of the paint onto the brush. For larger areas, such as decking or panels etc I use a small piece of fine sponge to apply the paint.

Apply the paint to the applicable item, using light strokes and in the required direction. Apply the paint along struts and across instrument panels and other smaller items. This gives variation to the wood effect and for the wing struts, is correct for the direction of the wood grain. If you apply too much paint, just brush or sponge it off immediately before it dries. Although the paint is water based, don't try to thin any applied paint with water as it will lift the paint, which builds up into clumps. If required, a second light coat can be applied. Always wait until a first coat has fully dried before applying a second coat, otherwise the first coat will 'drag' and lift from the surface.

Once painting is complete, clean the brush in water.

If desired and once the oil paint is fully dry, airbrush a semi-gloss clear coat, such as 'Tamiya' Semi-Gloss (X35) or similar, with a few drops of 'Tamiya' Clear Orange (X26) to give a varnished look to the finish.

Wood effect - Method 2:

Windsor & Newton' Griffin (Alkyd) oil paints:

NOTE: *The wood effects can also be achieved using 'Windsor & Newton' Griffin (Alkyd) paints.*

Mask off the area as required.

NOTE: *When airbrushing 'Tamiya' acrylic paints, I thin the paints using 'Mr. Colour' Self-Levelling Thinners (400), which is commonly referred to as 'unicorn tears' or just 'MLT'.*

Airbrush the areas with 'Tamiya' Dark Yellow (XF60) or similar.

Brush a covering coat of the 'Windsor & Newton' Griffin Alkyd paint , such as Burnt Sienna**,** over the areas.

Leave the oil paint to settle for about ten minutes.

Decant a small amount of White Spirits or 'AMMO Mig' enamel odourless thinners (A.Mig-2019), into a suitable dish.

Dip a broad flat oil brush into the thinners then wipe the brush on a sheet of kitchen roll, which should not deposit any fibres in the oil paint.

Brush the oil paint over the area, in the desired direction of the wood grain, wiping the brush on the sheet of kitchen roll to remove residual oil paint.

Repeat dipping and wiping the brush in the thinners and brushing the oil paint until the desired density and finish is achieved.

Leave the oil paint to fully dry, which normally takes approximately 24 hours.

If desired and once the oil paint is fully dry, airbrush a semi-gloss clear coat, such as 'Tamiya' Semi-Gloss (X35) or similar to give a varnished look to the finish.

Examples of wood effects

PART 3
WEATHERING
(General)

PART 3 - WEATHERING (General)

There are many different types of weathering mediums available now to modellers of aircraft, ships, vehicles and figures, in model of any type. These weathering mediums can be washes based on enamel, clay or ink. Weather pastels, applied by sponge' as well as oil paints of various sorts are also plentiful. Some modellers have even used water colour paints, and pencils. The following are the basic weathering mediums I tend to use on most of my models.

Flory Model clay washes:
The washes I tend to use are the 'Flory Models' Clay Wash 'Grime' and 'Dark Dirt', which come in various shades and consist of a suspended and very fine clay pigment. They are brushed over the surface to be weathered and dry in around 30 minutes. When dry, use either a piece of good, absorbent kitchen roll or a soft brush to remove as much of the clay wash as you need to achieve the desired effect. Once dampened, the dried clay is re-activated and the clay wash can be removed or worked as required.

First I seal the surface with airbrushed 'Tamiya' Semi-Gloss (X35) or similar. A gloss coat tends to stop the clay wash 'gripping' the surface when it is applied and it can run off or just puddle. A matte coat can cause the clay wash to 'grip' too much, making it difficult to remove or even to wash it off completely.

NOTE 1: The more glossy the applied sealing coat is, the more the chance there is that the applied 'Flory' clay wash will not spread fully, but rather form puddles or beads of wash. If this happens, add a few drops of ordinary kitchen washing up liquid to the clay wash. This will break the surface tension of the wash, allowing it spread fully.

NOTE 2: Always decant the amount of clay wash you need, rather than dipping the brush directly into the wash bottle. Dipping into the wash bottle can transfer contaminants from the brush into the wash, will can cause the wash to become thick and unusable.

NOTE 3: When a sealing coat is applied over areas treated with clay wash weathering, the intensity of the applied wash tends to darken. This should be considered when removing the clay wash, otherwise the final effect may appear too dark.

To apply the clay wash is just a matter of brushing all over the surface to be weathered. It doesn't matter really how much is applied as it can be left on for any period, as it is easily removed without any effect on the surface underneath. If you don't achieve your desired effect, you can wash it all off and start again. I use a soft brush, which has been very slightly dampened, to brush off the clay wash. For smearing effects, a very slightly damp brush or absorbent paper should be used, but even then I dab them onto a dry piece of the paper, until it's almost dry. Any wetter and you'll find that you are removing too much of the clay wash. If that happens you would have to re-apply the wash and start again. That said, if you're not happy with the final effect, you can easily remove the clay wash by brushing with a wet brush or even airbrush water over the surface. Dry off the surfaces washed and then re-apply the clay wash and try again until you are satisfied. The technique is to 'damp' brush or wipe over the surface to re-activate the clay wash and at the same time, to smear it over areas that had no clay wash. It'll dry more or less straight away. Then I'll very lightly brush and/or use a piece of damp absorbent paper to remove as much as I want until I get the desired effect. If I remove too much I just reapply clay wash to that area and repeat the removal procedure. Once finished, just run the brush under a tap to rinse out any residual clay pigments. Finally I usually seal the surface with airbrushed 'Tamiya' Semi-Gloss (X35) or similar, which will seal in the applied clay wash.

NOTE 4: 'Flory' current range of washes are: Dark Dirt, Grime, Black, Light (white), Mud, Sand, Rust and Concrete. All of these washes can be used as-is or mixed to create many colour shades for weathering.

Chipping effects:

To give the effect of chipped and weathered paint/varnish to metal engine cowls and forward fuselage panels etc, chipping fluids can be used. To achieve this effect, first prime the areas with a suitable primer then airbrush the metallic finish desired. Once dry, a chipping fluid, such as 'AK Interactive' Medium Chipping fluid or 'Vallejo' chipping fluid is airbrushed over the painted areas. An alternative is to use a cheap hair spray. This forms a barrier which will allow the top coat to be chipped off. Finally the required top coat colour is applied.
Once fully dry, moisten the top coat with water, which softens the paint. Then with a cut down (stiff) brush and wood cocktail stick, gently teased off the top coat paint. Take care when doing this as 'too much chipping' can't really be covered up. In that event you would have wet the top coat and remove it all with an old toothbrush or similar and then when dry, re-spray the top coat and try again. Once the desired effect was achieved, I sealed the surfaces with an airbrushed coat of semi-gloss clear coat.

'Tamiya' Weathering Master sets: Each of these 'Tamiya' produced weathering sets contain three 'tablets' of different colours and an applicator, which has a brush on one end and a sponge on the other. The tablets have a wax look and feel and can be applied onto painted surfaces to reproduce various finishes. It's best to use these as the final surface treatment, as being a 'Wax', any treated surfaces can't be painted or sealed.

Pigments: Pigments, such as those produced by 'Flory Models' or 'Humbrol' are effectively very fine 'dusts', which can be applied to a model to re-create dust, dirt, stains etc. They can be applied by dry brushing or mixed with other mediums to create paintable solutions.

Washes: Washes can be applied to either enhance panel lines etc or to add a 'filter' of colour onto a painted surface. They can be purchased ready made from various manufacturers or can be 'home made' using such as oil paints with a suitable thinning agent. I tend to use 'AK Interactive' products.

Water colour pencils:

Water colour pencils can be used to add weathering detail. The colour s applied to the model part then brushed gently with a brush, slightly dampened with water. This dilutes the pencil marking, allowing it to be faded as desired. 'AK Interactive' produce these 'weathering' pencils, which are marketed specifically for the modeller, although other artist water colour pencils can be used, such as 'Derwent' Inktense 24 ink pencils.

Oil paint:

A technique used more frequently now is oil paint ‘dot and drag’. Basically an oil paint of the desired colour is placed onto a piece of cardboard, which over a hour or so, soaks out the oil in the paint, leaving a drier pigment. The pigment is ‘dotted’ onto the painted surface where it is required then dragged with a brush previously wetted with ‘Tamiya’ X20 enamel thinners then wiped virtually dry.

Softly ‘flick’ the brush to drag the pigment in the direction required, which will blend it in a thin layer.

The amount of pigment left showing depends on the effect you require. Always keep the brush wiped clean to avoid a build up of pigment and remoisten and wipe dry often. The more paint you drag, the less pigment is left showing. Blending different coloured pigments can create stains from smoke/ gun blast, rain marks/runs, dirt/dust and oil/fuel stains.

A good quality oil paint and thinners are essential to produce a good finish.

Some oil paints can be too ‘gritty’ once leached of the oil, so I use ‘Abteilung 502’ oil paints thinned with ‘Tamiya’ Enamel thinners (X20).

PART 4
DECALS

PART 4 - DECALS

‘Aviattic’ decals:

The ‘Aviattic’ decals are different in both production techniques and application to those of the more traditional decal manufacturers. Traditional decals are normally created using processes such as silk screen printing and are pre-shaped for the particular model markings. When placed in warm water they will detach from the backing sheet and can then be slid onto the model surface and when they are correctly positioned, wiped with a semi-dry brush or cotton bud etc, to expel any water from under the decal. Once fully dry, decal softeners, such as ‘MicroSol’ and/or ‘MicroSet’ can be applied, if necessary, to ’weld’ the decal to the model surface. Finally a sealing coat of acrylic or lacquer gloss, semi-gloss or flat is applied over the decal, to seal and protect the seal and protect the decal.
The ‘Aviattic’ decals are laser printed onto a very fine carrier film and although this film is thin, the decals are remarkably resilient and somewhat ‘stretchy’ when being applied. This allows them to be more easily moved and positioned before being finally applied. Also with most other decals, I’ve used softeners to help the decals conform to surface irregularities and contours, which is something I’ve found is not really required for ’Aviattic’ decals, due to the nature of the carrier film. In addition, unless the decals has been printed pre-shaped (‘cookie cut’), the decals will need to be cut out from the sheet, so care is required to cut the decals accurately to avoid leaving gaps, especially at the edges, where the white base colour will show. That said, minor gaps may be able to be covered with weathering. For more information, refer to the ‘Aviattic’ instruction sheet supplied with the decals.
Aviattic’ decals are laser printed onto either ‘clear’ or ‘white’ backing, the ‘clear’ being dependent on the base coat you apply and the finished effect you desire. The decals are supplied with very clear instructions on their application, including when to add pre-shading to the base coat, where desired, before you apply any ‘clear’ backed decals.

Application:

NOTE: *The two decal sheets supplied in the kit are **‘cookie’** cut to shape and are **‘white’** backed.*

First airbrush the parts to have decals applied with a primer coat of such as ’AK Interactive’ White (AK759) or Grey (AK758) or similar light colour for ‘clear’ backed decals or ’AK Interactive’ Grey (AK758) for ‘white’ backed decals. Appropriate base colours can be applied over the primer coat under ‘clear’ backed decal.

NOTE: *‘Silvering’ is caused by air being trapped in the rough surface of the paint, such as on a matte (flat) finish, which after the decal is applied and dries, causes silver sheen patches showing in the decal (’silvering’).*

Once dry, check the surfaces for any imperfections, such as trapped dust or raised areas of paint, which will cause ‘silvering’ under the decals. Any surface imperfections found should be carefully sanded or polished out.

Airbrush at least two light sealing coats of a clear coat such as ‘Mig’ A-Stand Aqua Gloss (A.Mig-2503) or similar over the painted surface to form a gloss surface for applying the decals.

NOTE: *The surface must be pre-wet with warm water. A small amount of PVA adhesive (white glue) can be added to the decal water to aid the adhesion of the decals to the model surface. Care needs to be taken when you slide the decal from the backing sheet and onto the model surface, as the thin decal can fold over on itself.*

Soak each decal in warm water for approximately 20 seconds.

Wet the surface of the model where the decal is to be applied.

Carefully slide the decal onto the wetted surface. Make sure the decal does not fold over on itself.

Align the decal to the shape of the model part.

Using a broad, soft brush, brush the decal from the centre outwards to remove any water from under the decal.

Adhere the decal to the model part surface by either pressure rolling over the decal with cotton buds or, as I do, by wearing lint free cotton gloves and pressing/rubbing across the decal with your fingers.

Check to make sure the decal is in full contact with the surface of the model part and that there are no areas exhibiting ’silvering’ (trapped air under the decal). If so, gently prick through the decal and apply water then press out the water to adhere the decal back onto the model part.

Also check that there are no lifted decal edges around the model part.

Allow the decal to fully set, preferably overnight. Where decals have been applied to large areas, gentle heating using a hair dryer can accelerate the decal setting time.

Where decals cover location holes or other openings, prick or cut through the decal into the hole or opening then apply ‘Tamiya’ X20A thinners, which will soften and adhere the decal into the hole or opening. Using X20A can also conform decals around curves edges etc.

Protect and seal the decals by airbrushing a sealing coat over the decals. If more decals are to be added onto the applied decals a gloss sealing coat should be used. Otherwise a sealing coat of the desired finish can be applied, which should also be done once all of the required decals have been applied.

Kit supplied decals:

The kit supplied decals are applied in the normal wat and can be applied directly onto the ’Aviattic’ decal surfaces.

PART 5
RESIN

PART 5 - RESIN

NOTE: *Models can be cast in resin or 3D printed with resin.*

Below I have listed what I have found to be the primary differences for resin parts as opposed to styrene (plastic) injection parts:

1. When resin kits are cast in their moulds, a release agent is applied to enable the cast resin parts to be more easily removed, which is similar to plastic kit moulding. This release agent can leave a film on the surface of the kit parts, which, if not removed, can prevent paint or adhesives from adhering to the surfaces. The easiest way to remove this film is to carefully and fully wash all of the model parts in warm soapy water, using an old, soft tooth brush, then rinse all of the parts of at thoroughly and leave to dry. Alternatively clean the parts with isopropyl alcohol of at least 90% purity, especially on 3D printed parts that have resin residue on their surfaces.

2. Resin, by its nature, is very brittle and can be damaged or broken easily, especially when handling small parts. This is particularly evident when separating the individual items from the resin cast and support trees. The best way to remove item is to cut them away with a razor saw, or a sharp pair of nippers, then carefully remove any residual stubs of resin.

3. Once removed from the resin cast, parts may have 'resin flash' around or amongst parts, especially small items. This is easily removed with a sharp scalpel blade. Heavier residue can be scraped, filed or sanded away.

4. Plastic kits are assembled using solvent adhesives, which melt the surface where it is applied and 'weld' the joint together. Resin however will not react to this type of adhesive and can really only be glued using CA adhesive. This adhesive reacts to moisture in the air and on the surface to be joined. As most people know, it will also bond skin to whatever it touches, if the skin has CA adhesive on it. Obviously extreme care needs to be exercised when assembling resin kits using CA adhesive.

5. Cutting, sanding and drilling resin will create swarf and more importantly, resin dust. The dust in particular is dangerous, especially if inhaled. Therefore always vacuum the working area, and yourself, regularly. If you have a face mask or filtered respirator and find you can wear it whilst working, then do so. Resin can easily be drilled or scraped, but remember how brittle resin when it is being handled.

6. It is not unusual to find imperfections in resin cast parts, such as surface blemishes, small 'blow' holes or ragged edges. This can be common on some resin kits. These imperfections can be rectified by sanding/polishing and/or filling with modelling putty, then sanding/polishing.

7. Generally CA adhesive is supplied as 'instant bond' adhesive, but there are some manufacturers, such as 'VMS Fleky', that supply CA adhesive as standard, thin, slow and specific resin adhesive. Whichever adhesive is used you must ensure parts are correctly positioned and aligned before applying the adhesive. Trying to separate mis-aligned parts once the adhesive sets will prove very difficult and may result in irreparable damage to the parts.

PART 6
RIGGING

PART 6 - RIGGING

References:

'Wingnut Wings' instruction manual and web site.
Windsock Date File 149 - Rumpler C.IV at War (Ray Rimmel).
Windsock Date File 35 - Rumpler C.IV (Peter M Grosz).
Online resources.

General:

It's important to check where the various rigging attachment points are for this aircraft. Most models have these located on the model, but it's best to carry out research in reference books or research on line before drilling. Some modellers use micro drills manufactured for drilling printed circuit boards etc and these drill bits sometimes have identifying coloured collars fitted to the drill shanks. I have found that care needs to be taken when using these drills, as they are sharp and instead of easing their way into the plastic of the model, they tend to bite in and effectively 'cork screw' their way in, which causes jamming and lots of broken drills. This is not only expensive but can leave broken drill bits in the model, which are virtually impossible to extract. An alternative is to use High Speed Steel (HSS) drill bits, which are cheaper and have less 'bite' when in use, although again, they are very fragile and can very easily be broken. Some modellers drill through the wings etc of the model and rig by pulling through the rigging line/EZ thread etc, gluing in position and then rubbing down the exposed line 'tag' and then re-painting that area. I prefer to drill only part way into the plastic and attach the applicable rigging fixture with CA adhesive. With your research complete the rigging can be planned for the model in the subsequent Parts of this build log. For the primary rigging, such as flying and landing wires and cross bracing wires, I used 'Steelon' or 'Stroft GTM' mono-filament (fishing line) of 0.12 mm diameter and for flight controls and 0.08 mm for flight control cables. These are effectively transparent, but airbrushed with a semi-gloss clear coat, do give a look of steel and without the need of painting or colouring with a gel pen. The turnbuckles used are either sintered metal or resin and can be obtained from such as 'Gaspatch Models' or 'Proper Plane'.

NOTE: *The following rigging illustrations were adapted from those in the instruction manual and from research information. The different types of rigging are detailed under their type headings.*

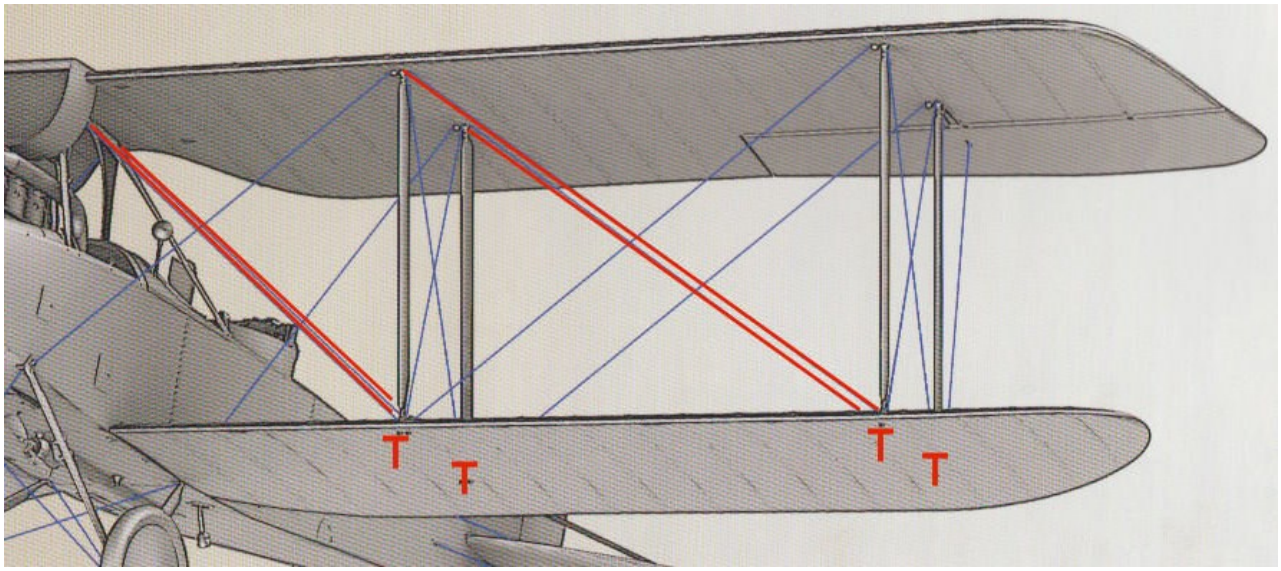
Landing wires:

Single landing wires were fitted to both sides of the aircraft as follows:

Between the tops of the front and rear fuselage cabane struts and diagonally down to inboard from the bottom of the inner interplane struts.

Outboard from the tops of the inner interplane struts and diagonally down to inboard from the bottom of the outer interplane struts.

Turnbuckles were fitted at the lower wing ends of the landing wires.



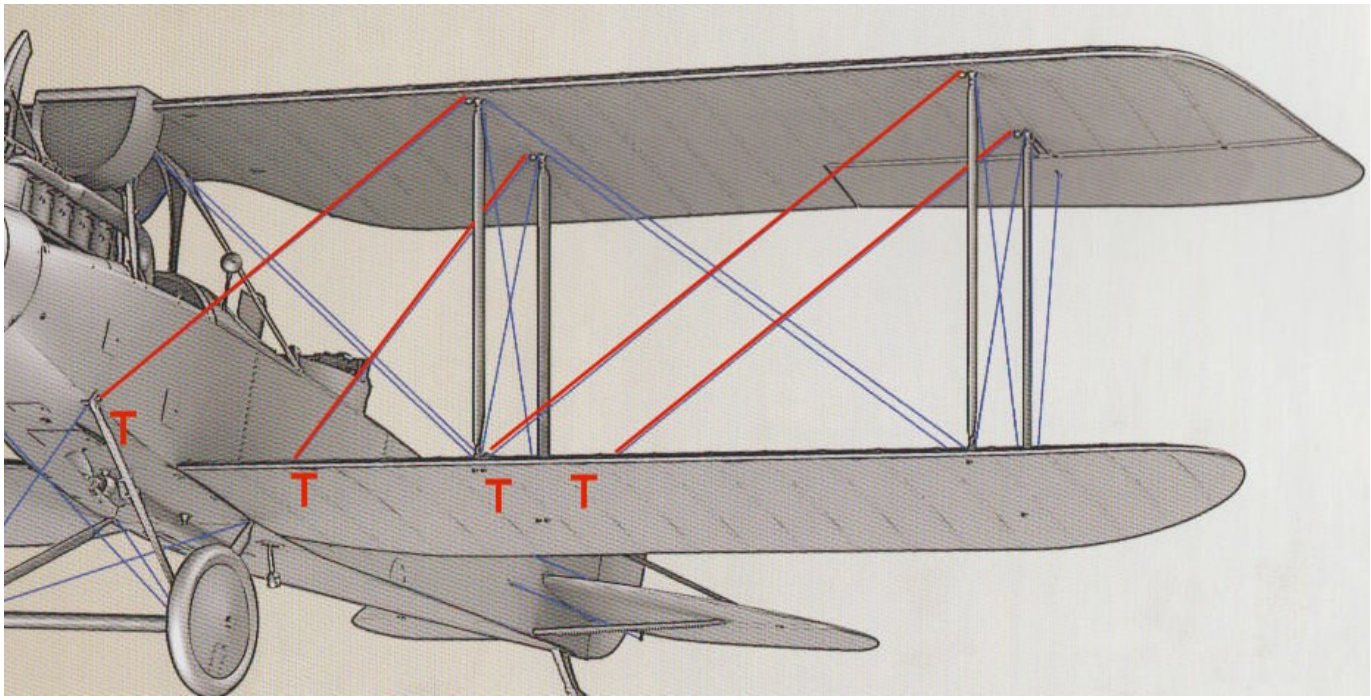
Flying wires:

Single flying wires were fitted to both sides of the aircraft as follows:

Inboard from the tops on the inner interplane struts and diagonally down to the top of the forward landing gear strut and at the fuselage/lower wing root.

Inboard from the tops on the outer interplane struts and diagonally down to outboard of bottom of the inboard interplane struts.

Turnbuckles were fitted at the lower wing/landing gear strut ends of the flying wires.

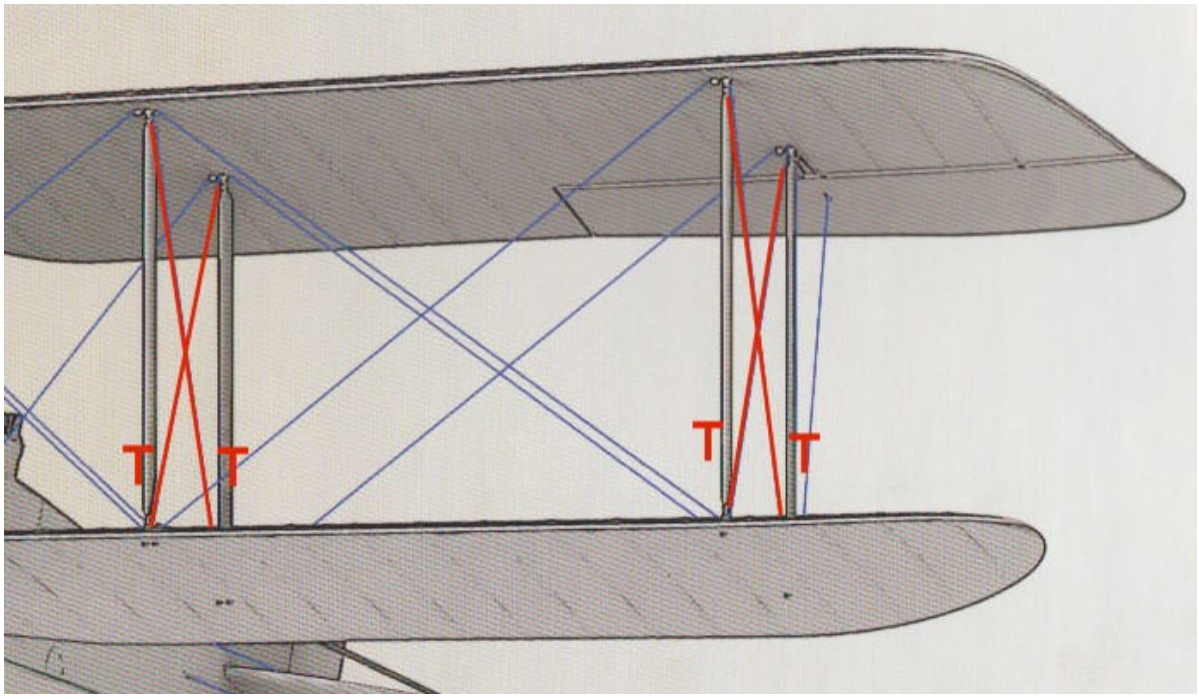


Incidence wires:

Single and crossed incidence wires were fitted to both sides of the aircraft as follows:

Between the bottom of the interplane struts and diagonally up and crossed to the tops of the interplane struts.

Turnbuckles were fitted towards the lower wing ends of the incidence wires.



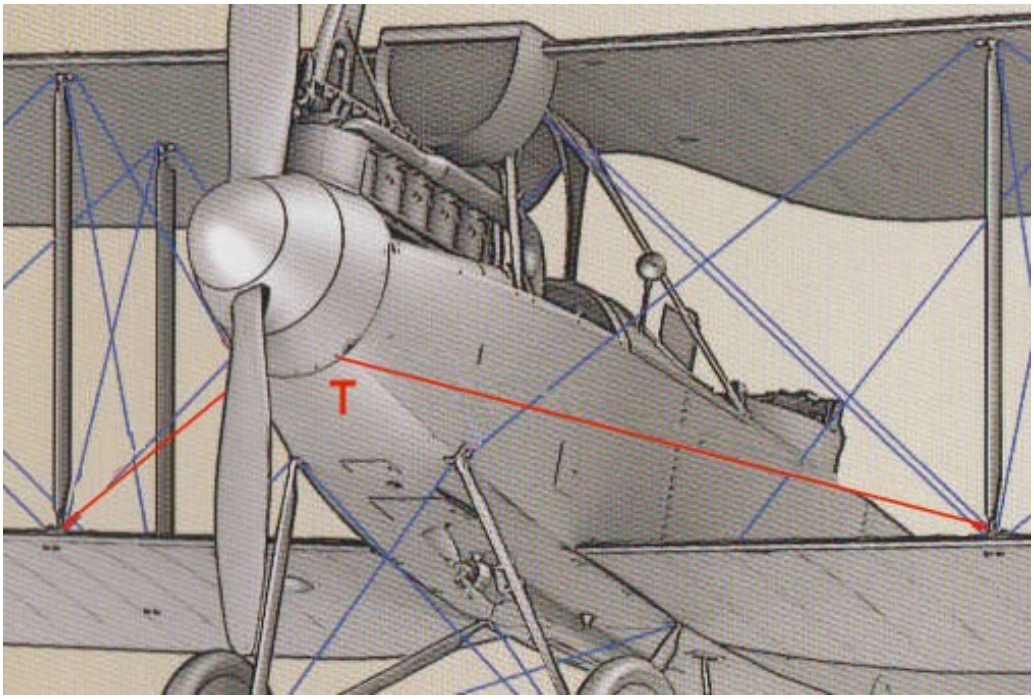
Drag wires:

NOTE: *A correction sheet was released by 'Wingnut Wings' to add the missing drag wires from the rigging illustration.*

Single drag wires were fitted to both sides of the aircraft as follows:

Between the bottom of the forward, inner interplane struts and diagonally across to the forward sides of the fuselage.

Turnbuckles were fitted towards the interplane strut ends of the drag wires.



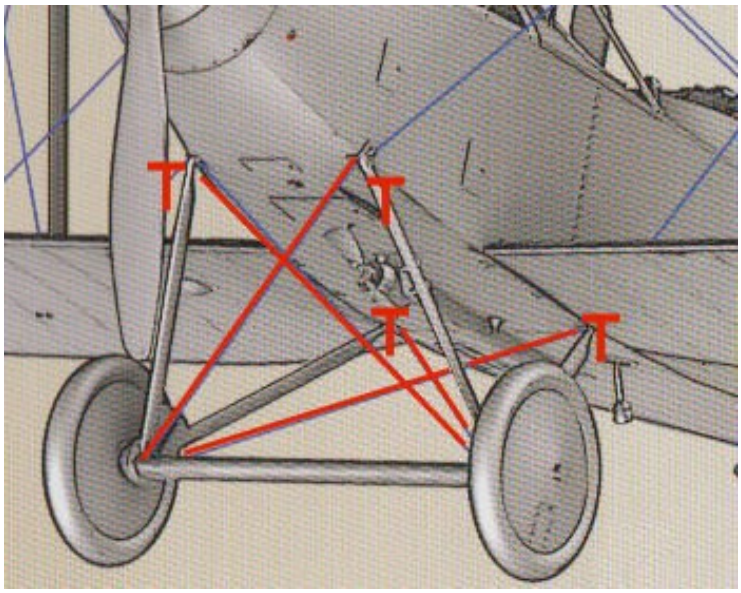
Landing gear bracing wires:

Single and crossed bracing wires were fitted between the front and rear landing gear struts as follows:

Inboard from the tops of the landing gear front struts and diagonally down and crossed to the forward outer ends of the landing gear axle fairing.

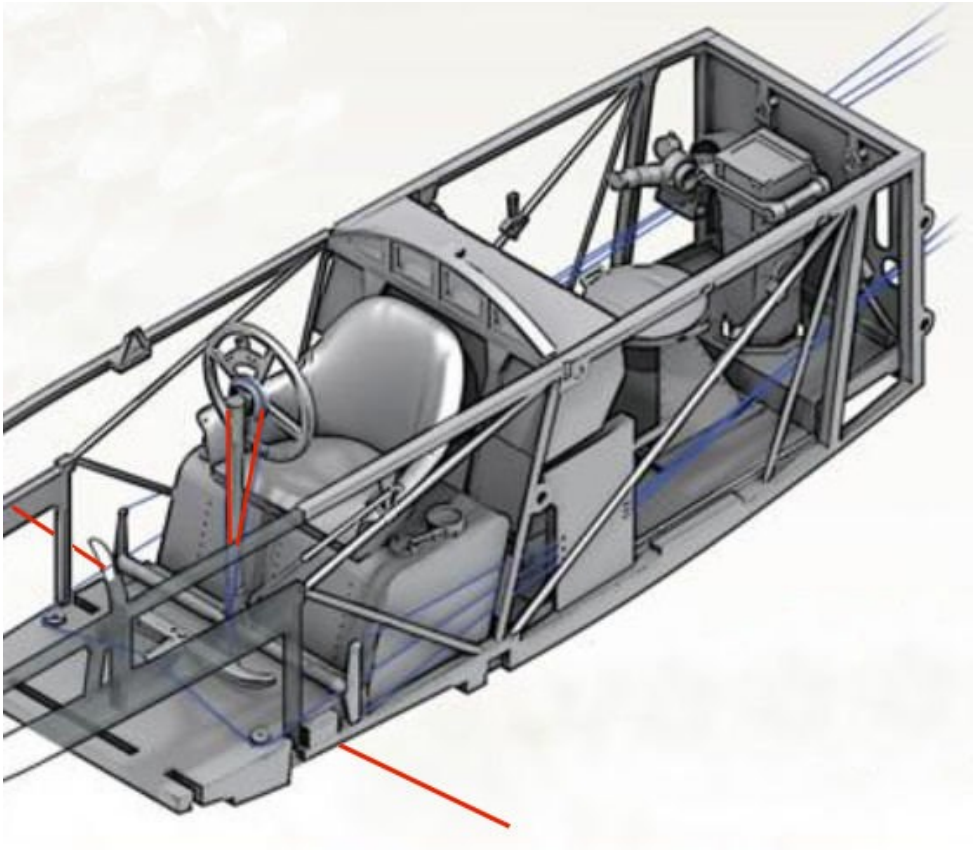
Inboard from the tops of the landing gear rear struts and diagonally down and crossed to the rear, outer ends of the landing gear axle fairing.

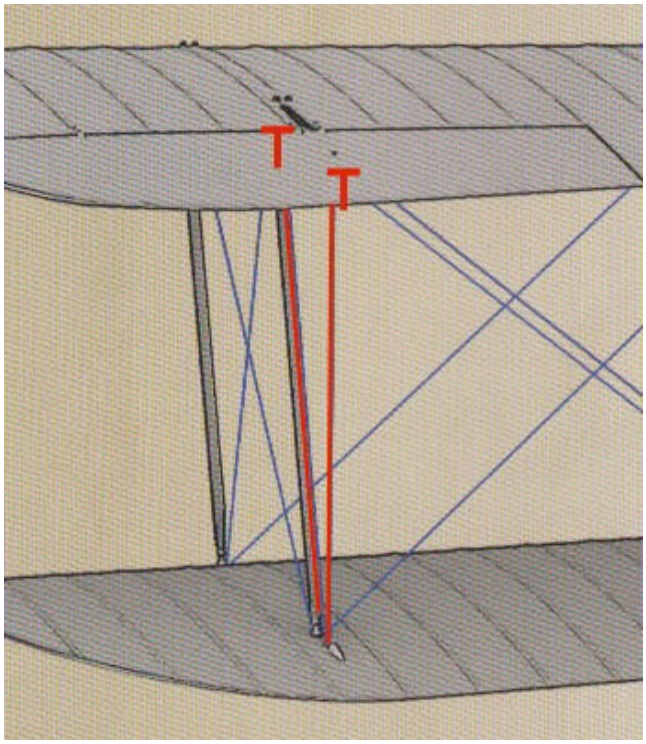
Turnbuckles were fitted at the fuselage ends of the wires.



Aileron control cables:

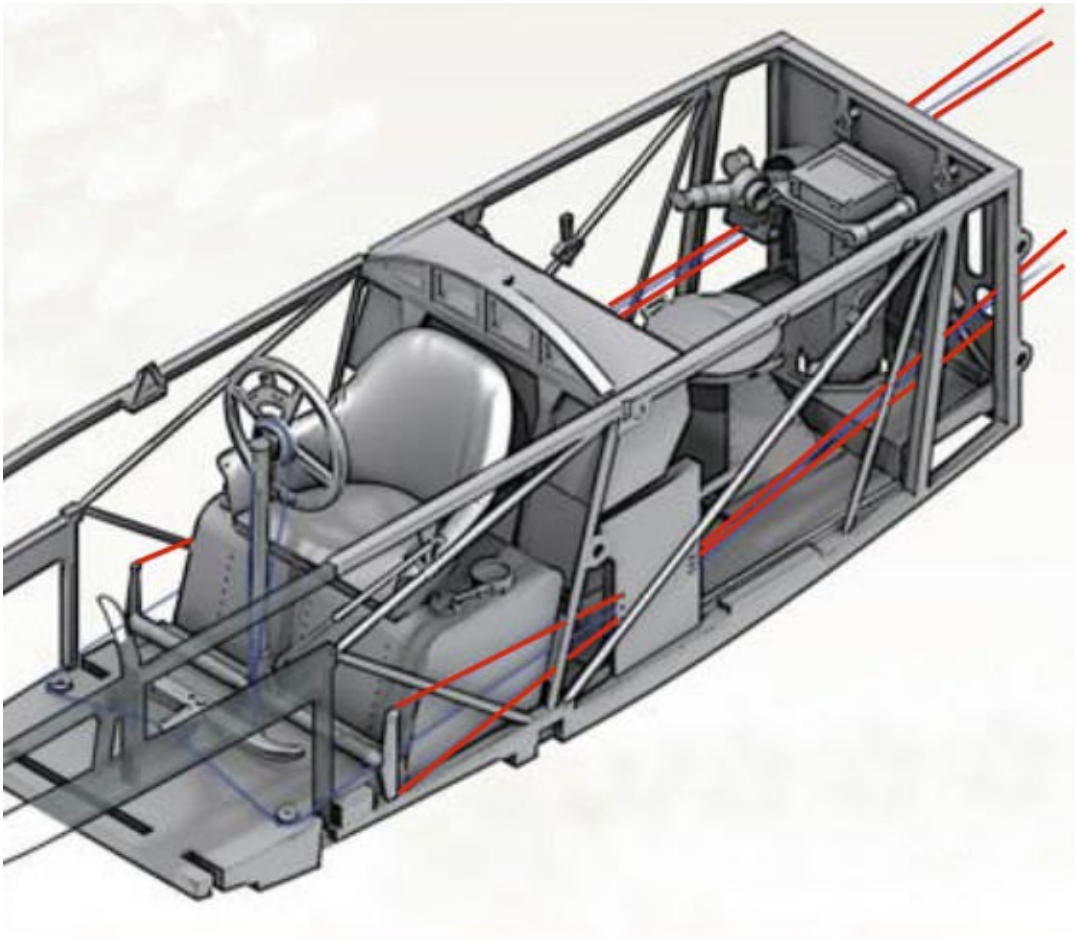
Cables were routed around a pulley on the front of the pilots steering wheel and then down and crossed and through the cockpit floor. The cables were then routed around pulleys and outboard through the lower wing to the rear of the outer, rear interplane stuts. One cable was routed up between the wings to the aileron. A second cable was routed up between the wings to the operating bell crank inside the upper wing.
As the pilot turned the steering wheel left or right, the cables on one side of the aircraft would pull that aileron in one direction whilst the cables on the other side of the aircraft pulled that aileron in the opposite direction. This caused the aircraft to roll (bank) left or right.

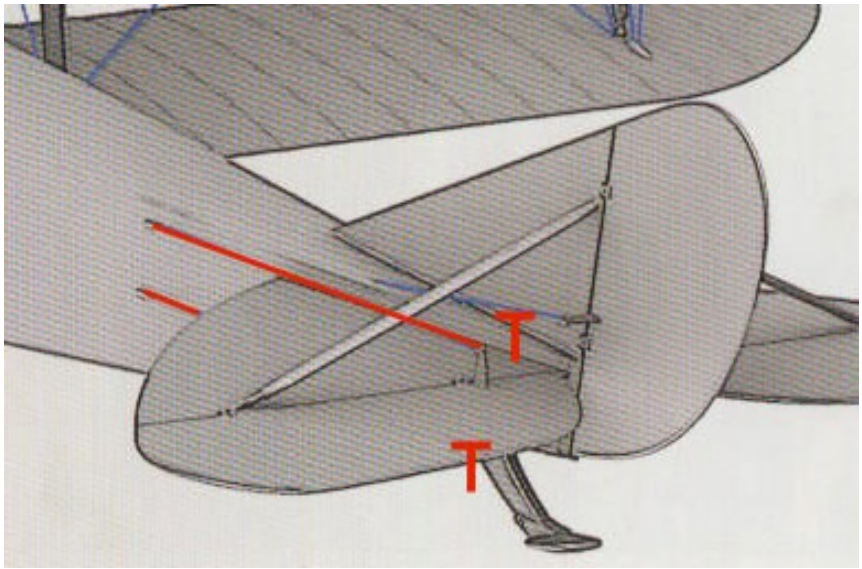




Elevator control cables:

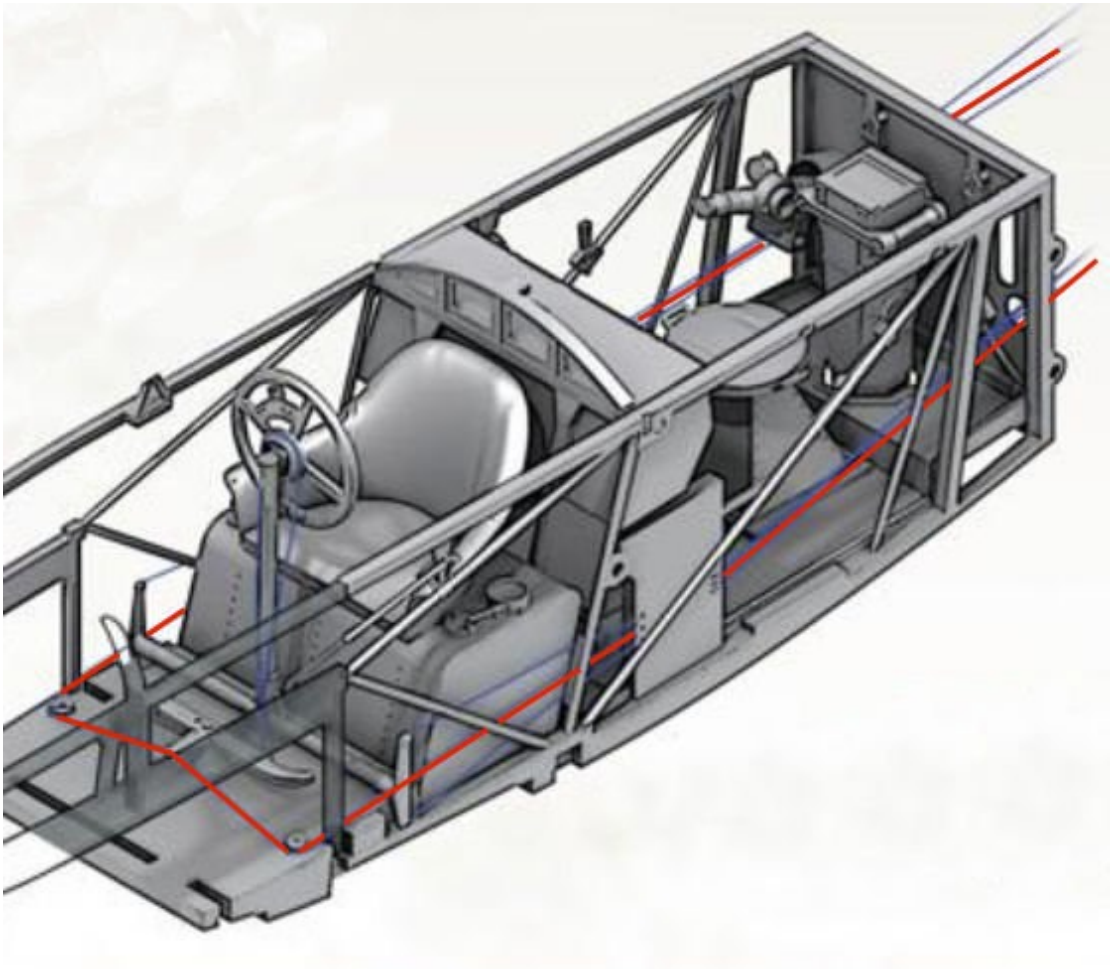
Elevator control cables were fitted to the top and bottom of control levers, which were attached to the outer ends of a torsion bar across the base of the control column. The two pairs of cables were routed rearwards through the cockpit and out from the rear, sides of the fuselage. The cables were attached to he top and bottom ends of the elevator control horns. Turnbuckles were fitted in the cables at the control horns.
As the pilot moved the control column forwards or rearwards, the cables the pulled the elevators either up or down, causing the aircraft to dive or climb (pitch).

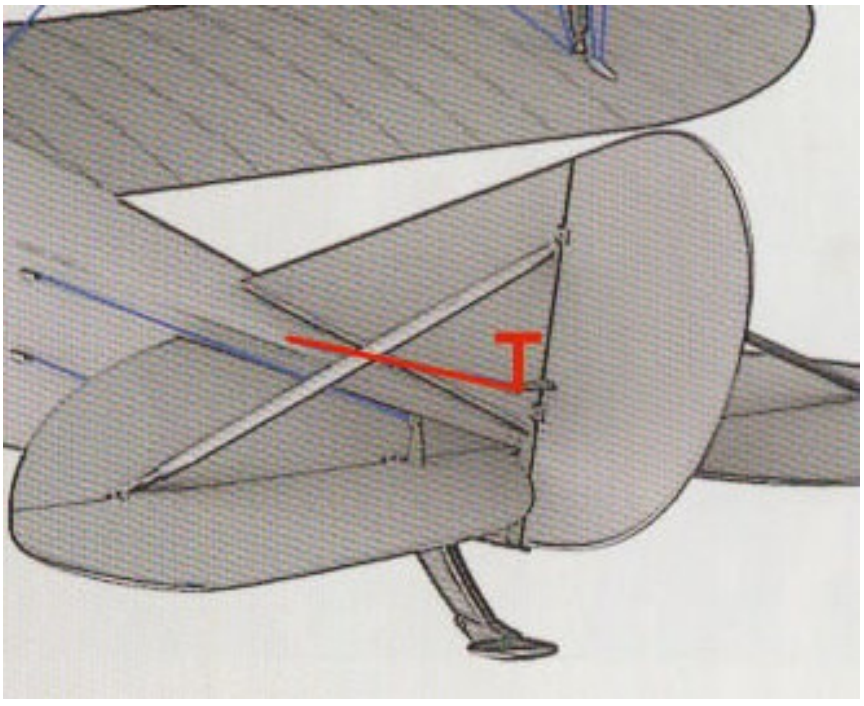




Rudder control cables:

Rudder control cables were attached to a lever on the front of the pilots rudder bar. The cables were routed outboard and around pulleys, then rearwards through the cockpit and out from the rear, sides of the fuselage. The cables were attached to the ends of the rudder control horn. Turnbuckles were fitted in the cables at the control horn.
As the pilot moved the rudder bar left or right, the cables the pulled the rudder left or right, causing the aircraft to turn in the required direction (yaw).





PART 7
PROPELLER

PART 7 - PROPELLER

NOTE: *The kit supplied propellers for this particular aircraft are those by 'Axial' or 'Astra'. However, I chose to replace the with a 'Wolff' laminated wood propeller (WP-060) made by Alexey Belov of 'Proper Plane' in Ukraine. This propeller was fitted to Rumpler C.IV aircraft.*

Preparation:

As the kit propeller shaft is larger than the hole in the propeller, I drilled out the propeller hole using a 2.4 mm diameter drill.

NOTE: *Refer to Part 5 (Resin) of this build log.*

Drill through the centre hole of the rear hub pates, using a 2.4 mm diameter drill.

Carefully cut away the two resin propeller hub plates from their bas block.

Sand the rear faces of the hub plates to reduce their thickness to that of the printed plates.

Brush paint the hub plates with 'Mr. Colour' Stainless Steel (213) or similar.

Assembly:

Using thin CA adhesive, secure the rear hub plate onto the rear of propeller, making sure it is positioned centrally over the hole in the propeller.

Using thin CA adhesive, secure the front hub plate onto the front of the propeller, making sure it is positioned centrally.

Decals:

NOTE: *The decals used are the kit supplied 'Wolff' propeller logo (70 x 2).*

Apply the two 'Wolff' logo decals centrally onto the front surface of the propeller blades, approximately a third of the way into the blade. Make sure the text 'Wolff' is towards the tip of the blades.

Finish:

Airbrush the propeller with a semi-gloss clear coat, such as 'Tamiya' Semi-Gloss (X35) mixed with 50% Clear Yellow (X24).

Weathering:

Brush 'AK Interactive' Kerosene wash (AK2039) over the front and rear hub plates.

Lightly sponge 'Tamiya' Weathering Master set A (Mud) along the leading edges of the propeller blades to represent erosion and dirt.

PART 8
WEAPONS

PART 8 - WEAPONS

The weapons fitted to this aircraft were a IMG 08 'Spandau machine gun for the pilot and a 'Parabellum' LMG 14 machine gun for the observer.

IMG 08 'Spandau':

NOTE: *Refer to page 9 of the kit instruction manual for more information on its construction. I chose to make the **'High Detail'** version of the machine gun. Once parts are cemented together, file or sand away any seam lines to blend the surfaces together.*

Preparation:

Remove the following parts required from their sprue gates and the kit supplied photo-etch sheet.

Machine gun A15.
Rear stay A7.
Spent ammunition chute A8.
Bending mandrel G64.
Photo-etch cooling jacket P7.
Photo-etch gun support P10.
Photo-etch end plate P4.

File or sand away any sprue or photo-etch tags or mold seams from the edges of the parts.

Assembly:

NOTE: *Handle the formed cooling jacket with care as it can easily be crushed or distorted.*

Using a low heat source (e.g. cigarette lighter or candle flame) 'wave' the photo-etch cooling jacket and the gun support over the flame and watch for the parts to discolour. **Do not linger** over the flame or the photo-etch may **distort or even melt**. Doing this anneals the photo-etch, making it easier to bend. Wipe off any soot from the parts.

Using the bending mandrel, bend the cooling jacket around the mandrel to form a cylinder, making sure the slots are kept parallel to each other (cooling jacket is not twisted).

Using thin CA adhesive, secure the joining seam along the cooling jacket.

Bend the gun support (as shown on page 9 of the kit instructions) along the bend lines to form the gun support.

Locate the gun support onto the front, underside of the gun, making sure the locating pegs on the gun insert fully into the top holes in the front plates of the support.

Pivot the support up at the rear to align the top rear of the support with its mounting points on the rear, underside of the gun.

Using thin CA adhesive, secure the gun support to the machine gun.

NOTE: *The rear end of the cooling jacket locates between the two rectangular plates on the front of the gun support. These may need to be bent slightly out to allow the cooling jacket to fully locate against the front of the machine gun breach block. If so, bend the back after the cooling jacket has been fitted.*

Locate the formed cooling jacket over the barrel and make sure the end plate can locate over the rear of the barrel muzzle.

Using thin CA adhesive, secure the cooling jacket to the front of the machine gun breach block and the underside of the barrel/muzzle.

Using thin CA adhesive, secure the end plate over the muzzle and onto the front of the cooling jacket.

Cement the rear stay onto the back of the machine gun breach block.

Cement the spent ammunition chute into it locating recess on the inboard side of the machine gun breach block.

Painting:

Airbrush the machine gun with ‘Tamiya’ Gloss Black (X1) or similar.

Airbrush the machine gun with ‘Alclad’ Gun Metal (ALC120) or similar.

Brush paint the spent ammunition chute with ‘Mr. Colour’ Stainless Steel (213) or similar.

Brush paint the handle of the cocking lever with ‘Tamiya’ Hull Red (XF9) or similar.

Weathering:

NOTE: *Refer to Part 3 (Weathering) of this build log for more information.*

Airbrush the machine gun with a semi-gloss clear coat, such as ‘Tamiya’ Semi-gloss (X35) or similar.

NOTE: *Dry brush by using a domed and soft brush, which has a very light dusting of paint. Dry off paint on the brush on an absorbent paper before dry brushing the part.*

Dry brush the machine gun with ‘Mr. Colour’ Super Iron 2 (203) or similar.

‘Parabellum’ LMG 14:

NOTE: *Refer to page 18 of the kit instruction manual for more information on its construction. I chose to make the **‘High Detail’** version of the machine gun.*

Preparation:

Remove the following parts required from their sprue gates and the kit supplied photo-etch sheet.

Machine gun halves G7 and G10.
Cocking lever G10.
Bending mandrel G18.

Gun mounting G4 and G9.

Ammunition drum G14.

Ammunition drum side plate G15.

Ammunition belt G13.

Photo-etch cooling barrel P2.

Photo-etch end plate P1.

File or sand away any sprue or photo-etch tags or mold seams from the edges of the parts.

Assembly:

Machine gun*:*

Cement the two halves of the machine gun together.

Cement the cocking lever to the right side of the machine gun breach block.

NOTE: *Handle the formed cooling jacket with care as it can easily be crushed or distorted.*

Using a low heat source (e.g. cigarette lighter or candle flame) 'wave' the photo-etch cooling jacket over the flame and watch for the part to discolour. **Do not linger** over the flame or the photo-etch may **distort or even melt**. Doing this anneals the photo-etch, making it easier to bend. Wipe off any soot from the part.

Using the bending mandrel, bend the cooling jacket around the mandrel to form a cylinder, making sure the slots are kept parallel to each other (cooling jacket is not twisted).

Using thin CA adhesive, secure the joining seam along the cooling jacket.

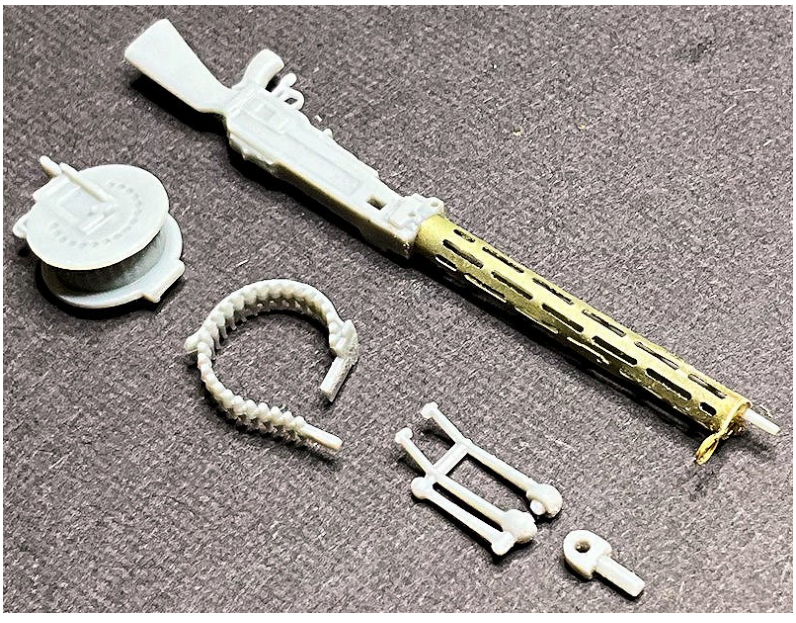
Locate the formed cooling jacket over the barrel and make sure the end plate can locate over the barrel.

Using thin CA adhesive, secure the cooling jacket to the front of the machine gun breach block.

Using thin CA adhesive, secure the end plate over the barrel and onto the front of the cooling jacket.

Ammunition drum:

Cement the drum side plate into its locating recess in the ammunition drum.



Painting:

Airbrush the machine gun and ammunition drum with 'Tamiya' Gloss Black (X1) or similar.

Airbrush the machine gun and ammunition drum with 'Alclad' Gun Metal (ALC120) or similar.

Airbrush the ammunition belt G13 and gun mountings G4 and G9 with a grey primer, such as 'AK Interactive' Grey (AK758) or similar.

Airbrush the gun mountings G4 and G9 with ‘Tamiya’ Grey Green (XF76) or similar.

Brush paint the handle of the gun mounting G4 with ‘Tamiya’ Hull Red (XF9) or similar.

Brush paint the ammunition belt G13 with ‘Tamiya’ Buff (XF57) or similar.

Brush paint the heads of the ammunition with ‘Mr. Colour’ Copper (215) or similar.

Brush paint the ammunition canisters with ‘Mr. Colour’ Brass (219) or similar.

Brush paint the shoulder butt and hand grip of the machine gun with ‘Tamiya’ Dark Yellow (XF60) or similar.

NOTE: *Refer to Part 2 (Wood Effects) of this build log for detail of applying wood effects using the ‘Windsor & Newton’ Griffin Alkyd oil paints.*

Apply the wood effect to the shoulder butt and hand grip of the machine gun by brushing with ‘Windsor & Newton’ Griffin Alkyd Burnt Umber oil paint.

Assembly (continued):

Locate the ammunition belt onto the ammunition drum.

Locate the ammunition drum against the underside of the breach block, with the ammunition belt into the feed slot on the top, right of the breach block.

Cement the ammunition drum and belt onto the machine gun breach block.

Clip (do not cement) the gun mounting G9 into its locating points on the bottom of the gun mounting G4.

Clip (do not cement) the gun mounting G4 onto its locating points on the bottom, front of the breach block.

Locate the butt rest (A18) into its locating hole in the observers gun cradle (A16).

Locate the machine gun mounting (G9) into its locating hole in the cradle.

Position the machine gun with its shoulder butt in the butt rest.

Cement the gun mounting (G4) onto the breach of the machine gun.

Once the cement has fully set, carefully remove the machine gun and mounting and the butt rest from the cradle.

Weathering:

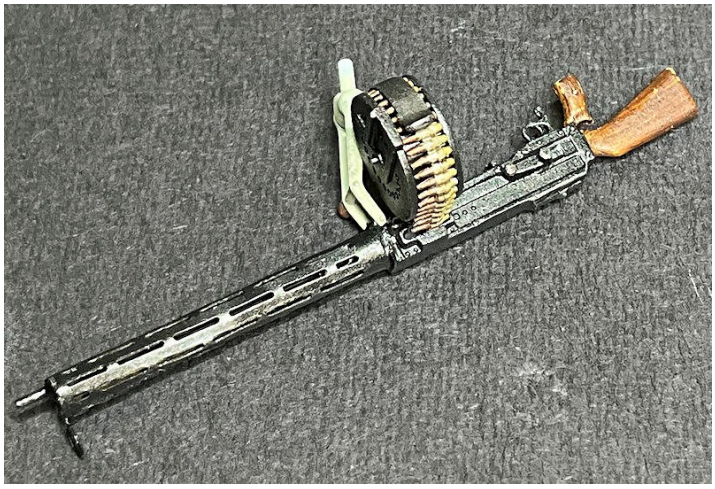
NOTE: *Refer to Part 3 (Weathering) of this build log for more information.*

Airbrush the machine gun with a semi-gloss clear coat, such as ‘Tamiya’ Semi-Gloss (X35) or similar.

NOTE: *Dry brush by using a domed and soft brush, which has a very light dusting of paint. Dry off paint on the brush on an absorbent paper before dry brushing the part.*

Dry brush the machine gun and ammunition drum with ‘Mr. Colour’ Super Iron 2 (203) or similar.

Lightly brush ‘AK Interactive’ Kerosene wash (AK2039) along the ammunition belt.



PART 9 ENGINE AND ACCESORIES

PART 9 - ENGINE AND ACCESSORIES

NOTE: *The engine fitted to this aircraft was the Daimler-Mercedes D.VIa 260hp inline six cylinder engine. Refer to pages 8 and 9 of the kit instruction manual for more information on its construction. Once parts are cemented together, file or sand away any seam lines to blend the surfaces together.*

Preparation:

Remove engine all parts required (page 8) and the oil tank and generator (page9) from their sprue gates and file or sand away any sprue tags or mold seams from the edges of the parts.

Assembly:

Cement the propeller shaft (E5) into the engine sump (E2).

Cement the engine crankcase (E1) onto the sump (E2).

Cement the two halves of the cylinder head (E10 and E11) together.

Cement the air pump (E18) onto the front end of the rocker boxes (E9).

Cement the fly wheel (E17) and two magnetos (D2) onto the rear of the engine.

Cement the de-compression valve (E12) onto the top, rear of the magneto drive shaft (A61).

Cement cylinder (E14) onto the bottom of the intake manifold (E16).

Cement together the two halves of the generator (A53 and A54).

File or sand away any seam joints from the parts.

Painting:

Airbrush the generator assembly and the tubes for the spark plug leads (E6) with a grey primer, such as 'AK Interactive' Grey (AK758) or similar.

Airbrush the generator assembly with 'Tamiya' Grey Green (XF76) or similar.

Airbrush the tubes for the spark plug leads (E6) with 'Tamiya' Hull Red (XF9) or similar.

Airbrush all other engine parts/assemblies and the oil tank (A35) with 'Tamiya' Gloss Black (X1) or similar.

Airbrush the oil tank (A35) with 'Alclad' Pale Gold (ALC108) or similar.

Airbrush the following parts with 'Alclad' Duraluminium (ALC102) or similar:

Engine assembly.

Magneto drive shaft (A61).

Bottom of intake manifold (E61).

Airbrush the rocker boxes/shaft (E9) with 'Alclad' Gun Metal (ALC120) or similar.

Brush paint the following parts as suggested:

'Mr. Colour' Stainless Steel (213) - Air pump (E18), valve springs and tappets on rocker boxes (E9), fly wheel (E17), water pump (E15), pipe clamps on water pipe (B1, straps around oil tank (A35).

'Mr. Colour' Brass (219) - Cylinder at bottom of intake manifold (E16), outer cylinder on both magnetos (D2), cover discs on valve of intake manifold, filler cap on oil tank (A35).

'Tamiya' Hull Red (XF9) - handle of de-compression lever (E12), face of magnetos (D2), exhaust and intake manifold gaskets on cylinder heads.

'Tamiya' Rubber Black (XF85) - body of magnetos (D2).

Assembly (continued):

Cement the cylinder head to the crankcase.

Cement the rocker boxes/shaft onto the cylinder heads.

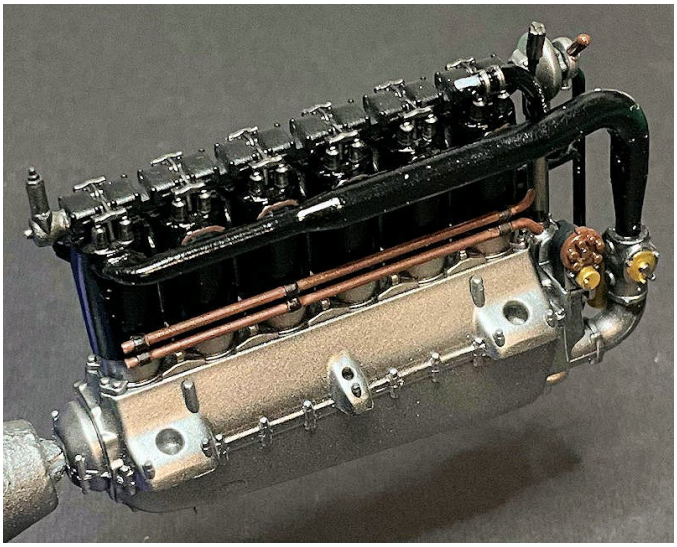
Cement the tubes for the spark plug leads onto the left side of the cylinders.

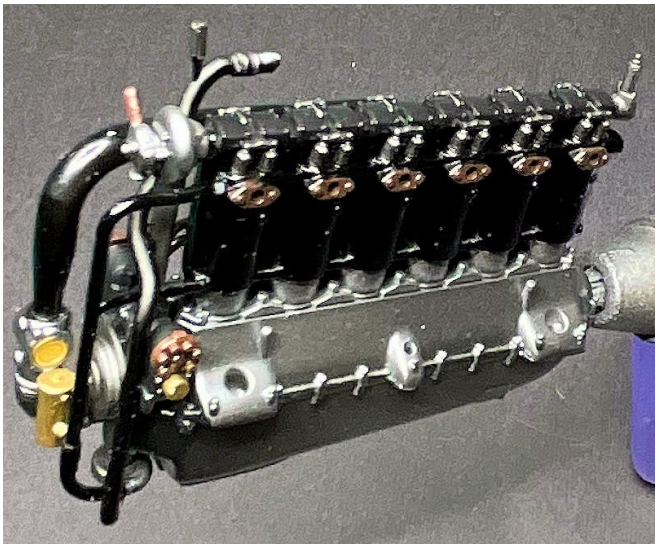
Cement the magneto drive shaft into the rear of the engine and against the rear of the rocker boxes/shaft.

Cement the water pipe B1 recess against the flywheel and into the magneto drive shaft. The bottom of the pipe locates under the water pump.

Cement the intake manifold into the rear of the engine and the left side of the engine cylinders.

Cement the water pipe E4 onto the outlet of the water pump and the two lugs on the right side of the rear engine cylinder.





Decals:

Apply decal 71 to the right, rear side of the engine crankcase.

Apply decal 72 to the left, rear side of the engine crankcase.

Apply either decal 73, 74 or 75 to the front engine cylinder.

Apply decal 91 to the water temperature gauge at the top of water pipe B1.

Apply decal 76 to the generator case.

Weathering:

NOTE: *Refer to Part 3 (Weathering) of this build log for more information.*

Airbrush the engine assembly with a semi-gloss clear coat, such as ‘Tamiya’ Semi-Gloss (X35) or similar.

Brush apply ‘Flory Models’ Clay washes over the following, allow to dry then remove to achieve your desired weathered effects. I chose to use the ’Flory Models’ Dark Dirt wash:

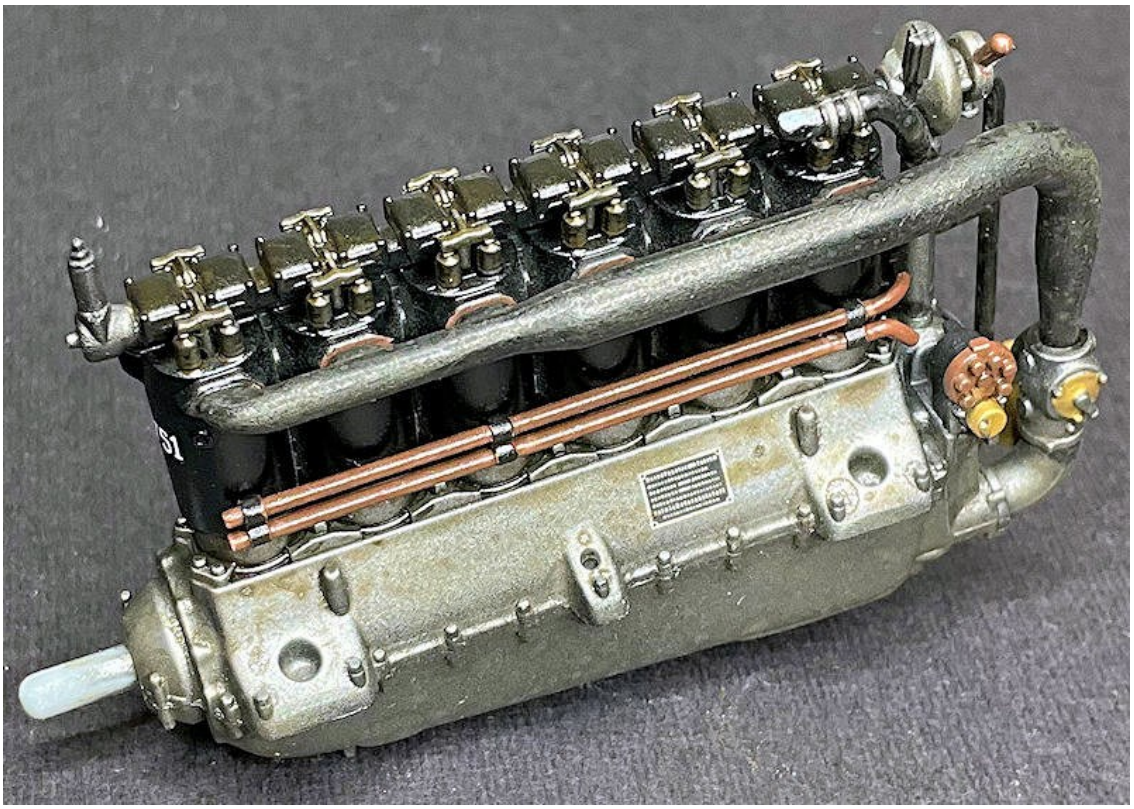
Engine assembly.

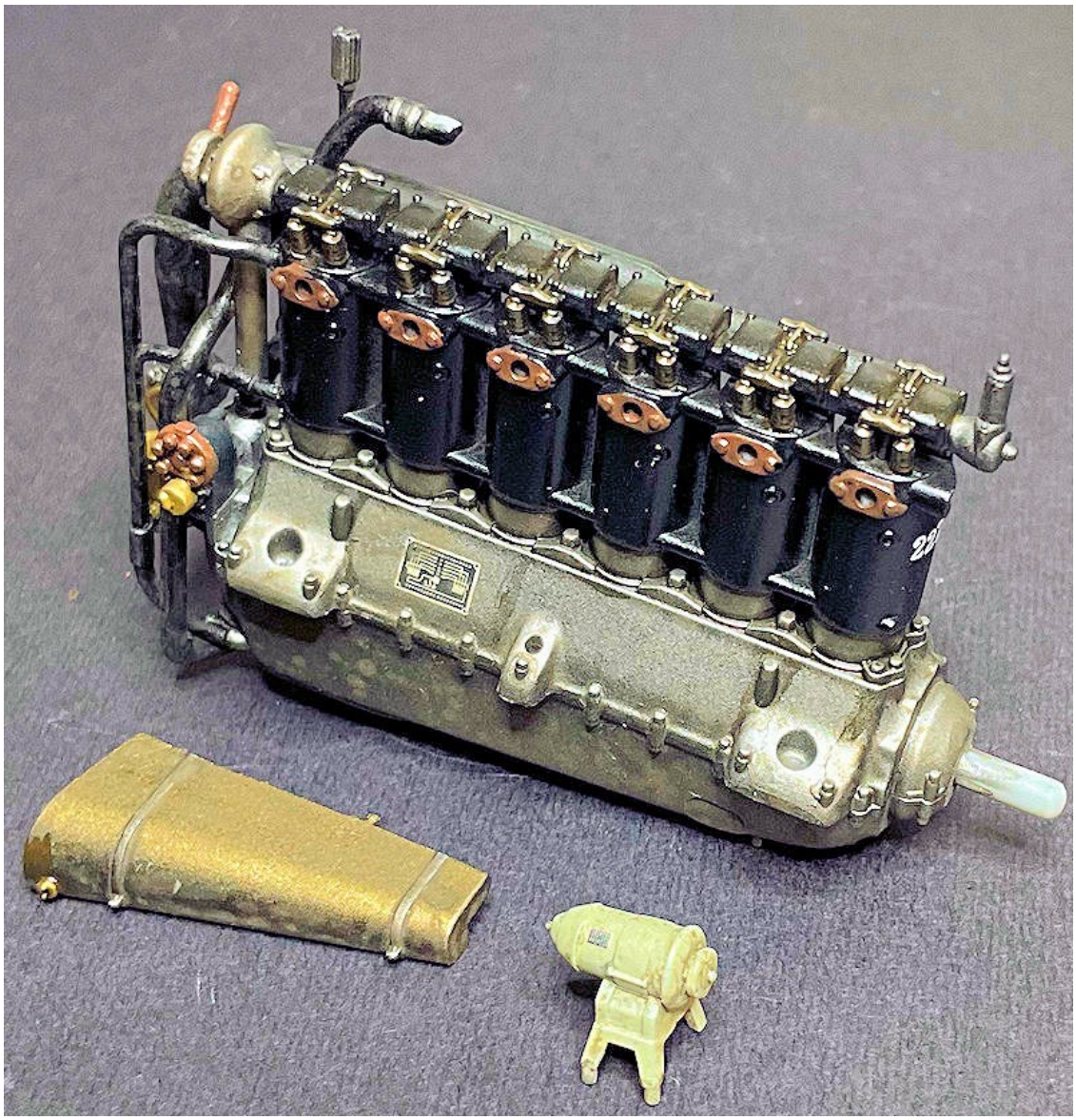
Oil tank.

Generator.

Brush ‘AK Interactive’ Kerosene wash (AK2039), as desired, around the base of the cylinders, streak down the crankcase/sump.

Brush ‘AK Interactive’ Engine Oil (AK2019) along the rocker boxes/shaft on the top of the cylinders and around the oil tank filler cap.



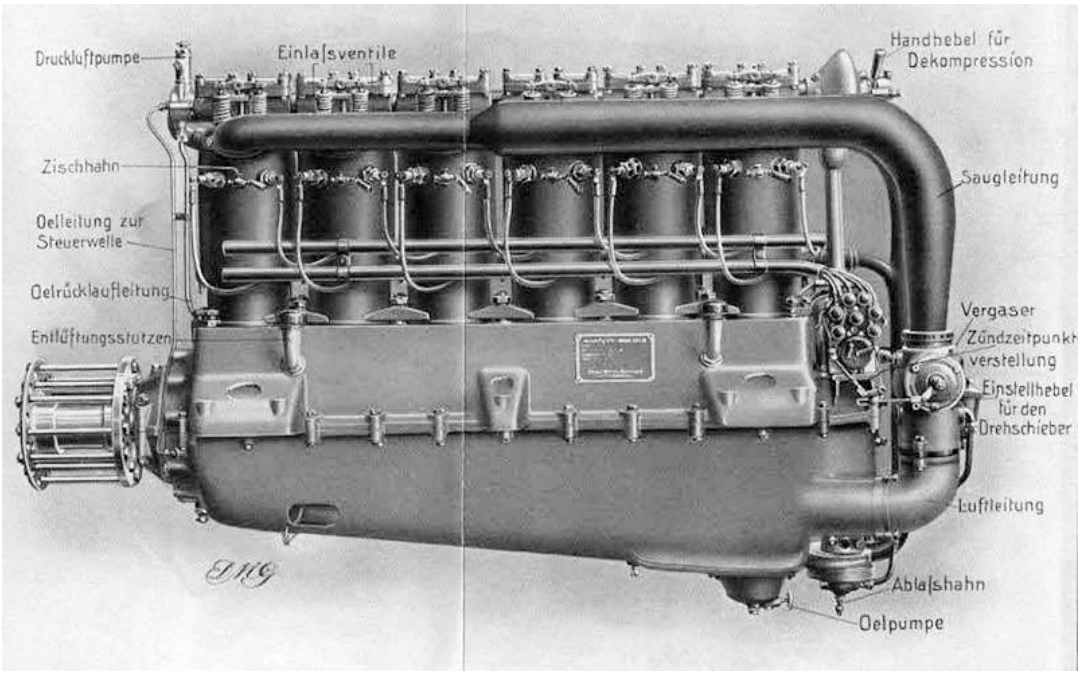


Modifications:

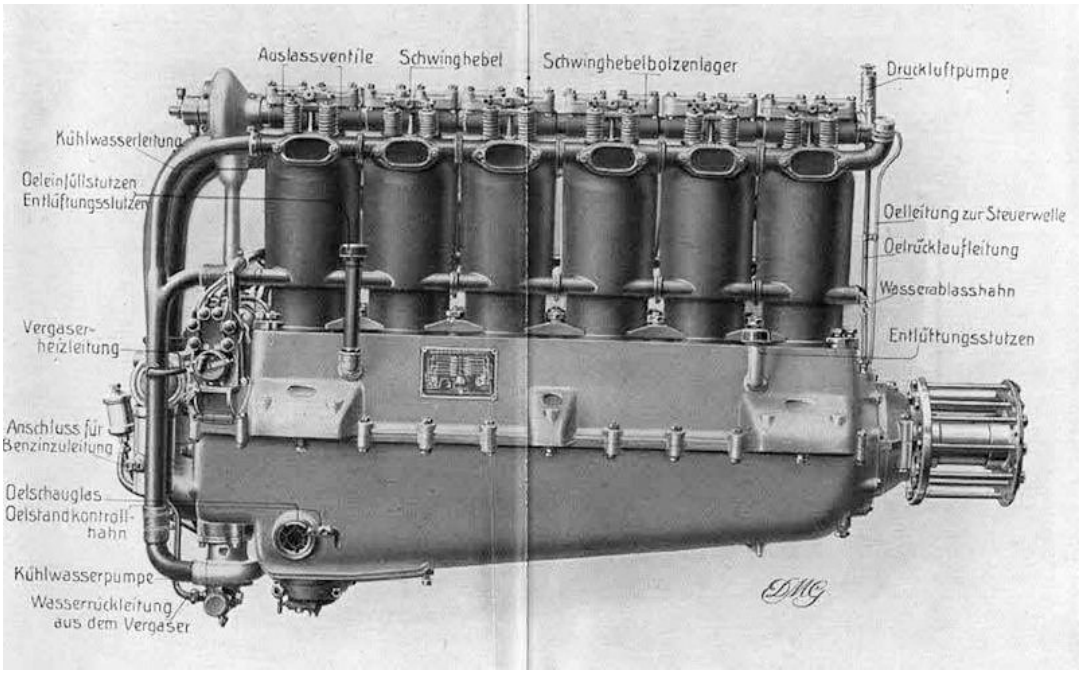
Ignition leads and spark plugs:

NOTE: *Each engine cylinder had two spark plugs. Ignition leads from the two magnetos were connected as follows:*

The left magneto leads were routed through the lower tube and connected to the left spark plugs.



The right magneto leads were routed across the rear of the engine and through the upper tube and then connected to the right spark plugs.



Roll cut twelve short lengths of 0.5 mm diameter Nickel-Silver tube, such as ‘Albion Alloy’s NST05 or similar.

Using as guides the two shallow recesses in the left side of each engine cylinder, drill holes of 0.6 mm into the cylinders, making sure the holes are drill at an outward angle (refer to the above illustrations).

Cut twelve lengths of ‘ModelKasten’ 0.2 mm black line (marked as 1.5).

Using thin CA adhesive, secure a line into each of the pre-cut tubes.

Using thin CA adhesive, secure a tube into each pre-drilled hole in the engine cylinders, making sure the tubes protrude 2.0 mm from the cylinders.

Pass each of the right spark plug lines down behind the tubes and then between the two tubes.

Using thin CA adhesive, secure each right line to the underside of the upper tube.

Cut away any residual line from under the upper tube.

Pass each of the left spark plug lines down behind the tubes.

Using thin CA adhesive, secure each left line to the underside of the lower tube.

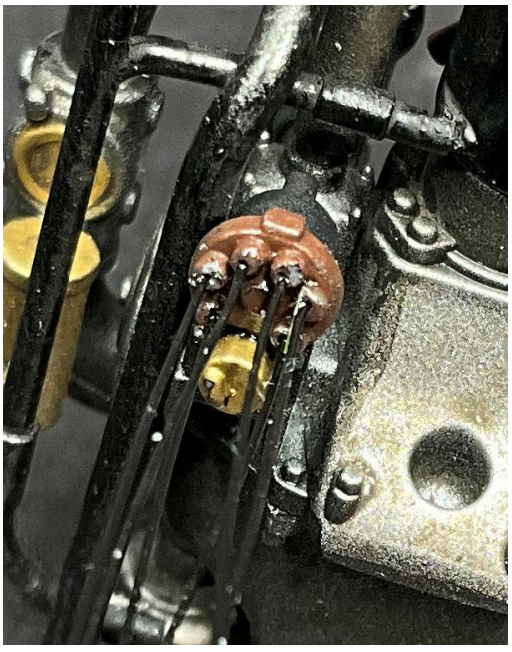
Cut away any residual line from under the lower tube.

Point mark the centre of the six ignition lead connection stubs on both magnetos.

Using the point marks as guides, drill holes of 0.3 mm diameter into, **but not through**, both magnetos.

Cut twelve lengths of ‘ModelKasten’ 0.2 mm black line (marked as 1.5).

Using thin CA adhesive, secure a line into each or the pre-drilled holes.

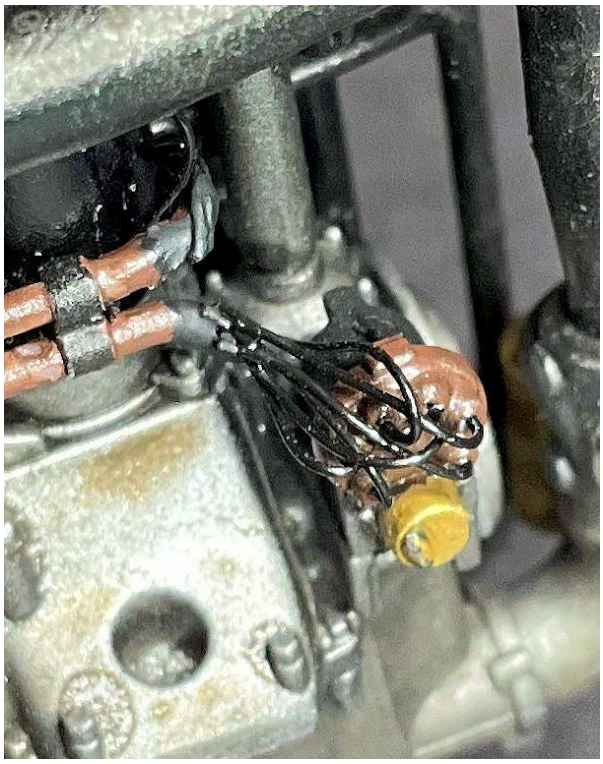


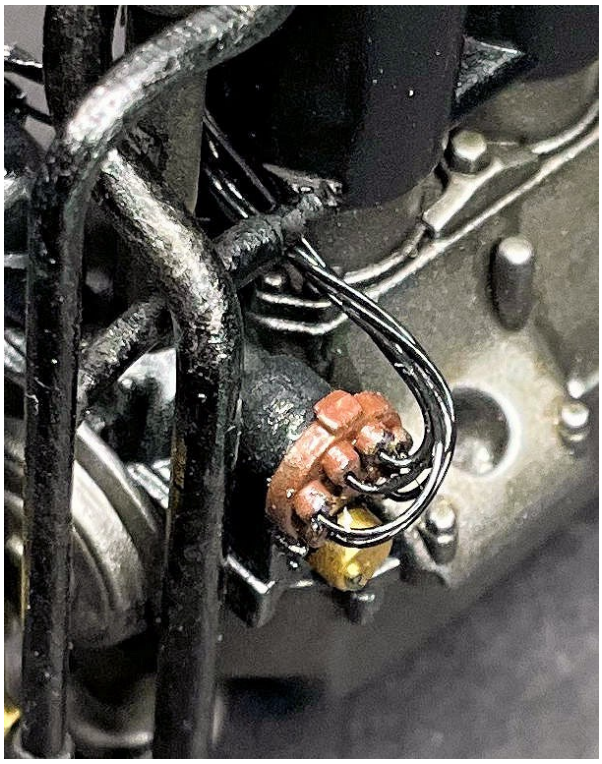
For the left magnetos, cut each line to loop over the magneto and rest against the end of the lower tube.

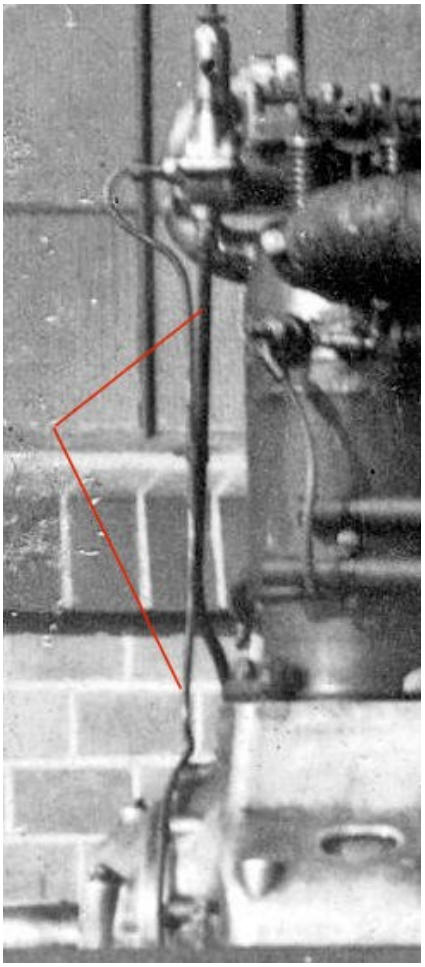
Using thin CA adhesive, secure each line to the end of the tube.

Repeat the procedure to attach the lines from the right magneto, across the rear of the engine and onto the end of the upper tube.

Brush paint the end of the tubes and lines with ‘Tamiya’ Rubber Black (XF85) or similar.







Air pump pipes:

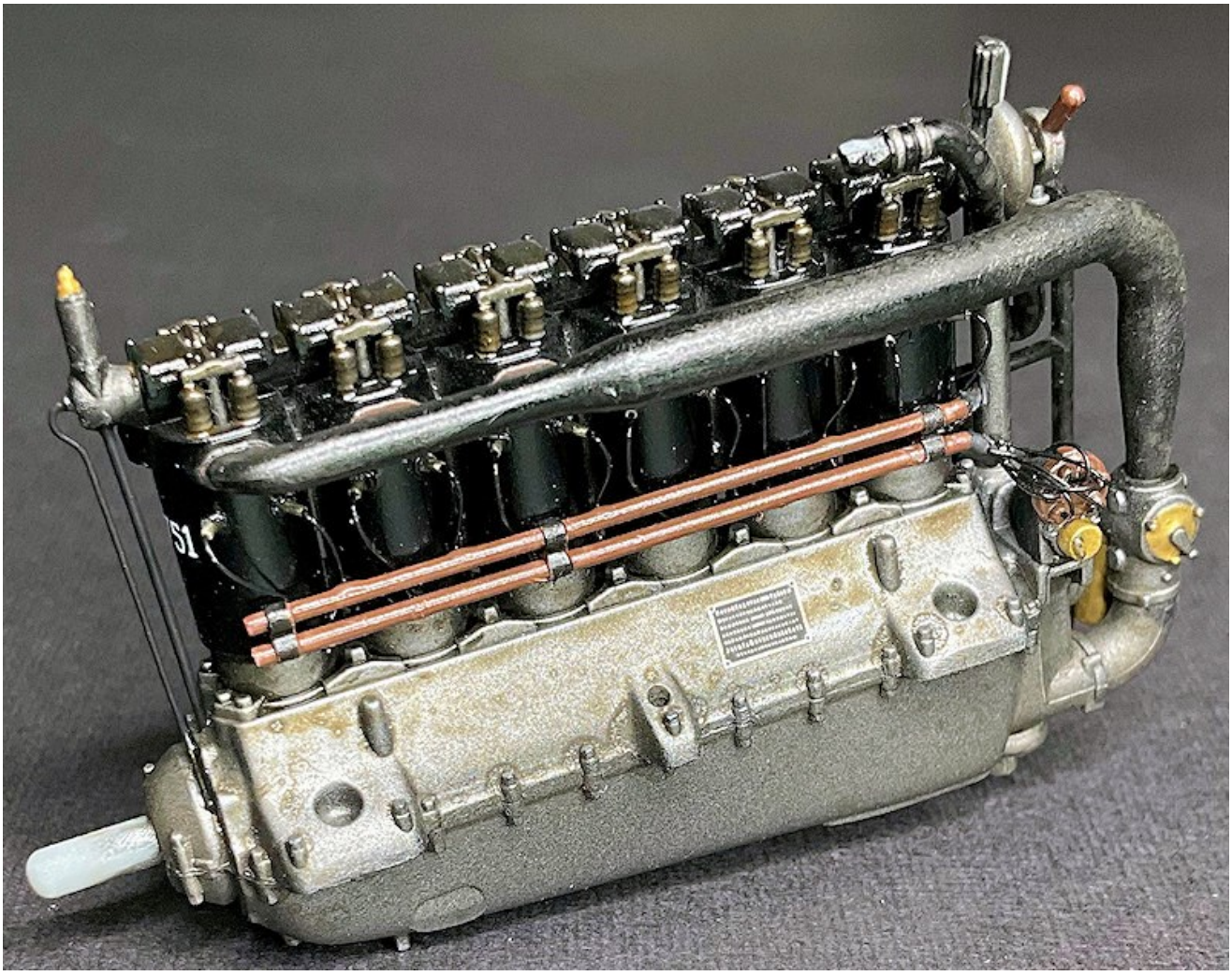
NOTE: *Two pipes were connected to the air pump on the top, front of the engine. These pipes are not represented in the kit.*

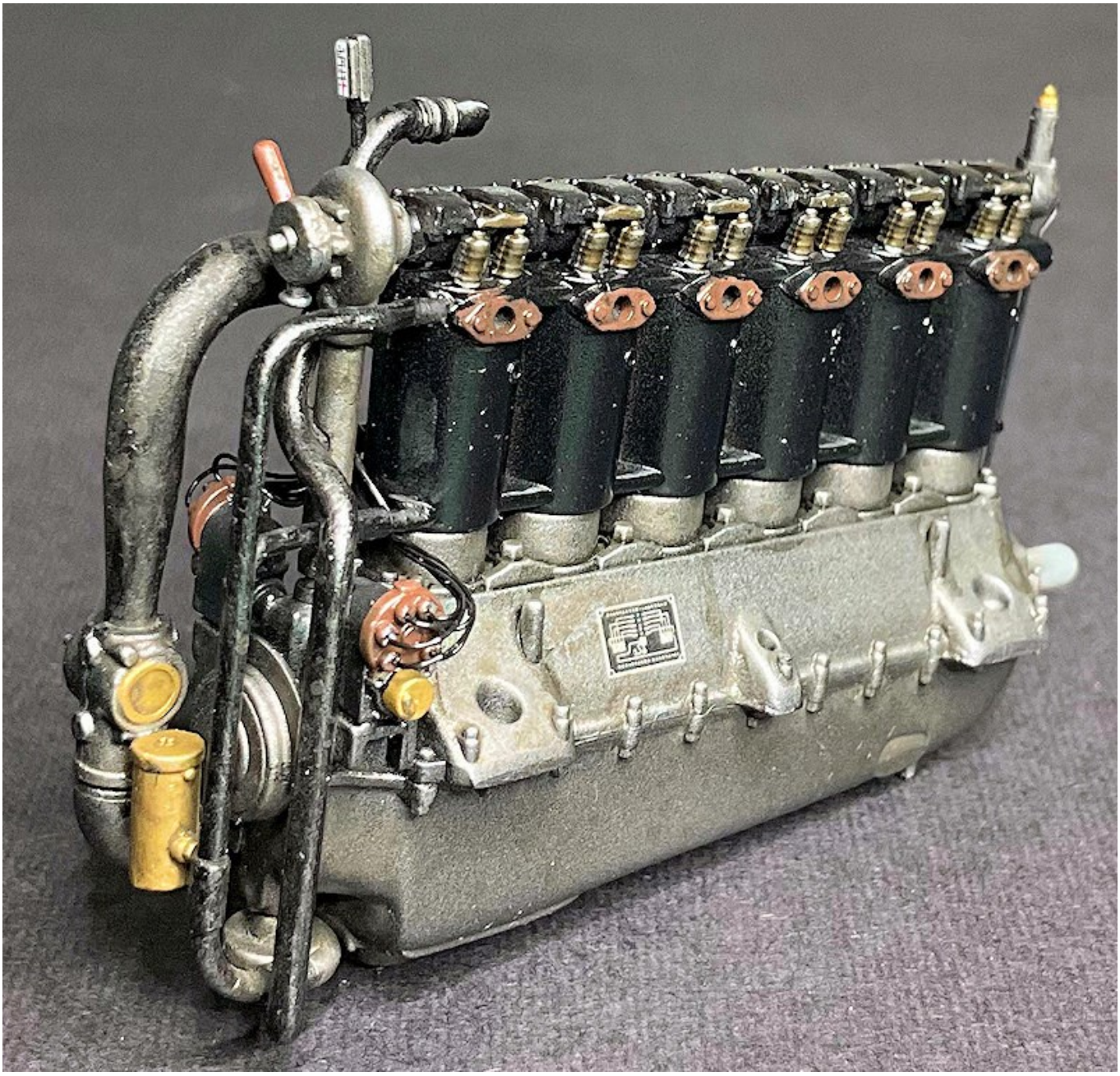
To represent the pipe from the underside of the air pump, I drilled a hole of 0.6 mm diameter into the centre of the crankcase, directly below the air pump. A length of 0.5 mm diameter Brass tube (Albion Alloy’s MBT05) was roll cut to length and secured into the hole using thin CA adhesive, making sure the top of the tube rested against the centre, underside of the air pump.

To represent the pipe from the front of the air pump, I drilled a hole of 0.4 mm diameter into the top, centre of the air pump. A length of 0.3 mm diameter Brass tube (Albion Alloy’s MBT03) was bent to form the top then cut slightly longer than required to rest against the top of the crankcase. The tube was secured into the hole in the air pump using thin CA adhesive. The bottom of the tube was bent left around the curve of the crankcase and secured in position using thin CA adhesive.

Brush paint the two tubes with ‘Tamiya’ Rubber Black (XF85) or similar.

COMPLETED ENGINE ASSEMBLY





PART 10
FUSELAGE

PART 10 - FUSELAGE

References:

'Wingnut Wings' instruction manual and web site.
Windsock Date File 149 - Rumpler C.IV at War (Ray Rimmel).
Windsock Date File 35 - Rumpler C.IV (Peter M Grosz).
Online resources.

Preparation:

NOTE: *Refer to the kit instruction manual for more information on construction of the fuselage. The cockpit assembly follows pages 4 - 7 and 10 - 12 and 16 of the kit instruction manual. For this model I used the following optional parts:*

Cockpit floor (I5).

FK camera (G87, G88, G94).

Wireless (G49).

Photographic camera plates container (G24).

Control column (I7, I9).

Observers seat (A37, A42).

Fuselage underside panels (I1, I3 and A17).

Once parts are cemented together, file or sand away any seam lines to blend the surfaces together.

Remove all parts, including optional parts, required from their sprue gates and file or sand away any sprue tags or mold seams from the edges of the parts. Pay particular attention to the two side frame (A14, A60) on page 6 of the kit instruction manual.

Seat belts:

Remove the photo-etch seat belts (P8, P9, P11 and P12) from the kits supplied sheet.

Remove any residual photo-etch tags from the edges of the belts.

Using a low heat source (e.g. cigarette lighter or candle flame) 'wave' each belt over the flame and watch for the part to discolour. **Do not linger** over the flame or the photo-etch may **distort or even melt**. Doing this anneals the photo-etch, making it easier to bend. Wipe off any soot from the belts.

Assembly:

NOTE: *Throughout assembly I chose to use 'Tamiya' extra thin liquid cement to secure parts together.*

Cement the bomb sight housing (A32) into its locating recess in the cockpit rear panel (A31).

Drill holes of 1.0 mm diameter through the internal recesses of camera half (G88).

Fully insert the camera support (G94) into the pre-drilled holes and cement in position.

Cement the two halves of the camera (G87, G88) together.

Drill holes of 1.0 mm diameter through the cockpit floor (I5) for locating the observers seat (refer Page 4).

Cement the tank panel (A24) into the rear of the auxiliary fuel tank (A22).

Cement the cockpit frame (A28) into the rear of the main fuel tank (A30).

Cement the pilots steering wheel (I9) onto the top of the control column (I7).

Cement the grease pump (A19) into its locating recess in the instrument panel (A41).

Cement the starter magneto G61) into its locating recess in the instrument panel (A41).

Cement the wireless winder (A34) into its locating holes in cockpit side frame (A14).

Cement the observers seat (A37) onto the seat mount (A42), making sure the seat overhang faces forwards (when fitted).

Cement the following into their locating slots in the cockpit floor (I5):

Cockpit rear panel (A31).

Wireless panel (A55).

Instrument panel (A41).

Cockpit forward panel (A9).

Cement fuselage underside panel (A17) fully into its recess in panel (I3).

Remove the external stitching from the fuselage half (B10) (refer to page 10 of the kit instruction manual).

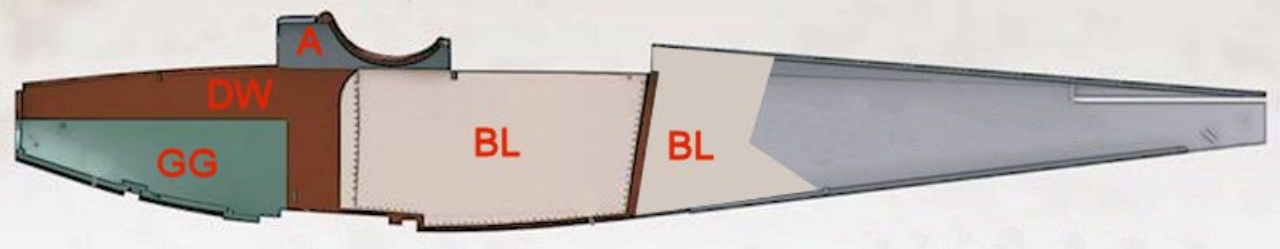
Where necessary, sand away any cemented seam lines to blend together the adjoining surfaces.

Refer to page 10 of the kit instructions - drill holes of 1.0 mm diameter through the fuselage halves (for carburettor air intakes).

Painting:

General:

NOTE: *Refer to pages 4-7 and 16 of the kit instruction manual for painting locations/parts. Refer to the following illustration for the areas of colours required inside the fuselage halves.*



Airbrush the assemblies/parts with a grey primer, such as 'AK Interactive' Grey (AK758) or similar. Only airbrush the fuselage/cockpit parts internal surfaces.

Airbrush the following assemblies/parts with 'Tamiya' Dark Yellow (XF60):

Cockpit floor assembly.

Cockpit side frames.

Engine bearer.

Observers seat (not the mount).

Pilot's seat.

Cockpit frame (rear of main fuel tank).

Mask off, in turn, the different areas on the inside of the fuselage halves and airbrush the following colours to the different areas:

GG - 'Tamiya' Grey Green (XF76).

A - 'Alclad' Duraluminium (ALC102).

BL - 'MRP' Clear Doped Linen (MRP-256).

DW - 'Tamiya' Dark Yellow (XF60).

Wood effect:

NOTE: *Refer to Part 2 (Wood Effects) of this build log for detail of applying wood effects using the 'Windsor & Newton' Griffin Alkyd oil paints.*

Apply the wood effect to the following parts by brushing with 'Windsor & Newton' Griffin Alkyd Burnt Umber oil paint:

Cockpit floor assembly.

Cockpit side frames.

Engine bearer.

Cockpit frame (rear of main fuel tank).

Fuselage internal areas marked DW in the previous illustration.

Apply the wood effect to the rear surface of the pilots seat by brushing with 'Windsor & Newton' Griffin Alkyd Burnt Sienna paint.

General (continued):

NOTE: *Refer to pages 4-7 and 16 of the kit instruction manual for painting locations/parts.*

Brush paint the detail parts as follows:

'Tamiya' Grey (XF22) - Wireless set, camera body, main and auxiliary fuel tanks, photographic camera plates container, wireless aerial winder body.

'Tamiya' Grey-Green (XF76) - Bomb sight housing, bomb sight, control column, throttle quadrant, rudder bar mounting, rudder bar.

'Tamiya' Gun metal (X10) - Metal strap fittings (camera panel), top of camera, pipes/fittings on cockpit floor assembly.

'Tamiya' Black (X18) - Wireless set, wireless panel, bomb sight, rim of pilots steering wheel, starter magneto, morse code transmitter, bomb rack halves, photographic camera plates.

'Tamiya' Light Blue mix (White XF2/Blue XF18 to 10/1 ratio - Bombs (x 4), steel tubes (cockpit side frames).

'Tamiya' Hull Red (XF9) - Rim of wireless aerial winder (hand wheel), handle on hand pumps.

'Tamiya' Deck Tan (XF55) - Two sections on wireless aerial winder (hand wheel),

'Tamiya' White (XF2) - Pipes on instrument panel.

'Tamiya' Wood (XF59) - Back of pilots seat, wireless aerial winder.

'Mr. Colour' Stainless Steel (213) - Wireless set, camera, bomb sight, pilots steering wheel, observers seat mount.

'Mr. Colour' Brass (219) - Instrument panel, main fuel tank, hand air pump.

'AK Interactive' Brown Leather (AK3031), stipple with British Uniform (AK3081) - Pilots seat/ cushion, observers seat.

Assembly (continued:

Cement the main fuel tank into its locating slots in the cockpit floor.

Cement the pilots seat into its locating slot in the main fuel tank.

Cement the auxiliary fuel tank onto its locating pegs in the rear of the pilots seat frame.

Cement the observers seat assembly into its locating holes in the cockpit floor.

Cement the four bombs onto their locating recesses in the outer half of the bomb frame.

Cement the inner half of the bomb frame over the fitted bombs and onto the outer frame.

Cement the bomb frame assembly into its locating slot in the cockpit floor.

Decals:

NOTE: *Refer to pages 4-7 of the kit instruction manual for the decals required and their locations.*

The decals I used for this particular model are as follows:

Wireless set - G6 to G11.
Camera - G24 to G26.
Bomb sight - 83 and 84.
Main fuel tank - 90.
Auxiliary fuel tank—93.
Cockpit right side frame - 87 and 88.
Cockpit left side frame - 86 and 92.
Instrument panel - G18, 77 to 81 or 82.

Refer to the pages in the kit instruction manual and brush a clear gloss coat, such as 'Tamiya' Clear (X22) or similar, over the parts that require decals.

Apply the relevant decals to the parts.

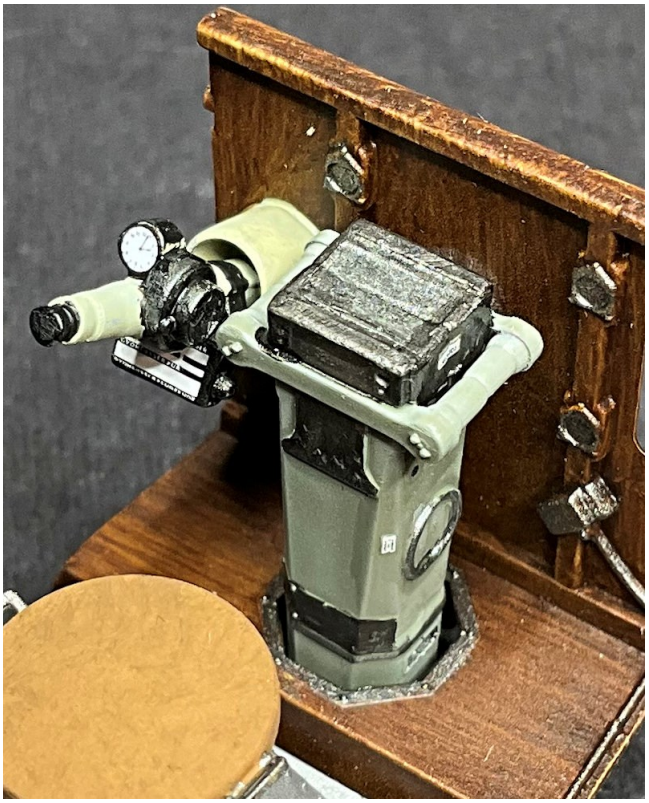
To seal the instrument decals and to represent lens glass, brush a clear gloss coat, such as 'Tamiya' Clear (X22) or similar, over the decals.

Assembly (continued:

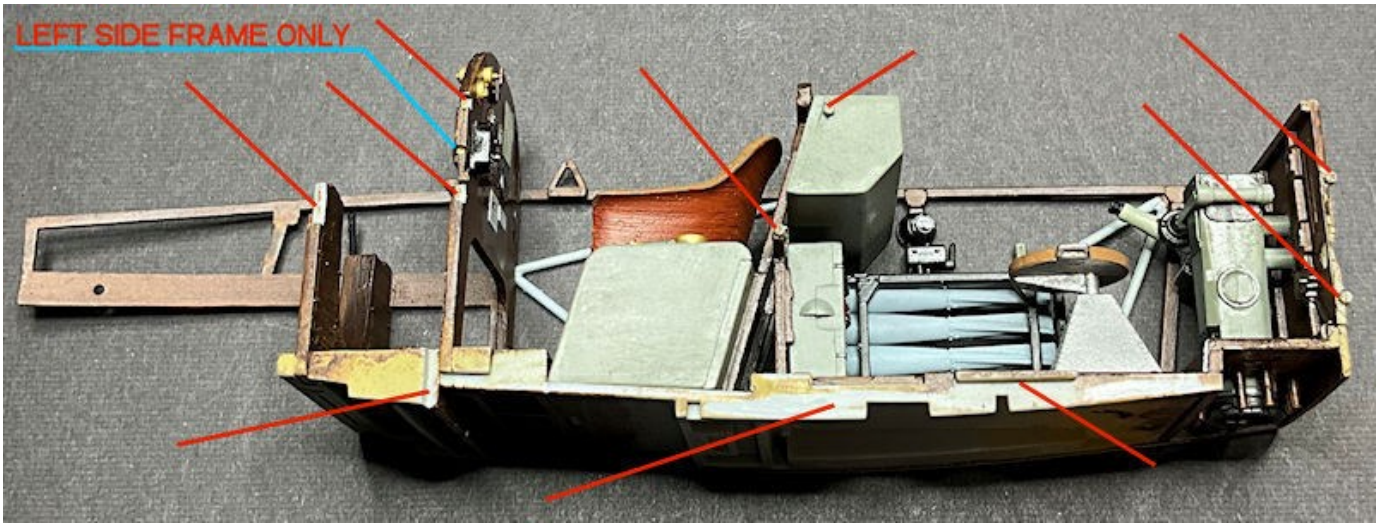
Cement the wireless set into its locating holes in the rear of the pilots seat frame.

Cement the camera into its locating holes in the rear panel of the observers cockpit.

Cement the bomb sight into its locating recess inside the sight housing on the rear panel of the observers cockpit.



NOTE: *Refer to the following photograph (**cockpit left side shown**) showing the locating recesses/stubs for attaching the cockpit side frames. The pilots seat belts are intended to fit over the locating stubs on the ends of the wireless seat frame. However, I felt doing this may stop the fuselage halves from closing together fully. Therefore the seat belts will be fitted later in the build.*



Make sure all paint and primer is removed from the locating surfaces for the cockpit right side frame.

Cement the cockpit right side frame fully onto the right side of the cockpit floor and the various locating recesses/stubs on the sides of the cockpit frames and auxiliary fuel tank.

Rigging preparation:

Control column:

Drill a hole of 0.2 mm diameter through both ends of the two elevator control levers, located on the ends of the torque tube across the bottom of the control column (for rigging elevator control cables).

Cockpit floor:

NOTE: *There is a pre-molded hole in both sides of the cockpit floor, forward from the rudder control pulley's in front of the bottom of the instrument panel.*

Using the pre-molded holes as guides, drill a hole of 0.4 mm diameter down through the cockpit floor (for rigging rudder control cables).

Instrument panel:

NOTE: *There is a pre-molded hole at the bottom of both sides of the instrument panel at the cockpit floor.* Using the pre-molded holes as guides, drill a hole of 0.4 mm diameter through the bottom of the instrument panel (for rigging rudder control cables).

Pre-rigging:

NOTE: *Refer to Part 6 (Rigging) for information on the cockpit rigging required. At this stage of the build it's best to rig flight controls before assembly of the model continues.*

The rigging materials used are:

'Albion Alloy's' Micro-tube (Brass MBT04 or Nickel Silver NST - 0.4 mm diameter).

0.08 mm diameter mono-filament, such as 'Steelon' or 'Stroft GTM).

Nickel-Silver or Brass tube can be chemically blackened by immersion in solutions such as 'Blacken-It' or similar.

The elevator and aileron control cable are attached to the control column.

Elevator control cables:

Cut a long length of mono-filament.

Cut and blacken a short length of 0.4 mm diameter tube.

Pass one end of the line through the tube then through a pre-drilled hole in the end of an elevator control lever.

Loop the line back and through the tube.

Slide the tube up to, **but not touching**, the end of the control lever.

Using thin CA adhesive, secure the lines in the tube, making sure the line loop is free to move in the control lever.

Cut away any residual tag end of line at the tube end furthest from the control lever.

Repeat the procedure to attach a line to the remaining control lever ends.

Aileron control cables:

Cut a long length of mono-filament.

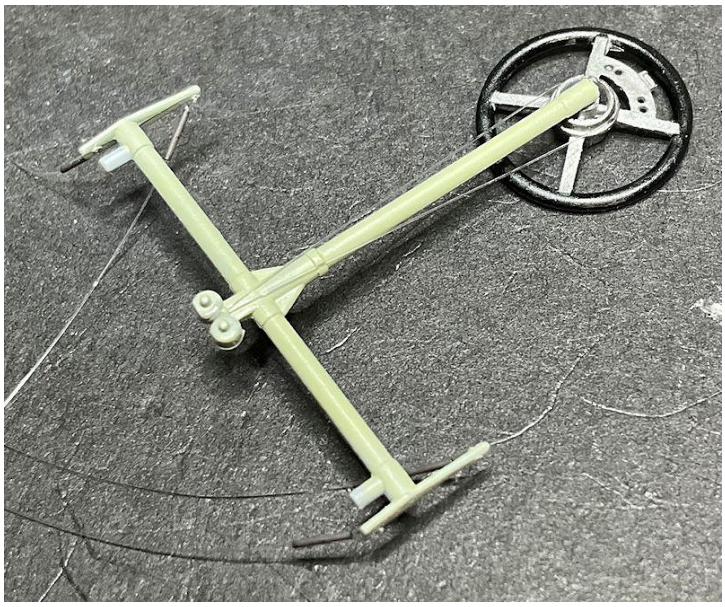
Using thin CA adhesive, secure the centre of the line over the pulley at the top, front of the control column (in front of the pilots steering wheel).

Pass one line down and across to and around the opposite pully on the bottom of the control column.

NOTE: *In the following steps, do not apply too much tension to the lines, as this will deflect or damage the control column.*

Applying light tension to the lines, secure them to the pulley's using thin CA adhesive.

Cut away any residual end tag of line at the pulley's.



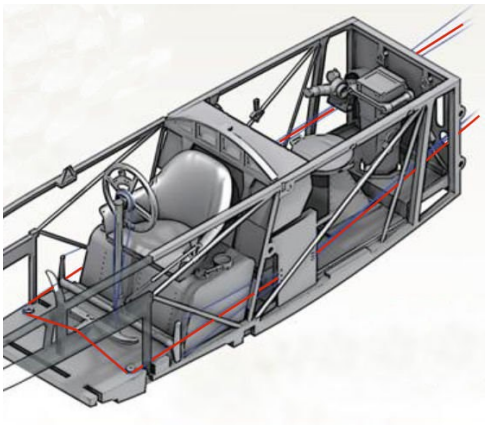
Assembly (continued):

Cement the control column into its locating holes in the cockpit floor.

Cement the rudder bar into its locating hole in the rudder bar mounting on the cockpit floor.

Rigging control cables:

Rudder control cable (right side):



Cut three long lengths of mono-filament.

Using one line, pass the ends of the line down through the pre-drilled hole in the cockpit floor, forward from the rudder pulley.

Locate the centre of the line over the forward tip of the rudder bar extension.

Using thin CA adhesive, secure the line to the rudder bar extension.

Pass one end of a second line through (from the pilots seat side) the pre-drilled hole at the bottom of the instrument panel then down through the pre-drilled hole in the cockpit floor, forward from the rudder pulley.

Using a second line, repeat the procedure on the other side of the cockpit assembly.

Using thin CA adhesive, secure the two lines in one of the pulley holes.

Lightly tension the free end of the line over the rudder bar extension then using thin CA adhesive, secure the two lines in that pre-drilled pulley hole.

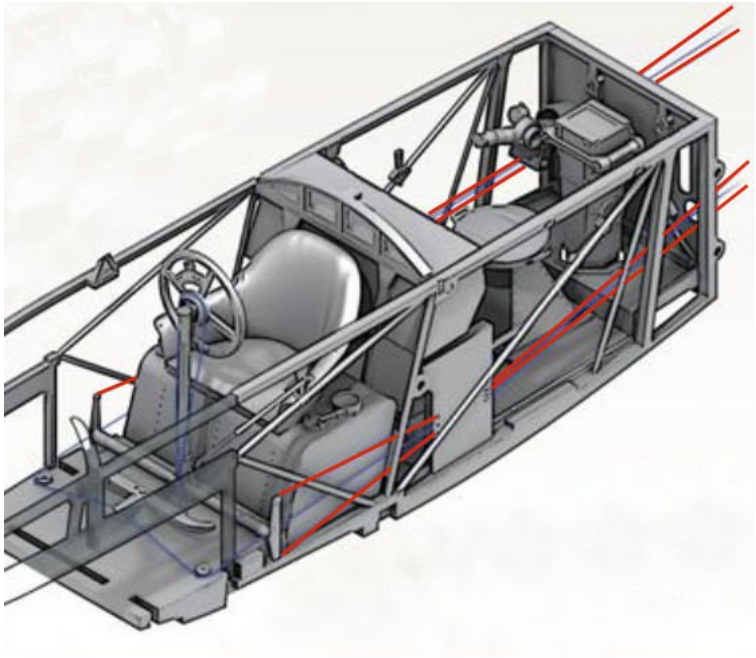
Pass the two lines from the instrument panel at the cockpit right side frame rearwards and inside the side frame members and through the hole in the side of the observers rear panel.

Lightly tension the line and hold it to the rear of the observers panel, using masking tape. Tape the line centrally at the hole and facing towards the centre of the panel.

Secure the line to the panel using thin CA adhesive.

Cut away any residual tag end of line at the rear of the panel.

<u>Elevator control cables (right side):</u>



Pass the two lines from the instrument panel at the cockpit right side frame rearwards and inside the side frame members and through the hole in the side of the observers rear panel.

Lightly tension the upper line and hold it to the rear of the observers panel, using masking tape. Tape the line centrally at the top of the hole and facing towards the top of the panel.

Secure the line to the panel using thin CA adhesive.

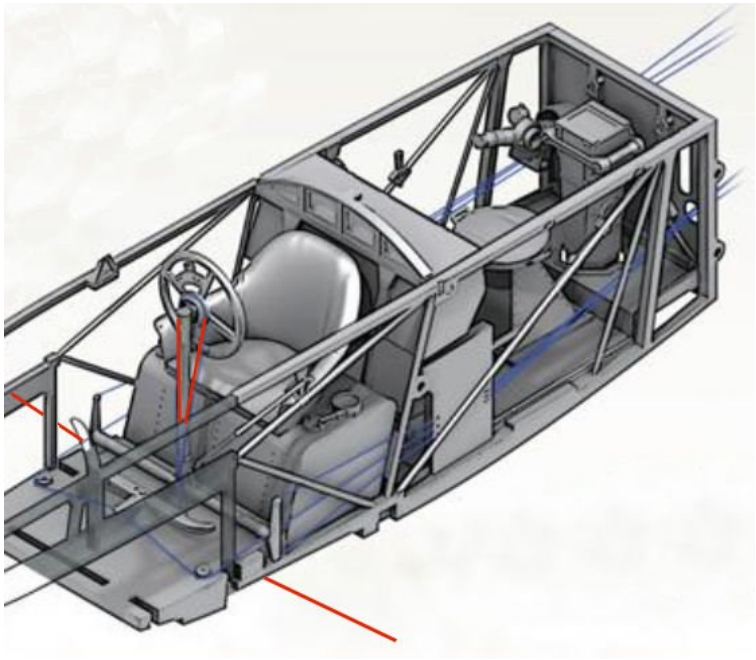
Lightly tension the lower line and hold it to the rear of the observers panel, using masking tape. Tape the line centrally at the bottom of the hole and facing towards the bottom of the panel.

Secure the line to the panel using thin CA adhesive.

Remove the masking tape and cut away any residual tag ends of line at the rear of the panel.

Aileron control cables:

NOTE: *The only cockpit visible aileron control cables are already rigged on to the control column.*



Assembly (continued):

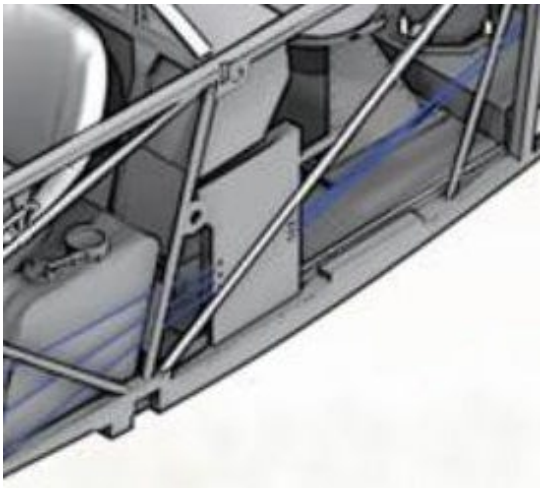
Make sure all paint and primer is removed from the locating surfaces for the cockpit left side frame.

Cement the cockpit left side frame fully onto the right side of the cockpit floor and the various locating recesses/stubs on the sides of the cockpit frames and auxiliary fuel tank.

Cement the optional camera plates container on the observers cockpit floor and close to the camera.

Rigging control cables (continued):

NOTE: *The rudder and elevator cables are intended to be secured into their cable location slots in the outboard side of the wireless winder panel. However, I chose to remove the cross member on the panel so three complete lines could be rigged, rather than six separate lines as the kit instructions show.*

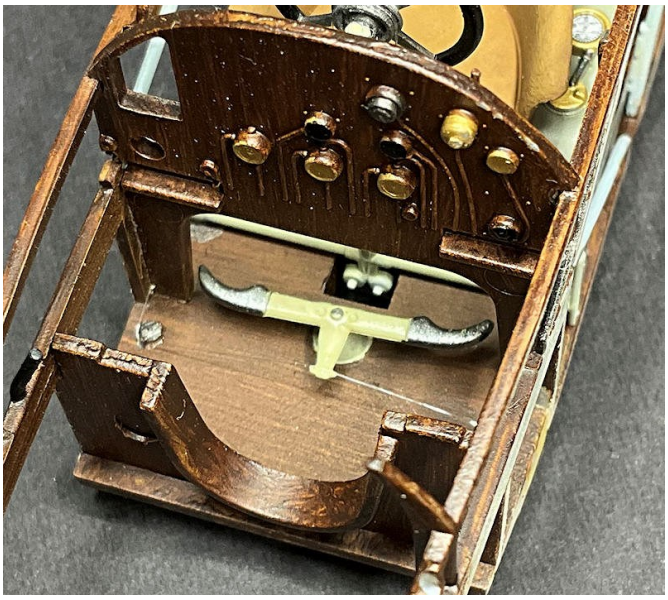


Rudder control cable (left side):

Rig the rudder control cable on the cockpit left side using the same procedure carried out on the right side.

Elevator control cables (left side):

Rig the elevator control cables on the cockpit left side using the same procedure carried out on the right side.



Modifications:

Switch levers:

NOTE: *The kit supplied instrument panel has pre-molded recesses for three switch levers. However, there are no levers supplied in the kit. Therefore, I chose to use resin levers from 'AYYZ' Cockpit handles (SKU AN030).*

Remove three appropriately sized levers from the 'ANYZ' set.

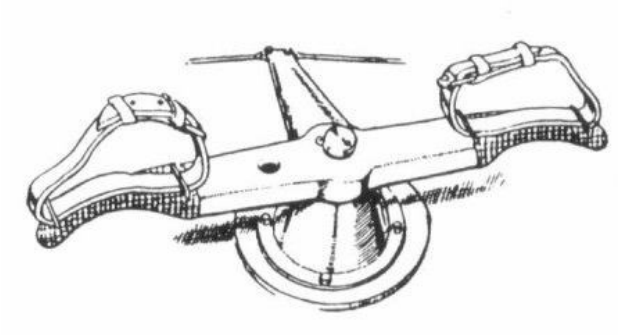
If necessary, run a drill of 0.5 mm diameter into the pre-molded recesses in the switch dial decals to deepen them.

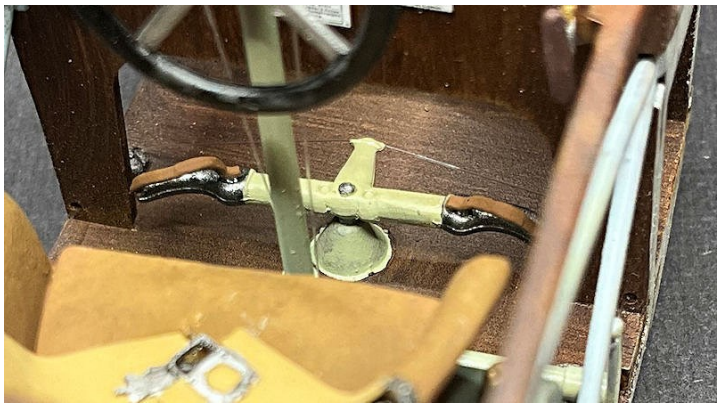
Brush paint the levers with 'Mr. Colour' Brass (219) then secure them into the pre-drilled holes, using thin CA adhesive.

Foot straps:

NOTE: *The kit does not supply the foot straps for the pilots rudder bar.*

To represent the foot straps, I cut short lengths of 0.5 mm diameter lead wire, such as that from 'PlusModel' or similar. These were flattened using flat nosed pliers, then secured to the rudder bar ends, using thin CA adhesive. Finally they were painted with 'AK Interactive' Brown Leather (AK3031).





Assembly (continued):

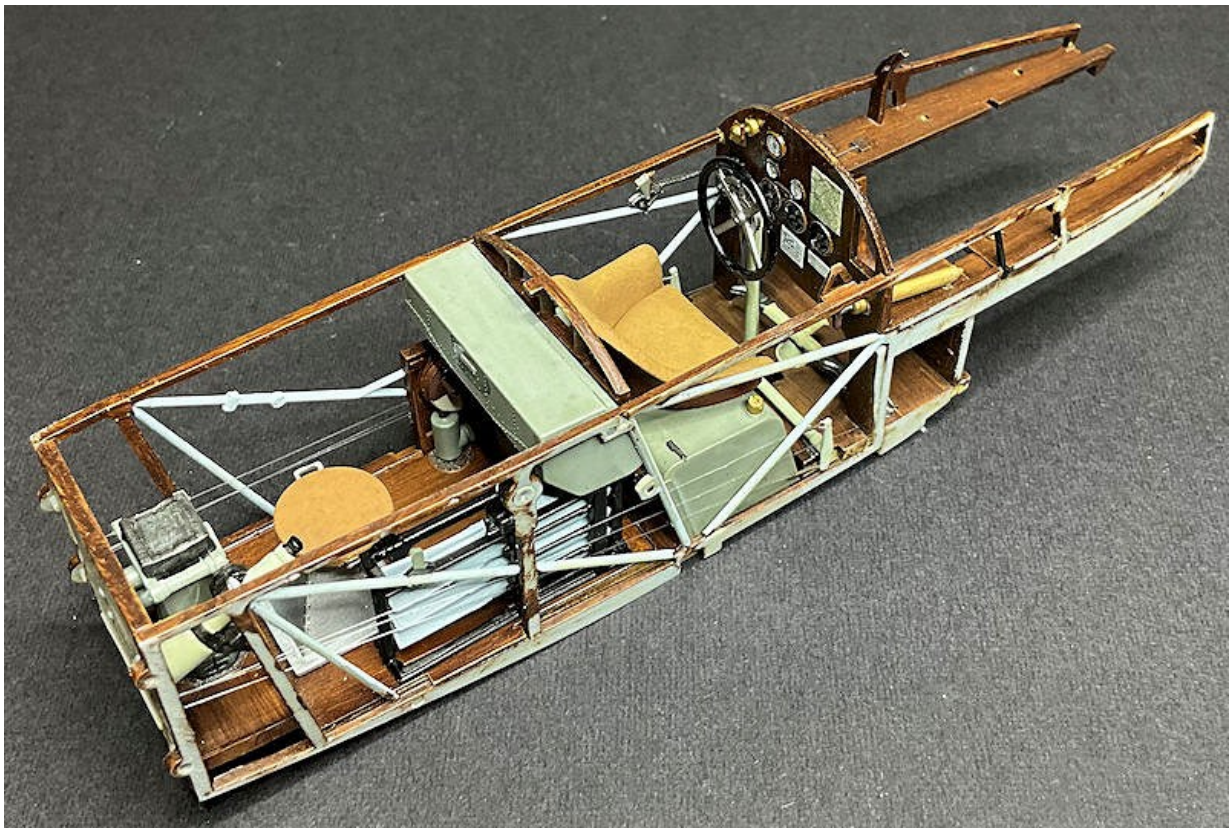
General:

Make sure all paint and primer is removed from the locating surfaces for the engine bearer.

Cement the engine bearer onto its locating shoulders/slots etc, making sure the edges of the cockpit side frames are aligned to the sides of the engine bearers.

Pass the hand pressure pump through its locating hole in the right side of the instrument panel and onto its locating peg on the right engine bearer.

Cement the hand pressure pump in position.



Seat belts:

NOTE: *The photo-etch seat belts (P8, P9, P11 and P12) were previously annealed (softened).*

Preparation:

Lightly sand the back of the strap ends that attach to the model (to key the adhesive when applied).

Cut away most of the ring attachments on the strap ends of the observers belts (P11 and P12).

Bend over the belt end the 'tang' of belts P9 and P12.

Painting:

Brush ‘VMS’ Metal Prep 4K or similar over the four seat belts.

Brush paint the four seat belts with ‘AK Interactive’ British Uniform Light (AK3082) or similar.

Brush paint the metal fittings on the four seat belts with ‘Mr. Colour’ stainless Steel (213) or similar.

Fitting:

NOTE: *The observers left belt is P12, the right P11.*

Using thin CA adhesive, secure the strap ends of the observers belts onto the top of the observers rear panel. The strap end of the right belt (P11) will need to be twisted slightly to fit between the wireless set and the camera.

Carefully position and bend the belts to lay down and over the observers seat (right belt) and the camera plates container (left belt).

Secure the belts to the seat using thin CA adhesive.

NOTE: *The pilots left belt is P9, the right P8.*

Using thin CA adhesive, secure the strap ends of the pilots belts onto the outer end of the cross member of the wireless frame.

Carefully position and bend the belts to lay up and over the pilots seat.

Secure the belts to the seat using thin CA adhesive.

Weathering:

NOTE: *Weathering effect is applied before assembly of the fuselage. Refer to Part 3 (Weathering) of this build log for more information.*

To provide a good base for applying weathering, airbrush a semi-gloss clear coat, such as ‘Tamiya’ Semi-Gloss (X35) or similar over the following surfaces:

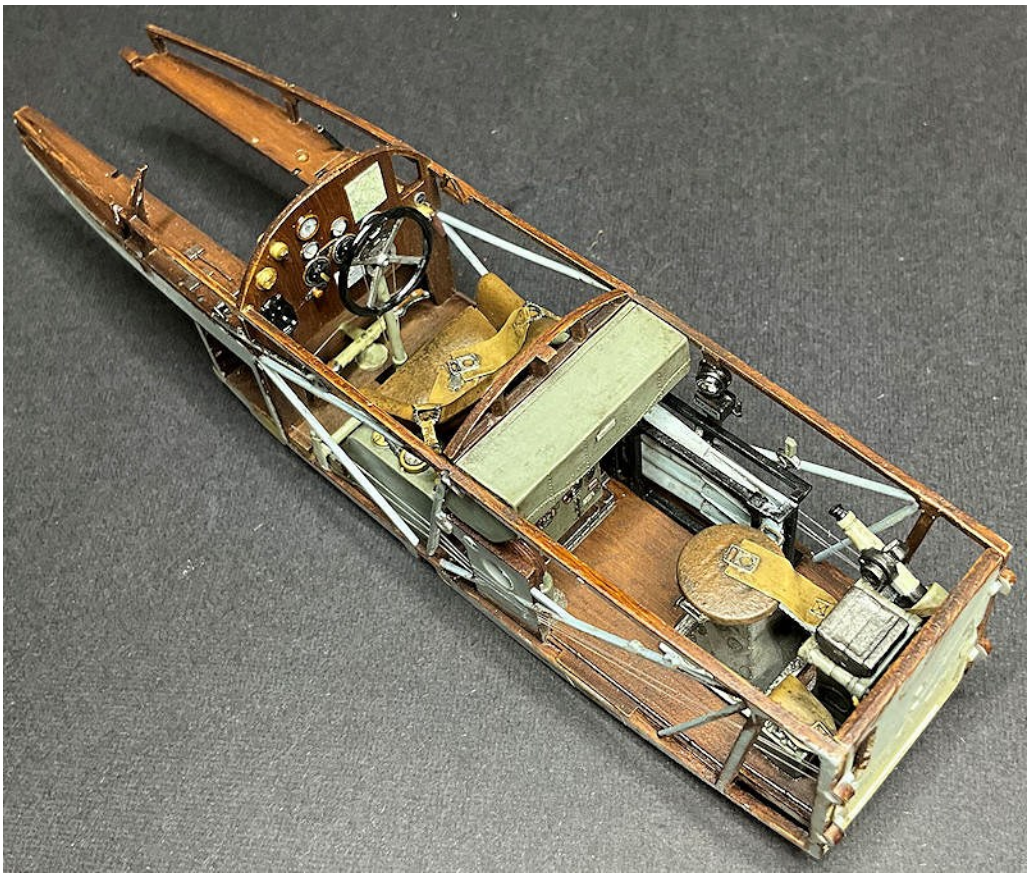
Inside of the fuselage halves

Cockpit assembly.

Brush apply ‘Flory Models’ Clay washes over the surfaces, allow to dry then remove to achieve your desired weathered effects. I chose to use the ’Flory Models’ Dark Dirt wash.

To seal and sheen, airbrush a semi-gloss clear coat, such as ‘Tamiya’ Semi-Gloss (X35) or similar over the treated surfaces.

Brush a clear gloss coat, such as ’Tamiya’ Clear (X22) or similar onto the instrument faces represent the glass lenses.



Assembly (continued:

NOTE: *The pilots ‘Spandau’ machine gun was prepared Part 8 (Weapons) of this build log. The engine assembly, oil tank and generator were prepared in Part 9 (Engine and Accessories).*

Make sure all primer/paint is removed from mating surfaces, holes and stubs.

Cement the ‘Spandau’ machine gun into its locating opening and holes in the right engine bearer and bottom, front of the pilots instrument panel.

Cement the cockpit assembly onto the fuselage right half, making sure it fully locates against its fuselage stubs for the observers cockpit rear frame and the right engine bearer. Make sure the outer frames of the cockpit are against the fuselage side.

NOTE: *The engine has no direct locating points. Therefore it could be fitted too far forward and obstruct fitting of the fuselage nose cone (A29).*

Temporarily fit the fuselage left half onto the assembly using masking tape.

Dry fit the engine with the fuselage nose (A29) cone held in position. Note the position of the engine on the bearers.

Remove the fuselage nose cone.

Cement the engine assembly onto the engine bearers at the noted positions.

Remove the fuselage left half.

Cement the oil tank into its locating holes on the engine left bearer.

Cement the generator into its locating holes on the engine left bearer.

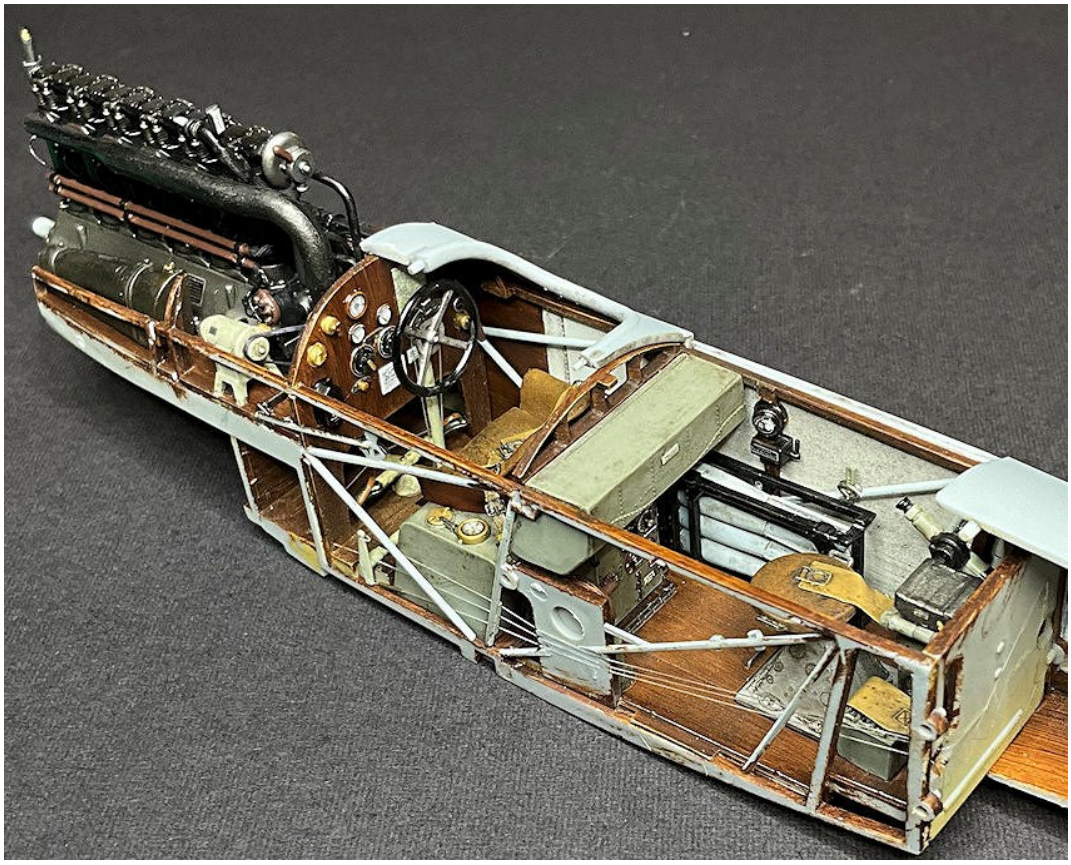
Modifications (continued):

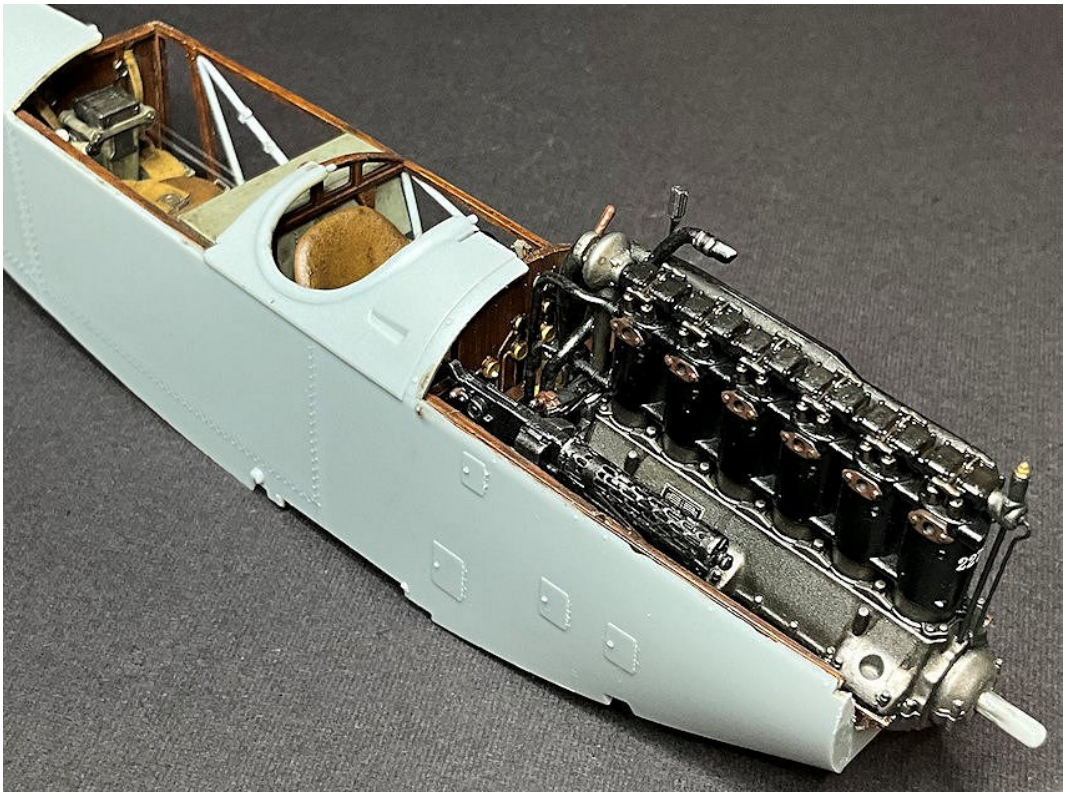
Generator drive belt:

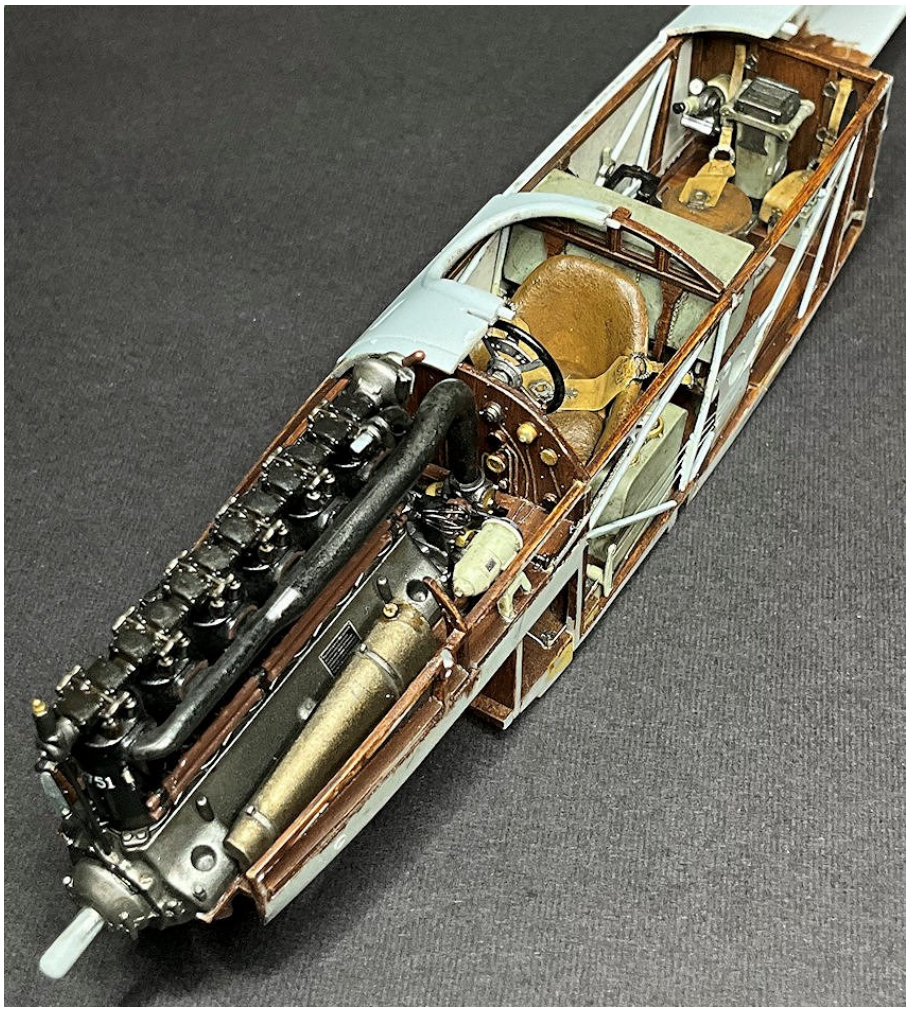
NOTE: *The kit does not supply any form of engine to generator drive belt.*

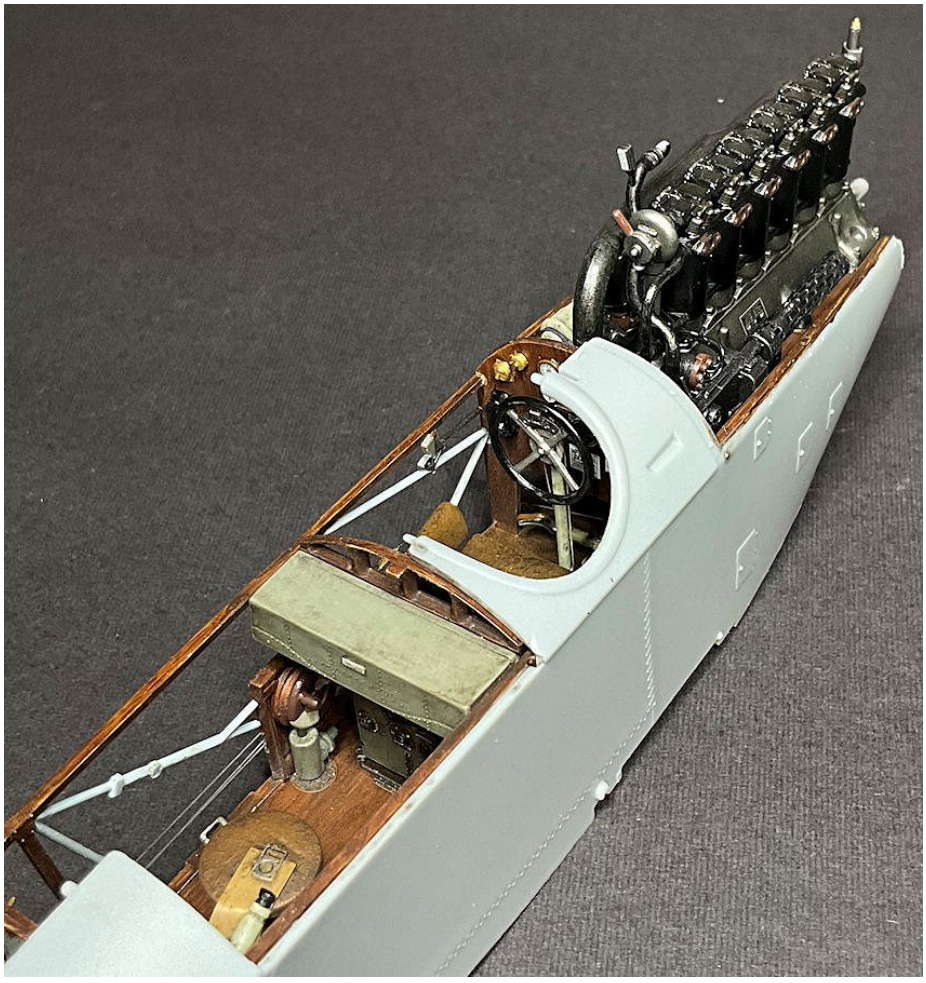
To represent the generator drive belt, I cut a long length of ‘EZ line’ Black stretch (heavy). This was looped over the pulley of the generator then secured to the flywheel using thin CA adhesive.

The following photographs show the fuselage assembly before being closed up.









Assembly (continued:

NOTE: *Make sure all primer/paint is removed from mating surfaces, holes and stubs.*

Dry fit the fuselage left half onto the right half assembly, making sure the two join together fully without any restrictions.

Cement the two fuselage halves together.

Cement the coaming panel (B16) for the observers cockpit onto the fuselage.

Cement rectangular panel (A17) into its opening in fuselage underside panel (I3)

Cement the fuselage underside panel (I3) into the fuselage underside.

Cement the fuselage underside forward panel (I1) into the fuselage underside.

Brush paint the inner surface of the nose cone (A29) with 'Mr. Colour' Stainless Steel (213) or similar.

Cement the nose cone (A29) onto the front of the fuselage.

File or sand the joint seams to blend the surfaces together and remove any unnecessary raised edges.

Check the joint seams for any slight gaps. If necessary, brush 'Mr. Surfacer' 500 or similar model filler over gaps and once fully cured, re-sand to blend the surfaces together.

Cement the two carburettor air intakes (D5) into their pre-drilled holes in the fuselage forward sides.

Mask the following:

Engine bay.
Pilots cockpit.
Observers cockpit.
Nose cowl opening.
Lower wing locating slots.

NOTE: *Lightly airbrushing grey over the cemented seams will highlight any remaining gaps or sinkage.*

Lightly airbrush a grey primer, such as 'AK Interactive' Grey (AK758) or similar, over the cemented seams around the fuselage.

Check for any remaining gaps or sinkage in any of the seams. If required, re-fill the area, re-sand and repeat airbrushing until the seams are not obviously visible.

Painting (continued):

Priming:

NOTE: *To mask I used a combination of masking tape, 'UHU' white tack, Kitchen food wrap (Clingfilm) and liquid mask (AK Interactive).*

Fully mask off the pilots cockpit, observers cockpit, the engine bay and all openings and location holes/ slots.

Airbrush the fuselage with a grey primer, such as 'AK Interactive' Grey (AK758) or similar.

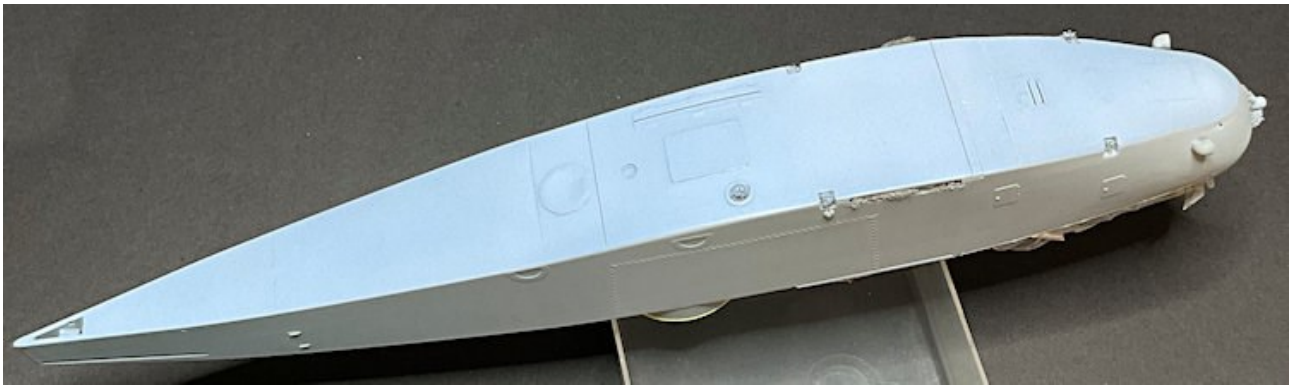
Fuselage underside:

NOTE: *Refer to the following illustrations to mask the fuselage for the various colours applied*. *'MRP' paints are very thin.* ***Shake*** *well the paint in the bottle in order to* ***thoroughly mix*** *the pigment with the solution. Apply* ***light coats*** *to build up the intensity of the colour.*

Mask off the sides of the fuselage and the nose cowl, to leave just the fuselage underside exposed.

Airbrush the underside of the fuselage with a mix of 'MRP' Azure Blue (MRP-119) and Bianco Neve (MRP -308) to an approximate ratio of 60/40%.

Remove the masking applied for painting the underside of the fuselage.



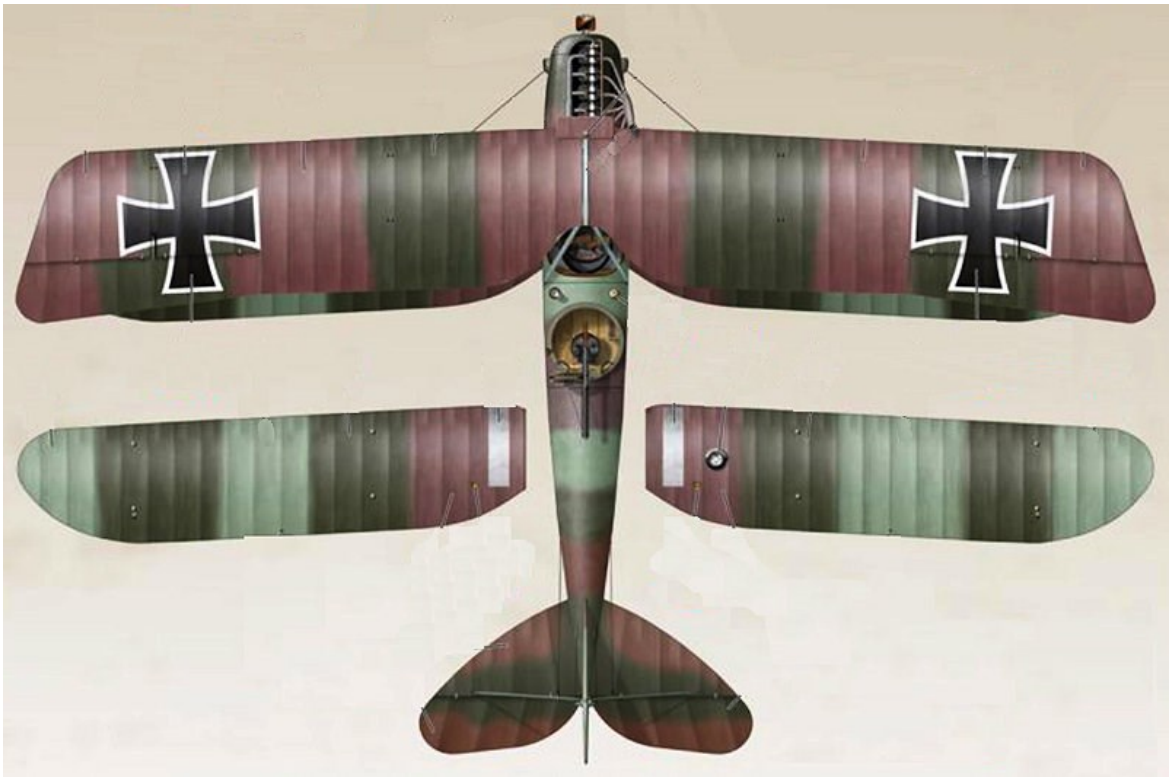
Fuselage top and sides.

NOTE: *To ensure good colour coverage, airbrush the light green colours first, followed by the darker green and finally the brown. The paints appear to have been sprayed onto the aircraft, so a 'hard edge' separation between the colours is not necessary. The colours used are:*

Light green - 'MRP' Interior Grey-Green (MRP-111).

Dark green - 'MRP' Dark Green (MRP– 110).

Brown - 'MRP' Dark Wood (MRP-262).



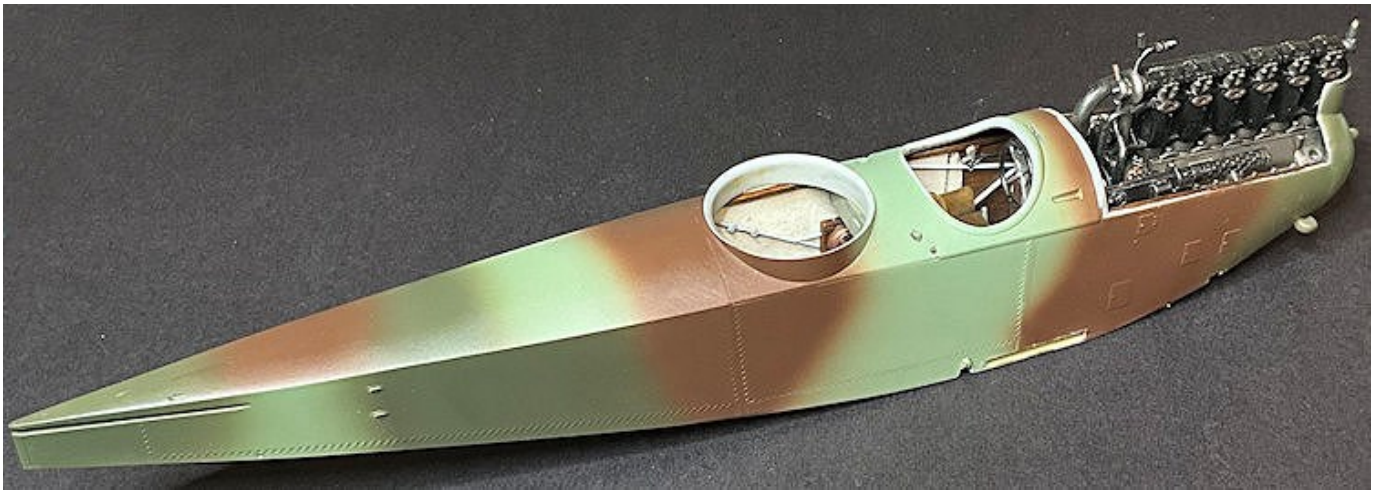
Mask off the underside blue colour of the fuselage, including the curved bottom of the fuselage nose cowl.

Airbrush the light green coloured areas on the fuselage sides and top surfaces.

Airbrush the dark green coloured areas on the fuselage sides and top surfaces.

Airbrush the brown coloured areas on the fuselage sides and top surfaces.

Remove all masking materials from the fuselage.



Detail painting:

Brush paint the surround of the camera opening and aerial weight opening on the underside of the fuselage with ‘Tamiya’ Grey-Green (XF76) or similar.

Brush paint around the engine panel edges with ‘Tamiya’ Red Brown (XF64) or similar.

Brush paint the filler cap for the auxiliary fuel tank with ‘Mr. Colour’ Brass (219) or similar.

Brush paint the pilots cockpit surround padding with ‘AK Interactive’ Brown Leather (AK3031) or similar.

Decals (continued):

Airbrush the fuselage with a clear gloss coat (several coats if necessary), such as 'Mig' A-Stand Aqua Gloss (A.Mig-2503) or similar.

Brush paint the 'Maximal' fuel gauge with a clear gloss coat, such as 'Tamiya' Gloss (X22) or similar.

'Aviattic' decals:

NOTES: *The decals used are the 'Aviattic' clear backed Linen Weave Effect (ATT32236).* ***Refer to Part 4 (Decals)*** *of this build log for more information.*

The 'Aviattic' linen decals are unlike normal screen printed decals, in that when being applied, have the ability to be handled with slightly less care than normal and they have the ability to stretch slightly, which standard decals do not. That said, if you handle them too roughly, damage can occur.

Make sure the model surface for each decal to be applied is clean and smooth or particles on the surface may cause 'silvering' (trapped air) under the decals when dry.

These 'Aviattic' CDL decals being used are not 'cookie' cut to the shapes required. Therefore the decals must be hand cut to shape.

Example of applying 'Aviattic' decals:

NOTE: *The following example applies to surfaces that can be traced around, such a wings and fuselage flat side panels. However, for surfaces which* ***can't be traced easily****, such as the curved top on the fuselage, a* ***paper template can*** *be cut and checked against the model surface, then used to trace the outline on the decal sheet.*

Lay the part with surface to have decal down onto the rear (blank) side of the decal sheet.

NOTE: *During the following step, do not press too hard when tracing the outline as this may mark the decal side of the sheet.*

Using a pencil, lightly trace the outline of the part onto the rear of the decal, allowing for any curvature of the part, such as wings.

Carefully cut out the decal shape.

Check that the decal fits correctly over the surface of the part.

NOTE: *To aid in adhesion, you can mix a small amount of PVA (white glue) into the decal water.*

Wet the model surface with clean water.

Soak the decal in the warm decal water long enough to be able to move the decal on its backing sheet.

Carefully lift the decal on its backing sheet from the water. Make sure the decal does not fold over on itself, as it will be difficult to separate a fold once out of the water.

Carefully slide the decal off one end of the backing paper and position the decal end onto the wing and holding that end, slide out the backing paper.

Using large, flat brush or cotton buds, start to smooth out the decal at one end, removing any water from underneath and smoothing the decal onto the surface. Continue this along the length of the decal, taking care not to grip the decal surfaces with your fingers, as this will cause ripples in the decal.

Once the decal is smoothed down onto the model surface, apply pressure along the decal with soft and dry tissue paper or by finger pressure whilst wearing lint free cotton gloves. This will expel any remaining water and press the decal on to the model surface. Check over the decal to make sure there are no tears or folds, which need to be rectified before the decal sets.

NOTES: *If the decal covers locating holes, slots or other openings, prick through the decal over holes or slice the decal over openings, then brush either 'MicroScale' MicroSol' or* ***sparingly*** *'Tamiya' X20A thinners into the holes or around the openings. This will soften and conform the decal.*

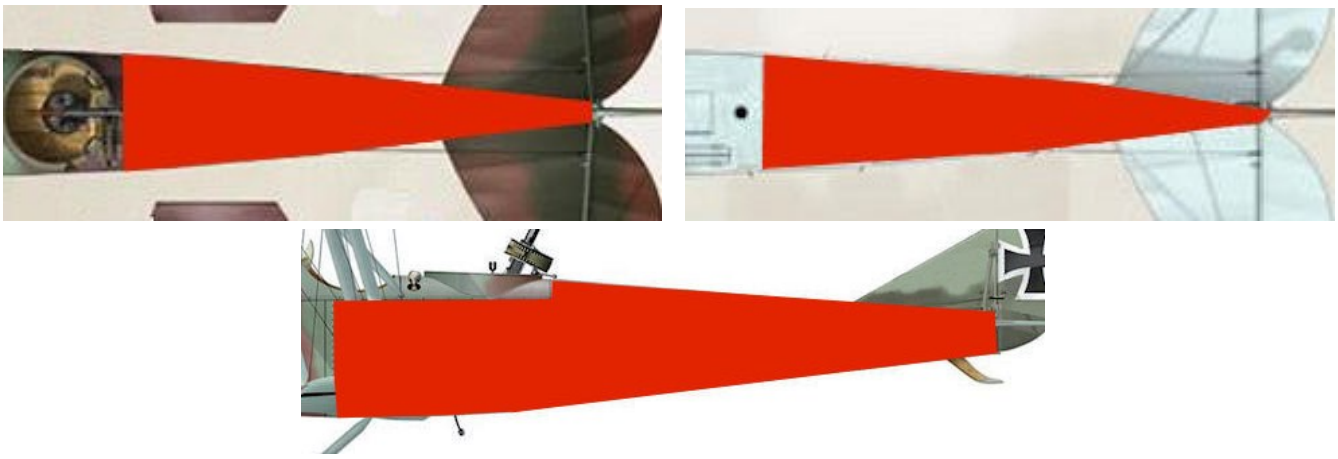
If the decal needs to be conformed around curved edges etc, brush ***sparingly*** *'Tamiya' X20A thinners across the decal edge. This will soften and conform the decal.*

Once fully dry and set, trim any excess decal from edges using a sharp blade, such as a shielded razor blade.

Application ‘Aviattic’ decals:

NOTE: *This aircraft, serial No. C 8518/16, was one of a batch of 150 aircraft ordered in November 1916. Originally these aircraft had linen covering on the fuselage, from the cockpit area rearwards. However, it was found that the fuselage structure could not withstand vibrations from the engine. Also, operating from rough, unprepared airfields caused problems. Therefore, in early 1917, modifications were made to the fuselage, which included stronger fuselage frames and replacement of most of the linen covering with plywood panels. These changes are represented in the later ‘Wingnut Wings’ kit version of this aircraft.*

Linen covered areas.



Using the previous ‘Aviattic’ example as a guide, cut and apply the CDL decals to the fuselage. Its easier to apply the decals in the following order:

Fuselage sides.

Fuselage underside.

Fuselage top (*cut a paper template and check against the model surface for alignment)*.

Kit supplied decals:

NOTE: *Refer to **page 27** of the kit instruction manual for the **location** of the various **decals** on the fuselage. The surfaces to have decals benefit from having a smooth, glossy finish. The kit supplied decals used for this model are as follows:*

Fuselage crosses both sides (8 x 2).

Rudder cross left side (5).

Rudder cross right side (6).

‘Lion’ head left side (37).

‘Lion’ head right side (38).

Serial number both sides (46 x 2).

Fin serial both sides (41 x 2).

Rudder serial both sides (41 x 2).

Fuselage rear serial both sides (43 x 2).

Datum line both sides (59 x 2).

Rigging data plate both sides (65 x 2).

Data plate left side (60).

Data plate right side (61).

‘Maximal’ fuel gauge (90).

Flare labels (G5 x 10).

Serial at tailplane strut left side (55).

Serial at tailplane strut right side (56).

Painting (continued):

NOTE: *The windscreen (C1) and tailskid (A58) will* ***be fitted later*** *in the build. Refer to page 14 of the kit instruction manual for the placement of parts, which are as follows:*

Map stowage locker (A3).
Maximal fuel gauge (A43).
Remote cocking lever (A6).
'Eisfeld' flare rack (G84).
'Eisfeld' flare pistol G95).
Engine access panels (A44, A45, A51 and A52).

Airbrush the parts with a grey primer, such as 'AK Interactive' Grey (AK758) or similar.

Airbrush the following with 'MRP' Interior Grey-Green (MRP-111):

Maximal fuel gauge (A43).
Remote cocking lever (A6).

Brush paint the remote cocking lever mechanism and the internal surfaces of the engine access panels (A44, A45, A51 and A52) with 'Mr. Colour' Stainless Steel (213) or similar.

Brush the 'Eisfeld' flare pistol (not the loaded flare) with 'Mr Colour' Dark Iron (214).

Using a cotton bud, buff the painted pistol and engine access panels to create a metallic sheen.

Brush paint the cocking lever handle with ‘Tamiya’ Hull Red (XF9) or similar.

Airbrush the Map stowage locker with ‘Tamiya’ Field Grey (XF65) or similar.

Airbrush or brush paint the ‘Eisfeld’ flare rack with ‘Tamiya’ Red Brown (XF64) or similar.

NOTE: *Paint the individual ‘Eisfeld’ flares red and/or white, as desired.*

Brush paint the ‘Eisfeld’ flares, including the loaded pistol flare, with ‘Tamiya’ Red (X7) or White XF2).

Brush paint retaining strap over the ‘Eisfeld’ flares with ‘Tamiya’ Buff (XF57) or similar.

NOTE: *The four access panels for the engine are to be displayed off the aircraft (not fitted).*

Airbrush the outer surfaces of the four engine access panels using ‘MRP’ Dark Green (MRP - 110) and ‘MRP’ Dark Wood (MRP-262). Airbrush the colours to align with the painted areas on the fuselage for each panel.

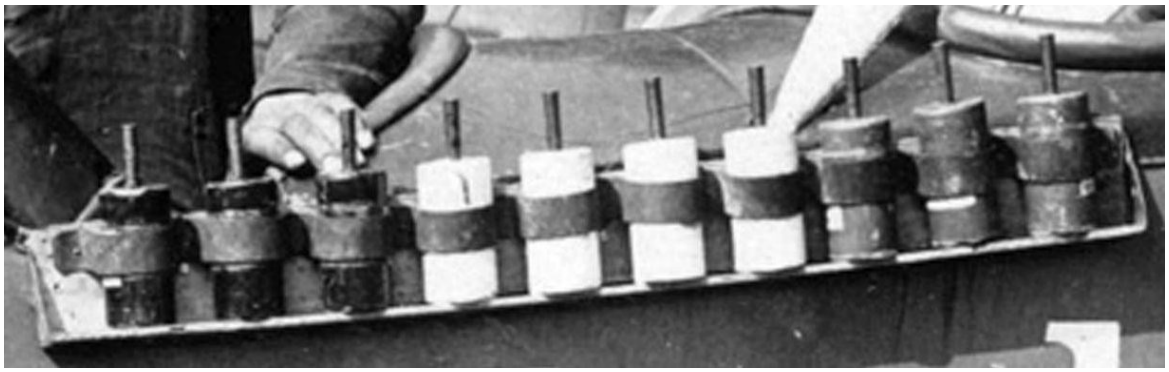
Decals (continued):

NOTE: *The surfaces to have decals benefit from having a smooth, glossy finish.*

Brush the dial face on the ‘Maximal’ fuel gauge and ’Eisfeld’ flares with a clear gloss, such as ’Tamiya’ Gloss (X22) or similar.

Apply kit decal (90) to the ‘Maximal’ fuel gauge.

NOTE: *As can be seen in the following photograph, when loaded in the flare rack, the flare labels (G5) are partially covered by the restraining strap. However, I chose to add the full decals at the bottom of the flares.*



I found the best way to apply the decals was to brush ‘MicroScale’ ***MicroSet*** *onto the flare then place and position the decal. Leave the decal centre to adhere to the flare, even though the ends will stand proud. Once the decal is held on the flare, brush ‘MicroScale’* ***MicroSol*** *over the decal, brushing from the centre of the decal out towards the ends. Continue this until the decal fully conforms to the flare.*

Apply the kit flare decals, in different positions, below the retaining strap.

Apply a complete label to the loaded flare in the ’Eisfeld’ pistol.

Assembly (continued):

Cement the map stowage locker in position between the pilot and observers cockpits.

Cement the ‘Maximal’ fuel gauge into its locating recess in the fuselage at the left rear of the pilots cockpit.

Cement the remote cocking lever for the pilots ‘Spandau’ machine gun into its fuselage locating recess at the forward, right of the pilots cockpit.

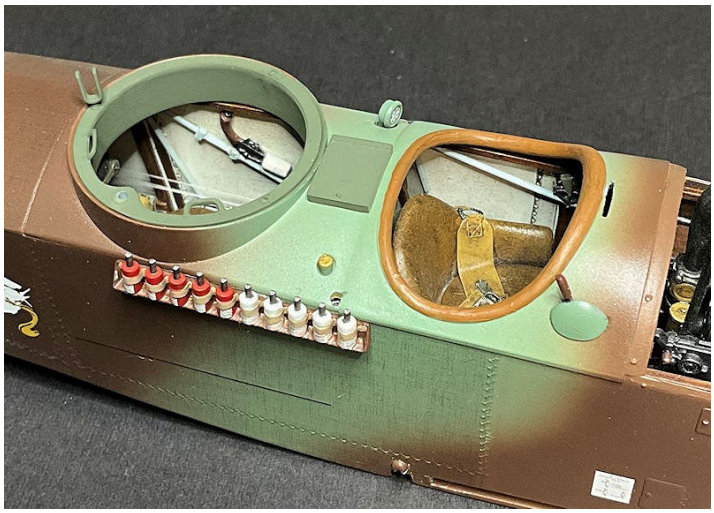
Cement the ‘Eisfeld’ flare pistol to the fuselage top, left longeron in the observers cockpit. Position the pistol as though it’s hanging from the longeron by the ring on the bottom of the hand grip.

NOTE: *As the fuselage side has decal applied, carefully scrape away decal where the rack is to be added. Alternatively, use thin CA adhesive to secure the rack to the fuselage.*

Secure the ‘Eisfeld’ flare rack to the top, right side of the fuselage, between the observer and pilots cockpits.

NOTE: *Cement the cradle into the fuselage so that when the observers machine gun is fitted, it faces* ***towards the right tailplane****. This is to allow refuelling figure, stood on a trestle (refer to Part 12 of this build log) to be positioned alongside the fuselage.*

Cement the observers gun cradle, in the desired position, into the observers cockpit.



Weathering (continued):

NOTE: *Refer to Part 3 (Weathering) of this build log for more information.*

Airbrush the fuselage with a semi-gloss clear coat, such as ‘Tamiya’ Semi-Gloss (X35) or similar.

NOTE: *After removing the clay wash to achieve your desired effect, it’s best to seal the surfaces with a clear coat. The clear coat will be absorbed by the clay wash, which slightly darkens the clay wash effect. Therefore, it’s better to remove slightly more of the wash before applying the sealing coat to avoid the end result looking too ‘heavy’.*

Brush apply ‘Flory Models’ Clay washes over the fuselage, allow to dry then remove to achieve your desired weathered effects. I chose to use the ’Flory Models’ Dark Dirt wash.

‘Flick’ ‘Flory’ Grime Clay wash onto the underside of the lower wings to represent dirt/mud thrown up by the landing gear wheels.

To seal the weathering, airbrush a semi-gloss clear coat, such as ‘Tamiya’ Semi-Gloss (X35) or similar over the treated surfaces.

Brush a clear gloss coat, such as ’Tamiya’ Clear (X22) or similar onto the instrument faces represent the glass lenses.

Lightly sponge ‘Tamiya’ Weather Master Set A (Mud) along the bottom edges of the fuselage rear.

Dry brush ‘Mr. Colour’ Super Iron 2 (203) on nose cowl and around panel edges, as desired.

PART 11
CONSTRUCTION

PART 11 - CONSTRUCTION

References:

'Wingnut Wings' instruction manual and web site.
Windsock Date File 149 - Rumpler C.IV at War (Ray Rimmel).
Windsock Date File 35 - Rumpler C.IV (Peter M Grosz).
Online resources.

Preparation:

NOTE: *Refer to the kit instruction manual for more information on construction of the remainder of this model. The assembly follows pages 11, 13 - 16, 18 and 21 of the kit instruction manual. For this model I used the following optional parts:*

Radiator shutters (A11).

Radiator halves (B11, B12).

Engine exhaust pipe (A59).

Wheel outer covers (D16 x 2).

Anemometer (G40, G73).

Once parts are cemented together, file or sand away any seam lines to blend the surfaces together.

Remove all parts required, including optional parts, from their sprue gates and file or sand away any sprue tags or mold seams from the edges of the parts.

Cement the upper wing halves (F2, F3) together using the centre section (B5).

Cement the two halves of the radiator (B11, B12) together.

Dry fit the radiator assembly onto its locating tab in the centre, leading edge of the upper wing. If the fit is too tight, remove material from the tab and/or the slot in the radiator until a good fit is achieved.

NOTE: *Refer to Part 6 (Rigging) for landing gear rigging. Temporarily fit the landing gear struts onto the axle ends so the angle of the rigging holes to be drilled can be noted.*

Using the pre-molded recesses in the front and rear ends of the landing gear axle/fairing (A56) as guides, drill holes of 0.4 mm diameter into, **but not through**, the fairing and at the angles required to align with the top of the opposite landing gear struts.

Remove the landing gear struts.

NOTE: *Handle the landing gear struts with care as the struts are thin at their end fittings and are therefore weak if stressed.*

Dry fit the landing gear struts into their locating recesses in the lower, outer edge of the fuselage sides. If the fit is too tight, remove material from the strut ends and/or recesses until a good fit is achieved.

Cement the landing gear struts onto the ends of the axle/fairing. Temporarily fit the assembly into the fuselage until the cemented joints have fully cured, as this will ensure the assembly parts are correctly aligned.

Remove the landing gear assembly.

Modifications:

Ailerons:

NOTE: *The ailerons in the upper wing can be animated using rods. However, the rudder and elevators are too thin to add rods, so will need to be cemented into their final positions.*

Point mark three locations (equally spaced) along the centre of both aileron leading edges.

Using the point marks as guides, drill holes of 0.6 mm diameter centrally into the ailerons.

Cut six short lengths of 0.5 mm diameter Brass rod, such as that from 'Albion alloy's' or similar.

Using thin CA adhesive, secure a rod fully into each of the pre-drilled holes in the ailerons.

NOTE: *The outer ends of the ailerons have 'wash out', which is a slight upward curve. Make sure the ailerons are on the correct side of the upper wing.*

Position the ailerons at their locations at upper wing and pencil mark the location of each rod onto the trailing edge of the upper wing.

Using the marks as guides, point mark the centre, rear edge of the upper wing.

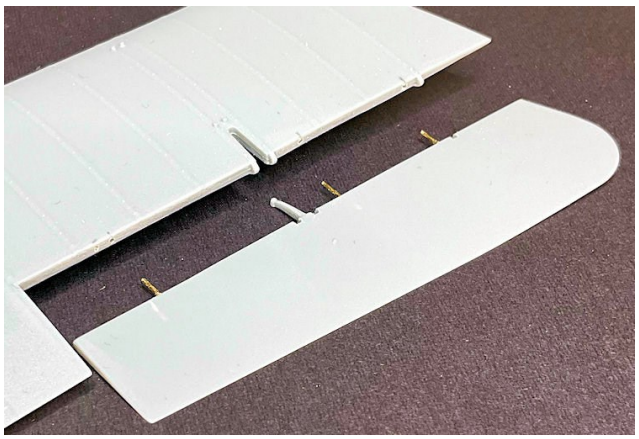
Using the point marks as guides, drill holes of 0.6 mm diameter centrally into the upper wing.

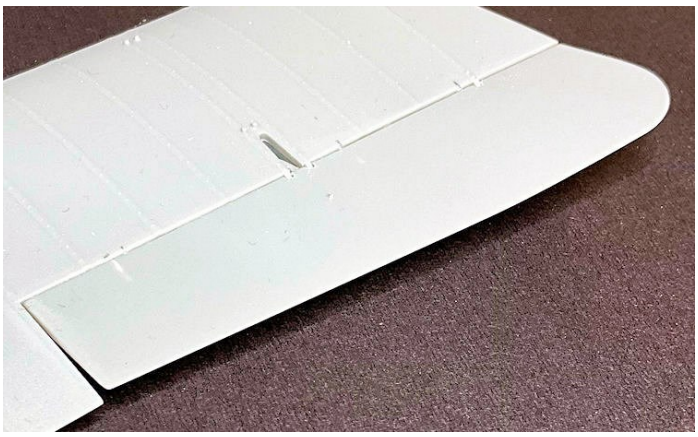
Dry fit the ailerons into their pre-drilled holes and if necessary, trim the length of the rods until the ailerons are against the upper wing.

NOTE: *The ailerons move in opposition during flight. To represent this on the ground, one aileron can be bent slightly upwards on its locating rods and the other aileron bent down at the same angle.*

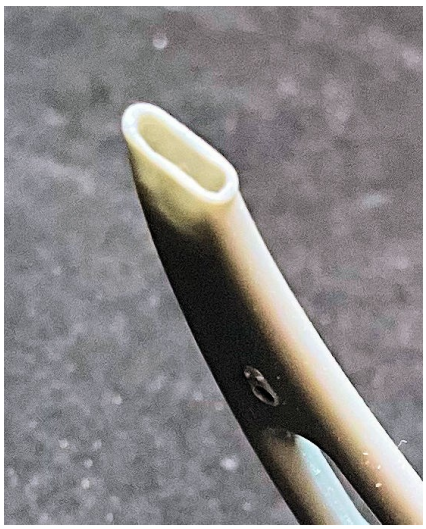
Carefully bend the ailerons slightly on their locating rods to the desired angles.

Remove the ailerons.





Engine exhaust pipe:



NOTE: *The exhaust pipe used for this aircraft (A59) is molded solid and has no opening at the outlet.*

Point mark along the centre line of the exhaust outlet.

Drill holes of 0.5 mm diameter into the exhaust pipe, making sure the drill does not break through the sides of the exhaust.

Open out the holes using a 0.8 mm diameter drill.

Angle the drill to break though any plastic between the holes.

Apply 'Tamiya' liquid cement to the opening to smooth out any irregularities inside the opening.

Painting:

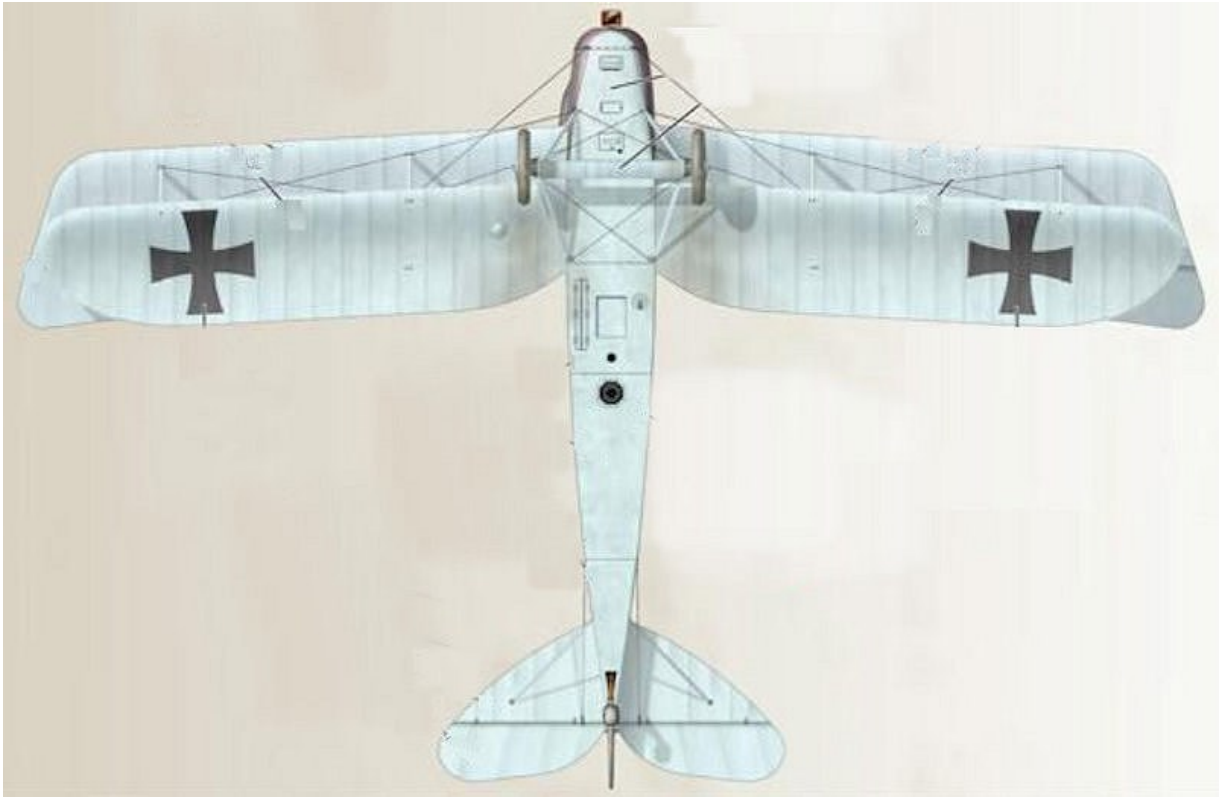
Airbrush the following with a grey primer, such as 'AK Interactive' Grey (AK758) or similar:

Upper wing.
Ailerons.
Lower wings.
Tailplane.
Elevators.
Fin.
Rudder.

NOTE: *Refer to the following illustrations for the various colours applied. 'MRP' paints are very thin.* ***Shake*** *well the paint in the bottle in order to* ***thoroughly mix*** *the pigment with the solution. Apply* ***light coats*** *to build up the intensity of the colour.*

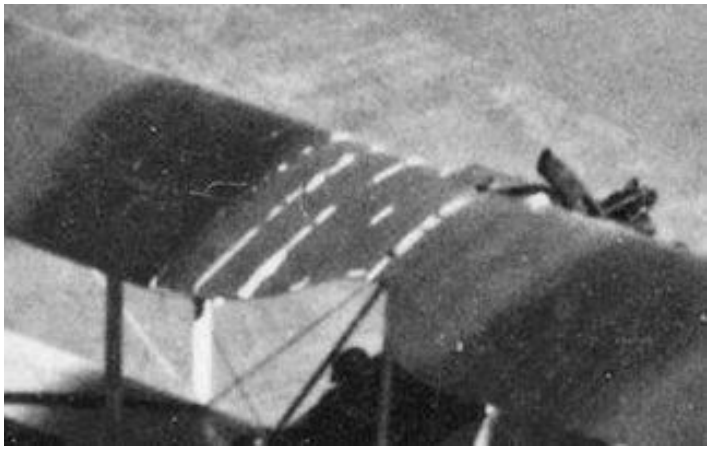
Underside surfaces.

Airbrush the underside of the parts (listed above) with a mix of 'MRP' Azure Blue (MRP-119) and Bianco Neve (MRP-308) to an approximate ratio of 60/40%.



Worn surfaces:

NOTE: *This particular aircraft showed evidence of worn coloured dope on the upper wing surface over some of the wing rib tapes to the left of the wing centre section.*



'MRP' is a type of lacquer and therefore can be difficult to remove, so chipping fluids are not used. Instead, to represent this wear, a base colour of linen is applied, followed by a clear sealing coat to act as a barrier to the top coat. The top colour is then applied and once cured, carefully sanded through to reveal the linen colour underneath.

Airbrush 'MRP' Linen (MRP-256) over the upper wing to the left of the wing centre section.

Seal to protect this paint with a matte clear coat, such as 'MRP' Matt Varnish (MRP-127).

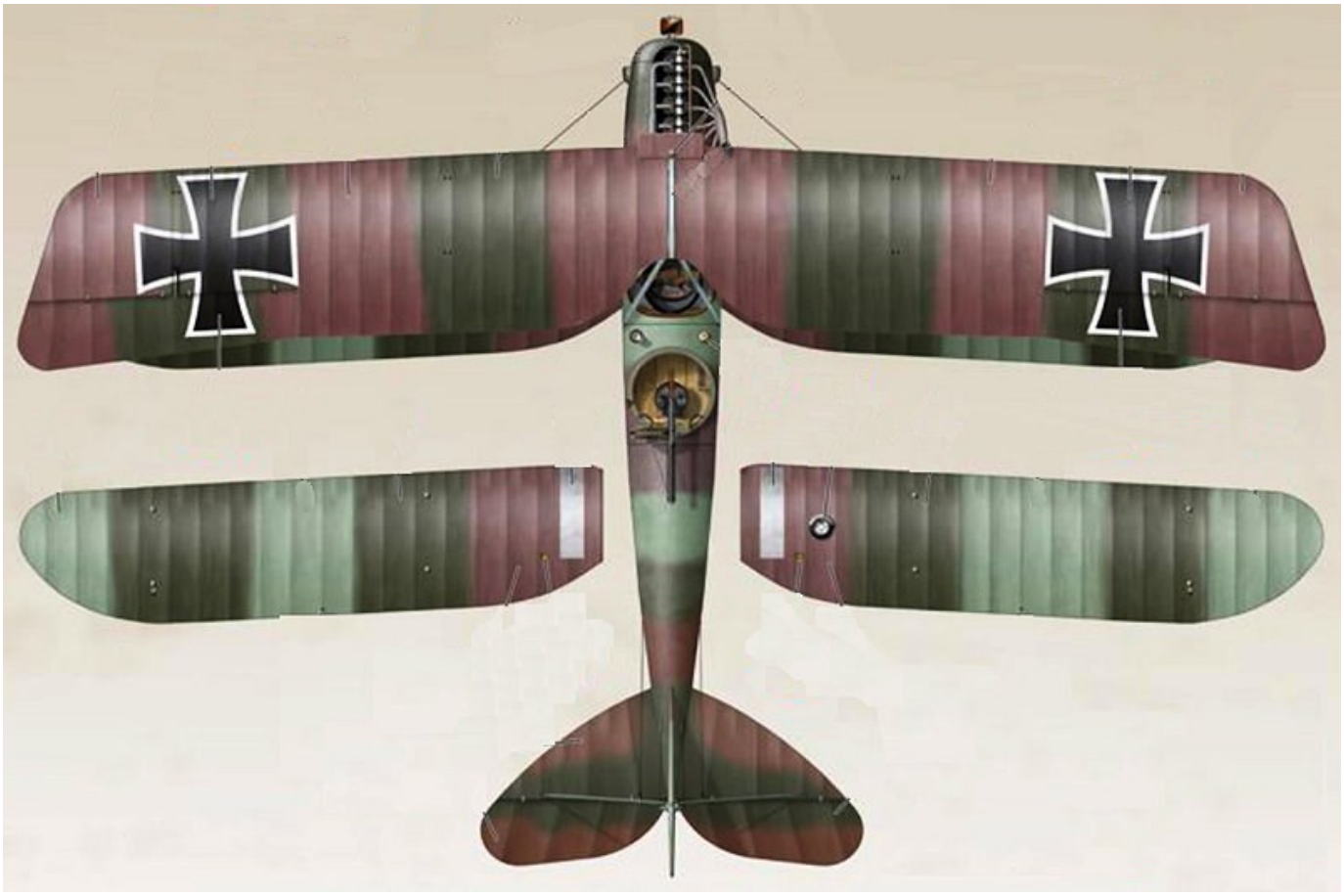
Upper surfaces.

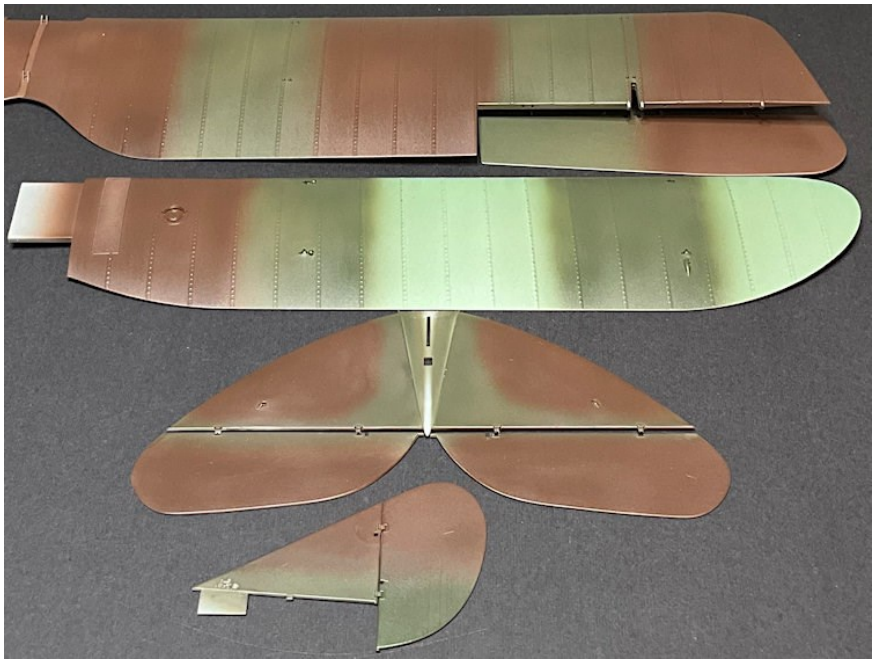
NOTE: *To ensure good colour coverage, airbrush the light green colours first, followed by the darker green and finally the brown. The paints appear to have been sprayed onto the aircraft, so a 'hard edge' separation between the colours is not necessary. The colours used are:*

Light green - 'MRP' Interior Grey-Green (MRP-111).

Dark green - 'MRP' Dark Green (MRP– 110).

Brown - 'MRP' Dark Wood (MRP-262).





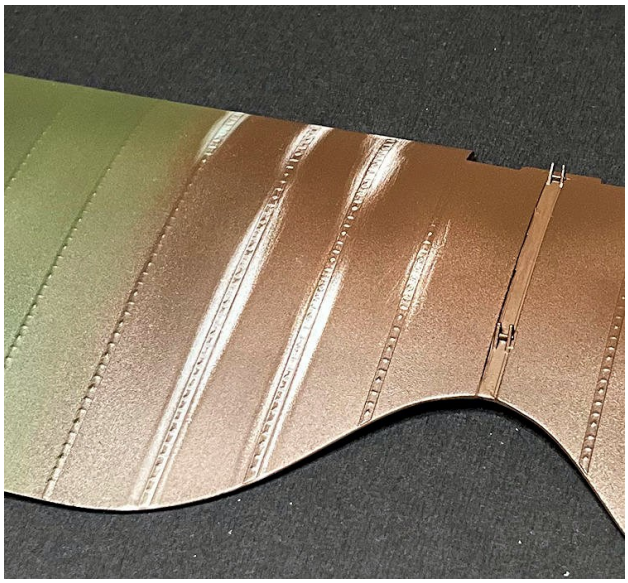
Airbrush the light green coloured areas on the upper surfaces of the lower wings.

Airbrush the dark green coloured areas on the upper surfaces of the upper wing, lower wings, ailerons (the left aileron colour is offset), tailplane, elevators and sides of the rudder.

Airbrush the brown coloured areas on the upper surfaces of the upper wing, lower wings, ailerons (the left aileron colour is offset), tailplane, elevators and sides of the rudder.

Worn surfaces (continued):

Using a fine sander, lightly sand away the brown paint over the wing ribs (refer to previous photograph) to reveal the lighter linen coloured paint.



Very lightly airbrush ‘MRP’ Dark Wood (MRP-262) over the sanded areas to reduce the lightness.

Detail painting:

Brush paint the centre strip on the upper wing centre section with ‘Tamiya’ Red Brown (XF64) or similar.

Brush paint the metal fittings at the centre strip of the upper wing centre section with ‘Mr. Colour’ Dark Iron (214) or similar.

Brush paint the compass in the right lower wing with ‘Tamiya’ Semi-Gloss Black (X18) or similar.

Mask around the foot tread panels on the upper surfaces of both lower wings.

Airbrush the foot tread panels with ‘Alclad’ Duraluminium (ALC102) or similar.

Remove the masking from the lower wings.

Airbrush all remaining parts with a grey primer, such as ‘AK Interactive’ Grey (AK758) or similar.

Airbrush or brush paint the following parts as detailed:

’MRP’ Azure Blue (MRP-119) and Bianco Neve (MRP-308) to ratio of 60/40%:
Interplane struts, fuselage cabane struts, tail skid, landing gear assembly, radiator, radiator shutters, tailplane underside struts, outer wheel covers.

‘Tamiya’ Grey Green (XF76):
Rudder and elevator control horns (D4), tailplane upper struts.

‘Tamiya’ Field Grey (XF65):
Observers gun ring (A16), Anemometer body (G73).

‘Tamiya’ Semi-Gloss black (X18):
Wireless aerial (A47), water pipe (A33), compass protector (A2).

‘Mr. Colour’ Stainless Steel (213):
Radiator front/rear grills, radiator filler neck, tail skid metal fittings.

‘Mr. Colour’ Stainless Steel (219):
Radiator filler cap.

‘Mr. Colour’ Stainless Steel (213):
Radiator front/rear grills, radiator filler cap.

‘Tamiya’ Gloss black (X1):
Engine exhaust pipe (A59).

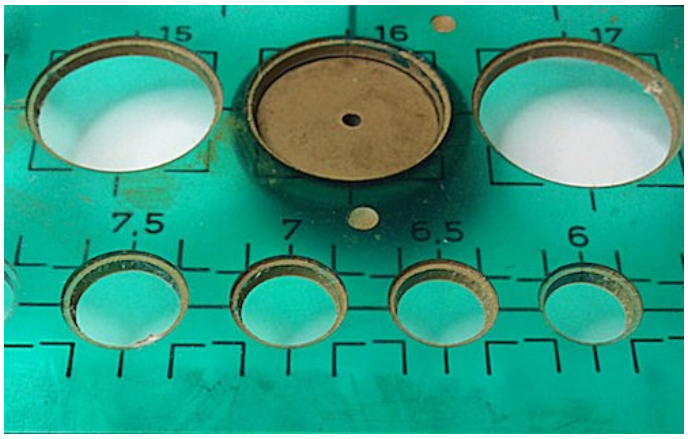
‘Alclad’ Exhaust manifold (ALC-123):
Engine exhaust pipe (A59).

‘Tamiya’ Buff (XF57):
Landing gear ‘bungee’ suspension cords.

‘Mr. Colour’ Dark Iron (214):
Landing gear axle (mask along the axle sides, buff with a cotton bud then remove masking).

NOTE: *To airbrush the inboard wheel covers without over spraying the surrounding tyres, I used a circle drawing tool (Linex 1217 T). I selected the correct size of hole and positioned the wheel face under the hole.*

Example



Airbrush the tyres on the wheels (D12) with **‘Tamiya’ IJN Grey (XF75)** or similar.

Using the (Linex 1217 T), airbrush the wheel covers wheels with **’MRP’ Azure Blue (MRP-119) and Bianco Neve (MRP-308)** to ratio of 60/40%.

Decals:

NOTE: *The surfaces to have decals benefit from having a smooth, glossy finish. The ‘Aviattic’ decals used are the Linen Weave Effect (ATT32236).*

Airbrush the following with a clear gloss coat (several coats if necessary), such as ‘Mig’ A-Stand Aqua Gloss (A.Mig-2503) or similar:

Upper wing.
Ailerons.
Lower wings.
Tailplane.
Elevators.
Fin.
Rudder.

‘Aviattic’ decals:

NOTES: *The decals used are the ‘Aviattic’ clear backed Linen Weave Effect (ATT32236).* ***Refer to Part 4 (Decals)*** *of this build log for more information.*

The ‘Aviattic’ linen decals are unlike normal screen printed decals, in that when being applied, have the ability to be handled with slightly less care than normal and they have the ability to stretch slightly, which standard decals do not. That said, if you handle them too roughly, damage can occur.

Make sure the model surface for each decal to be applied is clean and smooth or particles on the surface may cause ‘silvering’ (trapped air) under the decals when dry.

These ‘Aviattic’ CDL decals being used are not ‘cookie’ cut to the shapes required. Therefore the decals must be hand cut to shape.

Example of applying ‘Aviattic’ decals:

*The following example applies to surfaces that can be traced around, such a wings and fuselage flat side panels. However, for surfaces which **can’t be traced easily**, such as the curved top on the fuselage, a **paper template can** be cut and checked against the model surface, then used to trace the outline on the decal sheet. Larger areas may be covered by cutting several decals.*

Lay the part with surface to have decal down onto the rear (blank) side of the decal sheet.

NOTE: *During the following step, do not press too hard when tracing the outline as this may mark the decal side of the sheet.*

Using a pencil, lightly trace the outline of the part onto the rear of the decal, allowing for any curvature of the part, such as wings.

Carefully cut out the decal shape.

Check that the decal fits correctly over the surface of the part.

NOTE: *To aid in adhesion, you can mix a small amount of PVA (white glue) into the decal water.*

Wet the model surface with clean water or ‘Microscale’ MicroSet.

Soak the decal in the warm decal water long enough to be able to move the decal on its backing sheet.

Carefully lift the decal on its backing sheet from the water. Make sure the decal does not fold over on itself, as it will be difficult to separate a fold once out of the water.

Carefully slide the decal off one end of the backing paper and position the decal end onto the wing and holding that end, slide out the backing paper.

Using large, flat brush or cotton buds, start to smooth out the decal at one end, removing any water from underneath and smoothing the decal onto the surface. Continue this along the length of the decal, taking care not to grip the decal surfaces with your fingers, as this will cause ripples in the decal.

Once the decal is smoothed down onto the model surface, apply pressure along the decal with soft and dry tissue paper or by finger pressure whilst wearing lint free cotton gloves. This will expel any remaining water and press the decal on to the model surface. Check over the decal to make sure there are no tears or folds, which need to be rectified before the decal sets.

NOTE: *If the decal covers locating holes, slots or other openings, prick through the decal over holes or slice the decal over openings, then brush either ‘MicroScale’ MicroSol’ or **sparingly** ’Tamiya’ X20A thinners into the holes or around the openings. This will soften and conform the decal.*

*If the decal needs to be conformed around curved edges etc, brush **sparingly** ’Tamiya’ X20A thinners across the decal edge. This will soften and conform the decal.*

Once fully dry and set, trim any excess decal from edges using a sharp blade, such as a shielded razor blade.

Application ‘Aviattic’ decals:

Using the previous example, cut and apply the CDL decals to both sides of the following parts:

Upper wing.
Ailerons.
Lower wings.
Tailplane.
Elevators.
Fin.
Rudder.

NOTE: *The surfaces to have decals benefit from having a smooth, glossy finish. Refer to **pages 13, 14 and 27** of the kit instruction manual for the **location** of the various **decals**.*

Kit supplied decals:

NOTE: *The kit supplied decals used for this model are as follows:*

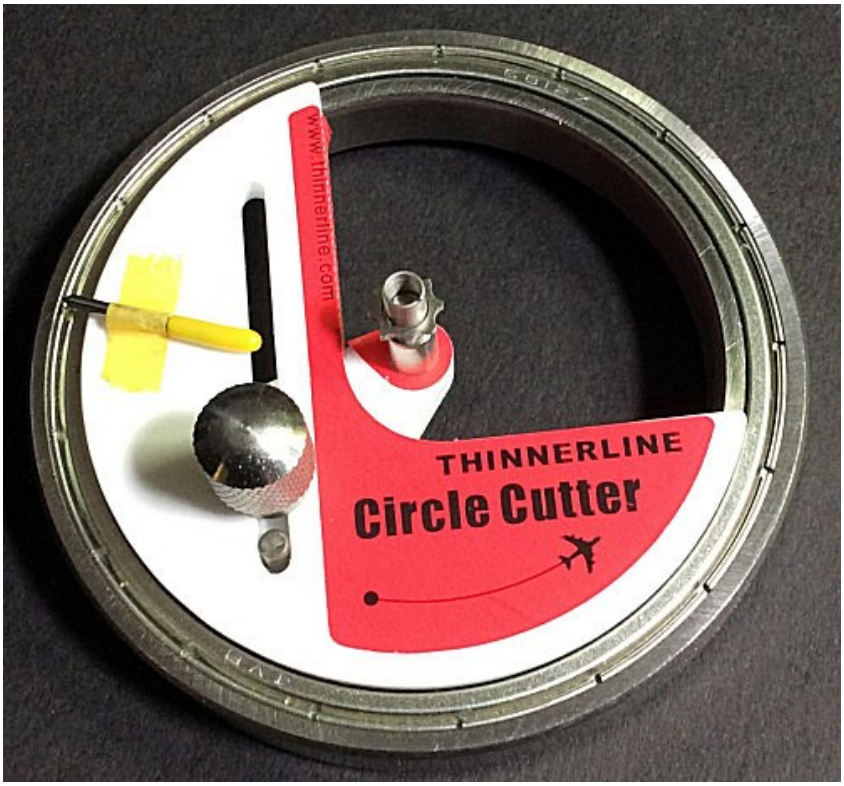
Upper wing crosses left side (1 and 2).
Upper wing crosses right side (3 and 4).
Lower wings crosses both sides (7 x 2).
Upper wing - underside serials both sides outboard of centre line (42 x 4).
Right outer struts (51 and 52).
Right inner (53 and 54).
Left outer struts (47 and 48).
Left inner struts (49 and 50).
Axle/fairing serials (45 x 4).
Wheel outer covers (41 x 2).
Anemometer (G13).
Compass (85).

Airbrush the decal areas of the parts with a clear gloss coat (several coats if necessary), such as 'Mig' A-Stand Aqua Gloss (A.Mig-2503) or similar.

Apply the various decal as shown on ***pages 13, 14 and 27*** *of the kit instruction manual.*

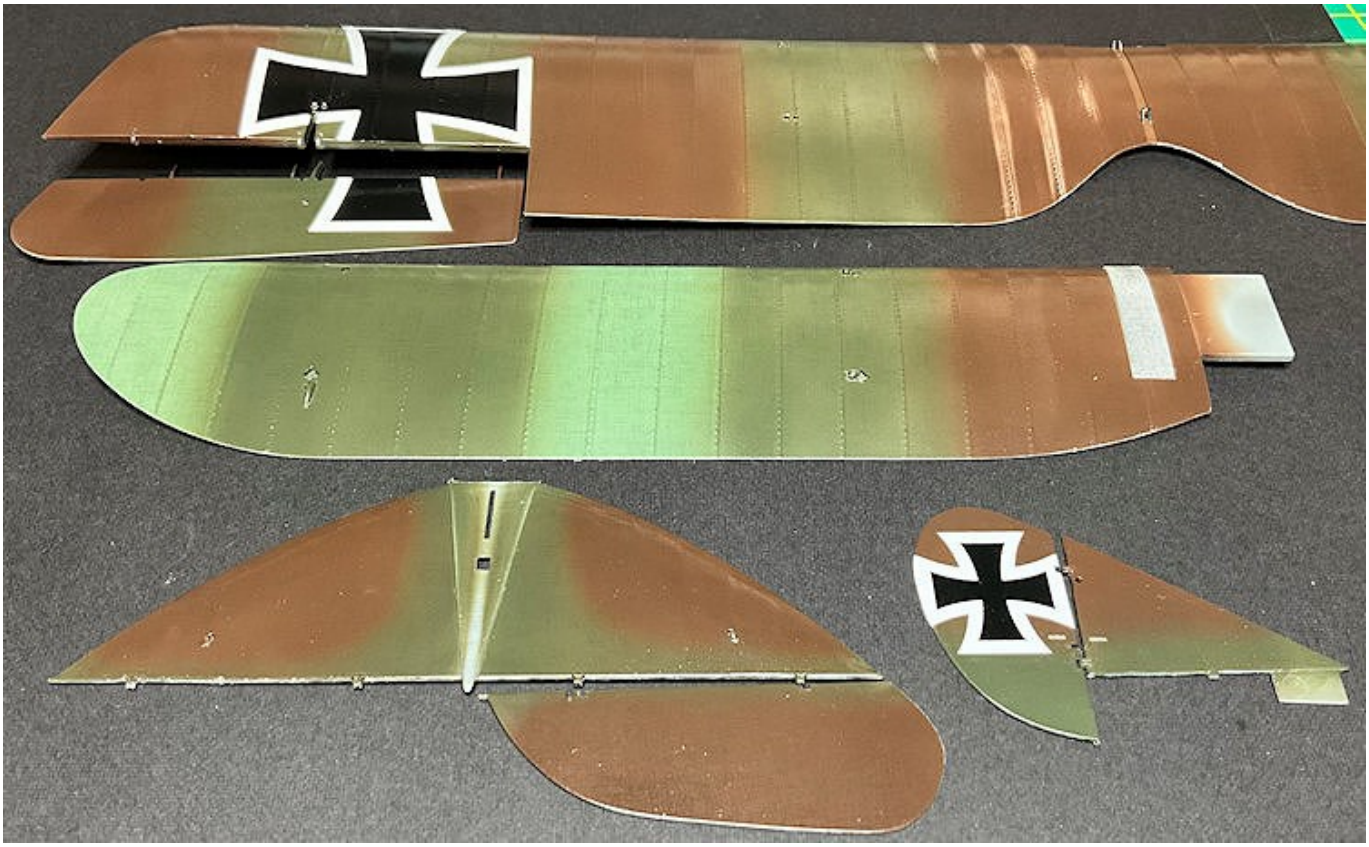
'Aviattic' decals:

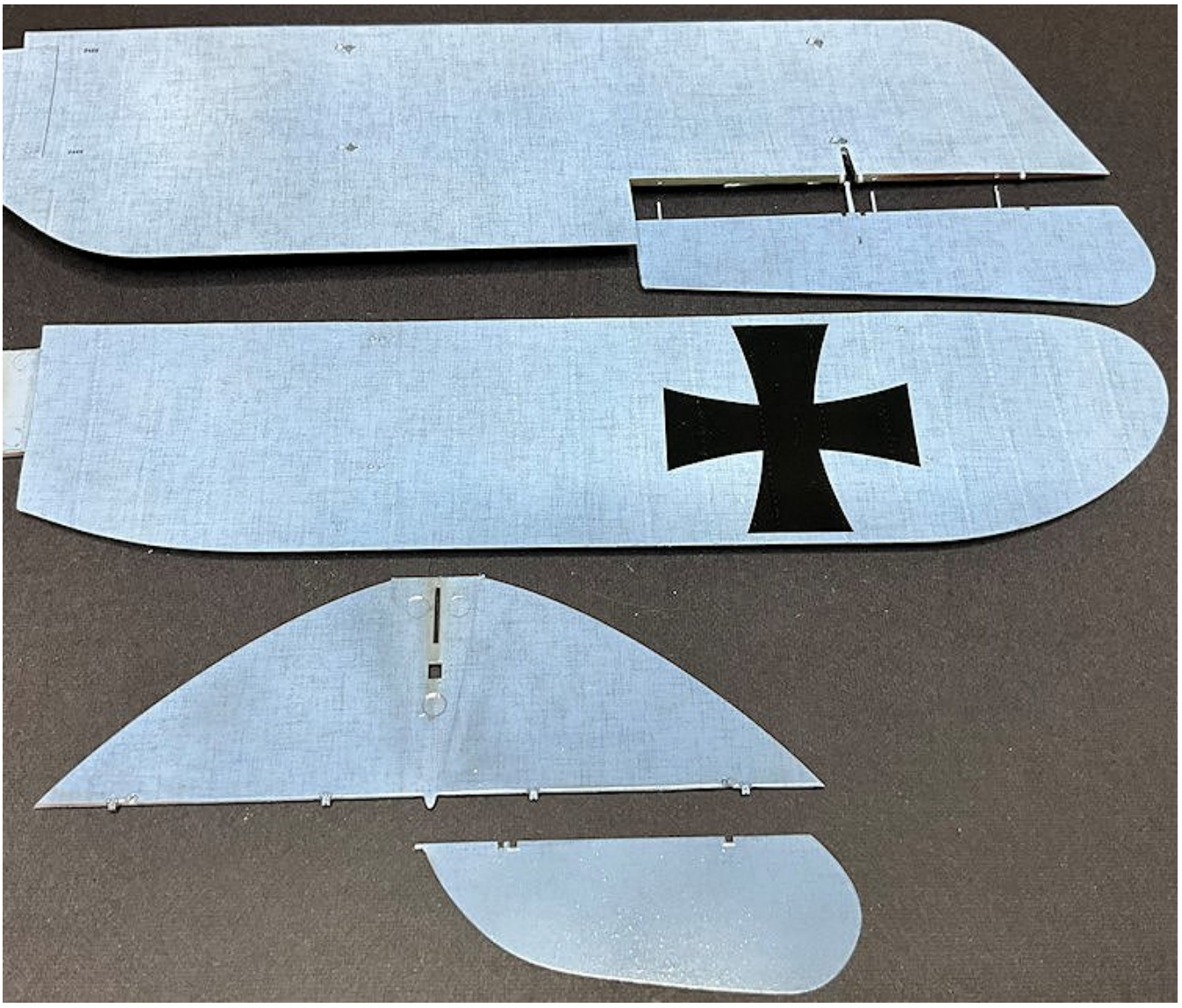
NOTE: *The 'Aviattic' decals used are the Linen Weave Effect (ATT32236). To cut these circular decals I used a 'Thinnerline' circle cutter. Other circle cutters are available, such as that from 'DSPIAE'.*

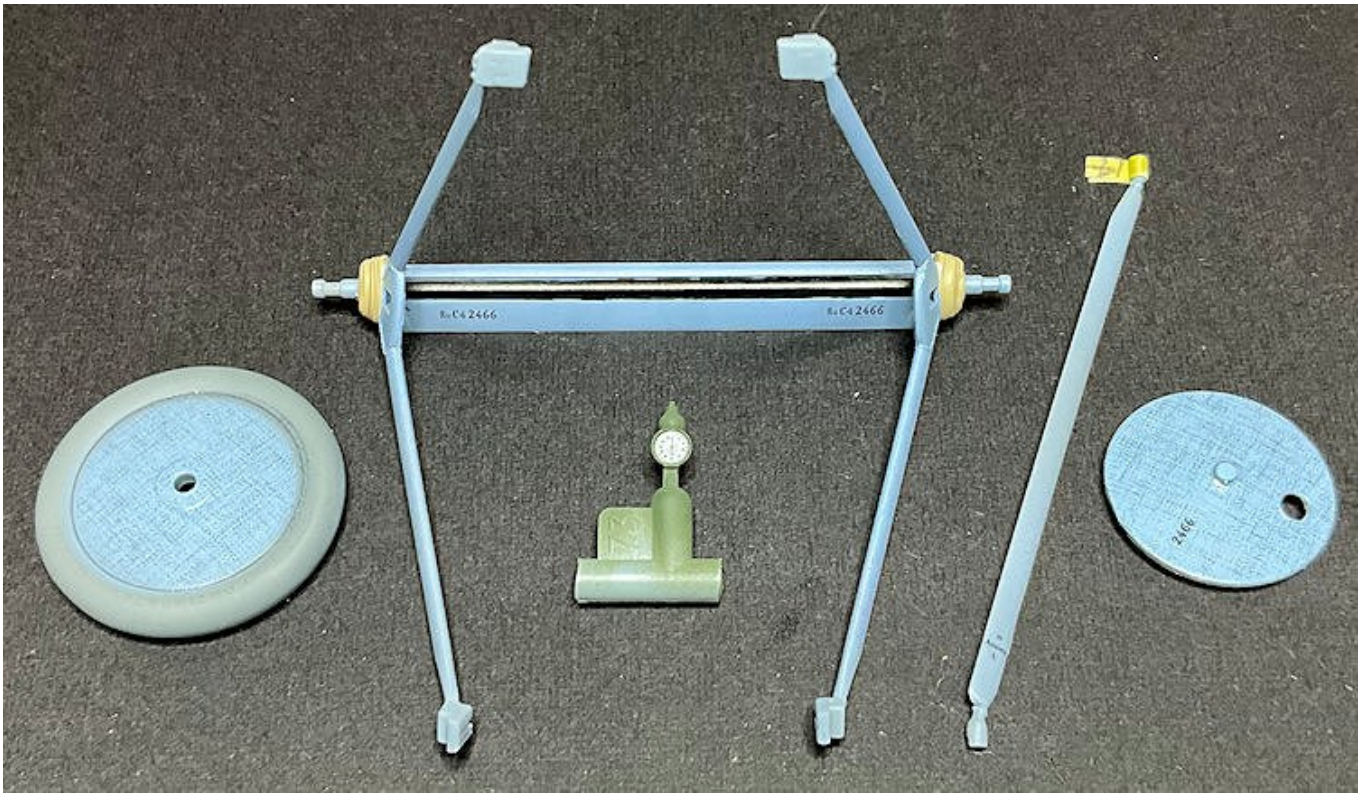


Airbrush the inner and outer wheel covers with a clear gloss coat (several coats if necessary), such as 'Mig' A-Stand Aqua Gloss (A.Mig-2503) or similar.

Apply the four decal discs to the wheels and covers.







Weathering:

NOTE: *Refer to Part 3 (Weathering) of this build log for more information.*

General:

Airbrush all flight surfaces and other parts with a semi-gloss clear coat, such as ‘Tamiya’ Semi-Gloss (X35) or similar.

NOTE: *After removing the clay wash to achieve your desired effect, it’s best to seal the surfaces with a clear coat. The clear coat will be absorbed by the clay wash, which slightly darkens the clay wash effect. Therefore, it’s better to remove slightly more of the wash before applying the sealing coat to avoid the end result looking too ‘heavy’.*

Brush apply ‘Flory Models’ Clay washes over the surface of the parts, allow to dry then remove to achieve your desired weathered effects. I chose to use the ’Flory Models’ Dark Dirt wash.

To seal and sheen, airbrush a semi-gloss clear coat, such as ‘Tamiya’ Semi-Gloss (X35) or similar over the treated surfaces.

Brush a clear gloss coat, such as ’Tamiya’ Clear (X22) or similar onto the compass instrument face (lower right wing) to represent the glass lens.

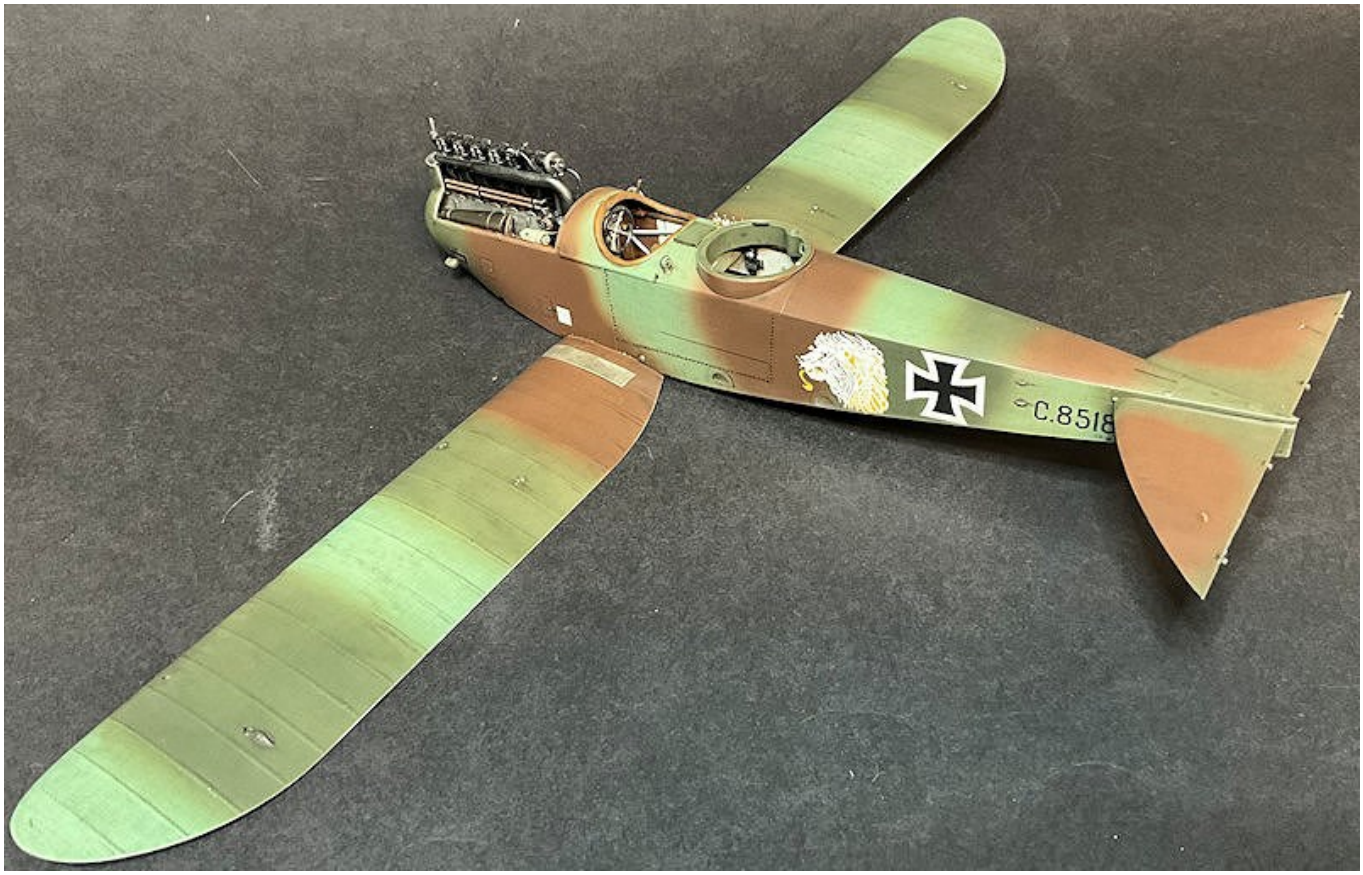
Engine exhaust pipe:

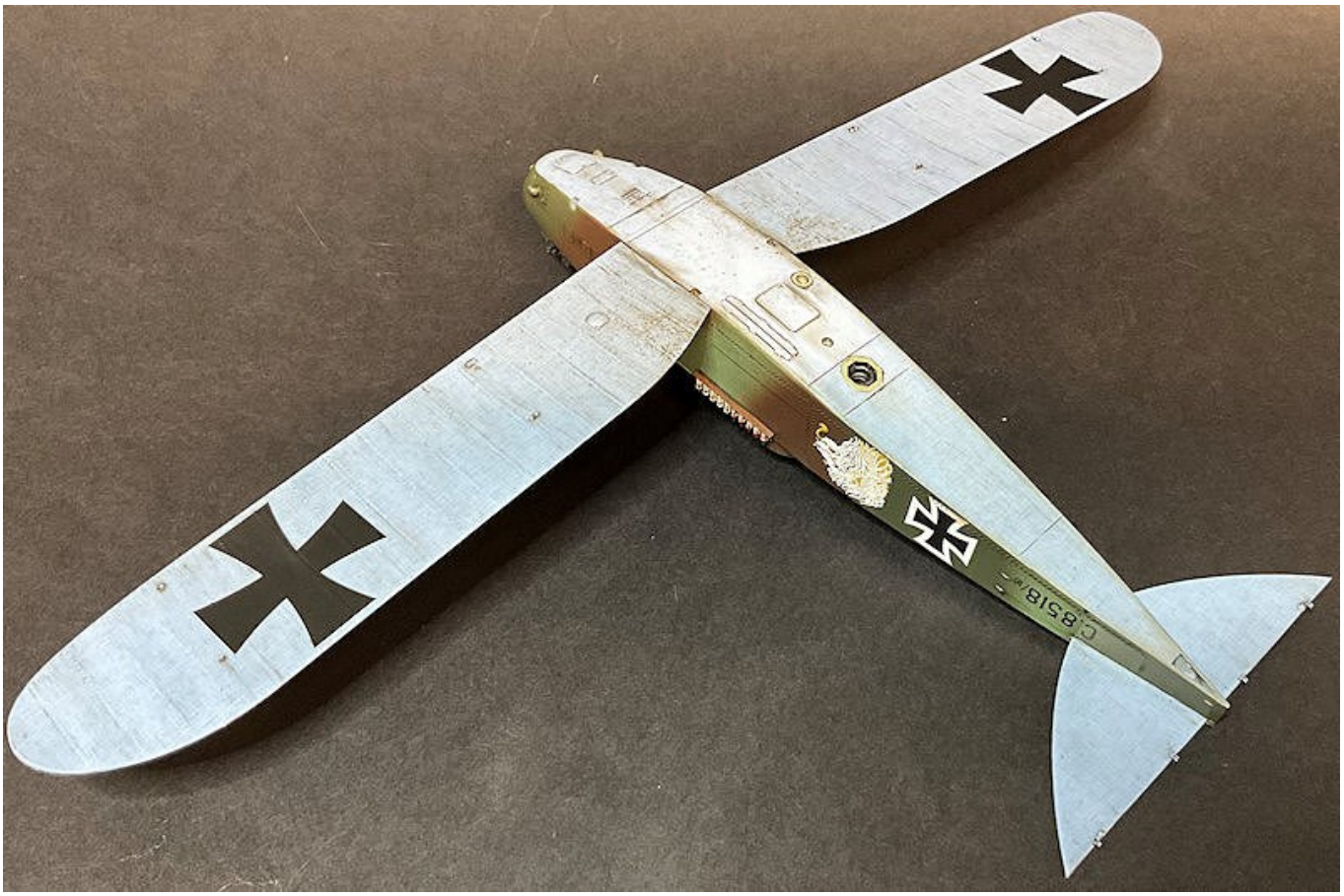
Airbrush the painted exhaust pipe with a matte (flat) clear coat, such as ‘Tamiya’ Flat (XF86) or similar.

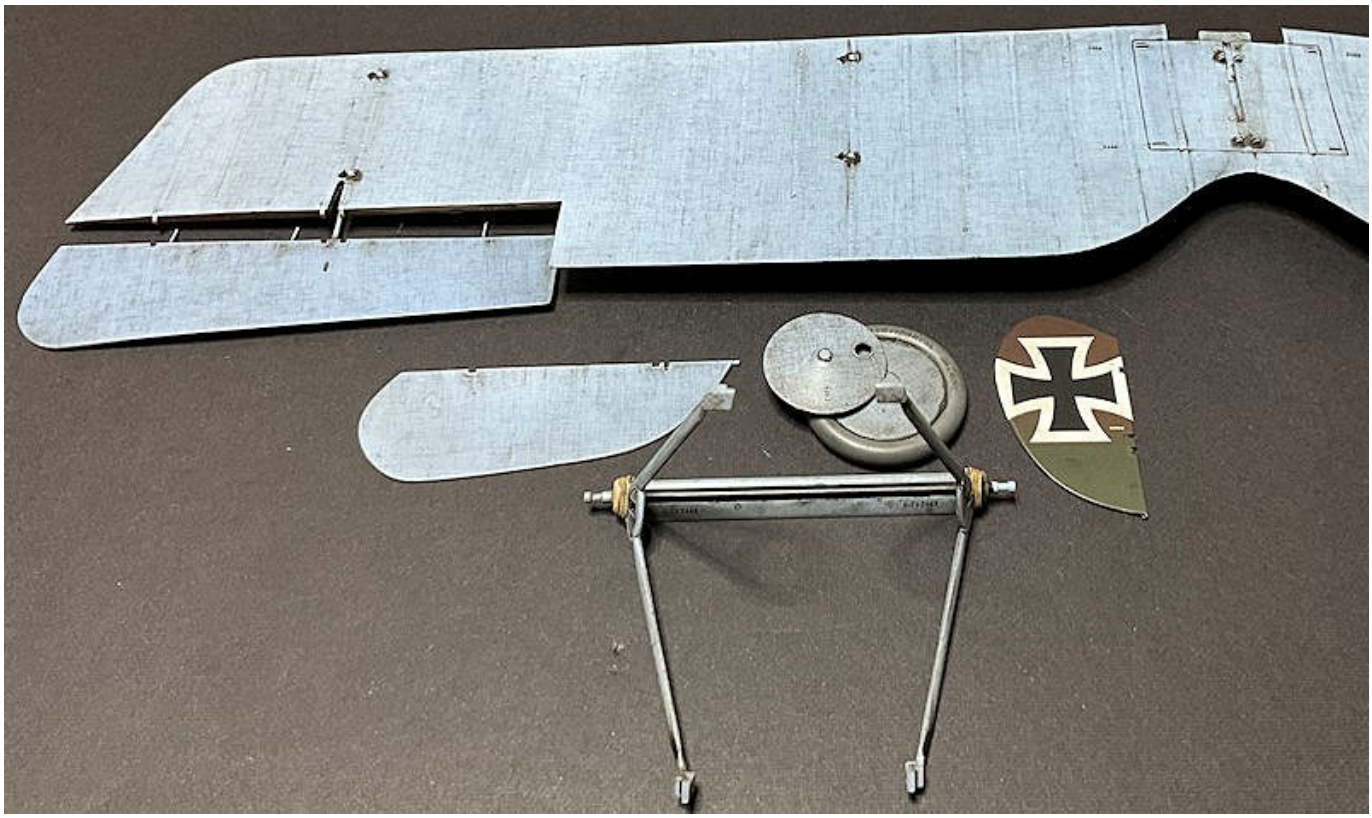
Apply your desired weathering finish to the two exhaust manifolds. I used ‘Flory Models’ Dark Dirt or Grey fine clay wash.

Seal the applied weathering with a semi-gloss clear coat, such as ‘Tamiya’ Semi-Gloss (XF35) or similar.

Lightly sponge ‘Tamiya’ Weather Master Set B (Soot) around the outlet of the exhaust pipe.







Assembly:

NOTE: *Make sure all primer/paint is removed from mating surfaces, holes, tabs and stubs.*

Cement the tailplane fully into its locating slot in the rear of the fuselage.

Cement the left and right lower wings fully into their locating slot in the lower sides of the fuselage.

Cement the radiator fully onto it locating tab in the centre, front of the upper wing leading edge.

Cement the forward and rear fuselage cabane struts fully into the locating recess in the centre, underside of the upper wing.

NOTE: *Fitting the struts correctly aligned is important to avoid upper wing misalignment when fitted. Refer to page 13 of the kit instruction manual for the correct locations for each of the interplane struts.*

Check that each strut fits fully into its locating holes/recesses in the top surface of the lower wings and the underside of the upper wing.

NOTE: *The following steps need to be carried out as soon as the struts are fitted and before the cement fully sets.*

Cement each interplane strut fully into its locating recess in the top surface of the lower wings.

Fully locate the fuselage cabane struts into their locating holes at the fuselage top sides between the cockpits and at the longerons inside the edge of the engine bay.

Carefully locate each interplane strut fully into its locating hole in the underside of the upper wing. Once all of the struts are located, hold the upper and lower wings together using elastic bands. Doing this will prevent the wings/struts moving out of alignment.

Check that:

The interplane struts are vertical when viewed from the front and are aligned to each other when viewed from the sides.

The upper and lower wings are parallel to each other when viewed from the front and sides and that they are aligned to each other when viewed from above.

Leave the assembly to allow the cement, securing the interplane struts in the lower wings, to fully set.

Remove the elastic bands from around the wings.

NOTE: *During the following step, take care removing the wing to avoid damaging/bending the interplane or fuselage cabane struts.*

Carefully remove the upper wing (with the fuselage cabane struts) from the top of the interplane struts and fuselage locating holes.

Rigging preparation upper wing/flight control surfaces:

NOTE: *As turnbuckles are fitted into the rigging lines at the lower wings, it's best to fit the various rigging lines to their anchor points in the underside of the upper wing and before assembly of the model continues. The rigging materials used are:*

*'GasPatch Elite Accessories' metal **1/48th** scale **Anchor Points**.*

'Albion Alloy's' Micro-tube (Brass MBT05 or Nickel Silver NST05) 0.5 mm diameter.

0.12 mm diameter mono-filament, such as 'Steelon' or 'Stroft GTM).

Nickel-Silver or Brass tube can be chemically blackened by immersion in solutions such as 'Blacken-It' or similar.

Anchor Points:

Preparation:

Remove a 'GasPatch' metal Anchor Point from its mould plate.

Snap the Anchor Point at the centre line to create two separate Anchor Points.

Check the 'eye' end holes are clear of metal to allow rigging line to pass through.

Use thin CA adhesive to secure the Anchor Point into its pre-drilled locating hole in the model.

Anchor Point locations:

NOTE: *Refer to Part 6 (Rigging) and the following photographs for information on the external rigging required. The following applies to each Anchor Point fitted to the model:*

Drill a hole of 0.3 mm diameter for each required Anchor Point into, **but not through**, the underside of the upper wing and landing gear.

Apply a small amount of CA adhesive to the 'tail' of the Anchor point and fully locate it into its pre-drilled hole, making sure no adhesive contaminates the hole in the 'eye' end of the Anchor Point.

Once all Anchor Points have been fitted, check that each is secured in the upper wing by pulling on the Anchor Point with tweezers or similar.

Pre-rigging:

Example:

NOTE: *The following example applies to each of the fitted Anchor Points in the underside of the upper wing and landing gear.*

Cut a longer than required length of 0.12 mm diameter mono-filament, such as that from ‘Steelon’ or ‘Stroft GTM’.

Cut a short length of blackened 0.5 mm diameter tube.

Pass the line through the tube then through the ‘eye’ end of the fitted Anchor Point in the underside of the upper wing.

Loop the line back and through the tube.

Slide the tube up to, **but not touching**, the ‘eye’ of the Anchor Point.

Secure the lines in the tube, using thin CA adhesive applied to the tube end farthest from the Anchor Point.

Cut away any residual end tag of line at the tube end.

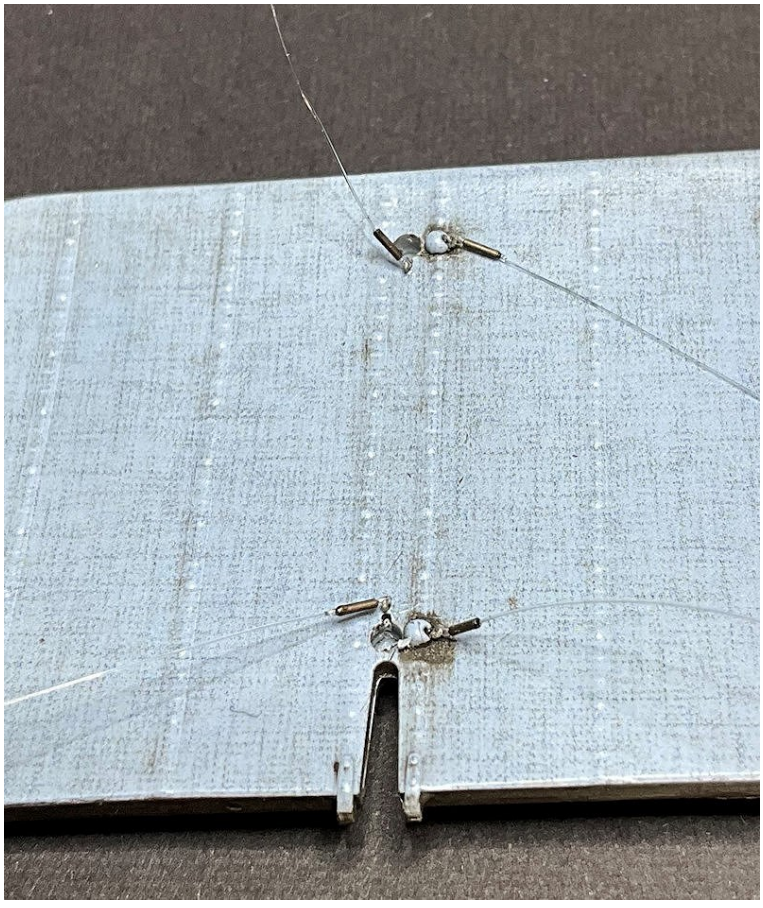
Check that the line is free to move in the Anchor Point.

Upper wing pre-rigging:

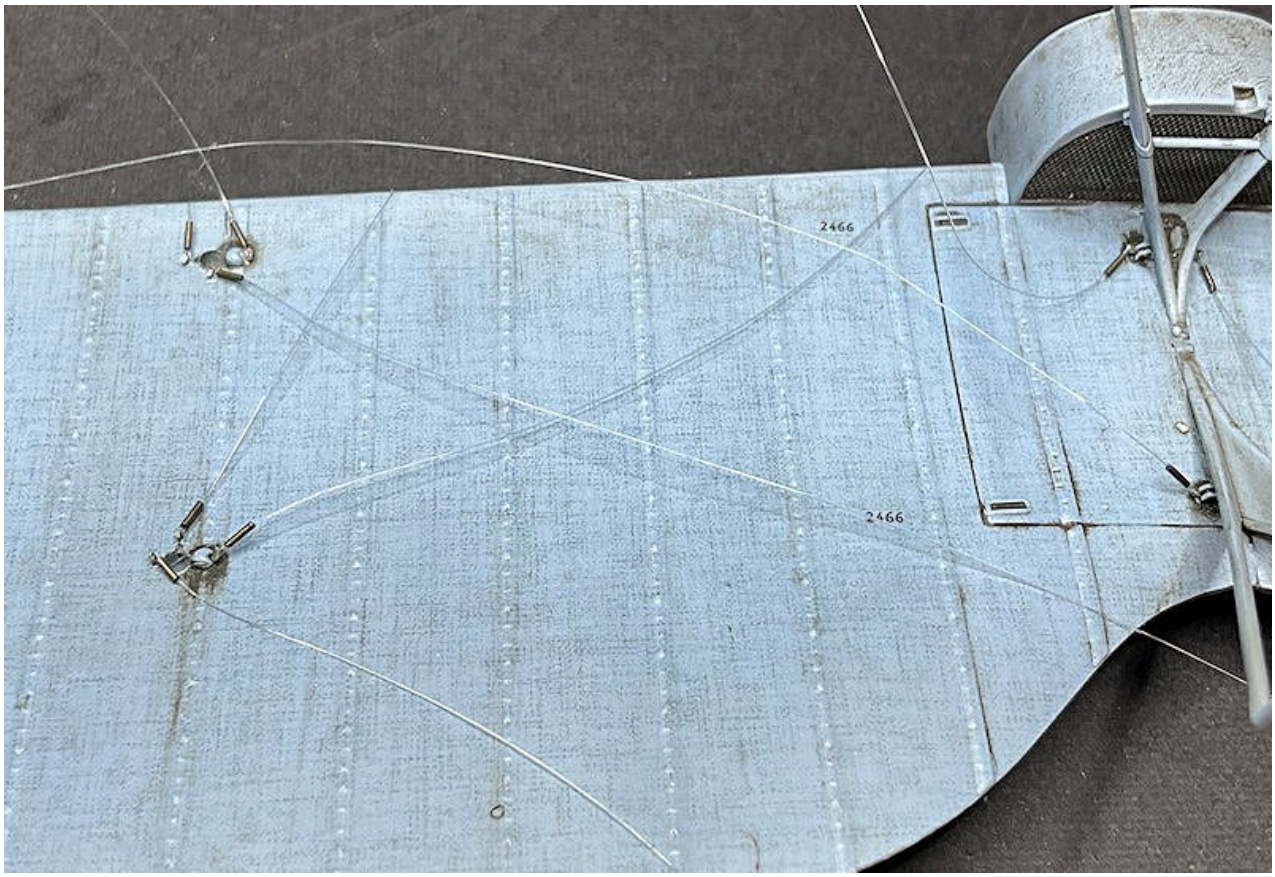
Using the previous example, attach a line to each of the fitted Anchor Points on the underside of the upper wing (twenty four in total).

Using the previous example, attach a line to each of the fitted Anchor Points on ends of the axle fairing of the landing gear (four in total).

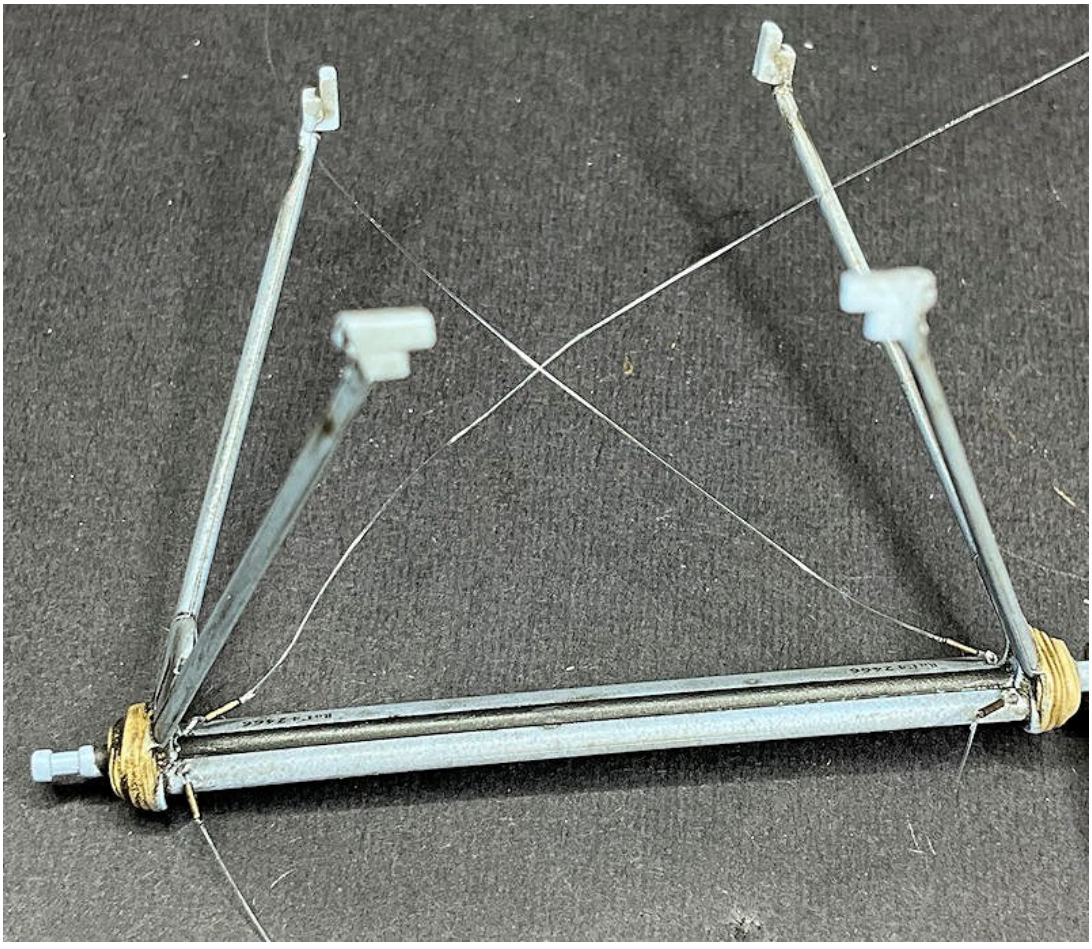
Outer underside of upper wing.



Inner underside of upper wing.



Landing gear.



Pre-rigging (control cables):

NOTE: *The rigging materials used are:*

*'GasPatch Elite Accessories' metal **1/48th** scale **Type A** turnbuckles.*

'Albion Alloy's' Micro-tube (Brass MBT04 or Nickel Silver NST04) 0.4 mm diameter.

0.08 mm diameter mono-filament, such as 'Steelon' or 'Stroft GTM).

Nickel-Silver or Brass tube can be chemically blackened by immersion in solutions such as 'Blacken-It' or similar.

Preparation:

Drill a hole of 0.3 mm diameter through both ends of the control horns (D4) for the rudder (x 1) and the elevators (x 2).

Drill a hole of 0.3 mm diameter through the end of the aileron control levers on the two ailerons.

Cement the control horns fully into their locating recesses in the leading edge of the rudder and the two elevators.

Using the small 'stub' on the upper surface of the two ailerons as guides, drill a hole of 0.3 mm diameter through the ailerons into the slot in the underside surface.

Remove six 'GasPatch' metal turnbuckles Type A from their mould plate.

Check the 'eye' end holes are clear of metal to allow rigging line to pass through.

Brush paint the centre barrels of each turnbuckles with 'Mr. Colour' Brass (214) and Copper (215) mixed to approximately 60:40% ratio.

Pre-rigging:

Example:

NOTE: *The following example applies to each of the fitted Type A turnbuckles.*

Cut a longer than required length of 0.08 mm diameter mono-filament, such as that from 'Steelon' or 'Stroft GTM'.

Cut a short length of blackened 0.4 mm diameter tube.

Pass the line through the tube then through 'eye' end of the turnbuckle.

Loop the line back and through the tube.

Slide the tube up to, **but not touching**, the 'eye' end of the turnbuckle.

Secure the lines in the tube, using thin CA adhesive applied to the tube end farthest from the turnbuckle.

Cut away any residual end tag of line at the tube end.

Check that the line is free to move in the turnbuckle.

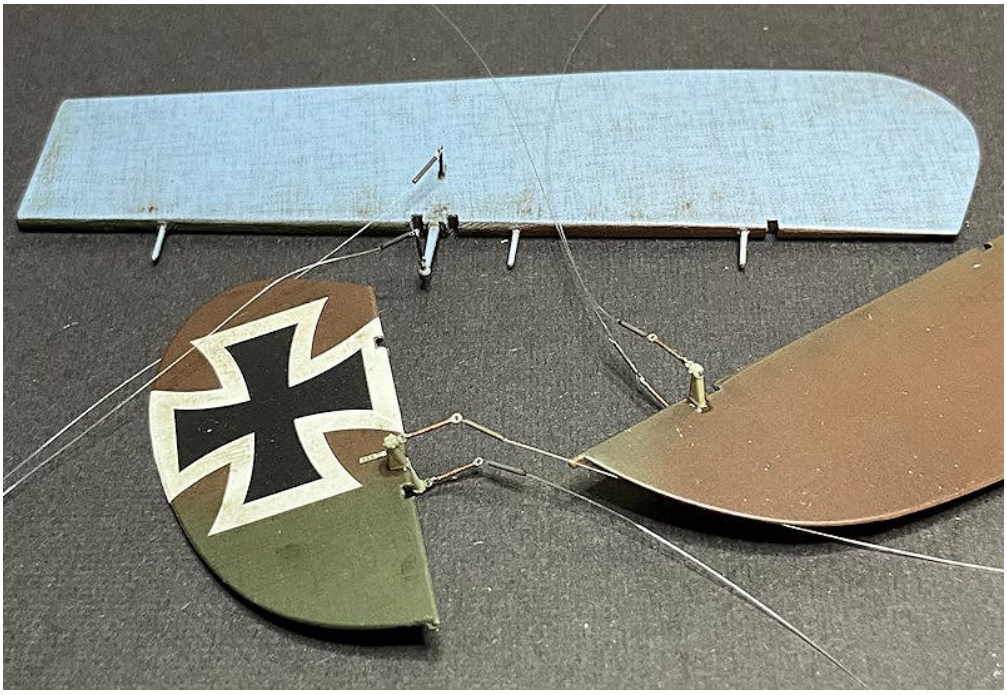
Upper wing pre-rigging:

Using the previous example, attach a line to each of the turnbuckles (six in total).

Turnbuckle fitting:

Using thin CA adhesive, secure the 'tail' of a turnbuckle fully into the pre-drilled holes in the ends of the rudder and elevator control horns.

Using thin CA adhesive, secure the ‘tail’ of a turnbuckle fully into the pre-drilled holes in the underside of the aileron control levers and in the slots.



Assembly (continued):

NOTE: *Make sure all primer/paint is removed from mating surfaces, holes, tabs and stubs.*

Cement the landing gear fully into its four locating recesses in the bottom edges of the fuselage.

Rigging preparation fuselage/lower wing assembly:

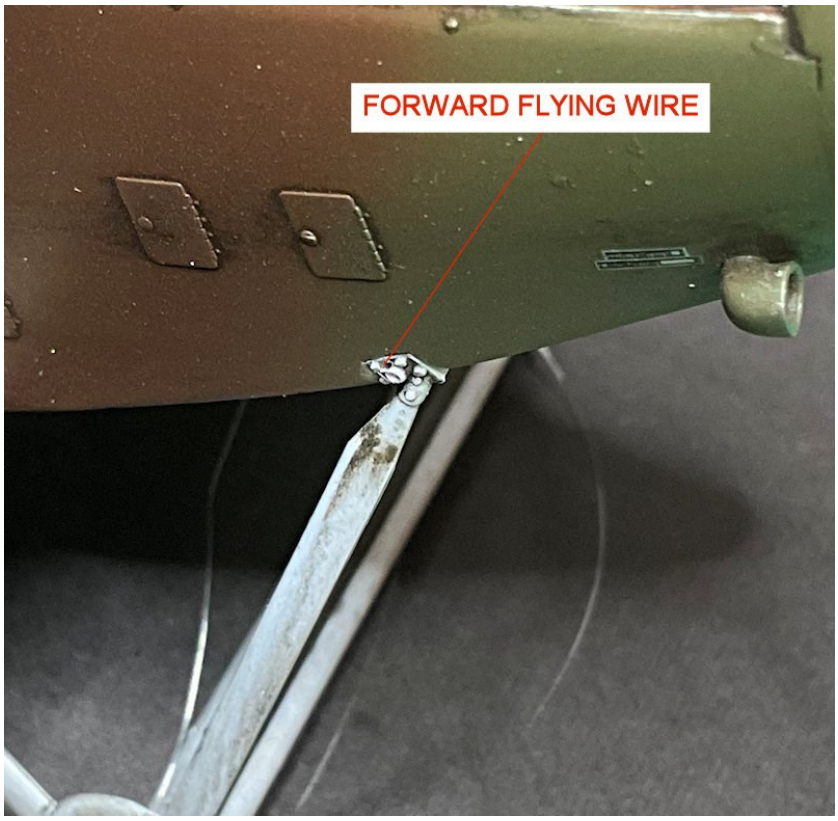
NOTE: *Refer to Part 6 (Rigging) and the following photographs for information on the external rigging required. The rigging holes should be drilled* ***at the correct angle*** *to align with the opposite end of the line when finally rigged.*

Structural wires:

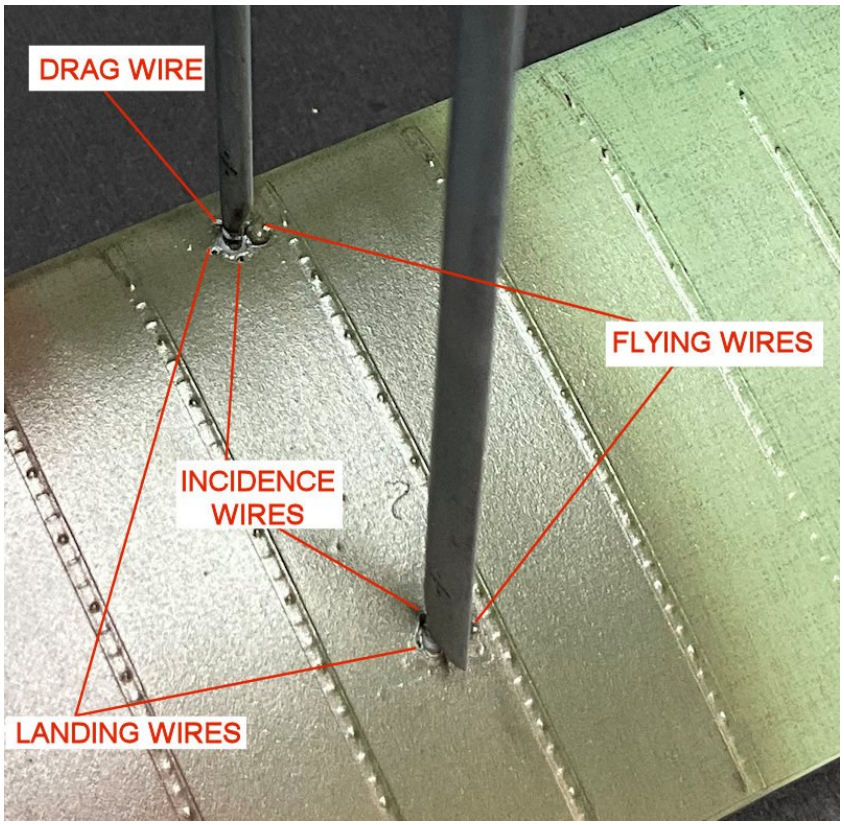
Flying wires:

Drill a hole of 0.3 mm diameter for the rear flying wires into location on the bottom of the fuselage at the lower wing roots.

Drill a hole of 0.3 mm diameter for the forward flying wires into the top of the landing gear forward struts.

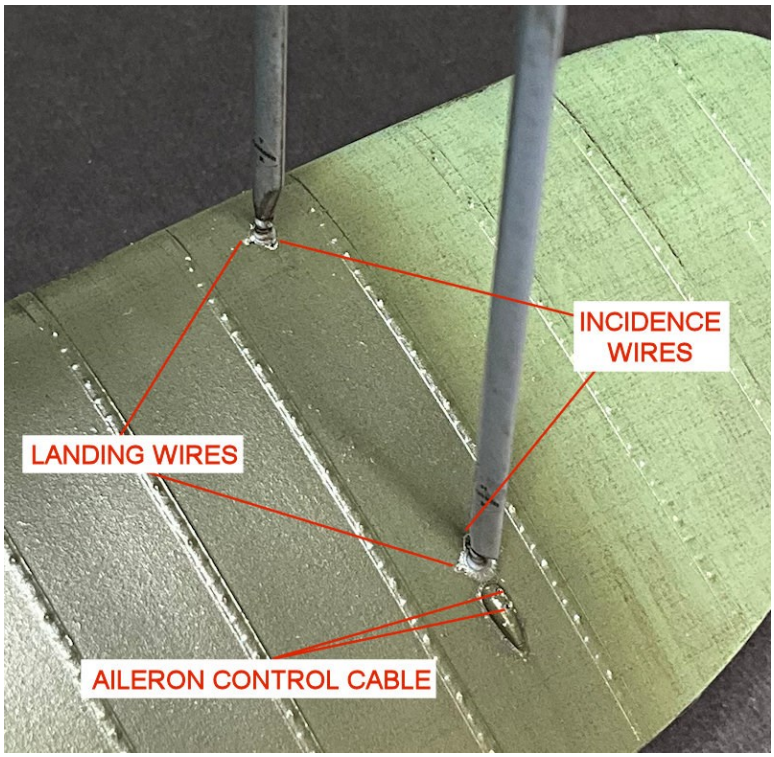


Drill holes of 0.3 mm diameter into, **but not through**, the lower wing outboard from the inner interplane struts.

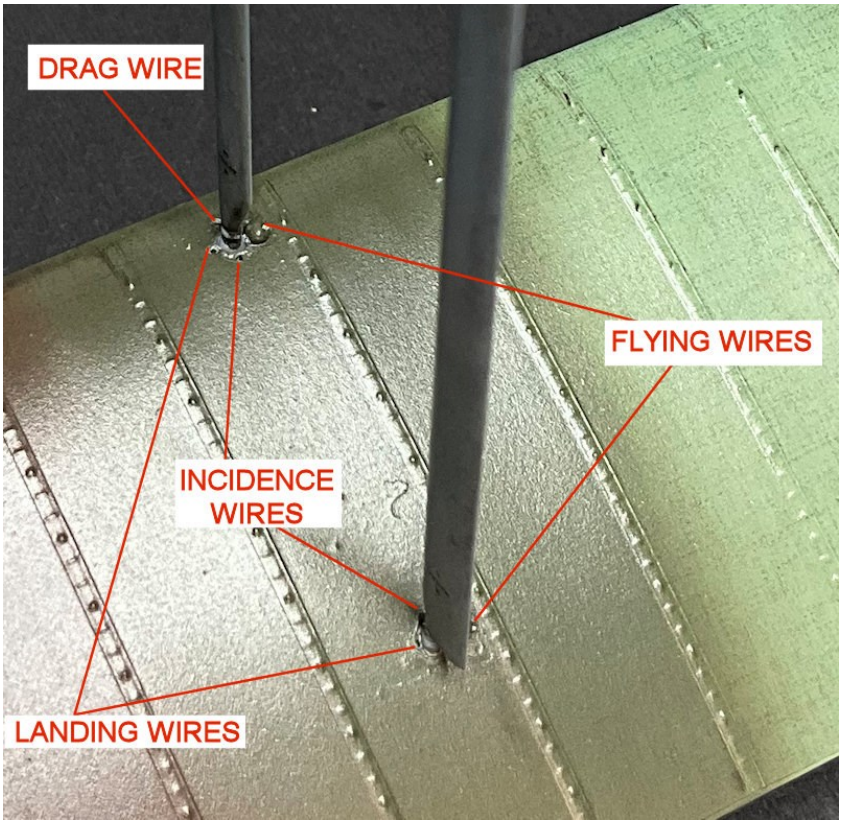


Landing wires:

Drill holes of 0.3 mm diameter into, **but not through**, the lower wing inboard from the inner interplane struts.

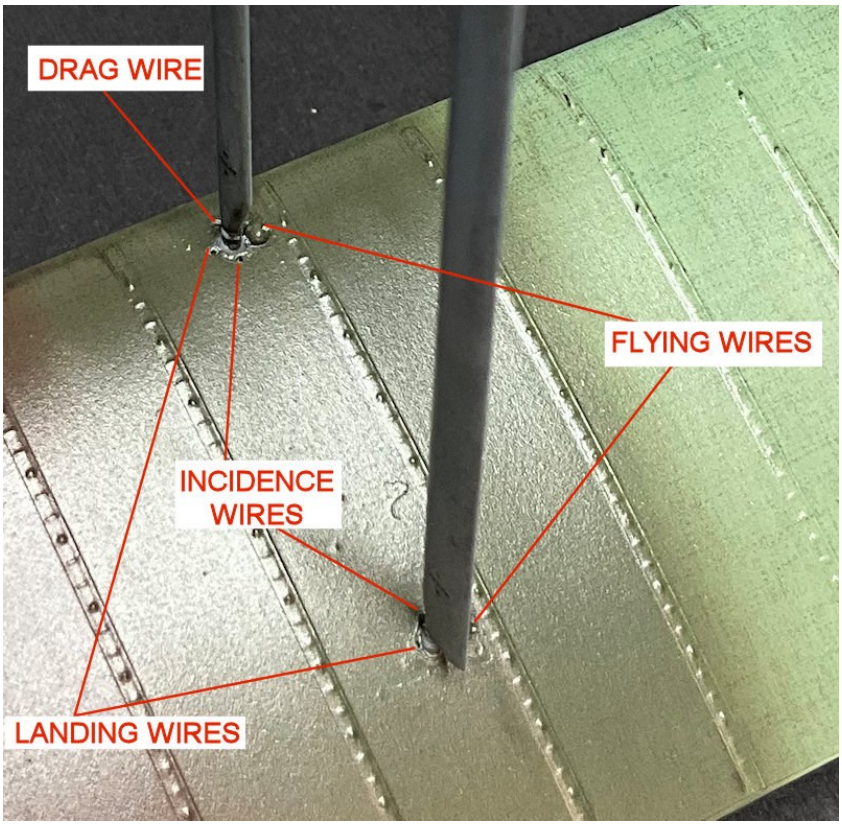


Drill holes of 0.3 mm diameter into, **but not through**, the lower wing inboard from the inner interplane struts.

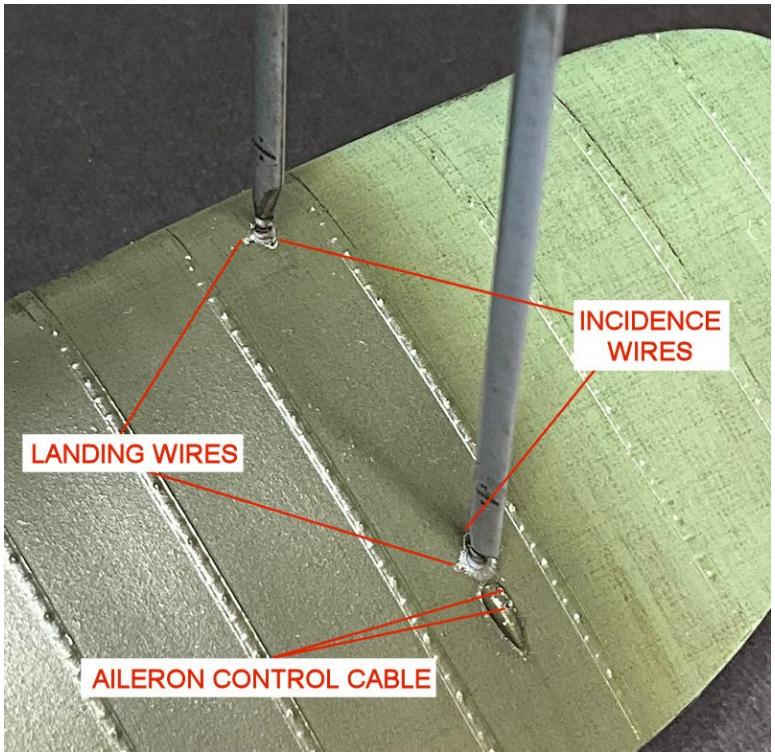


Incidence wires:

Drill holes of 0.3 mm diameter into, **but not through**, the lower wing at the rear of the inner front interplane struts and forward from the inner rear interplane struts.

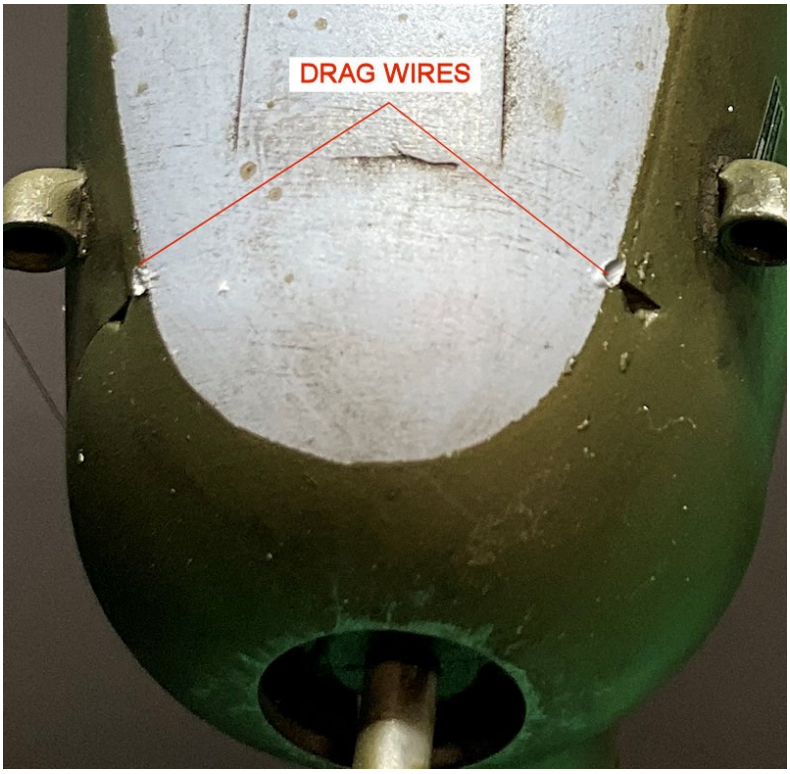


Drill holes of 0.3 mm diameter into, **but not through**, the lower wing at the rear of the outer front interplane struts and forward from the outer rear interplane struts.



Drag wires:

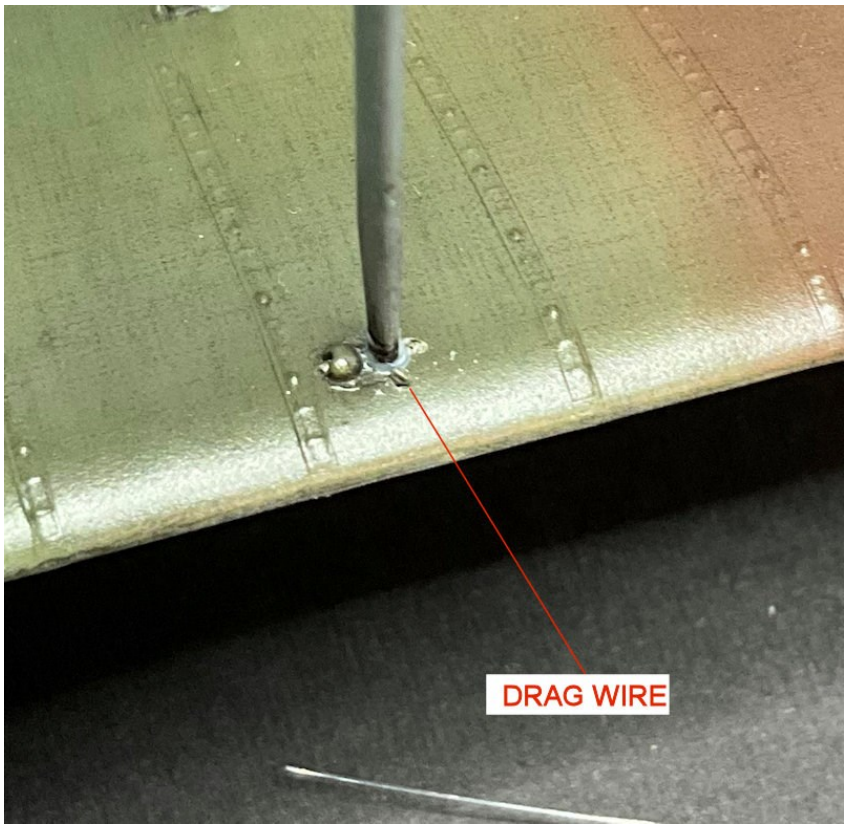
Drill holes of 0.3 mm diameter into the underside of the forward fuselage.



Drill holes of 0.3 mm diameter into, **but not through**, the lower wings, forward from the inner front interplane struts.

Prepare two ‘Gaspatch’ 1:48th scale metal Anchor Points.

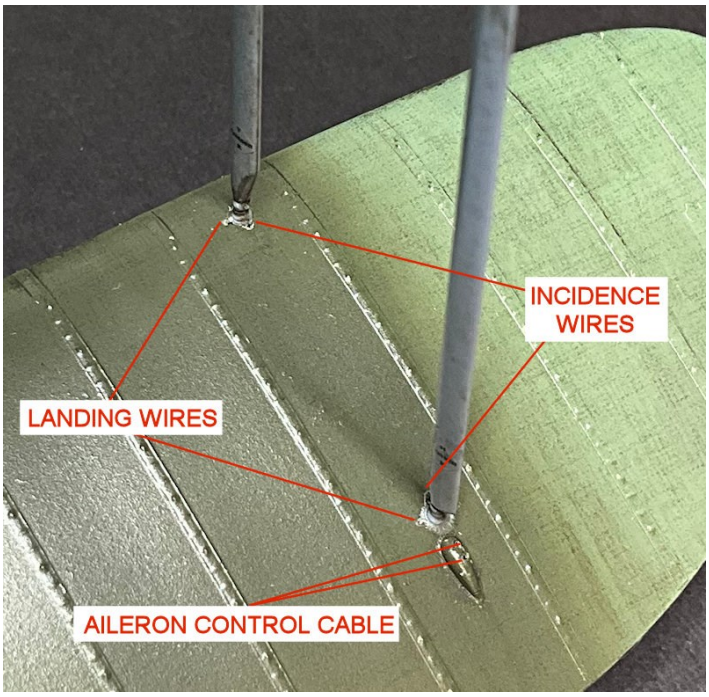
Using CA adhesive, secure the Anchor Points into the pre-drilled holes, making sure the adhesive does not contaminate the ‘eye’ ends of the Anchor Points.



Control cables:

Aileron control cables:

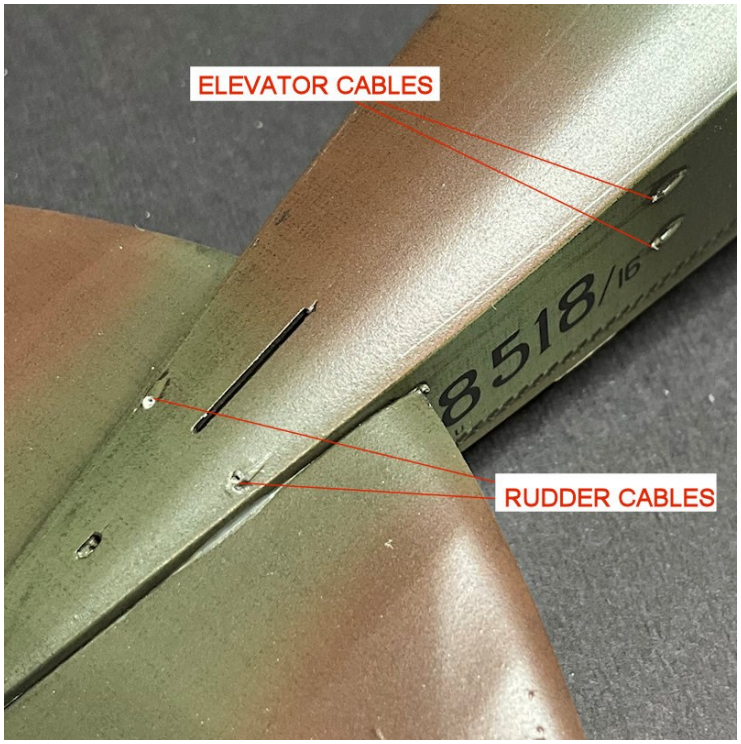
Drill holes of 0.3 mm diameter through the lower wings at the pre-molded recesses in the outer edge of the control cable fairings.



Rudder control cables:

Drill holes of 0.3 mm diameter through the top, rear of the fuselage at the rear of the two rudder control cable fairings.

Drill holes of 0.3 mm diameter through the sides of the fuselage, at the rear of the four elevator control cable fairings.



Assembly (continued):

Use thin strips of masking tape to hold the pre-rigged line in the upper wing to the wing underside. This is to keep the lines clear of the interplane strut locating recesses.

Fully locate the fuselage cabane struts into their locating holes at the fuselage top sides between the cockpits and at the longerons inside the edge of the engine bay.

Cement the fuselage cabane struts fully into their fuselage locating holes.

Carefully locate each interplane strut fully into its locating hole in the underside of the upper wing. Once all of the struts are located, hold the upper and lower wings together using elastic bands. Doing this will prevent the wings/struts moving out of alignment.

Cement the eight interplane struts fully into their locating recesses in the underside of the upper wing.

Check that:

All struts are fully located into the upper wing and the fuselage.

The interplane struts are vertical when viewed from the front and are aligned to each other when viewed from the sides.

The upper and lower wings are parallel to each other when viewed from the front and sides and that they are aligned to each other when viewed from above.

Leave the assembly to allow the cement, securing the interplane and fuselage cabane struts, to fully set.

Remove the strips of masking holding the pre-rigged lines to the upper wing.

Final rigging:

Structural rigging:

NOTE: *The rigging materials used are:*

*'GasPatch Elite Accessories' metal **1/32nd** scale **One Ended** and **Type C** turnbuckles.*
'Albion Alloy's' Micro-tube (Brass MBT05 or Nickel Silver NST05) 0.5 mm diameter.

Nickel-Silver or Brass tube can be chemically blackened by immersion in solutions such as 'Blacken-It' or similar.

Preparation:

Remove **twenty four** (24) 'GasPatch' **1:32nd** scale metal **One Ended** turnbuckles from their mould plate.

Check the 'eye' end holes are clear of metal to allow rigging line to pass through.

Brush paint the centre barrels of each turnbuckles with 'Mr. Colour' Brass (214) and Copper (215) mixed to approximately 60:40% ratio.

Rigging example:

NOTE: *The following example applies to each of the fitted **One Ended** turnbuckles.*

Cut a short length of blackened 0.5 mm diameter tube.

Pass the pre-rigged line through the tube then through ‘eye’ end of the turnbuckle.

Loop the line back and through the tube.

Slide the tube up towards, **but not touching**, the ‘eye’ end of the turnbuckle, leaving the loop of line loose.

NOTE: Do not secure the line in the tube until the turnbuckle has been secured in its locating hole.

Once the turnbuckle has been fitted into its locating hole, slide the tube up to, **but not touching**, the ‘eye’ end of the turnbuckle.

Keeping the line taut, secure the line in the tube, using thin CA adhesive applied to the tube end farthest from the turnbuckle.

Cut away any residual end tag of line at the tube end.

Final rigging:

NOTE: *For ease of access when final rigging structural wires, I found it best to rig the various lines in the following order:*

Incidence wires.
Landing wires.
Flying wires.
Landing gear bracing wires.
Drag wires.

Incidence wires:

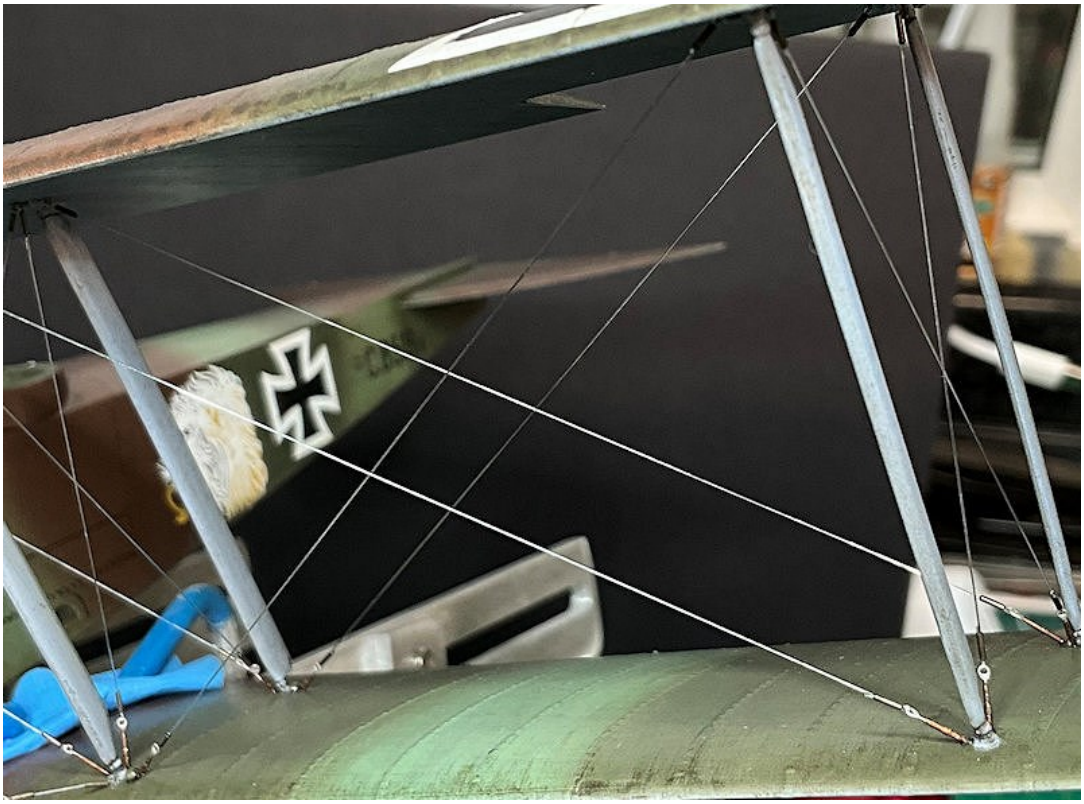
Following the previous example, final rig all eight **diagonally crossed** incidence wires between the interplane struts. Make sure that when the turnbuckles are secured in position in the lower wings, they are aligned to the opposite ends of the line in the underside of the upper wing.

Landing wires:

Following the previous example, final rig all eight landing wires between the between the upper and lower wings. Make sure that when the turnbuckles are secured in position in the lower wings, they are aligned to the opposite ends of the line in the underside of the upper wing.

Flying wires:

Following the previous example, final rig all eight landing wires between the between the upper and lower wings and fuselage. Make sure that when the turnbuckles are secured in position in the lower wings and fuselage, they are aligned to the opposite ends of the line in the underside of the upper wing.



Drag wires:

NOTE: *The following procedure applies to both drag wires.*

Following the previous example, attach a long length of **0.12 mm diameter** mono-filament to one end of a 'Gaspatch' 1:32nd scale Type C turnbuckle.

Use the same procedure to attach a **0.12 mm diameter** mono-filament to the other end of the turnbuckle.

Pass a line from one end on the turnbuckle through a blackened 0.5 mm diameter tube then through the Anchor Point for the drag wire, fitted to the lower wing leading edge, forward from the front inner interplane strut.

Loop the line back and through the tube.

Slide the tube up towards, **but not touching**, the 'eye' end of the turnbuckle.

Keeping the line taut, secure the line in the tube, using thin CA adhesive applied to the tube end farthest from the Anchor Point.

Cut away any residual end tag of line at the tube end.

Keeping the remaining line taut, cut the line so it can be inserted into the pre-drilled hole in the forward fuselage.

Slide another tube onto the line.

Keeping the line taut, secure the line in the pre-drilled hole.

Slide the tube up to the fuselage and secure on the line, using thin CA adhesive

Landing gear bracing wires:

Following the previous example, final rig the four **diagonally crossed** bracing wires between the axle fairing on the landing gear and the underside of the fuselage. Make sure that when the turnbuckles are secured in position in the fuselage, they are aligned to the opposite ends of the line on the landing gear axle fairing.

Drill holes of 0.4 mm diameter into the pre-mold slits in the top, underside of the four landing gear strut mountings in the fuselage. Make sure the holes are drilled aligned to the diagonally opposite Anchor Point.

Assembly (continued):

Cement the tail skid into its location in the underside, rear of the fuselage.

Cement the two ailerons onto their locations on the rear of the upper wing.

Cement the fin into its locating recess in the top, rear of the fuselage.

Cement the rudder onto its locations on the rear of the fin.

Cement the two elevators onto their locations on the rear f the tailplane.

Cement the radiator shutter (A10) assembly into the front of the radiator.

Cement the coolant pipe (A33) into its locating holes in the front top of the engine forward cylinder and the lower front edge of the radiator.

Cement the engine exhaust pipe (A57) into its locating holes in the upper right sides of the engine cylinders.

Cement the bracing rod (A5) into its locating hole in the left side of the engine exhaust pipe and between the third and fourth camshaft rockers on the top of the engine.

Locate the wheels onto the ends of the landing gear axle.

Locate the wheel retainers(G20) fully into their locating recesses in the ends of the axle.

NOTE: *If the wheels are to be allowed to rotate on the axle, do not cement them.*

Cement the wheels and wheel retainers onto the axle ends.

Once the adhesive has fully set, locate and cement the outer covers (D16) into the wheels.

Final rigging (continued):

NOTE: *For ease of access when final rigging control cables, I found it best to rig the various lines in the following order:*

Aileron control cables.

Rudder control cables.

Elevator control cables.

Rudder control cables:

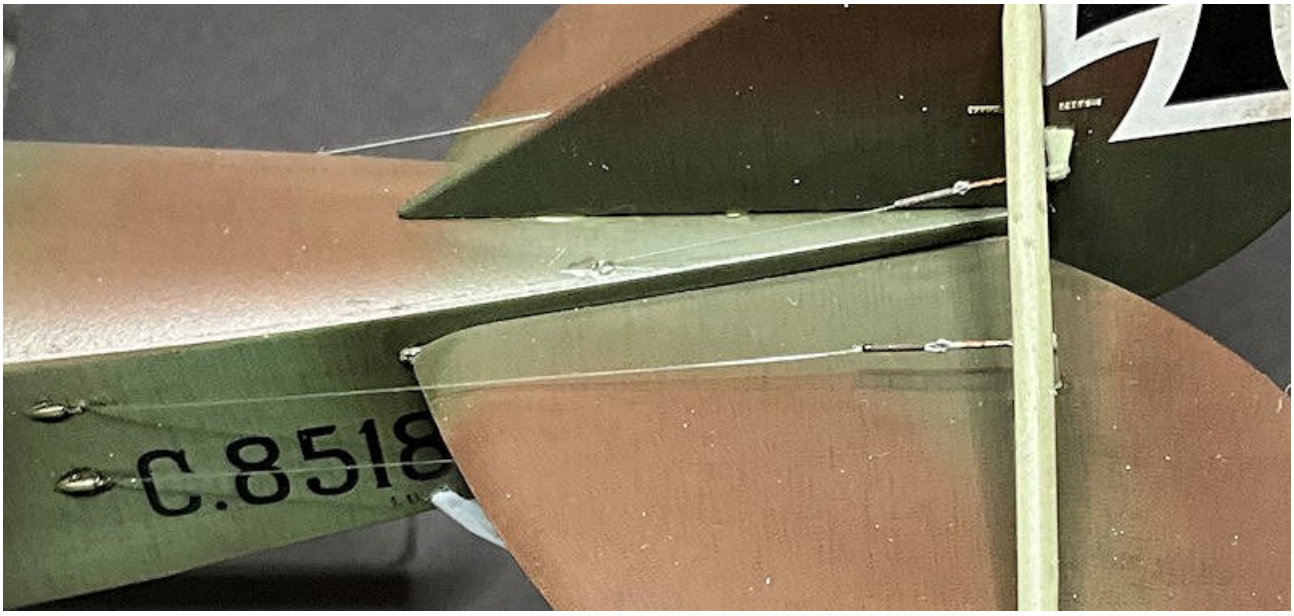
Cut the two rudder control lines such that they can be fully inserted into their pre-drilled holes in the top, rear of the fuselage.

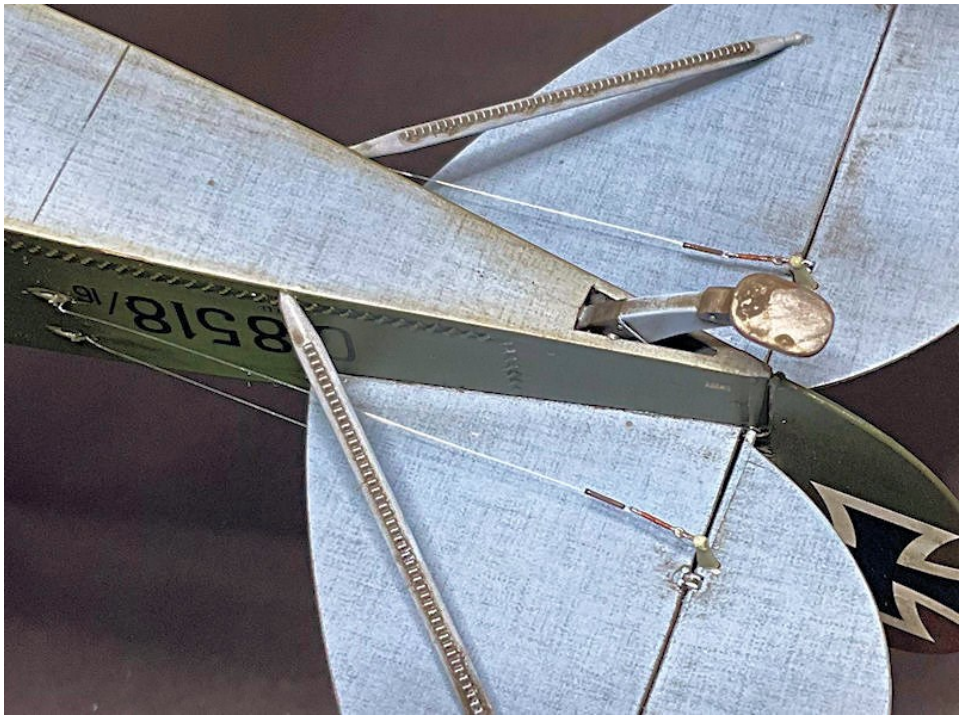
Keeping the lines taut, secure them into the fuselage using thin CA adhesive.

Elevator control cables:

Cut the four elevator control lines such that they can be fully inserted into their pre-drilled holes in the sides of the fuselage rear.

Keeping the lines taut, secure them into the fuselage using thin CA adhesive.





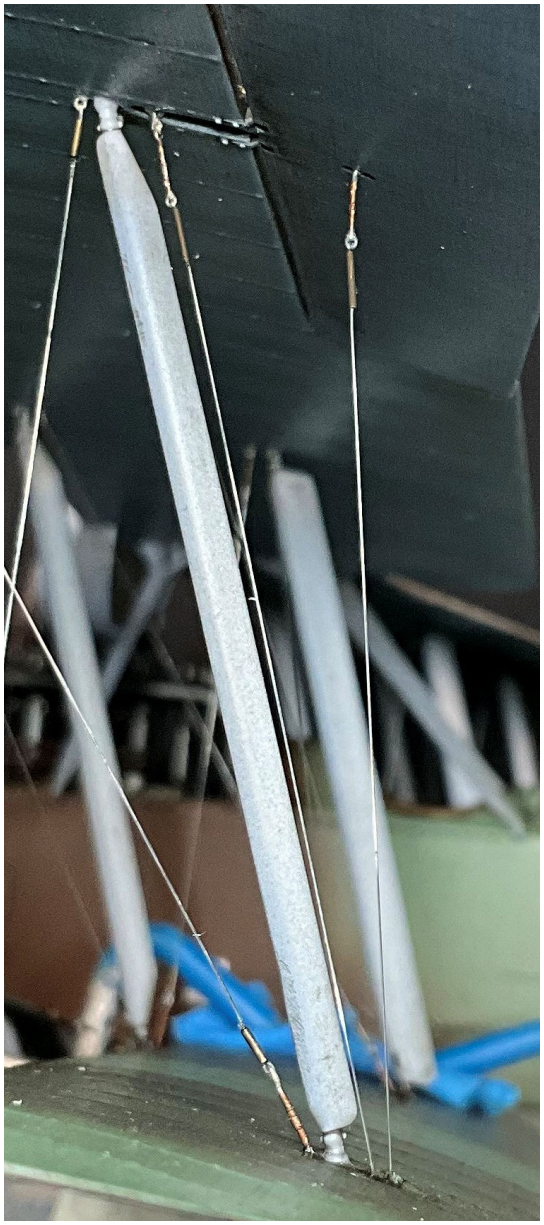
Aileron control cables:

Pass the forward aileron control lines down and through the pre-drilled forward holes in the lower wings in the aileron control cable fairings.

Pass the rear aileron control lines down and through the pre-drilled rear holes in the lower wings in the aileron control cable fairings.

Keeping the lines taut, secure them into the lower wings using thin CA adhesive.

Cut away any residual lines at the underside of the lower wings.



Rigging - final tensioning:

Invariably after rigging has been completed, some lines may be slack. This can be remedied by careful application of heat along the line.

WARNING: *Care needs to be taken when using this method to tension line, as using a heat source is required.*

NOTE: *Take care not to linger at one area of a line with the heat source as this will melt the mono-filament causing the line to break. Also take care not to touch any part of the model or any other rigging, as this will also cause damage through melting.*

Carefully move a suitable heat source (I use a small electrical soldering iron) close to and along the slack line, keeping the heat source always moving. You will see the line tension as the applied heat takes effect, shrinking the line.

Finish:

To reduce the surface sheen on the mono-filament, I lightly airbrushed the rigging with a semi-gloss clear coat, such as ‘Tamiya’ Semi-Gloss (X35).

Decals (continued):

NOTE: *The surfaces to have decals benefit from having a smooth, glossy finish.*

Kit supplied decals:

NOTE: *The kit supplied decals used for the wheels are the axle ends (64 x 2).*

Apply the 'Rumpler' logo decals to the ends of the landing gear axle, represented in the centre of the wheel outer covers.

Assembly (continued):

Cement the observers machine gun into its mounting locating hole in the cockpit cradle and into the butt rest.

Cement the wireless aerial (A47) into its locating recess in the underside right edge of the fuselage.

Cement the Anemometer body (G73) onto the inboard surface of the left inner, forward interplane strut, approximately one third the way down from the top of the strut.

Brush paint the frame around the windscreen (C1) with 'Mr. Colour' Stainless Steel (213) or similar.

Using PVA adhesive (white glue) secure the windscreen into its locating slot in front of the pilots cockpit.

Brush paint the rotating cups (G40) for the Anemometer with 'Mr. Colour' Brass (214) and Copper (215) mixed to approximately 60:40% ratio.

Cement the rotating cups onto its locating stub on the top of the Anemometer.

Using CA adhesive, secure the propeller in the desired position, onto the engine shaft.

PART 12
FIGURE
AND
ACCESSORIES

PART 12 - FIGURES AND ACCESSORIES

The figures and fuel cart used are the 'Aviattic' WW1 Fuel Cart (ATTRES 021) and WW1 German refuelling crew (ATTRES 014). The fuel cart is actually of the Royal Flying Corps (RFC) design, but is used as the equivalent German fuel cart from 'Aviattic' is no longer available.

NOTE: *Refer to Part 5 (Resin) of this build log for more information.* ***Handle all 3D printed parts with care, as the resin used and the fine detail on the parts can easily be damaged if stressed or drilled****. CA adhesive must be used throughout the build of the model parts.*

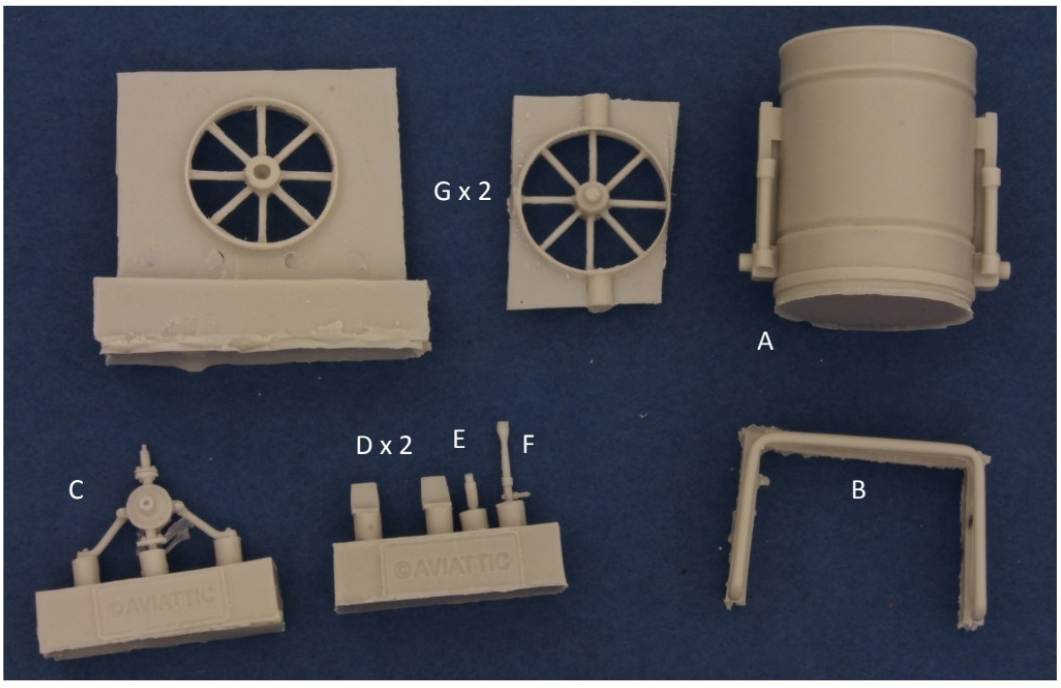
Fuel cart:

NOTE: *The fuel cart is supplied as the fuel drum, two wheels, seven fittings, handle and a fuel hose.*

Page 1

ATTRES021

WWI RFC/RAF Fuel Cart
Assembly Instructions



Part removal and cleaning

Remove all parts using a razor saw. A scalpel with a fresh blade can be used to remove thinner parts. Clean parts with a light gauge sanding stick and needle files. Wash parts in warm, mild detergent and dry before assembly. Note: that the wheel parts (G) are particularly delicate and it is important that a sharp razor saw is used to remove excess—using scalpel increases the risk of damaging these parts.

Warning: Resin dust is Harmful if inhaled. Please use suitable mask when cutting and sanding

References

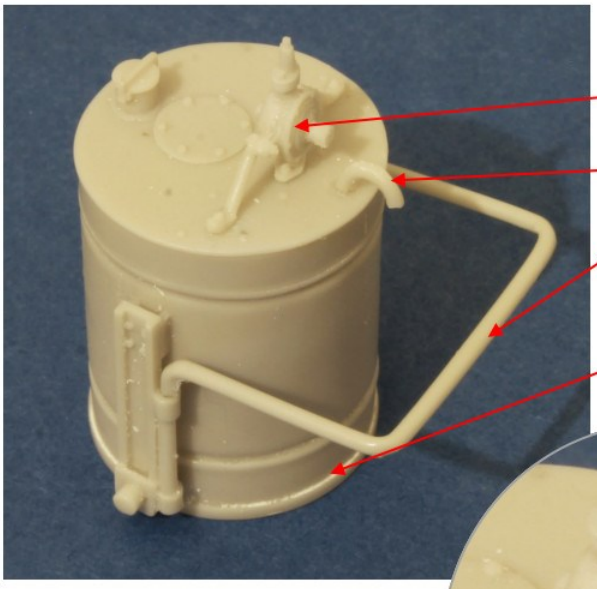
References for the RAF / RFC are even scarcer than those for German fuel carts . This sheet includes one of two know period references and walkaround photos of what we believe to be a replica fuel cart.

NOTE: *I drilled an appropriate sized hole into the hand pump C to fit the pump handle F. Also to fit the pipe E into the top of the fuel drum A. I also drilled and pinned the hand pump C to fit it into the fuel drum A.*

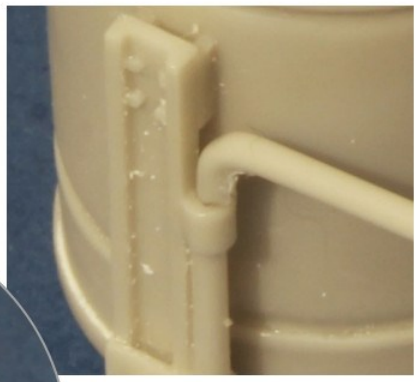
Page 2

Suggested assembly of the Resin parts

Step 1

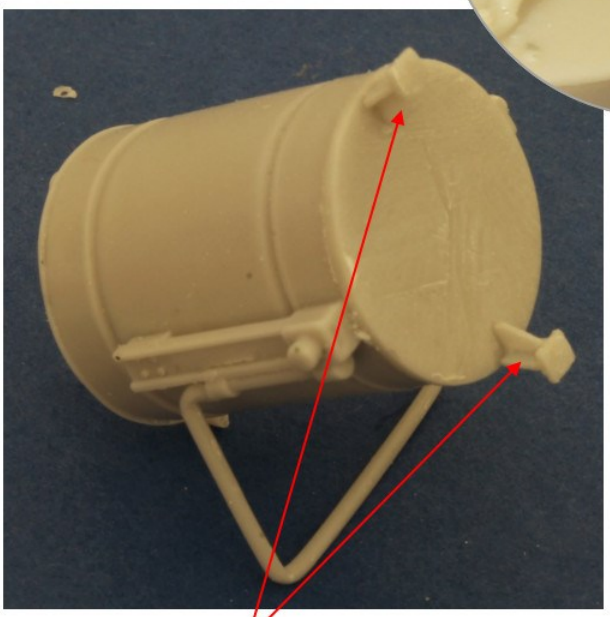


Modellers tip: Location lugs for the handle (part B) can be replaced with guitar string for added strength. Simply remove the original lugs. Drill a hole in end of each side of the handle and cement small sections of guitar string in to these holes.

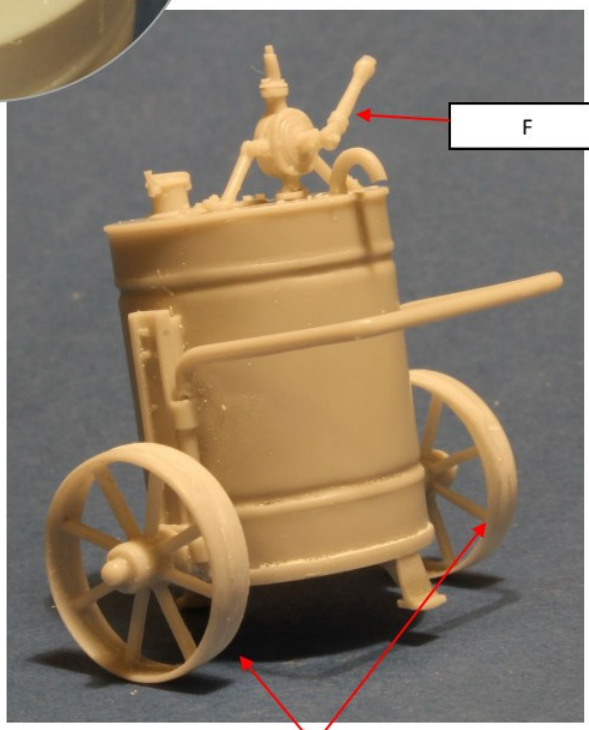


Note: attachment point for handle may need further drilling before fitting part F

Step 2



Step 3



NOTE: *For painting the fuel cart, refer to the following Painting: paragraph.*

Page 3

Painting

No colour references for an RAF re-fuelling cart exist and as such all colours suggested in these instructions are purely speculative.

Fuel Drum, Wheels and Handle bar: All of these parts are most likely to be either green or grey. There is some suggestion that drums may have had some kind of colour coding system but there is no visible evidence of this on the photograph printed below.

Lever control, Taps and pipes: These are likely to be metal or brass . The lever could be painted in a wood colour.

Rubber Hose

A length rubber hose is included within this kit. The hose is tubular and as such wire (included) can be threaded through the hose which will allow easy shaping of the hose. The hose fits to the upper end of part C.

Above: Period photographic references for these carts are very scarce

Walk around photographs

This Fuel cart on display at the Museum of Army flying, Middle Wallop is believed to be a replica.

Website: www.aviattic.co.uk

Facebook: www.facebook.com/aviattic

Contact us at: sales@aviattic.co.uk

Aviattic

Painting:

Airbrush the fuel cart assembly with a gloss black, such as ‘Tamiya’ Gloss Black (X1) or similar.

Airbrush the fuel cart assembly with ‘Alclad’ Steel (ALC112) or similar.

Airbrush the fuel cart assembly with semi-gloss clear coat, such as ‘Tamiya’ Semi-Gloss (X35) or similar. This will provide a grip coat for the subsequent chipping solution.

NOTE: *Hair spray, like weathering or chipping solutions, creates a barrier between the painted steel surface and the subsequent top coat of paint. When water is applied, it penetrates through the top coat of paint and softens it, but does not penetrate through the hair spray layer.*

Airbrush the fuel cart assembly with several light coats of hair spray. The hair spray does not need to be an expensive brand.

Airbrush the fuel cart assembly with a top coat of ‘Tamiya’ Dark Green 2 (XF81) or similar.

Wet an area of the painted surface with water and leave for several minutes.

Using a short stiff brush, gently brush the surface to gradually remove paint to create paint flaking and to reveal the Steel colour underneath.

Using a wood tooth pick, gently scrape the painted surface to create scratches.

Brush paint the wheel rims and the drum filler cap with ‘Mr. Colour’ Stainless Steel (213).

Buff the painted steel with a cotton bud to create the metallic sheen.

Brush paint the pump handle with ‘Tamiya’ Red Brown (XF64) or similar.

Brush ‘AK Interactive’ Kerosene wash (AK2039) around the filler cap, top circular plate and the base of the hand pump. Also run stain down the fuel drum from the filler cap.

Fuel hose:

NOTE: *I chose to not use the supplied wire sprung fuel hose and instead I used the ‘ANYZ’ Braided Line black 0.5 mm (AN011).*

I cut away the outlet from the top of the hand pump then drilled a hole of 0.5 mm diameter, followed by 1.1 mm diameter, centrally down into the outlet flange. I cut a short length of 1.0 mm diameter Brass tube, such as ’Albion Alloy’s’ MBT10 or similar. A long length of the ‘ANYZ’ Braided Line was cut and one end dipped into thin CA adhesive, to bind the line threads together. Once the adhesive was set I cut part of that end away then passed it through the cut tube to flush with the end of the tube. The tube was then secured into the drilled hole in the outlet flange, using thin CA adhesive. Finally, the Brass tube was brush painted with ‘Tamiya’ Dark Green 2 (XF81) or similar.

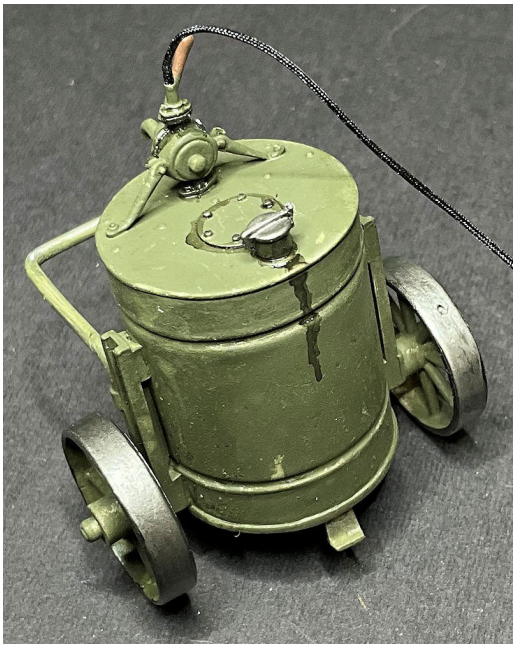


Figure 1:

NOTE: *The head supplied for this figure seemed to small in scale. Therefore I adapted a head from my 'spares' collection which was more in-scale. The remainder of the figure is supplied as the body, right arm and left hand.*

Refer to Part 5 (Resin) of this build log for more information.

Preparation:

Cut the parts of the figure from their casting blocks and sand or scrape away any seam lines and casting flash.

Carefully drill a hole of 1.2 mm diameter through both hands to allow the figure to hold the fuel hose.

I filed the neck of the replacement head to an angle so the head, when fitted, would be facing up.

Secure the head, right arm and left hand in position on the figure, using thin CA adhesive.

Drill a hole of 0.8 mm diameter centrally up into the left leg.

Cut a long length of 0.8 mm diameter Brass rod, such as that from 'Albion Alloy's or similar.

Secure the rod into the hole in the left leg, using thin CA adhesive. The rod will be used to hold the figure during painting and to secure the model into the final display base.

Fill any obvious gaps with a modelling filler, such as 'Perfect Plastic Putty' or similar and once set, file or sand to blend the surrounding surfaces.

Painting:

Airbrush the figure with a grey primer, such as 'AK Interactive' Grey (AK758) or similar.

Brush paint the figure as follows:

Flesh - 'Citadel Colour' Cadian Flesh Tone with Kislev Flesh highlights.

Shoes - 'Tamiya' Red Brown (XF64), Semi-Gloss (XF35)

Trousers/Cap - 'AK Interactive' German Uniform Base (AK3091) and Light (AK3092) 50:50%.

Jacket - 'AK Interactive' German Uniform Shadow (AK3093).

Hair/Moustache/Buttons/Cap band - ‘Tamiya’ Rubber Black (XF85).

Pocket rag - ‘AK Interactive’ Faded White (AK3029).

Cap studs - ’Tamiya’ Red (XF7) and ’Mr. Colour’ Stainless Steel (213).

Pocket tools - ’Mr. Colour’ Stainless Steel (213).

Weathering:

Sponge ‘Tamiya’ Weathering Master Set D (Oil Stain) on the trouser knees, pockets and on the jacket pockets and elbows.

Sponge ‘Tamiya’ Weathering Master Set A (Mud) on the shoes and trouser bottoms.

Brush ‘AK Interactive’ Kerosene wash (AK2039) over the pocket rag.

Figure 2:

NOTE: *The head supplied for this figure seemed to small in scale. Therefore I adapted a head from my ‘spares’ collection which was more in-scale. The remainder of the figure is supplied as the legs, upper body, feet, lower left and right arms and upper left and right arms.*

This figure will be standing on the kit supplied tail trestle as the figure will be about to refuel the aircraft at the filler cap between the cockpits.

Preparation:

Cut the parts of the figure from their casting blocks and sand or scrape away any seam lines and casting flash. The legs and upper body need to be sanded to allow the two to join together without any obvious gaps.

Carefully drill a hole of 1.2 mm diameter through the right hand to allow the figure to hold the fuel hose.

I filed the neck of the replacement head to an angle so the head, when fitted, would be facing slightly down.

Using thin CA adhesive, secure the upper body to the legs, making sure the outlines of both are aligned.

NOTE: *The arms and hands need to be secured in position so that the holes in the hands are aligned for holding the fuel hose.*

Using thin CA adhesive, secure the head and arms onto the upper body.

Using thin CA adhesive secure the lower right and left arms into their upper arms.

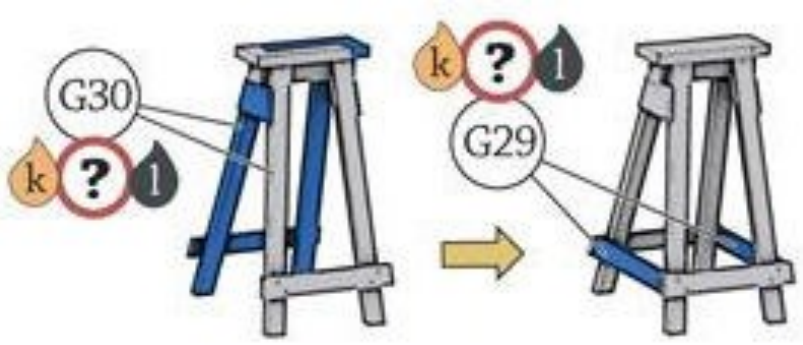
Using thin CA adhesive, secure the feet into the legs, making sure the soles of the shoes are both flat to the ground.

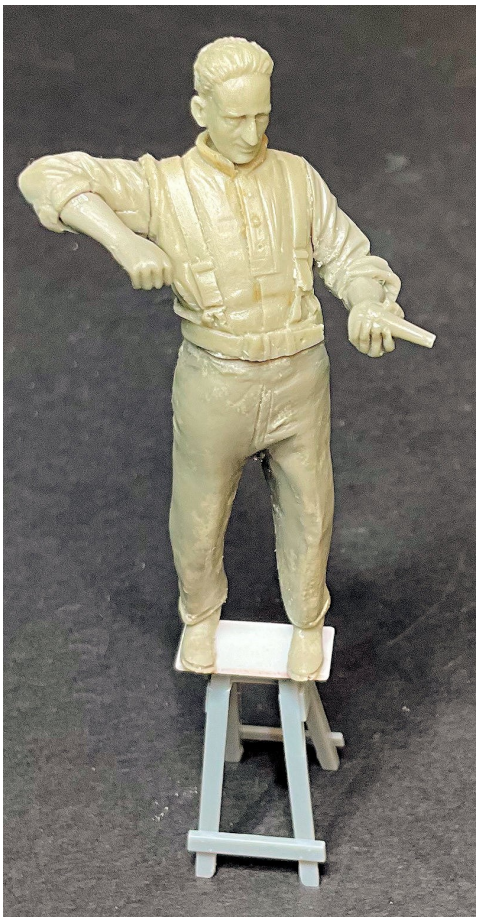
Fill any obvious gaps with a modelling filler, such as ‘Perfect Plastic Putty’ or similar and once set, file or sand to blend the surrounding surfaces.

Prepare the kit supplied tail trestle parts (G29 x 2 and G30 x 2).

Cement the trestle halves G30 together.

Cement the side braces G29 to the trestle.





NOTE: *A piece of plastic card needs to be attached to the top of the trestle to provide a larger platform to mount the figure on.*

Cut a rectangle of 0.8 mm plastic card large enough the fit the figure.

Cement the card centrally onto the top of the trestle.

Using thin CA adhesive, secure the figure onto the added trestle platform.

Painting:

Airbrush the figure/trestle assembly with a grey primer, such as ‘AK Interactive’ Grey (AK758) or similar.

Brush paint the figure as follows:

Flesh - ‘Citadel Colour’ Cadian Flesh Tone with Kislev Flesh highlights.

Hair - ‘Tamiya’ NATO Brown (XF68).

Shoes - ‘Tamiya’ Red Brown (XF64), Semi-Gloss (XF35).

Trousers - ‘AK Interactive’ German Uniform Base (AK3091) and Light (AK3092) 50:50%.

Shirt - ‘AK Interactive’ Faded White (AK3029).

Buttons/Buckles/Fuel hose nozzle - ‘Mr. Colour’ Stainless Steel (213).

Braces/Buttons - ‘AK Interactive’ British Uniform Light (AK3082).

Belt - ‘AK Interactive’ Brown Leather (AK3031).

Trestle - ‘Tamiya’ Dark Yellow (XF60) then brushed with ‘Windsor & Newton’ Griffin Alkyd oil paint (Burnt Umber).

Weathering:

Sponge ‘Tamiya’ Weathering Master Set D (Oil Stain) on the trouser knees and pockets.

Sponge ‘Tamiya’ Weathering Master Set A (Mud) on the shoes and trouser bottoms.

Brush ‘Tamiya’ Semi-Gloss cleat coat (XF35) mixed with Smoke (X19) 60:40 % over the shirt.

PART 13
DISPLAY BASE

PART 13 - DISPLAY BASE

The display case in made from piano black and clear acrylic sheet of 3mm thickness. The base shoulder, for locating the clear cover, is a second thickness on top of the base plate. This case was purpose built by Paul Moss, who has a retail outlet on Ebay - www.inperspextive.com

The grass mat used was the ‘‘Lars op’t Hof Scenery’ Pasture Autumn.

The information plaque was engraved by ‘TLS Engraving Ltd’.

Grass mat:

The grass mat was cut to the desired shape. The mat was laid onto the display base and positioned to ensure the model would clear the display top when located. A soft pencil was used to lightly trace the outline of the mat on the display base. PVA adhesive was then applied to the backing of the mat, which was then laid back onto the base, aligned to the pencil outline and gently pushed down to make proper contact. The grass mat was covered with a sheet of paper and several heavy books were then stacked onto the paper, to press the grass mat fully in contact with the display base. The books and paper were removed after several hours, when the edges of the grass mat were checked for contact (apply more PVA adhesive if not). The grass were gently brushed to remove any flatness.

Aircraft model:

The aircraft was not fixed to the display base, but left as ‘free standing’. Although this may not be as secure as fixing the model to the display base, it does mean the model will not be subjected to shock loading when being moved around, as it might be if fixed on the display. However, the location of the wheels and tail skid were scored through the grass mat to give the model a more firmer location.

The figure and accessories:

The figures and the refuelling cart were positioned on the base in their final positions and the location of the pin in the leg of the standing figure was marked on the grass mat. The location of the trestle legs, on which the second figure was standing, were marked on the mat.

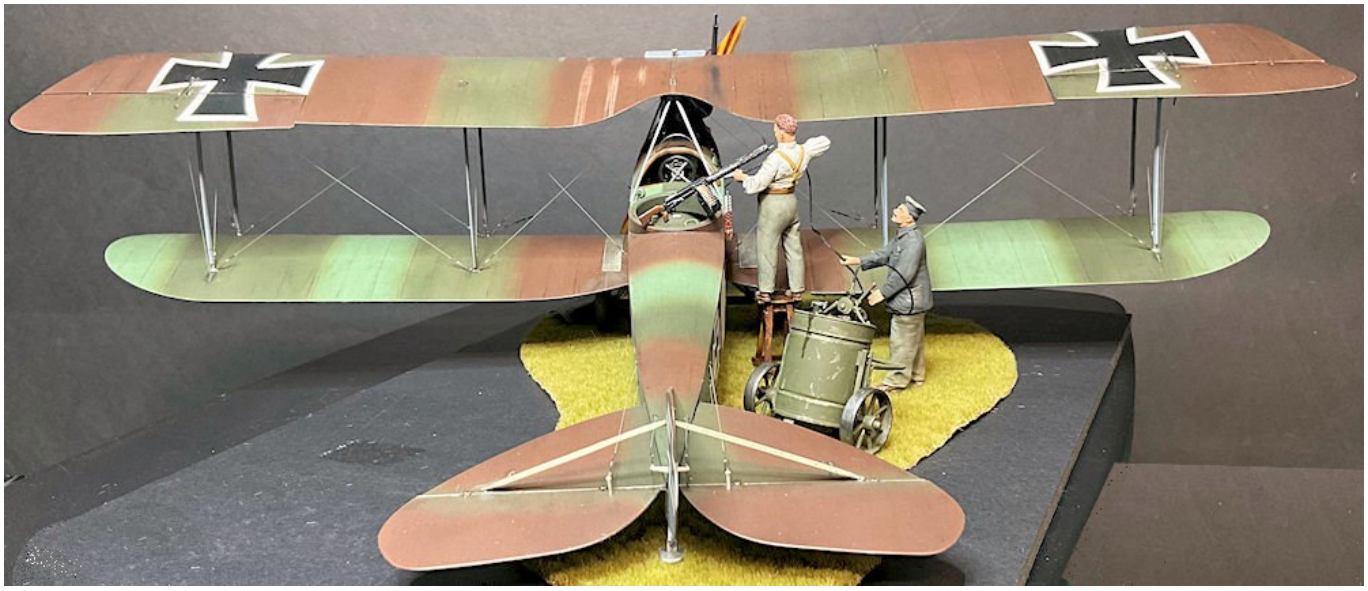
A hole of 1.0 mm was drilled through the grass mat and into (not through) the base. PVA or thin CA adhesive was then applied to the pin of the standing figure, which was then carefully seated into the drilled hole. Light pressure was applied to the figure to ensure it was fully located into the base.

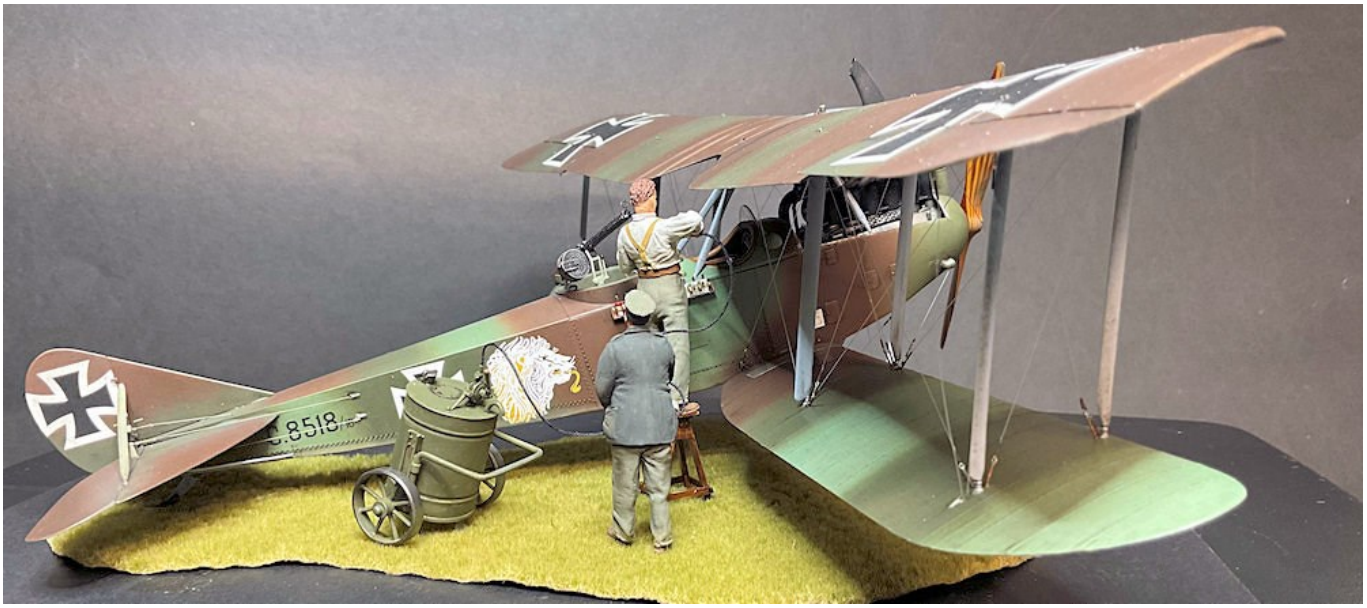
The locations of the trestle legs were cut through the mat to the display base and the trestle secure in the cut-outs using CA adhesive.

Finally the hose pipe from the refuelling cart was passed through the hands of the two figures and secured to the refuelling nozzle on the trestle figure, using CA adhesive.

PART 14
COMPLETED MODEL PHOTOGRAPHS


C.8518/



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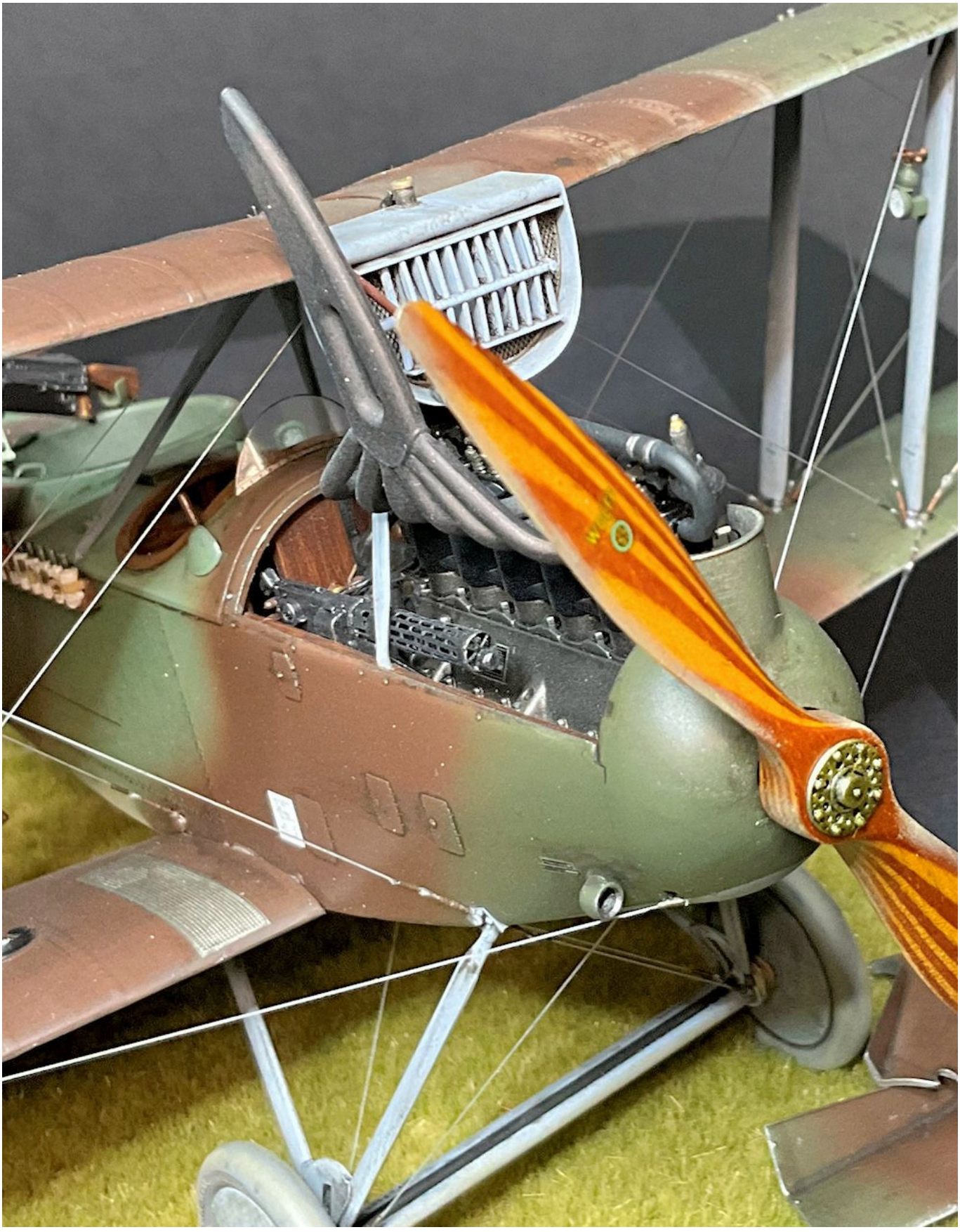

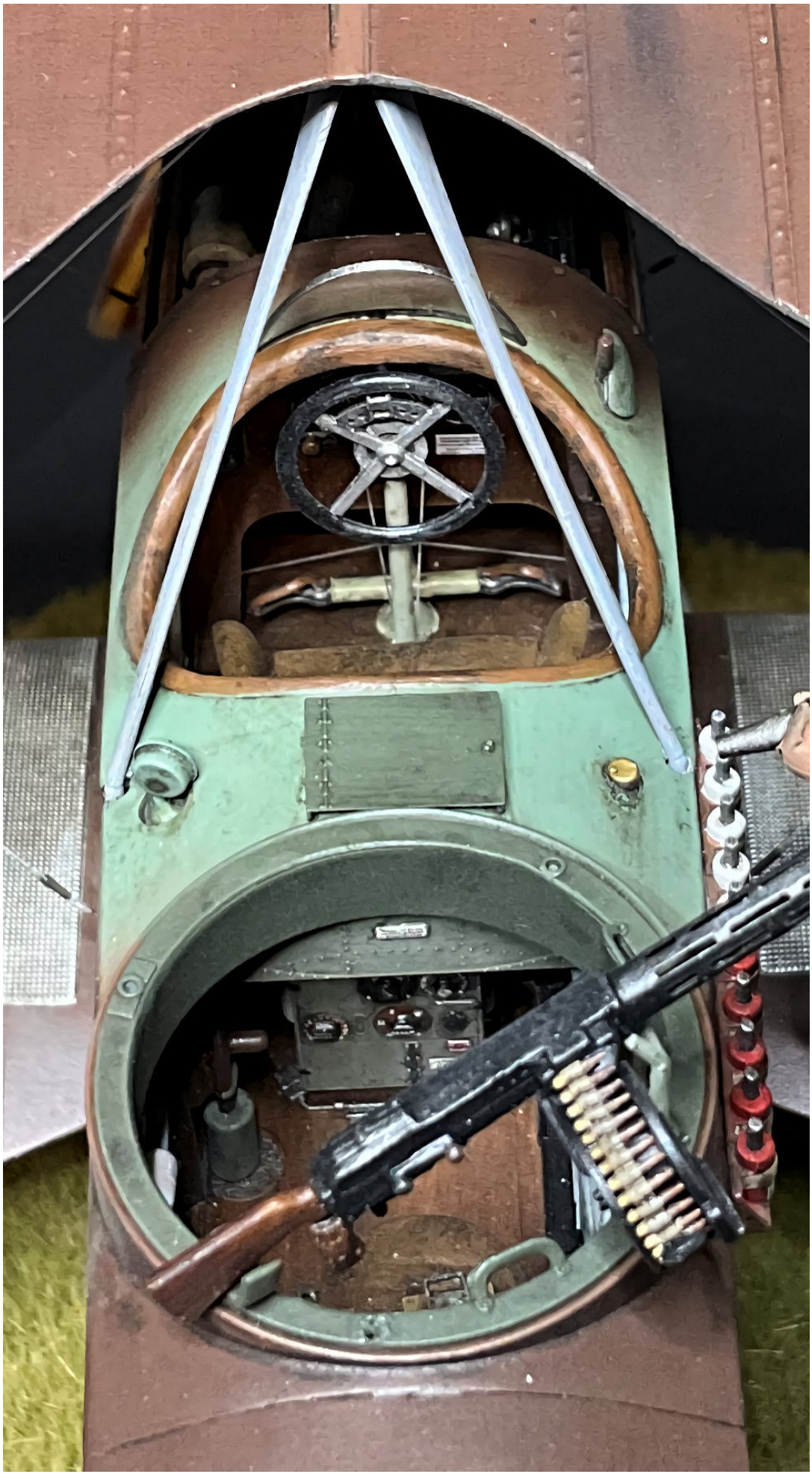

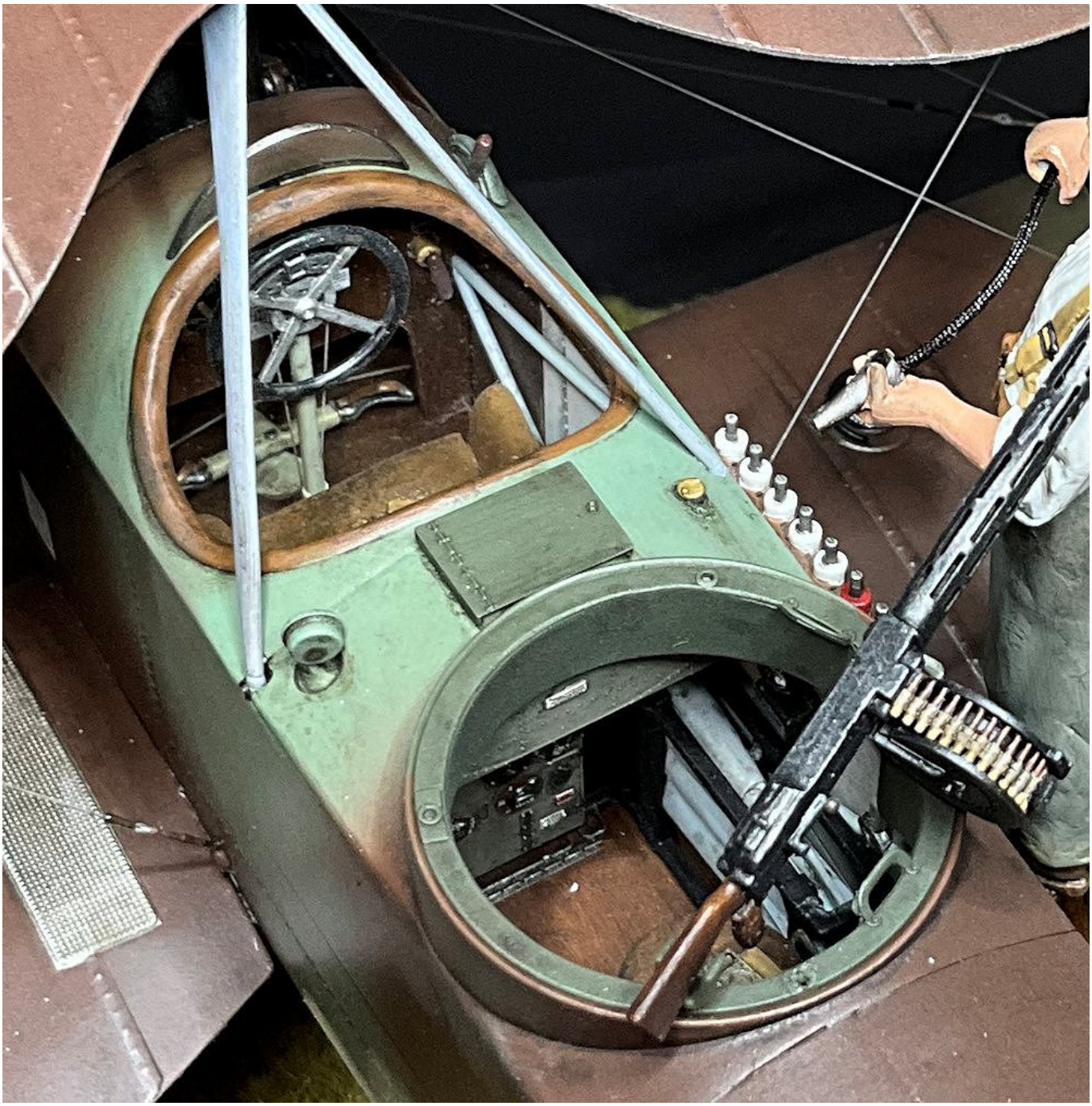

END