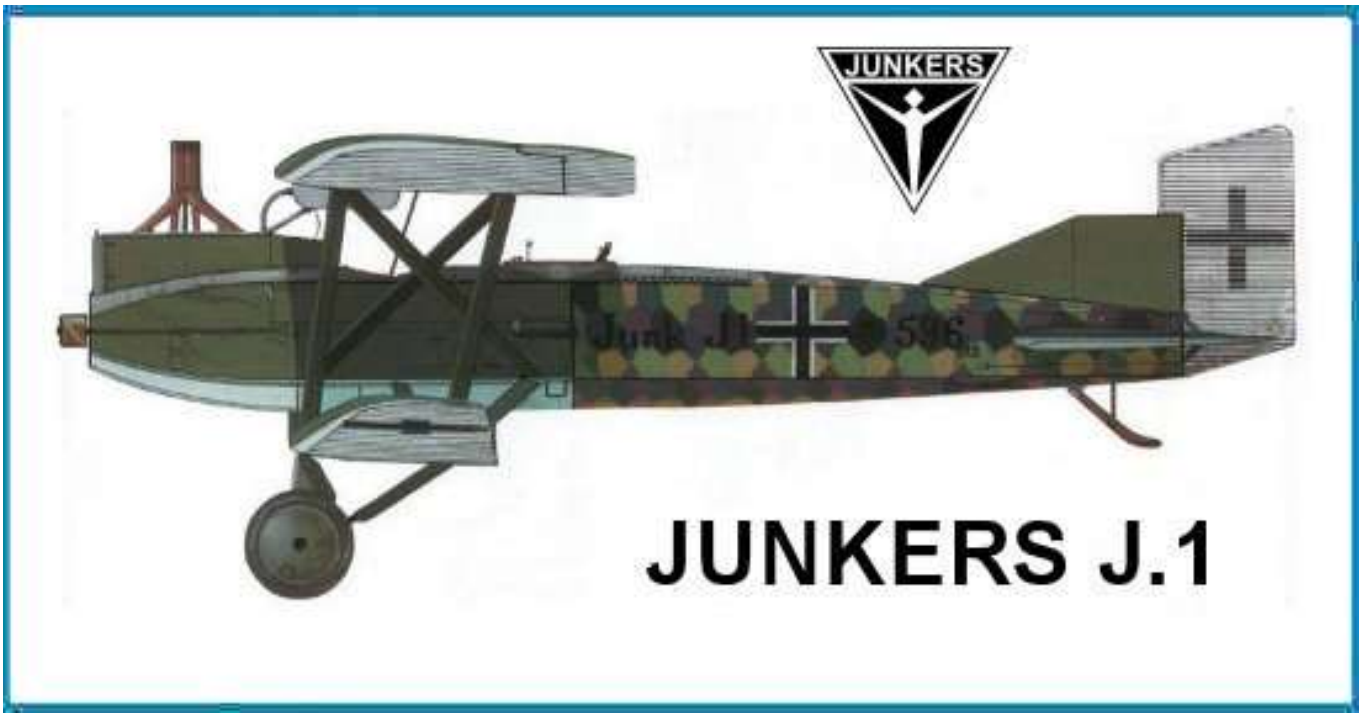


World War One Aircraft Models

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. As most modelers, I got involved in the world of construction kits at an early age, but 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, various modelers have asked if I would create 'build logs' for my future builds, which is what I now do for each build.
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, which covers the 1:32 scale Wingnut Wings' kit of the Junkers J.1.

Mike 'Sandbagger' Norris

sandbaggeruk@sky.com

Completed: August 2022

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, games PC and games console.

Sorted

AFTER MARKET

AFTER MARKET

Figures and accessories

'Wings Cockpit Figures' confident ace 1915-18 (LSK01),
'Kellerkind Miniaturen' Französischer pilot (54/065), Mechanic (54/094) and (54/017),
'Aviattic' German refuelling trolley (ATTR 011), 'ModelKasten' figure set B (ladder only).

Decals (as required)

'Aviattic' 5 colour lozenge (ATT32013),
'MDP' Mr. Decal paper clear (MDPCLRIWDP),
'Krylon' clear acrylic sealer (aerosol), 'MicroScale' MicroSol/MicroSet.

Propeller

'Proper Plane' laminated wood 'Axial' propeller (WP-017).

Exhaust pipe:

'REXx' replacement for kit part H3 exhaust (32031).

Engine:

'Taurus Models' resin fuel primers (D3219),

Weapon

'GasPatch' 1/32nd scale Parabellum LMG14 (15-32068).

Rigging accessories (as required)

'GasPatch Elite Accessories' resin turnbuckles 1/48 scale (Type C),
'GasPatch Elite Accessories' metal Anchor Points 1/48 scale (Type C),
'Albion Alloy's' Micro-tube Brass or Nickel Silver tube (0.4 and 0.5 mm diameter).
'Steelon' mono-filament (fishing line) of 0.08 and 0.12 mm diameter,
'T Force XPS' mono-filament match sinking 0.148 mm diameter,
'PART' 1/48th scale WWI Aircraft Control Horns (S48-087).

Sundries (as required)

Paints ('Tamiya' Acrylic, Humbrol Acrylic,
'Mr. Metal Colour', 'AK Interactive' Primer and micro-filler (Grey AK758, White AK759),
'AK Interactive' figure paints, Kerosene AK-2039, Oil AK-2019 wash,
'Alclad II' Lacquers, 'Alclad' Aqua Gloss 600, 'Mr. Colour' Levelling
Thinners, PVA Adhesive, 'MicroScale' Kristal Klear,
'VMS Fleky' CA adhesive (Standard and Thin), 'UHU' White Tack,
'AV' Masilla Plastica (401) putty, 'White Spirits', 'De-Lux Materials' Perfect Plastic Putty,
Sanding and/or Polishing sticks from 'Flory Models', 'Mr. Surfacer 500, 1000,1200',
'DecoArt Crafters Acrylic' (water based) paints, 'Plastruct' styrene rod, 'Tamiya' liquid cement,
'PlusModel' lead wire, 'Blacken-It' solution, 'MFH' black 0.4 mm flexible tube (P-961),
'EZ' stetch line (fine or heavy black), 'Revell' Contacta Professional cement (39604),
'Citadel' paints range, 'Krylon Industrial' Crystal Clear Acryli-Quik,
'Riich' 0.6 mm black soft pipe (RE 30005), 'Windsor & Newton' Griffin (Alkyd) oil paints.

Weathering mediums (as required)

'Flory' Clay washes, Flory Pigments, AK Interactive engine washes,
'Tamiya' Weathering Master sets.

Display Base

Etched Plaque, 'Inperspective' Acrylic base and cover,
'Lars op't Hof Scenery' grass mat (Pasture Autumn short).

AIRCRAFT BACKGROUND

AIRCRAFT BACKGROUND

References:

Windsock Datafile 39 'Junkers J.I' (by P.M. Grosz).
Canadian Aviation Museum, Ottawa.
'Flight Magazine' article of 18th March 1920.
Online 'Wikipedia'.

Background:

In late 1916 the 'Idflieg' (German Inspectorate of Aviation Troops) issued the J type design specification for an armoured ground attack and army liaison aircraft. Junkers responded with one of the most revolutionary aircraft of WWI with the Junkers J.I.
The Junkers Co. were a pioneer in the construction of all-metal aircraft with their steel monoplane (confusingly also called the J.1) being completed in 1915. This was followed by an improved version called the J.2 and finally the J.3 made from the much lighter Duraluminium, so called as it was aluminium with a cooper base, which was developed by the German metallurgist Alfred Wilm at the **Dür**ener Metallwerke AG. Hence the name '**Dur**aluminium. This material was the natural choice for use in Hugo Junkers' revolutionary J.4, designed to meet Idflieg J type specifications. The J.4 was actually designated the J.I by the Idflieg when it entered service as Roman numerals for aircraft type identification were used for military aircraft.

The Junkers J.1 (J.4) airframe was constructed entirely of Duraluminium (Dural) tubes almost completely sheathed in corrugated Dural sheet. The front fuselage was constructed from 5mm armoured steel to protect the crew from enemy fire. Initially the rear fuselage, fin and rudder were covered with fabric, but later production aircraft had the fin and rudder sheathed in corrugated sheet Dural. Development was continued post armistice, when even the rear fuselage was covered with corrugated sheet Dural. This fully corrugated aircraft design would remain a Junkers feature well into the 1930s.

Nicknamed 'the flying tank' or 'the moving van', the Junkers J.I was the A-10 Thunderbolt of its day, designed to attack enemy ground targets, while remaining impervious to ground fire. Despite being heavy, relatively slow and requiring a long take off and landing area, the J.I was popular with its crews due to the protection provided by its armoured front section and all metal airframe.

A total of 227 aircraft were produced between May 1917 and January 1919. There were losses due to accidents, mechanical failures and pilot error. However, these aircraft were apparently never shot down over allied lines, even though the French claimed to have done so on one occasion.

Specifications:

Engine - Benz Bz.IV (6 cylinder inline of 200hp [149kW])

Maximum speed - 96.3mph (155km/h)

Range - 193 miles (310 km)

Service ceiling - 13,123ft (4,000m)

Wing span - 52.5ft (16m)

Length - 29.7ft (9.06m)

Height - 11ft 2 in (3.4m)

Max weight - 4,797lb (2,176kg)

Armament - Parabellum LMG14 (0.311 in, 7.92mm) or LMG14/17 machine gun. Also stick

This particular model represents the Junkers J.1, Serial No: 596/18 located at the Junkers airfield at Dessau, Germany, in September 1918.

This aircraft was delivered to the front in September 1918. It was later found by American forces, abandoned with other aircraft in hanger No.1 at Villers la Chevres in January 1919.

Junkers J.1 aircraft, including 596/17, at the Junkers airfield at Dessau, Germany in 1918

MODEL DESCRIPTION

MODEL DESCRIPTION

('Wingnut Wings' - Kit No:32001)

References:

Windsock Datafile 39 'Junkers J.I' (by P.M. Grosz).
Canadian Aviation Museum, Ottawa.

This particular aircraft was released by 'Wingnut Wings' as one of their first four models back in 2009. As expected, any model from 'Wingnut Wings' (WNW) is at the top of quality and accuracy. The parts are manufactured from traditional styrene (plastic), not resin. There is minimal mould flash that needs to be removed and also virtually no ejection pin marks that need to be filled and sanded away. All of the main sprues, including the transparencies and photo-etch (PE) parts, are sealed in separate plastic bags, which prevents and sprue damaging another. There are eight main sprues, one transparency and one photo-etch for this model. The instruction manual is in the well known format that WNW produce and has clear and concise instructions, including coloured illustrations and photos for reference. Also the manual has a lot of information on the aircraft, including five colour profiles of the aircraft marking and colour schemes provided in the kit. The decal sheets supplied are by 'Cartograf' so should be of the best quality in both colour and registration. However, some modellers have experienced problems with applying the decals onto the corrugated surfaces of this particular models, similar to the Junkers D.I also released by Wingnut Wings.

Contents:

Cartograf decals included for 5 aircraft.
152 high quality injection moulded plastic parts.
Optional parts for early, mid and late production aircraft.
17 photo-etched metal detail parts.
Optional Parabellum LMG14 and LMG 14/17 machine guns.
Highly detailed Bz.IV engine
Highly detailed instruction book/ monograph.

Decals:

Junkers J.I 100/17, Flieger Abteilung 19, 1917.
Junkers J.I 134/17, Flieger Abteilung A (Artillerie) 263, 1918.
Junkers J.I 138/17, Flieger Abteilung 17, 1918.
Junkers J.I 802/17, 1918.
Junkers J.I 857/17, Flieger Abteilung A (Artillerie) 263, 1918.

Corrections:

NOTE: *The following are some corrections or enhancements to the kit found by myself and by other modelers during their previous builds of this model. These are all covered in the relevant chapters of this build log.*

Replacement machine gun from 'Gaspatch'

Aileron gap

Wavey aileron cover strip

Engine door bracing rods/formers

Engine push rods

Engine wiring etc

Cockpit wiring etc

Replace engine exhaust

Reduce bottom wing 'male' locators

Fuselage internal finish

Wireless trailing wire.

PART 1
WOOD EFFECTS
(General)

PART 1 - WOOD EFFECTS (General)

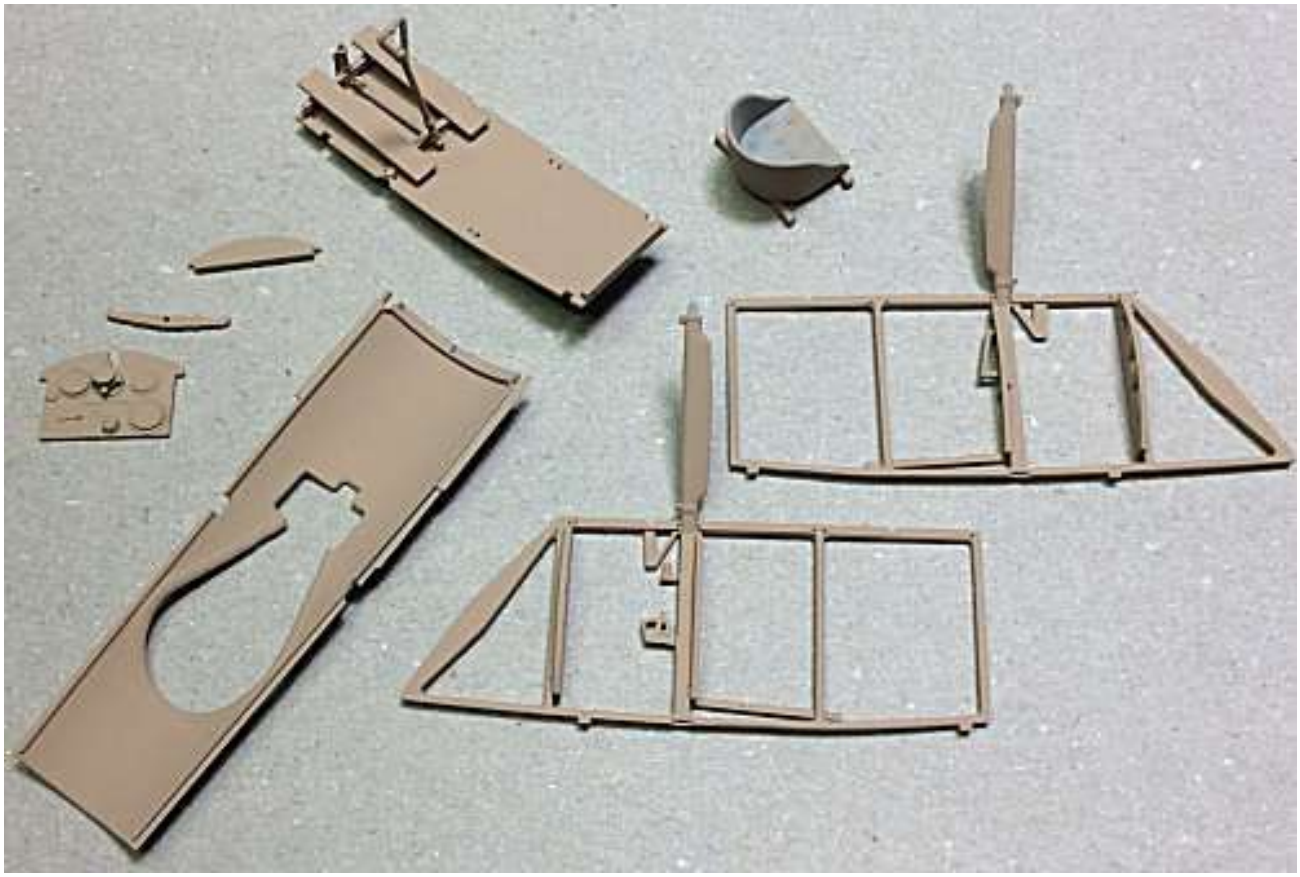
Preparation:

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 acrylic or 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 'Tamiya' Aerosol Light Grey (Fine) or White (Fine) acrylic 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' 400 Self Levelling Thinner', which aids brush painting. For most wood effect, I use 'Tamiya' Wooden Deck Tan (XF78) or Dark Yellow (XF60), suitably thinned with 'Mr. Colour' 400 Self Levelling Thinner'. 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).



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.

Below is an example of the Burnt Umber oil paint applied to a cockpit side frame.

Once the oil paint layers have dried, the final top coats can be applied to give the final effect of varnished wood.

'Tamiya' have 'Clear' coloured Acrylic paints, which are intended to be mixed with either Flat Clear (XF86), Semi-Gloss Clear (X35) or Clear (X22), to give the required finish but with a tint of the added 'Clear' colour. I use the Clear Yellow (X24) or Clear Orange (X26) to add a varnished tint to the clear coat. If using the 'Tamiya' Clear I add 'Mr. Colour' Levelling Thinners, which does improve airbrushing and avoids pooling. Otherwise I use 'Alclad' Light Sheen (ALC-311).

Although it's a lacquer, I've found that it will accept 'Tamiya' 'Clear' coloured Acrylics without any separation, which can happen with other paints. The 'Alclad' lacquers dry fast and provide a good sealing layer over the painted surfaces. When using 'Alclad' sealing coats, the golden rule is to allow the various painted surfaces to dry fully before applying 'Alclad' lacquers.

In this instance, I added a few drops of Clear Yellow (X24) into the 'Alclad' Light Sheen (ALC -311) and thoroughly mixed it. Only add small amounts to the 'Alclad' in order to control the amount of tint you desire. I increased my airbrush air pressure to around 20 psi to airbrush the sealing coats over the various cockpit items. The first coat usually dries to a more matte finish, which I assume is due to being sprayed onto the oil paint, rather than onto straight acrylic paint. Once this first coat has dried, I airbrushed several coats of just 'Alclad' Light Sheen (ALC -311), which added not only more sealing coats, but more importantly gave the desired semi-gloss 'varnished' finish I was after.

Below is an **example** of the applied 'Alclad' lacquer/X24 mix on the propeller.

NOTE: *Once you are confident using this method of replicating wood finishes, you can vary both the colour of the acrylic base coat and tinting of the sealing coat, to replicate other types of wood used in aircraft construction.*

Once the lacquer coats are thoroughly dry, any detail painting, decals or final weathering can be applied to the parts, as required, prior to fitting them to the model.

Method 2:

Windsor & Newton' Griffin (Alkyd) paints:

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

Mask off the area as required.

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 into a suitable dish.

Dip a broad flat oil brush into the White Spirit 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, wiping the brush on the sheet of kitchen roll to remove residual oil paint.

Repeat dipping and wiping the brush in the White Spirits 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.

Once the oil paint is fully dry, airbrush a semi-gloss clear coat, such as 'Alclad' Satin (ALC312-60) or similar, with a few drops of 'Tamiya' Clear Orange (X26) to give a varnished look to the finish.

PART 2
WEATHERING
(General)

PART 2 - 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. The kitchen roll can be used dry or very slightly dampened. If dampened, the dried clay is re-activated and the clay wash can be more easily be removed or worked as required.

First I seal the surface with an airbrushed semi-matte clear coat, such as 'Alclad' Light Sheen (ALC-311), which dries quickly. 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 more 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.

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 mixed to create many colour shades for different weathering finishes.

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. Use a soft brush or absorbent kitchen roll, which are dry or ***very slightly*** dampened, to brush or wipe off the clay wash in the direction of airflow over the model. Even then, dab them onto a dry piece of the paper, until they are almost dry. Any wetter and you'll find that you are removing too much of the clay wash. If that happens you can re-apply the wash and start again. 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 within 30 minutes. Then very lightly brush and/or use a piece of damp absorbent paper to remove as much you want until you get the desired effect. Once finished, run the brush under a tap to rinse out any residual clay pigments. Finally, seal the surface with your chosen clear coat, which will seal in the applied clay wash.

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 'Alclad' Light Sheen (ALC-311).

'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 quality oil paints can be too ‘gritty’ when leached of oil, so I use ’Abteilung 502’ oil paints and ‘Tamiya’ Enamel thinners (X20).

PART 3
DECALS
(General)

PART 3 - DECALS (General)

Standard decals:

NOTE: *The following is **applicable only** for decals on a **painted surface**. If decals are to be placed on top of **previously applied decals**, the decal setting solutions, **if used**, may 'eat' into the previous decals. In this case a sealing coat of clear gloss, such as 'Alclad' Aqua Gloss (ALC-600), 'Tamiya' Clear (X22) or similar should be airbrushed over the first decals, to provide a barrier against the setting solutions.*

Ensure the painted surface is smooth and free from any surface imperfections.

Airbrush a sealing coat of 'Alclad' Gloss (ALC-310) or 'Tamiya' Clear (X22) to provide a smooth surface.

NOTE: *'MicroSet' solution softens the decal to allow it to conform to the painted surface. Do not attempt to move the decal too much or it may tear.*

Wet the area using a light coat of 'MicroScale' **MicroSet** solution.

Apply the decal after it has soaked in 'warm' water enough to start to loosen the decals from its carrier backing.

Carefully move the decal into the correct position.

Once the decal is correctly positioned, use a flat brush to softly brush the water out from under the decal, working from the centre of the decal out towards the edges. I then use a dry cotton bud in the same manner. Finally, wearing cotton gloves, I apply slight pressure and slide my fingers across the decal to finally push the decal onto the surface.

NOTE: *'MicroSol' solution will soften the decal to allow it to conform fully to the painted surface. The solution usually causes the decal to wrinkle, but this is normal as the decal semi-dissolves to the surface. Once the solution has been applied, never try to disturb the decal as it will tear. Leave the solution for several hours to do its job, after which the decal will return to a smooth surface, but conformed fully to the painted surface.*

Brush the decal surface with a light coat of 'MicroScale' **MicroSol** solution.

Leave the solution for several hours to fully dry and set the decal.

Once the decals have been applied and are dry I airbrush a final sealing coat of 'Alclad' Light Sheen (ALC-311) or 'Tamiya' Semi-Matt (XF35) over the decals.

'Aviattic' linen effect 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-matt or flat is applied over the decal, to seal and protect the seal and protect the decal. However, '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, the decals 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 the decals. For this model I chose to use the 'clear' decals, in order to show the linen effect more visibly.

Application:
As the decal is to be applied over a coloured base coat (green, brown etc), first airbrush a primer coat of 'AK Interactive' primer and micro-filler White (AK759) or Grey (AK758) or similar on all of the surfaces to have the decals applied.

NOTE: *'Silvering' is caused by air being trapped in the rough surface of the paint, such as on a matte 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 the required base colours to the model surfaces.

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 either 'Alclad' Clear Coat Gloss (ALC-310) lacquer, 'Alclad' Aqua Gloss (ALC-600), 'Tamiya' Clear (X22) or 'Johnson' Pledge Floor Care finish (similar to 'Future'), all of which will form a gloss surface for applying the decals.

NOTE: *The surface must be pre-wet with like warm water with. 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 ant 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 rubbing 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.

PART 4
RIGGING
(General)

PART 4 - RIGGING (General)

General:

The first thing to check is that you have already drilled out the rigging attachment points. 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 and all necessary holes pre-drilled, the rigging can start. For the Internal cross bracing rigging and flight control cables, I use mono-filament (fishing line) of 0.08 or 0.12 mm diameter. These are effectively transparent but do give a look of steel, without the need of painting or colouring with a gel pen. The turnbuckles used can be either sintered metal or resin and obtained from 'Gaspatch Models'. Although the newer resin turnbuckles are better detailed, they are resin and therefore can break is stressed in the wrong direction. If in doubt, use the metal versions, which are much stronger. The aircraft external rigging is shown in the following illustrations, adapted from the 'Wingnut Wings' instruction manual. The RFC/RAF type aerodynamic wire was used for structural rigging and standard round wire wound cable was used for control cables. Aerodynamic wires were of either 2BA or 1/4 BST gauge.
The external rigging points will be made using 'GasPatch' resin turnbuckles and 0.4 mm diameter blacked tube to represent the late type fittings.
The rigging materials to be used are:

'Steelon' 0.08 and 0.12 mm diameter mono-filament

'GasPatch' 1/48th resin turnbuckles.

NOTE: *Most metal tube can be chemically blackened by immersion is solutions, such as Blacken-It' or similar.*

'Albion Alloys' 0.4 mm (NST04) and 0.5 mm (MBT05) diameter 'blackened' tube.

Junkers J.1

The structure of the Junkers J.1 aircraft was primarily of metal tubing with Duraluminium surface covering. The only area of the aircraft covered with linen was the rear of the fuselage. Earlier production aircraft also had linen covered tail surfaces, but this was changed to Duraluminium on later production aircraft, which includes the subject of this model build.

Rudder control:

The rudder was controlled by a cable attached to each end of the rudder bar. These cables were routed rearwards and through the rear bulkhead of the gunners cockpit. The cables were routed over pulleys behind the bulkhead and then rearwards inside of the fuselage and exited through ports at the rear of the fuselage.

From there they were routed rearwards and attached to the rudder control horns on each side of the rudder. Moving the rudder bar left or right moved the rudder left or right, causing the rear of the aircraft to swing left or right (yaw). Turnbuckles were fitted to the cables at the control horns.

Aileron control:

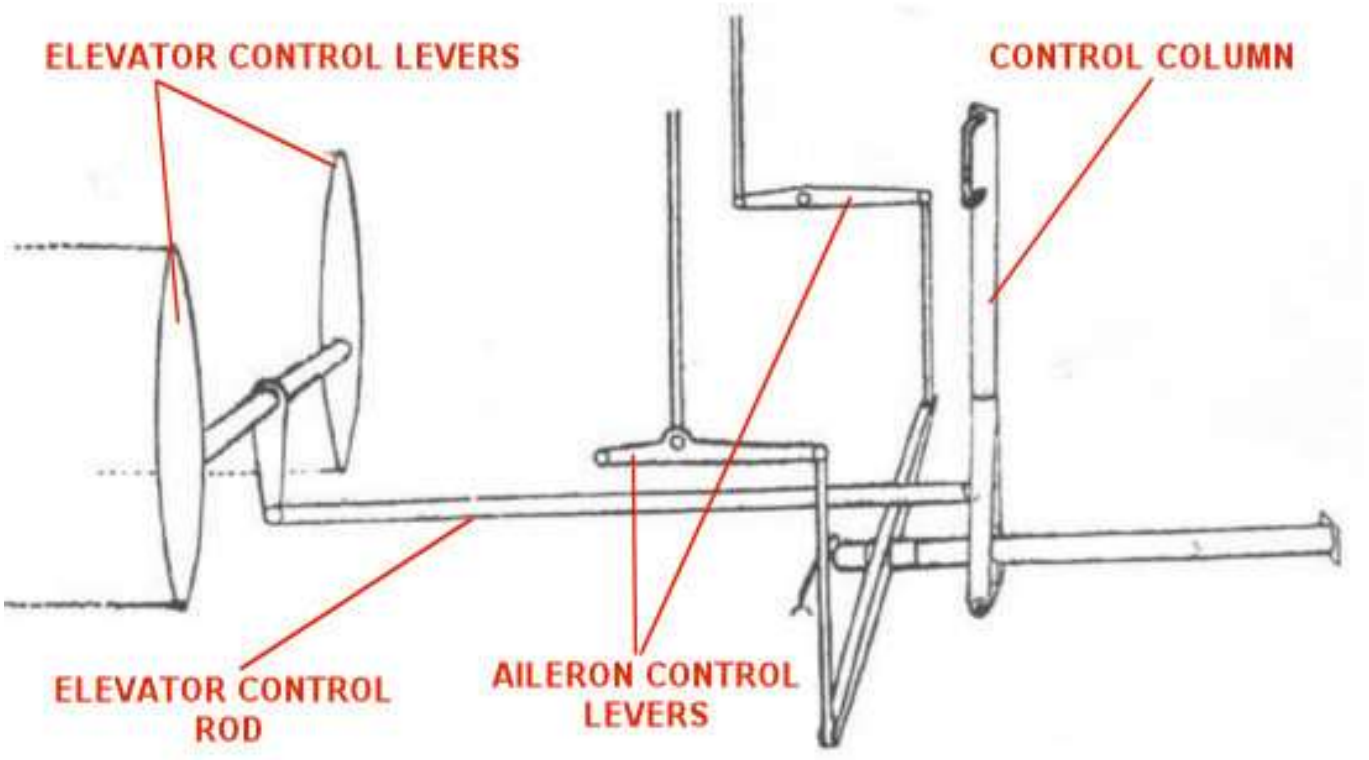
The ailerons in the upper wing were controlled by operating rods from the cockpit . The torsion bar at the base of the control column was attached to a cross bar, which in turn was connected to left and right aileron control levers. These levers were able to pivot up or down and were attached to control rods which were routed vertically up and out of the cockpit to the underside of the upper wing. From there control rods routed outboard were connected to the left and right ailerons. When the control column was moved left or right, the control levers were moved up or down in opposite directions and through the control rods, moved the ailerons up or down (in opposite directions). This caused the aircraft to roll left or right (roll).

Elevator control:

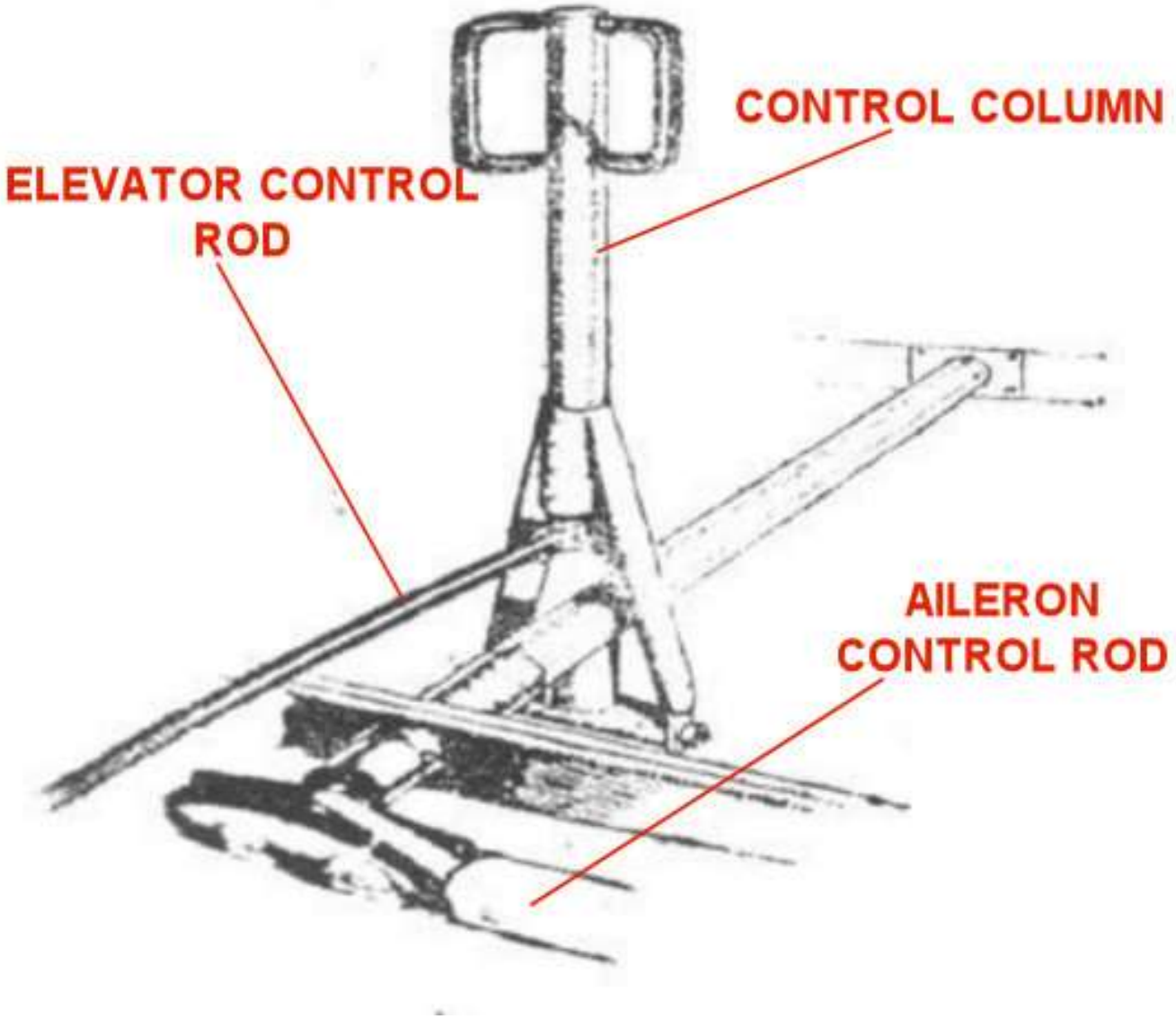
The elevator control was similar to that of the ailerons. A control rod attached to the control column was routed rearward and attached to the lever cross bar. Control cables were attached to the ends of the levers and routed rearwards through the rear bulkhead of the gunners cockpit. The cables were routed over pulleys behind the bulkhead and then rearwards inside of the fuselage and exited through ports at the rear of the fuselage. From there they were routed rearwards and attached to the upper and lower elevator control horns on the elevator. Moving the control column forwards or rearwards moved the elevators up or down, causing the aircraft to climb or dive (pitch). Turnbuckles were fitted to the cables at the control horns.

The only external and visible rigging required for this model are the control cables for the rudder and elevators. The only visible cockpit control cables were from the rudder bar.

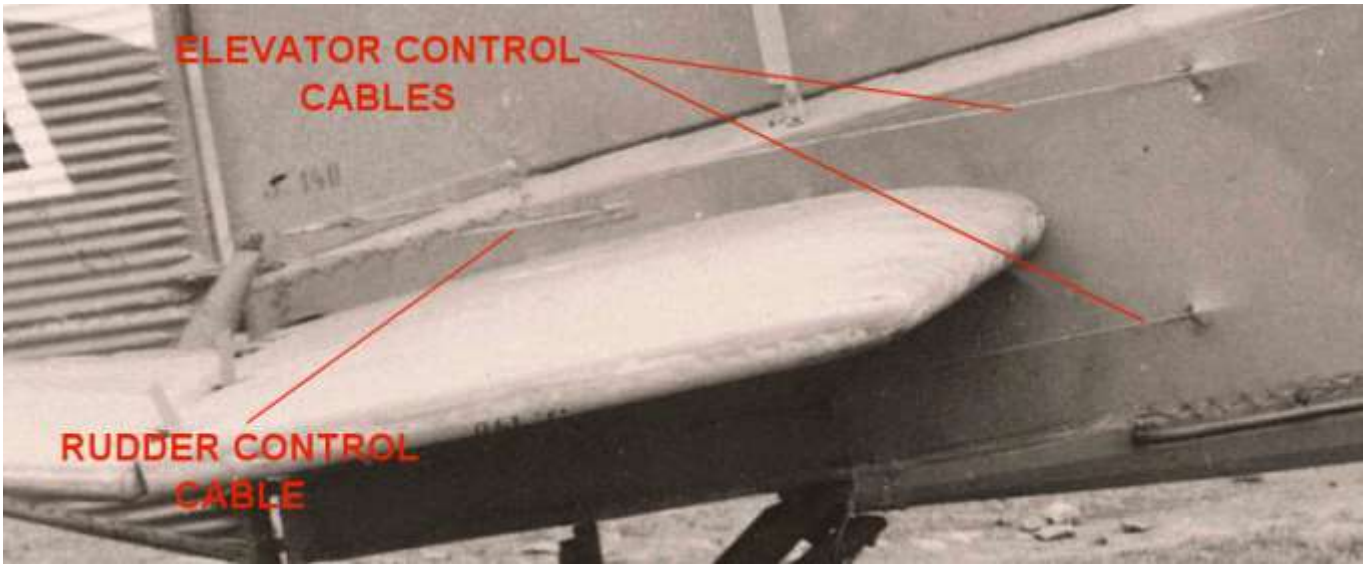
The only crossed bracing cables on the aircraft were in the rear of the fuselage between the tubular frame. However these were covered by the fuselage linen and will not be visible on this model.



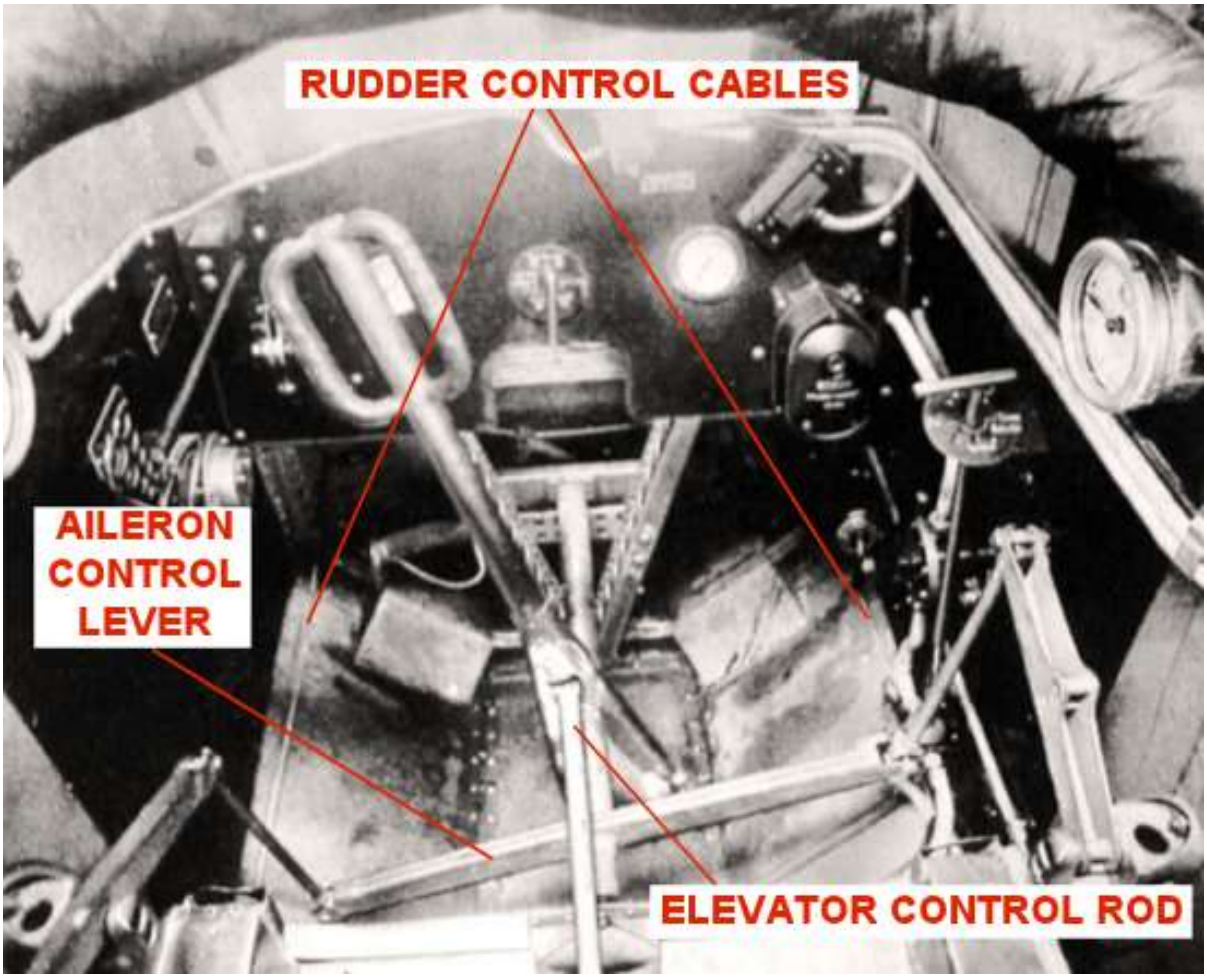
Simplified flight controls illustration



Pilots cockpit flight controls



Elevator and rudder control cables at rear of fuselage



Pilots cockpit flight controls.

Elevator and rudder control cable pulleys behind the gunners rear bulkhead.

PART 5
ENGINE

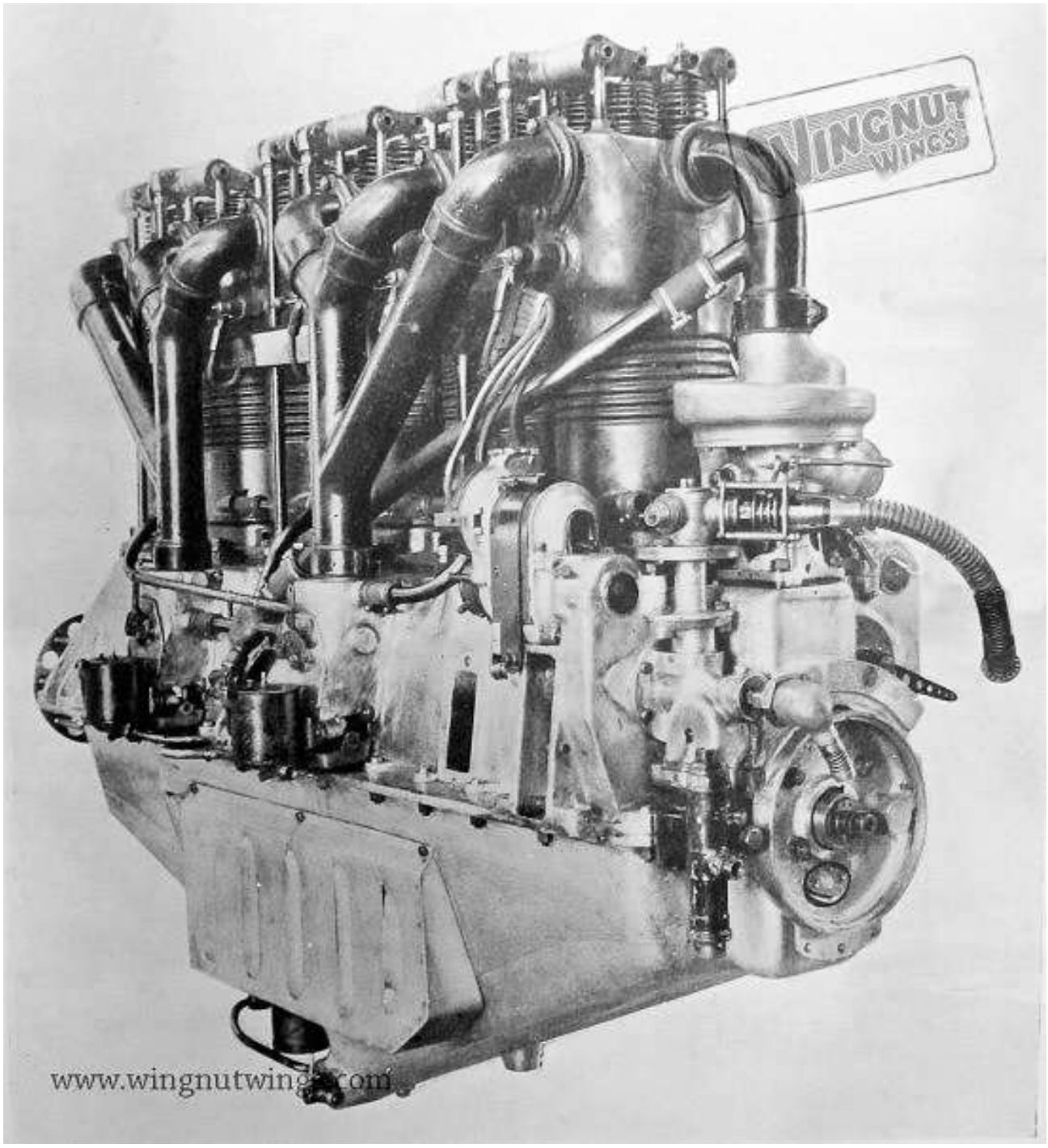
PART 5 - ENGINE

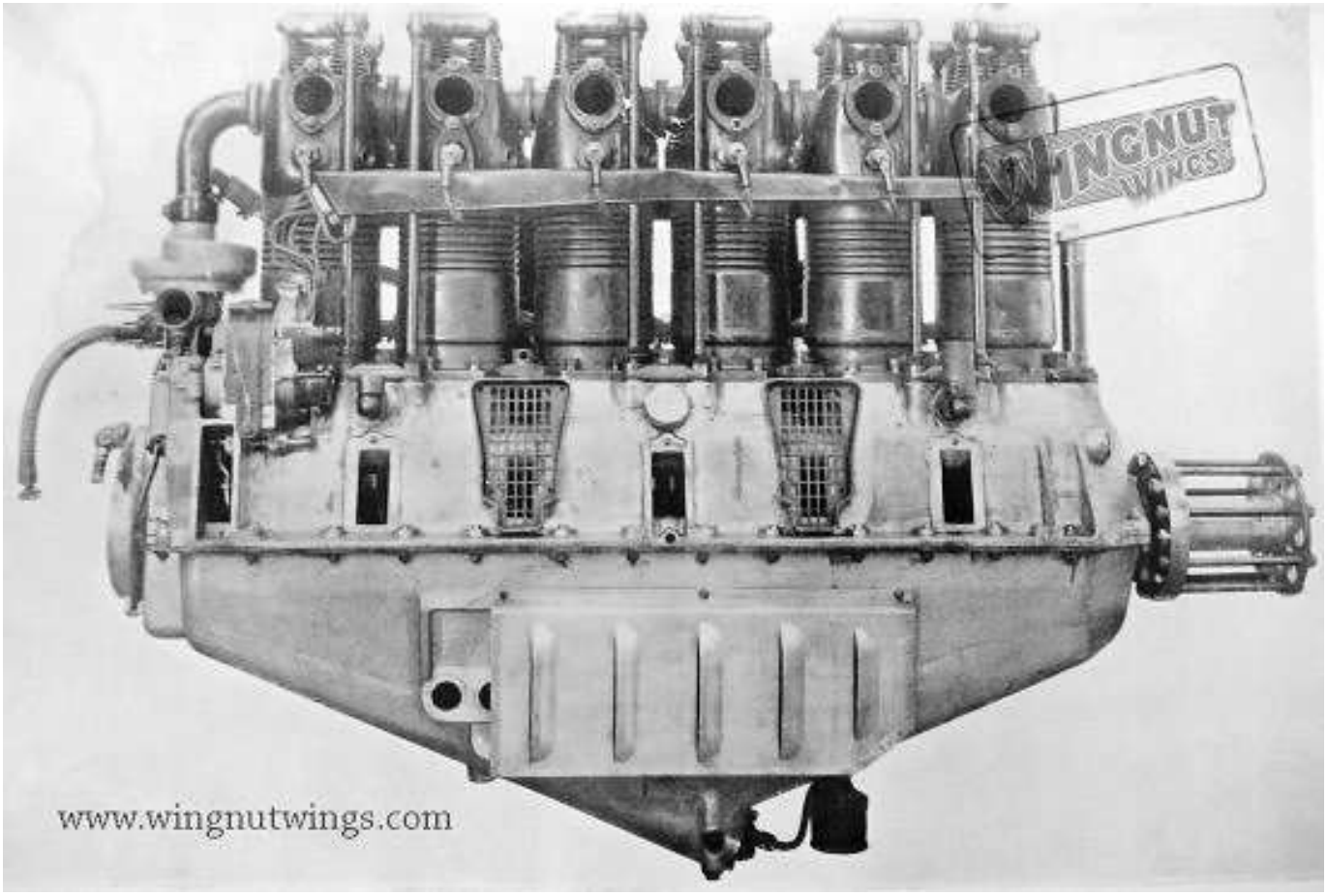
NOTE: *The 'Wingnut Wings' instruction manual is reference throughout this build. When removing any kit parts from their sprues, always remove any residual sprue tags and mould seams. Take care when removing the smaller or more fragile parts from their sprues. Too much cutting pressure can cause deformation, breakage or stress marks in the parts.*

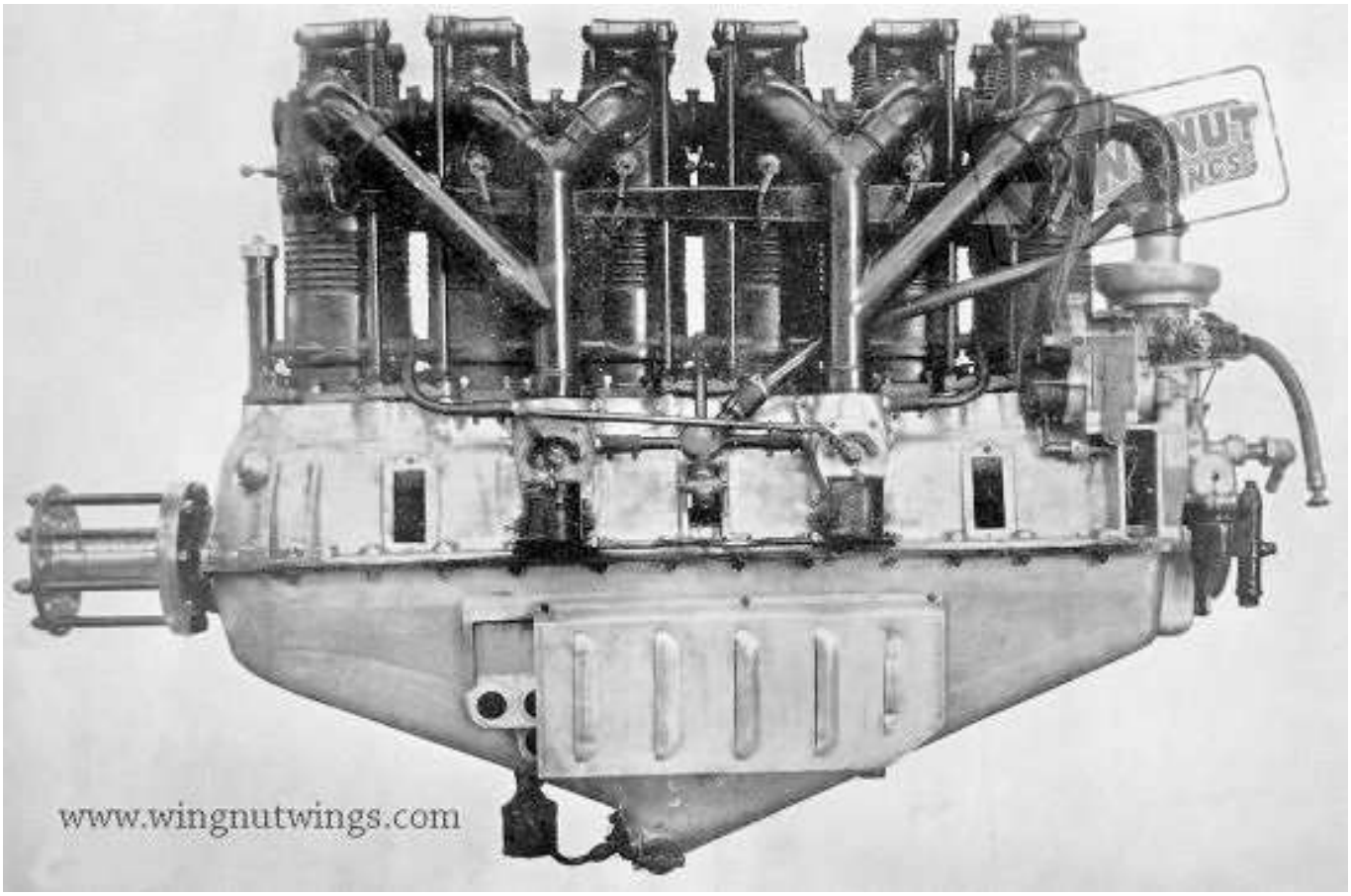
Sprue E contains the cylinder blocks halves (E3 and E4) with pre-moulded valve gear push rods. A second pair of cylinder halves (E10 and E11) are highlighted on page 2 of the instructions as being not required. Those parts do not include moulded valve gear push rods. I chose to use the highlighted pair (E10 and E11) without the push rods and to add them separately, as this will look more realistic.

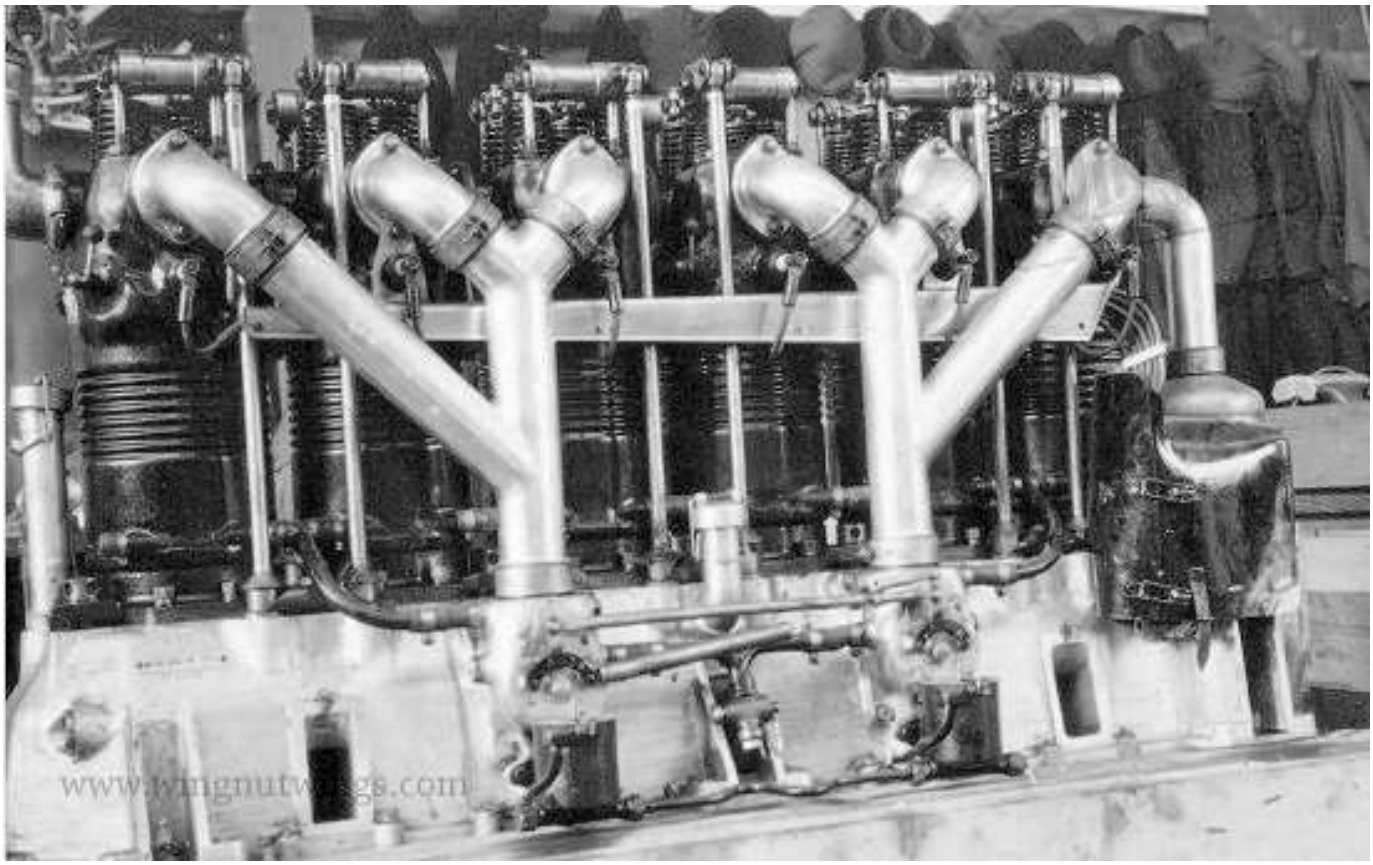
The photographs and illustrations are from 'Wingnut Wings'.

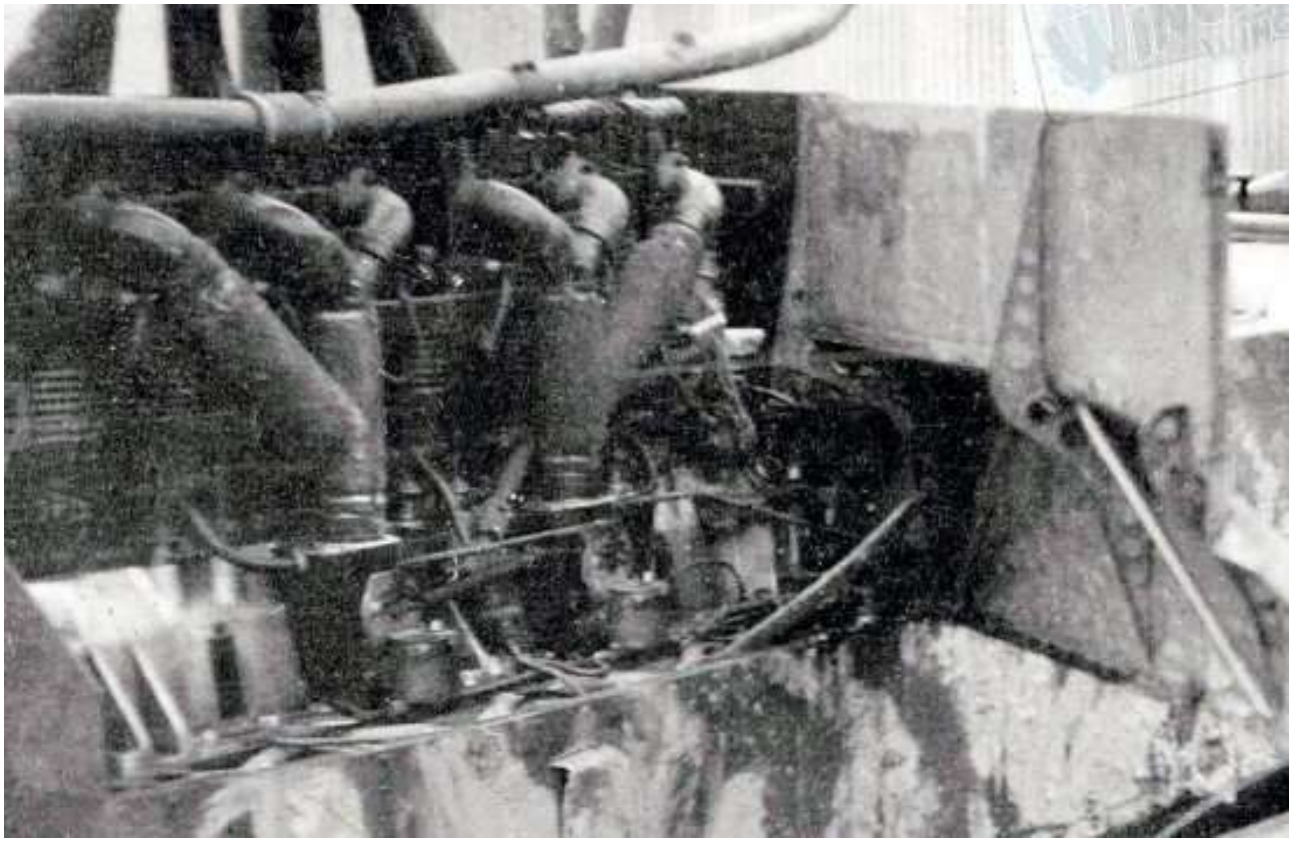
This part of the build log includes adding push rods and park plugs ignition wires.




www.wingnutwings.com


www.wingnutwings.com





All of the kit parts needed to build the engine are contained on a single sprue (E). Building the engine is straight forward following the 'Wingnut Wings' instruction manual.

Cement the engine sump (E1 and E2) together.

Cement the propeller shaft (E14) into the sump.

Cement the cylinder head (E5) to the sump.

Cement the drive housing (E7) onto the rear of the engine assembly.

Cement the circular housing plate (E13) onto the drive housing.

Cement the sump breather (A49) onto the side of the cylinder head.

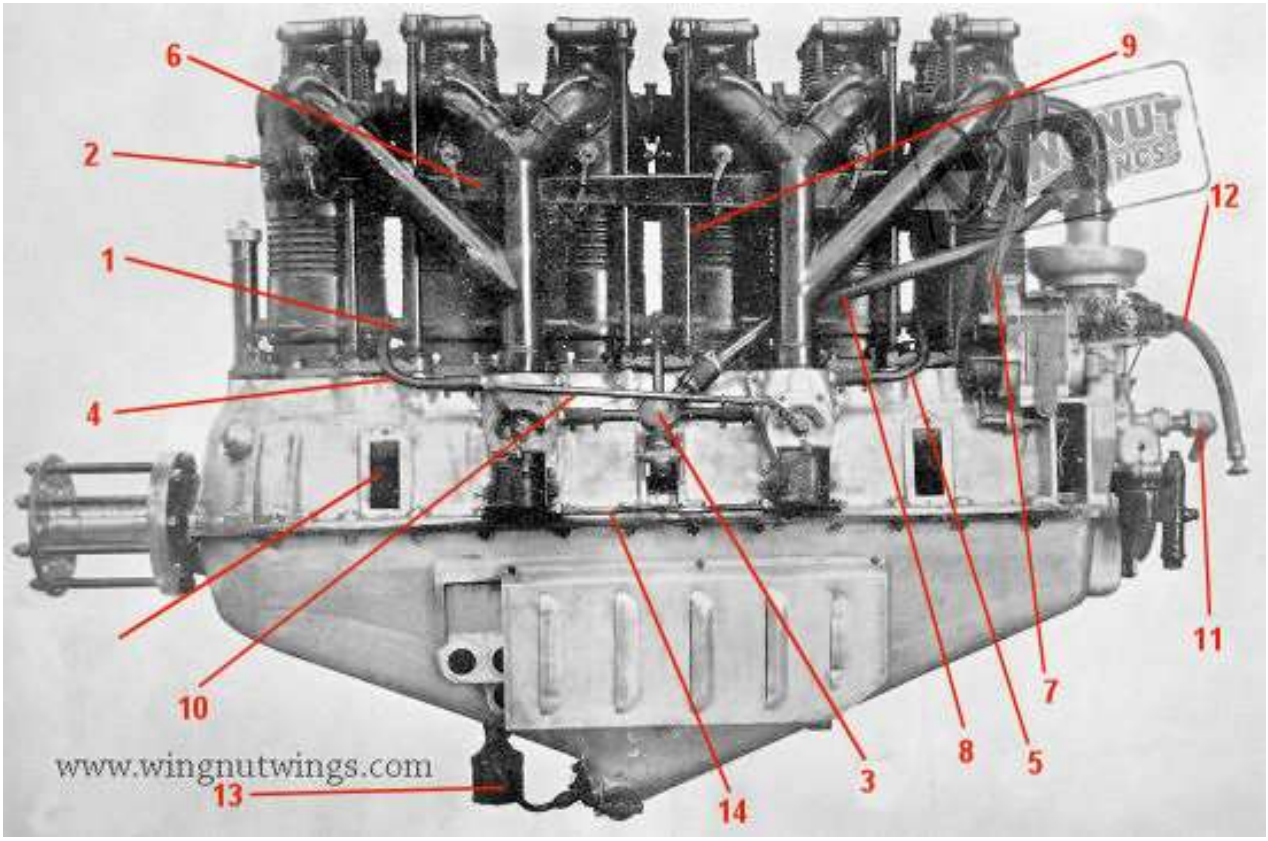
NOTE: *I chose to use the cylinder heads E10 and E11 and to add the separate valve gear push rods.*

Make sure the locators for the valve gear push rods (on both sides of the cylinder head) are clear of any styrene. If necessary, clear the locators using a 0.4 mm diameter drill.

Modifications:

NOTE: *The engine assembly, as supplied, lacks many smaller details that can be added to better represent the engine. The following numbering refers to the numbers indicated on the following photograph.*

1. Cylinders coolant pipe (left side of engine only).
2. Fuel primers (left side of engine cylinders).
3. Carburettor pre-heating gallery.
4. Carburettor pre-heating pipe.
5. Carburettor pre-heating pipe.
6. Ignition lead support tube (both sides of the engine).
7. Ignition leads (both sides of the engine).
8. Carburettor pre-heating supply pipe.
9. Valve gear and push rods (6 each side of the engine).
10. Engine controls.
11. Rear pipe connection.
12. Tachometer drive.
13. Oil filter and pipe.
14. Float chambers supply.



Preparation:

NOTE: *The following modification preparations are in the order shown on the previous photograph.*

1. Cylinders coolant pipe (left side of engine only)

NOTE: *The coolant pipe running through the base of the cylinders at the left side of the engine is moulded flat and between the cylinders. This is not realistic and will be replaced with styrene rod.*

Carefully cut away the pre-moulded pipe from between the bases of each cylinder.

Sand or scrape away residual material to smooth out the cut areas on the cylinders.

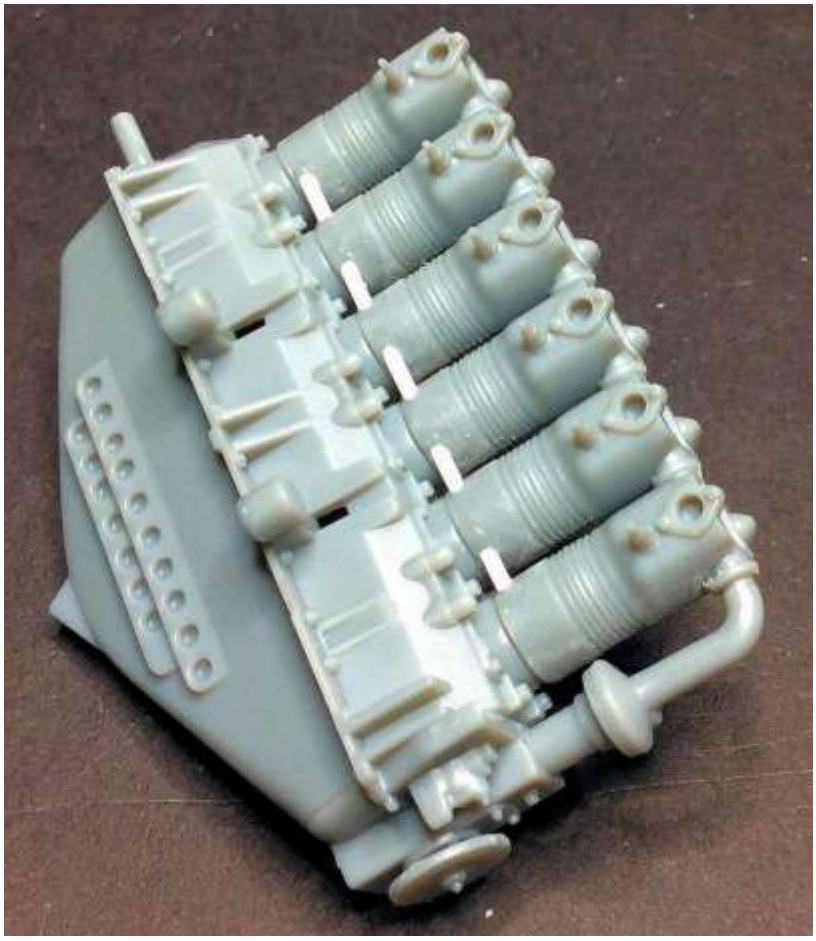
Temporarily fit the cylinders assembly onto the engine crankcase.

Cut short lengths of 0.8 mm diameter styrene rod, such as that from 'Plastruct' or similar.

Chamfer both ends of each insert such that they fit between the bases of the cylinders.

Cement the inserts between the bases of the cylinders, making sure they are aligned to each other and are parallel to the bottom of the cylinders.

Once the cement has fully set, carefully remove the cylinder assembly from the engine crank-case.



2. Ignition lead support tube (both sides of the engine):

Temporarily fit the two cylinder assembly and induction manifolds.

Cut two 30 mm lengths of 0.8 mm diameter Brass tube, such as 'Albion Alloy's' (MBT09) or similar.

NOTE: *To flatten tube I use the 'Albion Alloy's' 'Strutter' jaws in a vice.*

Slide the two tubes onto rod 0.2 mm diameter rod, such as 'Albion Alloy's' (NSR02) or similar.

Flatten the two tubes in the 'Strutter' jaws in a vice.

Remove the supporting 0.2 mm diameter rod.

Slightly chamfer one end of each tube to 45 degrees.

Use a pointer to slightly open up the openings at each end of the tubes.

Test locate the created support tubes (chamfered end forward) onto the sides of the cylinders and behind the induction manifolds.

Remove the tubes, manifolds and cylinder assembly.

2. Fuel primers (left side of engine cylinders):

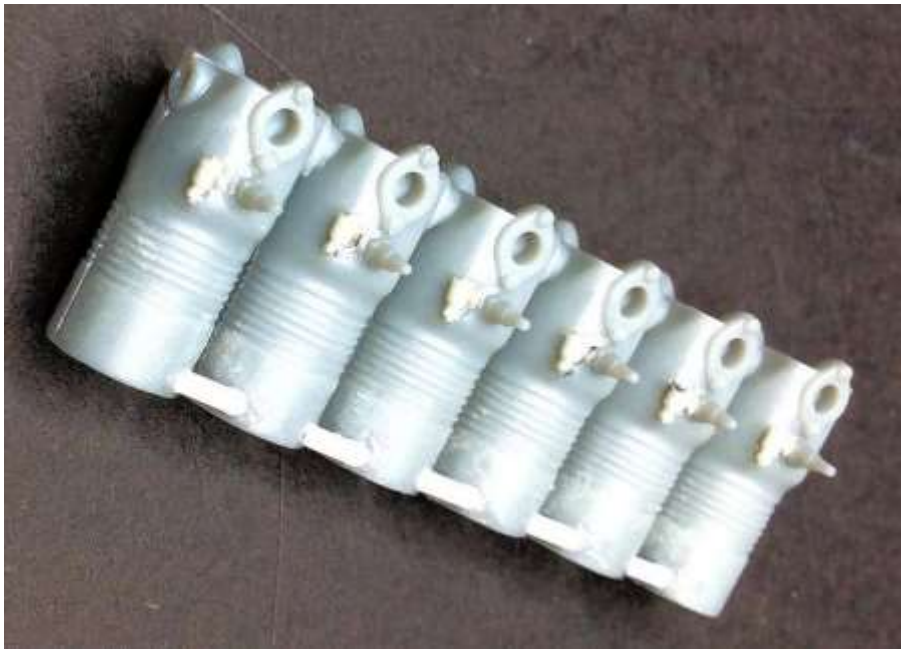
NOTE: *Fuel priming valves were fitted to the left side of the cylinders, level with and forward from the sparks plugs. Although of a different type, the fuel primers I used are the 'Taurus Models' resin fuel primers (D3219).*

Drill a hole of 0.8 mm diameter into each engine cylinder. The holes should be drilled forward from the spark plugs and aligned with them.

Cut away the body parts of six fuel primers.

Cement the bodies of the fuel primers into the pre-drilled holes in the cylinders.

NOTE: *The operating levers for the fuel primers are small and fragile. Therefore to prevent damage, the levers will be fitted later in the engine build.*



Painting:

Airbrush the cylinder head, engine crank case assembly, the two induction manifolds and the two ignition lead support tubes with a grey primer, such as 'AK Interactive' Grey (AK758) or similar.

Airbrush the cylinder head, engine crank case assembly, the two induction manifolds and the two ignition lead support tubes with a semi- black, such as 'Tamiya' Black (X18) or similar.

Airbrush the engine crank case assembly with 'Alclad' Aluminium (ALC-101) or similar.

Airbrush the two induction manifolds with 'Alclad' Exhaust Manifold (ALC-123) or similar.

Brush paint the carburettor housings on the bottom of the induction manifolds with 'Mr. Colour' Stainless Steel (213) or similar.

Cement the cylinder head onto the engine crank case.

Brush paint the added fuel primer bodies and the two carburettor float chambers with 'Mr. Colour' Brass (219) or similar.

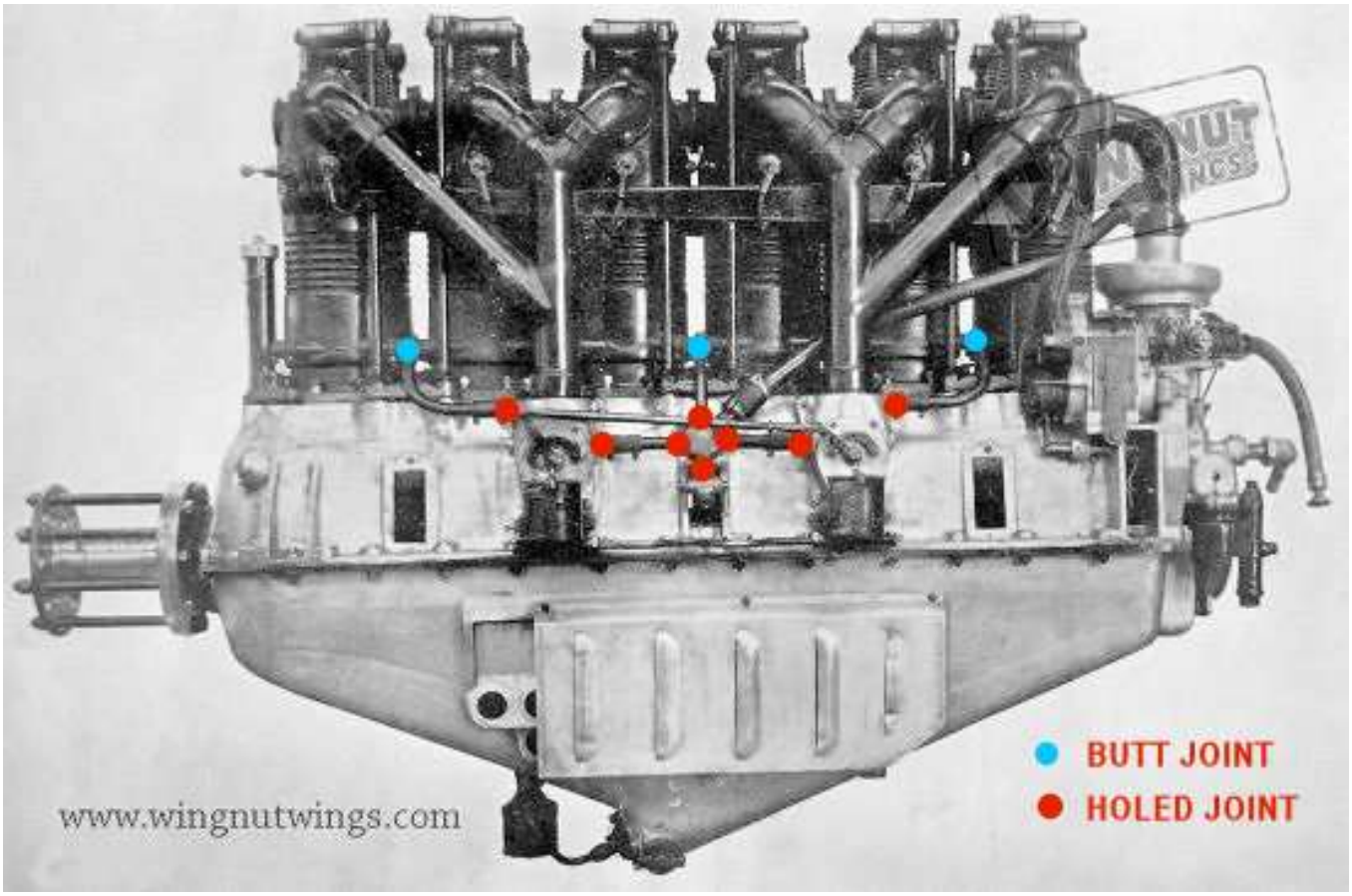
Brush paint the base of the twelve spark plugs with 'Mr. Colour' Stainless Steel (213) or similar.

Brush paint the spark plug bodies with 'Tamiya' Deck Tan (XF55) or similar.

Brush paint the top tube of the drive housing (E7) with 'Tamiya' Semi-Gloss Black (X18) or similar.

3, 4 and 5 Carburettor pre-heating gallery:

NOTE: *Refer to the following illustration for the location of drilled holes.*



Using a piece of styrene rod of 2 mm diameter, drill a hole of 0.5 mm diameter centrally through the rod and close to the end of the rod.

Drill a second hole of 0.5 mm diameter centrally through the rod and at 90 degrees to the previously drilled hole.

Cut away a 2 mm length of the drilled end of the styrene rod, to create a disc with the two 90 degree crossed holes.

Drill holes of 0.6 mm diameter into, **but not through**, the sides of the carburettor housings at the base of the intake manifolds. The holes should be aligned to the centre line of the induction pipe.

Cut a length of 0.5 mm diameter Brass rod, such as 'Albion Alloy's' (MBR05) or similar and pass the rod through one of the pre-drilled holes through the styrene disc.

Trim the length of the rod such that it can be inserted into the pre-drilled holes on the inner faces of the carburettor housings with the induction manifolds temporarily fitted to the engine.

Leaving the assembly located on the engine, cut and bend three lengths of the 0.5 mm diameter tube, such that they can be inserted into the top pre-drilled hole in the styrene disc and the pre-drilled holes in the outer faces of the carburettor housings. The other end of the three tubes should be cut such that they are in contact with the previously added coolant pipe at the base of the engine cylinders.

Drill a hole of 0.6 mm diameter into the engine crank case. The hole should be located centrally between the two raised edges that are between the two carburettor housings.

Cut and bend a length of the 0.5 mm diameter tube, such that it can be inserted into the bottom pre-drilled hole in the styrene disc and into the pre-drilled hole in the engine crank case.

Remove all of the rods except the top rod in the styrene disc and the horizontal rod through the disc into the carburettor housings.

Apply thin CA adhesive to secure:

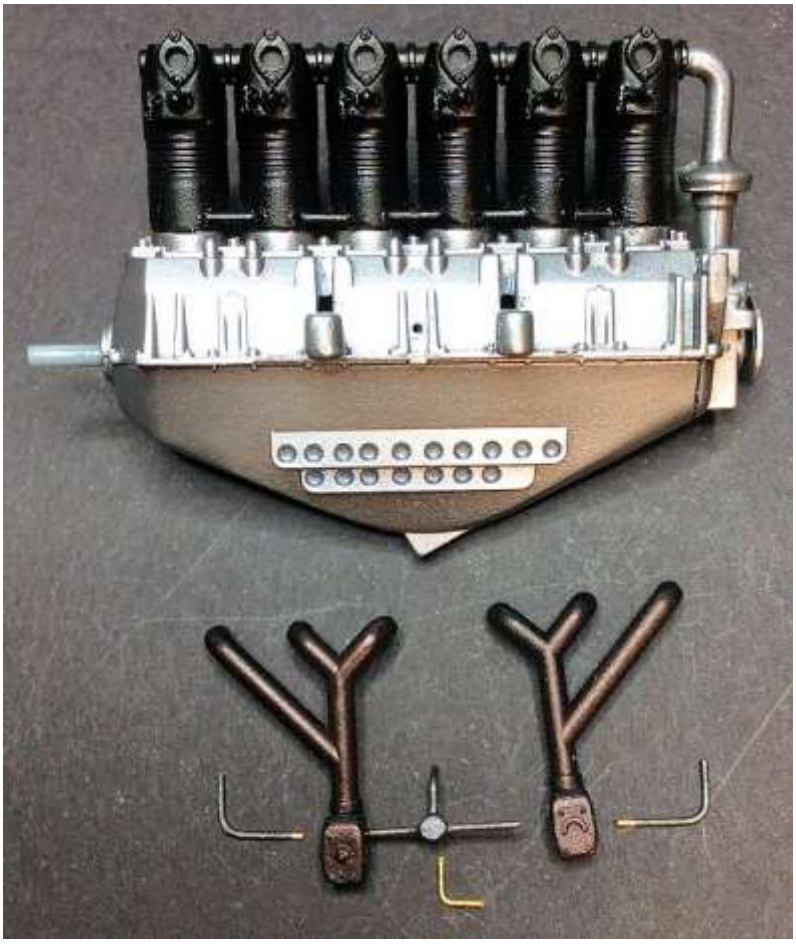
The top rod into the styrene disc.

The horizontal rod into the styrene disc.

The horizontal rod into the left carburettor housing only. **Do not apply adhesive** to the horizontal tube/right carburettor housing joint.

Once the adhesive has fully set, carefully remove the induction manifold and rod assembly.

Brush paint the rods and styrene disc with ‘Tamiya’ Metallic Grey (XF56) or similar.



Painting (continued):

Airbrush the two ignition lead support tubes, the two magnetos and the six cylinder head valve gear assemblies with a black primer, such as ‘AK Interactive’ Black (AK757) or similar.

Airbrush the six cylinder head valve gear assemblies with ‘Tamiya’ Metallic Grey (XF56) or similar.

Brush paint the faces of the two magnetos with ‘Tamiya’ Hull Red (XF9) or similar.

Brush paint the faces of the twelve cylinder heads ports for the induction manifolds and exhaust pipes.

Brush paint the front of the magneto housings with ‘Mr. Colour’ Stainless Steel (213) or similar.

Brush paint the control cylinder below the faces of magnetos with ‘Mr. Colour’ Brass (219) or similar.

6. Ignition lead support tube (both sides of the engine):

NOTE: *A spark plug was fitted into both sides of each engine cylinder. The plugs were connected to ignition leads which were routed in support tubes attached the both sides of the cylinders. The leads were connected to the magnetos and into the outer rim of the front face, not into the front face itself.*

Cut twelve lengths of 0.3 mm diameter lead wire, such as that from 'PlusModels' or similar.

Using thin CA adhesive, secure the ends of six of the wires into and at the end of each ignition tube (not the chamfered end).

Brush paint the twelve wires 'Tamiya' Semi-Gloss Black (X18) or similar.

Using thin CA adhesive, secure the tubes (with the chamfered end forwards) horizontally onto the engine cylinders and at the top of the cylinder cooling fins. The tube ends should be at the centre of the front and rear cylinders.

7. Ignition leads (both sides of the engine):

Drill six holes of 0.4 mm diameter around the rim of the two magnetos and inline with the pre-moulded stubs on the magneto faces.

Carefully trim the ends of the twelve ignition wires on the two support tubes such that they can be secured into the pre-drilled holes in the rim of the two magnetos.

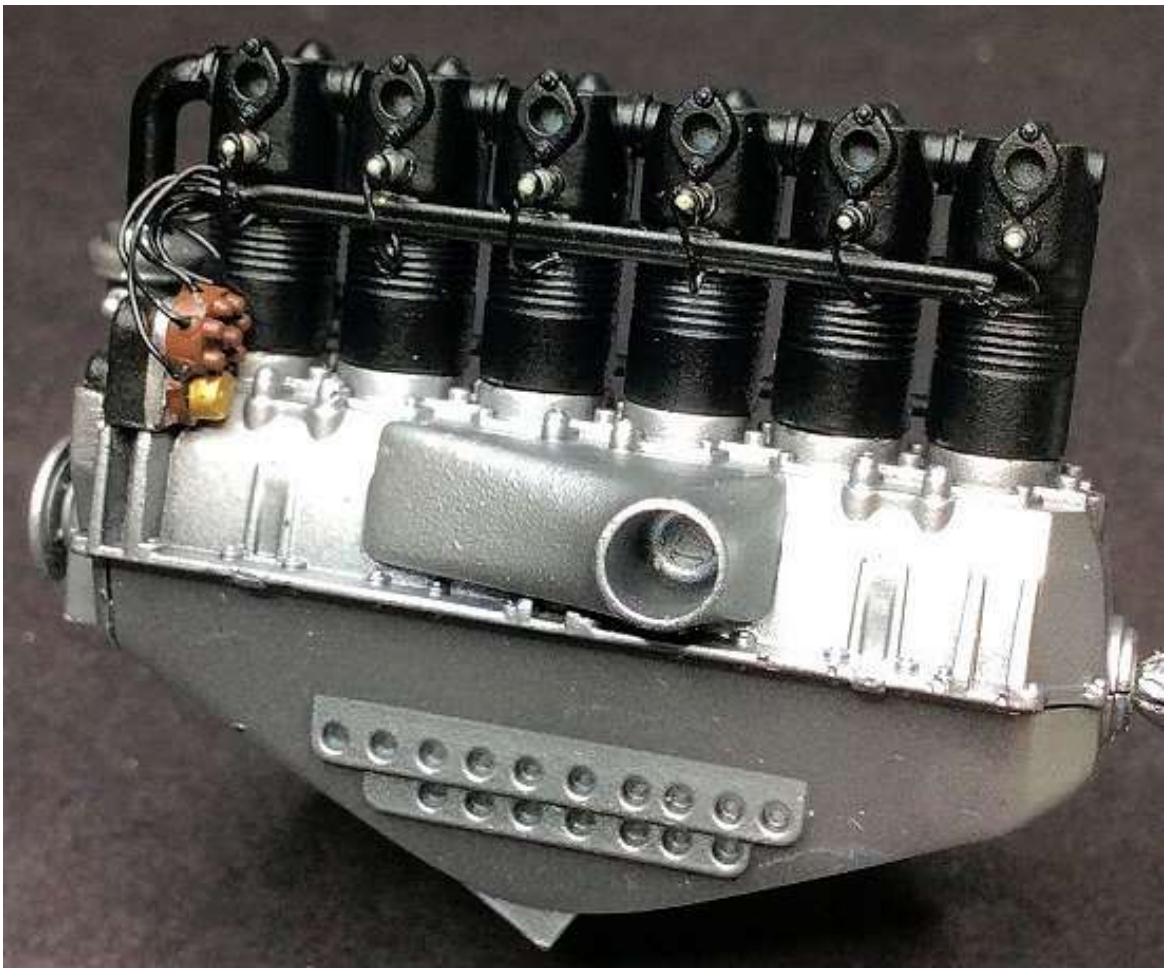
Secure the leads into the pre-drilled holes in the magnetos using thin CA adhesive.

Cut twelve lengths of 0.3 mm diameter lead wire, such as that from 'PlusModels' or similar.

Brush paint the twelve wires 'Tamiya' Semi-Gloss Black (X18) or similar.

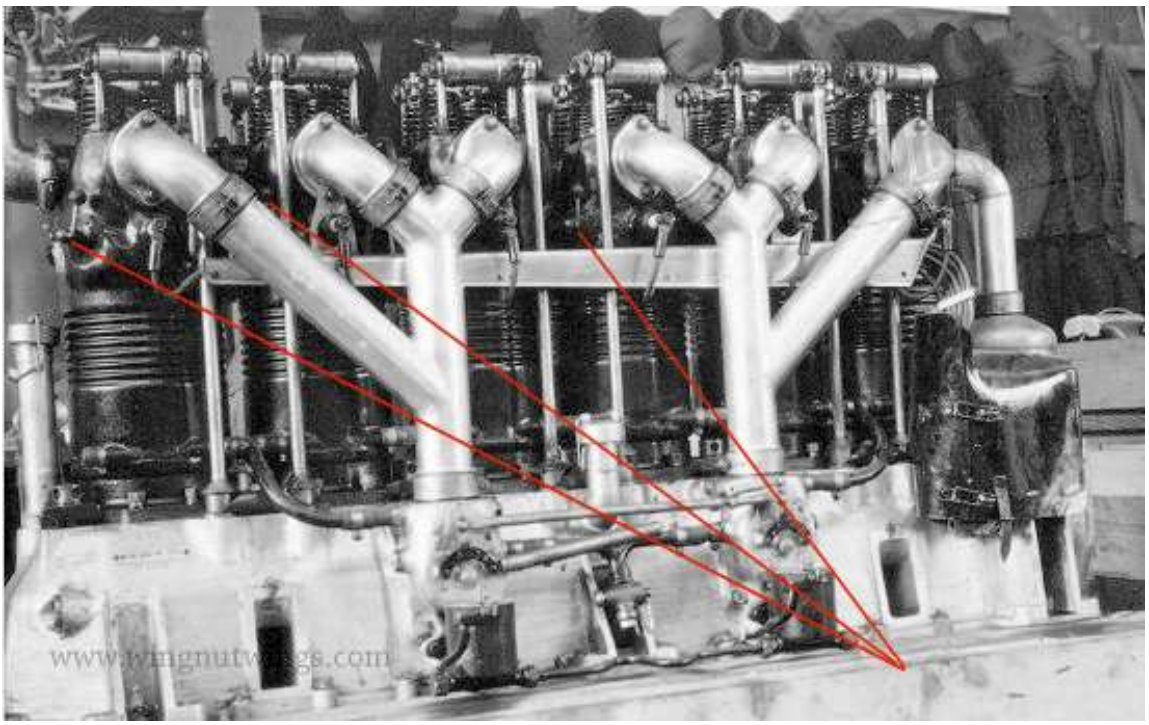
Bend one end of the wires around a 0.5 mm diameter drill to form a loop.

Using thin CA adhesive, secure the loops of the wires onto the ends of the spark plugs.



2. (continued) Fuel primers (left side of engine cylinders)

NOTE: *The bodies of the fuel primers were fitted earlier in this engine build. At this stage of the build it's best to fit the operating levers for the fuel primers.*
The engine as supplied is not intended to have fuel primers fitted. Fitting these ***may interfere*** *with adding three of the push rods on the left side of the engine. If this happens, refer to the 'Valve gear and push rods section later in the engine build.*

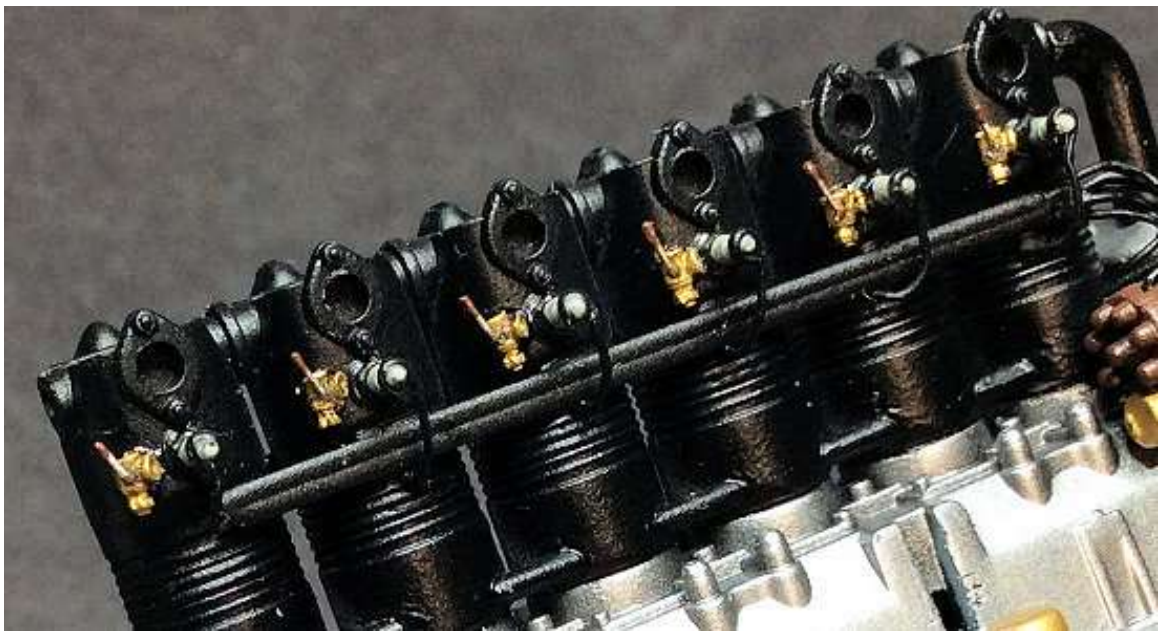


Cut six short lengths of 0.2 mm diameter Nickel-Silver rod, such as 'Albion Alloy's' (NSR02).

Drill a hole of 0.3 mm diameter into the forward side of the fuel primer bodies.

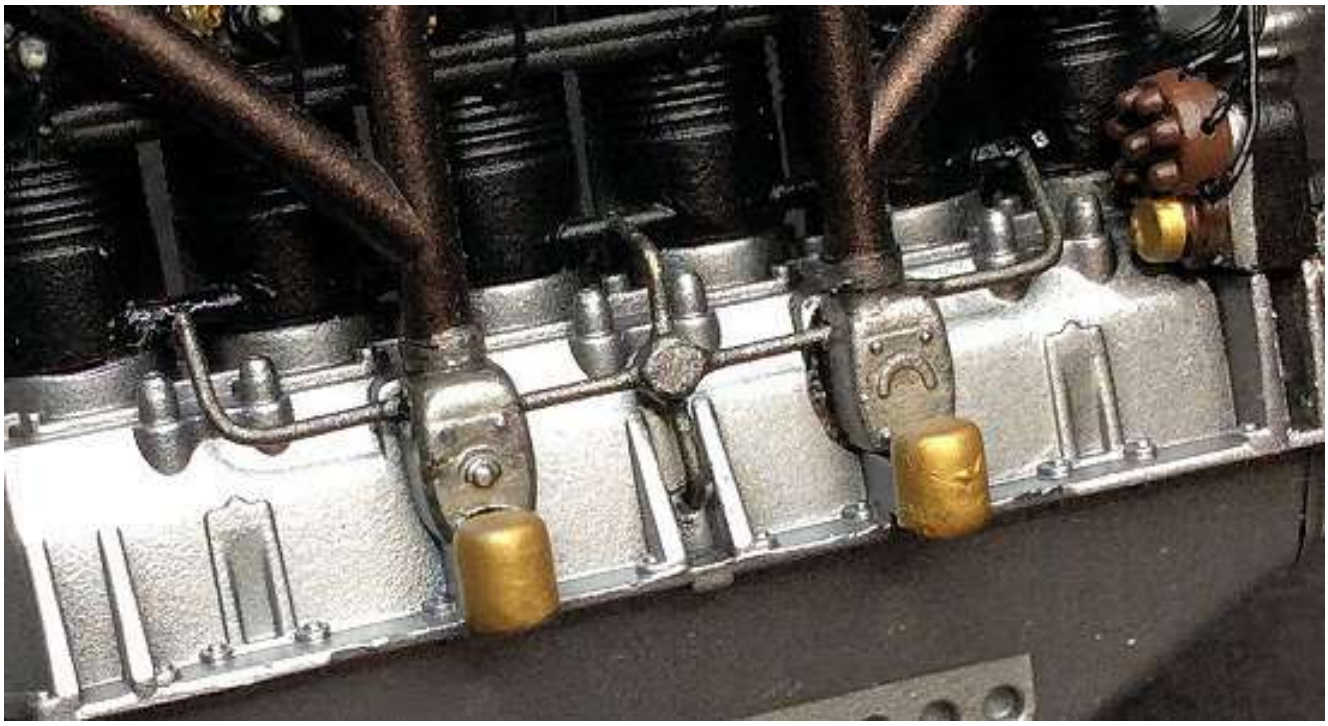
Using thin CA adhesive, secure the 'levers' onto the side of the fuel primer bodies.

To represent the round 'knob' grip on the end of the rod, a brush paint small amount of 'Tamiya' Hull Red (XF9).



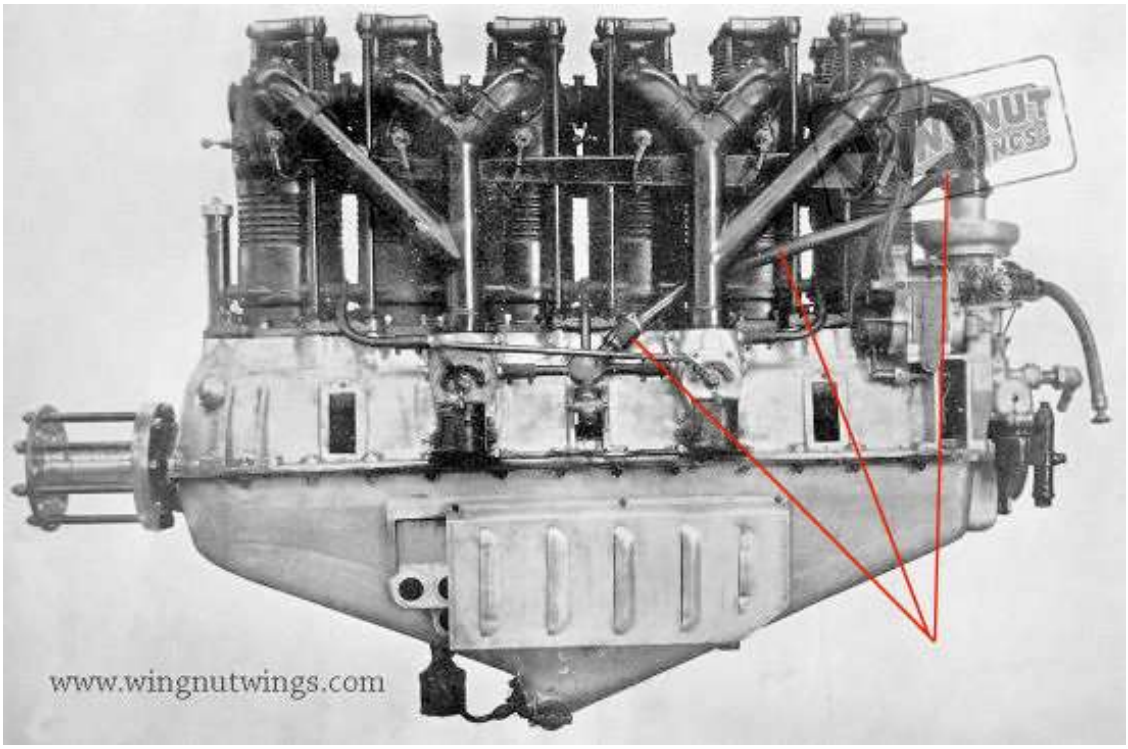
Cement the two induction manifolds onto their location slots and into the ports on the left side of the engine, making sure to include the centre carburettor pre-heating gallery created earlier.

Using thin CA adhesive, secure in position the bottom and the two side carburettor pre-heating pipes created earlier.



To represent the rubber joints brush paint the ends of the ends of each pre-heating pipes with 'Tamiya' Rubber Black (XF85) or similar.

8. Carburettor pre-heating supply pipe:



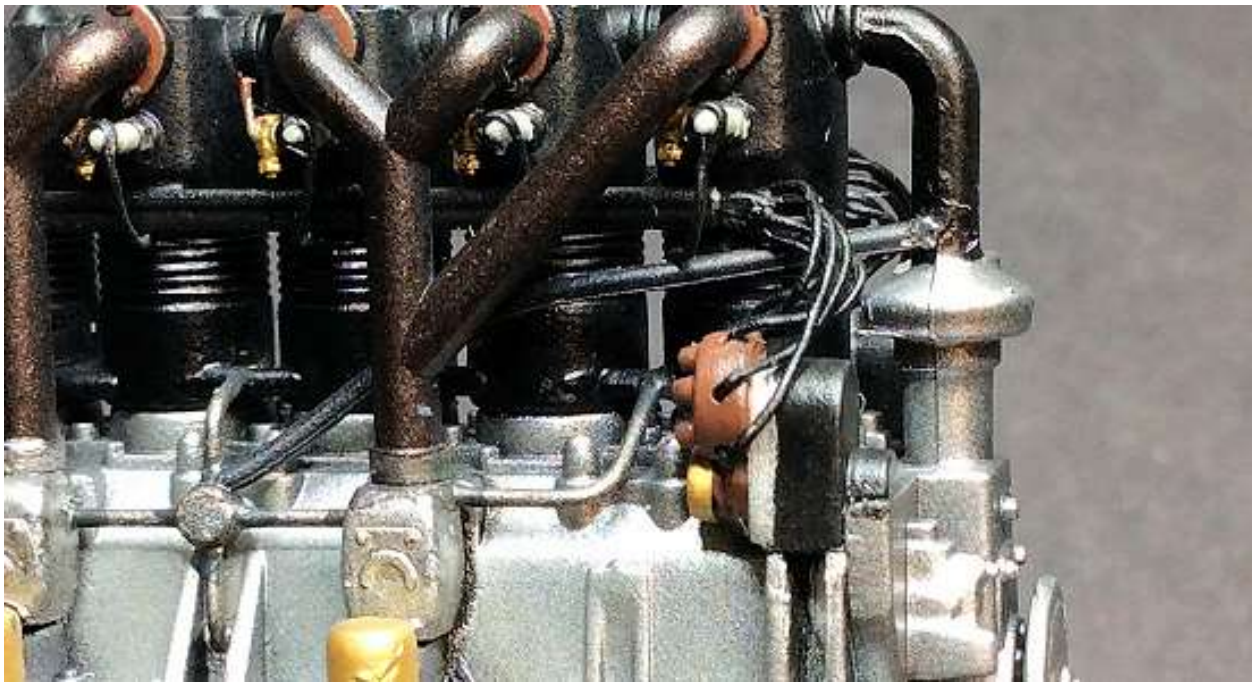
Cut a long length of 'MFH' black 0.4 mm flexible tube (P-961) such that it can be fitted between the centre hub of the carburettor pre-heating gallery and the pipe at top of the water pump.

Pass the tube under the ignition leads at the left side magneto and behind the rear induction manifold.

Using thin CA adhesive, secure the end of the tube against the centre hub of the carburettor pre-heating gallery.

Trim the length of the other end of the pipe such that it contacts the bottom of the pipe above the water pump. The tube should have gentle curves when positioned and not be strained or straight.

Using thin CA adhesive, secure the end of the tube against the pipe above the water pump.



9. Valve gear and push rods:

NOTE: *Due to the restrictions for space between the added support rails for the ignition leads and the induction manifolds, the push rods cannot be located behind the support rails, which is their correct location. Therefore, out of necessity, the push rods have to be located in-front of the support tubes.*

Clear away any paint or primer from the bottom mating surfaces of the six valve gear assemblies.

Check that the six valve gear assemblies fully locate into their recesses in the top of the engine cylinders.

NOTE: *During the following step, make sure the valve gear assemblies are fitted correctly, with the operating levers above the push rod locating lugs on the engine crank case.*

Cement the six valve gear assemblies into the tops of the engine cylinders.

Right side push rods:

Cut six lengths of 0.4 mm diameter Nickel-Silver tube, such as ’Albion Alloy’s’ NST04 or similar.

Trim the length of the tubes such that when located fully into their lugs on the engine crank case, their tops just fit under their valve operating levers.

Secure the tubes in position by applying thin CA adhesive to both ends of each tube.

Repeat the procedure on the left side of the engine. If three of the **tubes cannot be aligned correctly** due to contact with the fuel primers, carry out the ‘**Left side push rods’ procedure**.

Left side push rods:

Cut three lengths of 0.4 mm diameter Nickel-Silver tube, such as ’Albion Alloy’s’ NST04 or similar.

NOTE: *The following two steps apply only to the three push rods not obstructed by fuel primers.*

Trim the length of the tubes such that when located fully into their lugs on the engine crank case, their tops just fit under their valve operating levers.

Secure the tubes in position by applying thin CA adhesive to both ends of each tube.

NOTE: *The following steps apply only to the three push rods that are obstructed by fuel primers.*

Carefully cut away the locating lugs for the affected push rods from the engine crank case.

Cut three lengths of 0.4 mm diameter Nickel-Silver tube, such as ’Albion Alloy’s’ NST04 or similar.

Cut three short lengths of 0.8 mm diameter Brass tube, such as ’Albion Alloy’s’ MBT08 or similar.

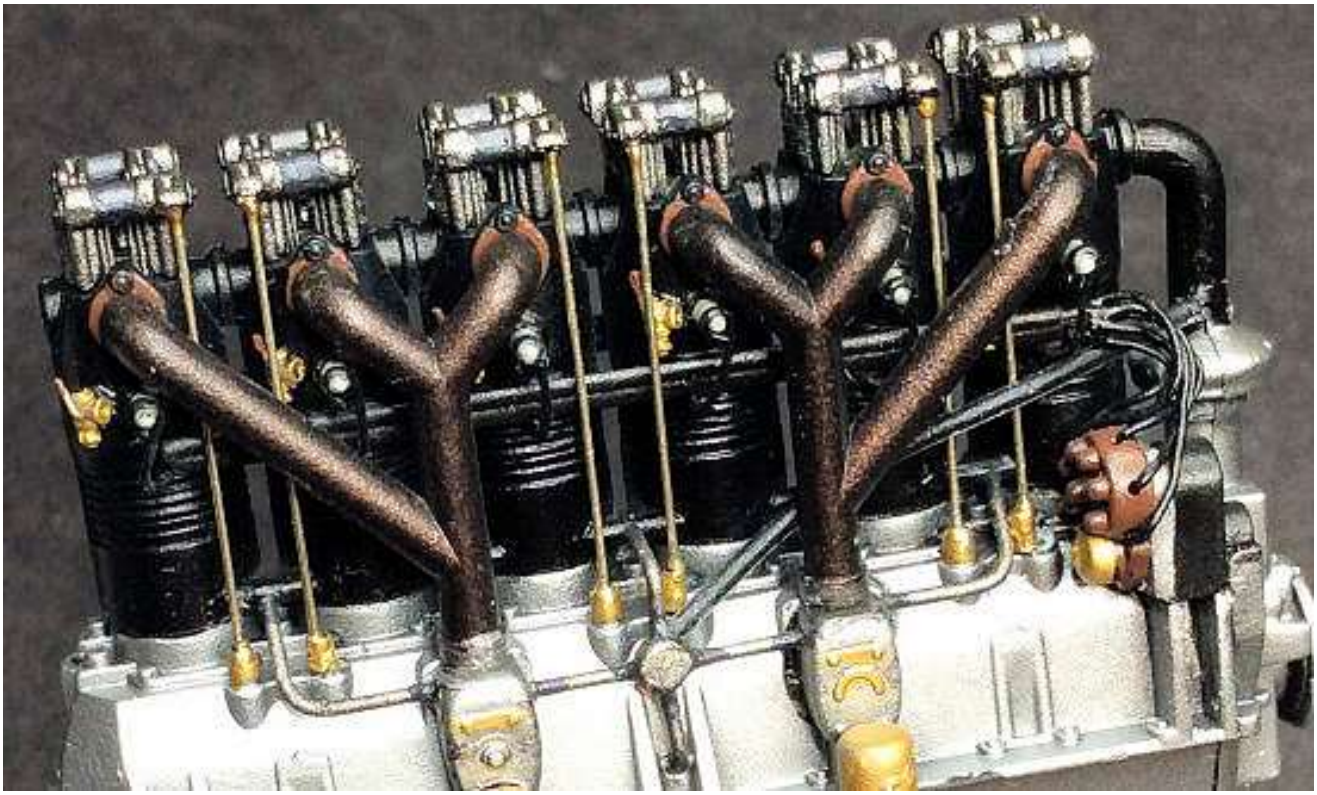
Using thin CA adhesive, secure the 0.8 mm tubes onto the end of the 0.4 tubes.

Trim the length of the 0.4 mm tubes such that when the 0.8 mm tube end is resting on the engine crank case, their tops just fit under their valve operating levers. Make sure the rods are vertical and with no need to bend the tubes to locate correctly under the valve operating levers.

Secure the tubes in position by applying thin CA adhesive to both ends of each tube.

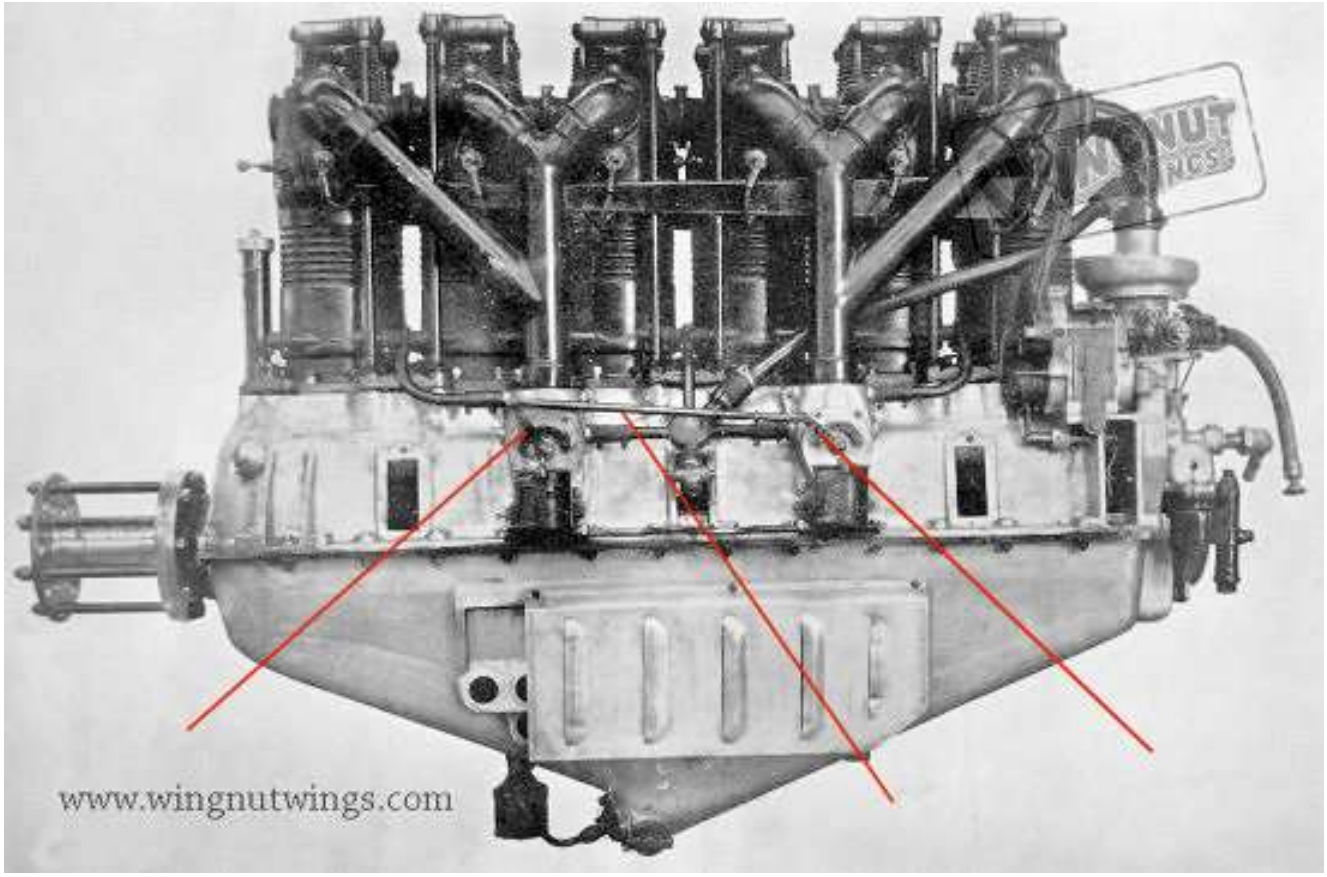
Brush paint the locating lugs and the three 0.8 mm diameter tubes with ‘Mr. Colour’ Brass (219) or similar.

Brush paint the top of the 0.4 mm tubes (under the operating levers) with ‘Mr. Colour’ Brass (219) or similar.



10. Engine controls:

NOTE: *The control rod from the engine to the pilots cockpit will be added later in this build.*



The carburettor control levers and rod were secured in position using thin CA adhesive.

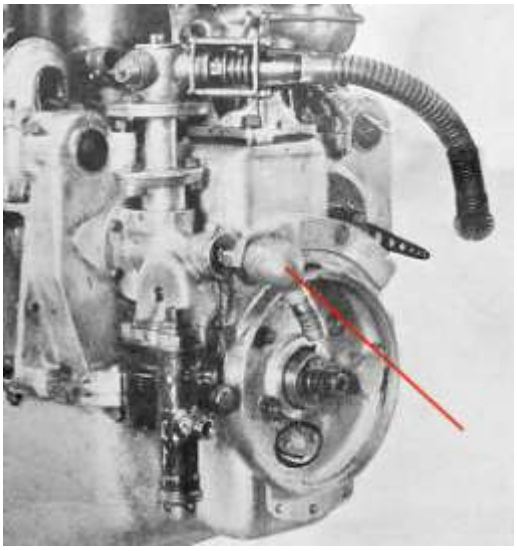
The rod is 0.4 mm diameter Nickel-Silver tube from 'Albion Alloy's' (NST04) or similar. The two levers are control horns from the 'PART' 1/48th scale WWI Aircraft Control Horns (S48-087).

The throttle control rod was created by bending a length of 0.3 mm diameter Nickel-Silver tube from ‘Albion Alloy’s’ (NST03) or similar. A hole of 0.4 mm diameter was drilled through the support flanges below the left side magneto. The tube was then passed through the holes and secured in position on the rear carburettor and flanges, using thin CA adhesive.

The left magneto control rod was created using the same procedure as for the throttle control rod.

11. Rear pipe connection:

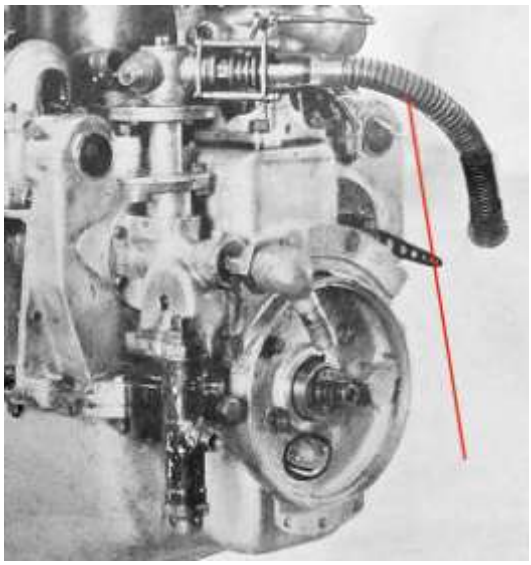
NOTE: *The purpose of this pipe connection is known (possibly fuel supply):*



This pipe was represented by drilling a 0.2 mm diameter hole into the rear of the engine. A short length of 0.2 mm diameter Nickel-Silver rod, such as ’Albion Alloy’s’ NST02 or similar. This was secured into a length of ‘MFH’ Black tube (P-961) using thin CA adhesive. The rod was then secured into the pre-drilled hole in the rear of the engine, using thin CA adhesive.

12. Tachometer drive:

NOTE: *This is assumed to be the drive for the pilots tachometer instrument.*



The same procedure used for the rear pipe connection was used to represent the tachometer drive.

13. Oil filter and pipe:

NOTE: *The oil is moulded into the underside of the engine, but is easily broken away.*

I cut away the pipe stub from the oil filter, then drilled a 0.4 mm diameter hole into, **but not through**, the top of the oil filter. A hole was also drilled through the underside of the engine at the previous filter location. Into the filter hole I secured, using thin CA adhesive, a short length of
0.3 mm diameter Brass tube, such as 'Albion Alloy's' MBT03 or similar. The filter tube was then secured into the pre-drilled hole in the under side of the engine. The filter was brush painted with 'Mr. Colour' Brass (219).

14. Float chamber supply:

NOTE: *The carburettor float chambers were supplied with fuel from an interconnected pipe and supply pipe.*

Drill a hole of 0.4 mm diameter hole into, **but not through**, the bottom, inward facing sides of the two float chambers.

Drill a hole of 0.4 mm diameter hole into, **but not through**, the bottom, rear side of the rear float chamber.

Drill a hole of 0.4 mm diameter hole of 0.4 mm diameter through the support flanges below the left side magneto.

Cut two lengths of 0.3 mm diameter Nickel-Silver rod, such as 'Albion Alloy's' (NST03) or similar.

Refer to the following photograph and bend the two rods such that they can be secured in position, using thin CA adhesive.

Oil filler:

Airbrush the kit supplied oil filler (E12) with a black primer, such as ‘AK Interactive’ Black (AK757) or similar.

Brush paint the filler cap with ‘Mr. Colour’ Stainless Steel (213) or similar.

Cement the oil filler into its pre-moulded hole in the top, front of the engine crank case.

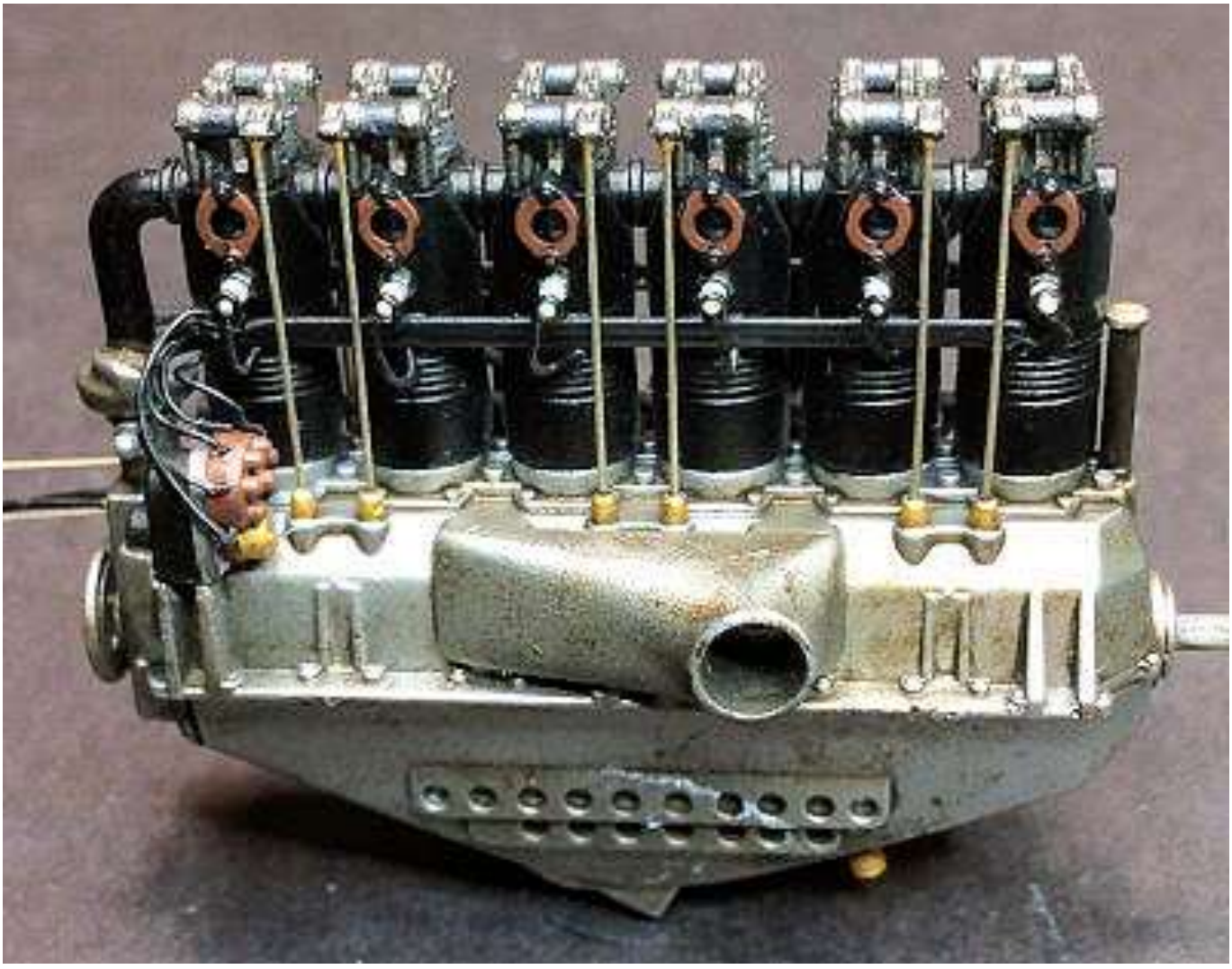
Weathering:

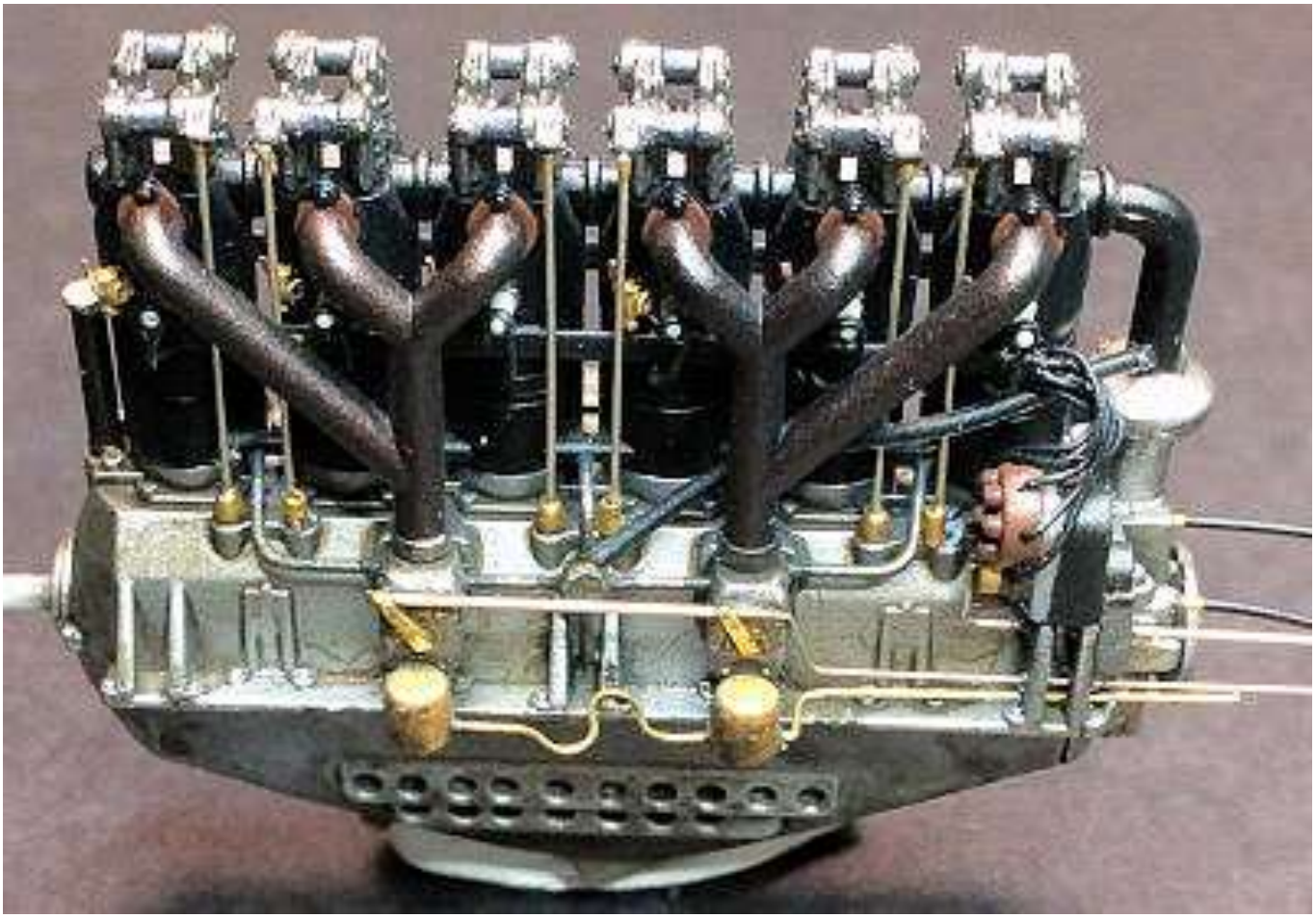
Lightly airbrush the entire engine with a semi-matte clear coat, such as ‘Alclad’ Light Sheen (ALC311) or similar.

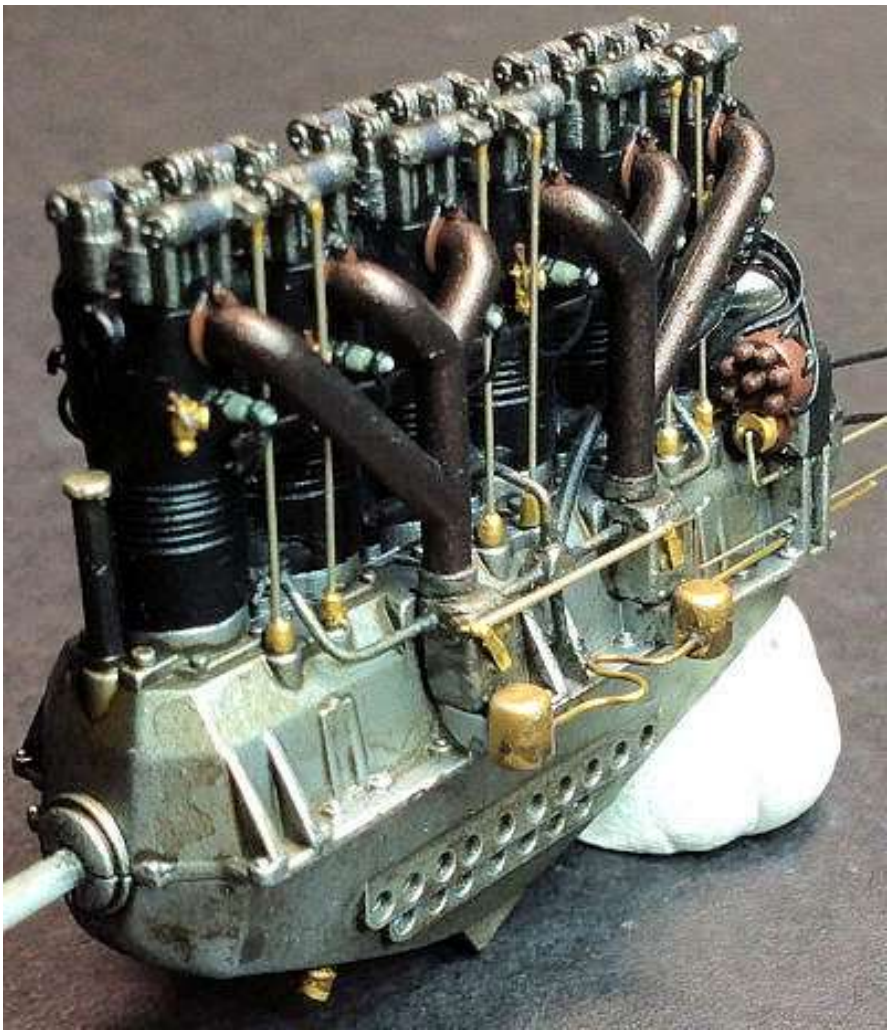
Refer to Part 2 (Weathering) of this build log for more information. I applied ‘Flory Models’ Dark Dirt fine clay wash.

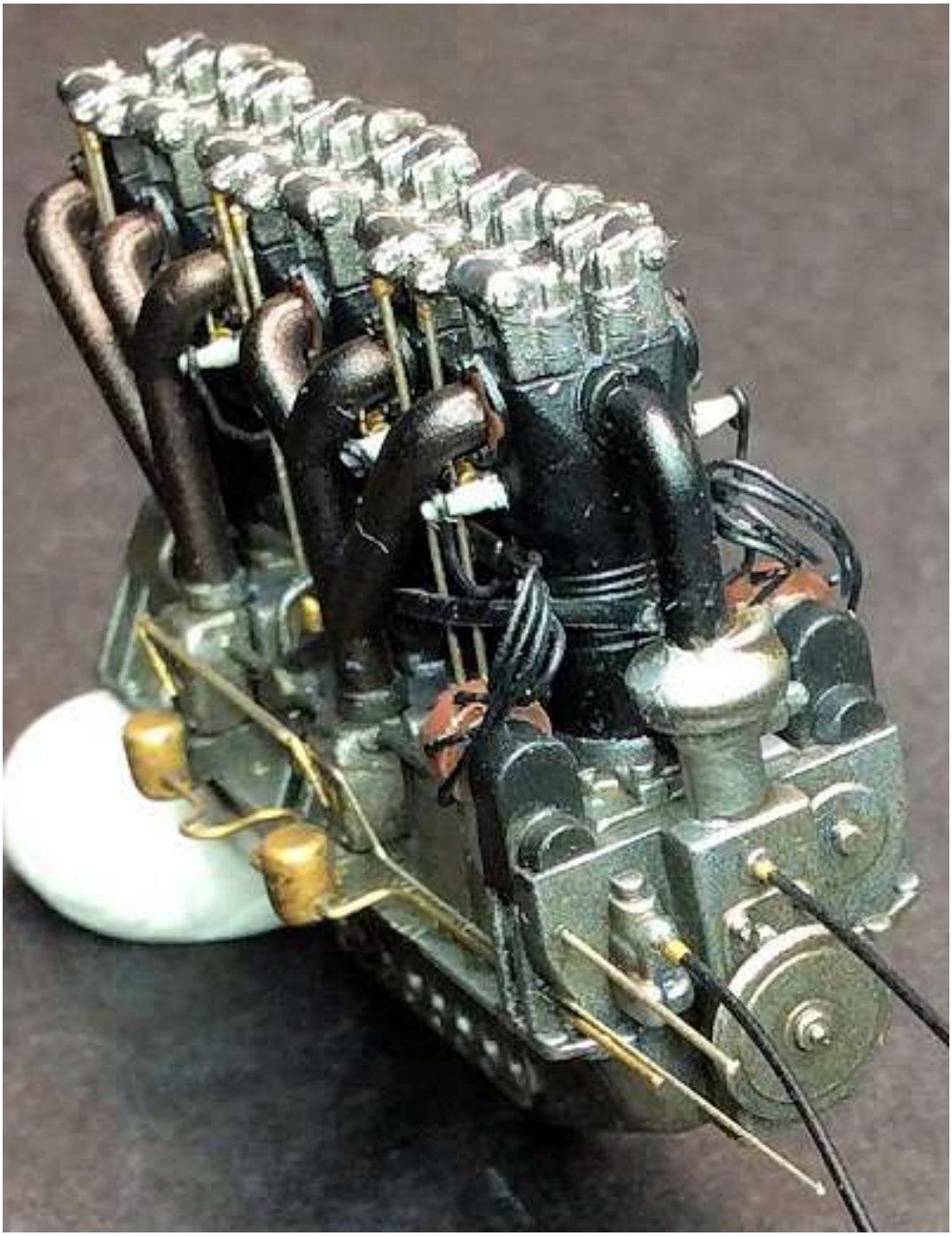
Seal in the applied weathering by lightly airbrushing with a semi-matte clear coat, such as ‘Alclad’ Light Sheen (ALC311) or similar.

Lightly brush ‘AK Interactive’ engine oil (AK2019) down the oil filler pipe.









PART 6
PROPELLER

PART 6 - PROPELLER

NOTE: *For this build I chose to replace the kit supplied propeller with a 'Proper Plane' laminated wood 'Axial' propeller (WP-017) from Alex at 'Proper Plane'. These propellers are supplied pre-varnished and supplied with resin propeller boss plates. The following kit supplied parts will not be required:*

Propellor (B7)

Centre boss (F14)

Spinner (B4).

Airbrush the propeller with a light coat of 'Tamiya' Red Brown (XF64), to blend together and darken the laminated wood layers.

Airbrush the propeller with a gloss clear coat, such as 'Alclad' Aqua Gloss 600 or similar.

Apply two 'Axial' decals to the centre of the front of the blades. I used decals from my 'spares'.

Carefully saw off the two propeller boss plates from the resin mould block.

Carefully sand the cut faces of the boss plates to reduce them to the thickness of the cast boss plates. Use a finger to 'drag' sand the each boss over a flat piece of suitable sand paper, checking regularly to ensure the sanded faces are flat and equal thickness around the boss plates.

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

Brush paint the two boss plates with 'Tamiya' Metallic Grey (XF56) or similar.

Secure the rear and front boss plates centrally onto the hub of the propeller, using thin CA adhesive.

Airbrush the propellor with a semi-matte clear coat, such as 'Alclad' Light Sheen (ALC311) or similar.

The propeller will be fitted later in this build.

PART 7
WEAPON ASSEMBLY

PART 7 - WEAPON ASSEMBLY

The kit supplied machine gun needs to be assembled from separate parts. Although of good quality, I chose to disregard the kit machine gun and replace it with the 'GasPatch' 1/32nd scale Parabellum LMG14 (15-32068) machine gun. This Part 7 of the build includes the kit supplied swivel mounting assembly.

NOTE: *The following kit supplied parts will not be required:*

Machine gun (G1 or G2)
Cooling jacket (G3)
Gun sight (G5)
Ammunition drums (G12, G13, G14 and G15).

Swivel mounting ring assembly:

NOTE: *Two parts are numbered incorrectly in the instructions on page 11 of the manual. The gun butt support* ***F2 should be F11*** *and the handle* ***F1 should be F10****.*

Cement the handle F10 into its location recesses on the inside of the swivel mounting ring.

Cut away the machine gun locating nubs from the inside top of the gun mounting G4.

Locate the butt support F11 into its location hole in the swivel mounting ring (F3).

Locate the gun mounting support G9 into its location hole in the swivel mounting ring (F3).

Locate the gun mounting G4 into the top of the gun mounting support G9.

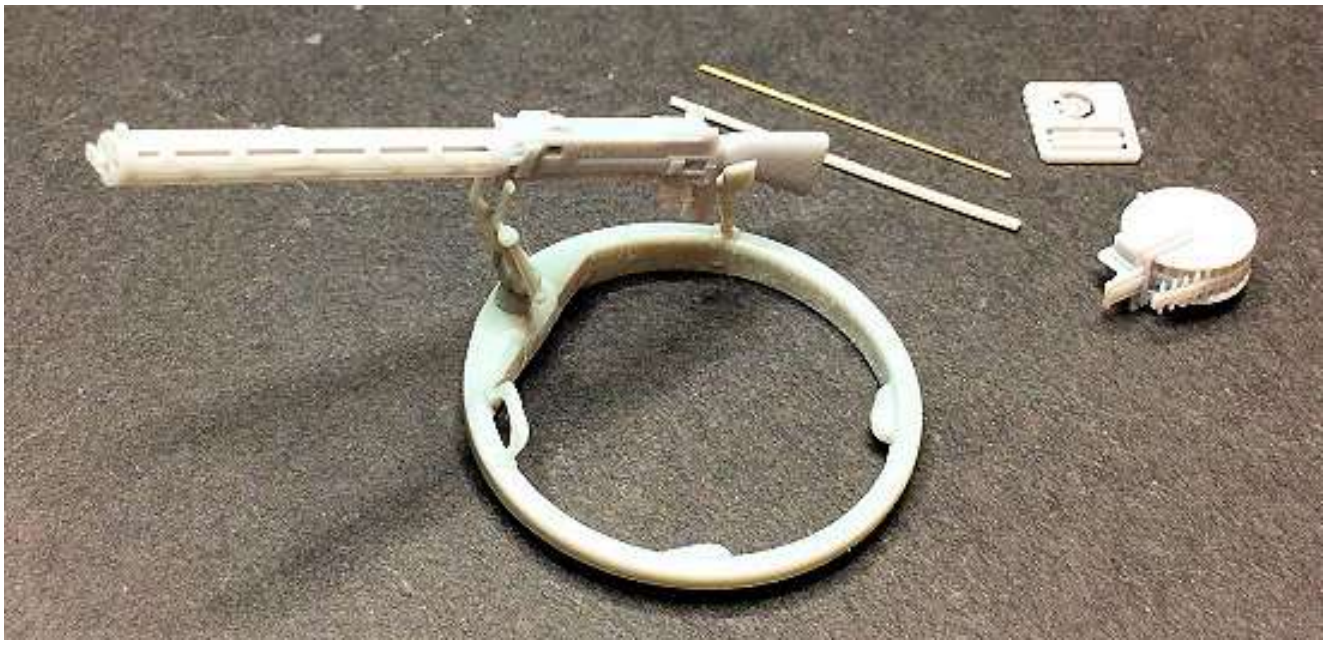
Locate the 'GasPatch' Parabellum machine gun into the top of the gun mounting G4 with the butt of the machine gun resting in the butt support F11.

Make sure the butt support F11 and butt of the machine gun are aligned.

Cement the butt support F11 and gun mounting support G9 into the swivel mounting ring F3.

Cement the gun mounting G4 to the gun mounting support G9.

Remove the 'GasPatch' Parabellum machine gun from the mounting and butt support.



‘GasPatch’ Parabellum LMG14:

Using thin CA adhesive:

Secure the internal barrel through the hole in the bottom, front of the cooling jacket. The slightly shouldered end protrudes from the front of the cooling jacket.

Secure the ammunition drum onto the breech block with the ammunition belt inserted into the slot in the breech block.

Secure the rectangular gun sight onto its location point on the top, front of the cooling jacket.

Secure the metal rod between the front (centre) of the ammunition drum and the location nub on the centre, right of the from of the cooling jacket.

Painting:

Swivel mounting ring:

Airbrush the swivel mounting ring with a grey primer, such as ‘AK Interactive’ White (AK758) or similar.

Brush paint or airbrush the swivel mounting ring as follows:

The swivel mounting ring - ‘Tamiya’ Dark Green 2 (RAF) (XF81) or similar.

Metal fittings - ‘Tamiya’ Metallic Grey (XF56) or similar.

Inner rests - ‘AK Interactive’ Leather (AK3031).

Machine gun:

Brush paint or airbrush the machine gun as follows:

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

Airbrush the machine gun assembly with ’Alclad’ Gunmetal (ALC120) or similar.

Brush paint the gun butt and handle with ‘Tamiya’ Dark Yellow (XF60) or similar.

NOTE: *Refer to Part 1 (Wood Effects) of the build log for more information.*

Apply the desired wood effects to the gun butt and handle - I used ‘Windsor & Newton’ Griffin (Alkyd) oil paints (Burnt Sienna).

Brush paint the ammunition belt with ‘Tamiya’ Desert Yellow (XF59) or similar.

Brush paint the ammunition rounds cases with ‘Mr. Colour’ Brass (219) and the bullet heads with Copper (215) or similar.

PART 8
FUSELAGE

PART 8 - FUSELAGE

References:

Windsock Datafile 39 'Junkers J.I' (by P.M. Grosz)
Science & Technology National Museum Milan (photographs)
Deutsches Technikmuseum Berlin (photographs)
Canadian Aviation Museum (photographs).
'Flight Magazine' article of 18th March 1920.

NOTE:
The 'Wingnut Wings' instruction manual is reference throughout this build.

When removing parts from their kit sprues, take care as cutting too close to the parts can cause stress marks. This is especially the case when removing the clear parts from their kit sprue.

Take care when removing the smaller or more fragile parts from their sprues. Too much cutting pressure can cause deformation, breakage or stress marks in the parts.

Remove any residual sprue tags and mould seams from the parts.

Fill and sand flush any ejector pin marks from parts that will be visible on the completed model.

Always remove any residual photo-etch tags from parts removed from their sheet. I used a diamond photo-etch file.

When cementing large kit parts, I use 'Revell' Contacta Professional cement (39604). This cement is a thicker liquid cement, which takes longer to fully set, but does provide a stronger bond between larger kit parts.

Preparation:

NOTE: *The elevator control rod and levers (Par A22) will not be used as it can't be seen in the completed model and anyway, is too weak to be rigged.*

Cut from their kit sprues and prepare all of the internal fuselage parts detailed on Pages 3 and 4 in the instruction manual, including the cockpit decking panel B6 (page 5).

Cement the observers seat (A16, A23 and A24) together.

Cement the lower fuselage panel (F1) onto the right fuselage half (B10).

Cement the cooling air cover (A21) onto the **outside** of the left fuselage half (opening facing to the rear).

Drill through the recessed 'holes' in the aerial wire spool (A53) using a 0.8 mm diameter drill.

Cement the wire spool onto the wireless set (A52).

Cement the fuel cock and lever (A31 and A32) in position on the fuel pipe A39).

Cement the pilots seat and arm rests (A9, A17, A44, A36, A34, A12, A13, A14, A15, A40) and A41) together.

Drill the 1.0 mm diameter hole through the left fuselage half (page 4 in the instruction manual).

Cement the aileron torque tube (A47) to the control column (A33).

Painting:

NOTE: *Refer to pages 3 and 4 of the instruction manual for what areas to mask before painting.*

Fuselage Internal:

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

Brush paint the details on instrument panel, as illustrated, with ‘Tamiya’ Rubber Black (XF85) or similar.

Mask off and airbrush the internal areas of the fuselage halves, as follows:

Engine bay and forward underside of cockpit decking panel - ’Tamiya’ Hull Red (XF9)

Pilots cockpit rear side, floor and seat assembly - ’Tamiya’ Cockpit Green (XF71)

Gunners cockpit rear curved panel and floor - ’Tamiya’ Cockpit Green (XF71)

Engine bay and pilots instrument panel frames - ’Tamiya’ Dark Green 2 RAF (XF81)

Engine bay and pilots instrument panel frame slots in fuselage - ’Tamiya’ Dark Green 2 RAF (XF81).

Wood effects:

NOTE: *The wood effect for this model was created using ‘Windsor & Newton’ Griffin (Alkyd) Raw Sienna paint.*

Mask off the four wood panels inside the fuselage halves.

Airbrush the pilots and gunners instrument panels, underside of the gunners seat, pilots cockpit forward side, gunners cockpit side and rear area of the cockpit decking panel B60 - ’Tamiya’ Dark Yellow (XF60).

NOTE: *Refer to Part 1 (Wood Effects) of the build log for more information.*

Apply the desired wood effects over the painted areas of the fuselage sides - I used ‘Windsor & Newton’ Griffin Alkyd **Burnt Sienna** paint.

Leave the oil paint to settle for about ten minutes.

Decant a small amount of White Spirits into a suitable dish.

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

Brush the oil paint along the panels in the desired direction, wiping the brush on the sheet of kitchen roll to remove residual oil paint.

Repeat dipping and wiping the brush in the White Spirits 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.

Once the oil paint is fully dry, airbrush a semi-gloss clear coat, such as ‘Alclad’ Satin (ALC312-60) or similar, with a few drops of ‘Tamiya’ Clear Orange (X26) to give a varnished look to the finish.

Gunners panel:

Brush paint the wireless set (A52) with ‘Tamiya’ Light Grey (XF66) or similar.

Brush paint the detail on the gunners panel (A20) with ‘Tamiya’ Light Grey (XF66) or similar.

Brush paint the wireless cable spool (A53) with ‘Tamiya’ Aluminium (XF16) or similar.

Brush paint the centre of the wireless cable spool (A53) with ‘Tamiya’ Rubber Black (XF85) or similar.

Brush paint the details on wireless set (A53), as illustrated, with ‘Tamiya’ Rubber Black (XF85) or similar.

Pilots instrument panel:

Brush paint the two tubes wireless set (A52) with ‘Tamiya’ Light Grey (XF66) or similar.

Seats:

Brush paint the pilots seat (A38) and arm rests and the gunners seat (A24) with ’Tamiya’ Dark Yellow (XF60) or similar.

Brush paint the pilots seat (A38) and gunners seat (A24) with ’AK Interactive’ Brown Leather (AK3031) with British Uniform (AK30810) highlights.

Brush paint the pilots seat arm rests with ’AK Interactive’ Brown Leather (AK3031).

Internal details:

Airbrush the following with ‘Alclad’ Duraluminium (ALC102) or similar:

Control column assembly (A33 and A47)
Fuselage located instruments
Aileron operating rods (A18 and A19)
Engine bearers ‘W’ frames (D13 and D14)
Throttle quadrant (A37).

Brush paint the following with ‘Mr. Colour’ Stainless Steel (213) or similar:

Fuselage wood panel detail
Fuel cocks (A31 and A32).

Airbrush the following with ‘Tamiya’ Desert Yellow (XF59) or similar:

Engine bearers (D20 and D21).

Brush paint the following with ‘Mr. Colour’ Copper (215) or similar:

Fuel pipes (A39) and the pre-moulded pipe on the fuselage right side.

Brush paint the following with ‘Mr. Colour’ Brass (219) or similar:

Fuel tank filler (A34).

Brush paint the fuel cock housing on tube (A39) with ‘Tamiya’ Red (XFF7) or similar.

Brush paint the cockpit tube (A26) with ‘Tamiya’ Light Grey (XF66) or similar.

Brush paint the control column hand grips and the throttle quadrant mounting with ‘Tamiya’ NATO Brown (XF68) or similar.

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

Enhancements:

NOTE: *Refer to Part 4 (Rigging) of this build log for more detailed information. The additions that follow are intended to enhance the cockpit details.*

Elevator control cables:

NOTE: *The tube used is blackened ‘Albion Alloy’s’ 0.4 mm diameter Brass tube. The Brass tubes are chemically blackened by immersion in ‘Blacken-It’ solution, although alternative solutions are available.*

Cut a four short lengths of blackened Brass tube, such as that supplied from ‘Albion Alloy’s’ (MBT04 or similar.

Deburr the tubes by running a 0.2 mm diameter drill through the tube.

NOTE: *Cut the length of rigging line **longer** than needed as this allows for easier final rigging.*

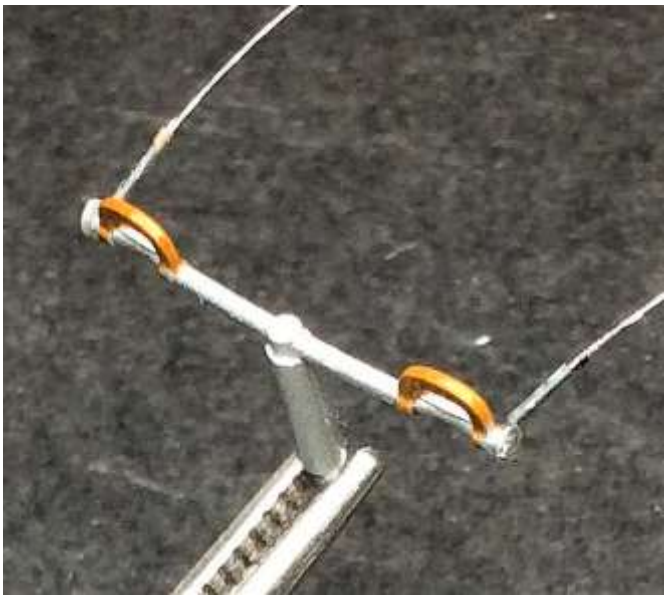
Cut four long lengths of 0.08 mm diameter mono-filament, such as ‘Stroft GTM’ or similar.

Pass each line through a tube then secure the lines in the tubes, using thin CA adhesive.

Rudder control cables:

NOTE: *Cut the two lengths of rigging line **longer** than needed. The lines should be long enough to span between the rudder bar ends and rearwards through the gunners rear bulkhead (when fitted).*

Repeat the procedure used to pre-rig the elevator control levers, but instead of drilling holes, loop the mono-filament around the ends of the rudder bar (A52).



Gunners rear bulkhead:

NOTE: *Refer to Part 4 (Rigging) of this build log for more detailed information. The additions that follow are intended to enhance the cockpit details.*

Control cables:

Drill three holes of 0.3 mm diameter through both side edges of the gunners rear bulkhead. The six holes should be located as shown on the following photograph. The two bottom holes are for the rudder control cables. The upper four holes are for the upper and lower elevator control cables and should align with the ends of the elevator control levers on part A22 (when fitted).

Gunners seat supports:

Drill holes of 0.3 mm diameter through the side edges of the gunners rear bulkhead and just inboard from the upper holes for the elevator control cables.

Drill a hole of 0.3 mm diameter through the side edge of the gunners seat and angled to align with the pre-drilled hole in the side of the bulkhead.

Cut a long length of 0.12 mm diameter mono-filament, such as ‘Steelon’ or similar.

Pass the line through one of the holes drill through the side of the bulkhead and secure it to the back of the bulkhead, using thin CA adhesive.

Slide two blackened 0.4 mm diameter tubes onto the line then pass the line through the hole drilled in the gunners seat.

Pass the line across the underside of the seat and up through the opposite drilled hole.

Slide two blackened 0.4 mm diameter tubes onto the line then pass the line ap and through the hole drilled in the bulkhead.

Keeping the line taut, secure it to the back of the bulkhead, using thin CA adhesive.

Slide the tubes against the seat and bulkhead and secure in position on the line using thin CA adhesive.

Assembly:

Cement the wireless and spool assembly in position on the gunners panel.

Cement the instrument panel onto the pilots panel.

Cement the throttle quadrant into its recess in the fuselage left half.

Cement the gunners seat into its locating slot in the rear bulkhead of the for the gunners cockpit.

Cement the tube A26 into its two location holes in the fuselage right half.

Cement the fuel tube assembly A39 into its location (under the fuel cock) in the fuselage right half.

Make sure any paint and primer are removed from the locating slots and mating surfaces in the fuselage halves and the edges of the bulkhead and frames.

NOTE: *When fitting the gunners rear bulkhead and the two instruments panel frames, check that the two fuselage halves will fully join with no gaps around the joint seam.*

Test fit the gunners rear bulkhead into its location in the fuselage right half and check that the fuselage left half fully locates.

Cement the gunners rear bulkhead into its location in the fuselage right half.

Test fit the gunners wireless panel/frame into its location in the fuselage right half and check that the fuselage left half fully locates.

Cement the gunners wireless panel/frame into its location in the fuselage right half.

Test fit the pilots instrument panel/frame into its location in the fuselage right half and check that the fuselage left half fully locates.

Cement the pilots instrument panel/frame into its location in the fuselage right half.

Pass the four created elevator control cables through the pre-moulded cut-outs in the sides of the gunners panel/frame.

Using thin CA adhesive, secure the tubes onto the forward face of the gunners panel/frame.

Pass the four lines through the pre-drilled holes in the sides if the gunners rear bulkhead.

Keeping the lines taut on the fuselage right side, secure them onto the back of the gunners rear bulkhead, using thin CA adhesive.

Temporarily fit the fuselage left side, making sure the panel/frames and bulkhead fully locate.

Keeping the lines taut on the fuselage left side, secure them onto the back of the gunners rear bulkhead, using thin CA adhesive.

NOTE: *During the next step, the lines on the fuselage left side may go slack, as that side of the panel is not yet fixed in position. The lines will re-tighten once the fuselage halves are permanently joined.*

Remove the fuselage left side.

Cut away any residual lines.

Cement the pre-rigged rudder bar into its location on the floor of the fuselage right half, making sure it's vertical in the floor and aligned across the fuselage.

Pass the two created rudder control cables:

Through the pilots instrument panel/frame and rearwards under the pilots seat (fuel tank.

Through the pre-moulded cut-outs in the bottom of the sides of the gunners panel/frame.

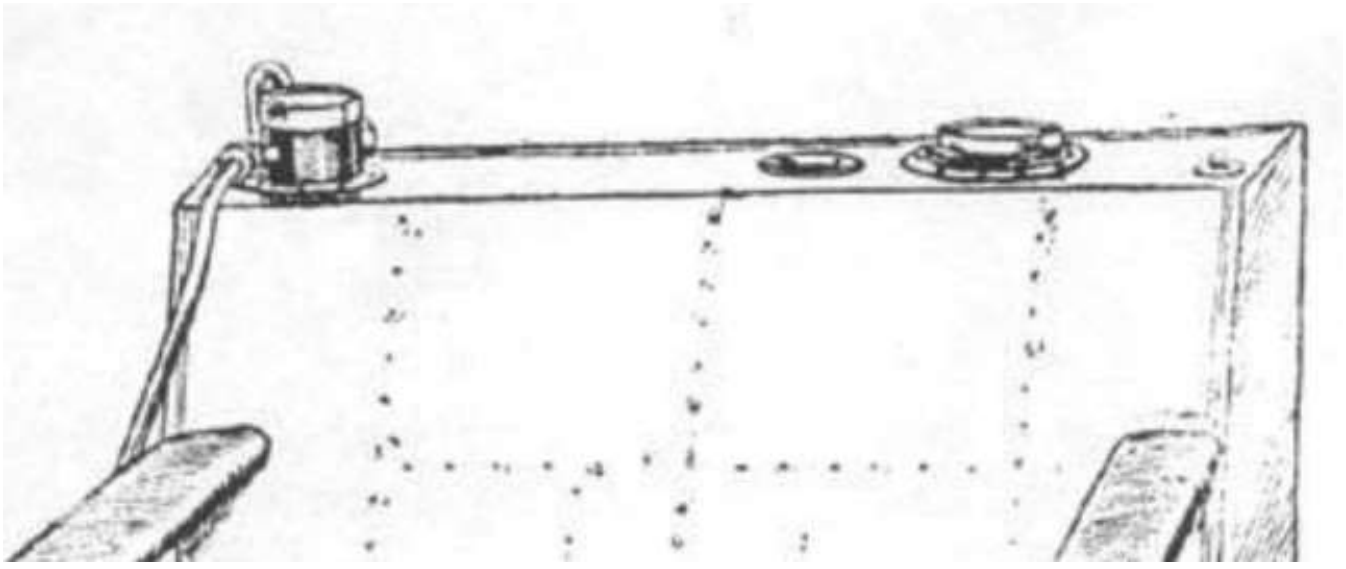
Rearwards through the pre-drilled holes in the bottom of the sides of the gunners rear bulkhead.

Keeping the lines taut, secure them onto the back of the gunners rear bulkhead, using thin CA adhesive.

Cut away any residual lines.

Pipe extensions:

NOTE: *As they are visible the three pipes/tubes on the fuselage right side should be extended, including connecting to the main fuel tank.*



NOTE: *The following steps apply to the top pipe od A39 and the pre-moulded pipe.*

Cut two lengths of 0.7 mm diameter lead wire, such as that from ‘PlusModel’ or similar.

Brush paint the wire ‘Mr. Colour’ Copper (215) or similar and the other with ‘Tamiya’ Light Grey (XF66) or similar.

Cut one length of 0.6 mm diameter lead wire, such as that from ‘PlusModel’ or similar.

Brush paint the wire ‘Mr. Colour’ Copper (215) or similar.

Temporarily locate the pilots seat assembly onto its location on the floor of the fuselage right side.

Mark the fuselage side (at the rear of the pilots seat assembly) with the location of the upper Copper coloured pipe and the light grey pipe.

Mark the rear of the pilots seat assembly with the location of the lower copper coloured pipe.

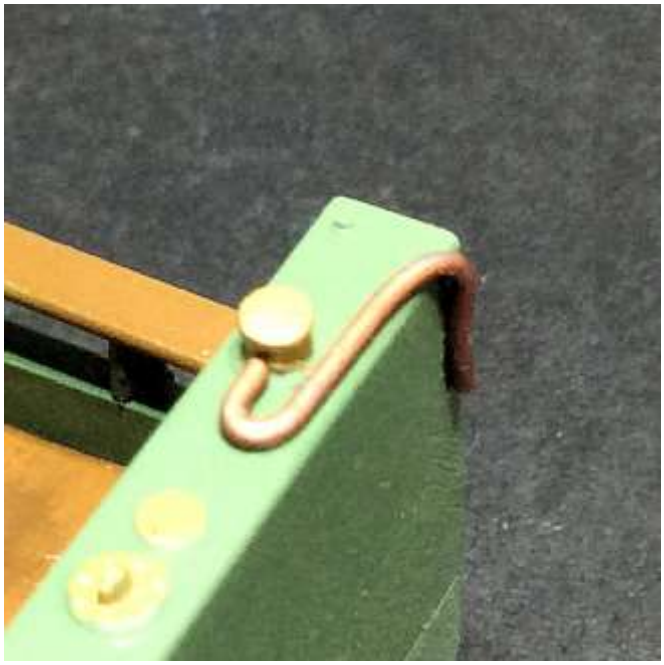
Remove the pilots seat assembly.

Bend one of the 0.7 mm diameter wires to form a curved pipe up the back of the fuel tank to the filler on the top of the fuel tank.

Bend the 0.6 mm diameter wire such that it can be located between the rear of the fuel tank across the forward face of the gunners panel/frame.

Cut the grey coloured 0.7 mm diameter wire such that it can be located between the rear of the fuel tank and the forward face of the gunners panel/frame.

Using thin CA adhesive, secure the pies onto the fuselage side and the fuel tank of pilots seat assembly.



Seat belts:

Cut the photo-etch seat belts parts (P1, P2 and P3) from the kit supplied sheet.

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

NOTE: *In the following step, take care to not heat the parts too much, as this may cause the metal to melt or distort. Always keep the heat moving over the parts.*

Anneal (soften) the photo-etch parts P2 and P3 by moving them across a flame, such as that from a cigarette lighter, until the parts colour changes slightly. Do not anneal parts P2 as they are too small.

Wipe any flame soot from the parts.

Secure Parts 2 to the P3 belts (in the open position), using thin CA adhesive.

NOTE: *The gunners seat belts locate into the pre-moulded holes at the top, sides of the gunners bulkhead.*

Refer to Page 4 of the instruction manual and bend the belts into the desired positions.

Remove the belts (without distorting the added bends).

Airbrush the belts with a grey primer, such as ‘AK Interactive’ Grey (AK758) or similar.

Airbrush the belts with ‘Tamiya’ Dark Yellow (XF60) or similar.

Brush paint the metal fittings of the belts with ‘Mr. Colour’ Stainless Steel (213) or similar.

Using thin CA adhesive, secure the belt in position on the pilots seat and gunners rear bulkhead.

Oil filter access panel:

NOTE: *The aircraft had an access panel on the underside of the fuselage nose, to allow access to the engine oil filter.*

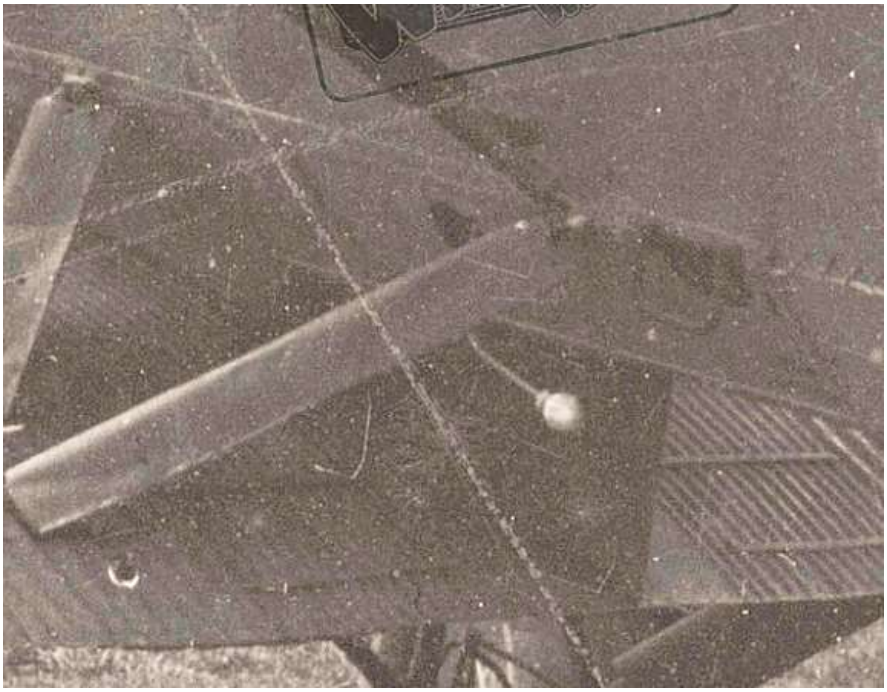
Cut from 0.2 mm thick styrene card the oil filter access panel, which should be 5 mm x 4 mm.

Cement the oil filter access panel in position on the underside of the fuselage nose. To position the panel hold the engine in position on the fuselage and note where the oil filter is located.

To represent the panel fastener, centrally point mark the rear edges of the panel.

Wireless cable:

NOTE: *The aircraft was fitted with a ‘Telefunken’ (Specification 99) transmitter and receiver. This was located in the gunners cockpit. A wire spool was hand turned to lower a wireless aerial line below the aircraft. The line was 37m long for the ‘Telefunken’ sender and 38m for the alternative ‘Huth’ sender. The aerial line was weighted to ensure it trailed below and behind the aircraft.*



Cut a long length of ‘T Force XPS’ mono-filament match sinking 0.148 mm diameter, or similar.

Wrap one end of the line with masking tape, to protect that exposed end from paint prior to adding the aerial weight later in this build.

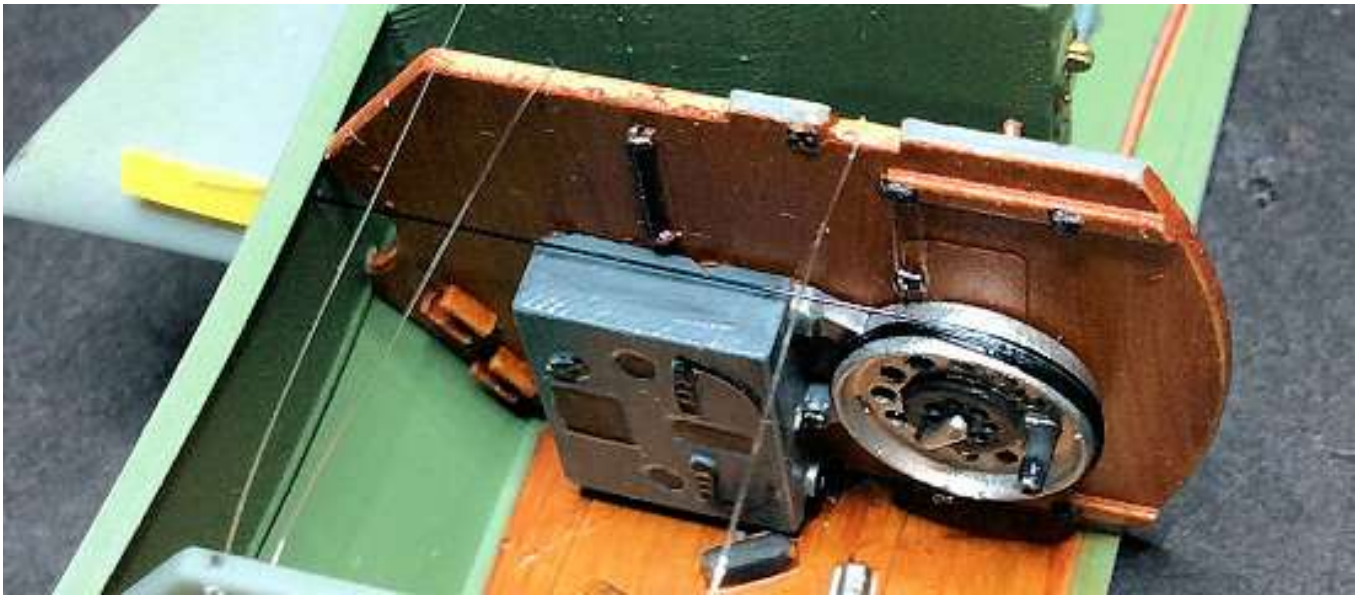
Drill a hole of 0.5 mm diameter through the gunners cockpit floor on the right fuselage half. The hole should be aligned to the edge of the wireless set and spool.

Pass the free end of the line through the pre-drilled hole and keeping it taut, pass it over the top of the wireless spool.

Secure the line to the spool using thin CA adhesive.

Wrap the line around the spool several times, securing it at intervals with thin CA adhesive.

Cur away the excess line at the spool.



Decals:

NOTE: *Refer to Part 3 (Decals) f this build log for more information and to pages 3 and 4 of the instruction manual for decal locations.*

Apply a gloss clear coat, such as ‘Tamiya’ Clear (X22) or similar, over the two instruments on the pilots panel and the instrument on the left and right fuselage halves. Also on the right side wall of the gunners cockpit.

Apply decals 5 onto the pilots instrument panel.

Apply decals 6 on the left and right fuselage halves.

Apply decal 4 onto the right side wall of the gunners cockpit.

Apply a gloss clear coat, such as ‘Tamiya’ Clear (X22) or similar over the decals.

Throttle control rod:

To represent the throttle control rod, cut a length of 0.4 mm diameter Nickel-Silver tube, such as ‘Albion Alloy’s’ (NST04) or similar. Trim the length of the tube such that it fits between the bottom of the throttle quadrant to the frame of the pilots instrument panel. Secure the tube in position using thin CA adhesive.

Weathering:

Refer to Part 2 (Weathering) of this build log for more information - apply your desired weathering finish to the left and right fuselage halves, the pilots seat assembly and the two engine bearers (D20 and D21) and 'W' frames (D13 and D14) - I used 'Flory Models' Dark Dirt fine clay wash).

Seal the applied weathering with a semi-matte clear coat, such as 'Alclad' Light Sheen (ALC-311) or similar.

Assembly (continued):

NOTE: *When fitting the frames D17 and D18 (engine support frames), check that the two fuselage halves will fully join with no gaps around the joint seam.*

Test fit the engine support frames D17 and D18 into their location slots in the fuselage right half and check that the fuselage left half fully locates.

Cement the engine support frames D17 and D18 into their location slots in the fuselage right half.

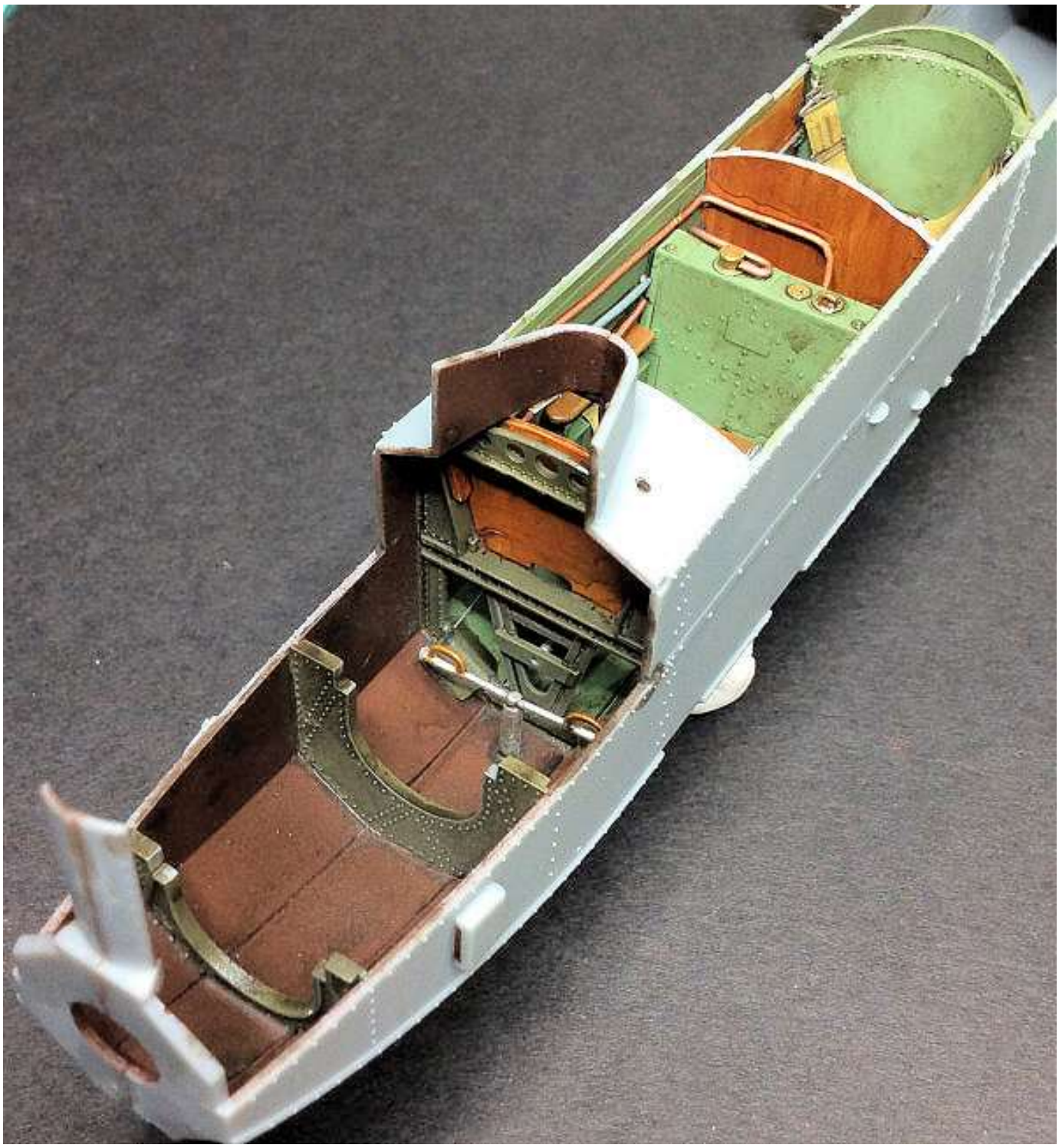
Cement the control column assembly into the slot location in the front of the pilots seat assembly.

Cement the pilots seat assembly onto its location on the floor of the fuselage right half. Make sure the torque bar forward from the control column locates into it hole in the instrument panel frame.

Test fit the two fuselage halves together, making sure all of the frames and panels fitted on the right fuselage side fully locate into their locations in the left fuselage side. Also the joint seam between the two fuselage halves has no gaps.

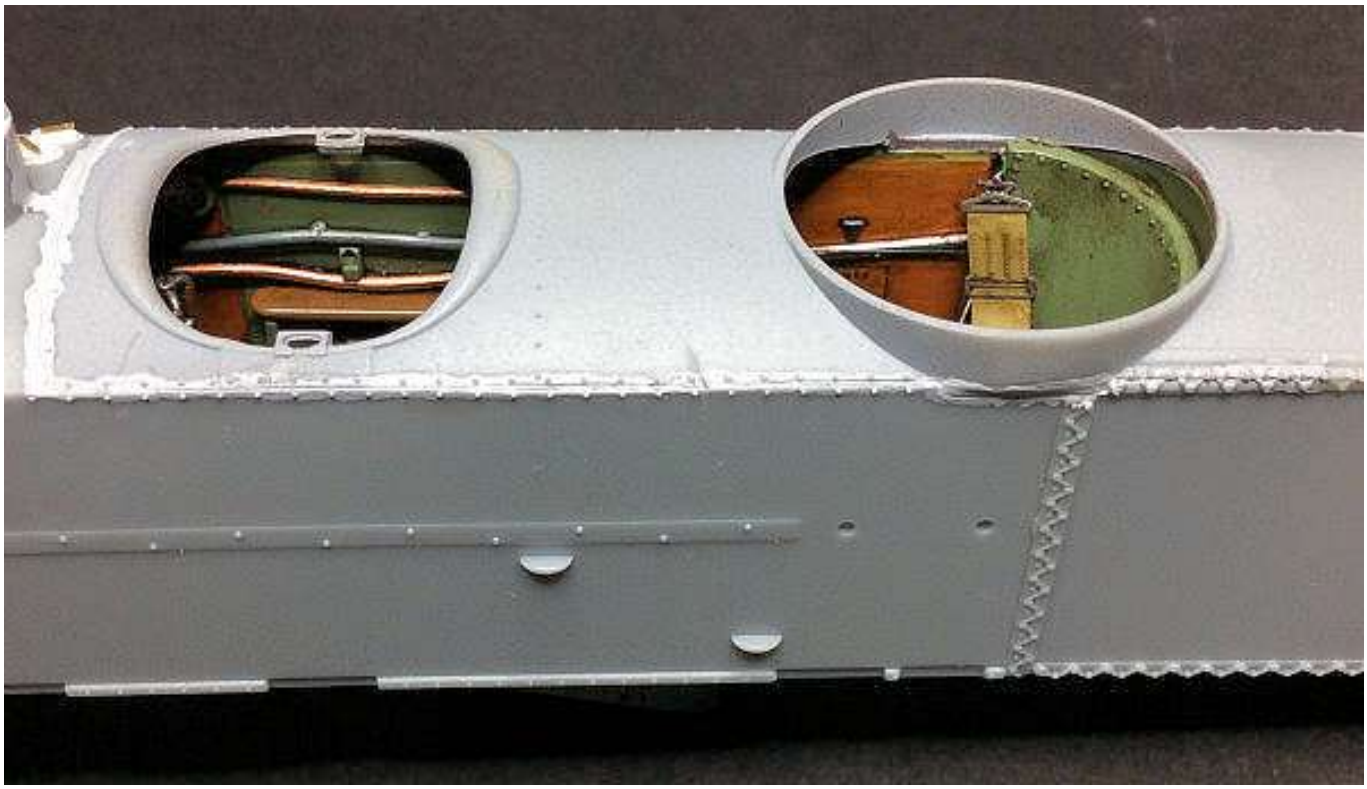
NOTE: *The instruction manual (page 4) shows that the two aileron control rods (A18 and A19) are to be fitted through the cockpit side hoops and fuselage locations. These parts can be easily broken during subsequent handling, as they stand proud of the fuselage. However, they can be fitted later in the build and after the fuselage has been closed up, which is what I chose to do.*

Cement the two fuselage halves together.



Check fit the fuselage top decking panel into its recess on the fuselage, making sure it fully locates without any gaps.

Cement the top decking panel into its recess on the fuselage.



If any gaps are evident, brush ‘Mr. Surfacer’ 500 surface primer/ filler to fill the gaps. Once fully dry, moisten a cotton but with ’Mr. Colour’ 400 thinners and wipe the excess away.

Sand or scrape the seam joints between the two fuselage halves and top decking panel to blend them together

Check fit the two engine bearers (D20 and D21) into their locations on the pilots panel frame and the engine support frames. Make sure the bearers are correctly positioned (D14 on the right side, D21 on the left side).

Cement the two engine bearers into their locations on the pilots panel frame and the engine support frames.

NOTE: *The two engine bearer ‘W’ frames (D13 and D14) are slightly tapered to align with the curve of the fuselage. As such they will fit only one way.*

Cement engine bearer ‘W’ frames (D13 and D14) between the inside of the fuselage sides and the engine bearers.

NOTE: *The engine will be finally fitted later in this build.*

Test fit the engine onto the engine bearers. Trim the length of the added Nickel-Silver tubes to allow them to clear the pilots panel frame. Pass the propeller shaft through the hole at the front of the fuselage then lower the rear of the engine to locate the engine onto the bearers.

Make sure the engine locates fully onto the bearers with no gaps.

Make sure the locating lugs under the engine flanges locate into their recesses in the top of the bearers (two on the right side and one on the left side).

Make sure the engine sits vertical on the bearers.

Filler caps:

NOTE: *Two filler caps were located on the right side of the fuselage top, between the pilots cockpit and the engine. What these were used for is uncertain, but possibly for fuel and radiator coolant.*

From 0.2 mm thick styrene sheet, cut two discs of 3.5 mm diameter.

Cement two discs in position on the outside of the right fuselage half, just the rear of the engine cowl panels.

Point mark the centre of the discs.

Using the point marks as guides, drill through the discs and fuselage using a small drill, such as a 0.5 mm.

Using drills of increasing diameter, drill out the holes to leave a thin rim of the discs.

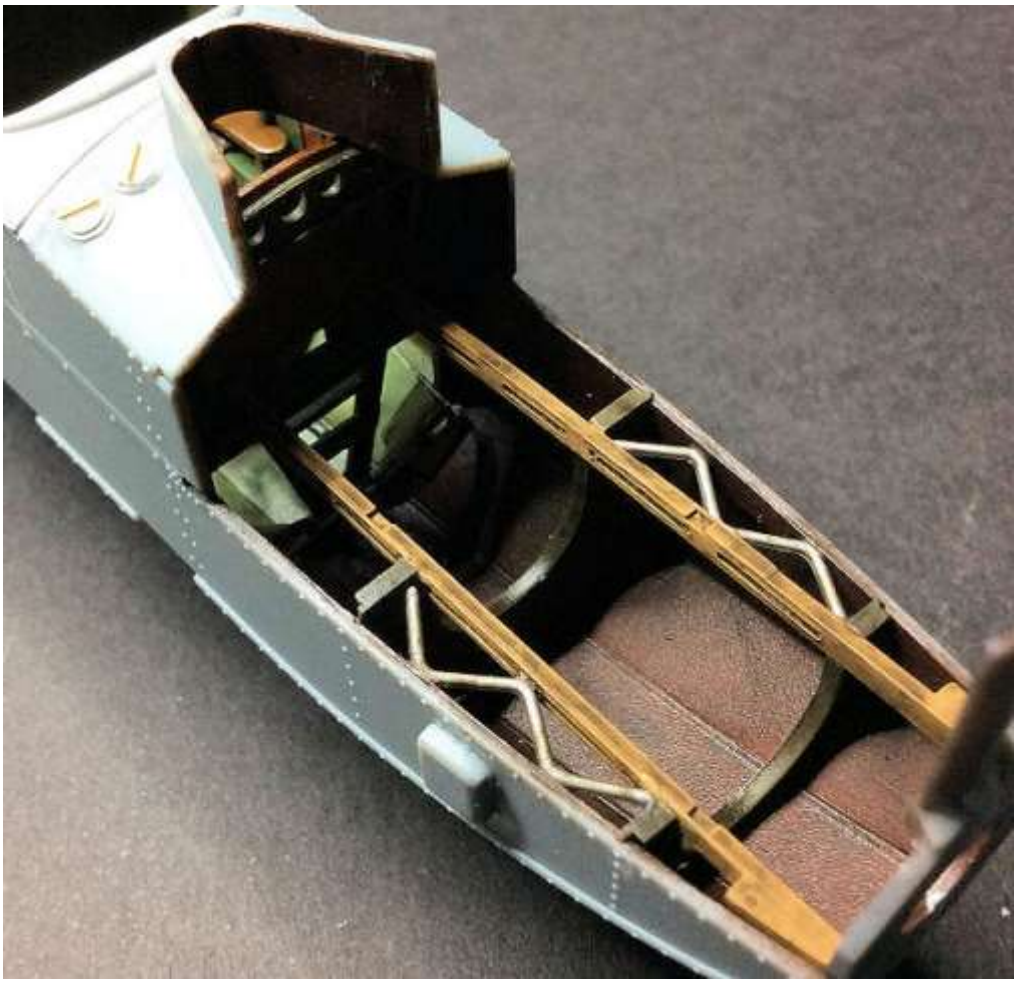
Cut two more discs slightly smaller in diameter.

Cement the disc in the centre of the previous discs.

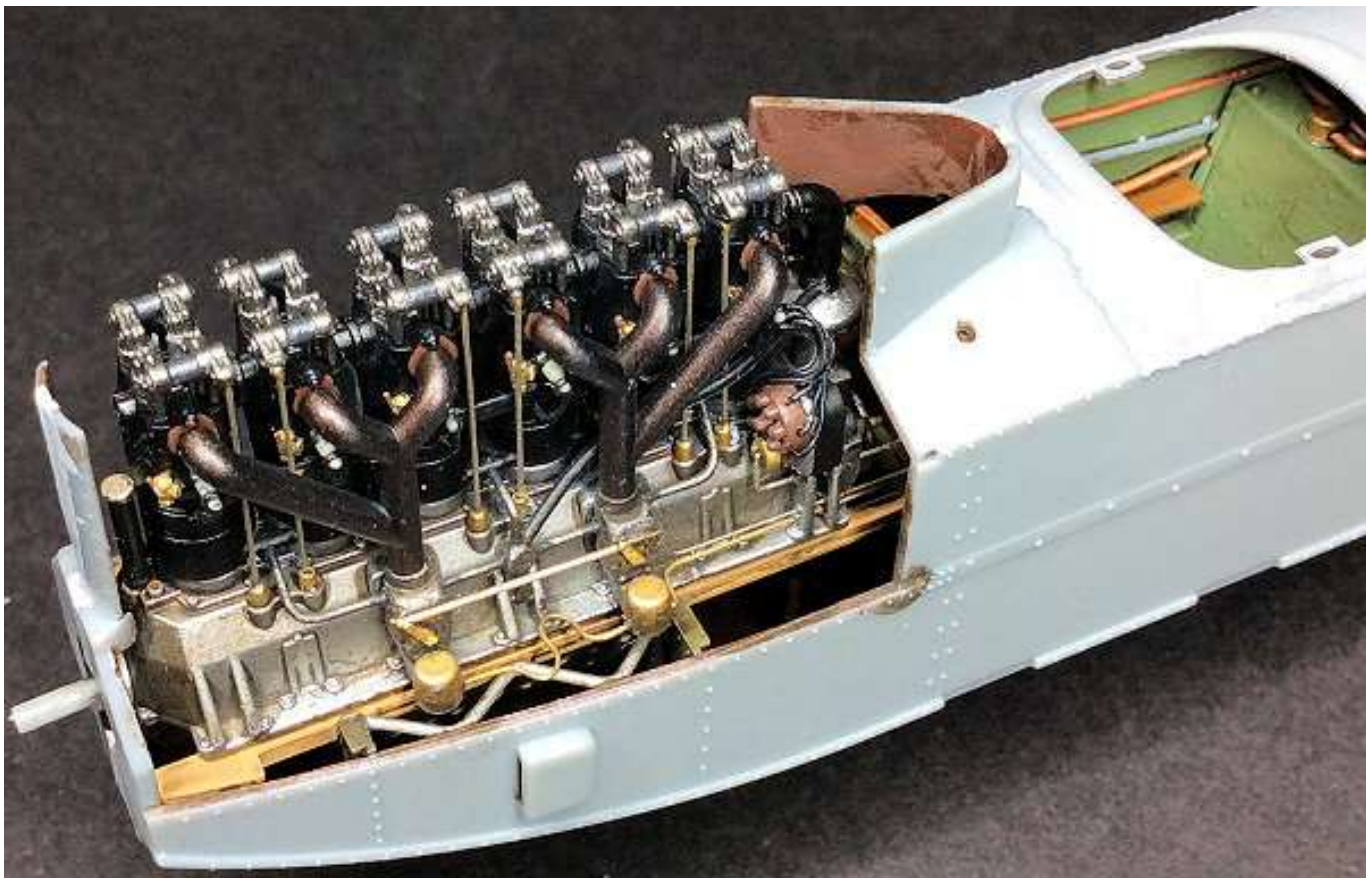
Using flat nosed plies, flatten a length od 0.3 mm diameter brass tube, such as 'Albion Alloy's' MBT03 or similar.

Cut the flattened tube in two short lengths the same width as the smaller discs.

Secure the flattened tubes on the smaller discs using CA adhesive (the thin edge on the discs).



Engine test fitted only



PART 9
CONSTRUCTION

PART 9 - CONSTRUCTION

References:
Windsock Datafile 39 ‘Junkers J.I’ (by P.M. Grosz)
Science & Technology National Museum Milan (photographs)
Deutsches Technikmuseum Berlin (photographs)
Canadian Aviation Museum (photographs).
‘Flight Magazine’ article of 18th March 1920.

NOTE:
The ‘Wingnut Wings’ instruction manual is reference throughout this build.

When removing parts from their kit sprues, take care as cutting too close to the parts can cause stress marks. This is especially the case when removing the clear parts from their kit sprue.

Take care when removing the smaller or more fragile parts from their sprues. Too much cutting pressure can cause deformation, breakage or stress marks in the parts.

Remove any residual sprue tags and mould seams from the parts.

Fill and sand flush any ejector pin marks from parts that will be visible on the completed model.

Always remove any residual photo-etch tags from parts removed from their sheet. I used a diamond photo-etch file.

When cementing large kit parts, I use ‘Revell’ Contacta Professional cement (39604). This cement is a thicker liquid cement, which takes longer to fully set, but does provide a stronger bond between larger kit parts.

Assembly:

Cement the following parts together:

Tailplane halves (D1 and D2)

Elevator halves (D3, D4, D5 and D6)

Upper wing centre section (H8, H9 with I1 and I6 stiffeners)

Left upper wing outer sections (I2 and I5)

Right upper wing outer sections (I3 and I4)

Left aileron halves (F4 and F6)

Right aileron halves (F5 and F7)

Left lower wing outer sections (H1 and H6)

Right lower wing outer sections (H2 and H7).

Secure the following parts in position using thin CA adhesive:

Elevator tabs over the elevator hinges (Page 12 - photo-etch P5). Cut away the surface corrugations to seat the tabs.

Wing straps on each inboard top surface of the lower wings (Page 5 - photo-etch P4).

Check that there are no gaps around the join seams and if necessary, fill and sand.

Lightly sand the edges of the assemblies to blend the joints.

NOTE: *The fit of the upper and lower wing outer sections into their centre sections is tight. To make them easier for fitting, sand the wing locators until a smooth fit is achieved.*

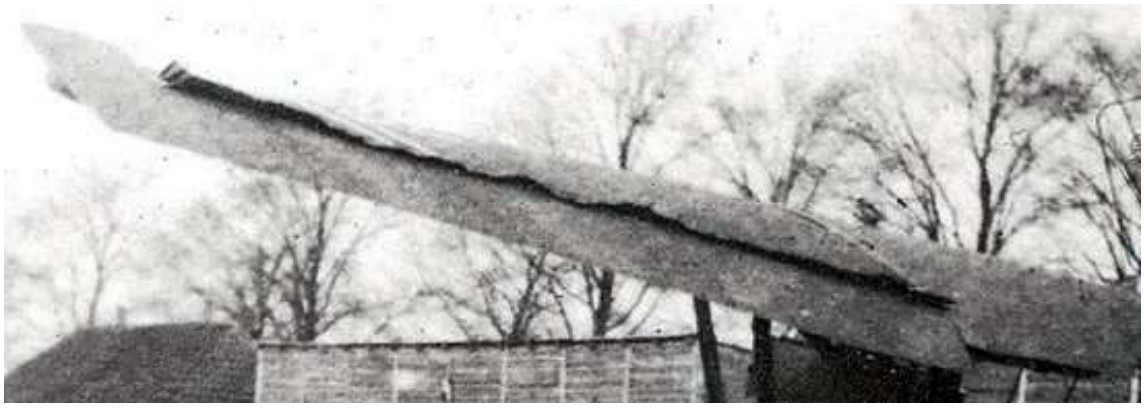
Check that the parts fully and correctly locate into each other.

Enhancements:

NOTE: *The following modifications to the kit parts are intended to better represent the actual aircraft and to correct errors in the moulding of the kit parts.*

Upper wing trailing edges:

NOTE: *The top halves (I4 and I5) of the outer sections of the upper wing have an extension at the wing trailing edges. This is to represent the cover strip for the leading edges of the ailerons. Due to the limitations of moulding, these cover strips are moulded as undistorted extensions, but in reality, these cover strips were normally unevenly distorted along their entire length and from slight to heavy distortions. If preferred, these cover strips will need to be modified.*



WARNING: ***The following technique used requires the use of a hot soldering iron. Take extreme care when working close to the heat source and make sure the soldering iron does not contact the model, as it will instantly melt the styrene.***

I used a small electrical soldering iron, fitted with a chamfered and flat tip.

Set up the solder iron in such a way that it can be turned on and left securely in position at a 45 degree angle.

Turn on the soldering iron and set it's operating temperature to high (I set mine to 350 degrees).

Once the soldering iron has reached operating temperature, carefully hold the upper wing trailing edge over and close to, **but not touching**, the trailing edge extension.

Wait for signs of the styrene softening then using a suitable round tool (I used the ball end of a paper embossing tool), ease the trailing edge up to distort it.

NOTE: *The created distortions are mainly in an upward direction, but some can be downwards, but not by much, otherwise they will stop the aileron from location onto the rear of the wing.*

Move the wing along and repeat the process at locations all along the trailing edge.

Repeat to create similar distortions on the other wing outer section.

Check that the ailerons can be fully located onto the rear of their wing outer sections.

Cement the lower wing outer sections into the lower wing centre section.

Cement the upper wing outer sections into the upper wing centre section.

Cement the upper wing ailerons into their hinge locations on the upper wing.

Cement the elevators into their hinge locations on the tailplane.

Upper wing aileron gap:

NOTE: *When the ailerons are fitted to the upper wing, their inboard ends should be close to the wing (refer to above photograph). However, an error in moulding the parts leaves a rectangular gap of 2.5 mm between the edge of the wing centre section and the inboard ends of the ailerons. To fill this gap, inserts of corrugations (to match the wing and aileron surfaces) need to be added. These can be created using parts 24 and 25 on kit sprue D. These are parts not required for the model (highlighted as such on page 2 of the kit instructions).*

Top surfaces:

Cut away the stub on the rear face and the smooth section from the edges of redundant parts 24 and 25.

Cut along the longest edge of the parts to separate a strip of just over two corrugations.

On the top surface of the upper wings, test locate the strips between the edge of the wing centre section and end of the ailerons.

NOTE: *During the following step, sand the sides of the strip equally. Don't sand just one side only as that will reduce the width of the ridge.*

Sand the edges of the strips to achieve a slide fit.

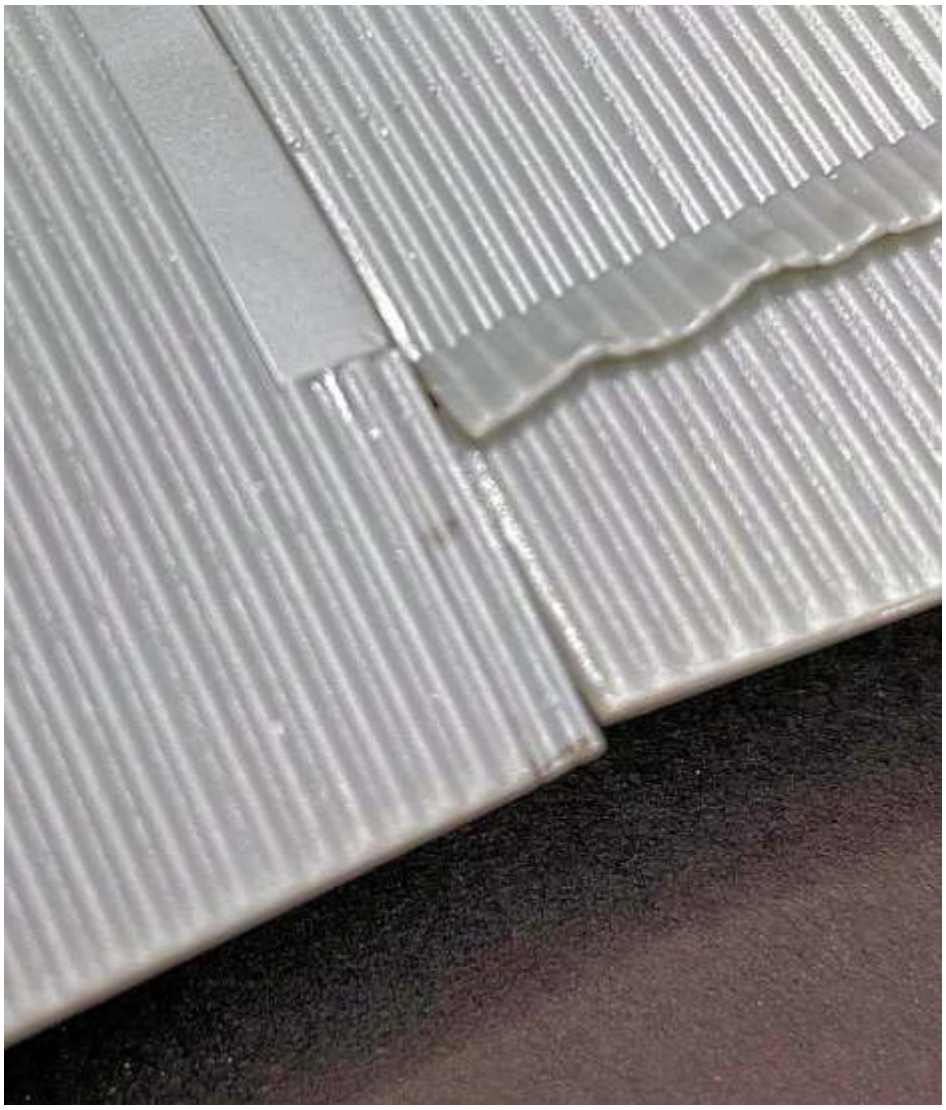
Trim the length of the strips such that the rear edge aligns with the wing rear edge.

File or sand a chamfer on the underside ends of the strips to allow for adding the underside strips (when created).

Fully locate the strips in position and cement the forward ends only as the strips will need to be bent slightly to align with the wing profile.

Once the cement has fully set, hold the rear edge of the strips down to align with the wing profile and apply thin CA adhesive to secure them in position.

Once the adhesive has set, reinforce the joint by applying cement.



Underside surfaces:

NOTE: *As there is not enough corrugations remaining from the cut redundant parts 24 and 25, the underside strips need to be created.*

Cut two strips from 0.5 mm thick styrene sheet and just wider and longer than the openings in the underside of the upper wing.

Sand the edges of the strips to achieve a slide fit.

Trim the length of the strips such that the rear edge aligns with the wing rear edge.

File or sand a chamfer on the underside ends of the strips to allow for mating with the chamfered underside end of the already installed strips.

Fully locate and cement the strips in position, making sure the strips align with the wing profile.

Cut four strips of 0.5 mm width from the styrene sheet and longer than the added inserts.

Trim the length of the four strips to that of the inserts.

Cement two strips on each insert, leaving a gap between them to approximate the surrounding corrugations.

Engine access doors:

NOTE: *The hinged engine access doors had more detail than provided on the basic doors that are supplied in the kit. As can be seen on the following illustrations and photographs, these details include:*

Lightening holes in the bracing ribs

Number of bracing ribs:

Two ribs - front and forward

Three ribs - forward, centre and rear

Two ribs - forward and centre

Retaining cable or rod

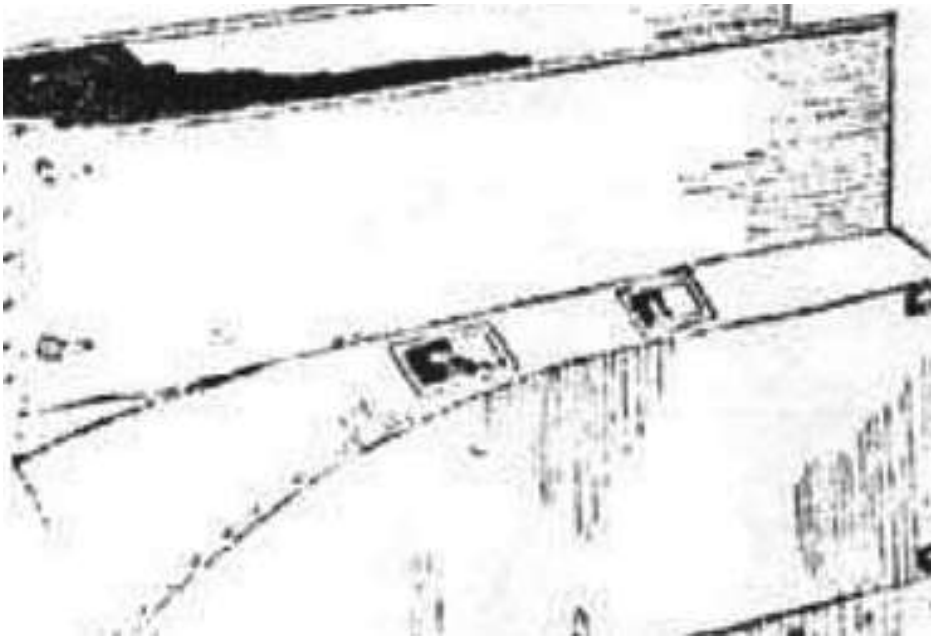
Additional bracing tubes

Ports from the external cooling air louvres (right door only)

Access panels to the engine (left door)

Access doors locking plates.

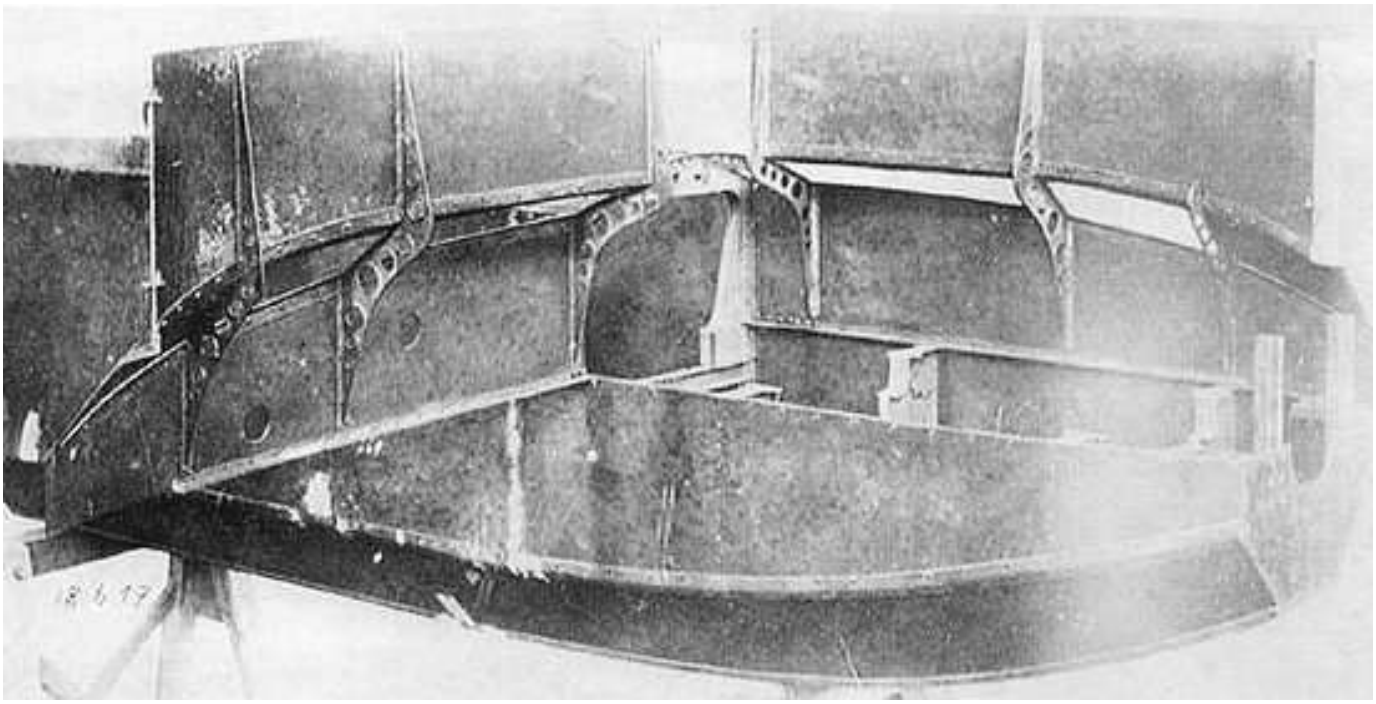
Left door with access panels



Left access door - front and forward bracing ribs

Right access door - forward, centre and rear bracing ribs

Right and left access doors - forward, centre and rear bracing ribs



Left access door - forward and centre bracing ribs

Right access door - forward and centre bracing ribs

Right engine access door:

Before adding detail to the door, first fill and sand flush or scrape away the multiple moulding ejector pin indents on the inner surface of the door.

NOTE: *Strangely, the kit supplied doors have four pre-moulded bracing ribs, which are not shown on any photographs of this aircraft, either taken at the time or on museum aircraft.*

At this stage a decision on how many bracing ribs are required, based on existing photographic evidence. However, the pre-moulded bracing ribs are not totally the correct shape and should have lightening holes. I chose to remove the four pre-moulded bracing ribs and replace them with the two forward and centre bracing ribs.

File or sand away the four bracing ribs on the two access doors, leaving just the witness marks of where they were.

NOTE: *Refer to the previous photographs for the size and shape of the three bracing ribs for each access door.*

Using 0.5 mm thick styrene sheet, mark then cut out each of the three bracing ribs. Start with the contact edge to the access door and once that aligns correctly, mark and cut out the remaining sides, using scissors or a sharp blade.

Point mark along the ribs for the lightening holes.

Using drills of 0.6, 0.8, 1.0 and 1.2 mm diameter, drill through the ribs to form the lightening holes.

NOTE: *Use the created ribs to draw around on 0.2 mm thick styrene sheet to mark up the ribs for the left access panel.*

Refer to the previous photographs and cement the three ribs onto the inside of the access panel.

Using 0.2 mm thick styrene sheet, cut out two discs of 4.0 mm diameter.

Cement the discs over the two cooling ports on the inside of the access door.

Point mark the centre of the discs and drill a hole through using a 1.0 then 2.5 mm diameter drill.

Using a straight edged blade, cut around the hole to leave a thin rim only.

Cut two lengths of 0.7 mm diameter Brass tube, such as 'Albion Alloy's (MBT07) or similar.

Slide the tubes onto a length od 0.2 mm diameter rod, such as 'Albion Alloy's NSR02) or similar.

Using the 'Albion Alloy's' 'Strutter' jaws in a vice, flatten the tubes.

Remove the 0.2 mm diameter rod.

File the ends of the tubes such that they fit between the added bracing ribs (refer to the following photographs).

Flatten the ends of the tubes using flat nosed pliers.

Secure the tubes in position using thin CA adhesive.

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

Left engine access door:

NOTE: *The differences for the left access panel are that there are no cooling ports, but there are two small rectangular access panels required.*

The two access panels (possibly for the carburettors) on the lower edge of the left hinged engine access panel, are pre-moulded on the panel, but are barely visible.

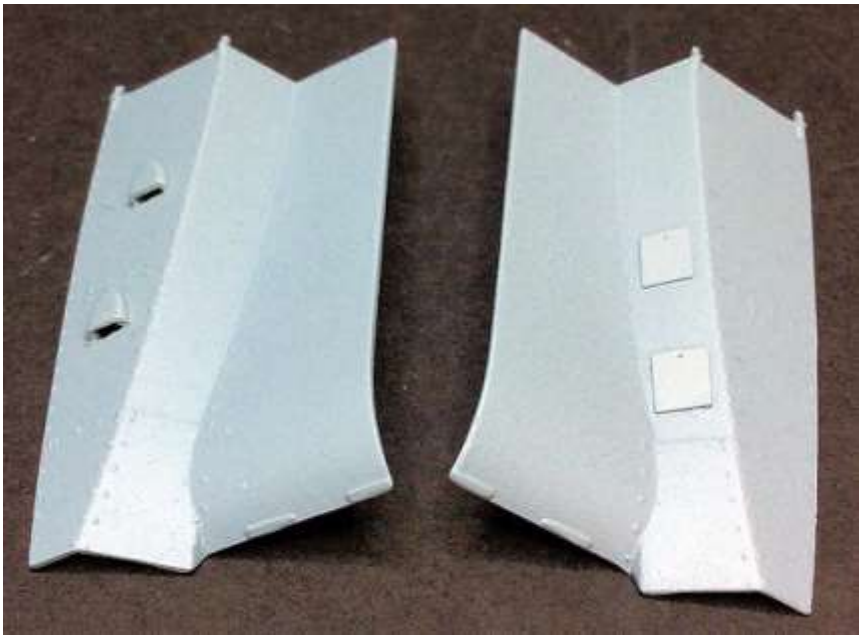
Cut from 0.2 mm thick styrene card the two access panels, 4 mm x 3 mm.

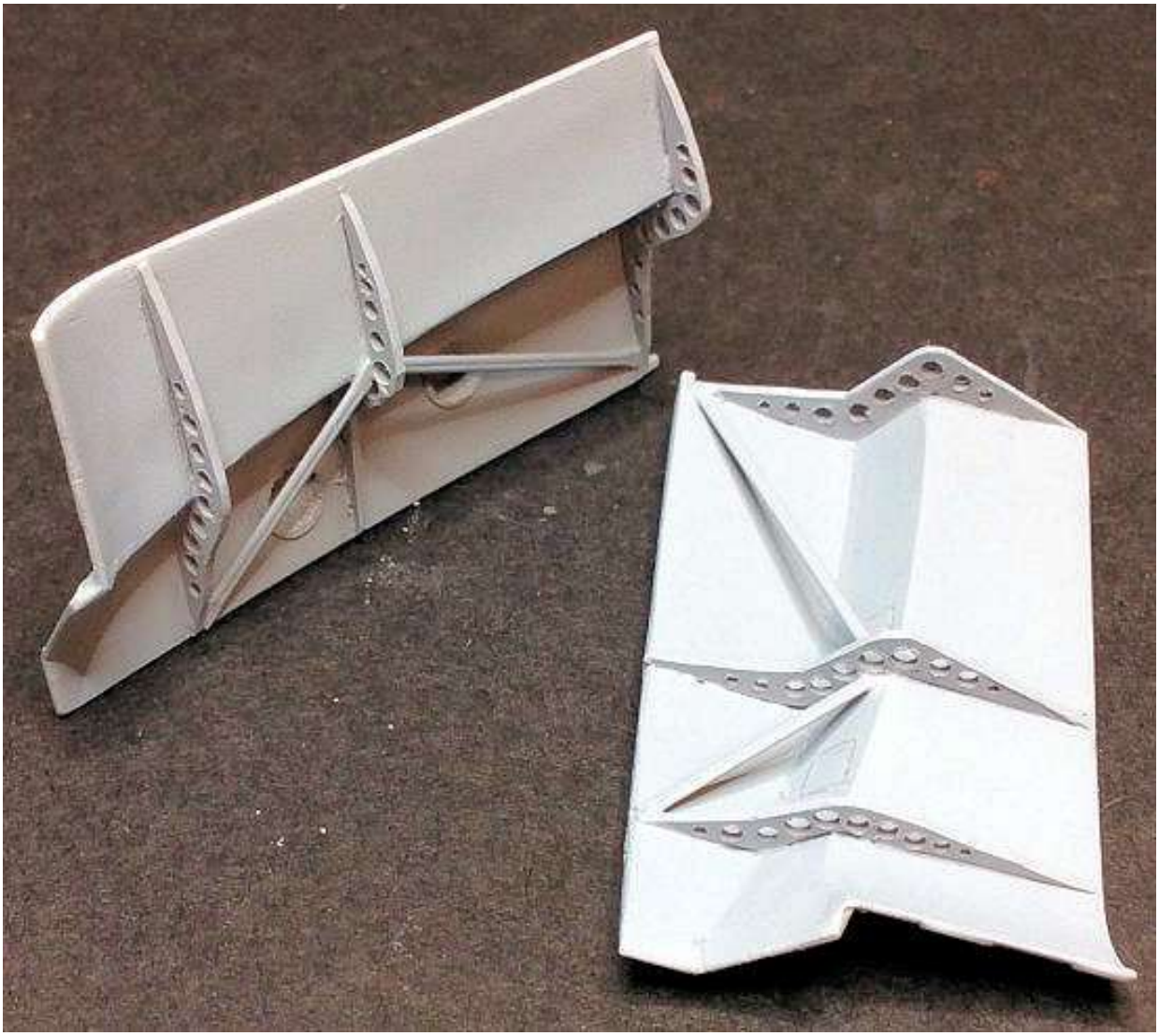
Cement the two access panels in position on the lower edge of the left hinged engine access panel.

To represent the panel fasteners, centrally point mark the rear edges of the two panels.

On the inside of the access door, carefully scrape the outline of the panels under where the panels are located.

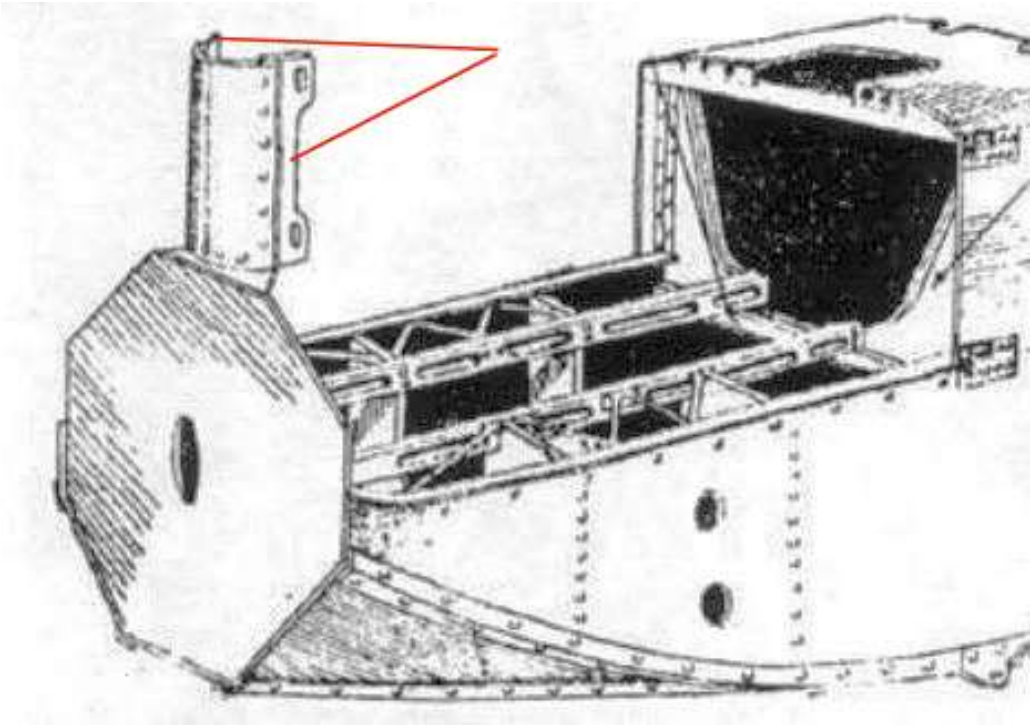
Continue to modify the left access panel for the bracing ribs and tubes, as carried out on the right access panel.





Access doors locking plates:

NOTE: *The two hinged engine access panels were secured to the front fairing panel with locking levers, which engaged with slots in the locking plates.*



Cut from 0.2 mm thick styrene card two separate locking plates.

Test locate the locking plates onto the rear of the front fairing panel.

Using a drill of 0.5 mm diameter, drill a slot in both protruding ends of each locking plate.

Cement the two locking plates in position on the rear of the front fairing panel.

NOTE: *Lever panel locks were fitted to the engine access doors. Although pre-moulded on the kit parts, the levers are to indistinct. Also those pre-moulded on the front vertical panel are not correct as these were located on the access doors (see below). These will be replaced later in this build.*

Sand away the pre-moulded panel locks on the vertical front panel.

Assembly (continued):

Radiator:

Cut from their kit sprues and prepare the radiator parts detailed on Page 8 in the instruction manual.

Cement the radiator parts (D26 to D30) together to form the radiator assembly.

Test fit the radiator assembly into its locating slots in the underside of the upper wing and if it's difficult to fully fit, sand the side edges D27 and D28) as required to achieve a push fit into the wing.

Cement the radiator assembly into the underside of the upper wing.

Struts:

Secure the following parts together:

Strut B24 and B12

Strut B23 and B14

Strut B20 and B11

Strut B19 and B15.

Landing gear:

Locate the suspension cords (A28 and A29) over the bottom of the landing gear struts A1 and A3.

Pass the ends of the axle A2 through the landing gear struts and suspension cords.

Fully locate the ends of the landing gear struts into their locating holes in the underside of the lower wing.

Align the axle to the lower wing.

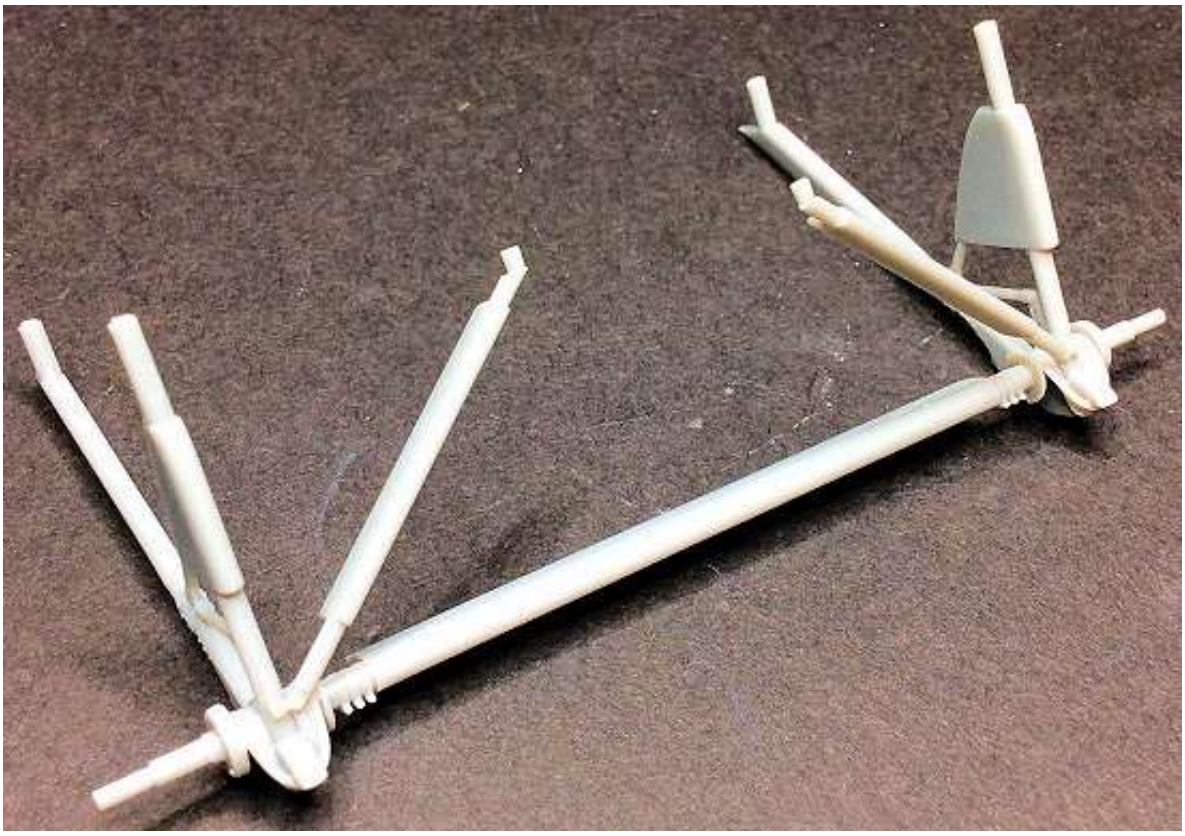
Cement the axle into the landing gear struts and suspension cords.

Locate the two bracing struts (A4 and A10) into their locating holes in the underside of the lower wing and holed lugs on the forward, bottom of the landing gear struts.

Cement the bracing struts into the landing gear struts **only**.

Cement the axle rings (A8) into the protruding ends of the axle.

Once the cemented parts are fully set, carefully remove the landing gear assembly from the underside of the lower wing.



Rudder control horns:

Drill a hole of 0.3 mm diameter through both ends of the rudder control horns (D15 and D16).

Cement the rudder control horns (D15 and D16) into their locating slots in the bottom, leading edge of the rudder.

Elevator control horns:

Drill a hole of 0.3 mm diameter through the ends of the elevator upper control horns (D9 and D10) and the underside control horns (D11 and D12).

Locate the elevator upper control horns (D9 and D10) into their locating slots in the top of the elevators.

Locate the elevator underside control horns (D11 and D12) into their locating slots in the underside of the elevators.

Cement the four control horns in position in the elevators.

Painting (continued):

Mask off the rear of the fuselage where the lozenge decals will be applied.

Airbrush the following with a grey primer, such as ‘AK Interactive’ Grey (AK758) or similar.

Upper wing
Lower wing
Tail plane/elevator
Fin
Rudder
Landing gear assembly
Engine access panels
All wing and fin struts.
Fuselage (un-masked areas).

NOTE: *When airbrushing a surface, angle the airbrush over the leading and trailing edges of the wings and tail plane/elevators. This should form a straight paint line along the edges without the need for masking. Airbrush in a similar manner for flat surfaces, such as the two engine access panels.*

Airbrush the following with ‘Tamiya’ Light Blue (XF23) or similar:

Upper wing (underside surface)
Lower wing (underside surface)
Tail plane/elevator (underside surface)
Fuselage (un-masked areas).

Airbrush the following with ‘Tamiya’ Dark Green 2 (RAF) (XF81) or similar:

Upper wing (top surface)
Lower wing (top surface)
Tail plane/elevator (top surface)
Fin
Landing gear assembly
Engine access panels (outer surfaces)
All wing and fin struts.
Fuselage (un-masked areas).

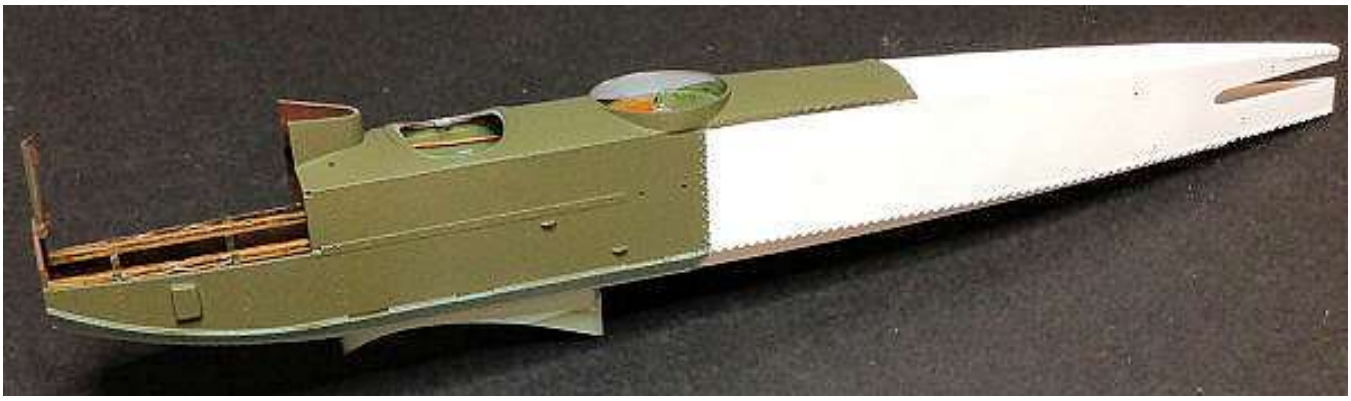
Airbrush the inner surfaces of both engine access panels with ‘Tamiya’ Hull Red (XF9) or similar.

NOTE: *The suspension 'cord' around the axle and bottom of the landing gear struts was not the normal 'bungee' cord, but was instead steel cable.*

Brush paint the wrapped suspension cables with 'Tamiya' Metallic Grey (XF56) or similar.

Mask off the forward, green and light blue painted areas of the fuselage, leaving only the where the lozenge decals will be applied.

Airbrush the unmasked area of the fuselage and the rudder with a white primer, such as 'AK Interactive' White (AK759) or similar.



NOTE: *The engine exhaust pipe assembly (kit part H3) is not totally required as it will be mostly replaced by the 'REXx' exhaust (32031).*

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

Flare holders (A7 or A35 or A45)
Engine cowl top panel (A27)
Tail skid (D31, D32 and D33)
Wheels and outer cover (A45 and A46)
Engine coolant pipes (B2 and B3)
Grab handles (A50 and A51)

Pilots mirror (A5)

Engine tachometer (A6)

Foot step (A30).

Brush paint or airbrush the parts as follows:

Flare holders (A7 or A35 or A45) - holders ‘Tamiya’ Dark Yellow (XF60) then apply wood effects (refer to page 62 of the build log for information). Flares can be either Red (XF7), J.A.Green (XF13), White (XF2) or Royal Blue (X3) with caps ’Mr. Colour’ Brass (219) or similar.

Engine cowl top panel (A27) - Underside ‘Tamiya’ Hull Red (XF9) - top side ‘Tamiya’ Dark Green 2 (RAF) (XF81) or similar.

Tail skid (D31, D32 and D33) - ‘Tamiya’ Dark Yellow (XF60) then apply wood effects (refer to page 62 of the build log for information). Metal fittings Metallic Grey (XF56), ‘bungee’ cord Buff (XF57) or similar.

Wheels and outer cover (A45 and A46) - Covers ‘Tamiya’ Dark Green 2 (RAF) (XF81).

Engine coolant pipes (B2 and B3) - ‘Alclad’ Steel (ALC112) or similar.

Grab handles (A50 and A51) - ‘Tamiya’ Dark Green 2 (RAF) (XF81) or similar.

Pilots mirror (A5) - ‘Alclad’ Steel (ALC112) or similar.

Engine tachometer (A6) - ‘Tamiya’ Rubber Black (CF85) or similar.

Foot step (A30) - ‘Tamiya’ Dark Green 2 (RAF) (XF81) or similar.

Radiator (underside of upper wing) - paint only the front and rear radiator grills with Metal fittings Metallic Grey (XF56) or similar.

Cockpit surround padding - ‘AK Interactive’ Leather (AK3031).

Decals:

NOTE: *Refer to part 3 (Decals) of this build log for information on applying these decals.*

Serial number:

NOTE: *The aircraft serial number 596/18 is not supplied in the kit. Therefore it needs to be created.*

Create the serial number 596/18 in black, using MS Word on a PC. The font used was ‘Century’ and was test printed to achieve the same size as the kit supplied decals.

Duplicate the serial number several times in case any are damaged when being applied.

Print the serial numbers on a sheet of ‘MDP’ Mr. Decal paper clear (MDPCLRIWDP) or similar clear backed decal paper.

Once the print has dried, apply several light coats of aerosol acrylic clear sealer, such as ‘Krylon’ clear or similar. Allow the sealer to fully dry overnight.

Kit supplied decals:

The kit supplied decals used are decal numbers 1, 3, 7, 8, 26, 31, 33 and 34.

Lozenge decals:

The lozenge decal used is the ‘Aviattic’ 5 colour lozenge (ATT32013). This decal sheet has the lozenge decal printed in strips. These strips are not ‘cookie cut’ to fit the model and will need to be cut to the correct shapes before application.

Preparation:

NOTE: *Before applying decals it's best to prepare the surface with a smooth, gloss coated surface. This will reduce 'silvering' (trapped air) from showing through the decals and also improves adhesion of the decals to the model surfaces.*

Make sure, as far as possible, that all surfaces to receive decals are smooth and free from surface imperfections.

Airbrush the areas to receive decals with several light coats of a clear sealer, such as 'Alclad' Aqua Gloss 600 or similar. The areas to be treated are:

Outer top surface of the upper wing

Outer underside surface of the lower wing

Compass recess inboard on top surface on left lower wing

Instrument face of the Tachometer

Both sides of the rudder

Both outer wheel covers

White painted areas of the fuselage rear.

Lozenge application:

NOTE: *The fuselage sides, top and underside need to be 'templated' by trial and error cutting paper or tissue paper until you achieve the correctly shaped templates.*

Cut out from paper the correct shapes of the fuselage sides, top and underside. Make sure the paper templates align correctly to the edges of the fuselage panels.

NOTE 1: *Make sure you cut out the decals using the correct side of the template or you will end up with a 'mirrored' decal (opposite way round).*

Using the paper templates, **'lightly'** outline them onto the **rear** (blank) side of the 'Aviattic' decal sheet. Make sure you don't apply too much pressure when marking out the decals, otherwise the impression of the pencil mark will shown through the decal side of the sheet.

Using sharp scissors or a scalpel blade, carefully cut out each decal. Make sure there is a clean cut through the decal as several cuts can cause slight 'fraying' at the cut edge, which can pull fine strips of the decal away when removed.

NOTE: *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. However, if you handle them too roughly, damage can occur.*

Make sure the fuselage surfaces are clean and smooth, otherwise particles on the surface will cause 'silvering' (trapped air) under the decals when dry.

NOTE: *Apply the fuselage top decal first, followed by the two sides decals and finally the underside decal.*

Wet the model surface with clean water.

Soak each decal in warm water for around 30 seconds or 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 model and holding that end, slide out the backing paper.

Using a soft broad brush, 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. This will expel any remaining water and press the decal onto 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.

Use a needle to carefully prick through the decal on any areas where air is trapped and can't easily be removed, such as wing location holes, control cable outlets etc.

Once the decals have set and if necessary, apply either 'MicroSol' or 'Tamiya' X20A thinners sparingly around any lifted edges of the decals. The thinners can also be used sparingly to 'seat down' areas of the decal that need to conform to surface detail or that show evidence of 'silvering' (trapped air under the decal).

Allow these decals to fully set.

NOTE: *Even when applied and sealed, the decals can easily be damaged if handled roughly or scraped with a sharp edge. Once decals have been applied, I wear either lint free or surgical (blue) gloves when handling those surfaces.*

Kit supplied decal application:

NOTE: *The kit supplied decals used are decal numbers 1, 3, 7, 8, 26, 31, 33 and 34. Refer to pages 13 and 14 in the instruction manual for information on positioning of these decals.*

Cut the rear 'leg' of the kit decals 34 to allow the main part to be applied to the wing and the cut section to the aileron.

Apply some of the decal water over the areas of the upper and lower wings and the rudder where the kit supplied decals are to be located.

NOTE: *As the wing surface is corrugated, applying the decal needs care as they will tend to grip the corrugations and can be damaged if forced to move during positioning.*

Apply the main portion of the decal in position on the upper wing.

Apply the aileron section of the decals in position on the ailerons.

NOTE: *Due to the surface corrugations, it is inevitable that water or air will be trapped under the decal. Once the decal has set, the trapped air or water will show as small blisters on the decal.*

To correct any water or air blisters in the decal, carefully slice along the corrugations using a sharp curved edge blade, such as a scalpel blade.

Apply 'MicroSol' by brush over the decal and leave to cure. This may need to be repeated several times to completely remove all of the blisters.

If necessary, use 'Tamiya' Semi-Gloss Black (X18) or White (XF2) to paint in any missing or damaged decal.

Repeat the procedure to apply the kit supplied decals33 to the underside of the lower wing and decals 26 to the sides of the rudder.

Apply the compass decal 7 into its recess inboard on the upper surface on the left lower wing.

Apply the Tachometer decal 8 onto the painted instrument A6.

Apply the logo decals 1 onto the painted outer wheel coversA46.

Applying fuselage serial number decals 31:

> **NOTE:** *Applying these two fuselage decals will require replacing the kit supplied serial number with the printed and correct number for this particular aircraft.*
>
> Cut away the existing serial number from the end of decals 31.
>
> Apply the decals 31 to the fuselage sides, making sure the crosses are aligned when viewed from above.
>
> Cut around the created serial number decals from the backing sheet.
>
> Apply the decals at the ends of the kit decal on the fuselage.

Assembly (continued):

Drill a hole in the top, front of the fuselage, left of the engine cowl panel, to fit the Tachometer (A6).

Drill a hole in the top, front of the fuselage, to the right of the cockpit, to fit the pilots mirror (A5).

Cements the tailplane fully into its locating cut out in the rear of the fuselage.

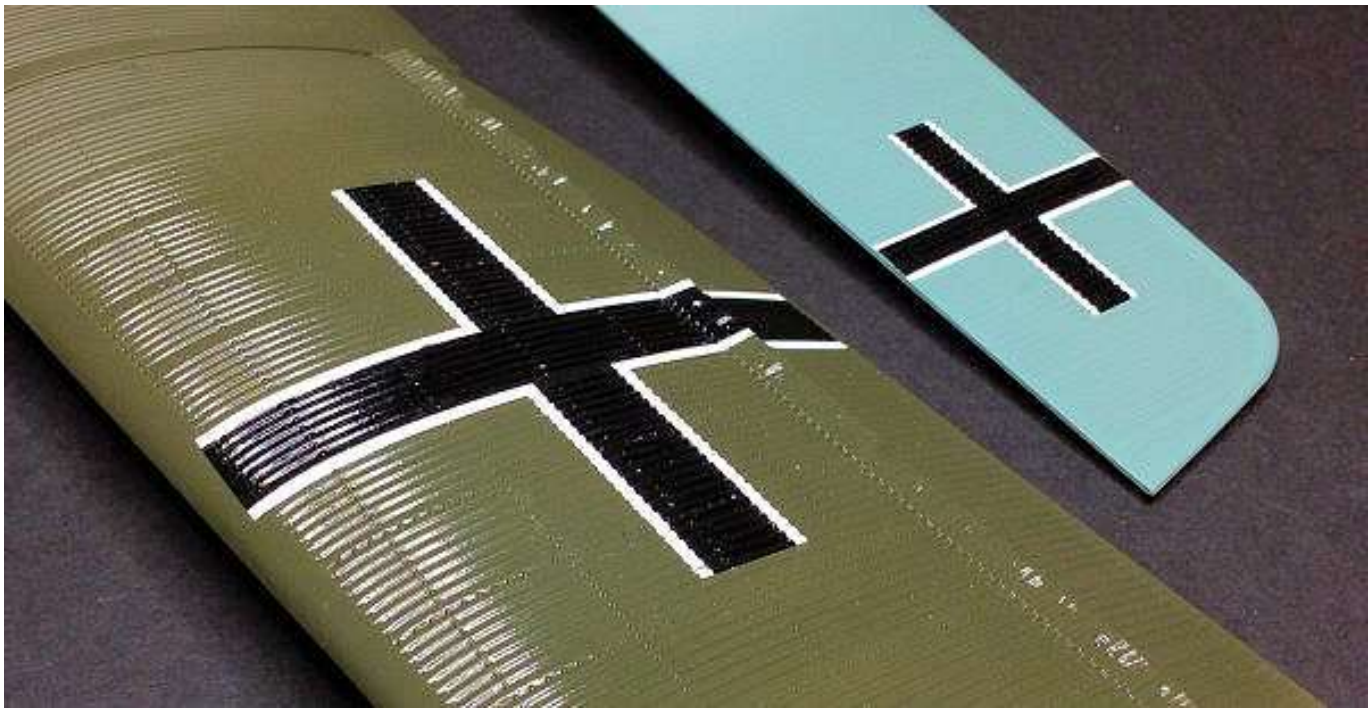
Cement the fin into its location holes on the top and rear of the fuselage.

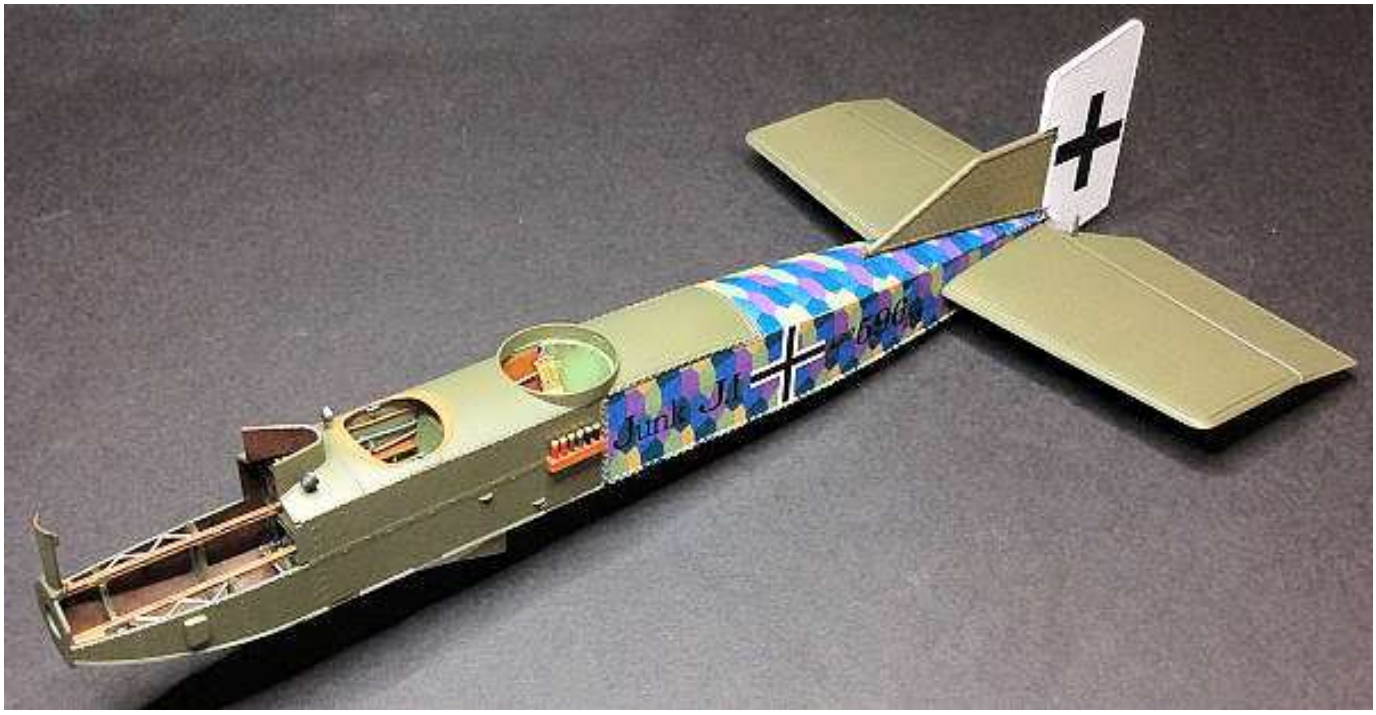
Cement the rudder into its bottom and upper recesses in the rear of the fuselage and at the top hinge on the fin.

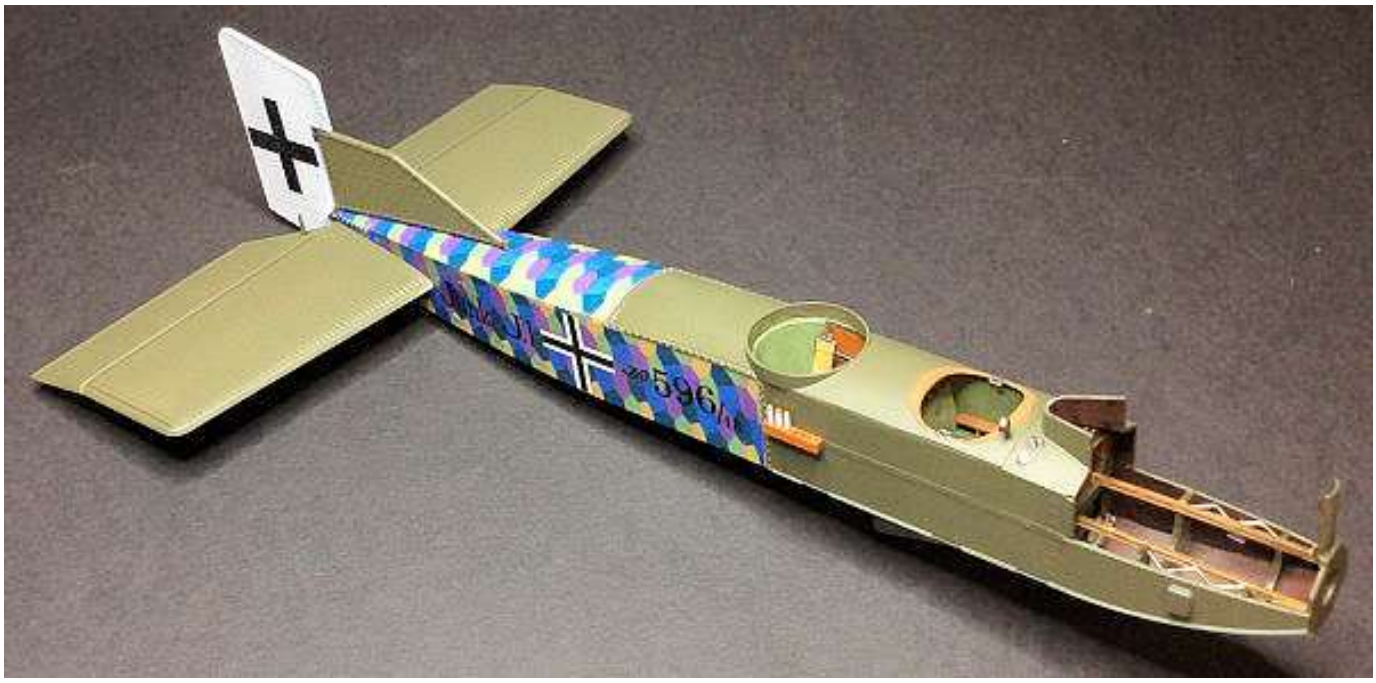
Cement the two flare racks into their location holes in the fuselage sides (gunners cockpit).

Cement the Tachometer into its pre-drilled hole in the top, front of the fuselage (left of the engine cowl panel).

Cement the pilots mirror into its pre-drilled hole to the right of the cockpit.



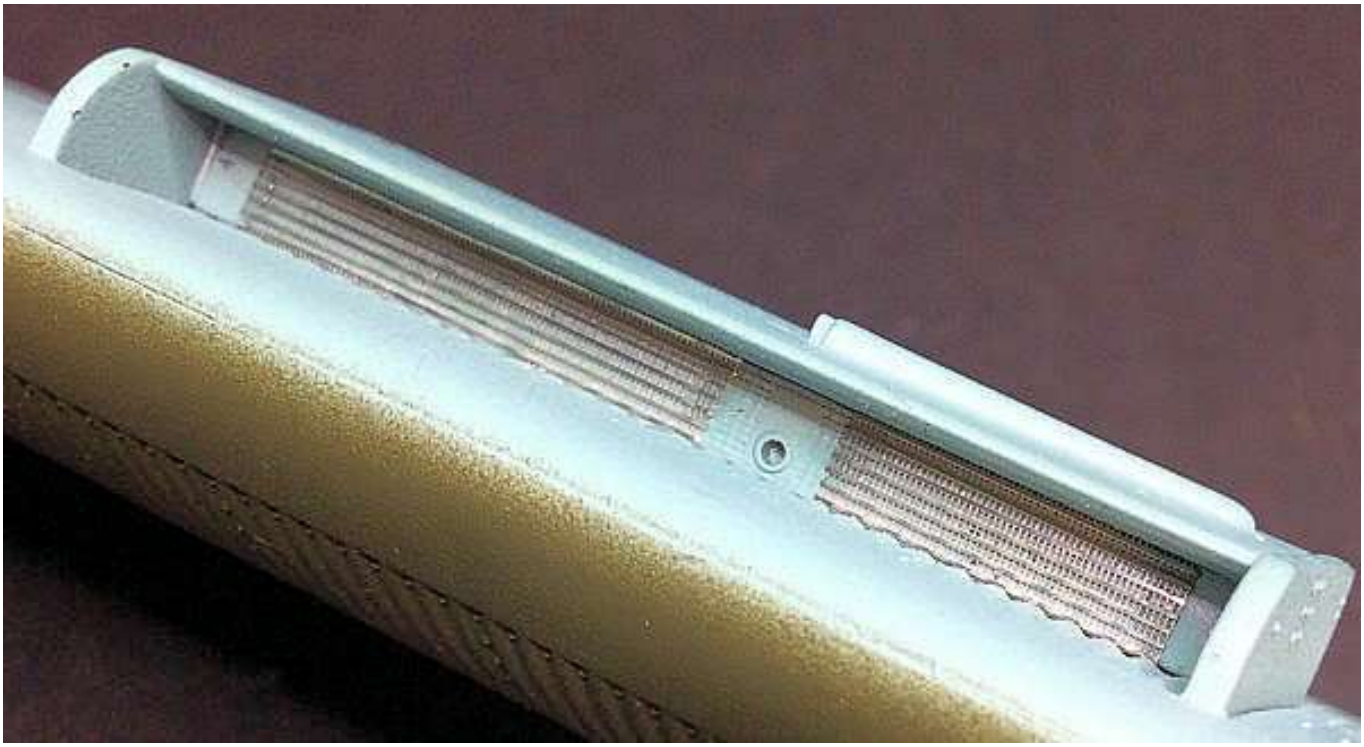

Junk J1
596

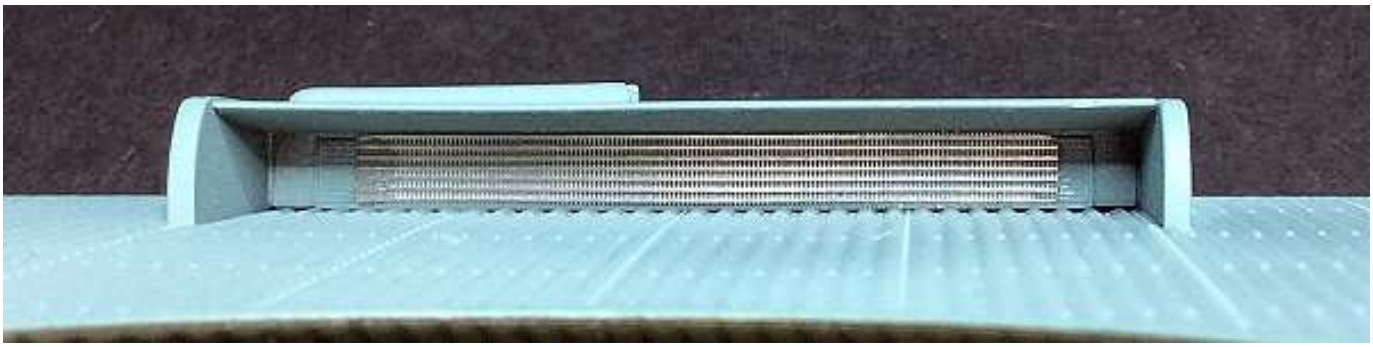

Junk J1
596


Junk J.1
596/18

Radiator grill:

To represent the front and rear grills for the radiator in the upper wing, I cut three strips of 'RB Productions' Radiator Mesh (RB-T027), which were held in position using thin CA adhesive.





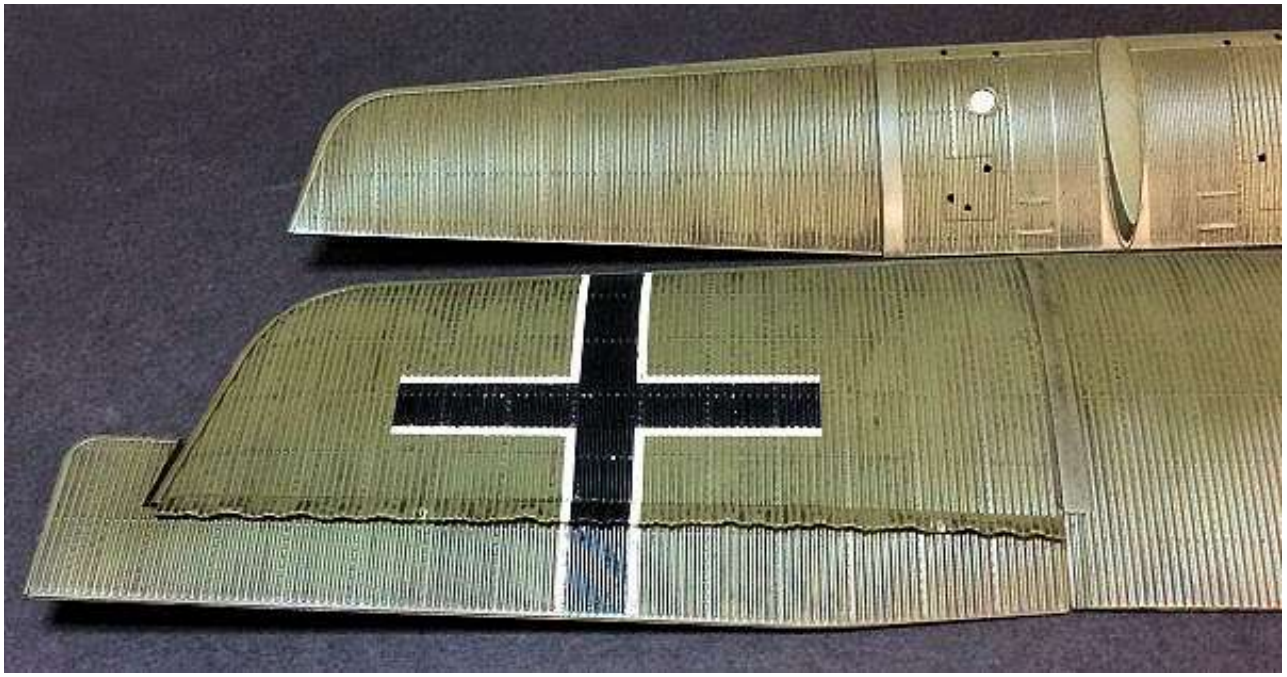
Weathering:

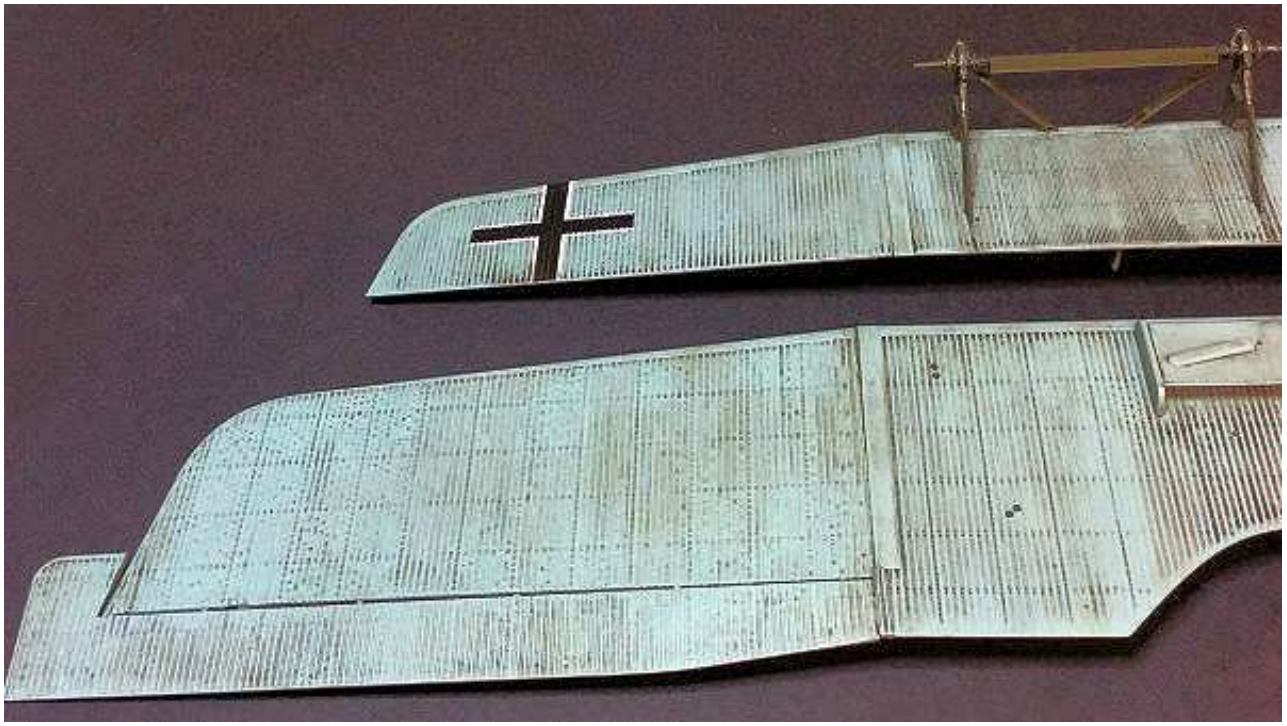
Weathering wash:

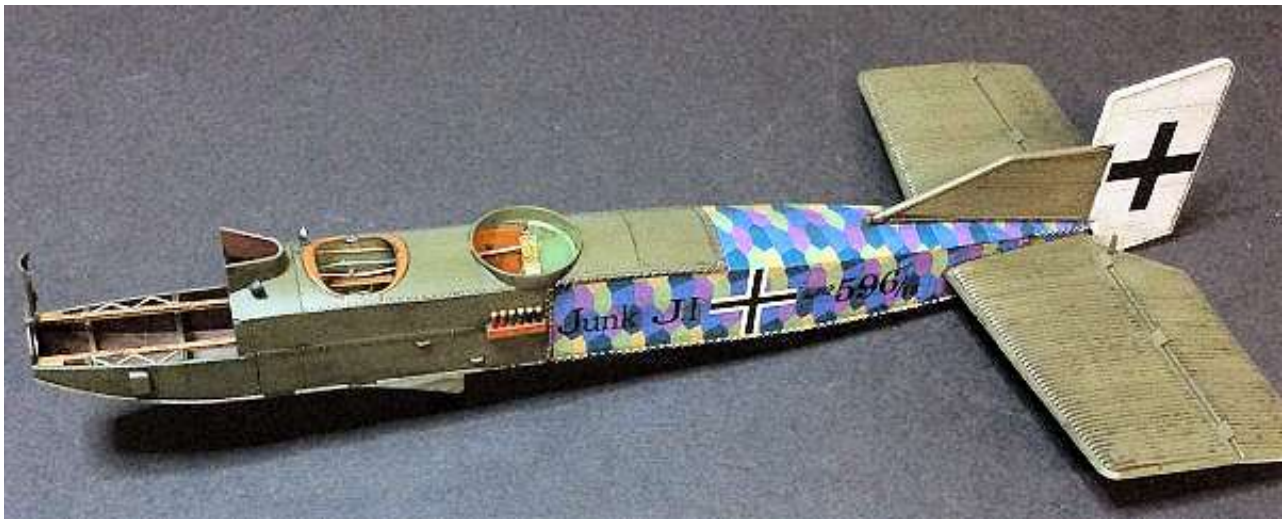
To seal and protect the applied paint and decals, airbrush all of the model parts with a semi-matte clear coat, such as 'Alclad' Light Sheen (ALC311) or similar.

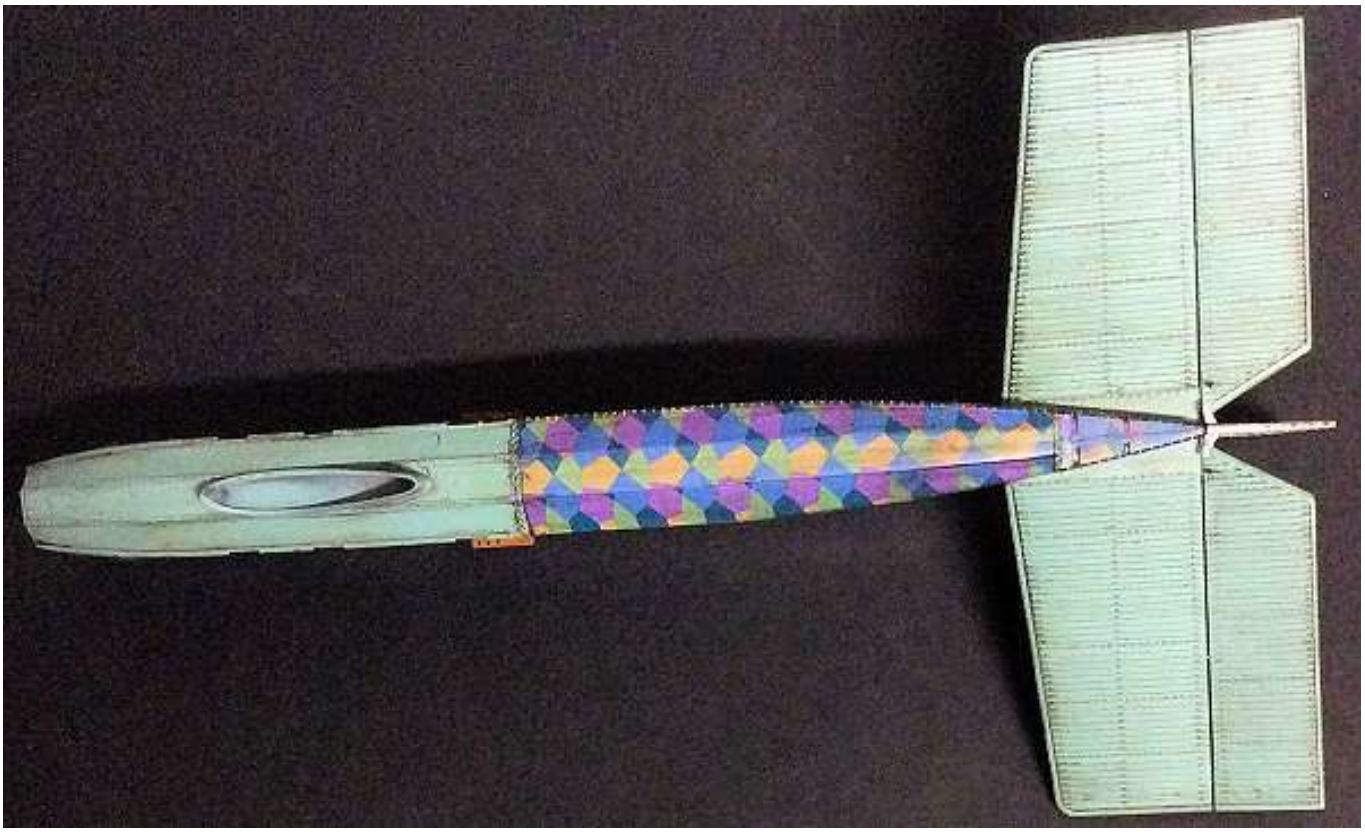
Refer to Part 2 (Weathering) of this build log. Apply the desired weathering over the upper and lower wings, fuselage, landing gear and all struts. I applied 'Flory Models' Dark Dirt clay wash. Remove the wash to achieve the desired weathered finish.

Seal the applied weathering, wood effects and painted parts by airbrushing a semi-matte clear coat, such as 'Alclad' Light Sheen (ALC311) or similar.





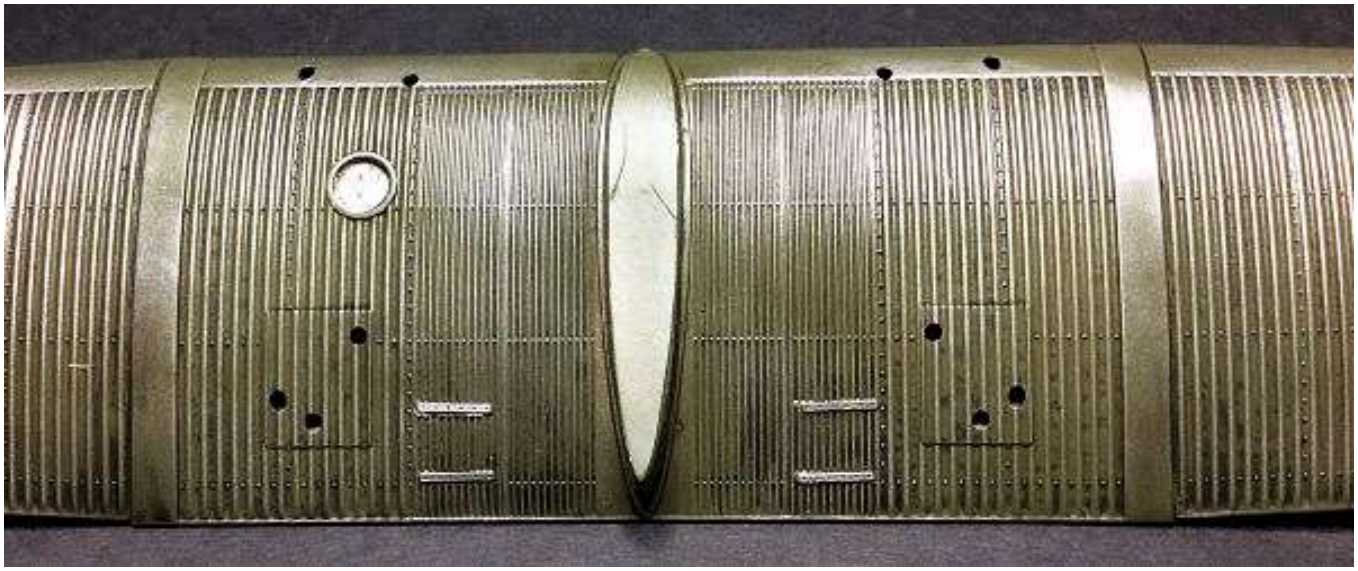

Junk J1
596

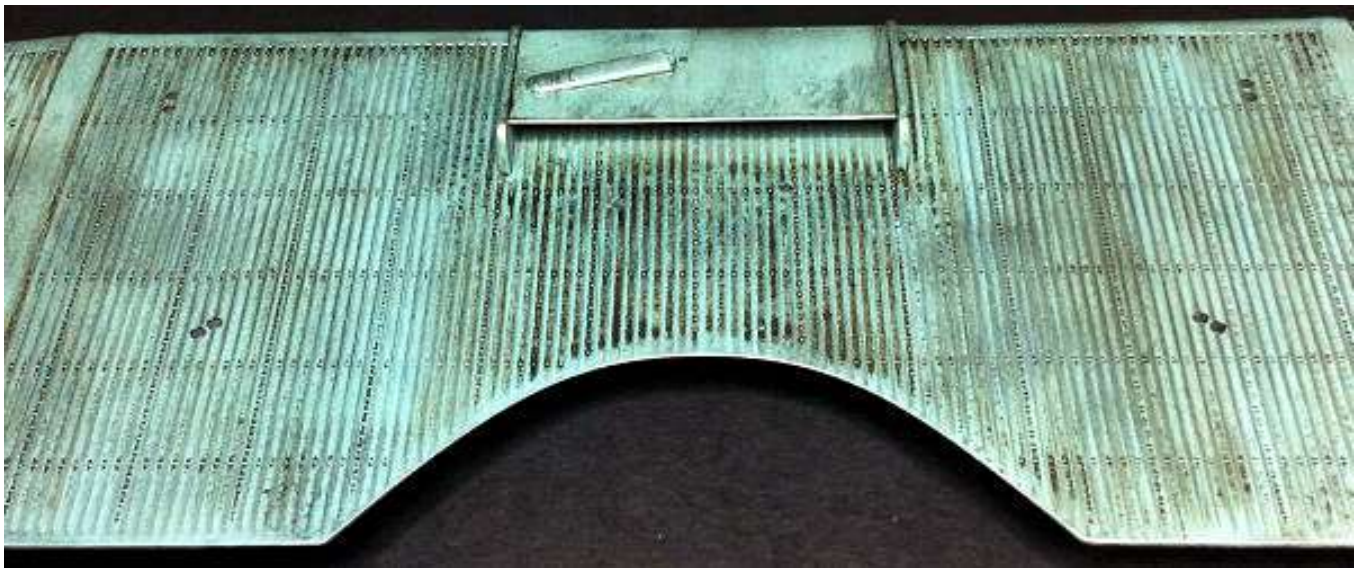


Metal dry brushing:

NOTE: *The aircraft was manufactured using corrugated Duraluminium sheet, which was the painted. Therefore, the surface finish should be weathered to show some wear of the paint showing the Duraluminium metal underneath.*

To dry brush the worn metal effect, wet a medium to large domed brush in the paint, such as 'Mr. Colour' Super Metallic 2 (Super Iron 2) (203) or similar. Then thoroughly wipe the brush on an absorbent tissue, such as kitchen roll, until there is virtually no paint left on the brush. Lightly brush across the model painted surfaces to leave a faint paint residue. The dry brushing should be carried out on all model parts, to achieve the desired effect, except the lozenge decal areas of the fuselage rear and the wheels.





Assembly (continued):

Remove any paint and primer from the locating holes and fuselage recesses for the six wing to fuselage struts (F13, B16 and B8 left side front to rear) and (F12, B17 and B9 right side front to rear).

Remove any paint and primer from the locating pegs and mating faces of the fuselage plates on the six struts.

Test fit the lower wing into its faired housing on the underside of the fuselage. Make sure the wing fully locates into the housing with the wing horizontal the to fuselage, when viewed from the front.

Cement the lower wing fully into its fairing housing on the bottom of the fuselage.

Cement the six struts, in their correct order, into their holes in the lower wing and against their fuselage locating recesses.

NOTE: *The following steps secure the wheels to the axle and so will not rotate.*

Locate the two wheels onto the ends of the axle.

Locate the two wheels retaining rings (A48) onto the ends of the axle.

Cement the wheels and retaining discs onto the axle.

Cement the outer wheel covers into the wheel recesses.

Locate the tail skid D31 into its location hole in the rear, underside of the fuselage.

Locate the two support struts (C32 left, D33 right) into their location recesses in the rear, underside of the fuselage.

Locate the two struts into the hole in the tail skid.

Cement the tail skid and both support struts in position.

Cement the top of the two fin support struts (D22 left, D23 right) into the fin locating hole and the bottoms onto the fuselage, making sure the struts are vertical to the fuselage.

Aileron control rods:

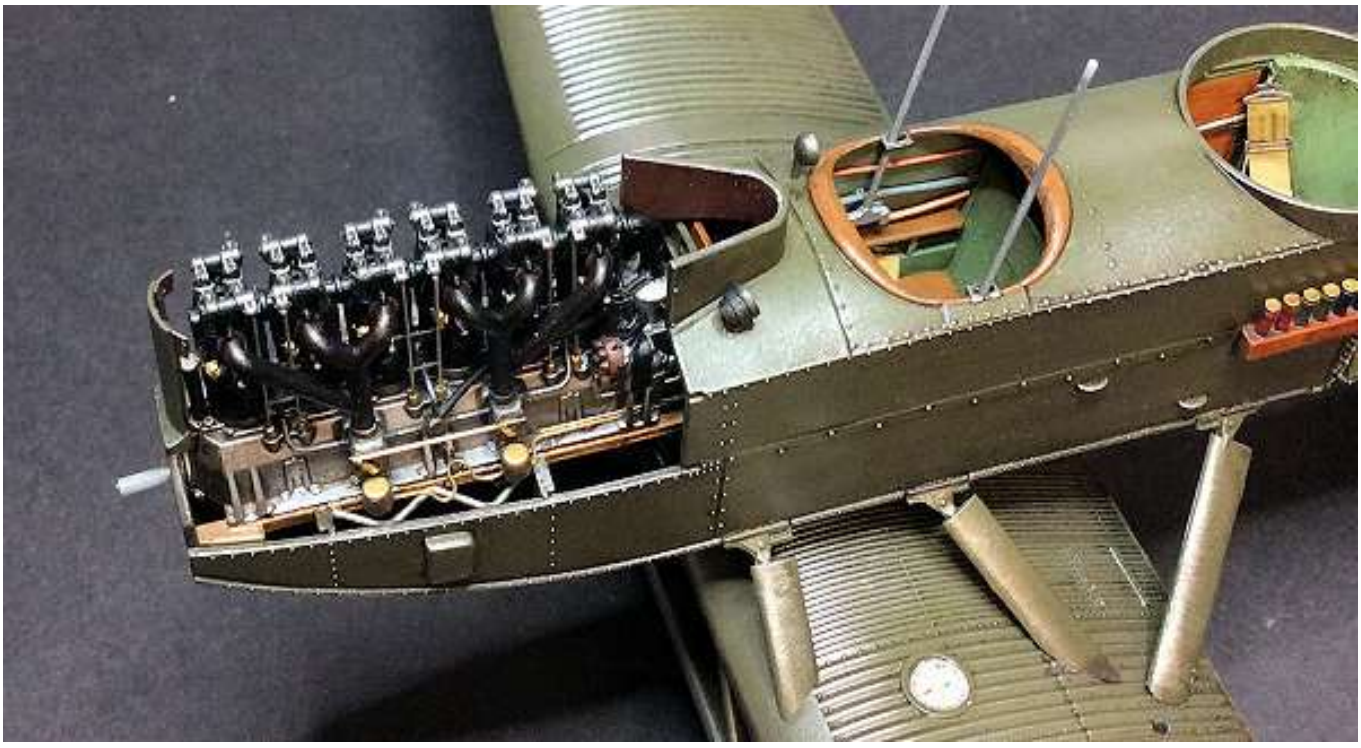
Lower the aileron control rods () into the cockpit and through the frame opening at the rudder peddles.

Pass the top of the rods through the support oval frames each side of the cockpit outer edges.

Pull the control rods back up to clear the rudder peddles and into the pilots cockpit. **Do not cement in position at this stage.**

Engine fit:

Test fit the engine onto the engine bearers by passing the propeller shaft down and through the opening in the front of the fuselage. Then drop the rear of the engine down onto the two engine bearers. Make sure the engine locates fully onto the bearers and into the location recesses (one on the left bearer and two on the right bearer). Also make sure the propeller shaft is central in the fuselage opening.



Upper wing and struts:

NOTE: *Refer to pages 8 and 9 in the instruction manual.*

Remove any paint and primer from the locating holes and fuselage recesses for the eight wing struts (B15/B19 and B11/B20 left side front to rear) and (B14/B23 and B12/B24 right side front to rear), (B25 and B22 left side) and (B18 and B21 right side).

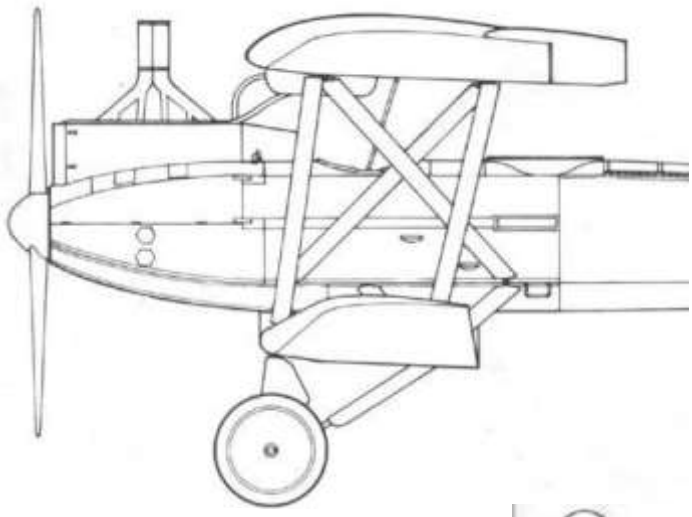
Remove any paint and primer from the locating pegs and mating faces of the eight struts.

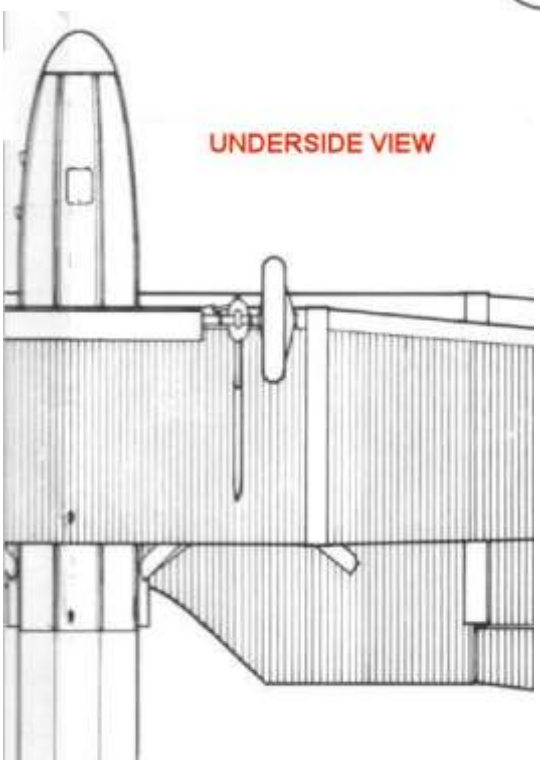
Cement the four struts (B15/B19, B11/B20 left side and B14/B23, B12/B24 right side) into their holes in the lower wing, making sure the aerofoil shape at the top of the struts are parallel to the fuselage.

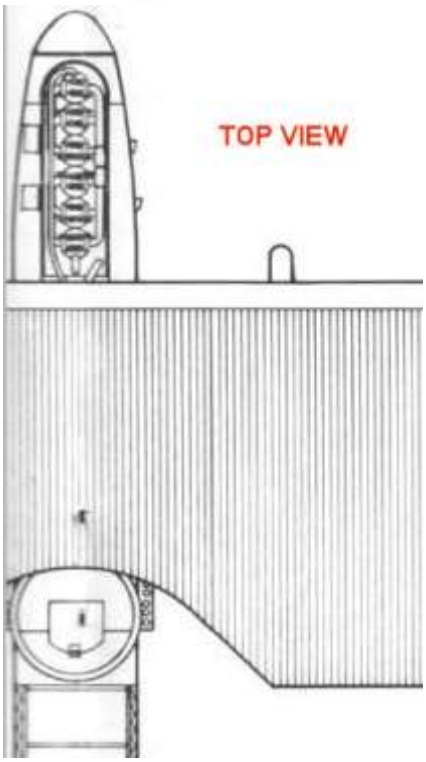
Once the cement is starting to set, carefully locate the upper wing into the four strut location holes, making sure they are fitted in the correct holes (front into forward hole and rear into outer hole).

Rest the bottom rear of the fuselage onto packing to level the fuselage.

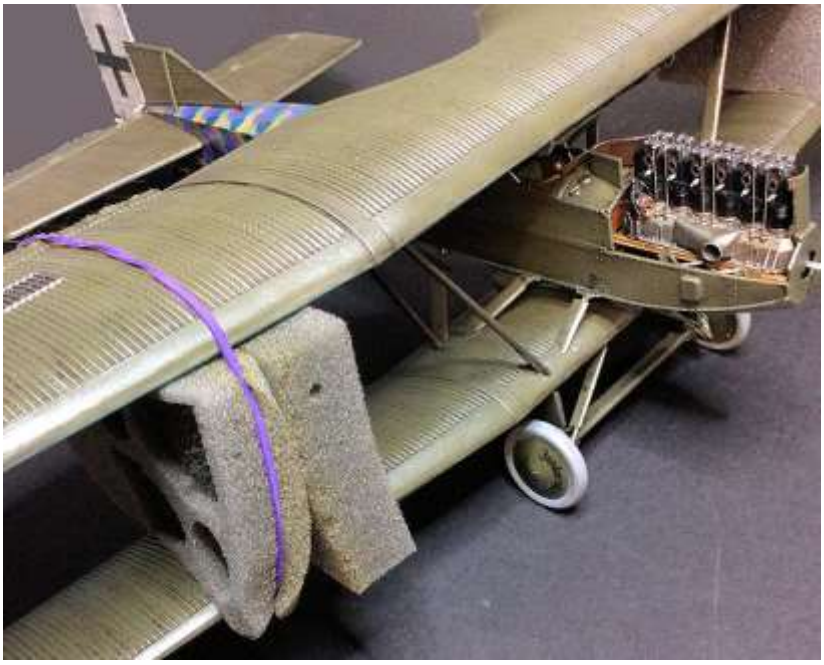
Use tall weights, bottles or similar, at the lower wing trailing edge and the upper wing leading edge, then position the upper wing as shown below.





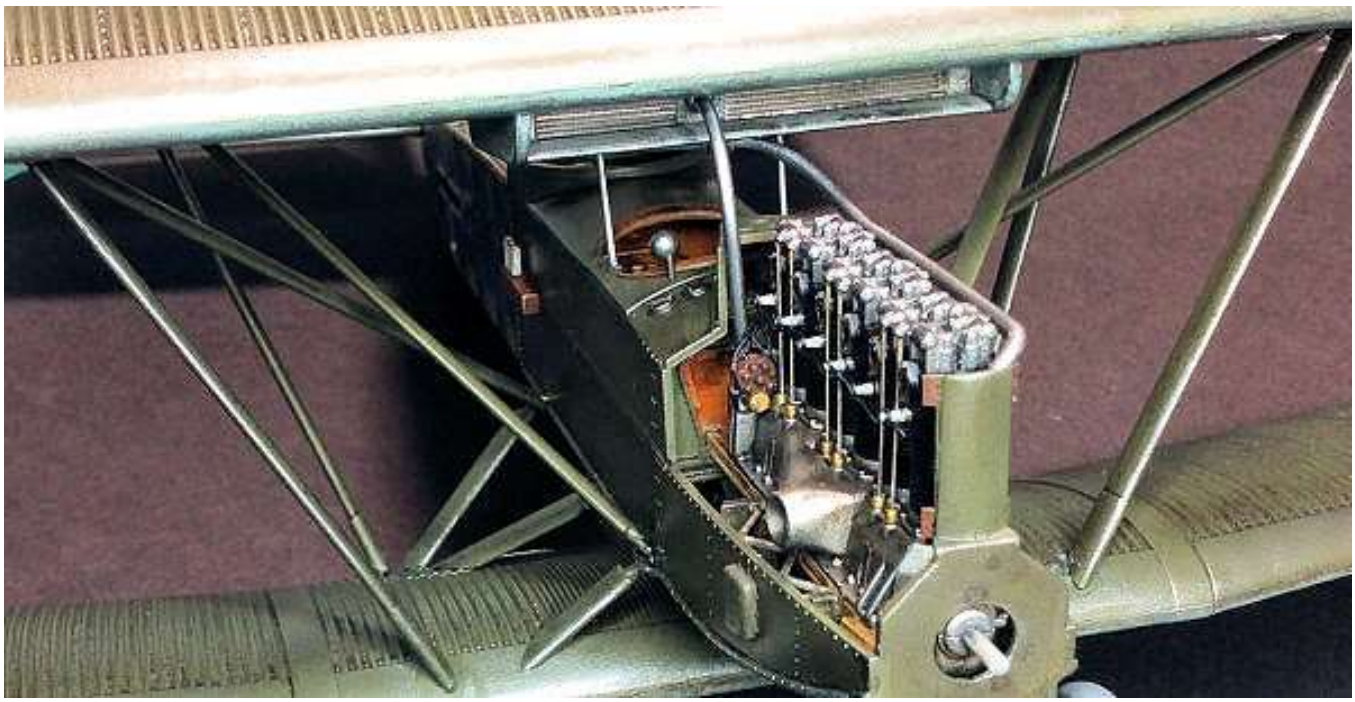


WARNING: *The upper wing, although hollow, is still a relatively heavy and large piece of the model. As such, when attached to just the four outer struts, it will move and twist until the four inboard struts are fitted, which will make the fit of the wing more rigid. Therefore it's best to restrain upper wing movement as much as possible for the remaining construction of the model. I used sponge packing pieces inserted between the wings, held in place by elastic bands around the wings and packing.*



Cement the four struts (B22, B25 left side and B18, B21 right side) into their holes in the underside of the upper wing, making sure the aerofoil shape of the struts are parallel to the fuselage.

Once the cement is starting to set, carefully locate the bottom of the four struts into their location recesses at the bottom of the already fitted front and rear struts.

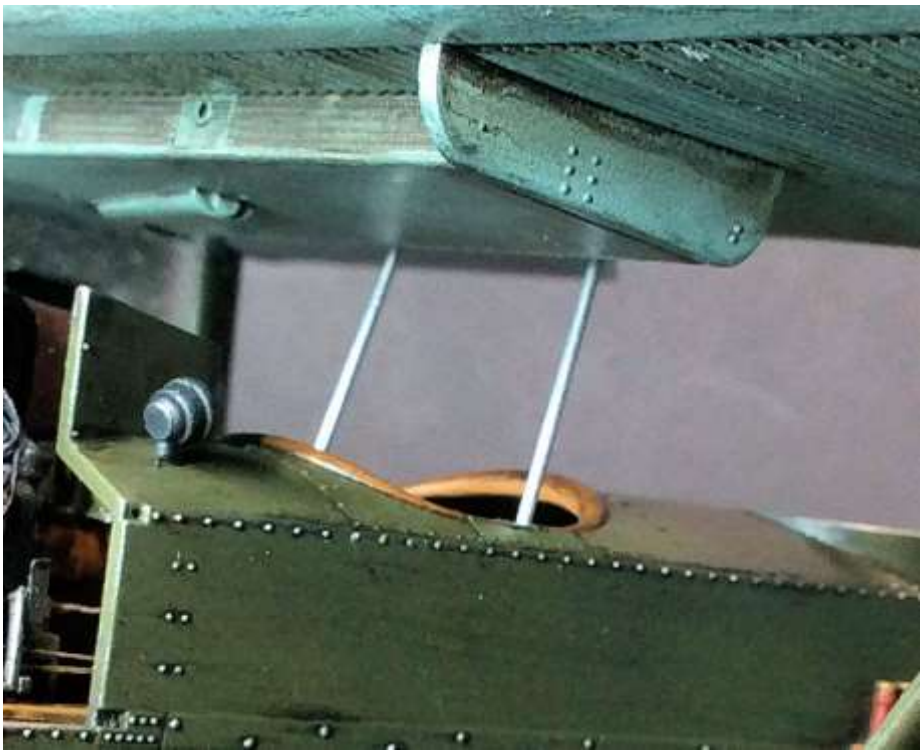


Aileron control rods (continued):

NOTE: *When locating the two aileron control rods between the pilots cockpit and the holes in the underside of the upper wing, make sure the operating leavers on the rods are face forwards in the cockpit and located, as far as possible, at their locating lugs on the sides of the cockpit (difficult to see).*

Turn the aileron control rods into their correct position and insert the top ends into their pre-moulded holes in the underside of the upper wing.

Cement the aileron control rods in position at their support hoops on the sides of the cockpit and at the underside of the upper wing.



Controls rigging:

NOTE: *The exit ports for the rudder and elevator control cables are on the rear, sides of the fuse-lage. The two forward ports are for the upper and lower elevator control horns. The rear exit ports are for the upper and lower rudder control horns.*

Cut a length of 0.4 mm diameter tube, such as ‘Albion Alloy’s MBT04 or similar.

Pass the tube through the rear of the fuselage at one pair or control cable exit ports (example - forward upper elevator ports).

Cut a long length of 0.12 mm diameter mono-filament, such as ’Steelon’ or similar.

Pass the line through the bore of the tube to exit from the other side of the fuselage.

Hold one end of the line and remove the tube from the fuselage.

Pass one end of the line through a blackened 0.5 mm diameter tube, such as ‘Albion Alloy’s’ MBT05 or similar.

Pass the end of the line through the pre-drilled hole in the end of the elevator upper control horn on that same side of the fuselage.

Pass the end of the line back through the tube.

Slide the tube up to, **but not touching**, the control horn.

Secure the lines in the tube using thin CA adhesive.

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

Pass the line at the other side of the fuselage through a blackened tube and that control horn, then back through the tube.

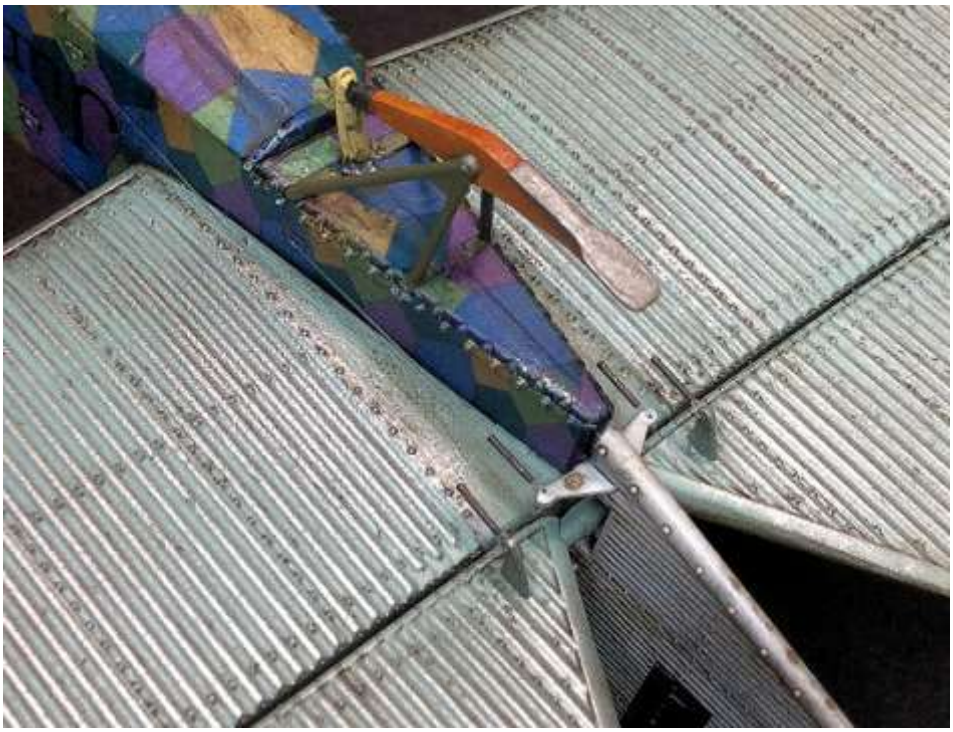
Keeping the line taut, slide the tube up to, **but not touching**, the control horn.

Secure the lines in the tube using thin CA adhesive.

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

Repeat the procedure to rig control lines to the remaining elevator and the rudder control horns.

To reduce the glare of the mono-filament, airbrush a semi-matte clear coat such as ‘Alclad’ Light Sheen (ALC311) or similar.



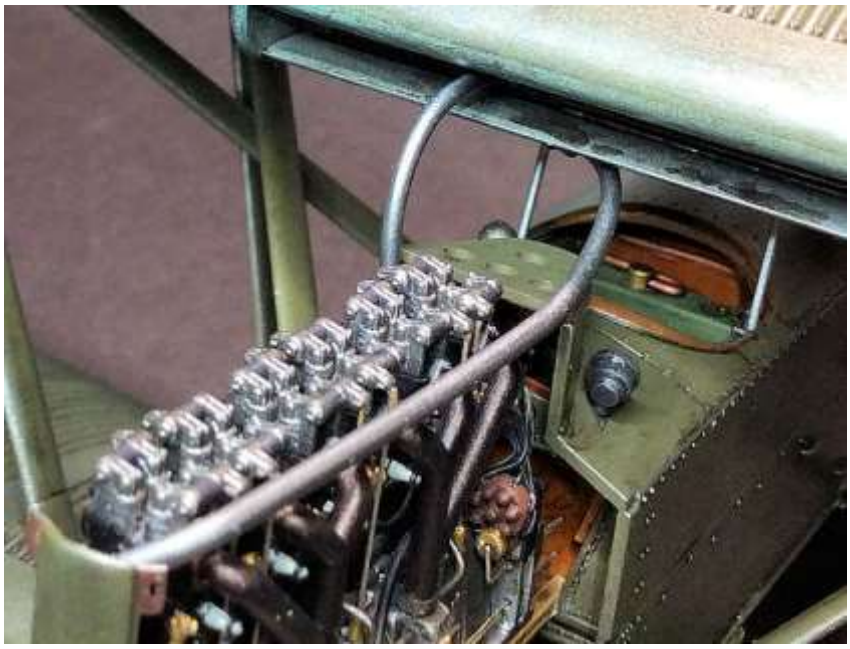
Coolant pipes and cover:

NOTE: *Refer to page 10 in the instruction manual.*

Cement the cover plate (A27) in position on the top, rear of the engine cowl.

Cement the coolant pipe (B3) into its location hole in the front, centre of the radiator in the upper wing and, if access is possible, onto its location stub on the rear of the engine.

Cement the coolant pipe (B2) into its location hole in the fairing on the underside of the radiator and on the front of the engine.



Weapon fit:

Locate the forward, bottom edge of the Parabellum machine gun breech into the forked Mounting in the swivel ring.

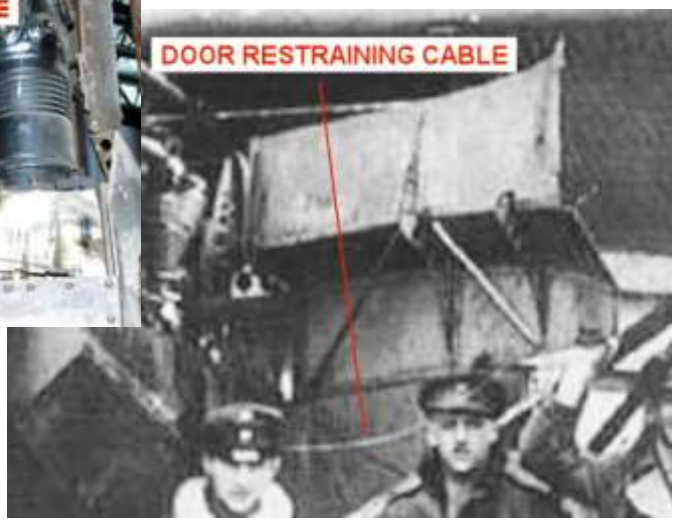
Locate the butt of the weapon into the ‘U’ shaped support in the swivel ring.

Lightly cement the weapon in the forked mounting.

Cement the swivel ring assembly, in the desired position, into the gunners fuselage cockpit.

Engine access doors:

NOTE: *The engine access doors can be fitted closed, both open or one open and one closed. I chose to have both doors fully open to reveal the engine. It's uncertain where the restraint cables were fitted. The following show different locations for the cable, although the museum aircraft cable may not be authentic.*



Test locate the two engine access doors into their pre-moulded locating holes in the fuselage at rear of the engine bay. If necessary, drill out the holes using a 0.8 mm diameter drill.

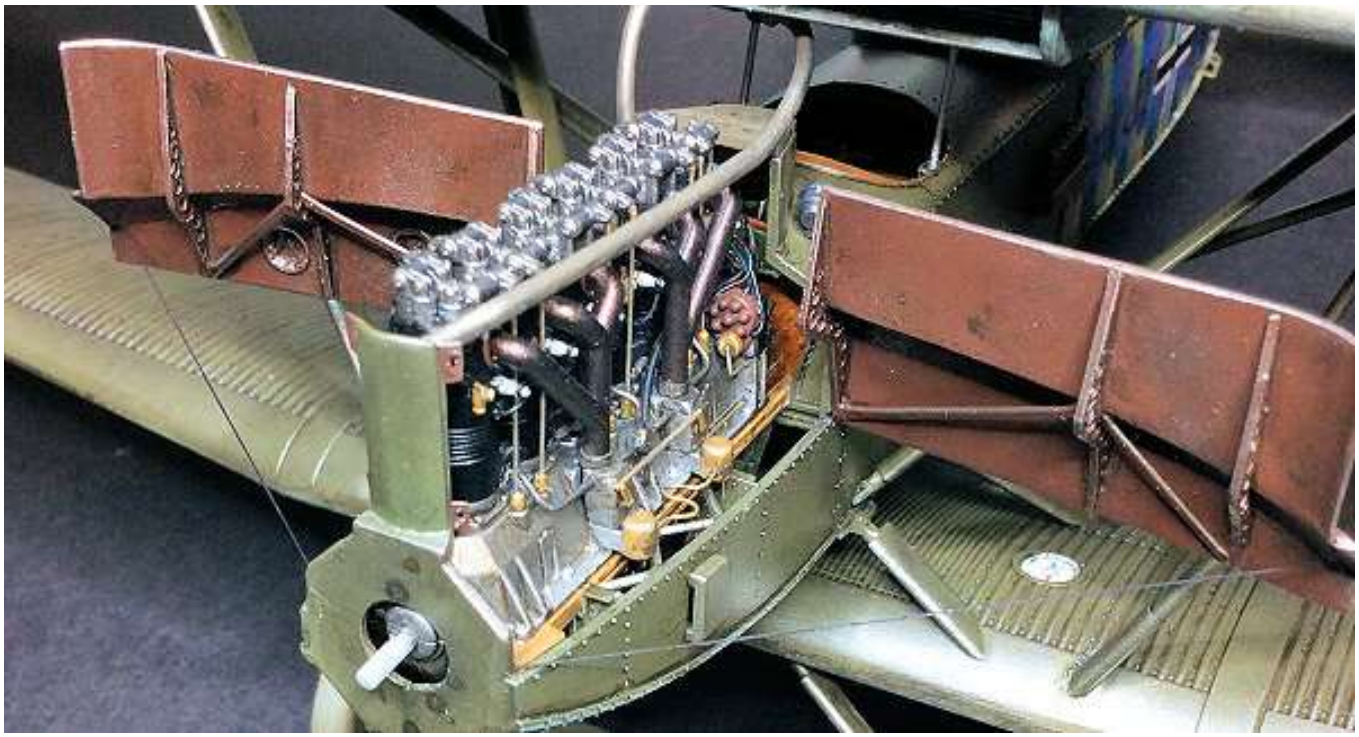
Cement the two access doors, as desired, in position.

NOTE: *The following steps are required only if the engine doors are being fitted open.*

Cut two lengths of 'EZ' stetch line (fine black).

Using thin CA adhesive, secure one end of the lines at the front end of the bottom edge of the engine bay.

Using thin CA adhesive, secure the other end of the left line midway up the front edge of the left engine access door. The right line to the right wing (not as shown) to allow access of the ladder.



Foot step:

Cement the foot step (A30) into its recess on the bottom, left side of the fuselage, at the rear of the wing strut locations.

Grab rails:

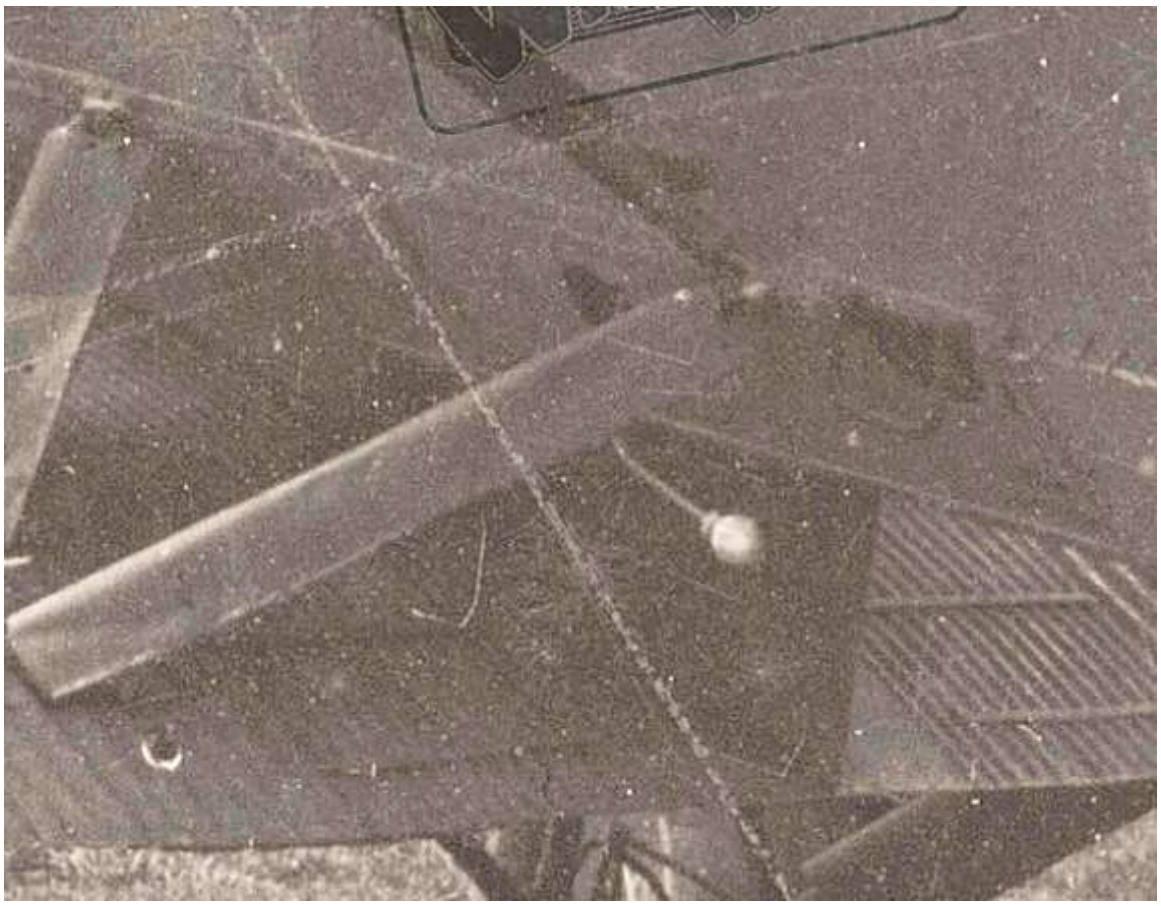
NOTE: *The two grab rails are intend to be cemented into recesses at the bottom, rear edges of the fuselage. However, these recesses are not deep enough.*

Using a drill of 8mm diameter, drill into then across the location recesses for the grab rails.

Cement the grab rails into the drilled recesses, making sure the rails are at 90 degrees to the fuselage sides.

Wireless aerial:

NOTE: *The external end of the wireless aerial was weighted to ensure the aerial wire drifted blew the aircraft when in flight. The aerial wire was fitted earlier in this build and should extend below the fuselage left side.*



Bend a short length of 0.4mm diameter Nickel-Silver tube, such as ‘Albion Alloy’s’ NST04 or similar to a 30 degree angle then cut it away.

Slide the tube onto the protruding line under the fuselage with the bend facing rearwards.

Secure the tube to the line using thin CA adhesive.

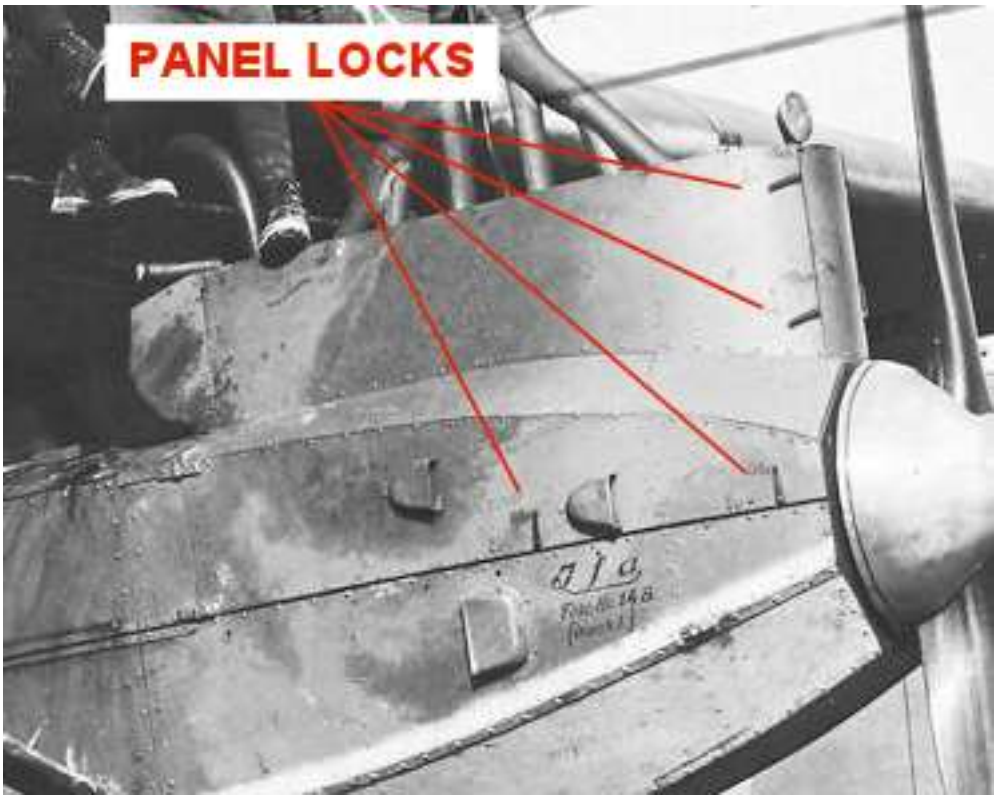
Apply by brush ‘Mr. Surfacer’ 500 primer onto the end of the tube to form a blob.

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

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

Panel locks:

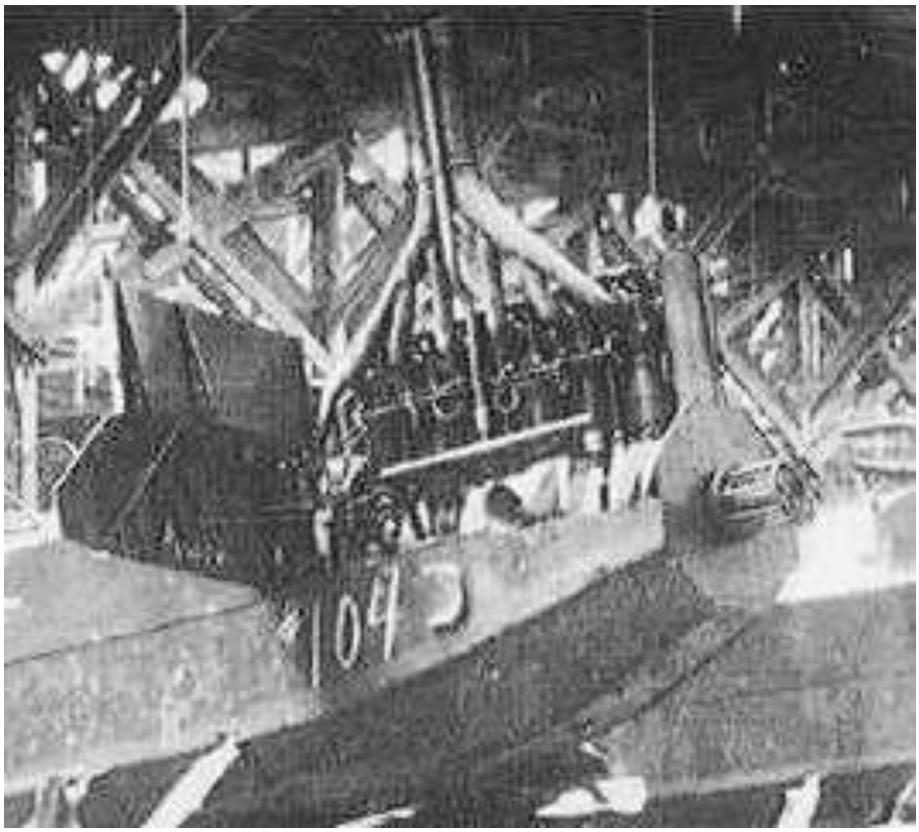
NOTE: *Lever panel locks were fitted to the engine access doors. Although pre-moulded on the kit parts, the levers are to indistinct. Also those pre-moulded on the front vertical panel are not correct as these were located on the access doors (see below). Therefore I decided to replace them.*



I used appropriate sized control horns from the photo-etch 'PART' 1:48th scale control horns and turnbuckles (S48-087) set. These were secured on the leading edge of the access doors, using CA adhesive. They were then brush painted with 'Tamiya' Dark Green 2 (RAF) (XF81).

Engine exhaust:

NOTE: *The kit supplied engine exhaust (part H3) will be replaced with the 'REXx' exhaust (32031). However the REXx exhaust does not have the centre drop pipe, which will be added from the kit part.*



REXx exhaust:

NOTE: *The REXx exhaust has no pegs to locate into the engine exhaust ports. When handling the exhaust, do not apply too much pressure as the exhaust may be crushed.*

Carefully drill a hole of 0.5 mm diameter centrally into, **but not through**, the exhaust pipes that are one in from each end of the row of pipes.

Carefully drill out the holes to 0.8 mm diameter.

Cut two short lengths of 0.8 mm diameter rod, such as that from 'Albion Alloy's' or similar.

Using thin CA adhesive, secure the rods into the pre-drilled holes in the two exhaust pipes, making sure the rods are at 90 degrees to the pipes when viewed from the side and top.

Test fit the REXx exhaust into the engine exhaust ports, making sure all of the pipes locate against the engine and that the exhaust stack is vertical to the engine when viewed from the front and side.

Using thin CA adhesive, secure the REXx exhaust onto the engine.

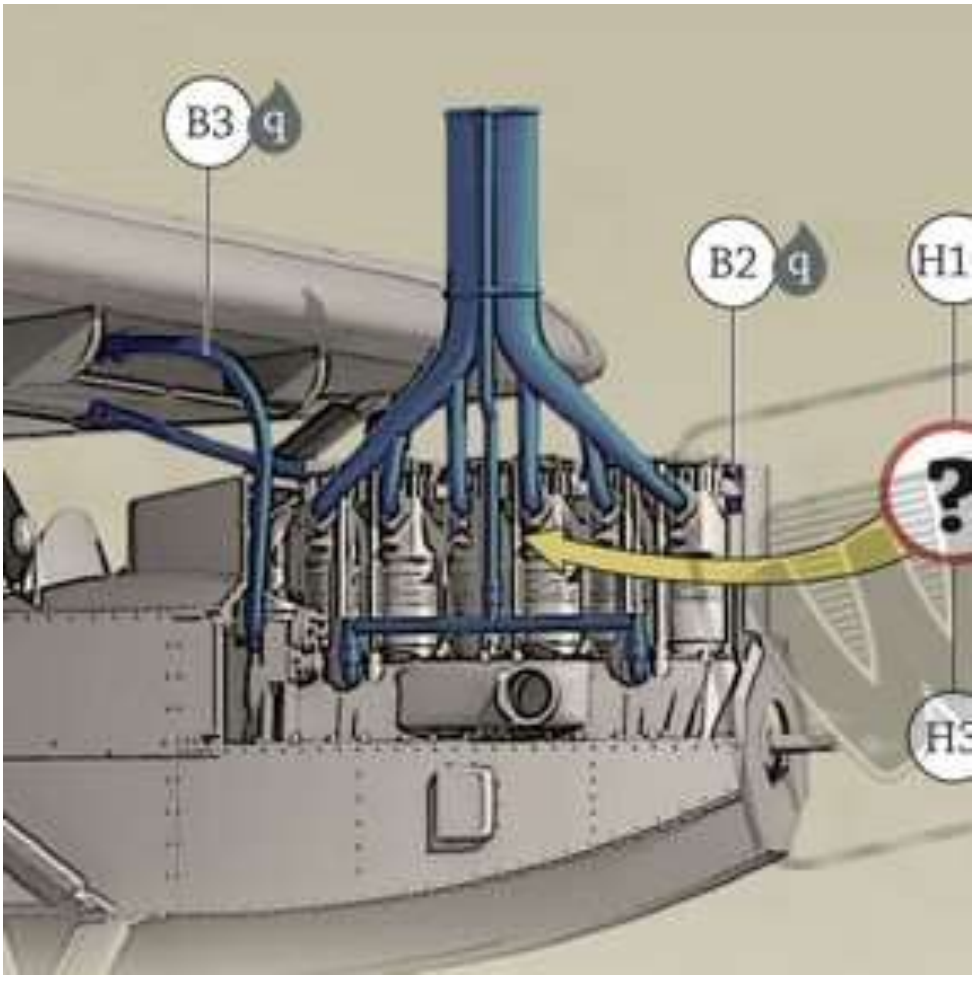
Kit exhaust part:

NOTE: *Refer to the previous photograph for the kit part to be used.*

Cut away the drop pipe from the kit supplied exhaust stack.

File or sand away any residual sprue tags and mould seam lines.

Test position the drop pipe at the engine locations and at the centre drop pipe on the REXx exhaust. If necessary, trim the height of the vertical drop pipe such that when positioned, the top of the pipe is close to the bottom of the REXx drop pipe.



Cut a short length of 1.6 mm diameter tube, such as ‘Albion Alloy’s’ MBY16 or similar, long enough to fit over the top of the kit drop pipe and bottom of the REXx drop pipe.

Secure the tube onto the top of the kit part drop pipe, making sure to leave room for the REXx drop pipe to locate into the tube.

Airbrush the drop pipe with a grey primer, such as ‘AK Interactive’ Grey (AK758) or similar.

Airbrush the drop pipe with copper, such as ‘Alclad’ Copper (ALC-110) or similar.

Airbrush the drop pipe with a light coat of mixed ‘Tamiya’ Red Brown (XF64), Rubber Black (XF85) and Hull Red (XF9) or similar. The colour mix should be as close as possible to that of the REXx exhaust colour.

Airbrush the top portion of the drop pipe with ‘Tamiya’ Rubber Black (XF85) or similar.

Airbrush the drop pipe with a semi-matte clear coat, such as ‘Alclad’ Light Sheen (ALC311) or similar.

Apply CA adhesive to the rear contact pipe to the engine.

Locate the top of the tube on the drop pipe over the drop pipe of the REXx exhaust.

Position the rear contact pipe onto its location on the engine.

Move the front contact pipe onto its location on the engine and secure in position using CA adhesive.

Apply CA adhesive to secure the REXx drop pipe to the tube on the top of the kit drop pipe.

Propeller fit:

Apply CA adhesive to the engine propeller shaft to secure the propeller onto the shaft. Make sure the rear of the propeller hub is parallel to the front face of the fuselage, when it's viewed from the side and from above.

PART 10
NOT INCLUDED

PART 10 - NOT INCLUDED

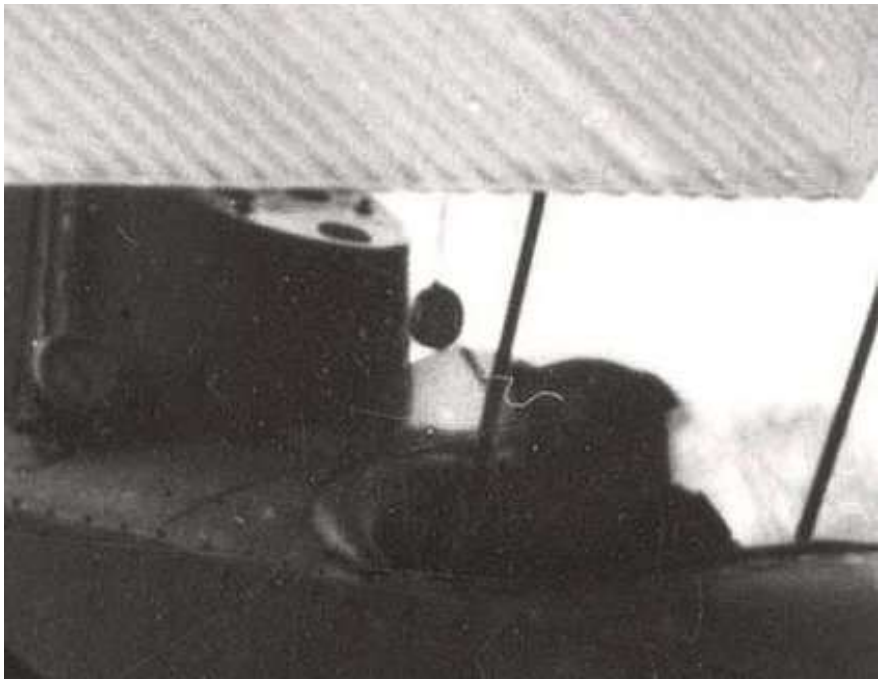
During my research I found two areas of this aircraft that had no information to enable me to represent the details accurately.

These were the gravity fuel tank in the upper wing and its associated pipe work and an altimeter suspended in front of the pilots cockpit.

Therefore I chose not to include these in the model build.

External altimeter:

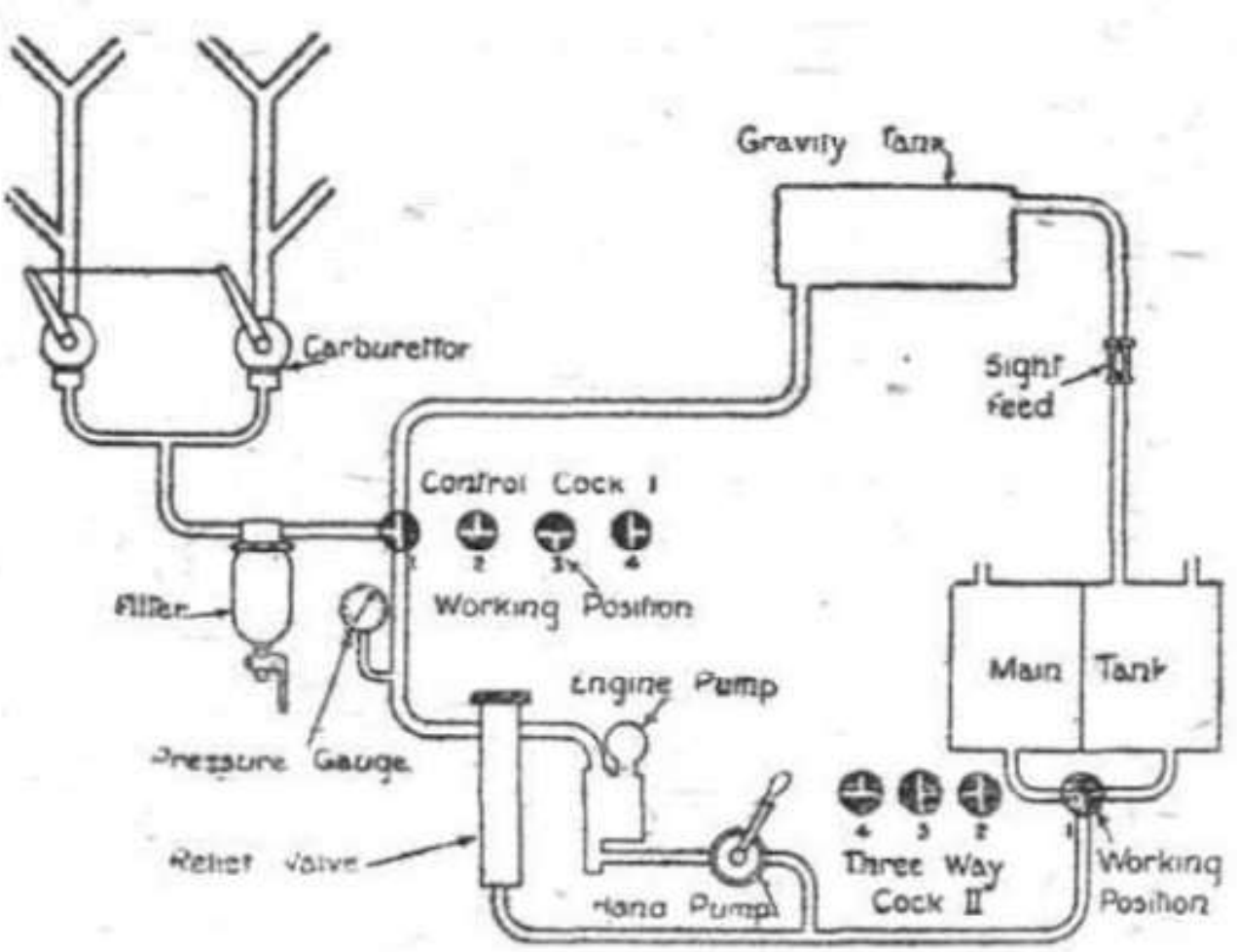
NOTE: *An altimeter was externally mounted on three suspension wires between the underside of the upper wing and the top of the fuselage, forward from the cockpit. I could not find evidence that this was fitted to all Junkers J.1 aircraft and therefore may have been a trial fit on particular aircraft.*



Gravity tank fuel:

Reference: Report in 'Flight Magazine' article of 18th March 1920.

The aircraft fuel system in simplified form.



Gravity fuel tank in the upper wing.

To prime the fuel system, the control fuel cock is positioned as shown (position 1) and fuel is pumped by hand (not in the kit) from the main fuel tank to both the engine and the gravity fuel tank in the upper wing. Once the gravity tank is full, the control fuel cock is moved (position 2) to shut off the fuel supply from the main tank, leaving only the gravity tank supplying the engine.

The engine is then started and once the fuel pressure gauge registers a good fuel pressure, the control fuel cock is moved (position 3) to shut off the supply from the gravity tank, leaving the main tank supply open. In the case of an emergency, the fuel cock is moved (position 4) to shut of any fuel supply to the engine.
If the engine driven fuel pump fails, the control fuel cock is moved (position 2) to supply fuel to the engine from the gravity fuel tank. With a full gravity tank (30 litres), the aircraft can remain airborne for at least 30 minutes on full power.
The main fuel tank is divided into two compartments, to reduce the loss of fuel caused by damage to the tank. The fuel supply from the tank is controlled by a three-way fuel cock, which can be selected to supply fuel from both tank compartments or either compartment.

Gravity tank:

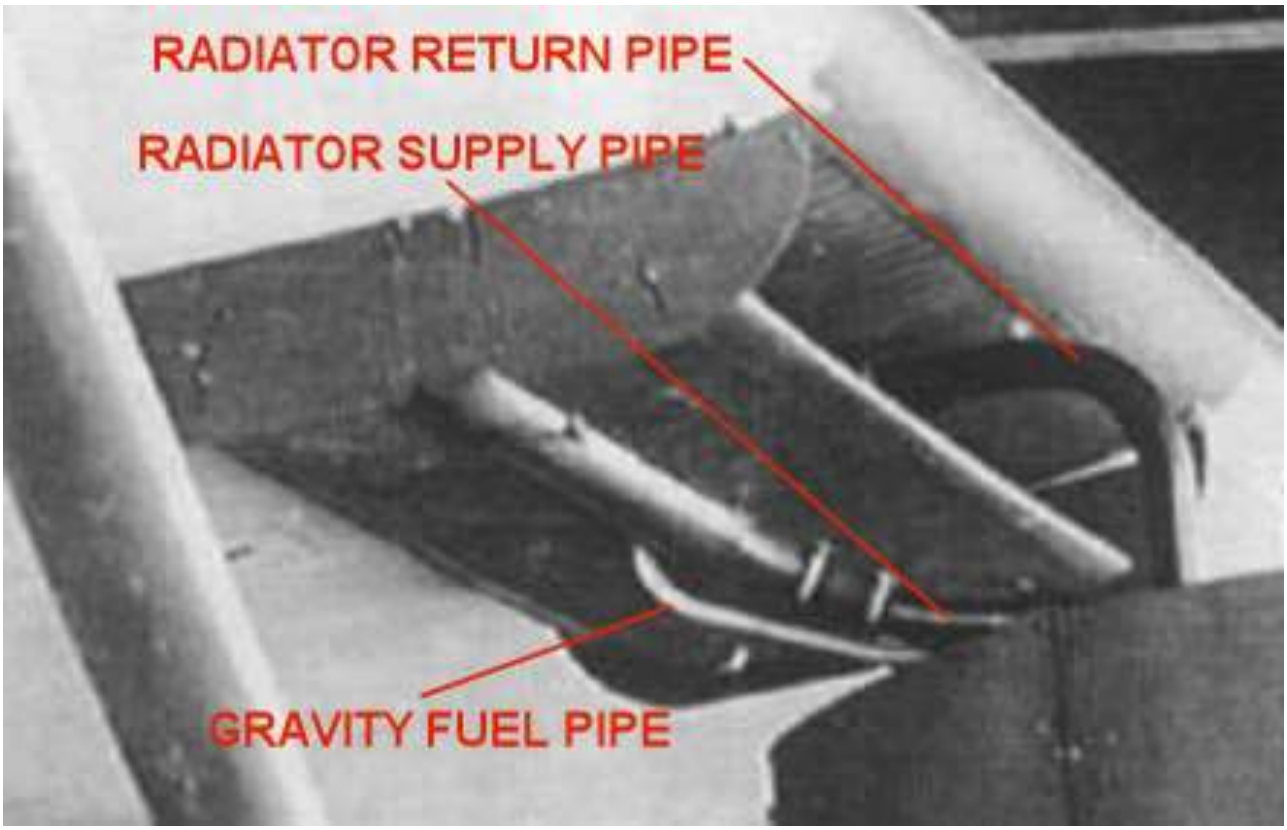
From the article it seems that the gravity fuel tank had two connected pipes (connections seen in the previous photograph). The lower pipe connected to the engine fuel supply, upstream from the engine driven fuel pump. The second pipe was connected to the main fuel tank.

Pre-heating fuel supply:

The normal supply of fuel from the main fuel tank was pre-heated at the two carburettors by heated coolant from the engine radiator (refer to Part 5 - Engine of this build log). Therefore, it seems probable that fuel supplied from the gravity tank would also need to be pre-heated.
The kit instructions do not show any pipe connection between the gravity tank to the main tank or the engine. Most of the photographs taken at the time do not show that area of the aircraft.
However, the following does show what seems to be an additional pipe to the normal radiator supply and return pipes for the engine cooling system.

Assumptions:

My assumption is that this pipe is the gravity fuel tank supply to the engine fuel supply. It is routed from the gravity tank in the upper wing and down through the radiator to be pre-heated before reaching the engine.



The aircraft in the Canada Museum shows a smaller pipe at the rear of the radiator, but I believe that pipe is too small to be part of the fuel system. I'm unable to ascertain just how the gravity tank is connected to the main fuel tank. It's possible that as the wing struts appear to be metal tubes that were covered with metal fairings, the pipe could have been routed through a strut between the fairing and the metal tube.

PART 11
FIGURES AND ACCESSORIES

PART 11 - FIGURES AND ACCESSORIES

The figures are made from resin, as opposed to the normal plastic used. Working with resin does present different challenges to the modeller, especially if it's the first time of building a resin kit. The properties of resin differ radically to those of plastic kits. Below I have listed pertinent points when working with resin:

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. 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 thoroughly and leave to dry. Alternatively wipe the parts with isopropyl alcohol (e.g. 'Tamiya' X20A thinners).
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. The best way to remove item is to cut them away with a razor saw, then clean them up afterwards.
3. Once removed from the resin cast, parts will normally 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 is 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.

Figures

'Wings Cockpit Figures' confident ace 1915-18 (LSK01),
'Kellerkind Miniaturen' Französischer pilot (54/065), Mechanic (54/094) and (54/017).

Accessories

'Aviattic' German refuelling drum (ATTR 011), Ladder from the 'ModelKasten' figure set B.

Wings Cockpit Figures' confident ace 1915-18 (LSK01):

This figure is supplied as a complete figure.

Preparation:

Cut the casting pegs away from the bottom of the shoes.

Scrape or sand away any resin artifacts or mould seam lines.

Drill a hole of 0.8 mm diameter up into one of the legs.

Cut a length of 0.8 mm diameter rod, such as 'Albion Alloy's' (MBR08) or similar.

Secure the rod into the pre-drilled hole in the leg, using CA adhesive. This rod will be used to hold the figure for painting and for assembly and mounting in the display base.

Painting:

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

Brush paint the parts as follows:

Helmet, jacket and belt:

'AK Interactive' Brown Leather (AK3031) with British Uniform (AK3081) highlights.

Airbrush the helmet, jacket and belt with a semi-matte clear coat, such as 'Alclad' Light Sheen (ALC311) or similar.

Flight trousers:

'AK Interactive' British Uniform (AK3081) with Brown Leather (AK3031) creases.

'Fug' boots:

'AK Interactive' British Uniform Light (AK3082) with British Uniform (AK3081) creases.

Shoes toes - 'Tamiya' Semi-gloss Black (X18).

Fur linings:

'Tamiya' White (XF2) with Deck Tan (XF55) highlights.

Goggles:

Lenses 'Tamiya' Metallic Grey (ZF56) with 'Tamiya Clear Yellow (X24) tint applied on top.

Buttons and buckles:

'Tamiya' Gun Metal (X10).

Flesh:

NOTE: *The **'Citadel'** paints used for painting the flesh are water based and can be thinned as required using water, which is also used to clean the brushes. It's easier to use a 'wet palette' when applying these paints as this keeps the paint from drying and allows mixing of paints as required. A basic wet palette can be a water proof plastic lid with dampened kitchen roll paper laid inside. The paints are then dripped onto the damp paper and applied from there.*

The paints used for the flesh of the figures are from the 'Citadel' colour range:

Base coat - 'Bugmans Glow'.	Shading - 'Reikland Flesh Shade'.
Flesh tone - 'Cadian Flesh Tone'	Flesh highlights - 'Kislev Flesh'.

Brush ‘Bugmans Glow’ over the exposed head and hands of the figure and allow to dry.

Brush thinned ‘Reikland Flesh Shade’ over the painted head and hands of the figure and allow to dry.

Brush thinned ‘Cadian Flesh Tone’ over the painted head and hands of the figure and allow to dry. Do not apply the paint such that it completely covers the previous coat, as subtle shadows are necessary around such as the ears, eyes, nose and chin etc.

Brush thinned ‘Kislev Flesh’ over the painted head and hands of the figure and allow to dry. This application is very light and intended to highlight areas such as the eye brows, ears, bridge of the nose and jaw line etc.

Using a needle point, apply ‘Tamiya’ Rubber Black (XF85) or similar to create the eye pupils.

‘Kellerkind Miniaturen’ Französischer pilot (54/065).

This figure is supplied in three parts, the body and two arms.

Preparation:

Cut the casting blocks away from the bottom of the shoes and the arms.

Scrape or sand away any resin artifacts or mould seam lines.

Drill a hole of 0.8 mm diameter up into one of the legs.

Cut a length of 0.8 mm diameter rod, such as ‘Albion Alloy’s’ MBR08 or similar.

Secure the rod into the pre-drilled hole in the leg, using CA adhesive. This rod will be used to hold the figure for painting and for assembly and mounting in the display base.

Assembly:

Secure the two arms in position using thin CA adhesive.

Painting:

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

Brush paint the parts as follows:

Flight helmet and jacket:

Base colour - ‘AK Interactive’ Brown Leather (AK3031).

Highlights - ‘AK Interactive’ British Uniform (AK3081).

Airbrush the helmet and jacket with a semi-matte clear coat, such as ‘Alclad’ Light Sheen (ALC311) or similar.

Trousers and helmet:

‘AK Interactive’ British Uniform (AK3081) mixed with German Uniform Base (AK3091).

Helmet strap ‘AK Interactive’ British Uniform (AK3081).

Helmet liner - British Uniform Light (AK3082).

Airbrush the helmet with a semi-matte clear coat, such as ‘Alclad’ Light Sheen (ALC311) or similar.

Gloves:

‘AK Interactive’ Brown Leather (AK3031) mixed with British Uniform Light (AK3082).

‘Fug’ boots:

‘AK Interactive’ British Uniform Light (AK3082) with British Uniform (AK3081) creases.

Fur linings:

‘Tamiya’ White (XF2) with Deck Tan (XF55) highlights.

Goggles:

Lenses ‘Tamiya’ Metallic Grey (ZF56) with ‘Tamiya Clear Yellow (X24) tint applied on top.

Buttons and buckles:

‘Tamiya’ Gun Metal (X10).

Flesh:

As previously described.

‘Kellerkind Miniaturen’ Mechanic (54/094)

This figure is supplied in two parts, the body and the left arm.

Preparation:

Cut the casting blocks away from the bottom of the shoes and the arm.

Scrape or sand away any resin artifacts or mould seam lines.

Drill a hole of 0.8 mm diameter up into the straight right leg (for mounting on a ladder).

Cut a length of 0.8 mm diameter rod, such as ‘Albion Alloy’s’ MBR08 or similar.

Secure the rod into the pre-drilled hole in the leg, using CA adhesive. This rod will be used to hold the figure for painting and for assembly and mounting on a ladder.

NOTE: *This figure is of a Navy mechanic and has the shoulder flap and hat tassels, which need to be removed.*

File, scrape or sand away the shoulder flap and hat tassels.

Assembly:

Secure the left arm in position using thin CA adhesive.

Painting:

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

Brush paint the parts as follows:

Trousers and jacket:

‘Tamiya’ Rubber Black (XF85) with mixed Ocean Grey (XF82) highlights.

Hat:

‘Tamiya’ Ocean Grey (XF82), Rubber Black (XF85) hat band, Flat Red (XF7) piping.

Shoes:

‘Tamiya’ semi-gloss Black (X18).

Hair:

‘Tamiya’ NATO Brown (XF68).

Buttons and buckles:

‘Tamiya’ Gun Metal (X10).

Flesh:

As previously described.

Surface finish:

Shoes - ‘Tamiya’ Weathering Master Set A (Mud).

Trousers - ‘Tamiya’ Weathering Master Set D (Oil Stain).

‘Kellerkind Miniaturen’ Mechanic (54/017)

This figure is supplied in two parts, the body and the right arm.

Preparation:

Cut the casting blocks away from the bottom of the shoes and the arms.

Scrape or sand away any resin artifacts or mould seam lines.

Drill a hole of 0.8 mm diameter up into one of the legs.

Cut a length of 0.8 mm diameter rod, such as ‘Albion Alloy’s’ MBR08 or similar.

Secure the rod into the pre-drilled hole in the leg, using CA adhesive. This rod will be used to hold the figure for painting and for assembly and mounting in the display base.

Assembly:

Secure the right arm in position using thin CA adhesive.

Painting:

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

Brush paint the parts as follows:

Trousers:

‘Tamiya’ Rubber Black (XF85) with Ocean Grey (XF82) highlights.

Shirt:

‘Tamiya’ White (XF2) with thinned (water) with fittings ‘AK Interactive’ British Uniform (AK3081).

Braces:

‘Tamiya’ Deck Tan (XF55) with fittings ‘AK Interactive’ British Uniform (AK3081)

Hat:

‘Tamiya’ Ocean Grey (XF82), Rubber Black (XF85) hat band, Flat Red (XF7) piping.

Shoes:

‘Tamiya’ semi-gloss Black (X18).

Hair:

Rubber Black (XF85).

Buttons and buckles:

‘Tamiya’ Gun Metal (X10).

Flesh:

As previously described.

Surface finish:

Shoes - ‘Tamiya’ Weathering Master Set A (Mud).

Trousers - ‘Tamiya’ Weathering Master Set D (Oil Stain).

‘Aviattic’ German refuelling trolley (ATTR 011).

This German style refuelling trolley is supplied as resin parts, originally cast by Szymon Grzywocz and re-mastered by Ron Kootje. The following steps are how I built and painted this model.

Preparation:

Cut the casting blocks away from the various parts.

Scrape or sand away any resin artifacts or mould seam lines.

Scrape, file or sand away the mating surfaces of the drum end disc and the drum such that the disc locates fully onto the end of the drum.

Secure the disc onto the end of the drum using CA adhesive, making sure the filler cap on the disc is aligned with the pump location on the side of the drum.

Drill a hole into the drum to locate the base of the pump pipe gallery.

Drill a hole up into the bottom of the pump to locate it onto the pre-moulded rod on the top of the pump pipe gallery.

Drill a hole into the face of the pump to locate the pump operating handle.

Cut away the cable stubs on the sides of the pump and the stubs on the two cable locations on the top of the two side support members.

Drill a 0.3 mm diameter hole into the sides of the pump and into the locations on the top of the two support side members.

Secure a ‘GasPatch’ 1:48th scale metal Anchor Point into the pre-drill holes in the sides of the pump.

Drill a hole into the centre inboard side of the two wheels to locate the wheels onto the locating stubs on the drum support.

Cut away the stub on the pump pipe gallery for locating the vertical support for the refuelling hose.

Drill a 1.0 mm diameter recess into the pump pipe gallery for locating the bottom of the vertical support for the refuelling hose.

Cut away the stub on the pump pipe gallery for locating the valve tap.

Drill a 0.9 mm diameter recess into the pump pipe gallery for locating the valve tap.

Assembly:

NOTE: *Thin CA adhesive is used to assemble the parts of the trolley.*

Secure the parts together in the following order:

The two side members onto the drum. Make sure the these are fitted with the extended ends at the filler cap end of the drum with the shorter ends flush with the other end of the drum. Also that the wire bracing stubs are uppermost.

The cross member across the end of the drum onto the ends of the side members.

The curved drum support under the drum and aligned with the centre rectangles on the side members.

The extended handle into the ends of the two side members.

The trolley rest onto the inside ends of the two side members.

Cut a length of 0.6 mm diameter tube, such as ‘Albion Alloy’s’ NST06) or similar.

Drill a hole of 0.6 mm diameter centrally into the underside of the drum, against the edge of the curved support beam and facing the trolley handle.

Bend one end of the tube such that when inserted into the drilled hole the straight end locates into the pre-moulded recess in the face of the block on the bottom of the trolley rest.

Secure the tube into the drum and trolley rest using thin CA adhesive.

The pump pipe gallery into the pre-drilled hole in the centre, top of the drum.

The pump onto the locating rod on the pipe gallery, making sure the pump is fitted at 90 degrees to the drum.

The pump handle into the pre-drilled hole in the pump.

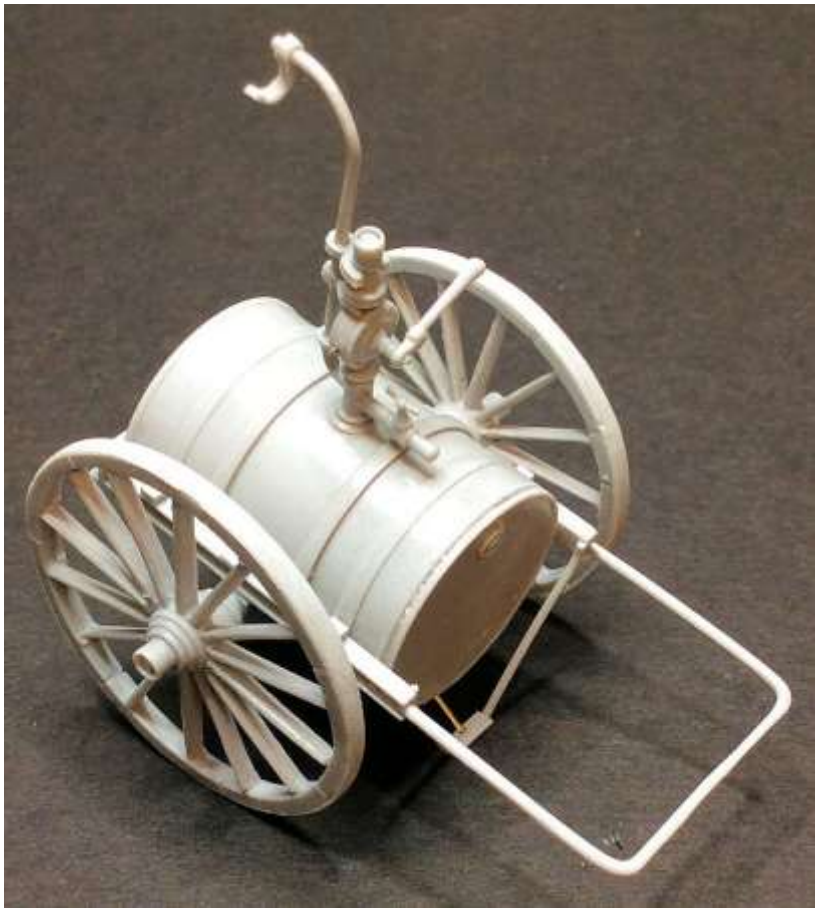
The valve tap into the pre-drilled hole in the pipe galley.

Slide the two pipe supports onto the hose support bar.

Locate the straight end of the hose support bar into its location recess in the pump pipe gallery and the two pipe support onto the pump.

Secure the hose support bar and its two supports onto the pump pipe gallery and the pump.

The hose support hook onto the top of the hose support bar.



Painting:

NOTE: *Paint the two wheels separately from the trolley assembly.*

Trolley assembly:

Airbrush the trolley assembly with a grey primer, such as ‘AK Interactive’ Grey (AK758) or similar.

Airbrush the trolley assembly with ‘Tamiya’ Flat Aluminium (XF16) or similar.

NOTE: *Applying hairspray will have a similar effect to applying chipping solutions. It will form a barrier between the base metal coat and the over sprayed grey colour. When water is applied it will penetrate to the hairspray layer, which will react to allow the top coat of grey to be chipped away.*

Spray two ***light*** coats of a cheap hairspray over the trolley assembly.

Airbrush the trolley assembly with ‘Tamiya’ Royal Light Grey (XF80) or similar. Avoid painting the pump and pipe gallery and the handle and hose support bar.

Wet areas of the trolley assembly with water and using a short, stiff brush or a wood tooth pick, carefully scrape the top coat of grey paint to reveal the steel underneath. Once the desired chipping effect is achieved, dab off any residual water with absorbent paper.

Brush paint the handle of the pump with ‘Tamiya’ NATO Brown (XF68) or similar

Using ‘Mr. Colour’ Stainless Steel (213) or similar, brush paint the trolley handle, hose support bar and the pump pipe gallery.

Using ‘Mr. Colour’ Brass (219) or similar, brush paint the valve tap handle, the hose supports and the hose support hook.

Using ‘Tamiya’ Dark Green 2 (RAF) (XF81) or similar, brush paint the pump housing and its upper pipe.

Airbrush the painted surfaces with ‘Alclad’ Matte (ALC314) or similar to seal the paint.

Refer to Part 2 (Weathering) of this build log for more information - apply your desired weathering finish to the trolley assembly - I used ‘Flory Models’ Dark Dirt fine clay wash).

If desired, represent fuel stains by brushing ‘AK Interactive’ Kerosene (AK-2039) wash around the base of the pump and down from the filler cap at the top, handle end of the fuel drum.

Bracing wires:

Cut a long length of 0.08 mm diameter mono-filament, such as ‘Stroft GTM’ or similar.

Pass one of the line down into one of the pre-drilled holes in the trolley side members.

Secure the line in the hole using thin CA adhesive.

Pass two blackened 0.4 mm diameter tubes, such as ’Albion Alloy’s’ (MBT04), onto the line.

Pass the free end of the line through the 1:48th scale ’Gaspatch’ Anchor Point fitted into that side of the pump housing.

Pass two blackened 0.4 mm diameter tubes, such as ’Albion Alloy’s’ (MBT04), onto the line.

Pass the line down into the remaining pre-drilled hole in the trolley side members.

Keeping the line taut, secure it in the hole using thin CA adhesive.

Cut away the residual tag of line.

Slide the four tubes against the trolley side member and the Anchor Point.

Secure the tubes in position on the line, using thin CA adhesive.

Repeat the process to add the bracing wire to the other side of the trolley.

NOTE: *The kit supplied hose pipe and wire was discarded to be replace with mono-filament and ‘Riich’ 0.6 mm black soft tube (RE30005).*

Cut a long length of ‘Riich’ black soft tube (RE30005).

Secure one end of the tube into the pre-drilled hole in the top of the pump, using thin CA adhesive.

Pass the tube up and over the hose support hook and secure it in the hook using thin CA adhesive.

Coil the tube around itself on the top of the fuel drum, using thin CA adhesive at intervals to hold it in position.

Cut a short length of 0.9 mm diameter Brass tube, such as ’Albion Alloy’s’ (MBT09), which has an internal bore large enough to fit over the end of the tube.

Trim the length of the tube such that with the cut Brass tube fitted, the end of the tube can be positioned on the end of the trolley side member.

Secure the cut Brass tube onto the end of the hose using thin CA adhesive.

Secure the Brass end of the tube onto the end of the trolley side member, using thin CA adhesive.

Airbrush a light coat of matte clear coat, such as ’Alclad’ Matte (ALC314) or similar, over the trolley hose and bracing wires.

Wheels:

Airbrush the two wheels with a grey primer, such as ‘AK Interactive’ Grey (AK758) or similar.

Airbrush the two wheels with ‘Tamiya’ Dark Yellow (XF60) or similar.

NOTE: *Refer to Part 1 (Wood Effects) of the build log for more information.*

Apply the chosen oil paint over the two wheels (not the outer metal rim). I used ‘Windsor & Newton’ Griffin (Alkyd) Burnt Sienna oil paint.

Leave the oil paint to settle for about ten minutes.

Decant a small amount of White Spirits into a suitable dish.

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

Brush the oil paint along the spokes and rims in the desired direction, wiping the brush on the sheet of kitchen roll to remove residual oil paint.

Repeat dipping and wiping the brush in the White Spirits 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.

Once the oil paint is fully dry, airbrush a semi-gloss clear coat, such as ‘Alclad’ Light Sheen (ALC311) or similar.

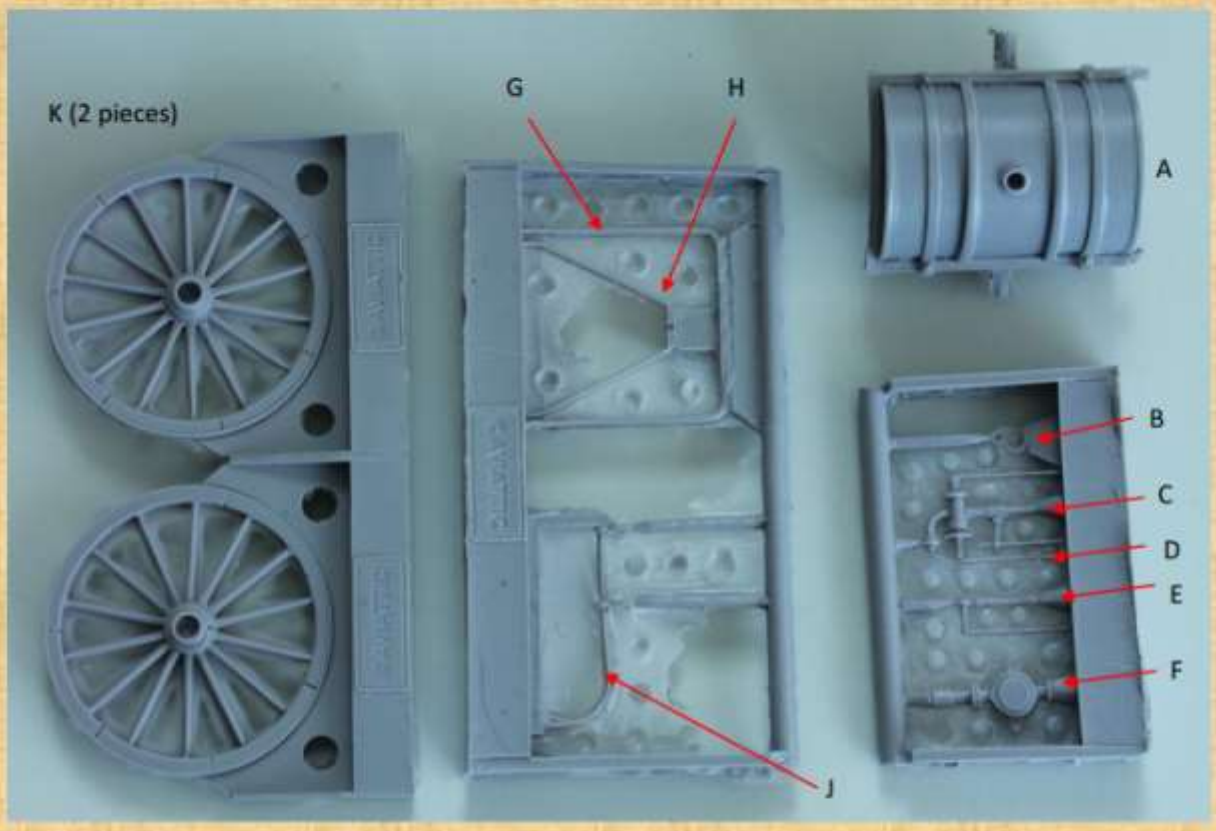
Brush paint the outer metal rim of the wheels and outer central hub with ‘Mr. Colour’ Stainless Steel (213) or similar. This type of paint, once dry, can be buffed to a metallic sheen using a cotton bud or similar.

Sponge on ‘Tamiya’ Weathering Master set B (Rust) over he wood effect spokes and rims of both wheels.

The following instructions are from the ‘Aviattic’ web site and were compiled by modeler/author Dave Hooper. **These instructions may differ from the parts supplied in your particular kit.**

AVIATTIC

German Re-fuelling Cart Assembly Instructions



Part removal and cleaning

Removal parts using a razor saw. A scalpel with a fresh blade an 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.

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

Painting

No colour references for a German re-fuelling cart exist and as such all colours suggested in these instructions are purely speculative. For this reason no specific paint codes are provided.

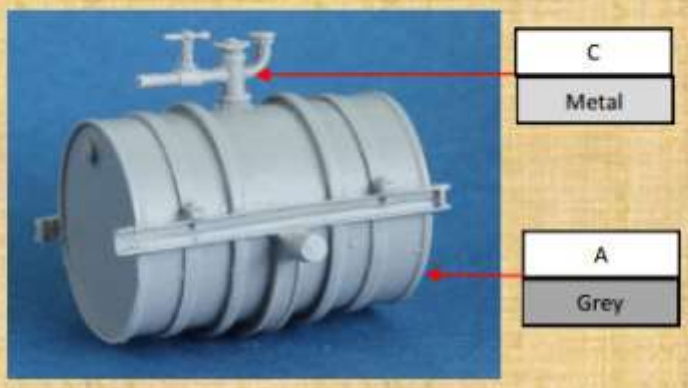
References

Few photographic references exist. One of the most common depicts a Roland C.II being fuelled which this kit is based on. A large good quality example of this photograph can be found in ‘The German Army Air service in World War One (Vintage Warbirds no.2) by Ray Rimell

Suggested assembly of the Resin parts

Modellers Note: Thinner parts can be replaced by wire or brass rod

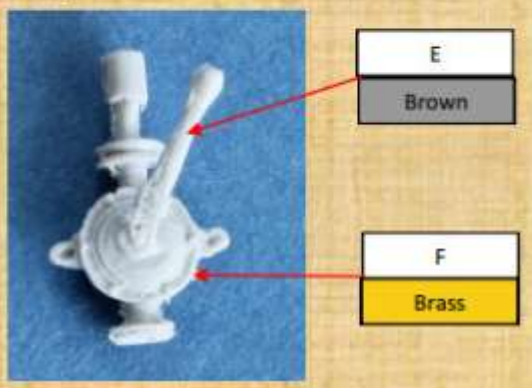
Step 1



Modellers tip: Drill a small hole in the end of the tap. Use a 0.40 drill to make initial centre hole and a 0.40 drill to expand.

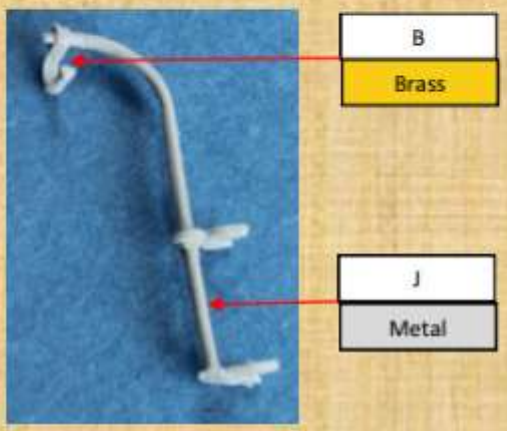
Painting tip: Drum bands could be metal or web-bing

Step 2

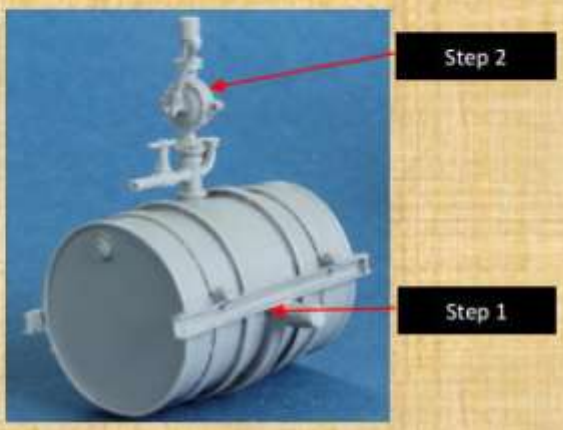


Modellers tip: Drill out holes each side of part F for bracing wires

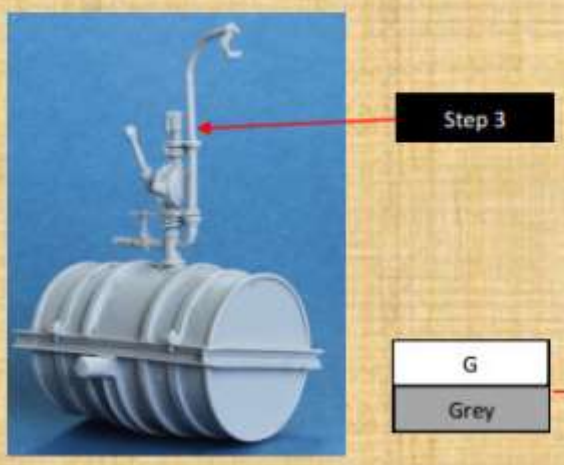
Step 3



Step 4

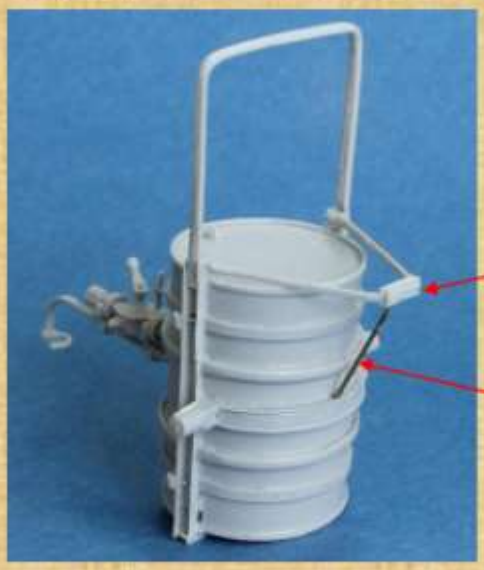


Step 5



Step 6

Step 7



D
Grey

H
Grey

K
Wood

Modellers tip: It is recommended that part H is replaced with a piece of brass rod (as shown in the photograph) The brass rod should be cut to approx. 15mm.

Step 8

Painting tip: Paint the wheel rims metal

Rubber Hose

A length rubber hose is included within this kit. The hose is tubular and as such 0.7mm wire can be threaded through the hose which will allow easy shaping of the hose. The hose fits to the top end of part F and hangs on the hook (Part B).

Bracing wires

Bracing wires can be fitted from pre-moulded holes in the frame of part A (two each side) to each side of part F.

Figures NO LONGER AVAILABLE

A pair of figures designed to be posed with the cart are available separately from Aviattic

‘Modelkasten’ Ladder

This ladder is supplied as five parts and is part of the ‘ModelKasten’ figure set B.

Preparation:

Scrape or sand away any surface artifacts or mould seam lines.

Assembly:

Cement parts F1, F2, F3, F4 and F5 together to create the ladder.

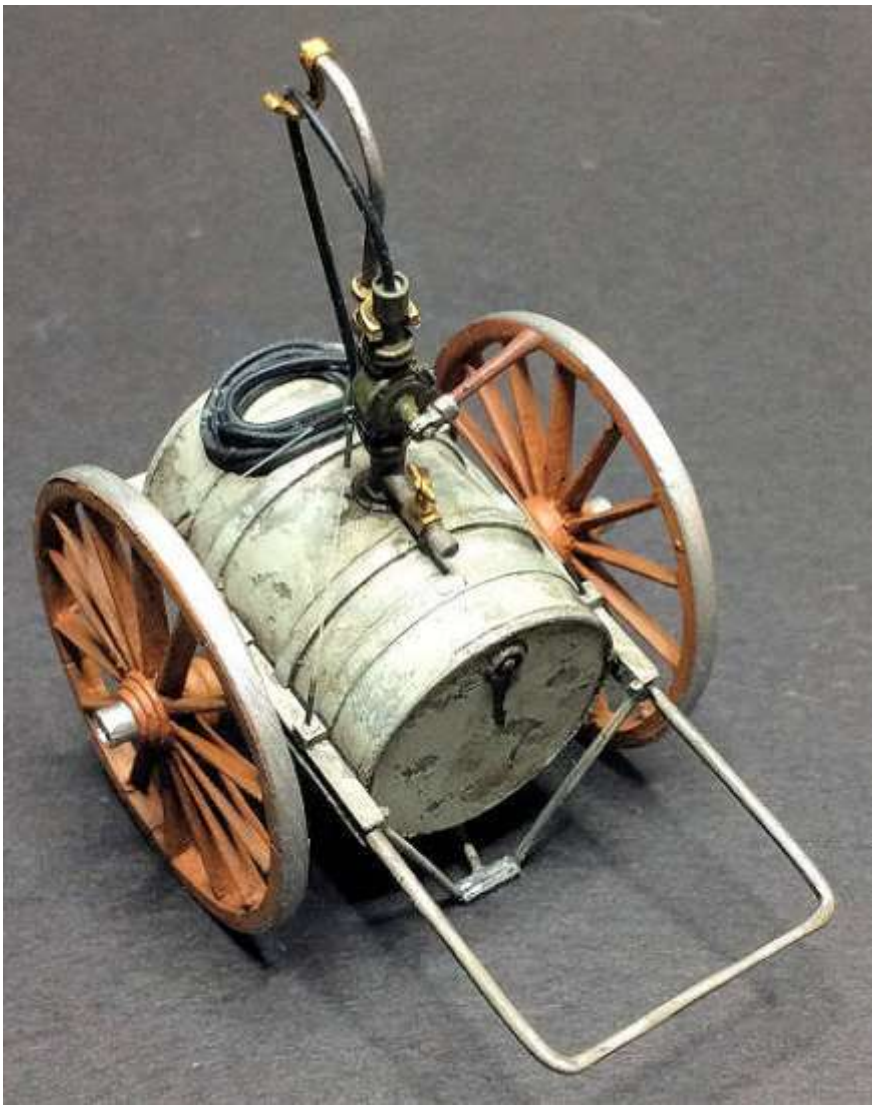
Painting:

Airbrush the ladder with a grey primer, such as ‘AK Interactive’ Grey (AK758) or similar.

Airbrush the ladder with ‘Tamiya’ NATO Brown (XF68) or similar.

Sponge on ‘Tamiya’ Weathering Master set E (Grey) over the ladder frame and steps.

Sponge on ‘Tamiya’ Weathering Master set B (Soot) over the middle of the steps and top.



PART 12
DISPLAY BASE

PART 12 - DISPLAY BASE

The display case is made from two sheets of 3mm thick Piano Black Acrylic sheet cemented together with a transparent top fabricated from 3mm thick Clear Acrylic sheet. This was custom made for me by Paul Moss at 'Inperspextive' (Ebay). The name plaque was also made by an on -line retailer 'The Engraving Shop'.

The grass mat was cut to shape from a sheet of 'Lars op't Hof Scenery' grass mat (Pasture Autumn short). The cut mat was then positioned on the base and the model and figures test placed to achieve the best effect and to make sure the transparent cover of the case would be able to be located onto the base without touching the model. The model and figures were then removed with the grass mat left in position on the display base. The edges of the grass mat were then carefully lifted and a soft marker pen was used to mark the outline of the grass mat, but approximately 5 mm inside the mat edge. The grass mat was then removed and inside its marked area on the display base was scuffed using a coarse grit sand paper, in order to give a key for the adhesive.

NOTE: *When applying the adhesive, make sure it is not applied too thickly and close to the edges of the finally positioned grass mat. Otherwise the adhesive may be squeezed out from under the grass mat once weight is applied to hold down the mat during setting of the adhesive.*

A thin coat of PVA adhesive (white glue) was applied to the scuffed area on the display base or to the back of the grass mat. The grass mat was then laid onto the PVA adhesive and positioned correctly. Light pressure was applied to ensure the mat was in contact with the adhesive. The grass mat was then covered with paper and weight added onto the paper (I use large books) to press the mat onto the PVA adhesive. Once the adhesive has set the books and paper were removed.

Finally an acrylic plaque stand was positioned to the left, front corner of the display base (just in from the edges of the shoulder for locating the transparent acrylic cover. The area on the underside of the stand and its contact are on the display base were scuffed using a coarse grit sand paper, in order to give a key for the adhesive. A thin coat of contact adhesive or two part epoxy (Araldite or similar) was then applied to both scuffed areas and once the adhesive started to set, the stand was carefully position onto the display base and pressed down to make full contact. The self-adhesive backed information plaque was then positioned centrally onto the stand and pressed to make full contact.

The model, figures, ladder and refueller were then positioned on the base in their final positions and the support pins in the legs of the pilot, observer and standing mechanic were marked into the grass mat. A holes of 1.0 mm diameter were then drilled through the grass mat and into, but not through, the display base. The holes were cleared of residual acrylic to ensure the pins in the figures would fully locate. The figures were then test fitted and where necessary, the support pins were snipped to the required length to fully locate into the display base.

NOTE: *The aircraft model is not secured to the display base as this can cause shock damage to the model if the display is transported to shows etc. Therefore the aircraft model can be packed separately for transporting.*

The aircraft itself, being light in weight, will tend to sit on top of the grass on the mat, rather than seat fully down, as would a real aircraft. Therefore the location of the aircraft wheels and tail skid were marked onto the grass mat and those areas were scrapped through the mat to create slight and unobstructed troughs, into which the aircraft can be located.

The remaining mechanic figure (for the ladder) could then be fitted to the ladder and positioned at the aircraft's engine, as though he was working on part of the engine.

With the aircraft located in its final position on the grass mat, position the ladder under the fitted restraining cable on the right engine access panel. Test locate the mechanic with the right leg on the top of the ladder and the left (bent) leg resting on the side of the engine bay. Mark the ladder where the pin in the right leg locates. Also mark the grass mat where the feet of the ladder are located.

Remove the ladder and figure.

Scrape through the marks made on the mat to create slight and unobstructed troughs, into which the ladder can be located.

Drill a hole through the ladder to locate the pin. Cut the length of the pin such that it locates into the pre-drilled hole without protruding from under the ladder. Test position the figure on the ladder at the aircraft and adjust their positions until the feet locate correctly on the ladder and with the left leg on the aircraft. Make sure the figure and ladder clear the restraining cord for the right access panel. Apply thin CA adhesive to secure the figure onto the ladder, then carefully remove the ladder and figure.

Position the refueller on the grass mat then mark the location of the two wheels and rest. Scrape through the marks made on the mat to create slight and unobstructed troughs, into which the refueller can be located.

Finally, position the aircraft, ladder with figure and the refueller onto their positions in the grass mat. Apply thin CA adhesive or PVA adhesive to the locating pins of the pilot, gunner and standing mechanic to secure them into their pre-drilled location holes.

PART 13
COMPLETED MODEL PHOTOGRAPHS


Junk J.I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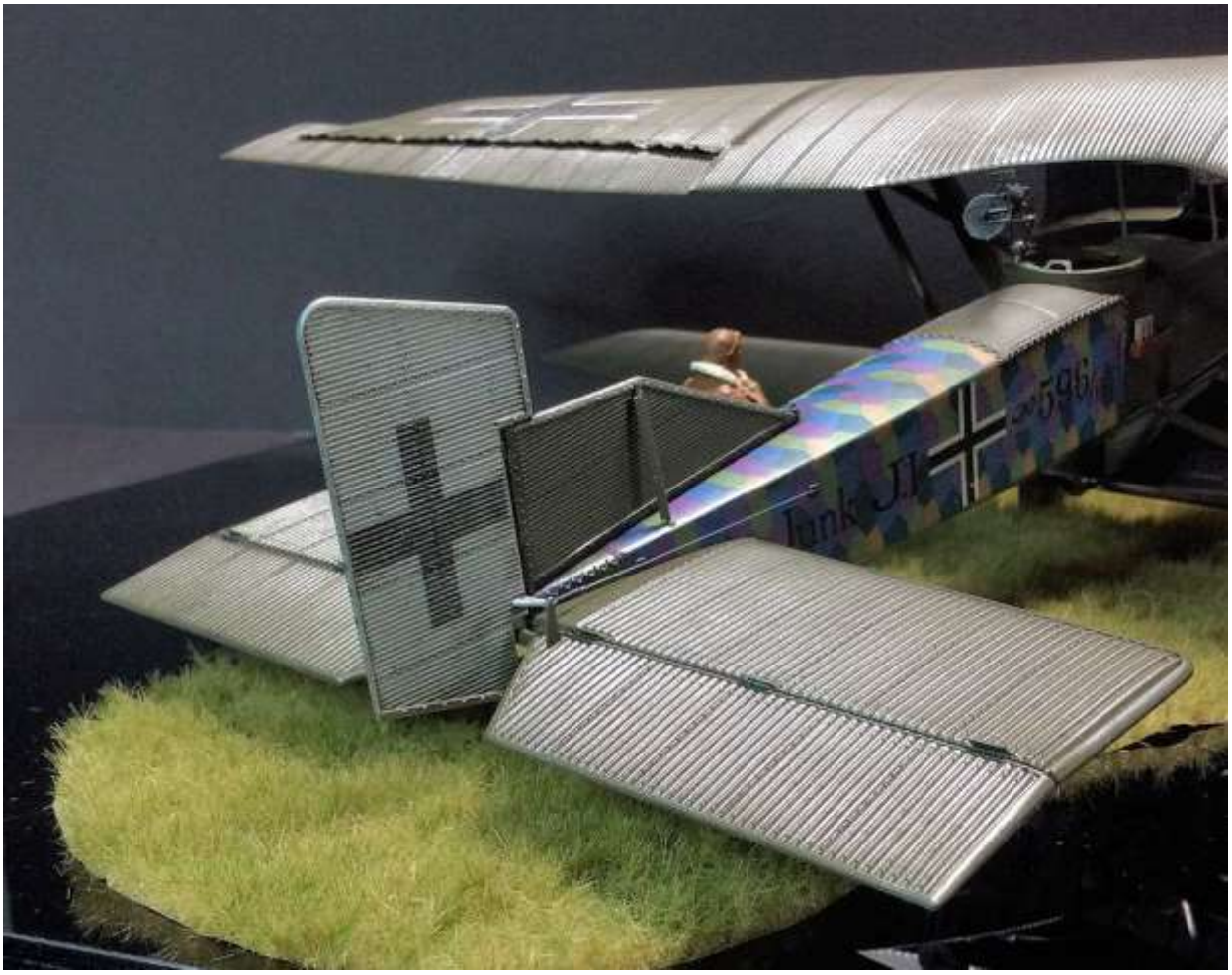
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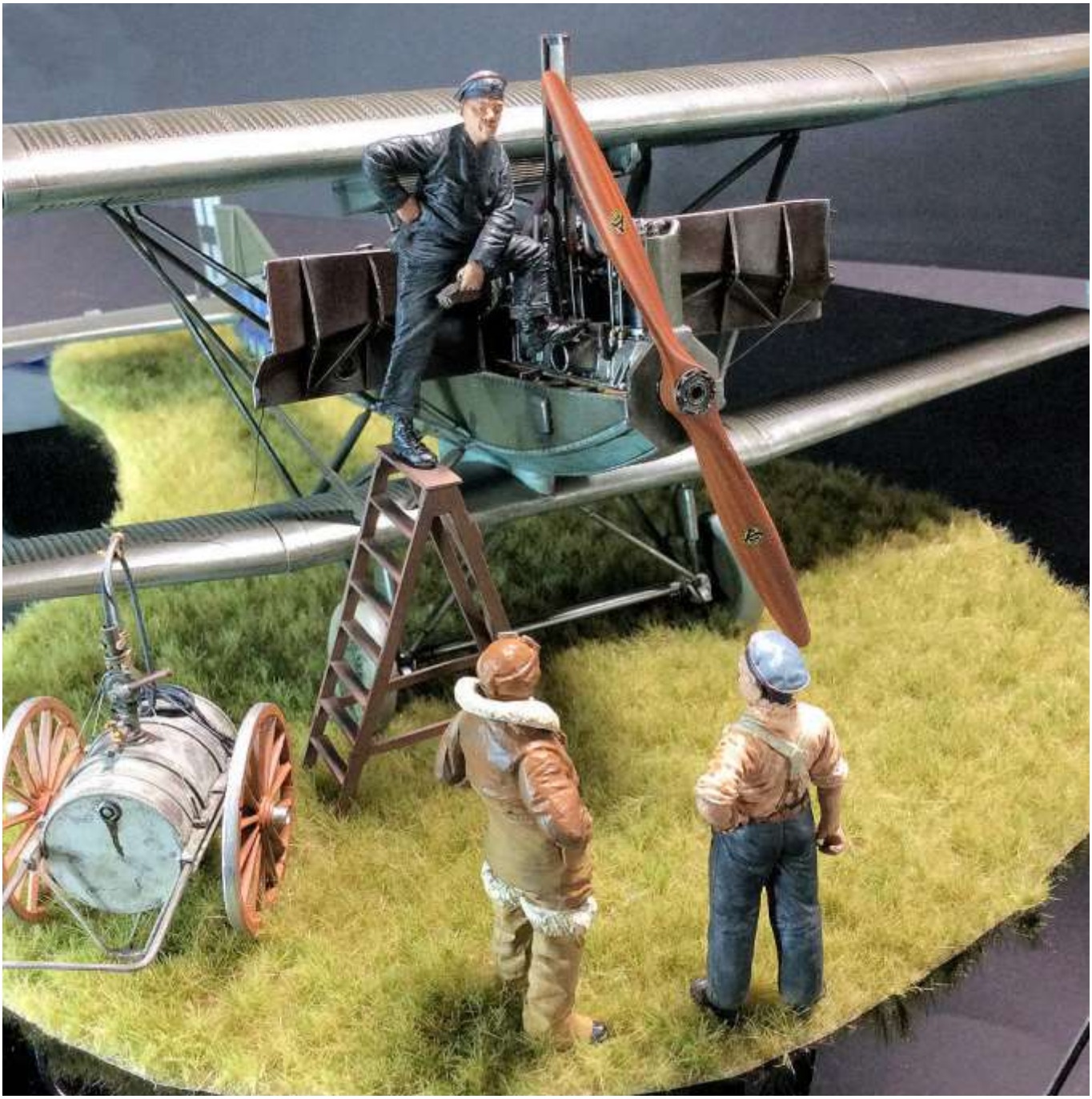

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