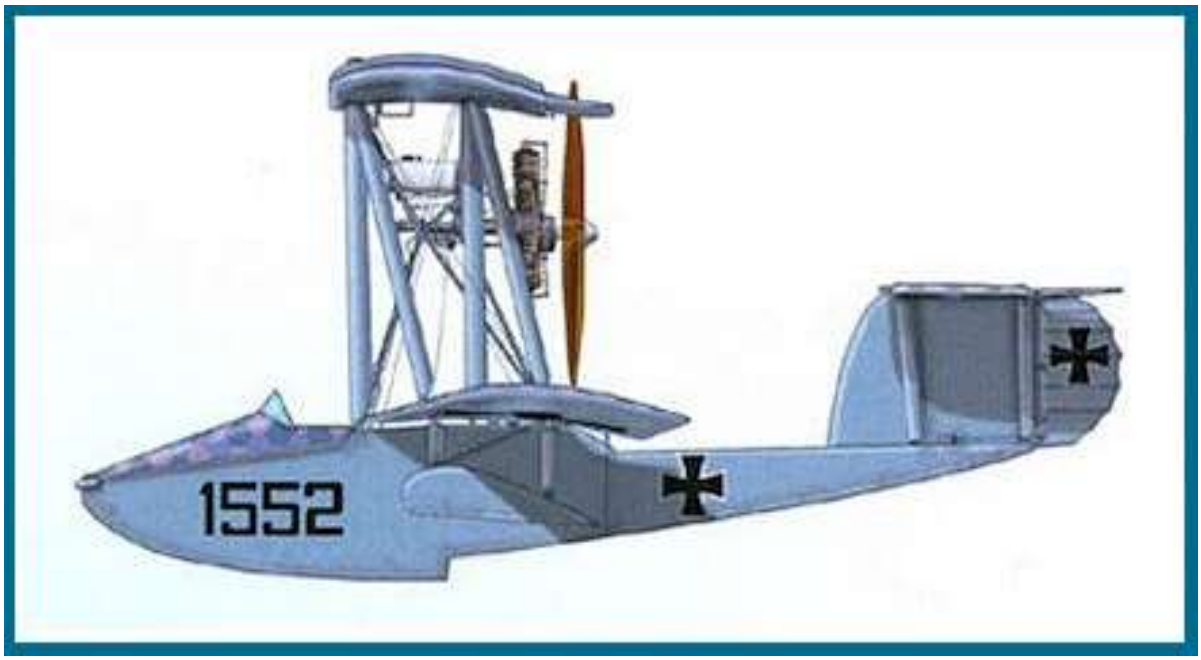


HANSA-BRANDENBURG W.20

World War One Aircraft Models

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

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

I don't consider myself a 'master' of this craft, but hope to be able to pass on what I have learned. As such, here is my build log, which covers the 1:32 scale resin model of the Hansa-Brandenburg W.20 by 'Omega Models'.

Mike 'Sandbagger' Norris

sandbaggeruk@sky.com

Completed: June 2021

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’ - (Seated pilot LSK 07A),
‘Elan 13’ Miniatures German Naval pilot WW1 (EL19),
‘Elan 13’ RFC Mechanic WW1 (EL41).

Decals

‘Aviattic’ linen effect Lozenge (ATT32113),
‘Aviattic’ linen weave effect (ATT32236),
‘Airscale’ Generic WW1 instruments (AS32 WW1).

Rigging accessories (as required)

‘GasPatch Elite Accessories’ Turnbuckles 1/48 scale,
‘Albion Alloy’s’ Micro-tube (Brass or Nickel Silver - various diameters),
‘Albion Alloy’s’ 'Connec+o' joiners (C-04 and C-08),
‘Steelon’ Mono-Filament 0.12 mm diameter,
‘Stroft’ Mono-filament 0.08 mm diameter.

Photo-etch

‘Jadar’ WW1 1:48th scale control horns (S48087),
‘Airscale’ Instrument Bezels (PE32 BEZ).

Sundries (as required)

Paints (‘Tamiya’ Acrylic, Humbrol Acrylic, ‘Mr. Metal Colour’),
‘AK Interactive’ Primer and micro-filler (Grey AK758, White AK759),
’AK Interactive’ Filters (Wood AK-261) and Washes (Kerosene AK-2039 and Oil AK-2019),
‘Alclad II’ metal lacquers, ‘Alclad’ Aqua Gloss 600, ‘Mr. Colour’ Levelling Thinners,
‘Vallejo’ Model Colour, PVA Adhesive (e.g. ’MicroScale’ Micro Krystal Clear),
‘VMS Fleky’ CA adhesive (Standard and Thin), ‘UHU’ White Tack,
‘AV’ Masilla Plastica (401) putty, ‘De-Lux Materials’ Perfect Plastic Putty,
Sanding and/or Polishing sticks from ‘Flory Models’, ‘Humbrol’ Maskol,
‘Milliput’ or ‘Green Stuff’ two part putty, ‘White Spirits’, ‘MicroScale’ MicroSol/MicroSet,
‘Mr. Surfacer’ 500, 1000 or 1200, ‘Mr. Metal Primer R’, ‘Artool’ Ultra Mask sheets,
‘DecoArt Crafters Acrylic’ (water based) paints, ’Plastruct’ styrene rod, ‘PlusModel’ lead wire,
‘ANYZ’ black braided line (AN001), ‘Tamiya’ extra thin liquid cement,
‘Plastic Magic’ liquid cement, ‘Black-It’ blackening solution, ‘Albion Alloy’s’ Connec+o C-08.

Weathering mediums (as required)

‘Flory’ Clay washes, Flory Pigments, AK Interactive engine washes,
‘Tamiya’ Weathering Master (Set C, D and E).

Display Base

Etched Plaque (name plate),
‘Inperspective’ custom made Acrylic base and cover,
‘Coastal Kits’ 1:32 Scale ‘Abandoned Airfield’ display mat.

THE AIRCRAFT

THE AIRCRAFT

Reference:
'Windsock' World War Centenary (Spring 2015, Vol.31, No.1).

This model represents the second version of the Hansa-Brandenburg W.20, Ser No:1552, photographed on the 14th of March 1918, at the Seeflugzeug-Versuchs-Kommando (SVK) seaplane testing command at Warnemünde before being accepted for naval use (by the SAK).

The Hansa-Brandenburg W.20 was designed during late 1917 and early 1918 by Ernst Heinkel whilst working at Hansa-Brandenburg. The intention for this small, unarmed spotter float plane was for it to be partially dismantled and stored in a water tight 6 x 1.9 metre container on board the projected 'Cruiser' class of submarine, such as U139 and U155. It was to be removed from its container, assembled quickly and launched whilst the submarine was on the surface. After the flight, the submarine would surface again, the aircraft loaded, dismantled and stowed in its container, after which the submarine could submerge. The aircraft was intended to be prepared for flight or stowing in less than 2 minutes and was to be stored inside the container which measured 20 feet long and 6 feet in diameter. However, the intended submarines to be used were never built before the armistice and only three W.20 aircraft were built. The first version, Ser No:1551, had only fuselage to upper wing support struts, but was severely damaged during trials. The second version, Serial No:1552 had interplane struts added between the wings and these struts were wire crossed braced. In addition the span of the lower wings was increased. The third and final version, Serial No:1553 had the interplane struts replaced by single interplane struts. However it was felt the W.20 design would not stand up to the operational conditions at sea and it could not be assembled quickly enough for submarine operations. The Navy decided to favour the more durable, metal designs then being developed. The three prototypes were stored at Hage, where they were found in December 1918 by the Allied Naval Armistice Commission.

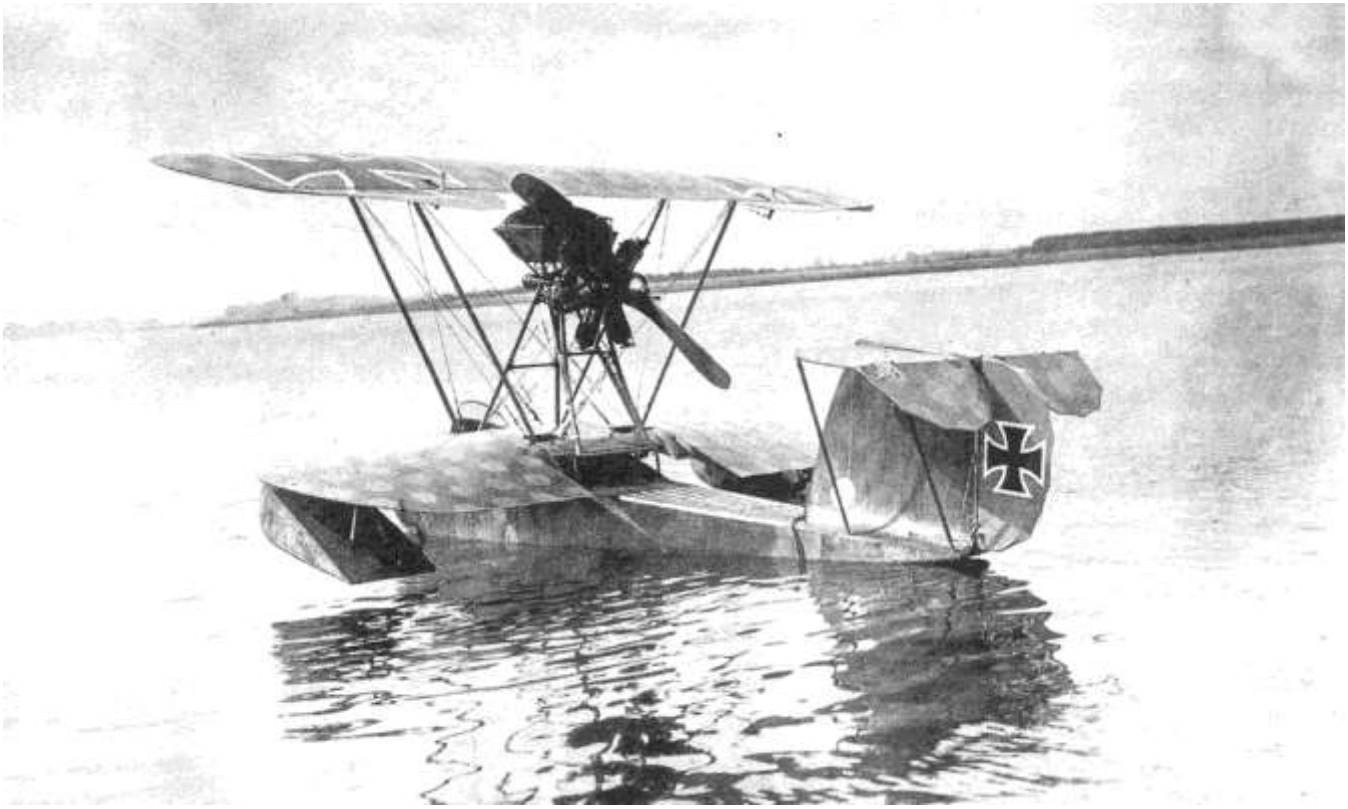
General specifications for the second version Ser No:1552:

Length – 19 ft 5 $^{1}/_{8}$ in (5.925m)
Wingspan - 22 ft 3 ¾ in (6.8 m)
Wing area - 171sq ft (15.82sq m)
Empty weight - 871lb (396 kg)
Loaded weight - 1,250lb (568kg)
Engine - 80hp Oberursel U0
Propeller - 2 bladed fixed pusher type
Armament - None

Performance:
Maximum speed - 115 km/hour
Climb rate - 3,280 ft (1000m) in 15 min
Endurance - 1 1/4 hour

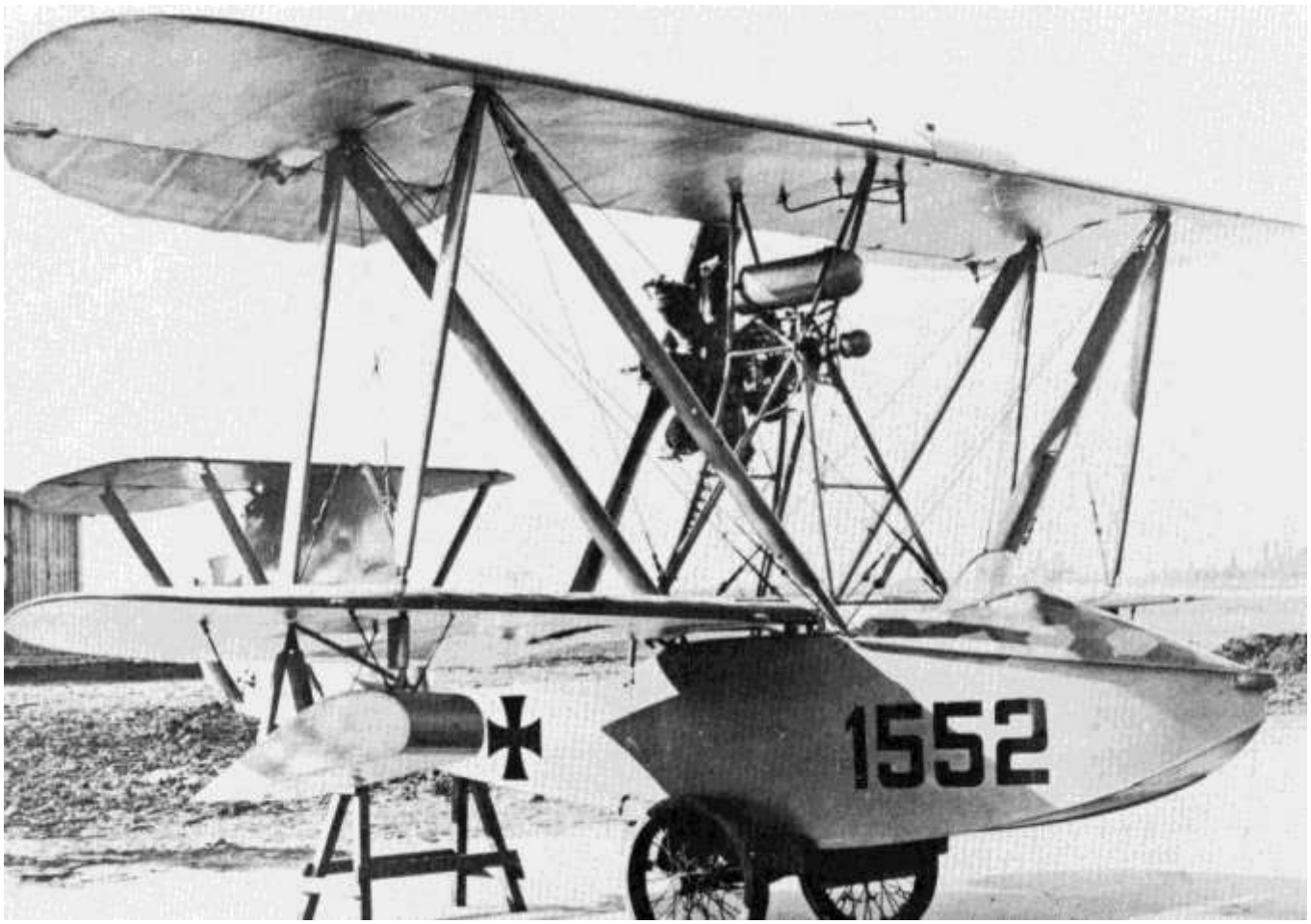
Although this design of Ernst Heinkel never saw operational service, he did design a similar aircraft in 1921, which was known as the Caspar-Heinkel U1. Two examples were purchased by the U.S. Navy for evaluation. This aircraft was intended to fit into a smaller space of 18 feet long and 4 feet 6 inches diameter. The design was a cantilever wing biplane, powered by a 50 hp engine and capable of a speed of 87 mph with a climb rate of 1000 m in 6 minutes. Four men could dismantle and stow the aircraft in only 22 seconds and reassemble it in only 31 seconds. One of the aircraft was wrecked when being transported on a truck when the aircraft struck low hanging trees. Interestingly Heinkel built and sold two examples to the Japanese, who subsequently followed on with this technology in WW2.

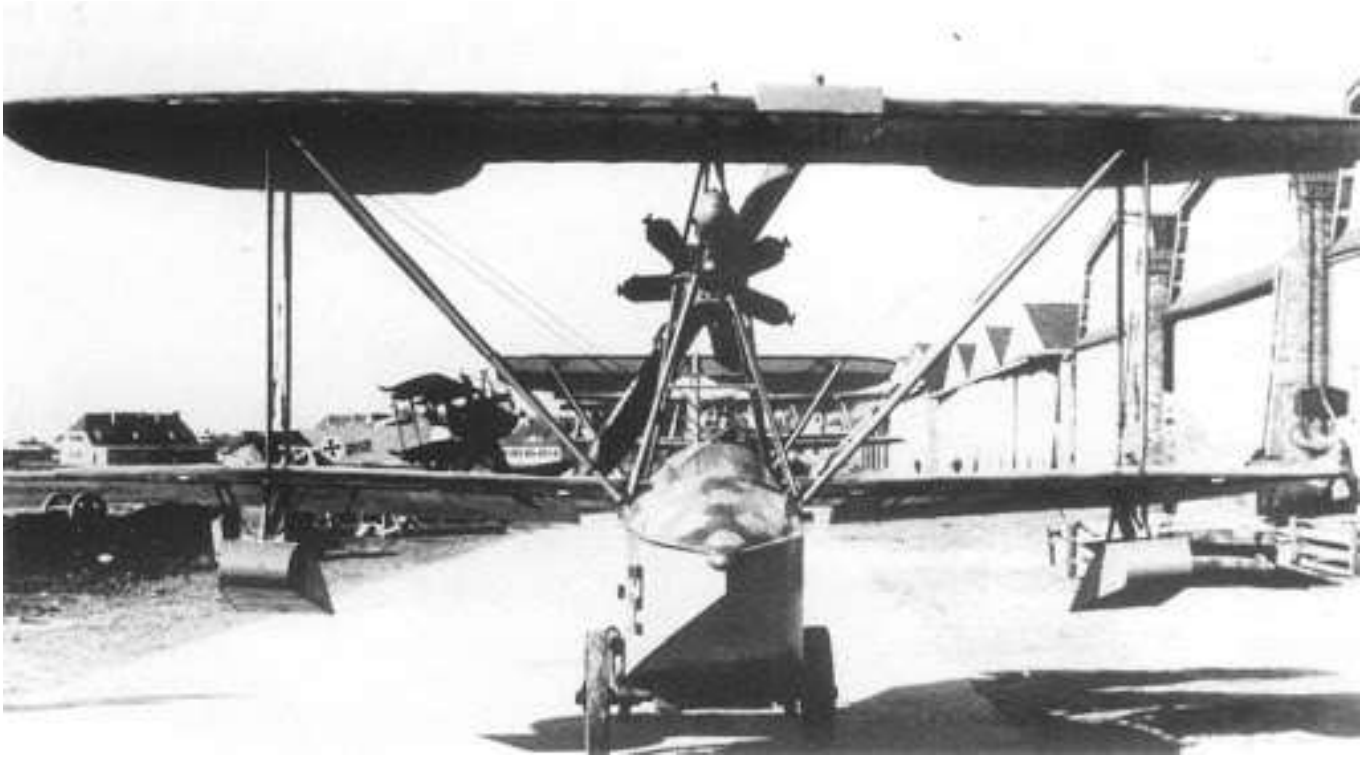
First version - Ser No:1551



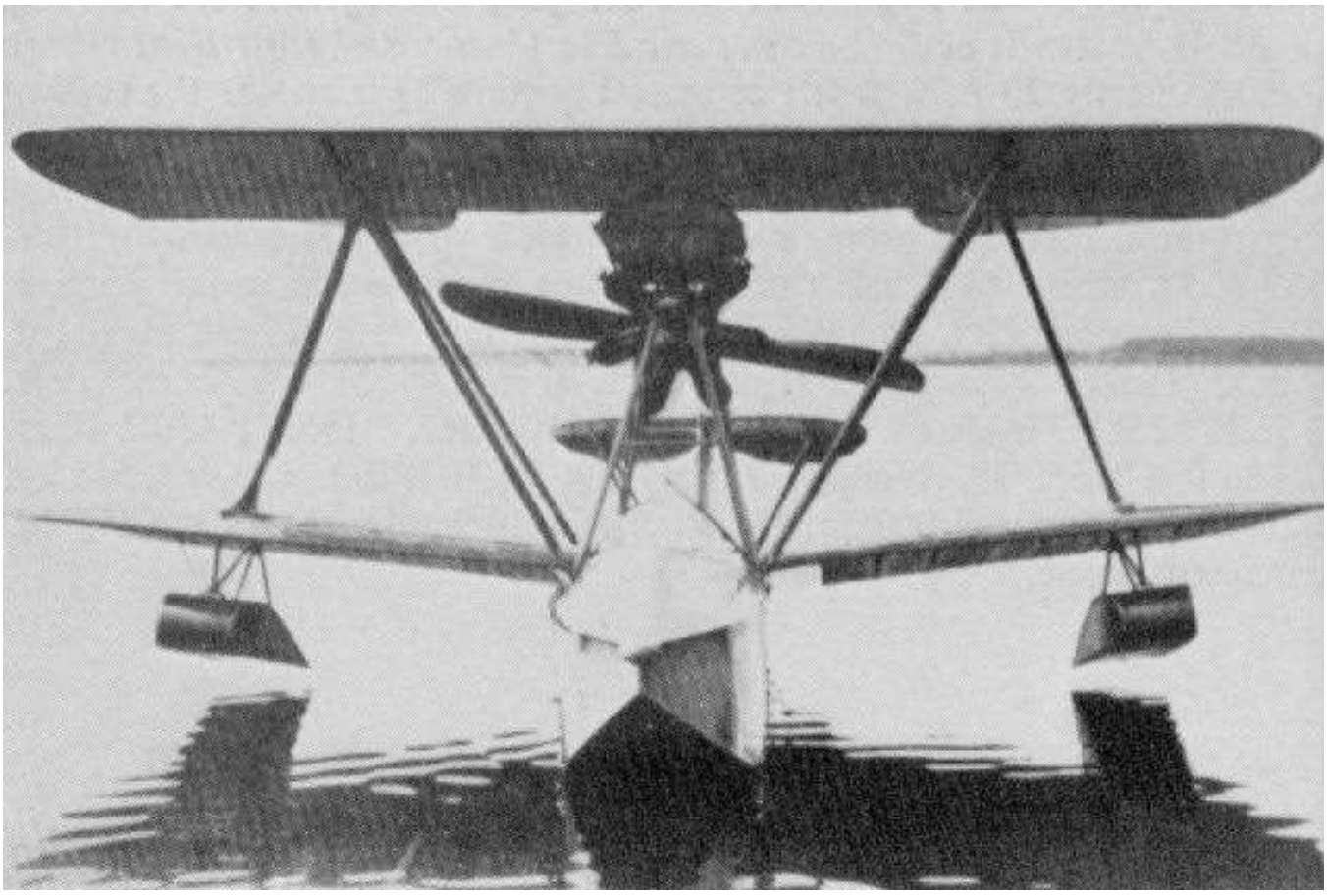
Second version - Ser No:1552

The subject of this model will be the second version, Ser No:1552.





Third version - Ser No:1553



PART 1
MODEL
DESCRIPTION

PART 1 - MODEL DESCRIPTION

('Omega Models' - Kit No:32001)

This 1:32nd scale model is manufactured by 'Omega Models', a Czech company who make models of the more obscure designs. The kit is manufactured from resin, which for some modellers can be problematic in building.
The following is a list of what I consider to be problem areas in the building of this model:

1. The supplied kit itself comprises of parts which are solely resin and unlike many more up market companies, 'Omega Models' do not reinforce parts, such as wing struts, with metal rods. This makes the supplied resin struts very weak when flexed.
2. All of the resin parts have mould 'flash' that will need to be removed and larger items, such as the wings, do have some warping, which is not uncommon in resin kits.
3. The kit does not supply many parts required to make this an accurate model, for example an instrument panel, all of the necessary wing float struts, all of the centre engine bearer struts etc.
4. The lower wing one piece moulding is not the correct shape according to the drawings supplied.
5. The kit parts have no locating pegs or holes, which can cause alignment problems during assembly.
6. The instructions supplied for assembling the model are virtually non-existent, being only several sheets of photo-copied data with only one section view of the fuselage internal parts. The remaining sheets are the kit contents and basic three-view drawings and some small colour profiles. The kit instructions do not give assembly instructions, apart from the two side drawings and they only list parts with no exploded assembly views. Also, some of the information refers to different versions of this aircraft, not the kit supplied Series 2 (1552) model.
7. The decals supplied are of reasonable quality but are not the normal, 'cookie' cut slide transfer. Instead the decals are printed on sheets and the normal carrier film does not cover decals on the sheets. Therefore each decal will need to be carefully cut out from its sheet before application to the model. Also the surface of these decals are easily damaged, such as from being scratched. Great care is needed handling these decals.
8. The kit does supply any ground equipment, such as a basic 'beaching' trolley or trestles.

In light of the above the model would need to be heavily modified to make it a reasonable representation of the actual aircraft. Such modifications could be:

Making metal tube replacement struts for the entire model.

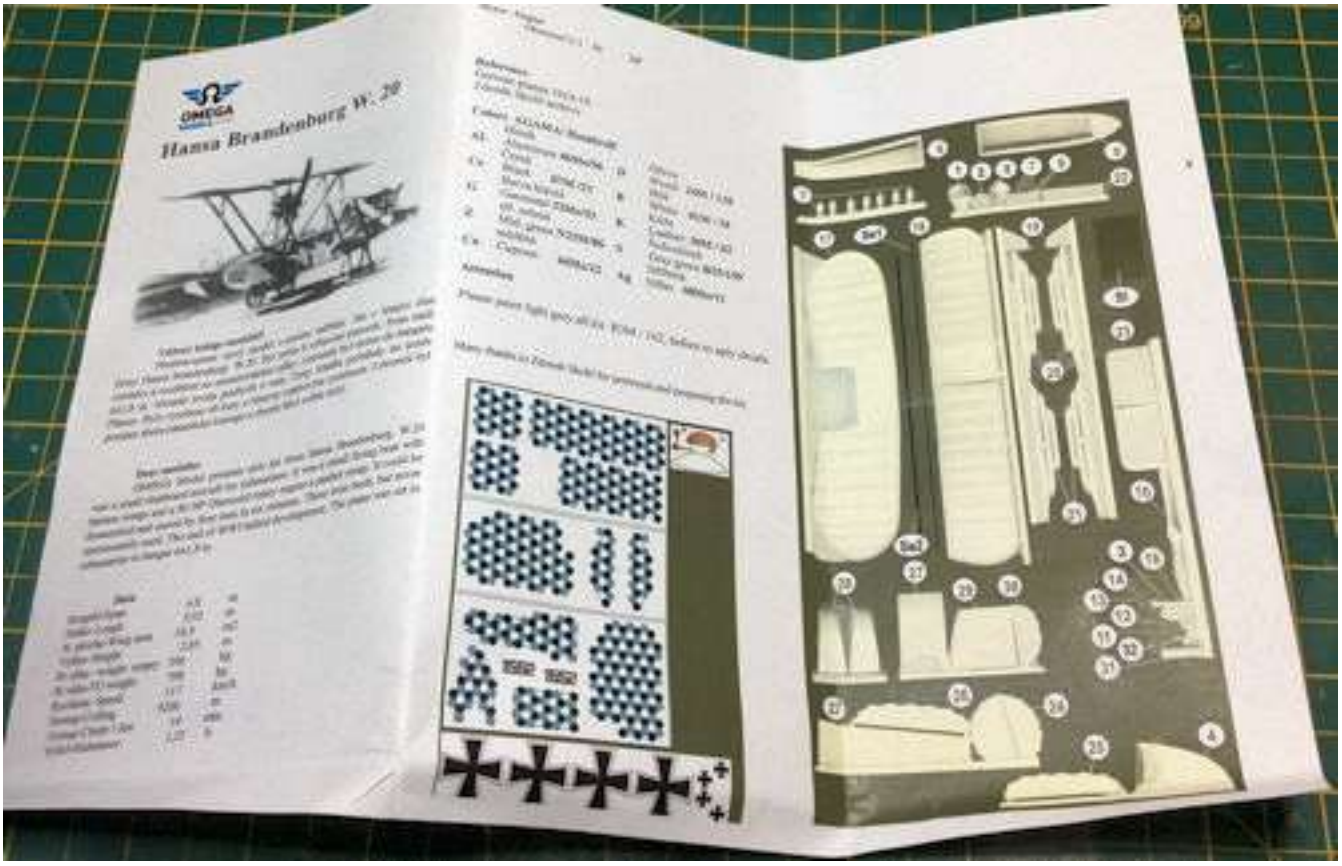
Replacing the kit supplied decal with after market decal, such as lozenge decal from 'Aviattic.

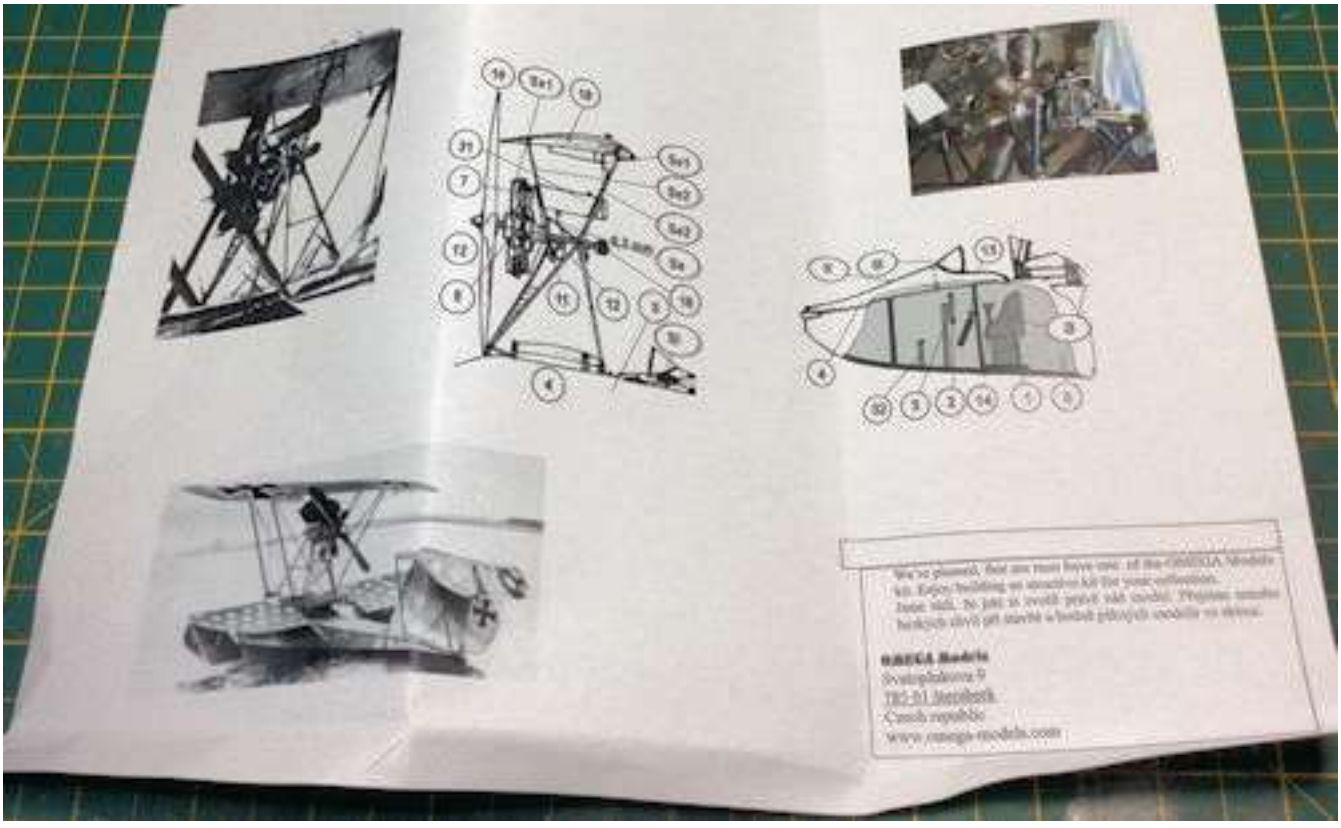
Adding basic cockpit detail, such as a seat harness, controls and pipework etc.

If one can be found, replacing the kit supplied resin engine with the equivalent engine from 'Wingnut Wings (kit sprue number 132E0014 - the 7 cylinder 80hp Oberursel U.0 or Gnome engines, which is part of their Fokker E.1 (32021) or Sopwith Pup (Gnome) (32055) kits. Also Taurus Models have a very good resin kit of this engine (D3217).

In any event, this kit is certainly not for the less experienced modeller!!


Hansa Brandenburg
W.20
OMEGA
1/32
1552
1552


Hansa Brandenburg W. 29


OMEGA Models

PART 2
WOOD EFFECTS (General)

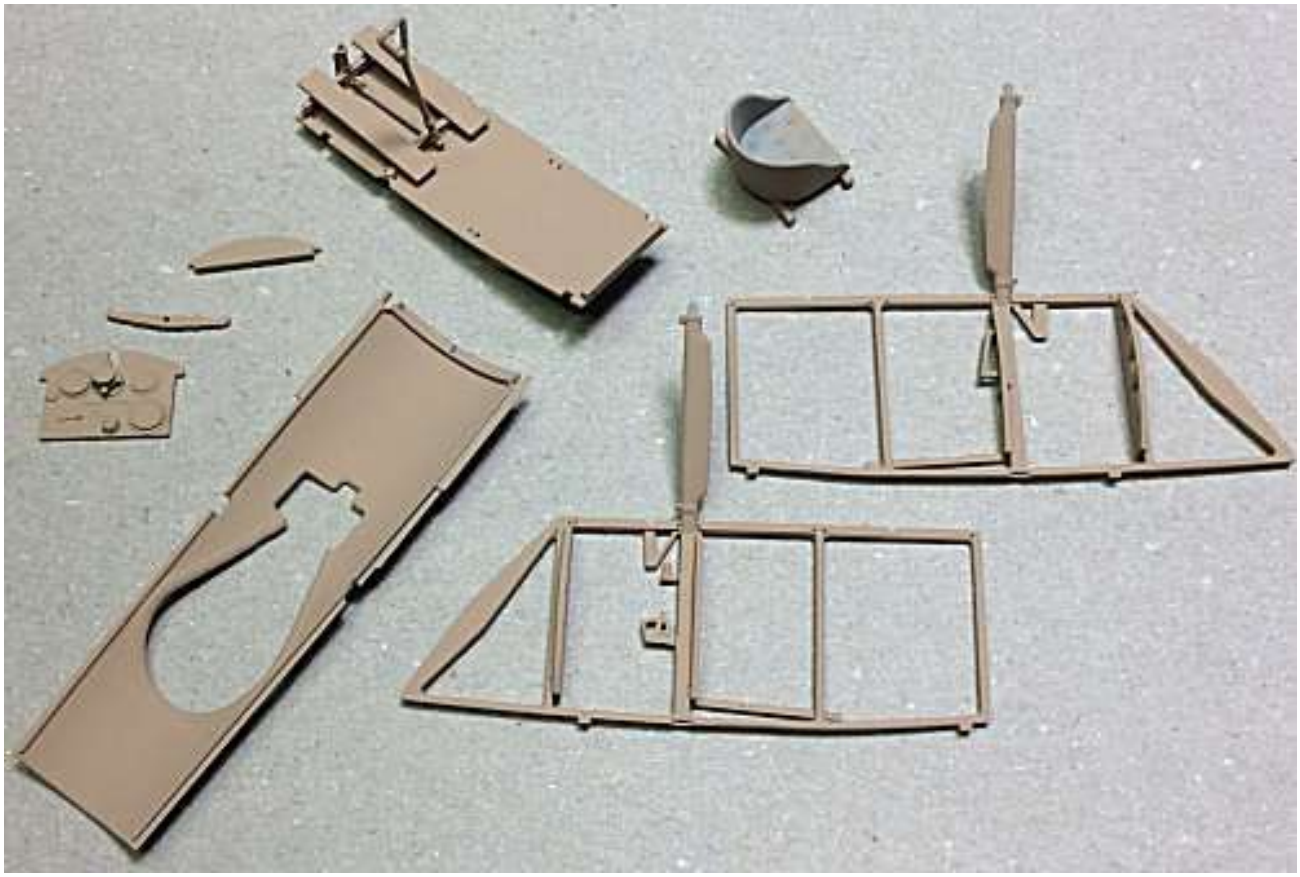
PART 2 - WOOD EFFECTS (General)

A basic technique:

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' Levelling Thinner', which aids brush painting. For most wood effect, I use 'Tamiya' Wooden Deck Tan (XF78) or Dark Yellow (XF60), suitably thinned with 'Tamiya' Thinners (X20A). Allow this base coat to fully dry (if you can't smell the paint, then it's dry).

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



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.

PART 3
WEATHERING
(General)

PART 3 - WEATHERING (General)

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

Flory Model clay washes:

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

First I seal the surface with airbrushed '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 matte coat can cause the clay wash to 'grip' too much, making it difficult to remove or even to wash it off completely.

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

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

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

To apply the clay wash is just a matter of brushing all over the surface to be weathered. It doesn't matter really how much is applied as it can be left on for any period, as it is easily removed without any effect on the surface underneath. If you don't achieve your desired effect, you can wash it all off and start again. I use a soft brush, which has been very slightly dampened, to brush off the clay wash. For smearing effects, a very slightly damp brush or absorbent paper should be used, but even then I dab them onto a dry piece of the paper, until it's almost dry. Any wetter and you'll find that you are removing too much of the clay wash. If that happens you would have to re-apply the wash and start again. That said, if you're not happy with the final effect, you can easily remove the clay wash by brushing with a wet brush or even airbrush water over the surface. Dry off the surfaces washed and then re-apply the clay wash and try again until you are satisfied. The technique is to 'damp' brush or wipe over the surface to re-activate the clay wash and at the same time, to smear it over areas that had no clay wash. It'll dry more or less straight away. Then I'll very lightly brush and/or use a piece of damp absorbent paper to remove as much as I want until I get the desired effect. If I remove too much I just reapply clay wash to that area and repeat the removal procedure. Once finished, just run the brush under a tap to rinse out any residual clay pigments. Finally I usually seal the surface with airbrushed 'Alclad' Light Sheen (ALC-311), which will seal in the applied clay wash.

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

Chipping effects:

To give the effect of chipped and weathered paint/varnish to metal engine cowls and forward fuselage panels etc, chipping fluids can be used. To achieve this effect, first prime the areas with a suitable primer then airbrush the metallic finish desired. Once dry, a chipping fluid, such as 'AK Interactive' Medium Chipping fluid or 'Vallejo' chipping fluid is airbrushed over the painted areas. An alternative is to use a cheap hair spray. This forms a barrier which will allow the top coat to be chipped off. Finally the required top coat colour is applied.
Once fully dry, moisten the top coat with water, which softens the paint. Then with a cut down (stiff) brush and wood cocktail stick, gently teased off the top coat paint. Take care when doing this as 'too much chipping' can't really be covered up. In that event you would have wet the top coat and remove it all with an old toothbrush or similar and then when dry, re-spray the top coat and try again. Once the desired effect was achieved, I sealed the surfaces with an airbrushed coat of '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 4
DECALS
(General)

PART 4 - DECALS (General)

Standard decals:

The supplied markings decal sheet and the optional 'lozenge' decals sheets are not 'cookie cut' to the required shapes, but are part of the overall carrier film on the sheet. Therefore you will need to carefully cut the individual decals from the sheet. The decals appear not to be laser

printed, as with for example 'Cartograph' decals, and backing sheet is thicker than standard decal sheets. This makes it difficult to achieve a clean cut around the decals. The decals are not of the best quality, which is to be expected from a 'limited run' kit of this type and given that they have to be carefully cut out from the sheet may make the end result less than favourable.

One alternative to using these decals is, where possible, is to source replacements from commercial retailers or from your 'spares' collection if you have one. This would only apply to the larger 'standard' markings as the smaller and specific model decals are unique and would still need to be used.

A second alternative for the larger markings would be to create masks and airbrush the markings, although this would require specific masks and is not a method advised for the less experienced modeller. Again the small and specific models decals would still need to be used.

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 may 'eat' into the previous decals. In this case a sealing coat of either 'Alclad' Gloss (ALC-310), 'Alclad' Aqua Gloss (ALC-600), Tamiya' Clear (X22) or 'Johnson' Pledge Floor Care finish 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), 'Alclad' Aqua Gloss (ALC-600), 'Tamiya' Clear (X22) or 'Johnson' Pledge Floor Care finish, 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.

Carefully press out any residual water from the decal by either pressing with a tissue or by gently rolling over the decal with a cotton bud.

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.*

Wet 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 fully dry and set, airbrush a sealing coat over the decal, dependant of your desired finish. I tend to use either 'Alclad' Light Sheen (ALC-311) lacquer or 'Tamiya' Semi Gloss (X35).

Once the decal is correctly positioned, use a flat brush to 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.

Once the decals have been applied I airbrush a sealing coat of either 'Alclad' Clear Coat Gloss (ALC-310) lacquer), 'Alclad' Aqua Gloss (ALC-600), 'Tamiya' Clear (X22) or 'Johnson' Pledge Floor Care finish over areas of decals where more decals are to be applied.

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.

To 'knock back' the sheen for applying weathering effects (refer to Part 3 of this build log), for example 'Flory' clay washes or oil paint, I airbrush a sealing coat 'Alclad' Light Sheen (ALC-311) mixed with Flat (ALC-314) at a 3 to 2 ratio.

'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 are not 'cookie cut'*** and therefore they 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. 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:

First airbrush a primer coat of 'AK Interactive' primer and micro-filler (White - AK759) 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 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 5
RESIN (General)

PART 5- RESIN (General)

This model contains aftermarket resin parts, as opposed to the normal plastic used. The reason for creating resin kits is that in years gone by, resin kits were able to produce much finer detail on kit parts than the plastic kit equivalents. Even today, there are many producers of resin kits and particularly after market replacement parts. However, plastic kit manufacturers have come a long way now and kits, such as those from 'Wingnut Wings' and 'Copper State' are equal to, if not better than resin kits. Manufacturers of resin kits these days tend to make kits to order or have 'limited' runs, although aftermarket parts are usually readily available. 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 what I have found to be the primary differences for resin kits from plastic kits:

1. When resin kits are cast in their moulds, a release agent is applied to enable the cast resin parts to be more easily removed, which is similar to plastic kit moulding. This release agent can leave a film on the surface of the kit parts, which, if not removed, can prevent paint or adhesives from adhering to the surfaces. The easiest way to remove this film is to carefully and fully wash all of the model parts in warm soapy water, using an old, soft tooth brush, then rinse all of the parts 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.

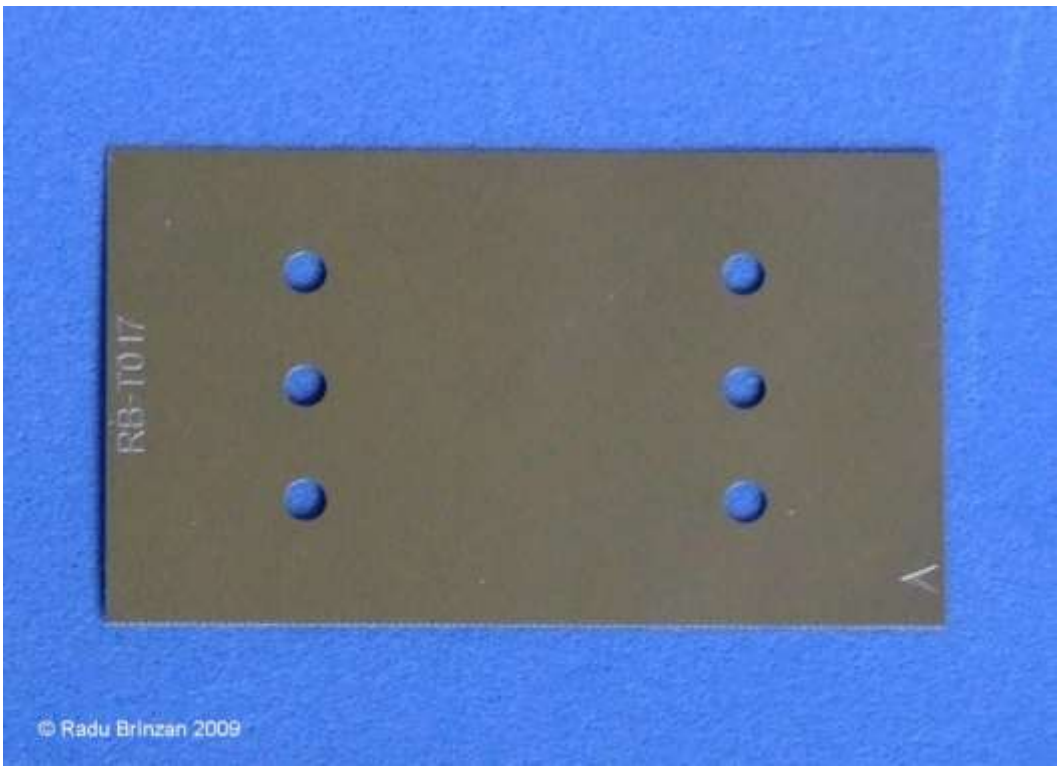
4. Plastic kits are assembled using solvent adhesives, which melt the surface where it is applied and 'weld' the joint together. Resin however will not react to this type of adhesive and can really only be glued using CA adhesive. This adhesive reacts to moisture in the air and on the surface to be joined. 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.

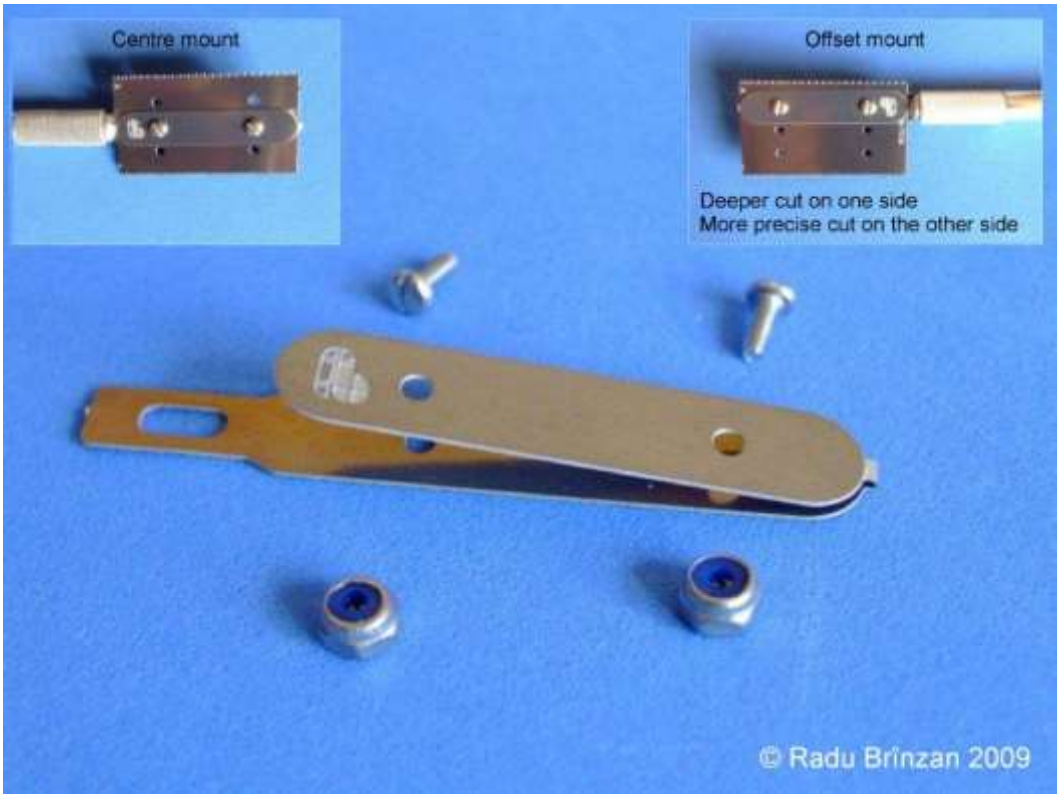
5. Cutting, sanding and drilling resin will create swarf and more importantly, resin dust. The dust in particular is dangerous, especially if inhaled. Therefore always vacuum the working area, and yourself, regularly. If you have a face mask or filtered respirator and find you can wear it whilst working, 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.

NOTE: *To separate resin parts from the thin moulding backing sheet, use sharp scissors or a scalpel blade. To separate larger parts from the moulding base block, use a fine modellers saw. The saw I use has a double sided and fine 'drag' saw blade and with its holder is available from 'RB Productions'.*





PART 6
RIGGING
(General)

PART 6 - RIGGING (General)

General:

Reference:
'Windsock' World War Centenary (Spring 2015, Vol.31, No.1).

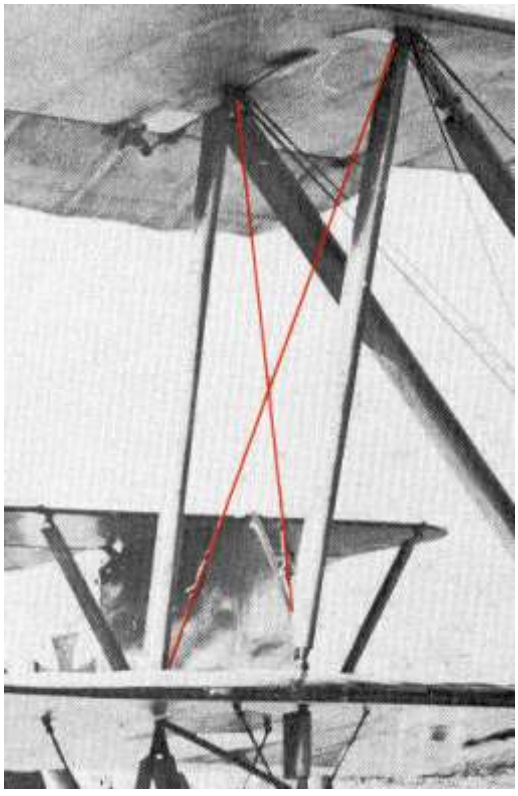
The first thing to check is that you have already drilled out the rigging attachment points. Most models have these located on the model, but it's best to carry out research in reference books or research on line before drilling. Some modellers use micro drills manufactured for drilling printed circuit 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 primary rigging, such as flying and landing wires and cross bracing wires, I used 'Steelon' or 'Stroft' mono-filament (fishing line) of 0.12 mm diameter and for flight controls I used 'Stroft' 0.08 mm diameter mono-filament. 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 are either sintered metal or resin and obtained from 'Gaspatch Models'.

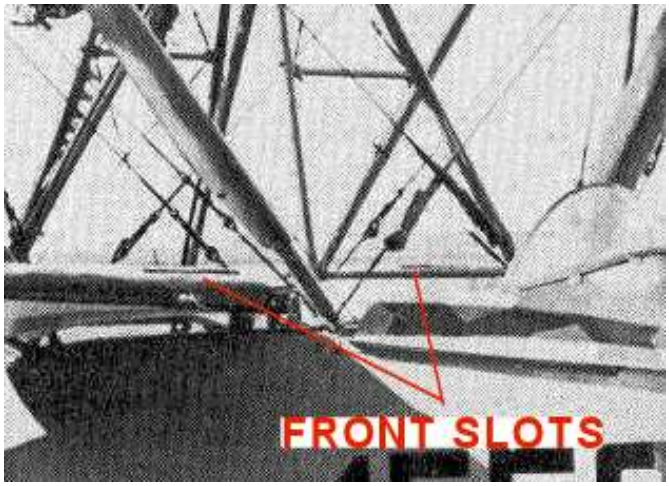
NOTE: *Given the extreme lack of reference material for this aircraft, some of the rigging, particularly the cockpit to upper wing control cables for the ailerons, were assumed, based on other similar aircraft.*

Incidence wires:

Two crossed incidence wires were fitted between the outboard interplane struts. These wires were attached between the top and bottom of the struts and crossed diagonally. The anchor points for these wires were fitted into the underside of the upper wing and top surface of the lower wings. Turnbuckles were fitted to the wires at the lower wing ends.



Lower wing slots:

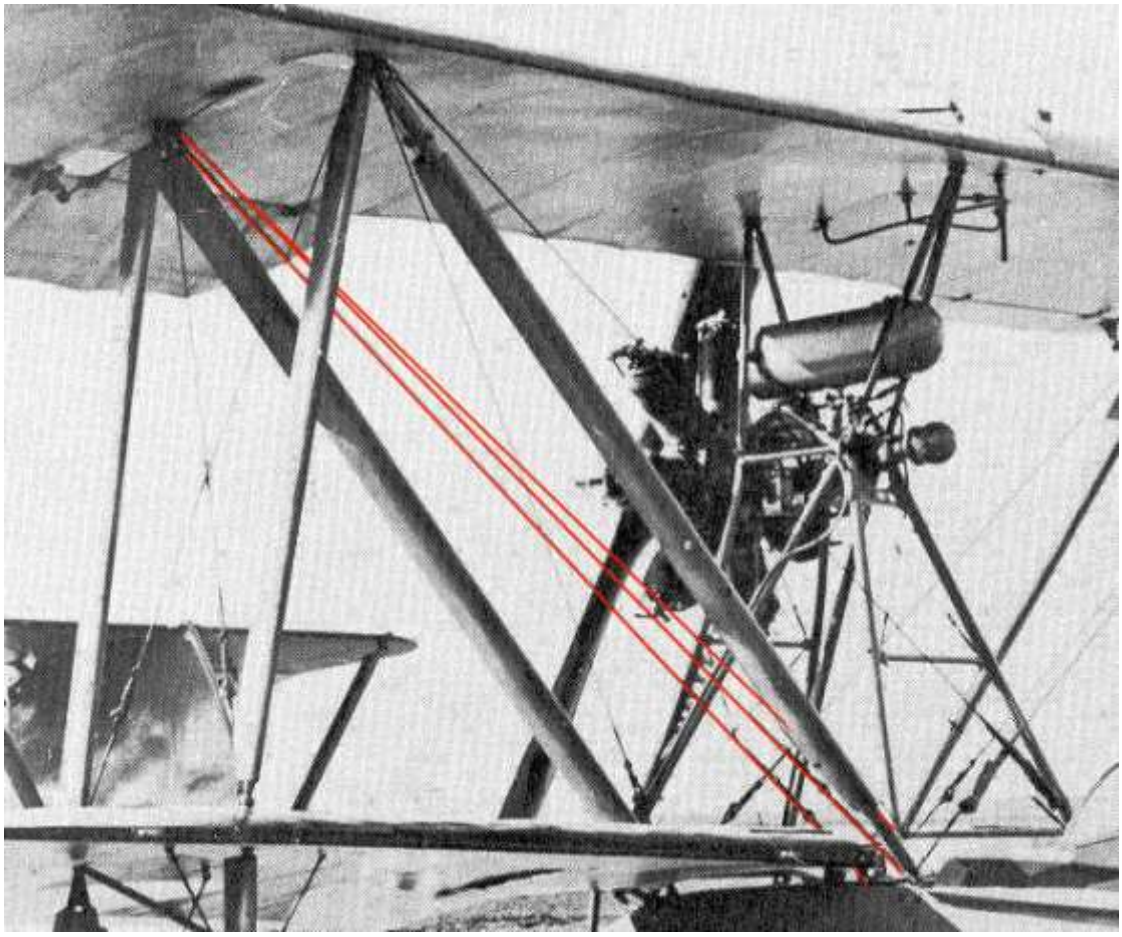


Rear strut bracing wires:

1. A wire was attached inboard from the top of the rear strut and routed diagonally down and through the rear slot in the lower wing for attaching the **opposite rear strut**. The wire anchor point was on the top of the fuselage and below the wing. A turnbuckle was fitted at the interplane strut.

2. A second wire was attached inboard from the top of the rear strut and routed diagonally down and through the forward slot in the lower wing. The wire anchor point was on the top of the fuselage and below the wing. A turnbuckle was fitted above the wing.

3. A third wire was attached inboard from the top of the rear strut and routed diagonally down to its anchor point on the fuselage at the rear of the base of the forward strut on that side of the fuselage. A turnbuckle was fitted above the fuselage.

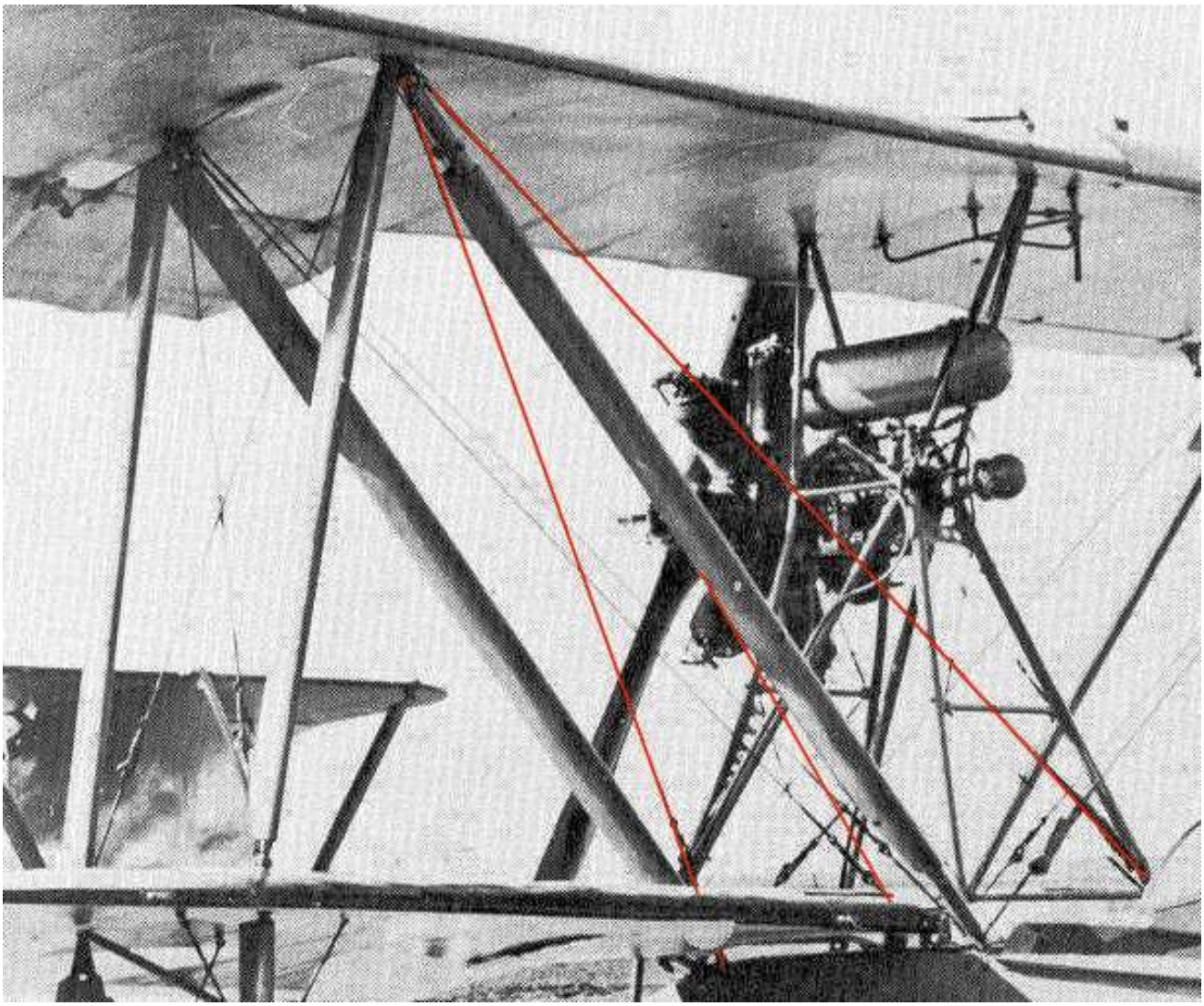


Front strut bracing wires:

1. A wire was attached inboard from the top of the front strut and routed diagonally down and through rear slot in the lower wing slot for the rear strut on that side of the aircraft. The anchor point was on the top of the fuselage. A turnbuckle was at the interplane strut.

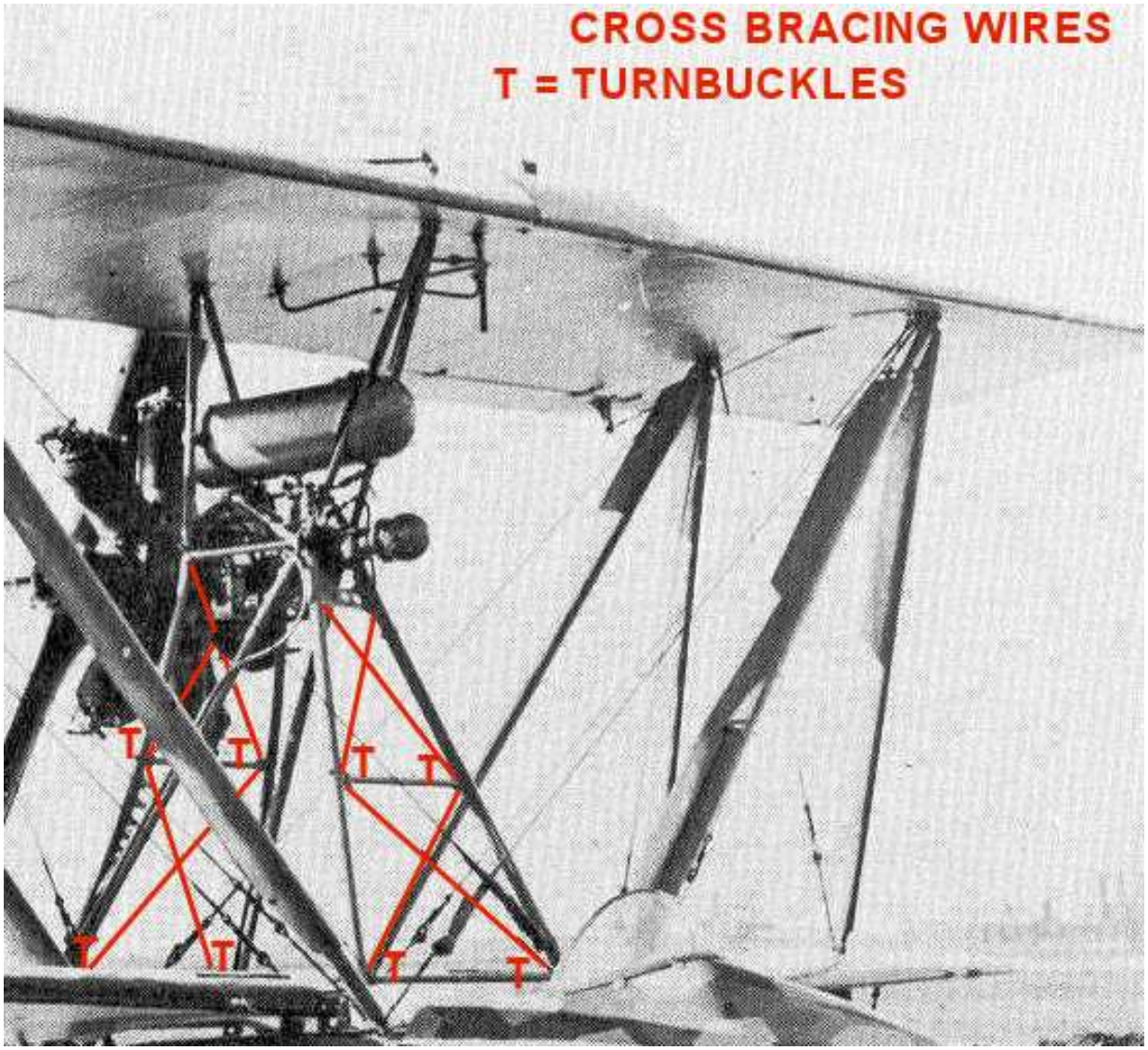
2. A second wire was attached inboard from the top of the front strut and routed diagonally down and through the forward slot in the lower wing, which was inboard from the forward wing attachment. The wire anchor point was on the top of the fuselage and below the wing. A turnbuckle was fitted above the wing.

3. A third wire was attached inboard from the top of the front strut and routed diagonally down to its anchor point on the top of the fuselage, forward from the base of the opposite front strut. A turnbuckle was fitted above the fuselage.



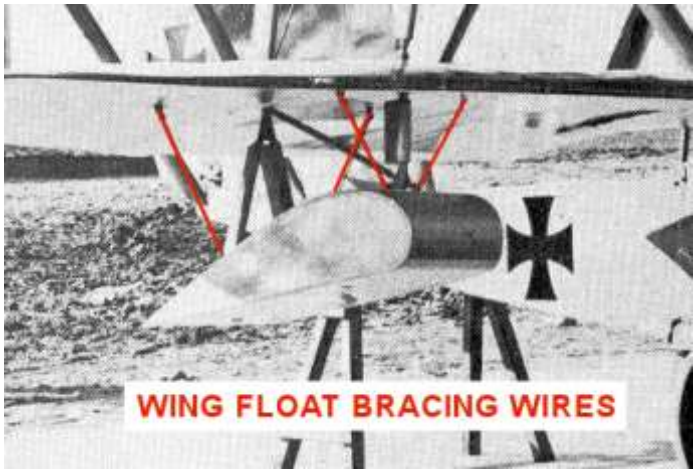
Engine support frame:

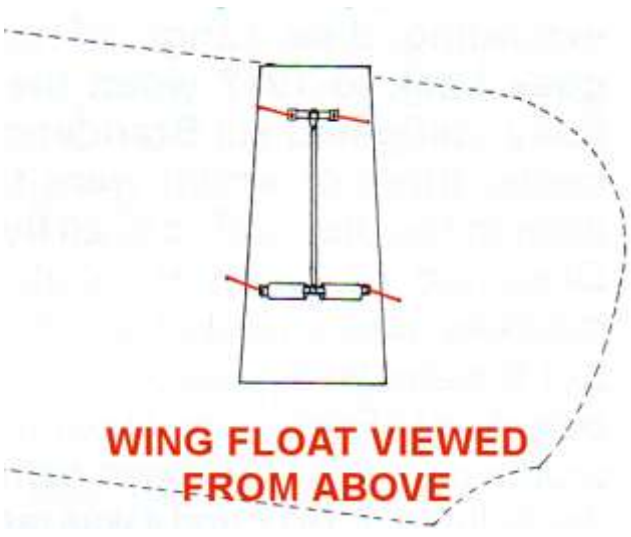
Two crossed wires were attached at the front of the engine support frame, between the corners of the lower section of the engine support frame and similarly for the upper section. The same applied to the upper and lower sections at the rear of the engine support frame. Turnbuckles were fitted at the bottom of each wire.



Wing floats:

Two wires were fitted between the underside of the lower wing and the froward sides of the wing float. Twire were similarly attached to the rear sides of the wing floats. The inboard wires were angled forwards from the sides of the floats to their under wing anchor points. The outboard wires were angled rearwards from the side of the floats to their under wing anchor points.





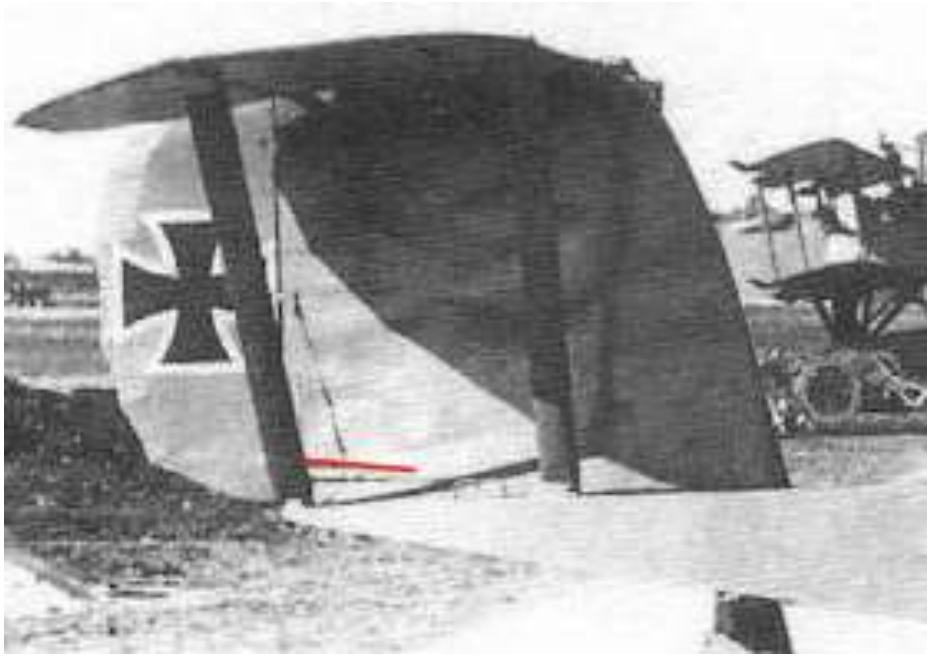
Fin:

A single bracing wire was fitted to each side of the fin, between the base of the rear fin support strut and midway up the fin rear spar.

Control cables:

Rudder cables:

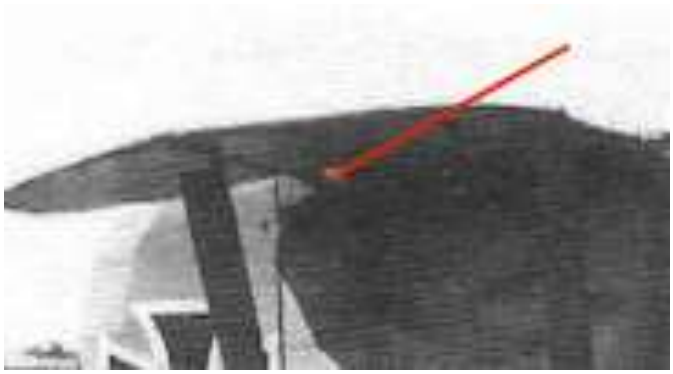
A single rudder cable was at both sides of the fin, between the base of the fin and the rudder control horns, located slightly higher on the rudder post. There is no evidence of external turnbuckles as these were probably fitted in the cockpit area at the control column.

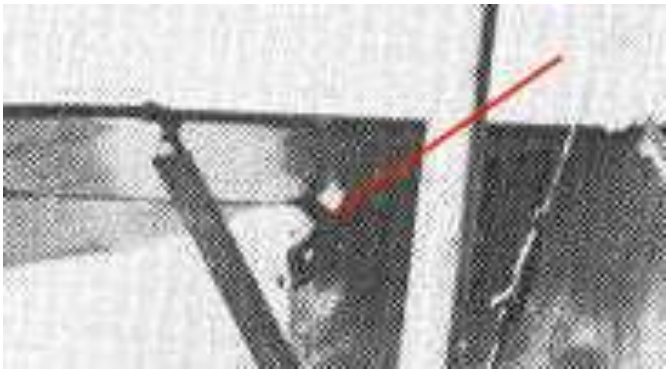


Elevators:

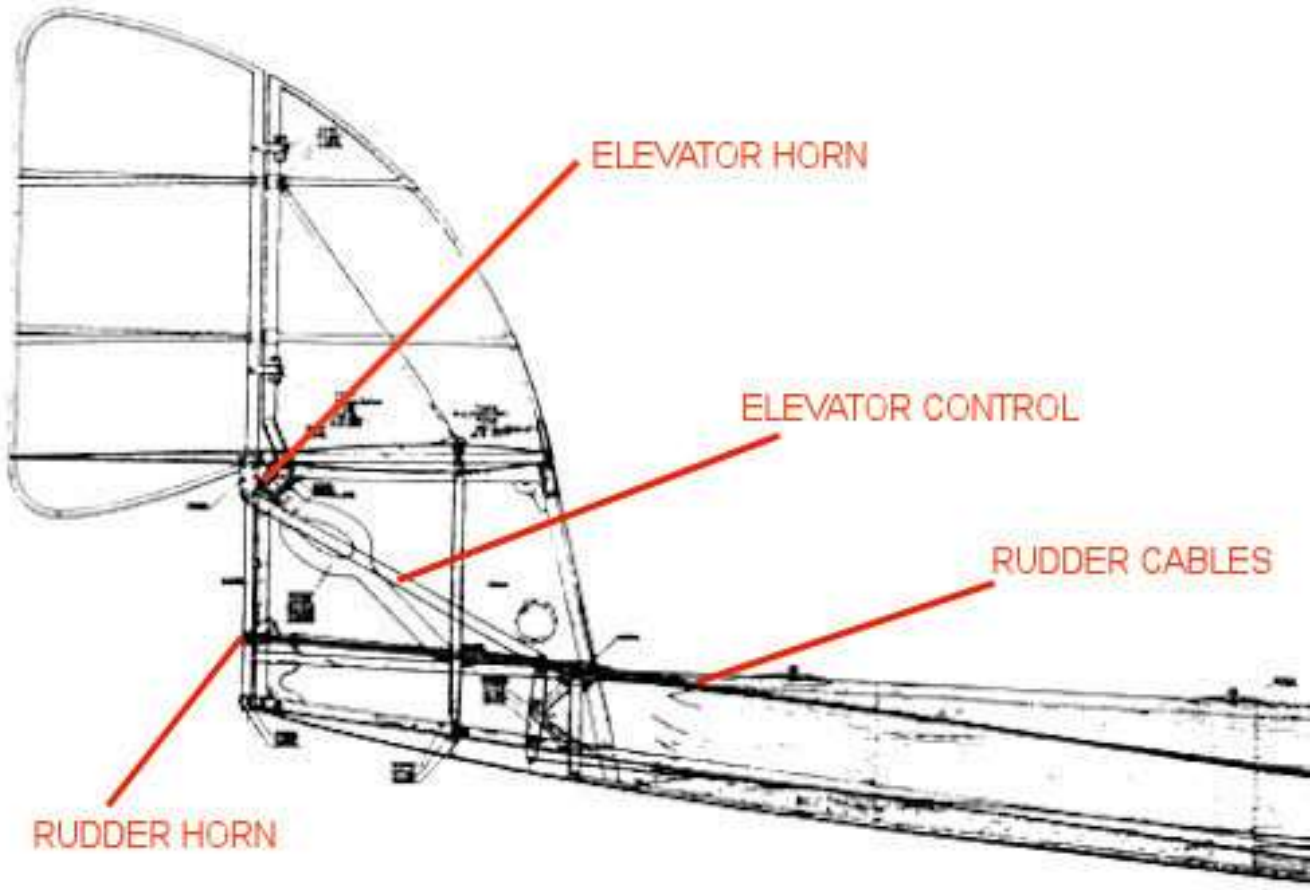
There is very little information on this aircraft and just four published photographs. I couldn't find any evidence of external control cables or control horns for the elevators, as found on most WW1 aircraft.
There does appear to be something I found on two of the photographs, which could be control related. Therefore I suspect the controls were routed from the cockpit and rearwards through the fuselage then up inside the fin. From the fin external rods were connected to elevator control horns located inboard on the elevator leading edge.
I think possibly a very similar control setup as used on, for instance, the Italian Macchi M.5 float plane. However, without more information, I decided to disregard that control detail.

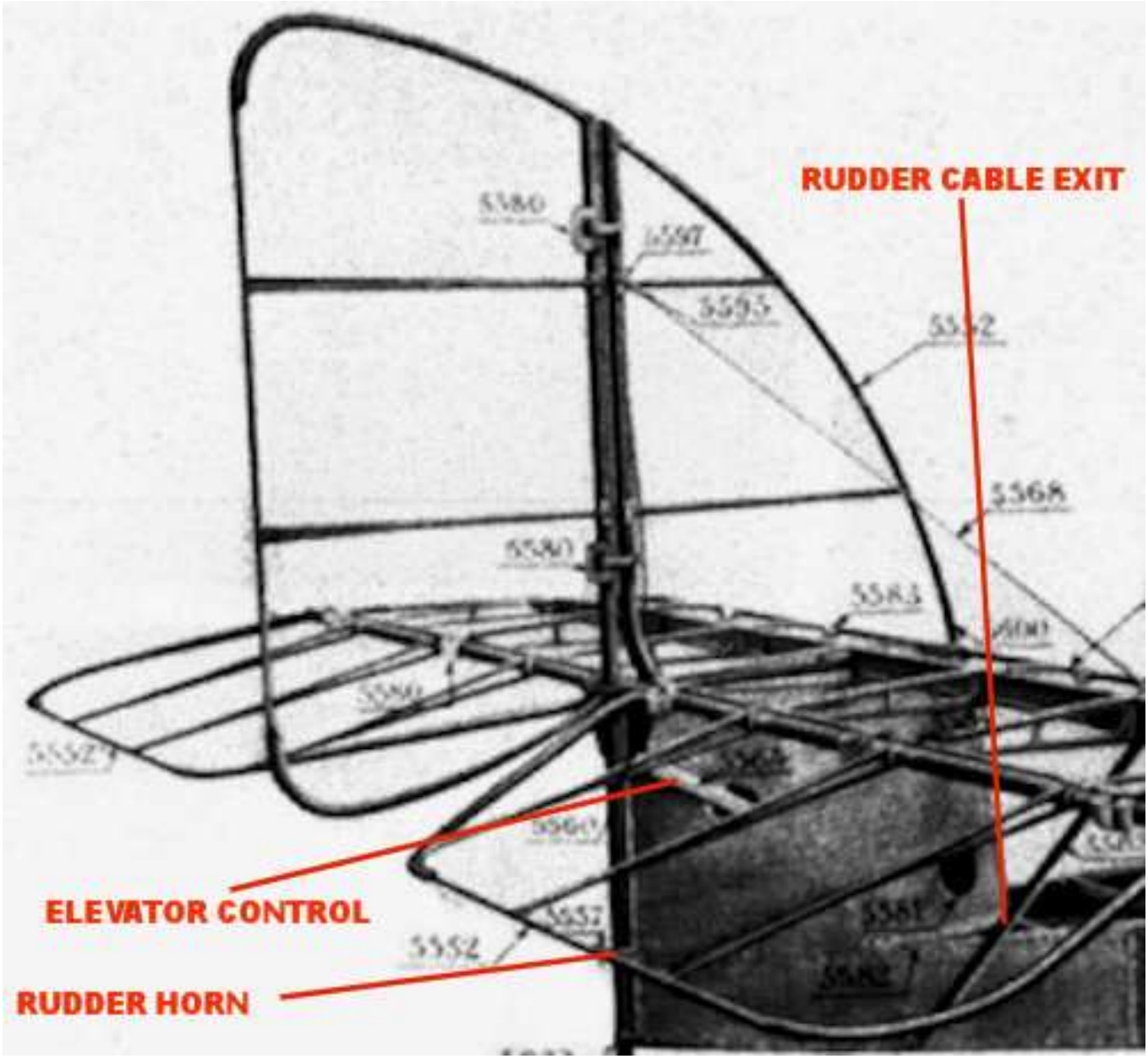
Hansa-Brandenburg W.20





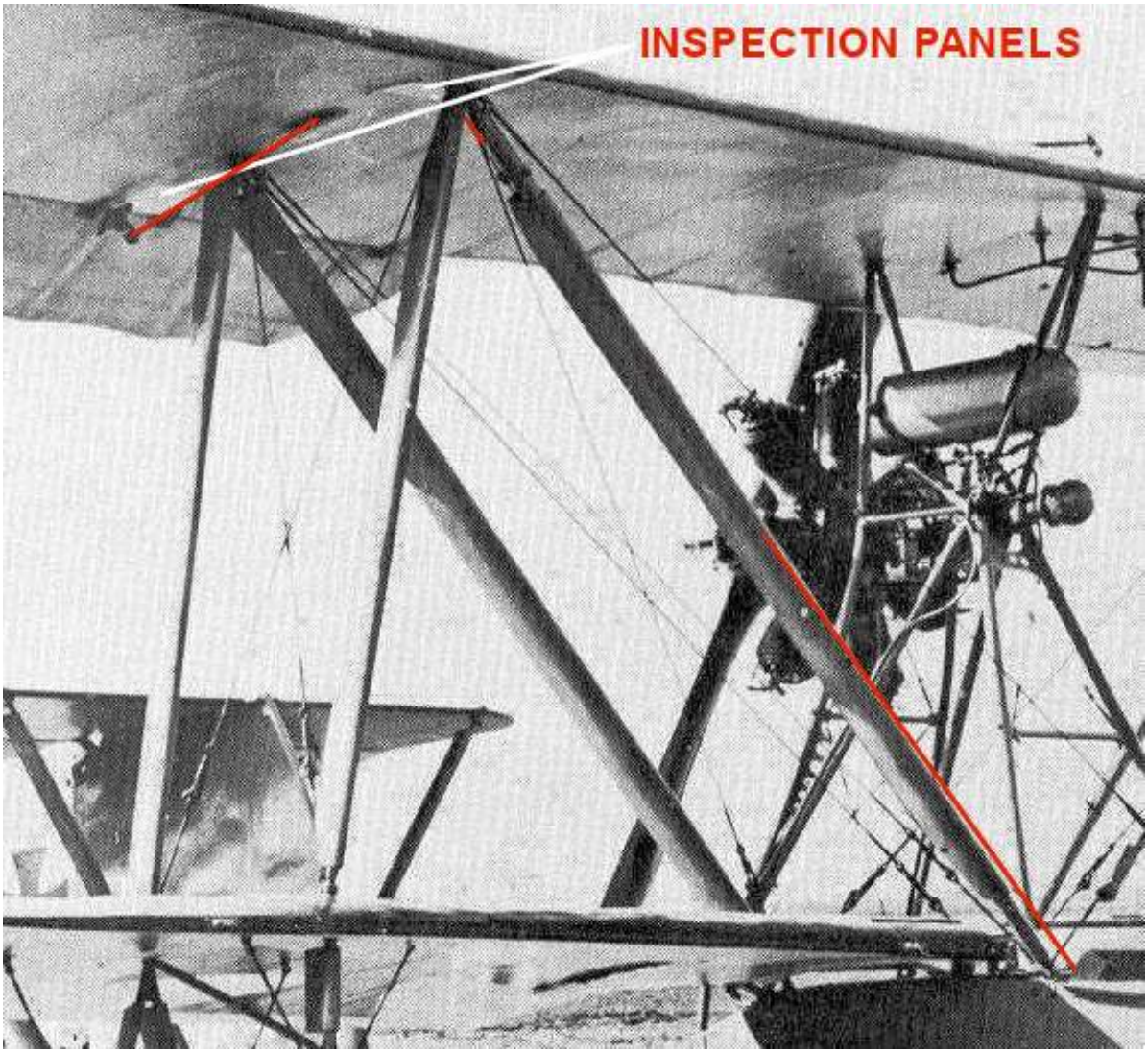
Macchi M.5

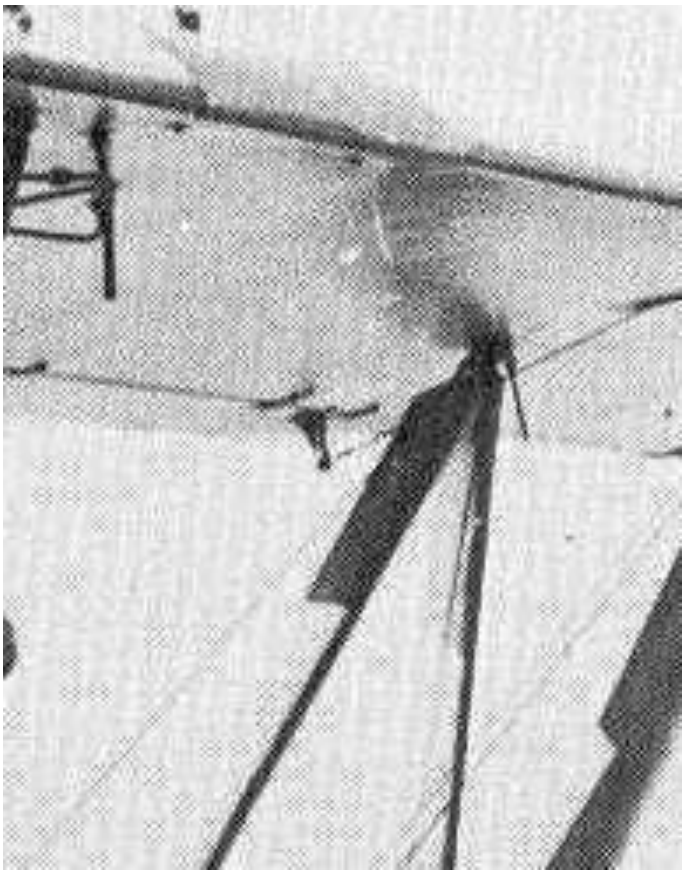




Aileron cables:

It is assumed that the aileron operating cables were routed from the cockpit and through the top of the fuselage to the underside of the upper wing, inboard from the wing and incidence struts. Control pulley inspection panels were fitted to the rear of the forward and rear incidence struts. The cables were route internally in the upper wing and exited to be attached to the bottom of the aileron control horns. Return cables were fitted between the top of the aileron control horns and the top surface of the upper wing. The cables passed through openings in the upper wing to the control horns.


INSPECTION PANELS



PART 7
PROPELLER

PART 7 - PROPELLER

NOTE: *The resin propeller supplied in the kit was replaced by a more accurate wood laminated propeller made by 'ProperPlane'. The kit supplied propeller appears to have been moulded incorrectly as its blade orientation does not align with the propeller fitted to this aircraft as shown in the following photograph.*

Kit supplied resin propeller

'ProperPlane' wood laminated propeller

Cut the conical propeller fairing from the resin kit supplied part and sand away residual resin so that the rear face of the fairing is flat.

Cut the two propeller hub plates from supplied ’ProperPlane’ propeller and sand the rear faces flat and to the moulded edges of the plates.

Scrape away the raised centre nut of the face of the rear propeller plate.

Secure the conical fairing onto the centre of the rear propeller hub plate.

Carefully drill out the centre hole in the propeller front hub plate using a 2 mm diameter drill.

Brush paint the two propeller hub plates with ‘Mr. Colour’ Stainless Steel (213) or similar.

NOTE: ***Make sure you fit the propeller hub plates to the correct side of the propeller****. Refer to the previous photograph for the correct orientation of the propeller blades as viewed from the rear of the aircraft.*

Secure the two propeller hub plates to the centre hub of the propeller, using thin CA adhesive.

Cut a length of 2.0 mm diameter Brass tube, such as ‘Albion Alloy’s’ MBT20 or similar.

Using thin CA adhesive, secure the tube into the propeller through the holes in the front propeller hub plate and propeller hub.

NOTE: *Refer to the previous photograph for details of the erosion protection plates fitted to the propeller tips.*

Using the kit supplied resin propeller as a base, apply masking tape, in turn, to both sides of the propeller tips and with a sharp blade, cut the shape of the erosion protection plates into the tapes.

Peel off the masking tape and retain the four masks required.

Position each mask, in turn, on its propeller blade tip and brush paint the exposed area with a Brass colour, such as ’Mr. Colour’ Brass (219) or similar.

Remove and discard the masks.

Cut the fitted brass tube propeller shaft such that it can be inserted into the pre-drilled hole in the rear of the engine, leaving a slight gap between the front propeller hub plate and the engine.

PART 8
ENGINE
AND
COMPONENTS

PART 8 - ENGINE AND COMPONENTS

Basic engine:

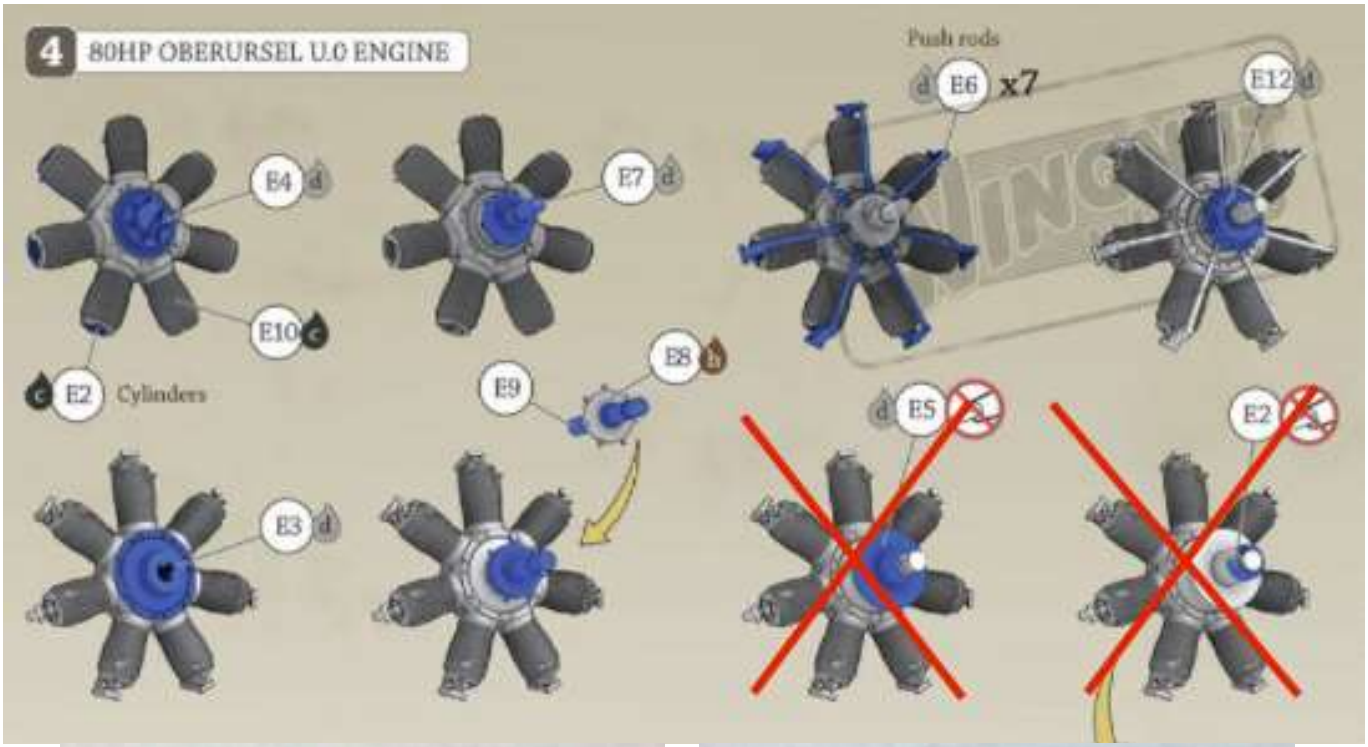
NOTE:

The kit supplied engine is resin and not a particularly well moulded Oberursel U.0 80hp 7 cylinder rotary engine, which was the German copy of the license built French Gnome 7 'Lambada' engine. Therefore I chose to use the Oberursel U.0 80hp 7 cylinder rotary engine (sprue No:132E0014) from a 'Wingnut Wings' Fokker E.1 model (kit No:32021). This engine is also part of the 'Wingnut Wings' Sopwith Pup (Gnome) (kit No:32055).

Follow the 'Wingnut Wings' instructions sheet to assemble the Oberursel basic engine, but with the following exceptions:

Cut away the push rods from the seven parts E6. These will be replaced by Nickel-Silver and Brass tube.

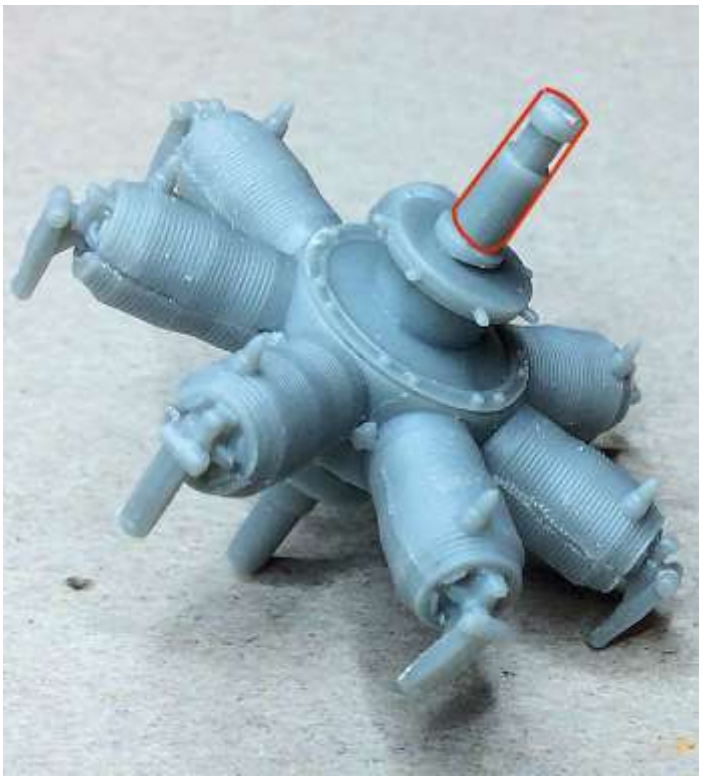
Disregard using parts E5 and E12. Due to the different engine mounting for this aircraft, these parts are not required.



NOTE:

The following modifications are necessary, so that engine installation is suitable for this aircraft.

Cut away the engine mounting shaft at the rear of the small diameter disc on part E7.



Engine components:

NOTE: *To cut discs from plastic card, I use a 'ThinnerLine' circle cutter. There is also a similar tool available from 'DSPIAE'.*

'Thinnerline' circle cutter

Engine backing disc:

From 0.2 mm thick plastic card, cut a disc of 12 mm diameter with a centre hole the diameter of the small diameter disc remaining on the engine mounting shaft E7.

Cement the disc onto the rear of part E7.

Using thin CA adhesive, secure 0.5 mm diameter plastic rod, such as that from 'Plastruct' styrene rod or similar, around the rear edge of the disc.

Engine shaft:

Drill a hole of 1.0 mm diameter centrally into the remaining shaft of part E7.

NOTE: *To continue you will need to use the engine support frame that was created in Part 10 (Modifications and corrections) of this build log. The Brass tubing used was from 'Albion Alloy's'.*

Cut a length of 2.0 mm diameter tube (MBT20) sech that when inserted through the two hoops in the upper frame, one end is flush to the rear of the rear hoop and the other end protrudes through the front hoop by 1.5 mm.

Cut the following tubes to the same length:

> 1.8 mm diameter (MBT18), 1.6 mm diameter (MBT16), 1.4 mm diameter (MBT14) and 1.2 mm diameter (MBT12).

Deburr in the internal bores of each tube using drills of the appropriate size.

Slide each tube into the next size down in diameter to create a 2.0 mm diameter tube with a 1.0 mm diameter internal bore.

Cut two lengths of 1.0 mm diameter Brass rod, such as that from 'Albion Alloy's' or similar.

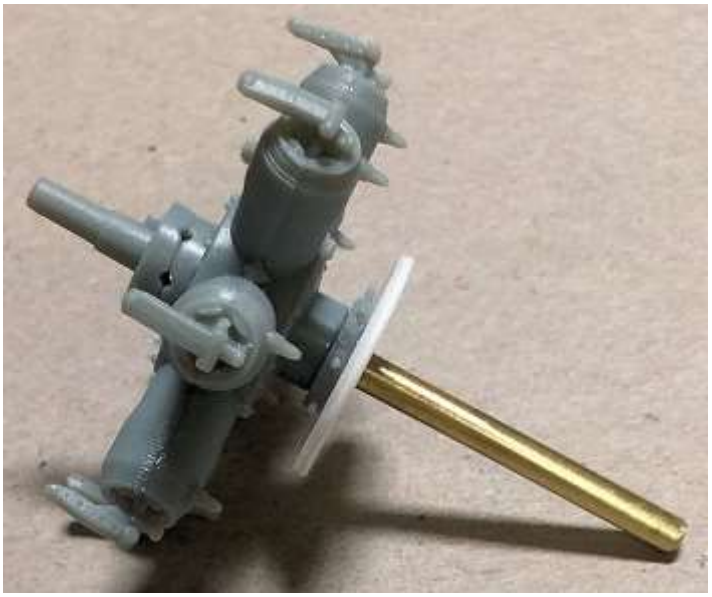
Insert the rods into each end of the tube assembly.

Soft solder the rods and tubes together at each end.

Remove any external residual solder.

Trim the rod at one end of the assembly such that it can be inserted fully into the hole pre-drilled in the remaining shaft of part E7.

Secure the rod into the remaining shaft of part E7 using thin CA adhesive.



Carburettor air intake:

Cut the shaft away from the kit suppled resin part 16.

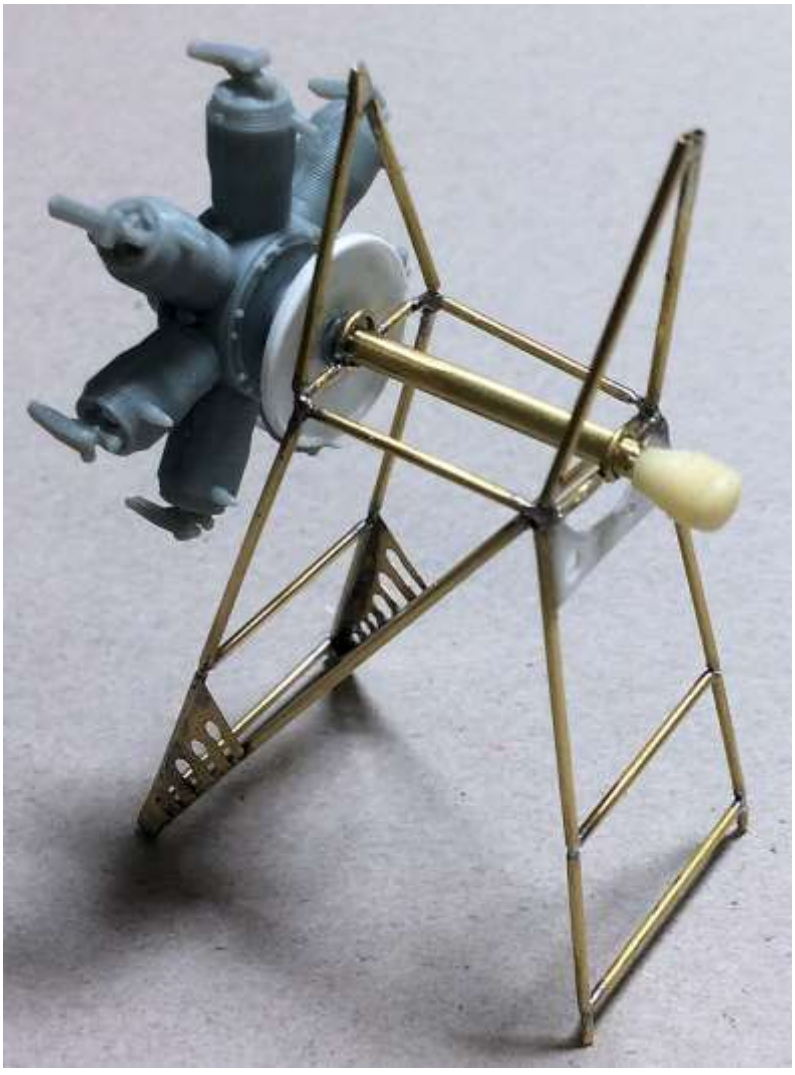
Drill a hole of 1.0 mm diameter centrally into, **but not through**, kit resin part 16.

Trim the length of the remaining protruding rod in the 2.0 mm diameter tube assembly, such that the kit resin part 16 can fully locate onto the rod.

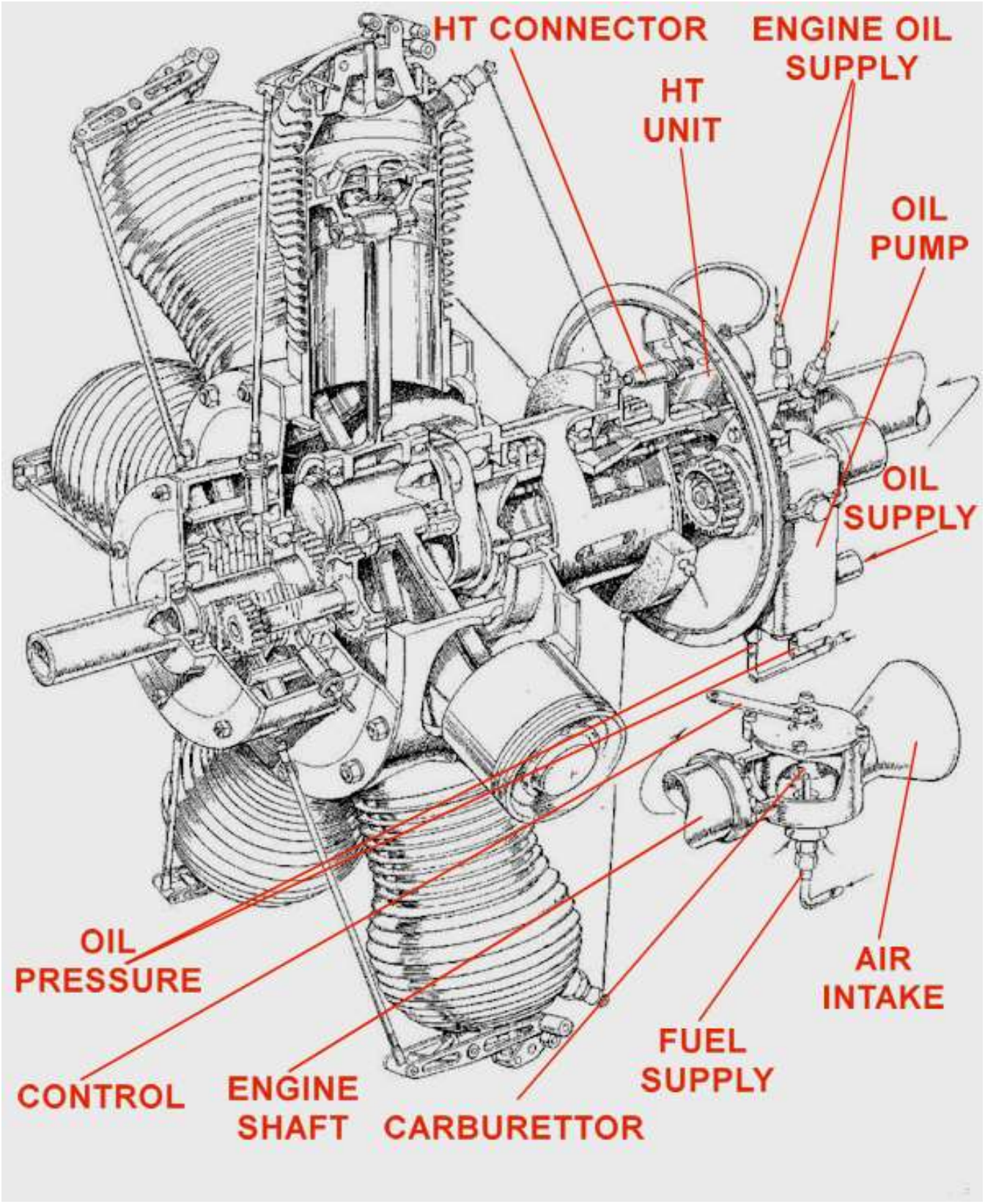
Drill eight rows of holes of 3 x 0.5 mm diameter equally spaced along kit part 16.

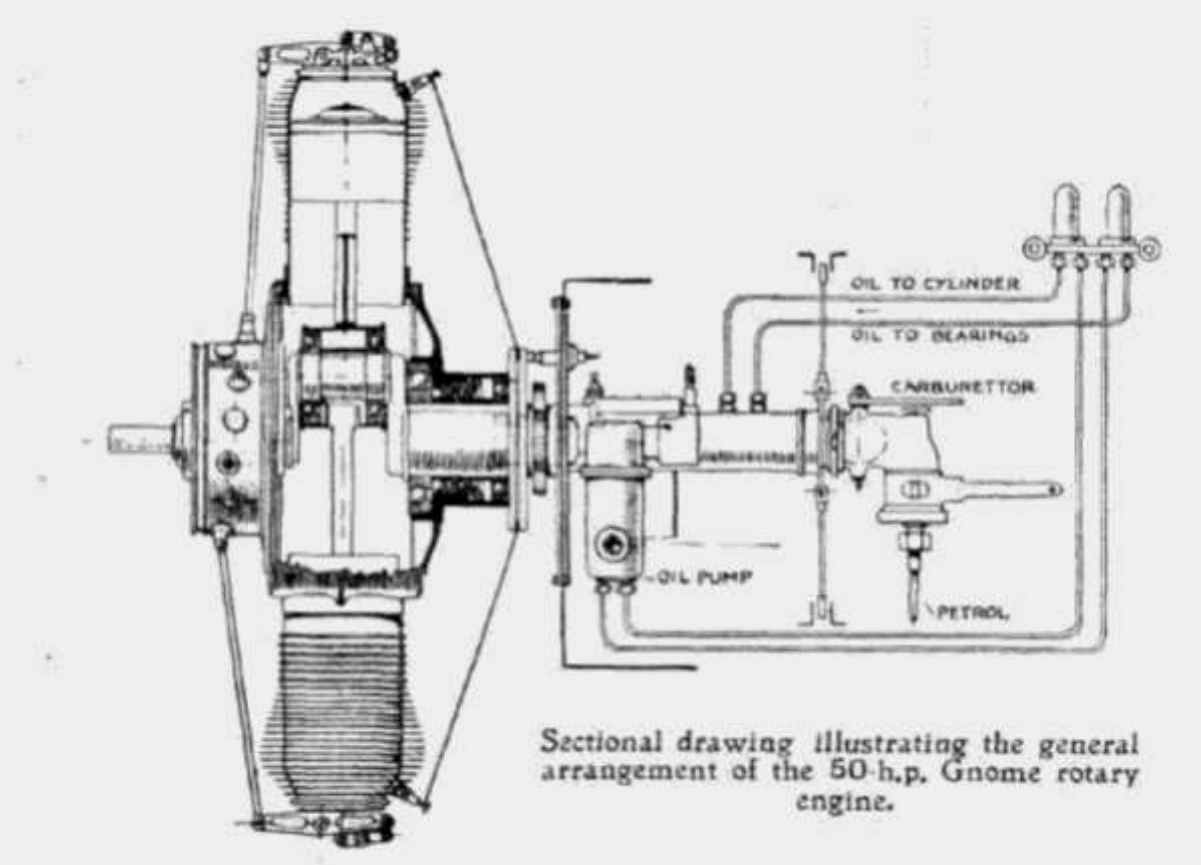
Drill eight holes of 0.5 mm diameter equally spaced around the nose of kit part 16 and one in the centre.

When test fitted to the engine frame (Part 10 of this build log) the assembly should look like the following photograph.



NOTE: *Reference data for what components were fitted to control the engine of this aircraft are almost non-existent. Therefore I have based these parts on typical Gnome components, as illustrated in the following illustration and photograph.* ***Some degree of guesswork*** *was required and therefore the end result may not be truly accurate.*





Sectional drawing illustrating the general arrangement of the 50-h.p. Gnome rotary engine.

Oil pump:

From 1.0 mm thick plastic card, cut a rectangle 3.5 mm x 6 mm.

Cut kit resin part 11 from its moulding block.

Drill a hole of 0.5 mm diameter into the rear centre of the shaft.

Cut a short length of 0.4 mm diameter brass rod, such as that from ’Albion Alloy’s’ or similar.

Secure the rod into the pre-drilled hole in part 11 using thin CA adhesive.

Drill a hole of 0.5 mm diameter into a corner of the plastic card such that the kit part 11 can be located with its edges aligned with those of the plastic card.

Secure part 11 into the pre-drilled hole in the plastic card using thin CA adhesive.

Drill a hole of 0.6 mm diameter into the opposite corner of the plastic card.

Drill two holes of 0.6 mm diameter into bottom edge of the plastic card.

Cut three short lengths of 0.5 mm diameter brass tube, such as that from ’Albion Alloy’s’ (MBT05) or similar.

Secure the three tubes into the pre-drilled holes in the plastic card using thin CA adhesive.

HT unit:

From 1.0 mm thick plastic card, cut a square 3.5 mm x 3.5 mm.

Cut a short length of 1.5 mm diameter brass tube, such as that from ’Albion Alloy’s’ (MBT15) or similar.

Drill a hole of 1.6 mm diameter into a corner of the plastic card such that when the cut 1.5 mm diameter tube is inserted into the pre-drilled hole, its edges aligned just clear from the edges of the plastic card and with 1.5 mm protruding.

Secure the cut tube into the pre-drilled hole in the plastic card using thin CA adhesive.

Fill the opening of the 1.5 mm diameter tube with a modelling putty and when set, sand flush to the tube.

Carburettor:

File or sand a slight flat on the rear of the carburettor air intake (kit resin part 16).

Cut a 1.0 mm length of 1.5 mm diameter brass tube, such as that from ’Albion Alloy’s’ (MBT15) or similar.

Secure the cut tube vertically onto the flat on part 16.

Drill a hole of 0.6 mm diameter into the side of part 16 opposite the fitted tube.

Cut a short length of 0.5 mm diameter brass tube, such as that from ’Albion Alloy’s’ (MBT05) or similar.

Secure the cut tube into the pre-drilled hole using thin CA adhesive.

Using the ‘Thinnerline’ circle cutter, cut a 5 mm diameter disc from 0.2 mm thick plastic card.

Drill a 1.1 mm diameter hole through the centre of the disc.

Slide the disc on the 1.0 mm diameter rod in the part 16 and secure it against the rear of part 16 using thin CA adhesive.

Fill the opening of the 1.5 mm diameter tube with a modelling putty and when set, sand flush to the tube.

NOTE: *The following photograph was taken after grey and black primers were applied to the basic engine assembly and frame (Part 10 of this build log). It shows the basic engine installation.*

Engine propeller shaft:

Cut away the propeller shaft from the engine flush to the rear of the push rod disc.

Drill a hole of 2.0 mm diameter into the engine at the centre of the push rod disc (for mounting a shaft for the replacement propeller later in the build).

Painting:

Airbrush the basic engine/shaft, the HT unit, carburettor, oil pump and oil tank (kit resin part 31) with a black primer, such as ‘AK Interactive Black (AK-757) or similar.

Airbrush the basic engine/shaft, the HT unit, carburettor, oil pump and oil tank (kit resin part 31) with a Steel colour, such as ‘Alclad’ Steel (ALC-112) or similar.

Brush paint the valve levers on the top of each cylinder with a Stainless Steel colour, such as ‘Mr. Colour’ Stainless Steel (213) or similar.

Brush paint the rear barrel of the valve levers on the top of each cylinder and the base of each spark plug with a Brass colour, such as ‘Mr. Colour’ Brass (219) or similar.

Brush paint the outer body of each spark plug with ’Tamiya’ Deck Tan (XF55) or similar.

Brush paint the ignition slip ring k plug wing ’Tamiya’ Hull Red (XF9) or similar.

Lightly sponge the top of each cylinder with ‘Tamiya’ Weather Master Set D (Burnt Blue).

Brush ‘AK Interactive’ Kerosene wash (AK-2039) over the engine assembly.

Push rods:

NOTE: *The push rods are replaced using Nickel-Silver and Brass tube.*

Drill out the seven push rod holes on the front disc of the engine to 0.7 mm diameter.

Cut seven short lengths of 0.6 mm diameter Brass tube, such as ‘Albion Alloy’s’ MBT06 or similar.

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

Secure the 0.6 mm tubes onto one end of the 0.4 mm tubes using thin CA adhesive.

Roll cut the 0.6 mm tubes such that they can be inserted into the pre-drilled 0.7 mm holes in the engine disc with 1.0 mm protruding.

Trim the length of the 0.4 mm tubes such that they can fit against the underside of the valve levers with 1.0 mm of the Brass 0.6 mm tube protruding from the engine disc.

Secure the push rods in position using thin CA adhesive.

Ignition leads:

Twist seven lengths of 0.125 mm diameter copper wire around a 0.6 mm diameter drill shank to form spiral leads with a loop at one end.

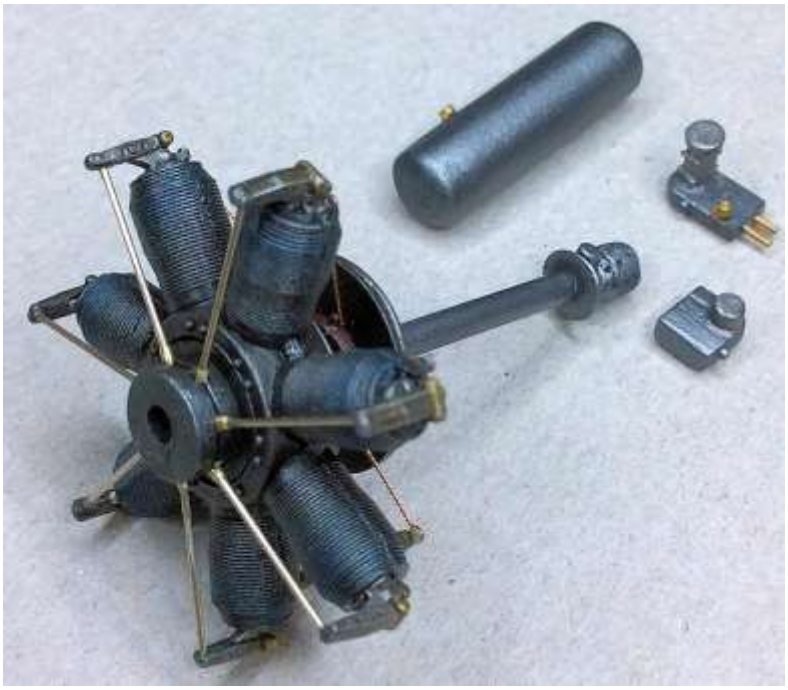
Trim the length of the leads such that the loops will fit over the spark plugs with the other ends resting against the short stems on the ignition slip ring.

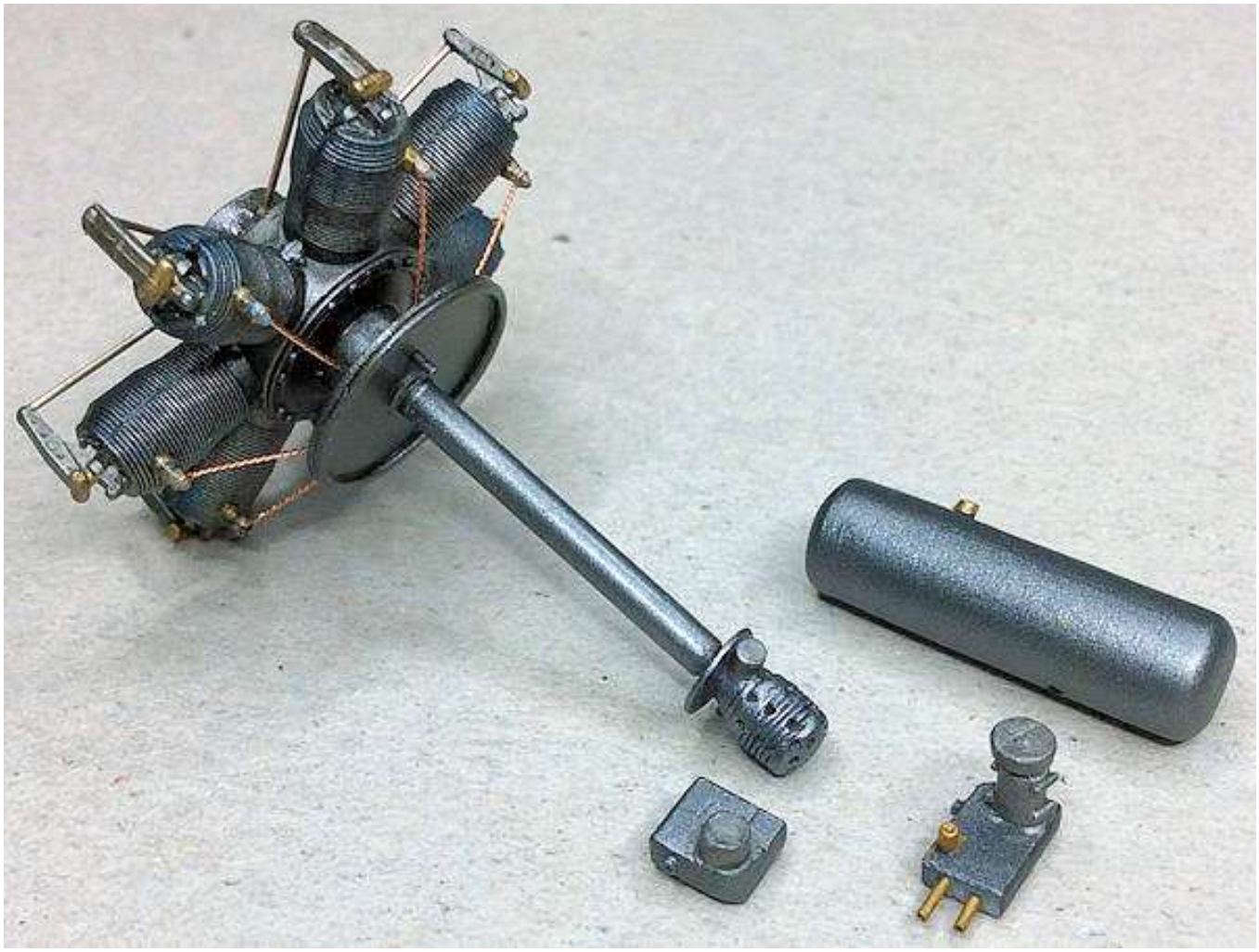
Secure the leads in position using thin CA adhesive.

Painting components:

Brush paint the cylinders on the HT unit, carburettor and oil pump with a Stainless Steel colour, such as ‘Mr. Colour’ Stainless Steel (213) or similar.

Brush paint the cap on the oil tank and the two pipes on the oil pump a Brass colour, such as ‘Mr. Colour’ Brass (219) or similar.





PART 9
BASIC FUSELAGE

PART 9 - BASIC FUSELAGE

Reference:
'Windsock' World War Centenary (Spring 2015, Vol.31, No.1).

Assembly:

NOTE: ***As this model is resin, CA adhesive must be used to secure parts together.***

Cut away the moulding block from the hull ((5), rear fuselage (6), front decking (4) and the two rear decking panels (27).

Sand away the obvious mould flash from the parts.

Sand the mating faces of the hull and rear fuselage to achieve a full contact without obvious gaps.

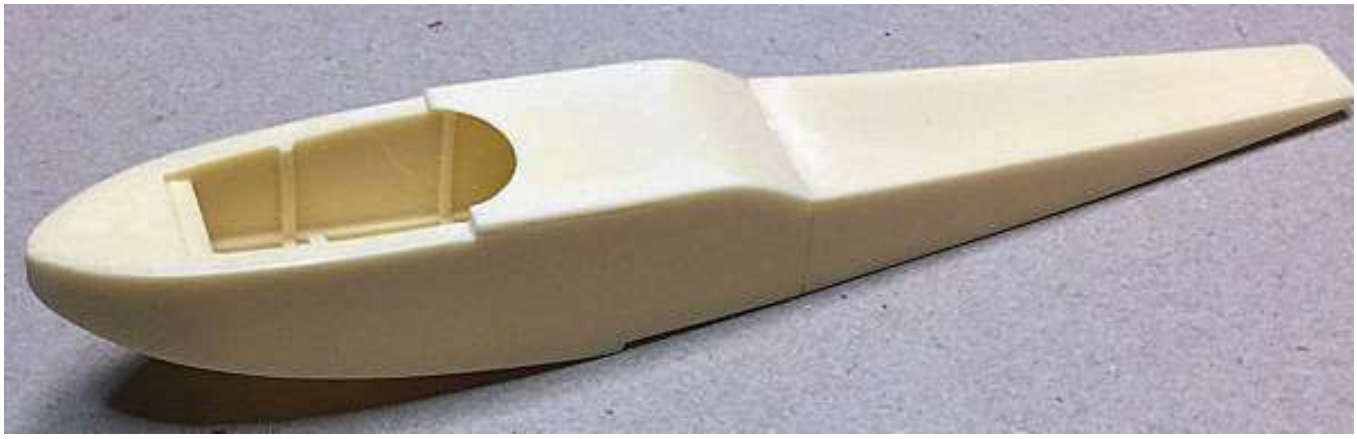
Secure the rear fuselage to the hull.

Secure the two rear decking panels to the assembly.

If necessary, fill any joint gaps with model filler, such as 'Magic Plastic Putty' or 'Mr. Surfacer' 1000.

Sand the assembly surfaces to blend them together.

Reduce the thickness of the inner faces of the cockpit sides, between the two vertical frame members, by scraping or sanding. Reduce the thickness such that it is just thicker than the rear ends of the forward decking, when located.



NOTE*: As the pilot figure will be secured into the cockpit, the supplied pilot's seat (1) and the rudder bar (32) are not required.*

Cut the pilot's seat away from its mounting block.

Position the mounting block on the cockpit floor, with its rear face against the floor cross member.

Test fit the prepared pilot figure into the cockpit and onto the block. This will require cutting or sanding the back and possibly the right hand to enable the figure to be inserted into the cockpit and onto the mounting block.

Note how far out of the cockpit the pilot figure is. The figure should sit with the cross over of the pilot's shoulder straps on his back aligned with the rear edge of the rear cockpit decking panel.

Either sand the height of the block or secure plastic card packing to the block in order to achieve the correct fit.

Position the front decking onto the hull, which should roughly align with the hull outline with its two rear edges against the rear decking.

Note where, if necessary, resin needs to be removed to achieve the correct fit. I found that the forward edges of the rear decking panel needed to be cut away slightly.

With the forward decking held in position, test fit the pilot figure into the cockpit through the cockpit opening and onto the fitted mounting block.

Note if material needs to be removed from the pilot figure to enable it to fully locate into the cockpit.

Sand away resin from the pilot figure until the figure can be inserted unobstructed into the cockpit and onto the block.

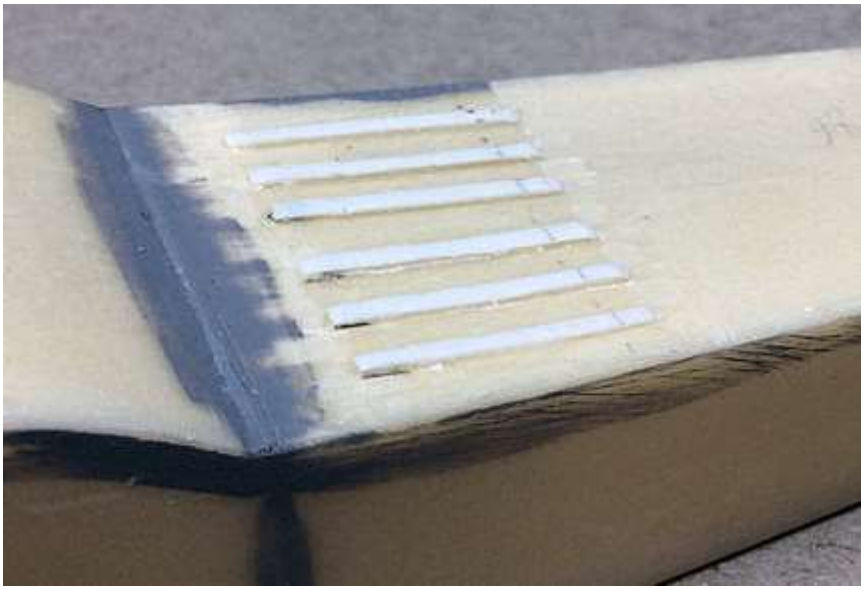
Secure the front decking in position on the top front of the hull.

Sand the edges of the forward decking to blend them with the shape of the hull, including rounding off the two ends of the decking.

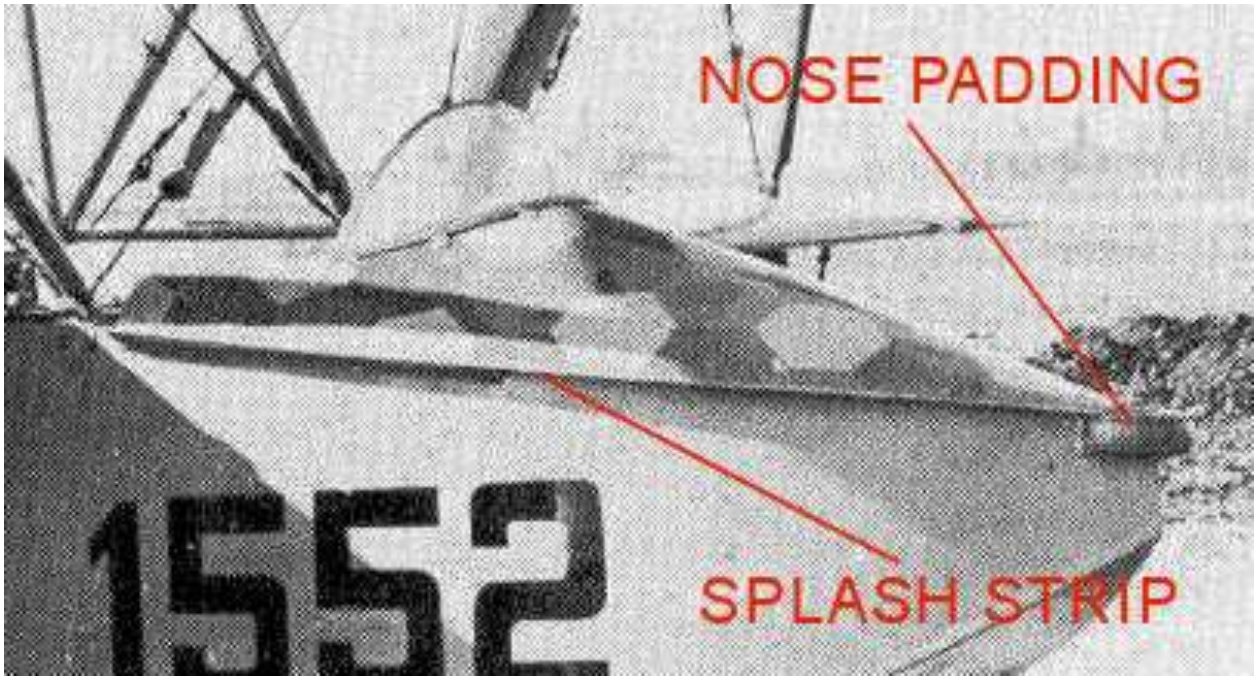
Cut the six thin decking strips (22) from their moulded sheet (or as I did, replace them with strips cut from 0.5 mm plastic card) and carefully sand the resin flash away from the edges.

Secure the decking strips, equally spaced, across the top of the rear decking panel with their front edge 5 mm to the rear of the fuselage to hull joint.

I necessary, lightly sand the top surface of the strips to reduce their height.



NOTE: *At the nose of the hull was a padding block to prevent damage to the hull when docking the aircraft. Also a 'splash' strip was fitted around the top edge of the hull to deflect water spray from the hull away from the cockpit. Neither of these are represented in the kit.*



Splash strip:

Starting on one side of the hull and at the font decking to rear decking joint, secure a long length of 0.5 mm diameter plastic rod, such as that from 'Plastruct' styrene rod or similar.

Apply thin CA adhesive at points along the hull to front decking joint and position the plastic rod along the joint line.

Continue securing the rod around the nose of the hull and along the other side of the hull, ending at the front to rear decking joint.

Cut away the residual rod.

Apply thin CA adhesive along both sides of the rod to reinforce the bond.

Windscreen support:

Repeat the previous technique to create a support strip for the windscreen around the curve of the cockpit opening, 1.5 mm from the edge.

Padding block:

Mix a two part epoxy putty, such as ‘Green Stuff’ or ‘Milliput’ at a 50-50% ration.

Roll out a small length of the putty and apply it around the top edge of the nose of the hull.

Shape the putty before it starts to set, then leave to cure and set.

Cockpit detail:

NOTE: *There is no actual instrument panel supplied in the kit, just an inkjet printed representation, which will not be used due to being very easily damaged.*

Cut out the instrument panel from its decal sheet

Trace the outline of the panel onto 0.2 mm thick plastic card.

Cut out the panel shape from the card.

Test fit the panel into the pre-moulded groove on the underside of the forward decking.

Make sure the panel seats fully into the groove.

Secure the panel vertically into the groove.

Remove the control column (3), control wheel (2) and hand pump (13) from their mould blocks and sand away any resin flash from their edges. *The compass stem (14) is not being used.*

Secure the control wheel to the control column.

The remaining work required for the fuselage is covered in the following Part 10 (Construction) of this build log.

PART 10
MODIFICATIONS AND CORRECTIONS

PART 10 - MODIFICATIONS AND CORRECTIONS

NOTE: ***As this model is resin, CA adhesive must be used to secure parts together.***

Flight control surfaces:

NOTE: *As supplied in the kit, the flight control surfaces (fin, tailplane, rudder, ailerons and elevators) do not have any locating points and are intended to be just 'butt' glued in position. Although CA adhesive does provide a strong bond, it is subject to failing if the glued parts are subjected to a shock load, such as being knocked. Therefore it is always best, where possible, to reinforce these joint with metal rod.*

Remove the upper wing, fin, tailplane, ailerons, rudder and elevators from their moulding blocks and sand away any resin 'tags' at the edges and any surface artifacts or imperfections.

If necessary, carefully sand the 'scalloped' trailing edges of the parts to better define their shape.

Ailerons:

NOTE: *The ailerons fit onto the upper wing trailing edge with their squarer ends inboard. As the wing trailing edge is too thin to drill, I sanded back the trailing edge where the two ailerons locate to provide sufficient thickness to drill.*

Position each aileron against the upper wing trailing edge and mark on the wing the location of the inboard end of each aileron.

Sand back the trailing edge of the upper wing by 1.0mm such that the aileron locates fully with its outer edge aligned with that of the upper wing. Also make sure the mating faces of the ailerons and upper wing have no obvious gaps.

Drill three 0.3mm diameter holes centrally into the leading edge of both ailerons.

Cut six short lengths of 0.3 mm diameter brass rod ('Albion Alloy's or similar) and secure them into the holes using thin CA adhesive.

Position the ailerons against their locations at the upper wing trailing edge and mark on the upper wing the position of the six fitted rods.

Using the marks as a guide, drill six 0.4mm diameter holes into the centre of the upper wing trailing edge for locating the two ailerons.

Test fit the ailerons into the upper wing and unless they are to be left aligned with the wing, carefully bend one aileron slightly up and the other down.

Fin:

Drill two 0.5mm diameter holes centrally into the bottom edge of the fin.

Drill two 0.3mm diameter holes centrally into the top edge of the fin.

Cut two short lengths of 0.5 mm diameter brass rod ('Albion Alloy's or similar) and secure them into the holes in the bottom edge of the fin, using thin CA adhesive.

Cut two short lengths of 0.3 mm diameter brass rod ('Albion Alloy's or similar) and secure them into the holes in the top edge of the fin, using thin CA adhesive. The rear rod on the top of the fin must be only protrude by approximately 0.5 mm as it will fit into the thin rear of the tailplane.

Position the bottom of the fin against the pre-moulded strip in the top, centre of the fuselage rear.

Mark the rod locations centrally on the pre-moulded strip.

NOTE: *The rear of the fuselage is narrow so take care not to drill through the underside of the fuselage.*

Using the marks as a guide, drill two 0.6 mm diameter holes centrally into the fuselage strip for locating the fin.

Test fit the fin onto the fuselage, making sure it is vertical to the fuselage when viewed from the rear.

Position the top of the fin against the underside of the tailplane.

Mark the rod locations centrally on the tailplane.

NOTE: *The rear of the tailplane is very thin so take care not to drill through the tailplane.*

Using the marks as a guide, drill two 0.4mm diameter holes centrally into the underside of the tailplane.

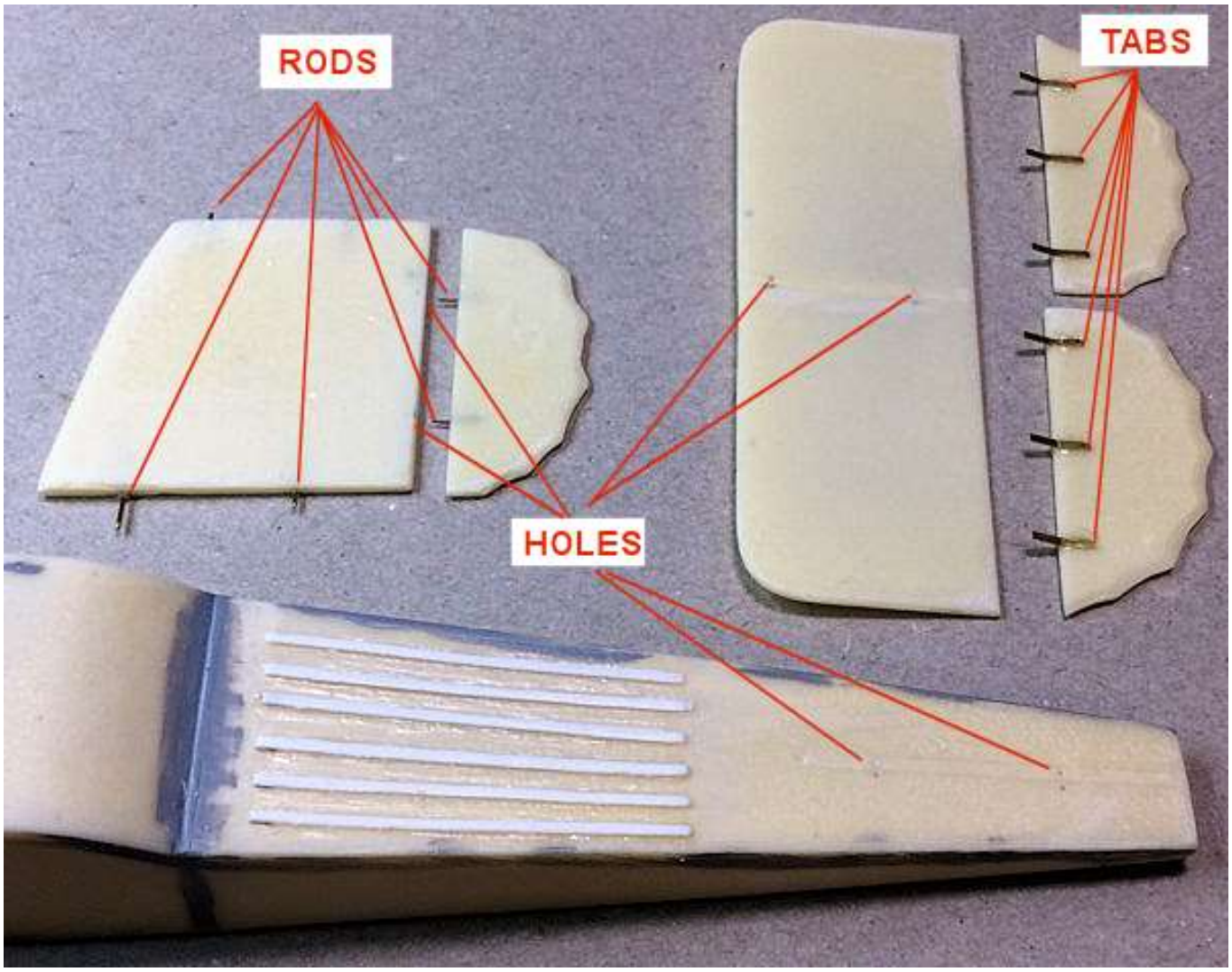
Test fit the tailplane onto the fin, making sure it is horizontal to the fuselage and fin when viewed from the rear.

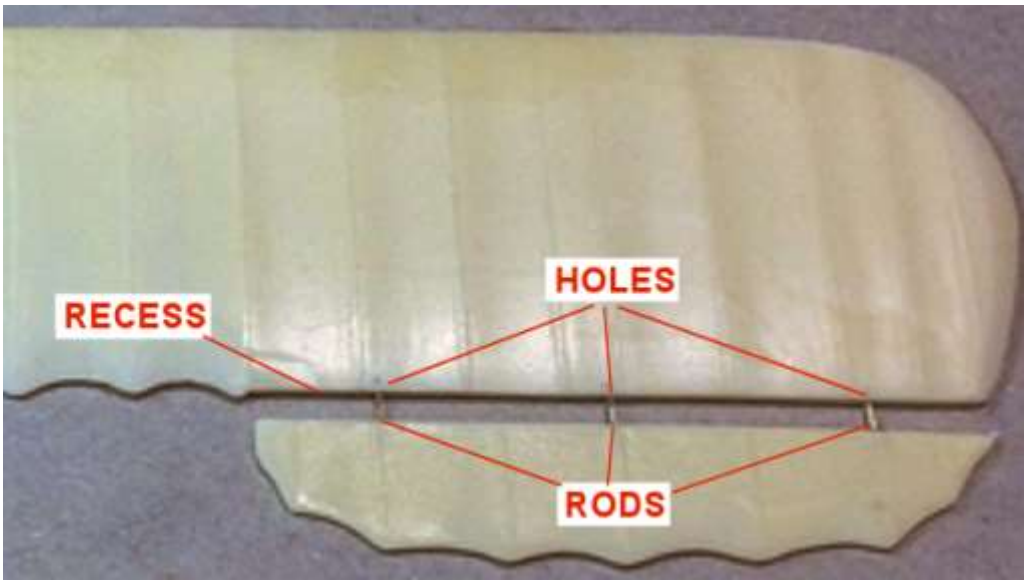
Rudder:

Carry out the same procedure to fit locating rods into the leading edge of the rudder and holes in the trailing edge of the fin, using 0.3 mm diameter rod.

Elevators:

The trailing edges of the two elevators are too thin to drill. Therefore to support them in position I cut six strips of spare photo-etch and secured the to the underside of the elevators. The strips were bent slightly to give the fitted elevators a downward angle.





Control horns and cable ports:

NOTE: *As supplied in the kit, the flight control surfaces (rudder and ailerons) do not have any control horns for attaching the control cables or cable access ports. These need to be created. The elevators were operated internally and did not have external cables or control horns.*

The ailerons on the upper wing were operated by control cables from the top and underside of the wing. These cables were attached to control horns on the leading edge of the ailerons.

The rudder was similarly operated with cables from the fuselage to control horns located towards the bottom of the rudder post.

Ailerons:

Cut four suitable control horns for the ailerons from the ‘Jadar’ WW1 1:48th scale control horns (S48087). Make sure to leave the long tags on the base of the control horns.

Drill a hole of 0.5 mm diameter through each aileron at the centre rib tape.

Insert the long tang of a control horn into the pre-drilled hole on both sides an aileron and secure in position using thin CA adhesive.

Repeat the procedure to the other aileron.

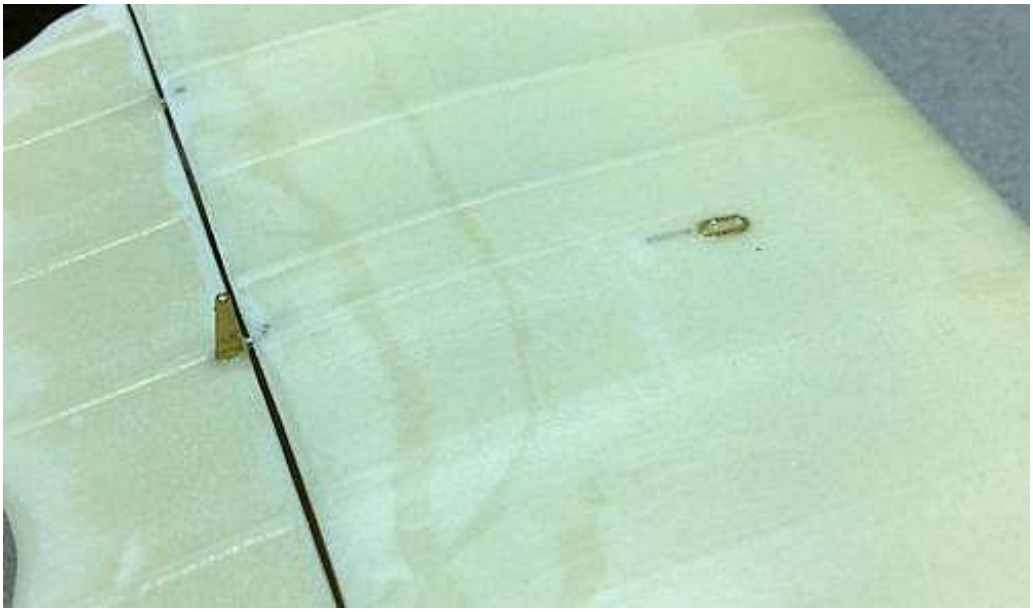
Cut four cable ports from the photo-etch sheet from the ‘Jadar’ WW1 1:48th scale control horns (S48087).

Temporarily fit the ailerons onto the upper wing.

Secure the cable ports onto the top surface and the underside of the upper wing 15 mm from the wing leading edge and angle slightly towards the aileron control horns.

NOTE: *The holes for the control cables will be drilled into the ports later in this build*

Top surface



Underside

Rudder:

Follow the same procedure as for the ailerons to create rudder control horns and cable ports for the rudder.

NOTE: *The holes for the control cables will be drilled into the ports later in this build*

Ribs tapes:

NOTE: *The rudder, elevators and tail plane were linen covered structures with rib tapes covering the linen joins. It is unclear if the fin was covered with wood panelling or linen. The photographs available suggest that it was linen, as the fin structure formers can be see under the covering.*

Although rib tapes are represented on the wings and ailerons, they are not represented elsewhere.

*The tail plane and elevators had **eight** rib tapes equally spaced across the top and underside surfaces.*

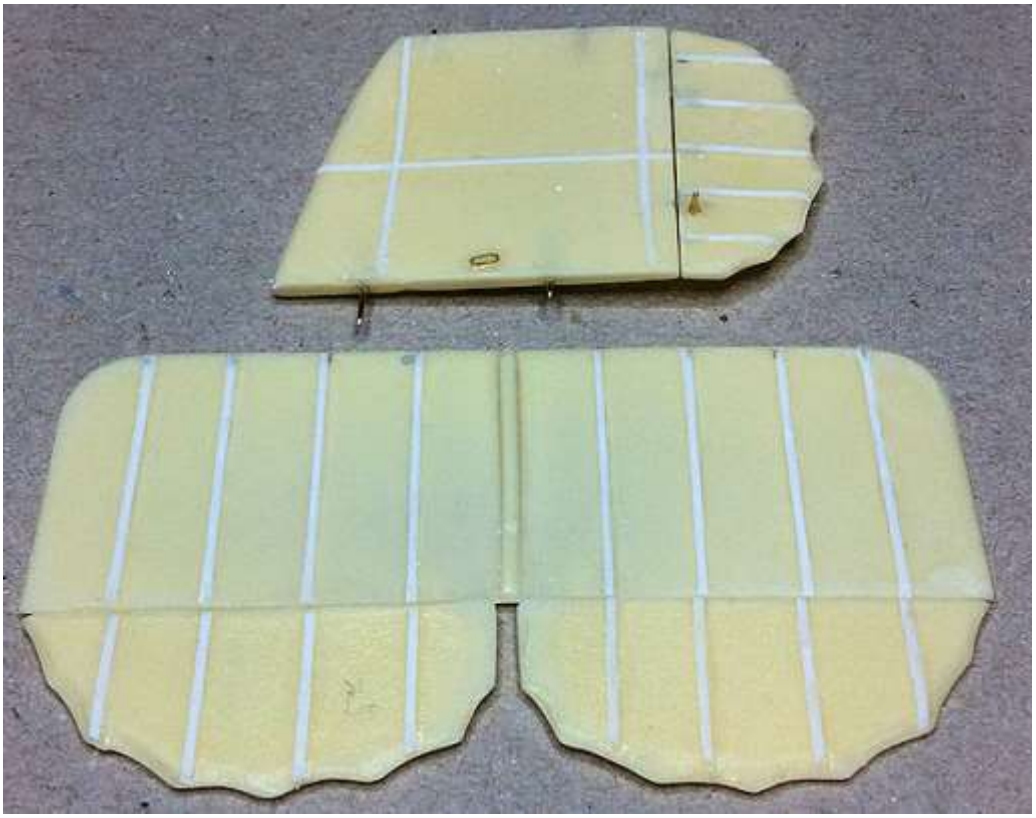
*The rudder had **five** rib tapes equally spaced down both sides.*

*The fin had **three** 'visible' formers on each side. One vertical near the leading edge, one vertical near the trailing edge and one horizontal midway up the fin.*

Cut 1.0 mm wide strips of 0.2 mm thick plastic card.

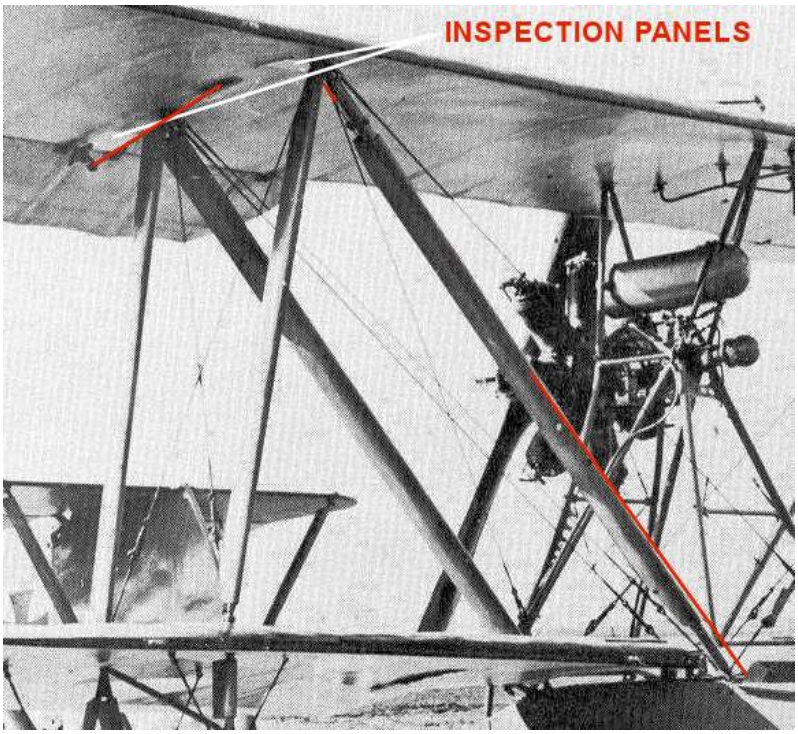
Refer to the following photographs and secure the strips in position on both sides of the tail plane, fin, elevators and rudder.

Lightly sand the strips to blend them to the surfaces.



Inspection panels:

NOTE: *The aileron control cables were routed to and from the ailerons inside the upper wing. The cables would have been guided around pulleys, which would have required maintenance. Removable inspection panels were fitted on the underside of the upper wing to allow access to these pulleys. The panels are not represented in the kit and need to be created.*



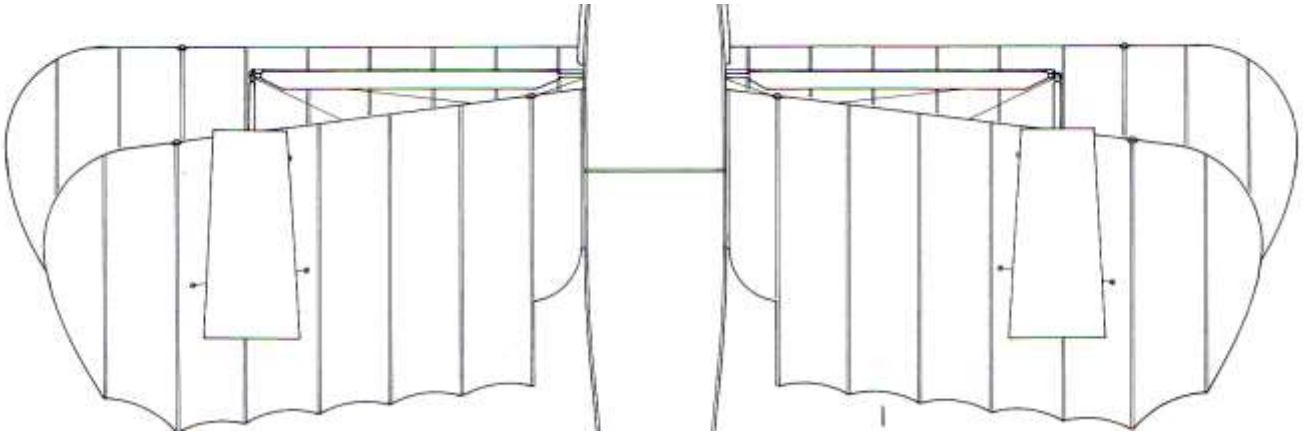
Cut four squares, approximately 3 mm square, from 0.2 mm thick plastic card.

Refer to the following photograph and secure the panels onto each side of the underside of the upper wing, using thin CA adhesive.

Drill holes of 0.3 mm diameter into, **but not through**, the corners of each panel, to represent the retaining screws.

Lower wing - profile:

NOTE: *The lower wing, as supplied in the kit, has an incorrect leading edge profile. The wing had more rearward stagger than has been moulded for the kit wing. Also the wing rib section at the fuselage had a rounded trailing edge, not square cut as supplied in the kit and angled walk boards were fitted at the wing roots. The rear wing struts were attached to the top of the fuselage through slots in the rear centre section of the wing. Rigging wires were routed through these slots as well as through similar slots in the forward centre section of the lower wing. The lower wing needs to be modified to incorporate these differences.*

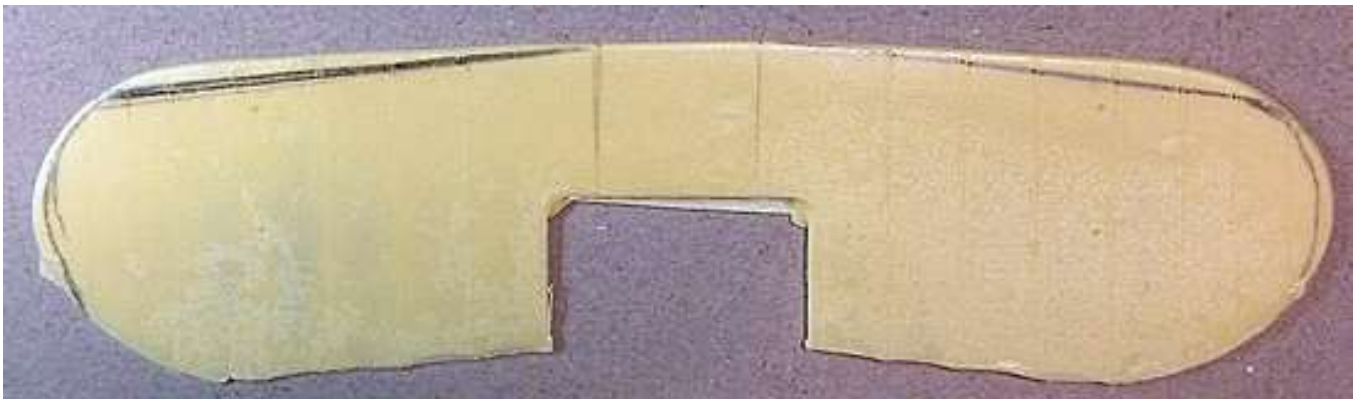


Pencil mark the sides of the fuselage centrally onto the centre section of the lower wing.

Pencil mark 5 mm rearwards from the wing leading edge and on the third rib tape in from the wing tips.

Pencil a line from the front of the marked fuselage line and over the wing rib mark out to the wing tip.

Pencil mark an curve between the outer end of the leading edge line and the rear of the first rib tape from the wing tip.



Saw off the leading edges of the lower wing along the pencil line.

Sand the sawn leading edges to create a rounded profile blended to the wing upper and underside surfaces.

Sand the front of the wing tips to blend them with moulded wing profile.

Sand the trailing edge ‘scallops’ to better define their shape.

Sand the centre cut-out, especially the corners.

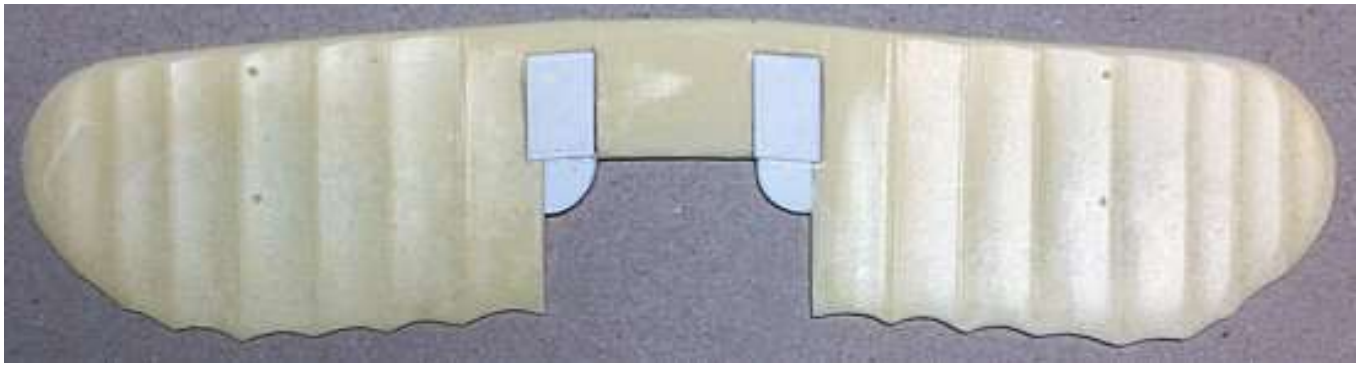
Using 2.0 mm thick plastic card, pencil mark two corner arcs to fit at the corners of the centre cut-out. Their sides should be 8 mm in length.

Using 2.0 mm thick plastic card, pencil mark two 10 mm wide, 16 mm long walk boards with their ends angled to align with the wing leading edge.

Using CA adhesive, secure the two corner arcs into the corners of the centre cut-out in the lower wing.

Using CA adhesive, secure the two walk boards onto the top surface of the lower wing with their inner edges aligned to the marked line for the fuselage sides and 6 mm back from the wing leading edge.

Sand the upper and undersides of the lower wing and corner arcs to blend the corners arcs with the wing surfaces.



NOTE: *The following step is necessary as the changes to the lower wing affect the positioning of the wing struts, wing floats and fuel pipes.*

Using a modelling filler, such as ‘Magic Model Putty’ or similar, fill the pre-moulded wing strut locating ‘dimples’ in the top of the lower wing and underside of the upper wing. Also the wing float locations ‘dimples’ on the underside of the lower wing and fuel pipe location ‘dimples’ on the underside of the upper wing.

Pencil mark a line across the rear of the centre section of the lower wing4 mm from its rear edge.

Mark and drill a slot through the centre section and at both sides of the marked line. The slots should start 0.5 mm from the inner edges of the applied walk boards and be 4 mm in length. These slots will be used to allow the wing rear struts to be located into the top of the fuselage.

Using the inner edges of the two walk boards as a guide, file or sand back the leading edge of the lower wing to a depth of 1.5 mm. This recess will allow the location of the from struts of the engine support frame.

Use the same procedure to created two slots through the forward centre section of the lower wing aligned to the front edge of the added walk boards. Make sure the edge of slots are at least 1.5 mm away from the pre-drilled wing locating holes on the underside of the wing

Wing stacking pads:

NOTE: *The leading edge of the upper and lower wings were fitted with ‘stacking pads’, which were used to protect the wings when resting on their leading edges when being transported. The upper wing was fitted with one pad at each side and the lower wing with two pads at each side. The stacking pads are not represented in the kit and need to be created. Refer to the following illustration for the location of the six stacking pads.*

Using the above illustration for the location of the six stacking pads, point mark their locations into the centre of the leading edges of the lower and upper wings.

Using the point marks as guides, drill holes of 0.9 mm diameter into the wing leading edges. Take care when drilling the holes not to break through the upper or lower surface of the wings.

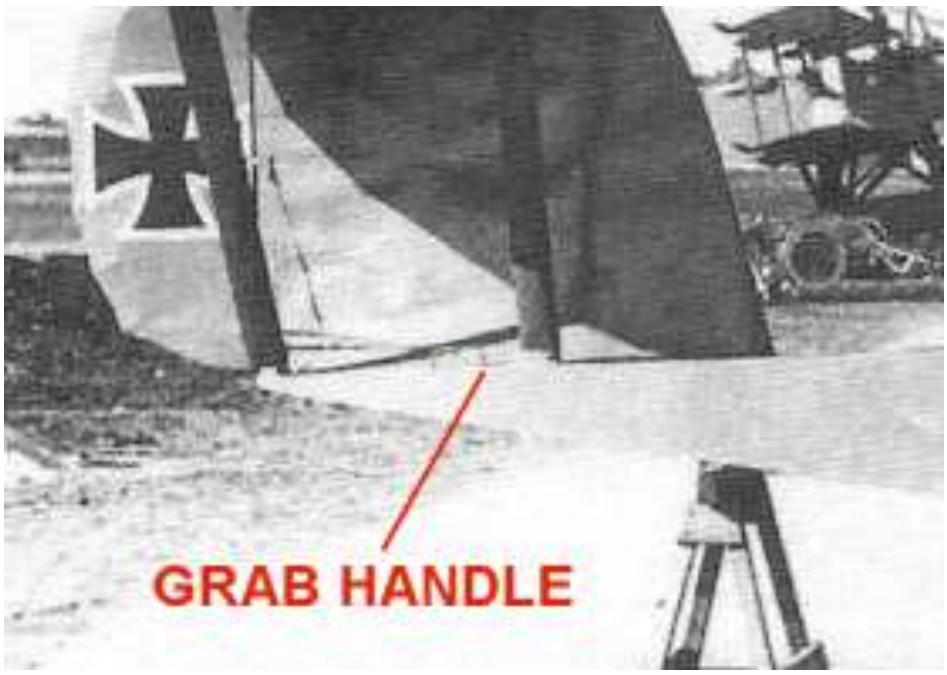
Cut six short lengths of 0.85 mm diameter plastic rod, such as that from ’Plastruct’ styrene rod.

Secure the cut rods into the pre-drilled holes using thin CA adhesive.

Carefully sand the protruding rods back to the wing leading edges and with a ‘domed’ shape end.

Grab handles:

NOTE: *The aircraft was fitted with two grab handles, which were used by ground crew to handle the aircraft. The handles were located on the top edge of the rear of the fuselage, midway along the base of the fin. The handles were angled outwards. Theses grab handles are not represented in the kit and need to be created.*



Temporarily fit the fin onto the fuselage.

Pencil mark the outer top edge of the fuselage midway along the base of the fin.

Remove the fin.

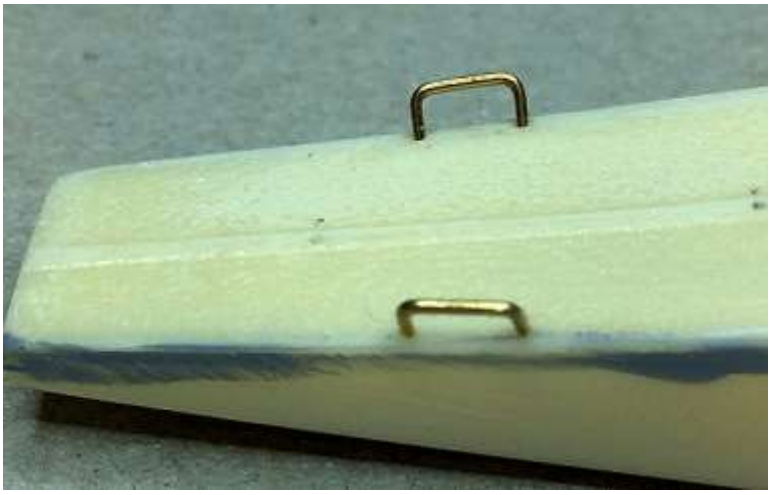
Mark a point 2 mm either side of the pencil mark.

Using the marks as guides, drill holes of 0.6 mm diameter into the top of the fuselage and angled outwards.

Bend 0.5 mm diameter Brass rod, such as that from 'Albion Alloy's' or similar, to form the grab handles.

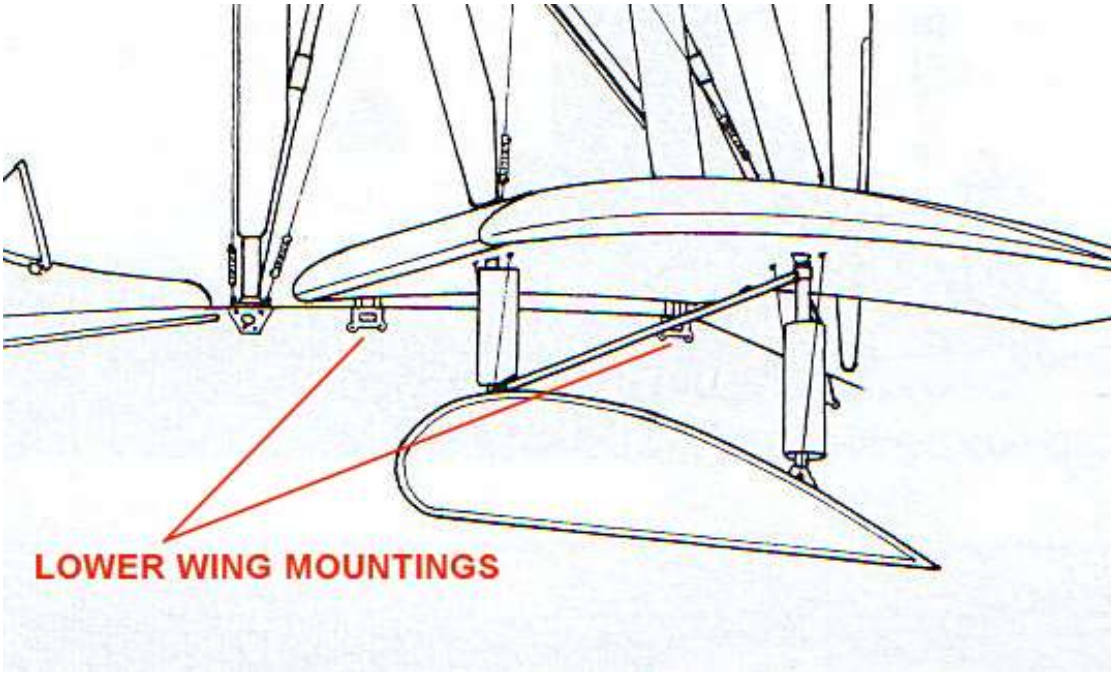
Test fit the handles into the pre drilled holes.

Do not secure the handles in position yet, as this will be done later in the build.



Lower wing - mountings:

NOTE: *The lower wing was not fitted directly to the top of the fuselage but was located on four mountings and just clear of the fuselage. The front a rear wing spars of the lower wing passed across the fuselage through these mountings. The kit instructions show the mountings, but they are not supplied in the kit. Therefore representations of the mountings need to be created.*



Position the lower wing onto the top of the fuselage rear of the cockpit.

Pencil mark the wing leading and trailing edges onto the fuselage. Also mark the two slots in the rear of the wing centre section onto the fuselage.

Cut four brackets from the ‘Jadar’ WW1 1:48th scale control horns (S48087) photo-etch set.

Using CA adhesive, secure two of the brackets vertically on the sides of the fuselage with their centre 3 mm back from the pencil leading edge mark.

Using CA adhesive, secure the remaining two brackets vertically on the sides of the fuselage with their centre midway between the wing trailing edge mark and the rear of the wing slot marks.

Drill a hole of 0.6 mm diameter vertically into the top of the fuselage and behind the centre of each bracket.

Cut four lengths of 0.5 mm brass rod, such as that from ‘Albion Alloy’s’ or similar.

Secure the rods into the pre-drilled holes, using thin CA adhesive.

Using flat tweezers, bend the top of the each bracket down onto the fuselage and against the rod.

Secure the brackets to the rods using thin CA adhesive.

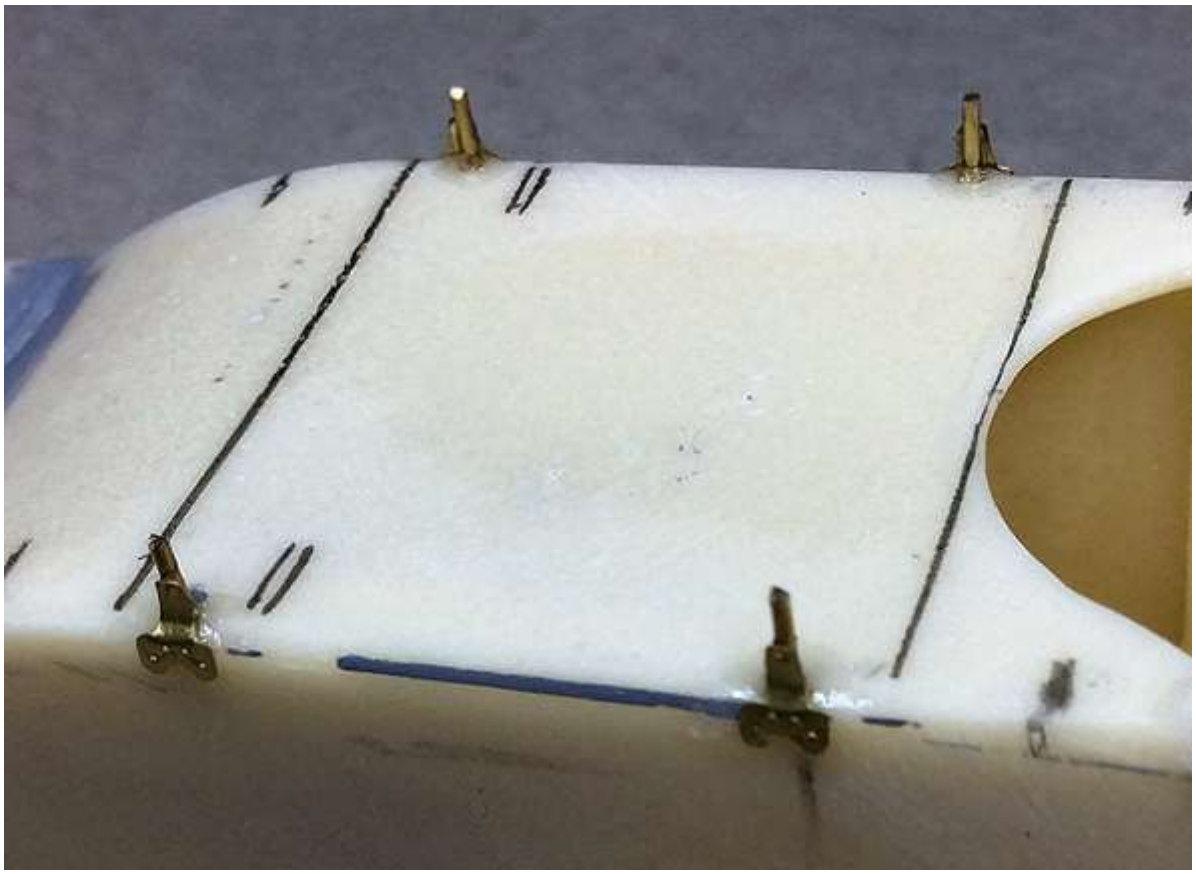
Snip the top of the rods to leave approximately 1.0 mm protruding above the top of each bracket.

Carefully position the lower wing onto the for rods with the wing aligned to the pencil marked lines.

Carefully push down on the wing centre section to impress the ends of the rods into the underside of the lower wing.

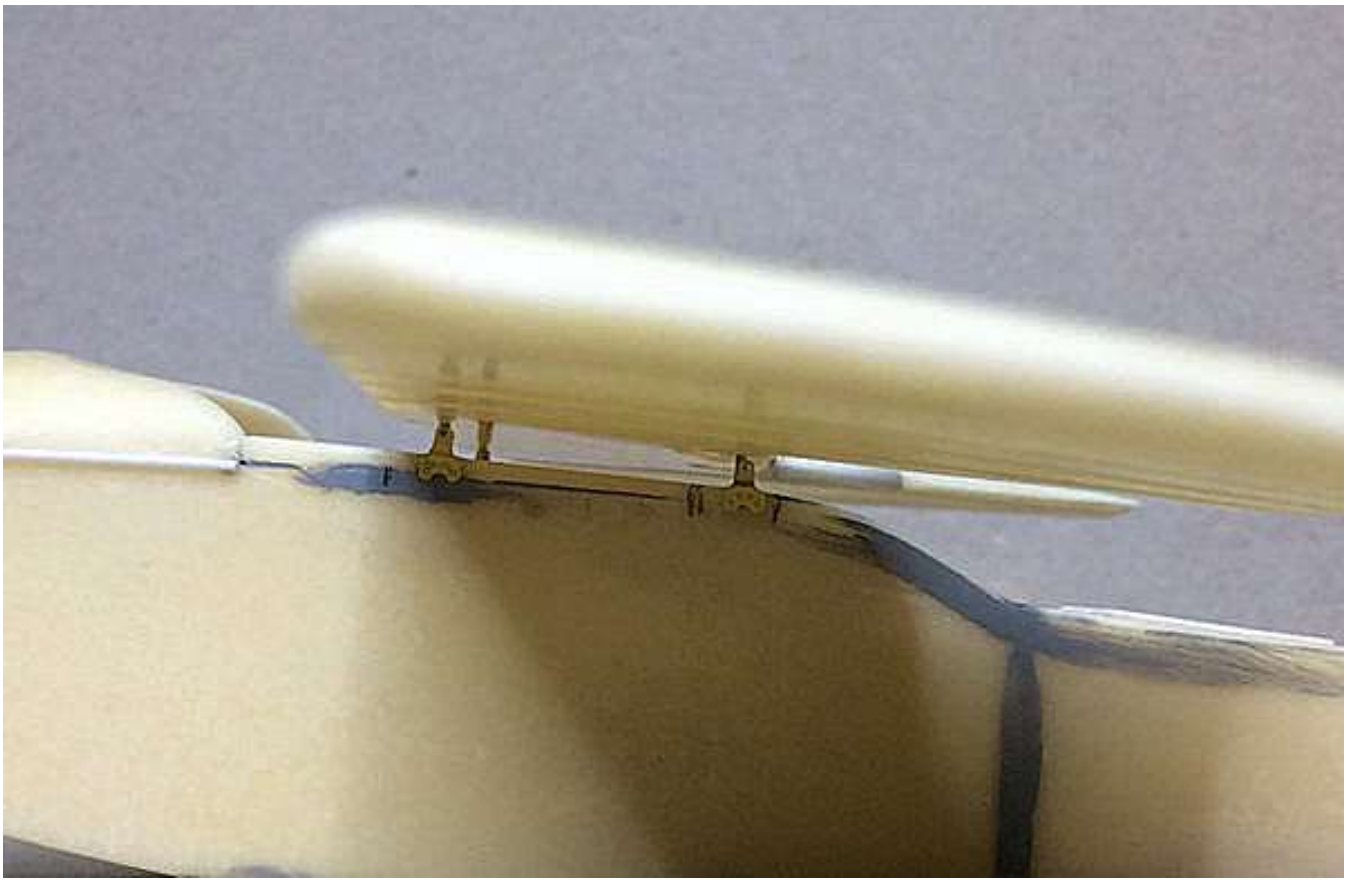
Remove the wing and check that the four rods are marked into the wing.

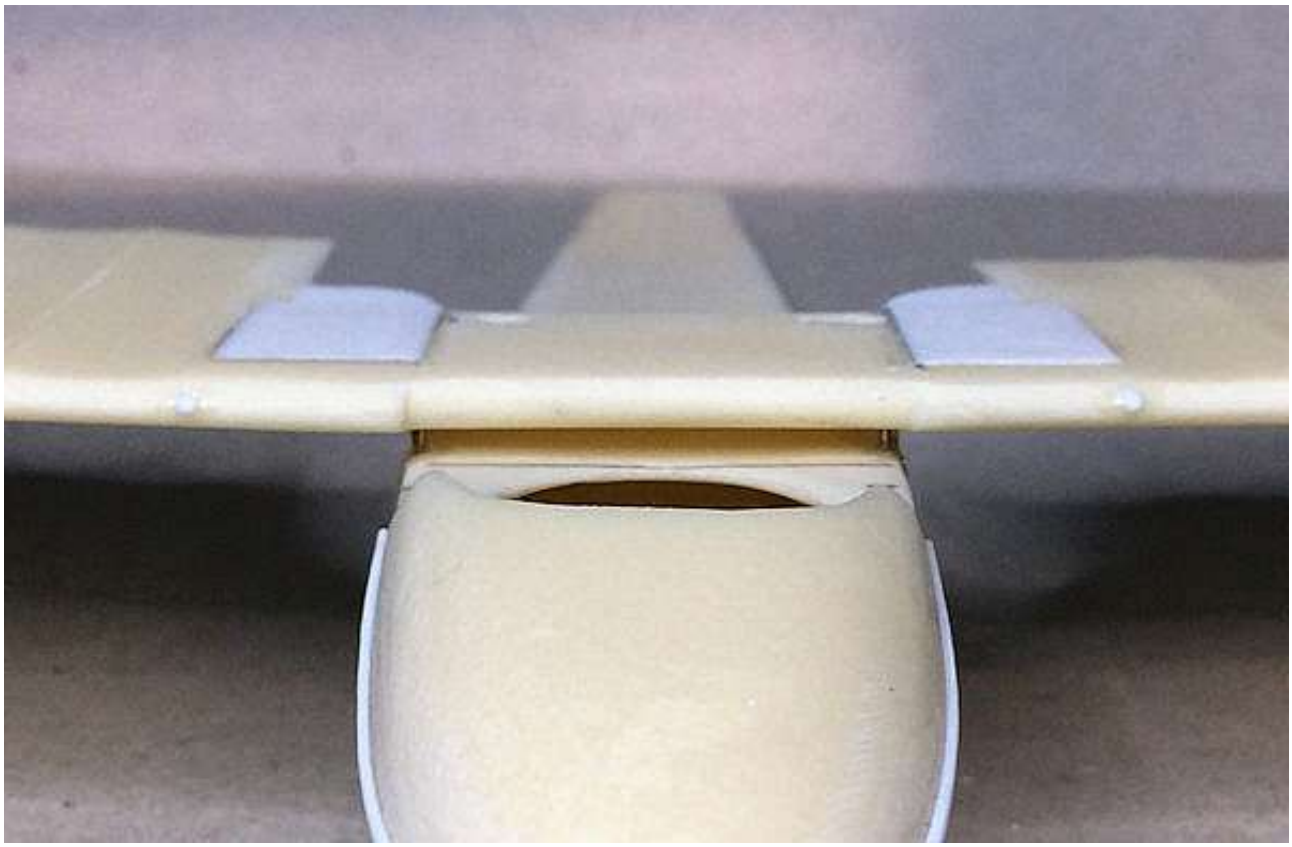
Using the marks, drill holes of 0.6 mm diameter into, **but not through**, the lower wing.

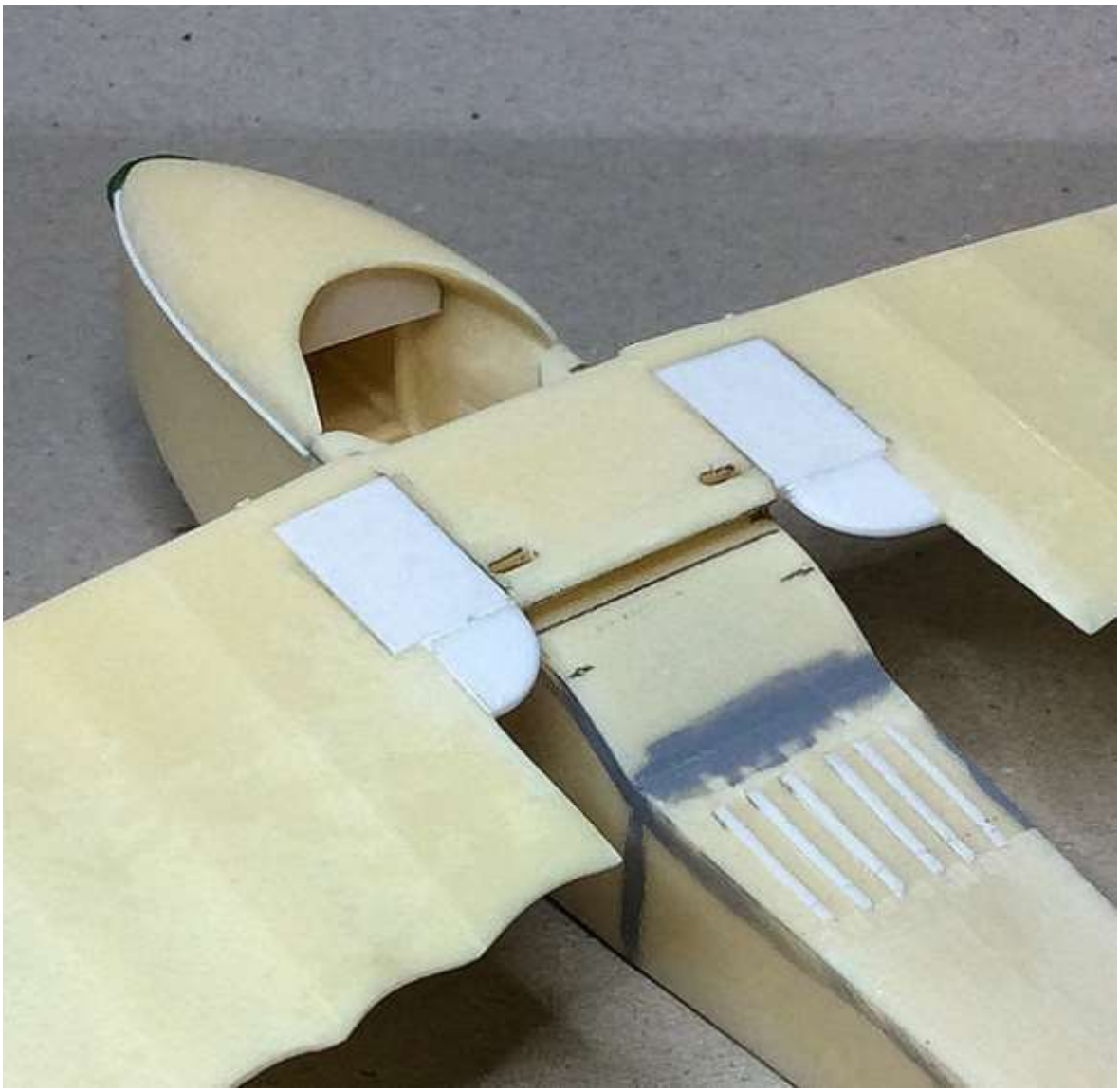


Test fit the wing onto the rods and if necessary, trim the height of the rods such that the underside of the wing is located at the top of the brackets.

Check that when mounted on the rods, the lower wing is horizontal, when viewed from the front and at 90 degrees to the fuselage, when viewed from above.

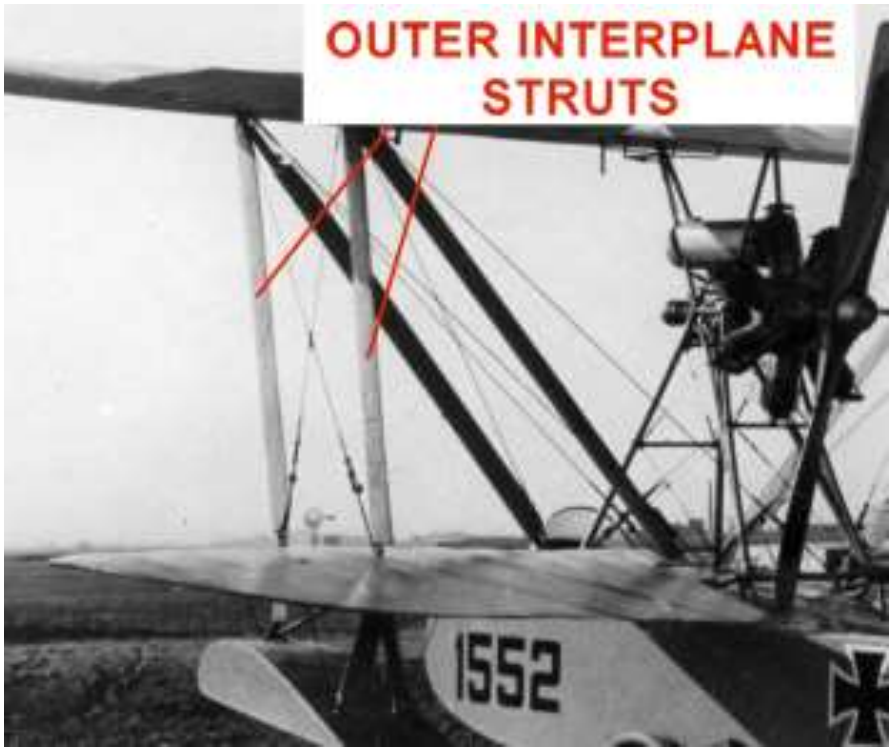






Outer interplane struts:

NOTE: *The outer interplane struts supplied in the kit are resin and without any internal metal reinforcing rods. This makes the brittle resin of the struts weak and liable to breaking during handling when assembling the model. Therefore I decided to recreate these struts using brass rod and tube.*



Using as guides the original pre-moulded and filled locating ‘dimples’ in the underside of the upper wing and top surface of the lower wing, pencil draw a line through each pair.

On the pencil line, mark 5 mm back from the wing leading edges.

On the pencil line, mark 18 mm back from previous mark.

NOTE: *The strut locating holes are drilled slightly larger than the strut locating rods. This allows self-alignment of the wings and struts during assembly.*

Using the marks as guides, drill holes of 1.1 mm into, **but not through**, the **lower wing** and at the approximate angle as shown in the above illustration.

Using the marks as guides, drill holes of 1.1 mm into, **but not through**, the **upper wing** and at the approximate angle as shown in the above illustration.

Using a kit supplied interplane strut as a guide, cut four lengths of 2.0 mm diameter brass tube, such as ’Albion Alloy’s MBT20 or similar. The length of the tube should match the length of the kit strut, but not including the ’rods’ at each end.

NOTE: *The struts are created using the ‘Strutter’ from Model Skills (Albion Alloy’s). The ’Strutter’ is a pair of hardened steel jaws, one of which has two steel pins, the other has location holes for the pins. These are used in a normal medium sized bench vice. A length of tube, with an appropriate solid rod inserted is positioned across the two pins of the ’Strutter’ and when the vice jaws are tightened, the ’Strutter’ jaws crush the brass tube around the inserted rod. The strut tube and rod can then be soft soldered together. The protruding rod at each end of the strut is used to locate the struts into pre-drilled locating holes in the model.*

Insert a length of 1.0 mm diameter brass rod, such as that from ’Albion Alloy’s’ or similar, into each tube.

Using the ’Strutter’ tool create the four struts around their supporting rods.

Soft solder the rod into the tube, making sure that solder runs into the tube as well as at the rod joints.

Cut the ends of the rods to leave at least 5 mm protruding from each end of the tube.

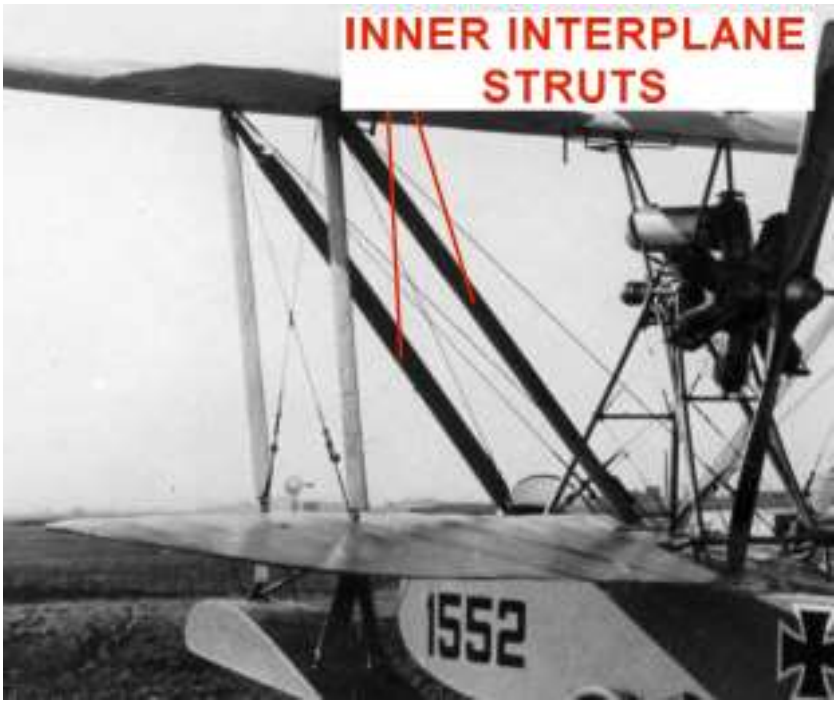
File a chamfer on the same side and at each end of the tube, then sand the edges of the chamfer to blend with the surrounding strut.

NOTE: *If the tube internal bore is exposed, fill the opening with either modelling putty or CA adhesive and once fully set, sand the chamfer to shape.*

Test fit each strut into its upper and lower wing pre-drilled locating holes. Make sure the ends of the strut rods do not protrude from the wing surfaces. If so, file the end of the rods to reduce their length.

Inner interplane struts:

NOTE: *The inner interplane struts supplied in the kit are resin and without any internal metal reinforcing rods. This makes the brittle resin of the struts weak and liable to breaking during handling when assembling the model. Therefore I decided to recreate these struts using brass rod and tube. It's best at this stage to temporarily fit the outer interplane struts and upper wing. This will allow accurate measuring and test fitting of the inner interplane struts.*



Preparation:

Locate the lower wing onto its four locating rods on the fuselage and hold in position using 'UHU' white tack or similar.

Using thin CA adhesive, secure the outer interplane struts into their pre-drilled locating holes in the lower wing.

Locate the upper wing onto the four interplane struts.

Check that the upper and lower wings are aligned and the leading edge of the upper wing is aligned with the rear edge of the cockpit opening. If necessary, carefully flex the upper wing to achieve the correct alignment.

Remove the upper wing.

On the underside of the upper wing, point mark the inboard side of the four outer interplane strut locating holes. The marks should be aligned with the centre of the holes and 2.0 mm from the outer edges of the holes.

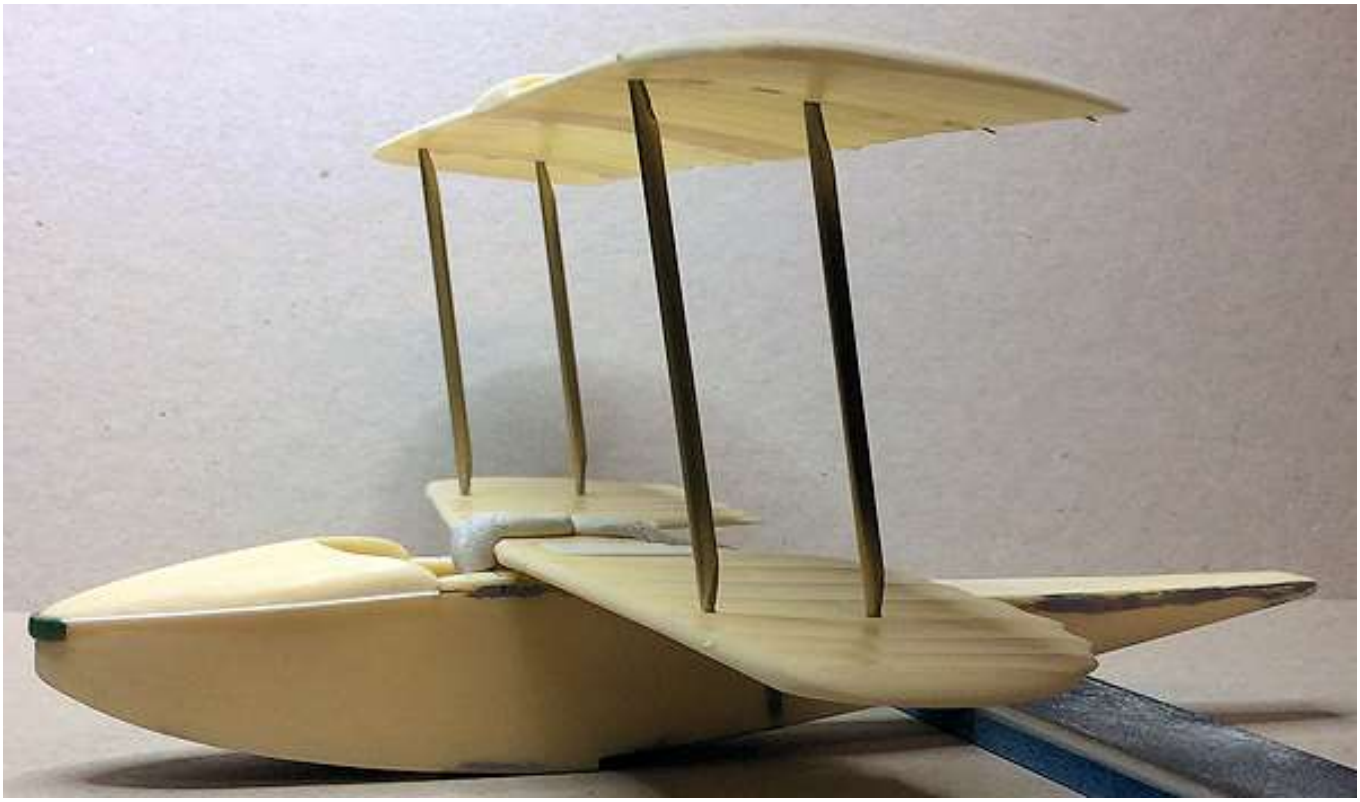
Using the point marks as guides, drill holes of 1.1 mm diameter into, **but not through**, the upper wing.

Forward inner struts:

Drill a hole of 1.2 mm diameter through the top outer edges of the fuselage sides at the cockpit, midway between the rear edge of the front decking and the leading edge of the lower wing. The holes should be drilled at the approximate angle to the top of the forward outer interplane struts.

Locate the upper wing onto the four interplane struts.

Check that the upper and lower wings are still aligned and the leading edge of the upper wing is aligned with the rear edge of the cockpit opening. If necessary, carefully flex the upper wing to achieve the correct alignment. Hold the wing to the struts using ‘UHU’ white tack or similar.



Cut a long length of 1.0 mm diameter Brass rod, such as that from ‘Albion Alloy’s’ or similar.

Bend one end of the rod such that when the other end is inserted through the pre-drilled hole in the fuselage, the bent end will fit fully into the pre-drilled hole inboard from the forward outer interplane strut.

With the rod in position, cut a length of 2.0 mm diameter Brass tube, such as ’Albion Alloy’s MBT20 or similar. The length of the tube should be from the interplane strut to the middle of the wing leading edge, leaving rod only into the fuselage.

Trim the length rod the rod so it can’t be seen from inside the cockpit.

Create the strut shape and assemble it using the same procedure used to create the interplane struts.

Locate the strut in position between the fuselage and upper wing and hold in place with ‘UHU’ white tack or similar.

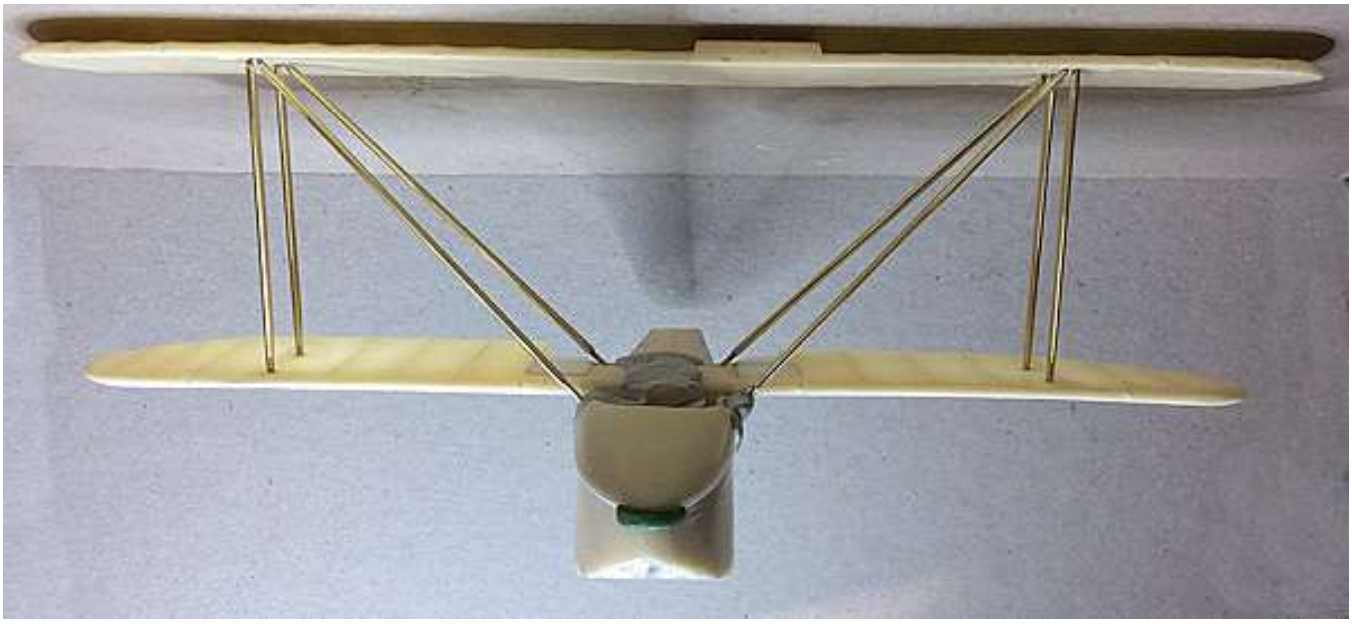
Repeat the procedure to create the forward strut on the opposite side of the aircraft.

<u>Rear inner struts:</u>

Use the same procedure to create the two rear inner interplane struts. The differences are:

One end of the strut rod should pass through the pre-cut slots in the rear, centre section of the lower wing, to rest on the top of the fuselage.

The fuselage end of the outer tube should end approximately 1.5 mm above the top surface of the lower wing.



Remove any ‘UHU’ white tack or similar holding the struts in position.

Remove the four inner interplane struts.

Remove the upper wing.

Remove the lower wing from the fuselage.

Carefully twist each of the four outer interplane struts to break the CA adhesive bond.

Remove the four struts from the lower wing.

Lay the various struts on a sheet of paper and mark the paper with the strut positions on the model. This will avoid fitting the struts in the wrong positions on the model.

Tailplane support struts:

NOTE: *The tailplane support struts supplied in the kit are resin and without any internal metal reinforcing rods. This makes the brittle resin of the struts weak and liable to breaking during handling when assembling the model. Therefore I decided to recreate these struts using brass rod and tube. It’s best at this stage to temporarily fit the fin and tailplane. This will allow accurate measuring and test fitting of the support struts.*

On the underside of the tailplane, drill holes of 1.0 mm diameter into, **but not through**, the tailplane leading and trailing edges, between the first and second outer rib tapes of the tailplane.

Temporarily locate the fin onto the fuselage with the pre-fitted locating rods.

Hold the fin vertically on the fuselage by using ‘UHU’ white tack or similar at each side of the base of the fin.

Temporarily locate the tailplane onto the fin using the pre-fitted locating rods.

Hold the tailplane horizontal to the fin by using ‘UHU’ white tack or similar at each side of the top of the fin.

At the top outer edges of the rear of the fuselage, drill holes of 1.0 mm diameter. The holes should be 5 mm and 26 mm from the end of the fuselage and drilled at an outward angle to the pre-drilled locating holes between the first and second outer rib tapes of the tailplane.

Cut four lengths of 0.8 mm diameter brass rod, such as that from ’Albion Alloy’s’ or similar.

For each of the struts, bend one end at an angle such that when inserted into its pre-drilled hole in the fuselage, the bent end will locate into its pre-drilled hole on the underside of the tailplane.

Trim the straight end of each rod until the rod can be inserted into the fuselage and tailplane, without pushing the tailplane from its horizontal position on the fin.

Use the same procedure to create the four tailplane struts as used for the interplane struts.

Check fit the four struts and check that the fin is still vertical on the fuselage and the tailplane is horizontal to the fin.

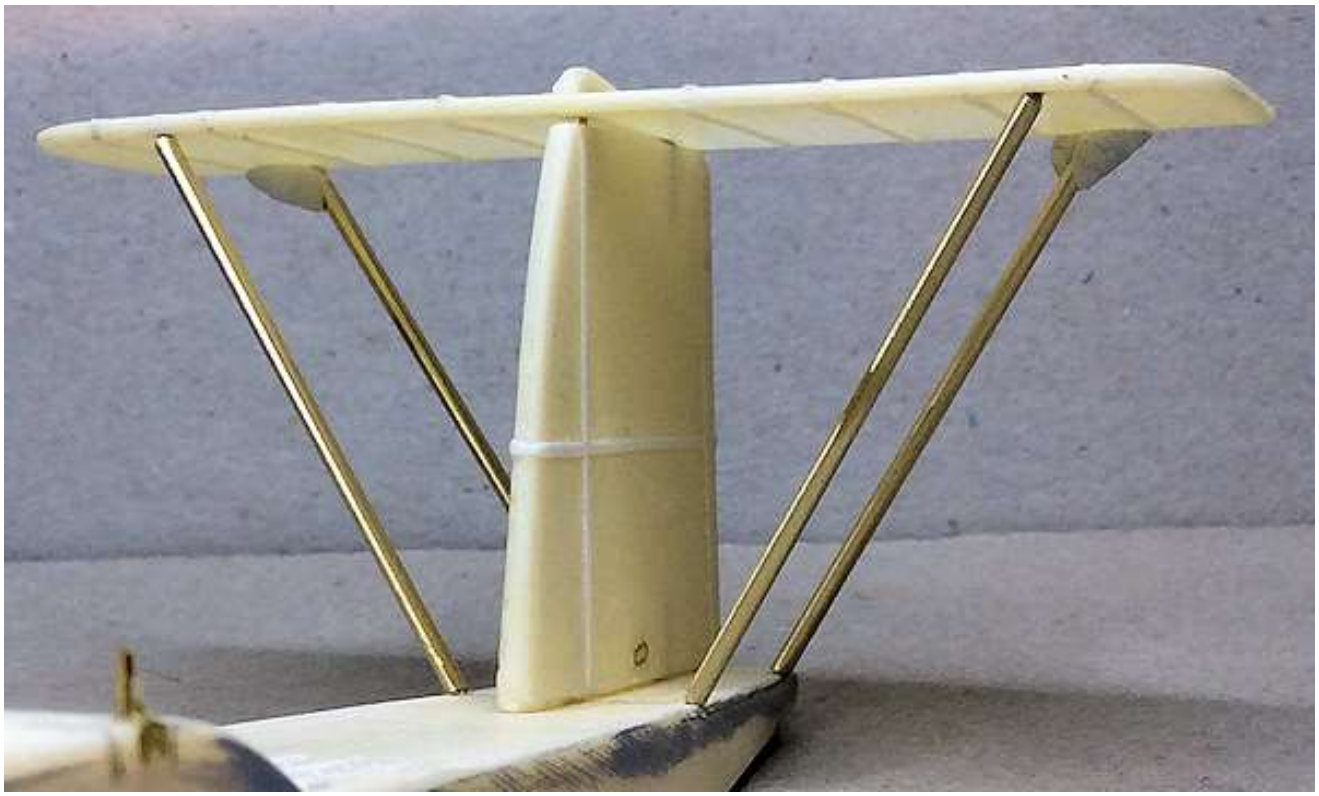
Remove any ‘UHU’ white tack or similar holding the struts in position.

Remove the four struts.

Remove the four tailplane struts.

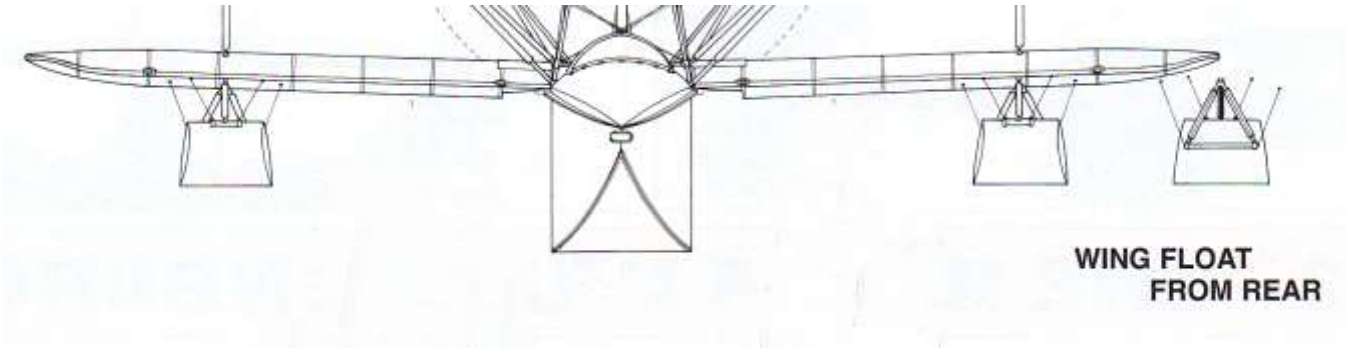
Remove the upper tailplane.

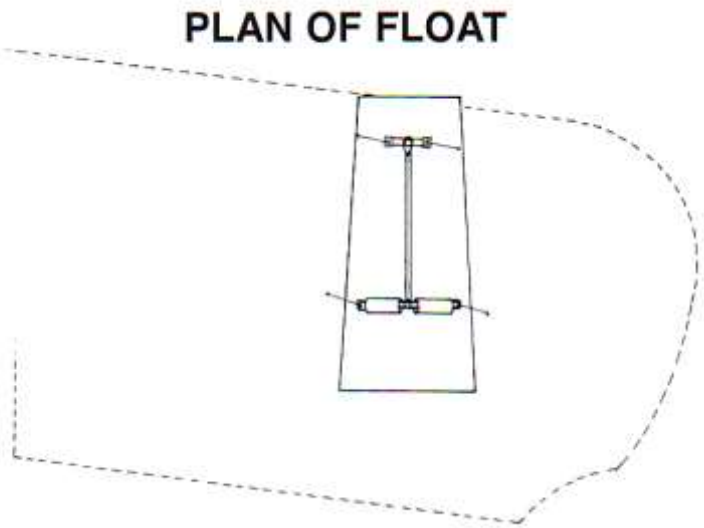
Remove the fin from the fuselage.



Wing float support struts:

NOTE: *The wing float support struts supplied in the kit are resin and without any internal metal reinforcing rods. This makes the brittle resin of the struts weak and liable to breaking during handling when assembling the model. Therefore I decided to recreate these struts using brass rod and tube.*





Make sure any pre-moulded location ‘dimples’ for the wing floats in the underside of the lower wing and on the top of the float are filled with either CA adhesive or modelling putty, then sanded smooth.

Drill a hole of 0.9 mm diameter into the top, centre of the floats with the drill angled slightly Forwards and vertical when viewed from the front or rear of the float.

Secure a length of 0.8 mm diameter Brass rod, such as that from ‘Albion Alloy’s or similar into the drilled hole, using thin CA adhesive.

Cut the height of the rod such that it protrudes from the float by 8 mm.

Using the same procedure for forming the strut shape as used for the interplane struts, create a strut of 7 mm length.

Secure the strut onto the fitted rod using thin CA adhesive, leaving 1.0 mm of rod protruding.

Point mark 20 mm rearwards from the centre of the fitted strut and 1.5 mm in from each side of the floats.

Drill a hole of 0.9 mm diameter into the top of the floats at the point marks. The holes should be drilled at an angle, such that when lengths of 0.8 mm Brass rod are inserted, the top of the rods are 2 mm apart and aligned to the top of the fitted forward strut.

Bend a length of 0.8 mm diameter Brass rod to approximately a 30 degree angle.

Test fit the bent rod into the two drilled holes and as necessary, cut the ends of the two ’legs’ to achieve the correct fit:

The bent rod should be positioned such that the top centre of the rod is aligned to the top centre of the fitted forward strut.

The ‘legs’ of the strut are aligned with the forward strut when viewed from the sides of the floats.

When inserted fully into the floats, the ’legs’ should be 15 mm in length.

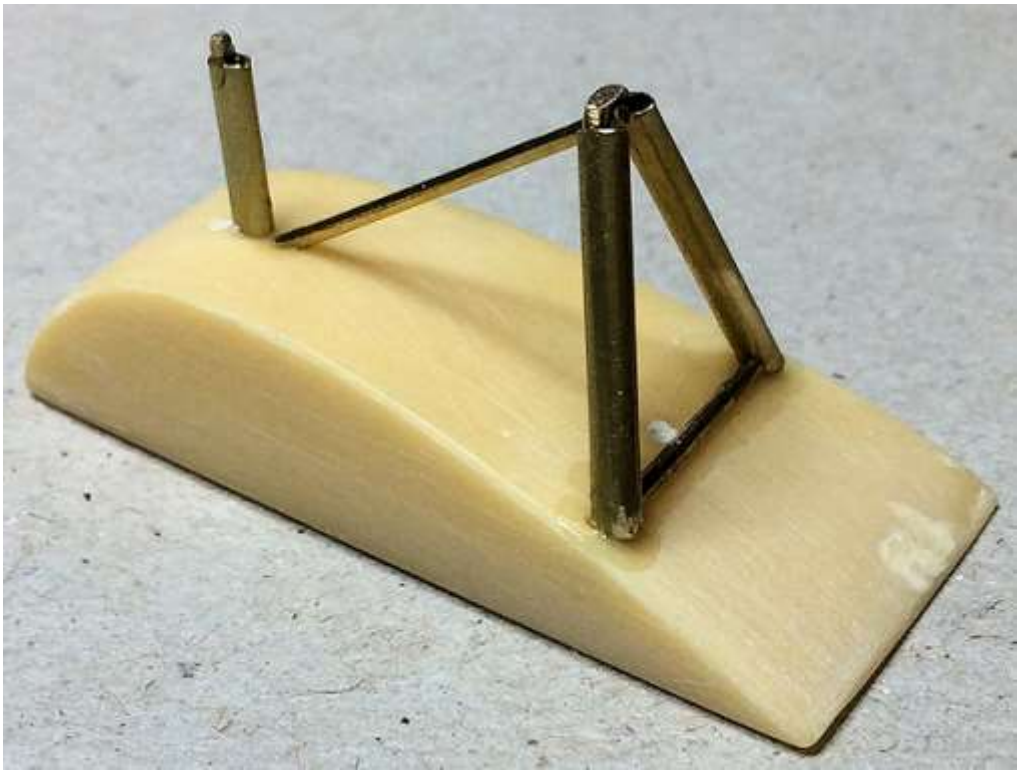
Using the same procedure for forming the strut shape as used for the interplane struts, create two struts of 14 mm length.

Secure the two struts to the ‘legs’ of the rod using thin CA adhesive, leaving just the bend at the top protruding.

Secure the strut assembly into the pre-drilled holes in the float, using thin CA adhesive. Make sure the strut assembly is correctly positioned, as before.

Cut four lengths of 0.8 mm diameter Brass rod and trim their lengths, such that for each float, one will fit between the bottom of the ‘legs’ on the rear strut assembly and the other to span between the bottom of the forward stut to the underside of the top bend on the rear strut assembly.

Secure the four struts in position on the two floats, using thin CA adhesive.



On the underside of the lower wing, point mark 9 mm from the wing leading edge and 3 mm inboard from the fourth rib tape from the wingtips.

Drill a hole of 0.9 mm diameter into, **but not through**, the underside of the lower wing.

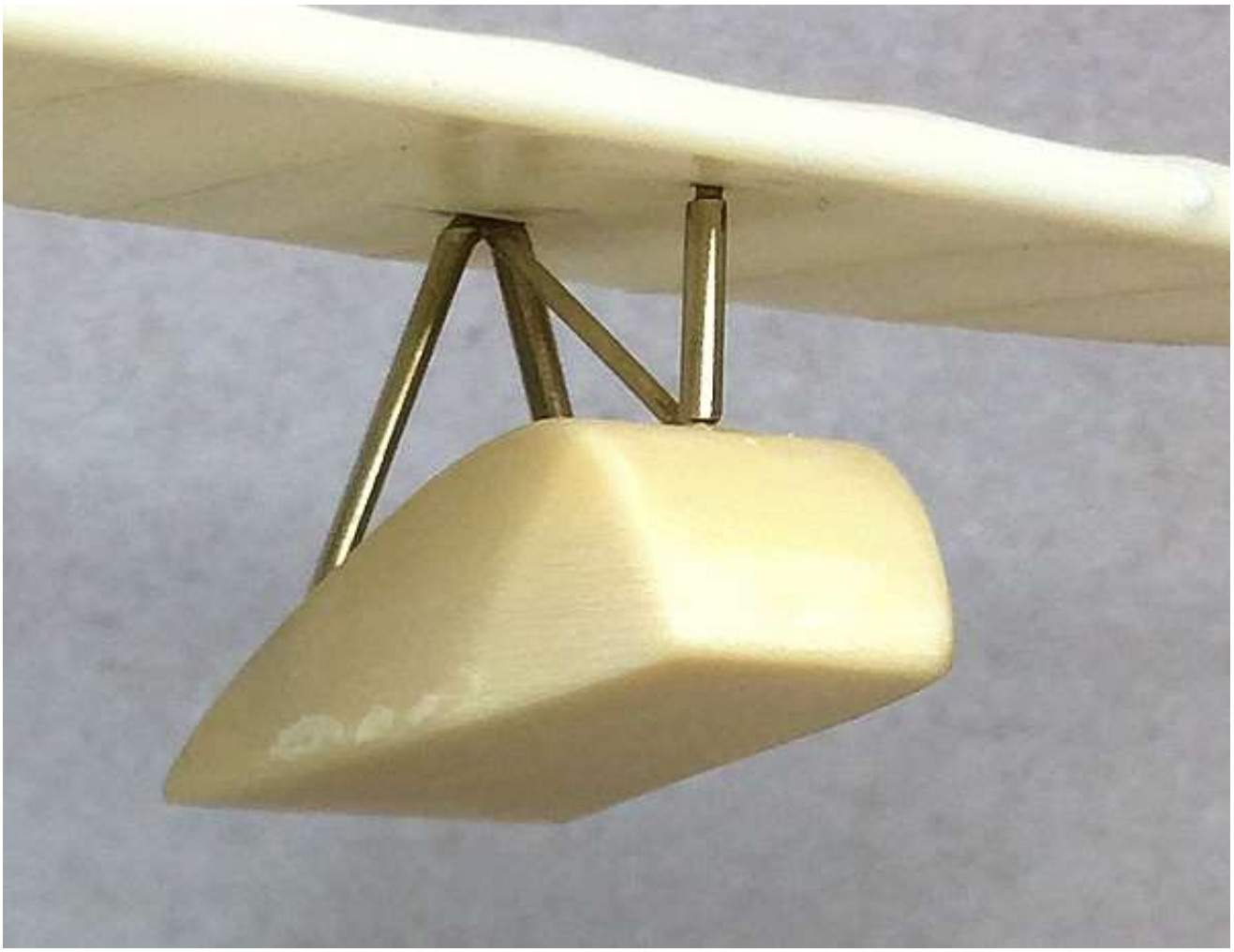
Locate the front strut of each float into its drilled hole and align the floats to the wing rib tapes.

Pencil mark on the wing the position of the top bend of the rear float struts.

File or sand a flat on the top bend of the rear float struts

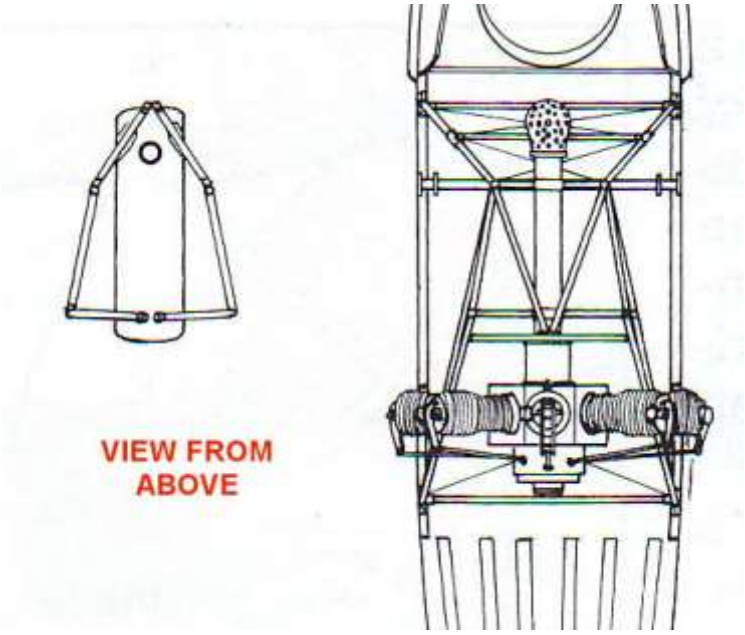
Using a thin modelling chisel or similar, carefully create a slight channel across the underside of the lower wing, such that the top of the floats rear struts will locate in the recess.

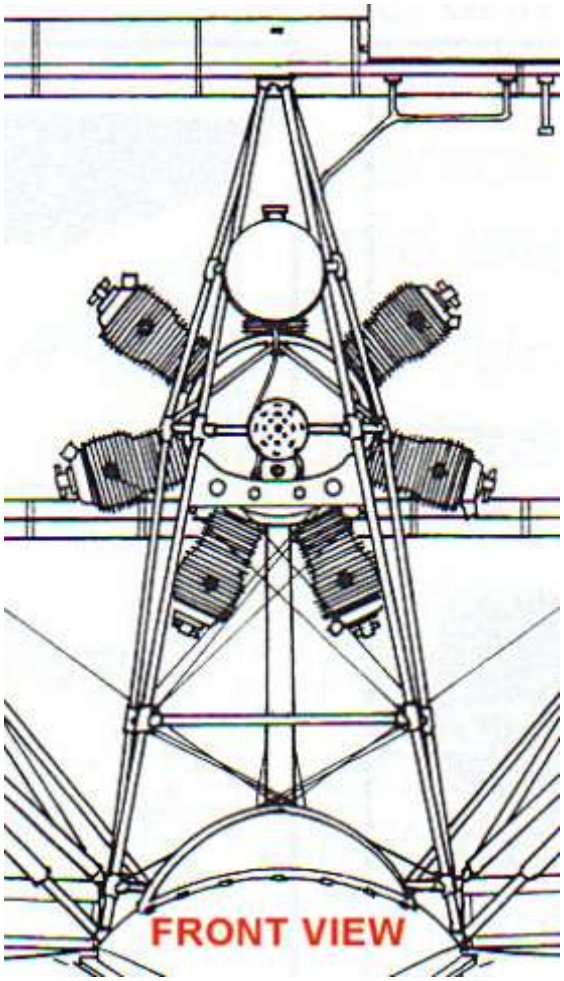
Test fit the float assemblies into the lower wing.

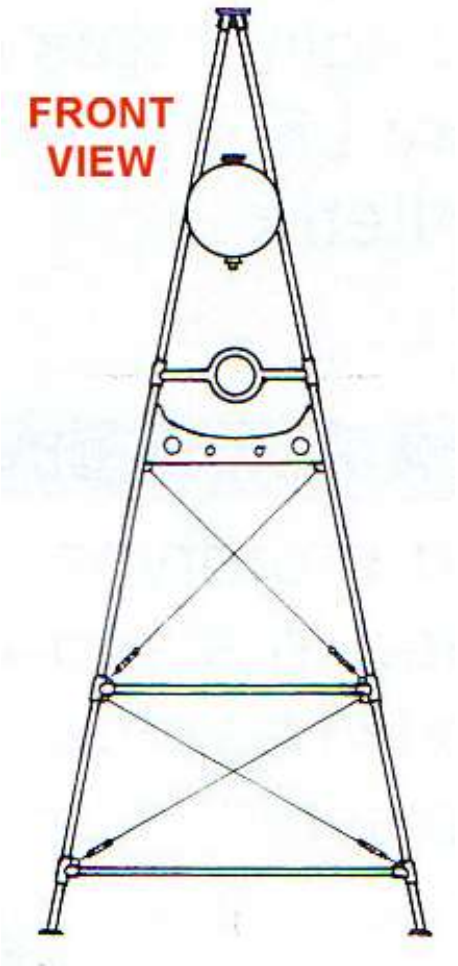


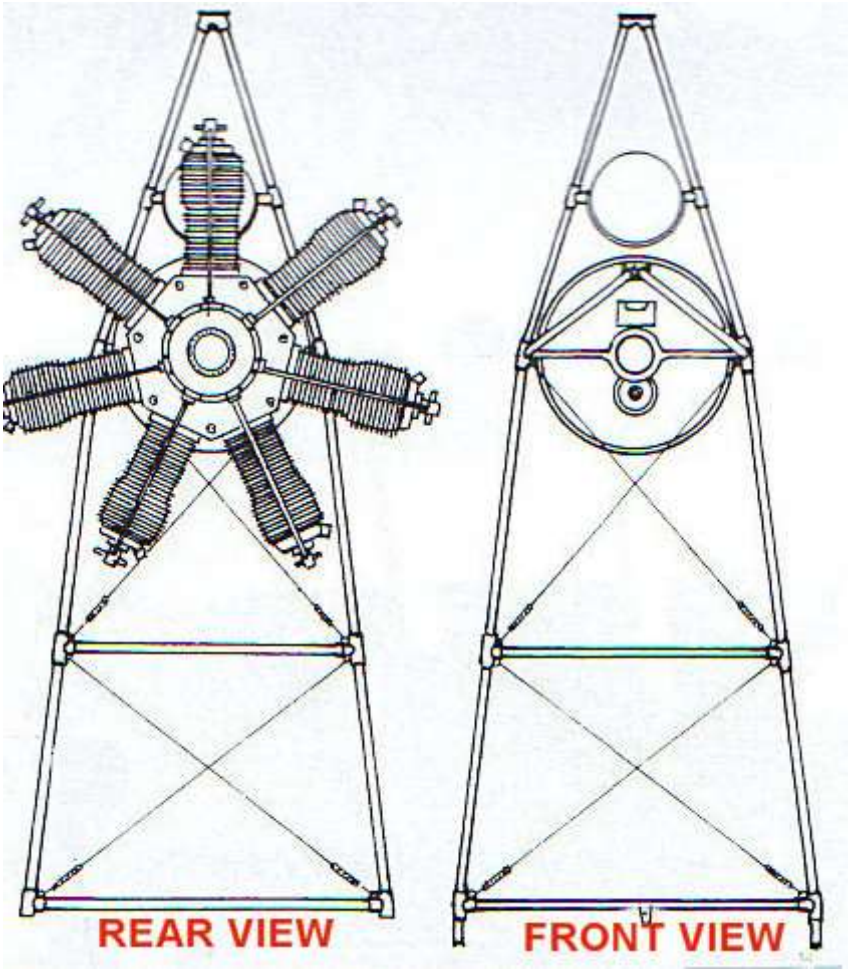
Engine support frame:

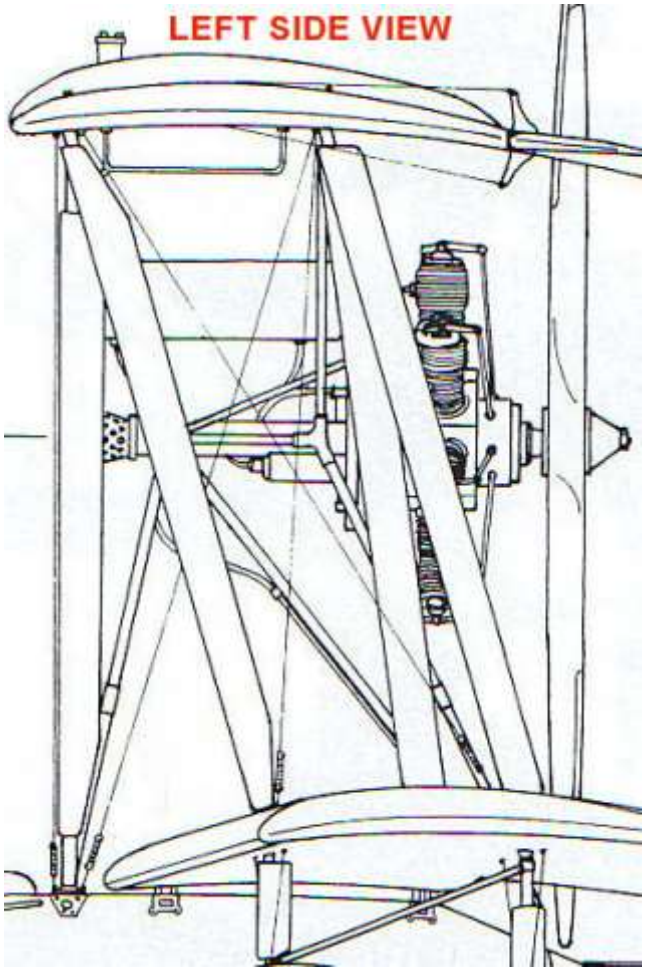
NOTE: *The kit instructions show a side view only of the engine support frame and the kit does not supply any frame work at all, apart from a piece of wire. Therefore the frame needs to be created using brass rod.*

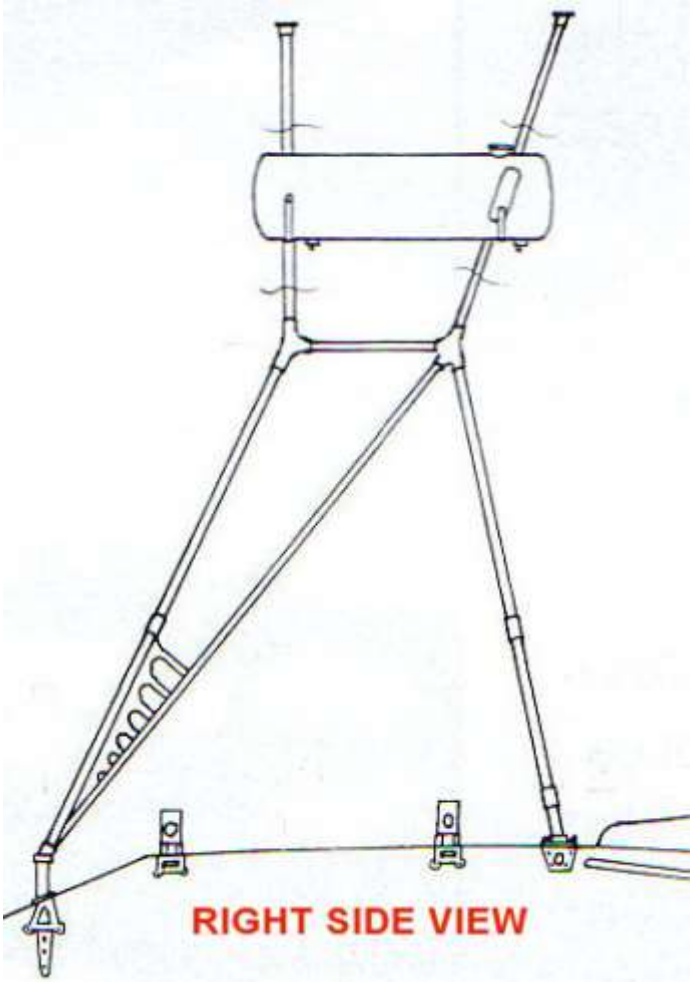


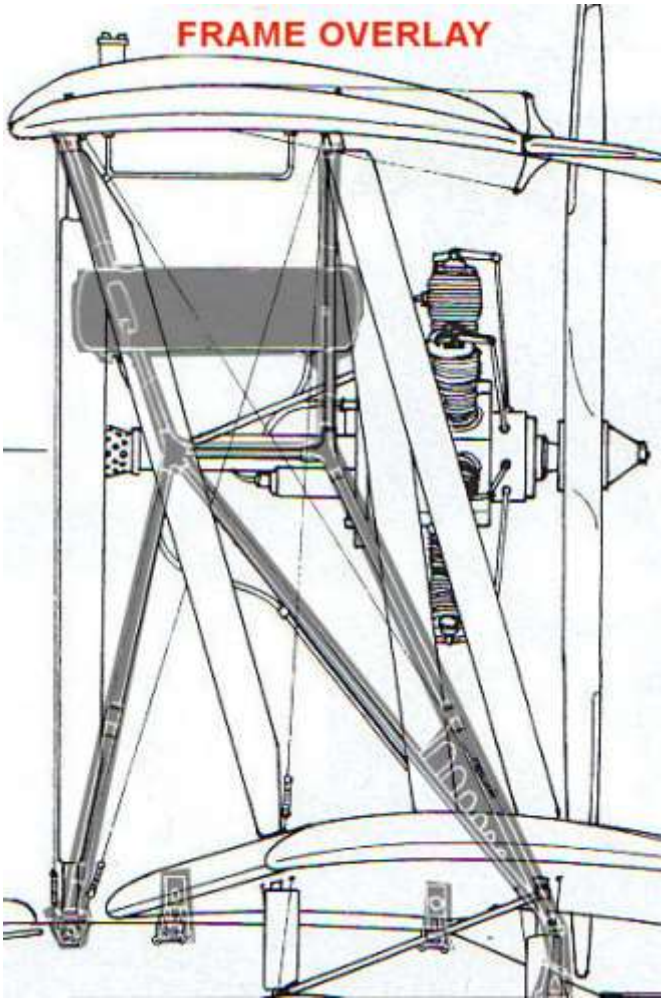

FRONT VIEW


FRONT
VIEW


REAR VIEW
FRONT VIEW


LEFT SIDE VIEW


RIGHT SIDE VIEW


FRAME OVERLAY

NOTE: *The construction of the engine support frame was done by reference to the previous illustrations and was done with soft soldered from 0.8 mm diameter brass tube ('Albion Alloy's MBT08) and heavily modified 'Albion Alloy's' 'Connec+o' joiners (C-08). The legs of these joiners are inserted into the tubes and can be bent to most shapes, allowing framework to the connected, then soldered.*

The engine support frame is complex and reference to the previous illustrations and the following photograph must be made to understand its construction.

Using thin CA adhesive, secure the outer interplane struts into their pre-drilled locating holes in the lower wing.

Locate the lower wing onto its four locating rods on the fuselage and hold in position using 'UHU' white tack or similar.

Base frame:

Refer to the previous illustrations and following photograph and drill two holes of 1.0 mm diameter through the rear decking panel, behind the pre-drilled holes for the inner interplane struts and just forward from the leading edge of the lower wing.

Using a 1.0 mm diameter drill, create angled inwards grooves into the rear decking panel at the joint between it and the top, rear of the fuselage.

Temporarily locate the upper wing onto the four interplane struts.

Refer to the previous illustrations and following photograph and measure the various lengths of tube required to create the front and rear frames.

Remove the upper wing

Create the front and rear frames including their cross members.

Soft solder all of the frames joints.

Locate the two frames into the fuselage holes and grooves making sure their tops are aligned and they are at the correct angles.

Cut tubing to create the interconnecting bars. The two looped bars were made by wrapping 0.5 mm diameter rod (annealed to soften it) around a 2.0 mm diameter former and the legs inserted into short lengths of tube.

Soft solder all of the interconnecting bar joints.

Measure, cut and soft solder the two diagonal support tubes.

Create the front upper plate from 0.2 mm thick plastic card and secure in position at the top of the front frame using CA adhesive.

Create the two side panels from spare photo-etch sheet and soft solder in position at the bottom of the rear frame.

Temporarily locate the upper wing onto the four interplane struts.

Check the frame or alignment to the fuselage and upper wing.

NOTE: *The rear upper rear struts are vertical to the fuselage and the upper forward struts are angled forwards at the top.*

Cut four lengths of tubing and position them to the top corners of the frame and angle in at the top to meet ventrally on the underside of the upper wing and trim the lengths of the tubes accordingly.

Remove the upper wing and engine support frame.

Soft solder the four tubes to the corners of the top of the frame and at their tops to form inverted ‘V’ shapes.

Locate the engine frame assembly into the fuselage.

Temporarily locate the upper wing onto the four interplane struts.

Check that the upper wing is fully located onto the four interplane struts and the top of the two inverted ‘V’ frames on the engine support frame are in contact with the underside of the upper wing.

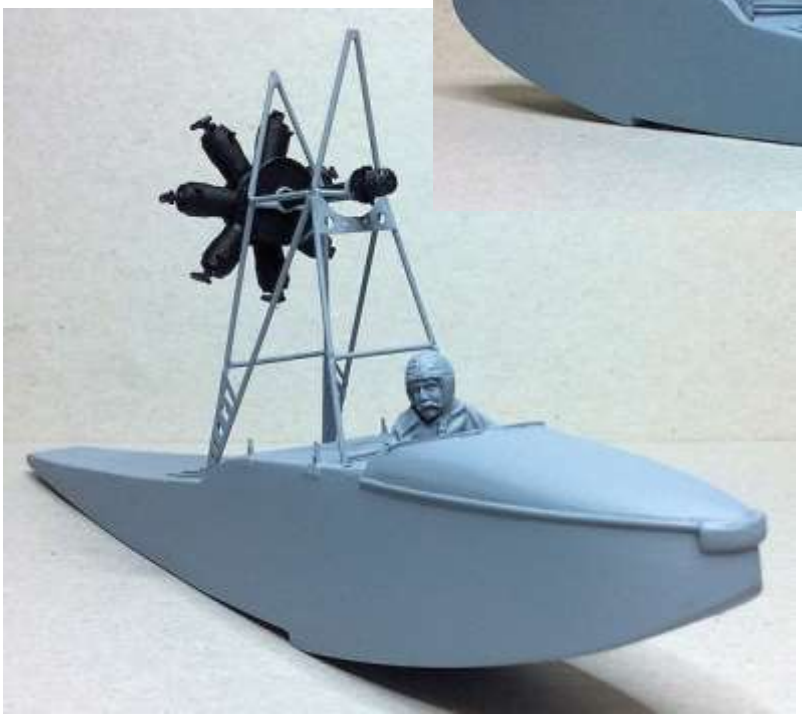
Remove the upper wing and engine support frame.

Remove the lower wing from the fuselage.

Carefully twist each of the four outer interplane struts to break the CA adhesive bond.

Remove the four struts from the lower wing.

NOTE: *The following photographs were taken after grey and black primers were applied to the basic engine assembly and frame (Part 8 of this build log). They show the basic engine installation.*



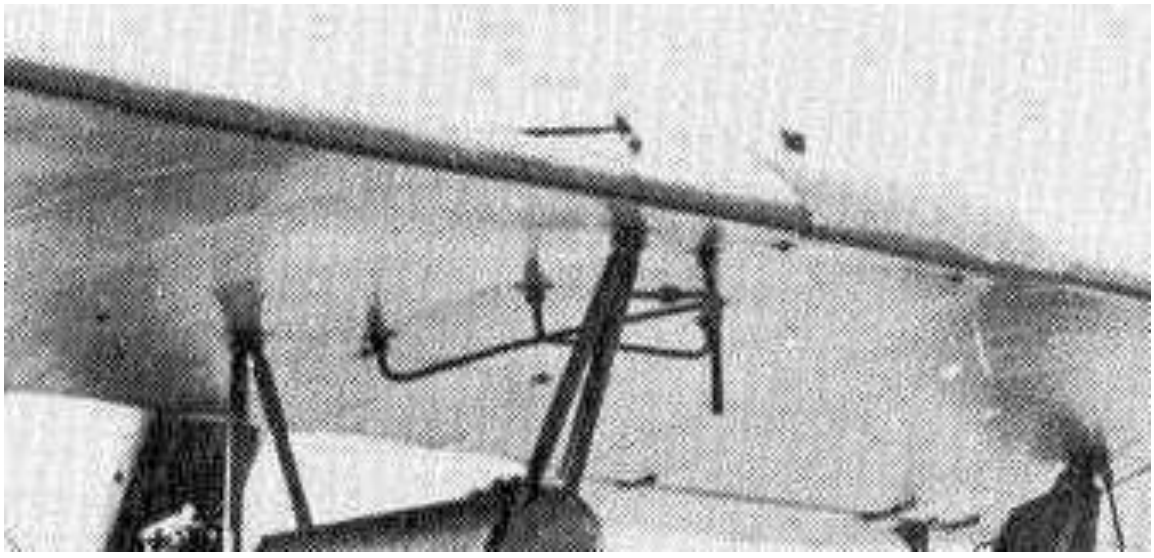
Rigging points:

NOTE: *With reference to the previous illustrations, the engine support frame had crossed bracing wires between the bottom and top frames, front and rear on the frame. These rigging points need to be replicated on the created frame. The joints in the frame were made using 'Albion Alloy's' Connec+o joiners, which effectively create a solid Brass joint. Drilling 0.3 mm diameter holes through these joints for rigging is difficult, so I chose to glue rigging attachments from my photo-etch 'spares' (from Special Hobby Fokker D.II kit), using thin CA adhesive. Otherwise the rigging line could be wrapped around the joints and glued.*

Once the CA adhesive had fully set I cleared the holes in the rigging attachments using a 0.2 mm diameter drill. Also the area around the attachments was lightly sanded to remove any residual CA adhesive.

Fuel pipes - upper wing:

NOTE: *Fuel pipes were installed on the underside of the upper wing to supply fuel down to the carburettor on the front of the engine shaft. These pipes were assembled using 'Albion Alloy's' 'Connec+o' joiners (C-04) and 0.4 mm diameter Brass tube (MBT04).*



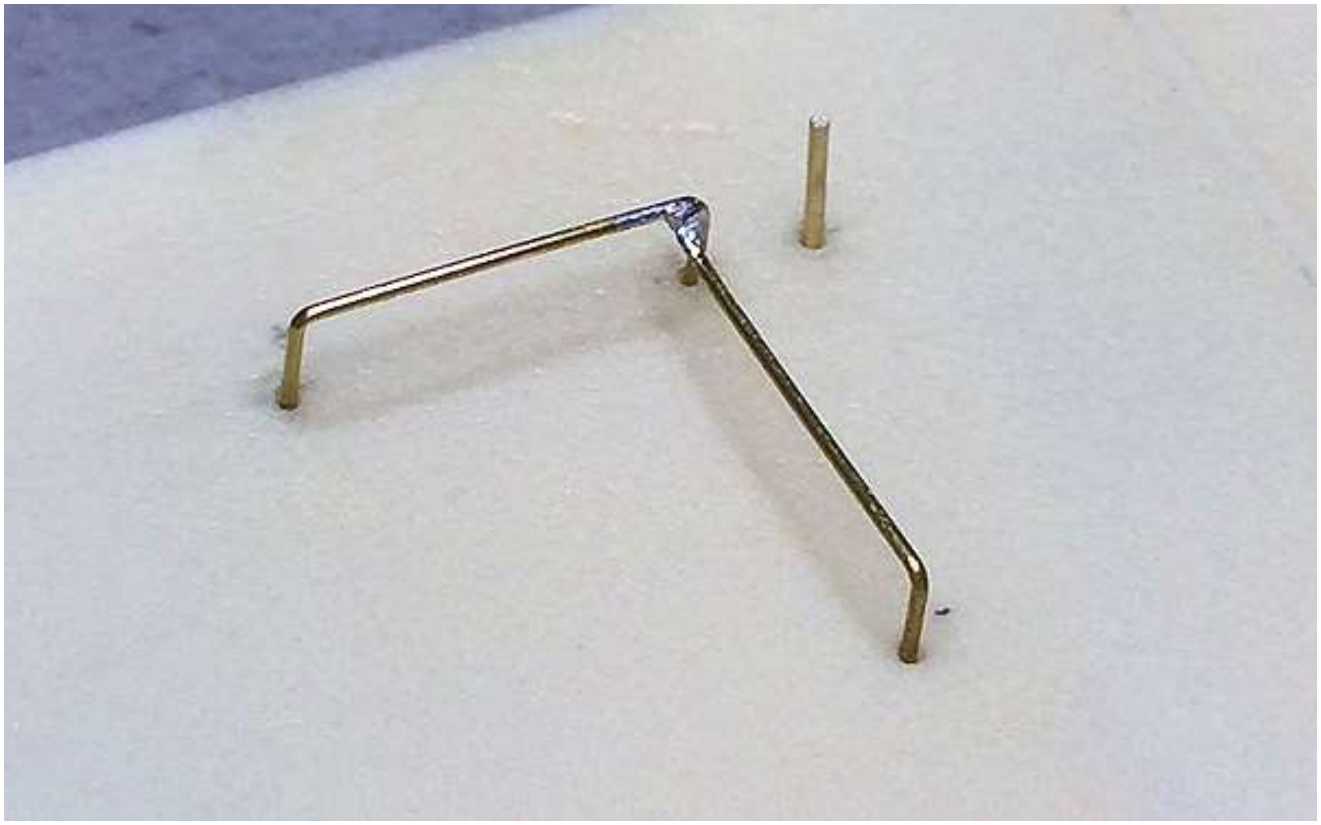
On the underside of the upper wing mark four points as shown on the following photograph.

Drill four holes of 0.5 mm diameter into, **but not through**, the underside of the upper wing.

Using 0.4 mm diameter Brass tube, such as ‘Albion Alloy’s’ MBT04 or similar, create the three way pipe to fit into the three pre-drilled holes.

Using 0.5 mm diameter Brass tube, such as ‘Albion Alloy’s’ MBT05 or similar, cut a short length to fit into the outer pre-drilled hole.

NOTE: *Do not secure these into the wing at this stage.*

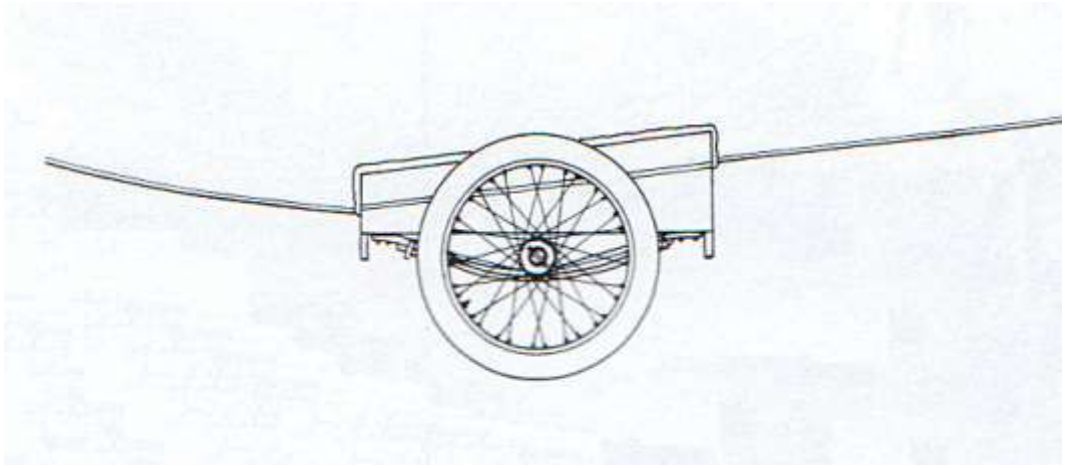


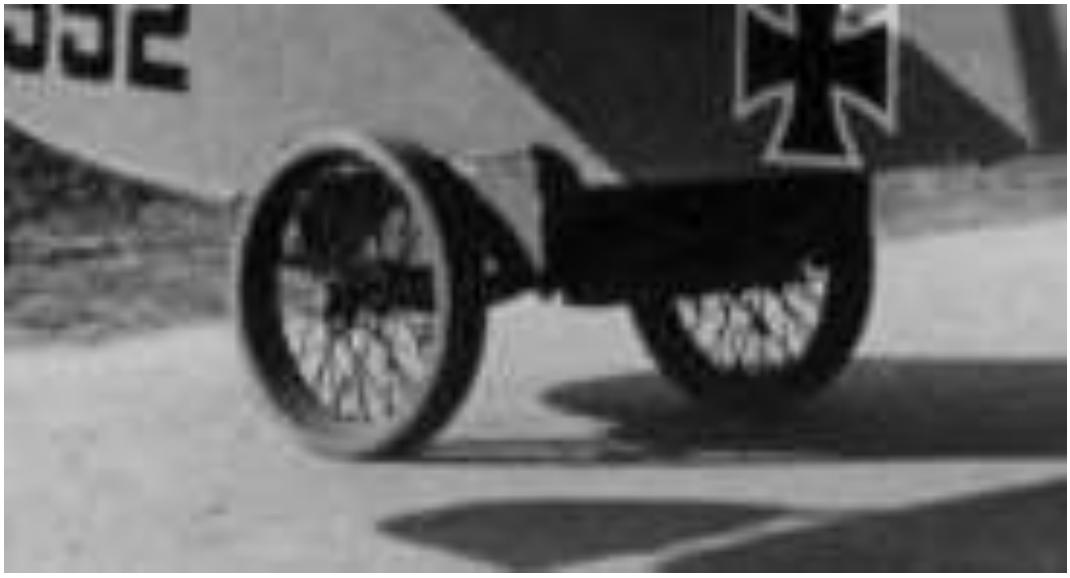
PART 11
ACCESSORIES

PART 11 - ACCESSORIES

NOTE: *The model is to be displayed on a beaching trolley with the rear of the fuselage supported on a trestle. Neither of these are supplied as part of the model kit, so will need to be created.*

Beaching trolley:





Preparation:

From 0.8 mm plastic card, cut a rectangle of 31 mm x 27 mm (base).

From 0.8 mm plastic card, cut a rectangle of 10 mm by 27 mm (rear panel).

From 0.8 mm plastic card, cut a rectangle of 8 mm by 27 mm (front panel).

From 0.8 mm plastic card, cut two side panels 31 mm long with one end 10 mm wide (front) and the other 12 mm wide (rear).

Cut the wheels of the 'Kellerkind' Tail Skid Trolley (54/077) set from their mould blocks and remove any resin flash or residue.

Run a 1.8 mm diameter drill through the hub holes to clear any resin artifacts.

Cut a 36 mm length of 1.8 mm Brass tube, such as 'Albion Alloy's' (MBT18) or similar (axle).

Cut a length of 0.5 mm Brass rod, such as 'Albion Alloy's' or similar, and anneal the rod over a flame to soften the Brass (axle loops).

Construction:

Cement the two side panels onto the top of the 31 mm long edges of the base. The straight edge of the panels are cemented to the base with the ends matching in height.

Cement the front panel across the base and the 8 mm heigh end of the side panels, with 3 mm extended down from the bottom of the base.

Cement the rear panel across the base and the 10 mm heigh end of the side panels, with 3 mm extended down from the bottom of the base.

Sand the edges of the assembly to blend the various panels and remove any joint seams.

Lay the axle tube across the middle of the underside of the base and pencil mark its outline.

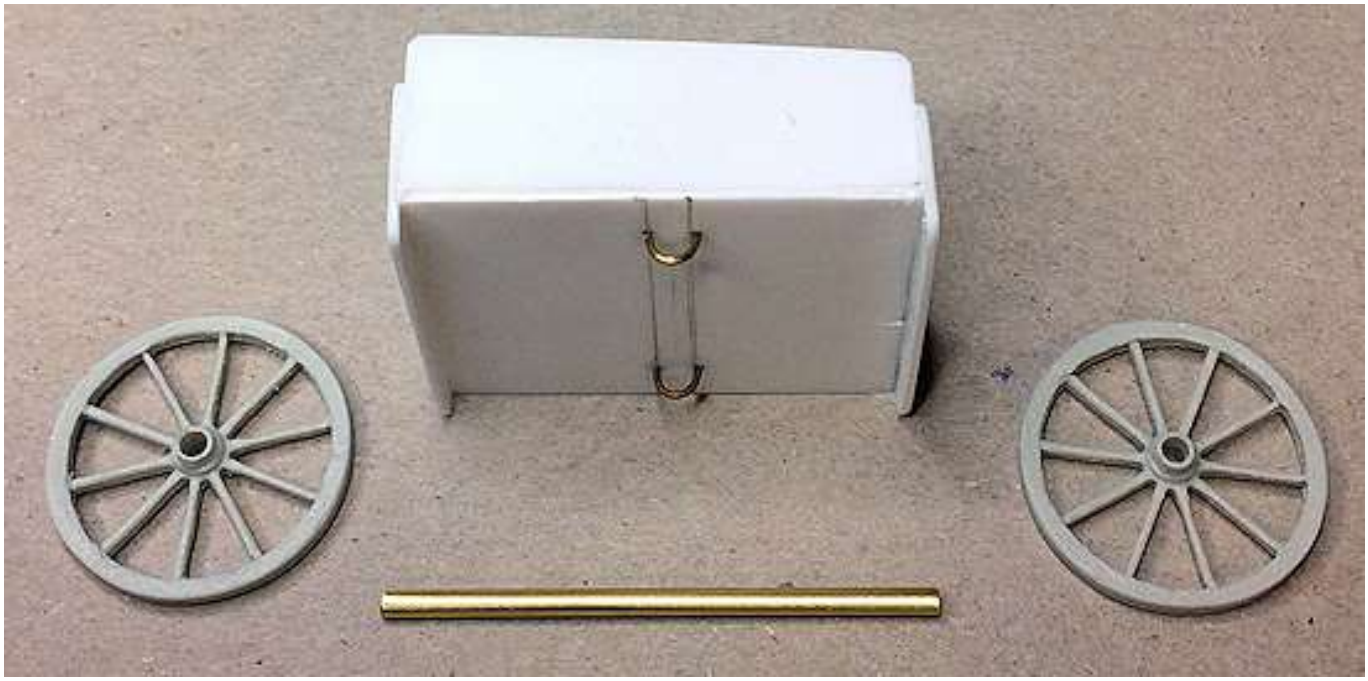
Bend the annealed 0.5 mm diameter rod over a 2.0 mm diameter former the cut to form two ‘U’ shapes.

Point mark both axle lines 5 mm in from the edge of the base.

Using the point marks as guides, drill holes of 0.6 mm diameter through the base.

Insert the ’U’ tubes into the holes then slide the axle through the ’U’ tubes.

Hold the axle and ’U’ tubes against the underside of the base and then apply thin CA adhesive around the ends of the ’U’ tubes from inside the base.



Cut six strips 1.5 mm wide from 0.2 mm thick plastic card .

Bend one end of a strip to 90 degrees and cement it to the axle side of the front panel and aligned to the edge of the base.

Once the cement has set, push the other end of the strip down and against the axle side of the rear panel.

Cut away the excess strip flush to the edge of rear panel.

Cement the strip to the end panel.

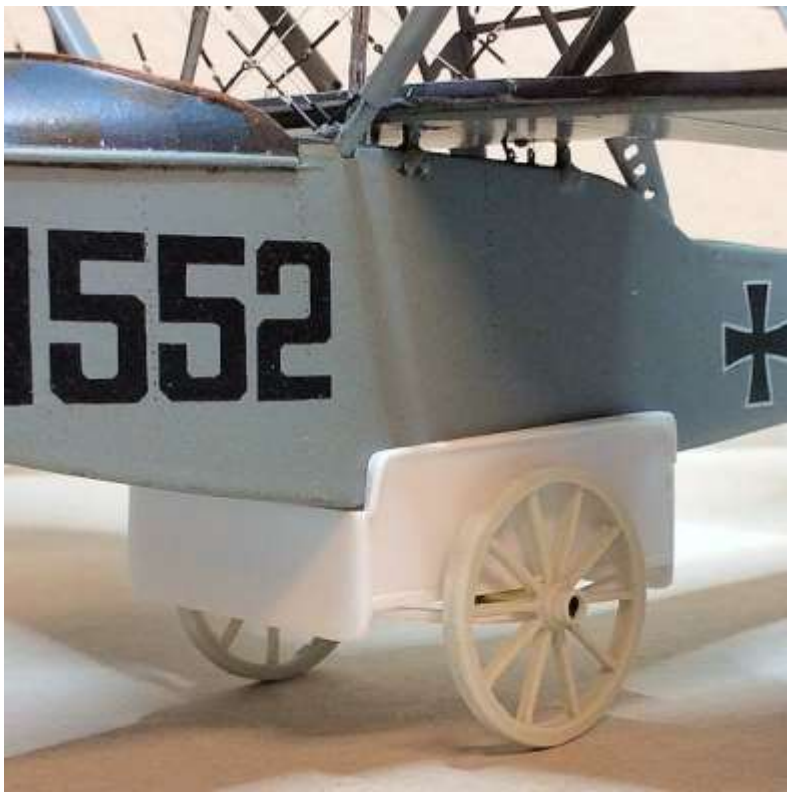
Repeat the procedure to two more strip onto the first strip, to represent the three leaf suspension springs.

Repeat the procedure to add three leaf springs to the other side of the base.

Remove the axle.

Using thin CA adhesive, start at one end of a side panel at the top of the end panel and secure a length of 0.5 mm diameter plastic rod, such as that from ’Plastruct’ styrene rod or similar, up and along the outer edge of the side panel and down to the top of the other end panel. This represents the edge of the trolley padding.

Repeat the procedure on the other side of the trolley.

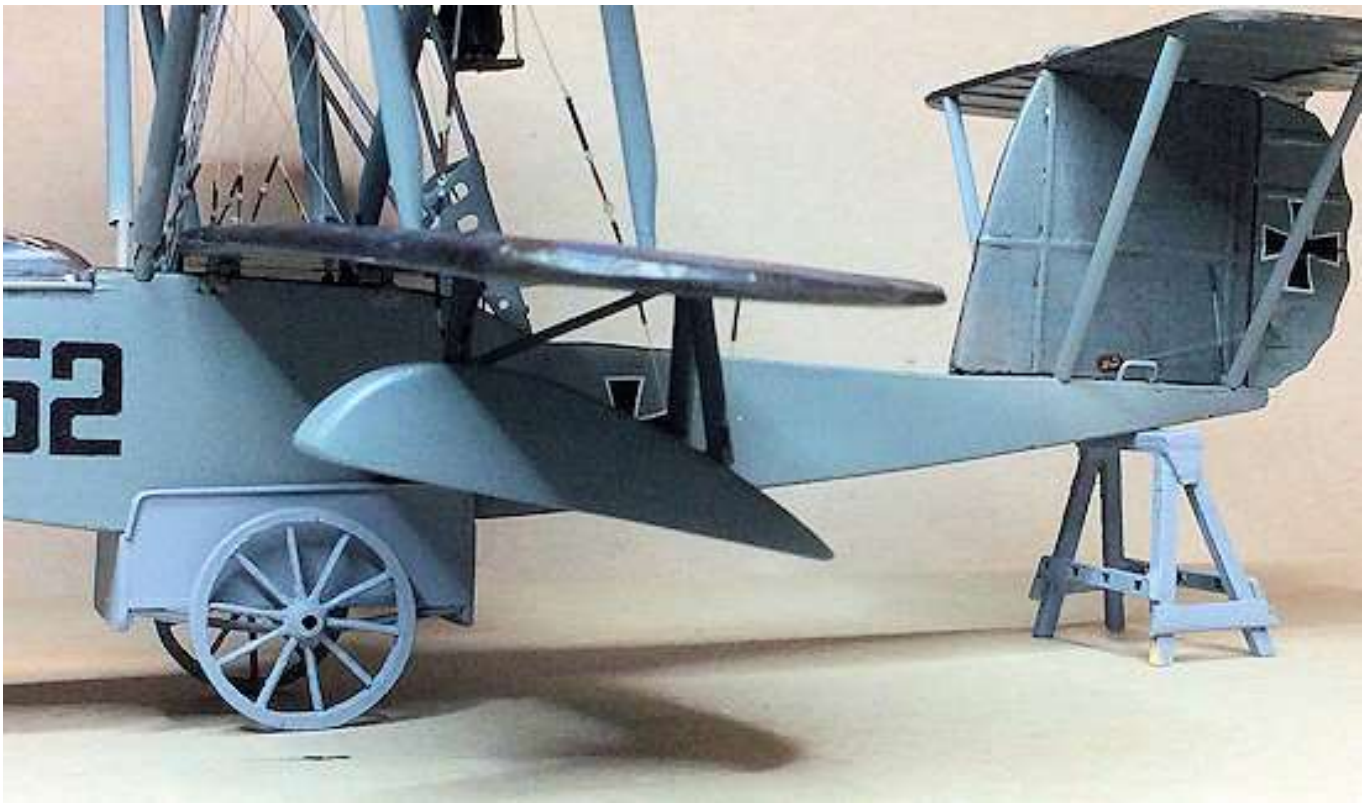


Tail trestle:

Construction:

Using plastic 3 mm square section and 0.8 mm thick plastic card, from such as ‘PlusModel’ refer to the photograph to construct the tail trestle. I used thin balsa wood.

The tail trestle should be tall enough that when the aircraft is in its beaching trolley and the fuselage is resting on the trestle, the top, rear of the fuselage should be horizontal.



Painting:

Airbrush the beaching trolley assembly, wheels and tail trestle with a grey primer, such as ‘AK Interactive’ Grey (AK-758) or similar.

Airbrush the beaching trolley assembly, wheels and tail trestle with ‘Tamiya’ Deck Tan (XF78) or similar.

Refer to Part 3 (Weathering) of this build log. I applied ‘DecoArt’ Burnt Umber.

Brush paint the rims and centre hubs of the two beaching trolley wheels and both of the three leaf suspension springs with ‘Mr. Colour’ Iron (212) or similar.

Brush paint the padding rim around the top of the trolley side panels with ‘Humbrol’ Leather (62) or similar.

Beaching trolley - assembly:

Using thin CA adhesive, secure one wheel (centre hub outwards) onto the end of the axle. Make sure the outside of the hub is flush with the axle tube.

Pass the axle under the suspension springs and through the two ‘U’ supports.

Using thin CA adhesive, secure the remaining wheel (centre hub outwards) onto the end of the axle. Make sure the outside of the hub is flush with the axle tube.

Finish:

Airbrush the beaching trolley assembly and tail trestle with a semi-matte clear coat, such as ’Alclad’ Light Sheen (ALC-311), ’Tamiya’ Semi-Gloss (X35) or similar.

PART 12
CONSTRUCTION

PART 12 - CONSTRUCTION

NOTE: ***As this model is resin, CA adhesive must be used to secure parts together.***

Rigging points:

NOTE: *Before assembly of the model is started, it's best to prepare all of the rigging anchor points required, especially those that will be inaccessible when parts are assembled. Refer to Part 6 (Rigging) of this build log for information on the different rigging required and their locations on the aircraft.*

Incidence wires:

Temporarily locate the four interplane struts into their location holes in the top surface of the lower wing.

Point mark 1.0 mm in front of the rear struts and behind the front stuts.

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

Repeat the procedure on the underside of the upper wing.

Wing bracing wires:

Temporarily locate the four interplane struts into their location holes in the underside of the upper wing.

Point mark 1.0 mm in front of the two rear struts and behind the two front stuts.

Using the point marks as guides, drill holes of 0.4 mm diameter into, **but not through**, the upper wing.

Fuselage anchor points:

Temporarily locate the lower wing onto the fuselage.

Point mark the fuselage top surface centrally and at both ends of the two rear wing slots.

Point mark the fuselage top surface centrally and at the inboard end of the front wing slots.

Using the point marks as guides, drill holes of 0.4 mm diameter into the fuselage.

Point mark the fuselage top surface forward from the locating holes for the engine support frame and inboard from the locating hole for the diagonal wing support strut.

Using the point marks as guides, drill holes of 0.4 mm diameter into the fuselage.

Point mark the top of the fuselage rear, 1.0 mm inboard from the locating holes for the fin rear support struts.

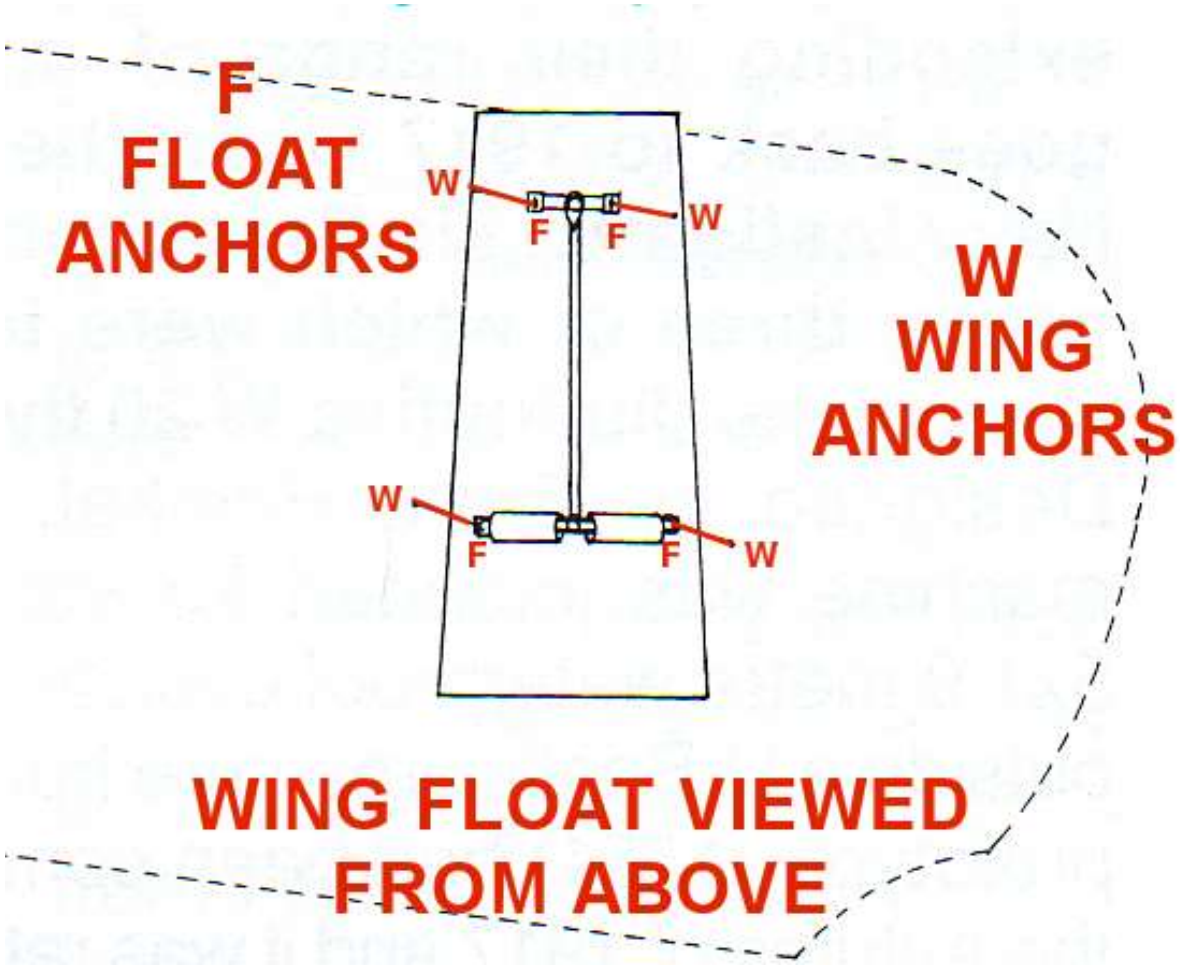
Using the point marks as guides, drill holes of 0.3 mm diameter into the fuselage.

Ailerons:

At the aileron control cable outlet ports on both sides of the upper wing, drill a locating hole of 0.3 mm diameter at a shallow angle into, **but not through**, the wing. The angle drilled should allow the cables to align with the ends of the aileron control horns.

Wing floats:

Refer to the following illustration of the wing floats as viewed from above the lower wing.



NOTE: *The anchor points in the wing are aligned to the wing leading and trailing edges.*

Drill two holes of 0.3 mm diameter into, **but not through**, the underside of the lower wing and aligned with the sides of the wing float.

Drill two holes of 0.3 mm diameter into the wing float at either side of the front support strut of the wing float.

Drill two holes of 0.3 mm diameter into, **but not through**, the underside of the lower wing and outboard from the rear sides of the wing float.

Drill two holes of 0.3 mm diameter into the wing float outboard from the rear support struts.

Secure a 'GasPatch' **1:48th** scale 'Anchor Point' into each of drilled holes, using thin CA adhesive.

Fin:

At the rudder control cable outlet ports on both sides of the fin, drill a locating hole of 0.3 mm diameter at a shallow angle into, **but not through**, the fin. The angle drilled should allow the cables to align with the ends of the rudder control horns.

Temporarily fit the fin, tailplane and its rear support struts.

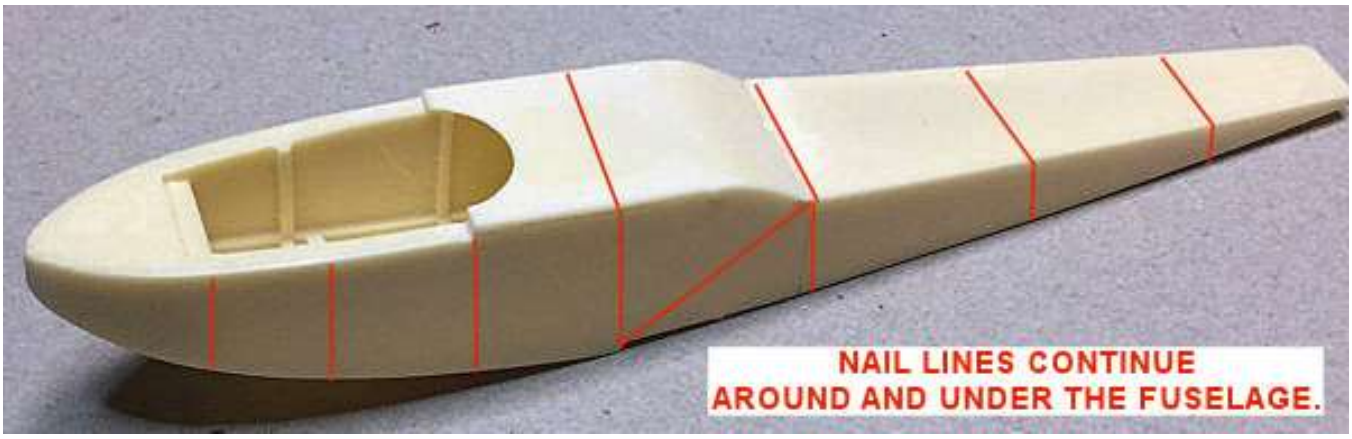
Drill a hole of 0.3 mm diameter through the fin, half way up the fin and aligned with the rear fin support struts when fitted.

Drill a hole of 0.3 mm diameter into the fuselage inboard from the rear strut locating hole.

Nail lines:

NOTE: *It is difficult to ascertain where, if at all, the panels of wood covering the fuselage, were secured to the internal structure. The wood used was possibly marine grade plywood and nailed onto the outer edges of the fuselage frames. As such I have marked the nail lines in positions I think were probable.*

Using a 'Rosie the Riveter' tool (1.0 mm), I impressed nail lines at the locations shown on the following illustration.



Painting:

NOTE: *Before painting brass or photo-etch parts, the surfaces should be primed otherwise the applied paint will easily chip or flake off the surfaces.*

Brush 'Mr. Metal Primer R' over the engine support frame and all of the wing, tailplane and wing float stuts and allow to dry overnight.

Airbrush the inside of the cockpit, with a grey primer, such as 'AK Interactive' Grey (AK-758) or similar.

Airbrush the inside of the cockpit with 'Tamiya' Wooden Deck Tan (XF78) or similar.

Refer to Part 2 (Wood Effects) of this build log - I brushed 'DecoArt Crafters Acrylic' paint (Burnt Umber), including around the cockpit rim.

Once dry airbrush a semi-matte clear coat, such as 'Alclad' Light Sheen (ALC-311) or similar.

Mask off the cockpit.

Airbrush a grey primer, such as 'AK Interactive' Grey (AK-758) or similar over the fuselage, upper wing, lower wing, fin, rudder, tailplane, elevators, ailerons and wing floats.

Check primed surfaces for any imperfections, such as 'blow' holes and blemishes. If any are found and are shallow, brush 'Mr. Surfacer' 1000 over the areas and once dry, sand smooth to blend with the surrounding areas.

NOTE: *Although portrayed as being light blue, the 'Windsock' World War Centenary (Spring 2015, Vol.31, No.1) states that the non-lozenge areas of the aircraft were more likely to be the standard light sea grey.*

Airbrush a base coat of 'Tamiya' Dark Sea Grey (XF54) or similar over the fuselage, upper wing, lower wing, fin, rudder, tailplane, elevators, ailerons, wing floats and engine support frame.

Make sure the painted surfaces are smooth and free of imperfections. If necessary lightly polish the surfaces to achieve a smooth finish.

Airbrush a light coat of ‘Tamiya’ Medium Sea Grey 2 (XF83) or similar over the fuselage, upper wing, lower wing, fin, rudder, tailplane, elevators, ailerons, wing floats and engine support frame.

Airbrush a gloss clear coat, such as ‘Alclad’ Aqua Gloss 600 or ’Tamiya’ clear gloss (X22) or similar over the fuselage, upper wing, lower wing, fin, rudder, tailplane, elevators and ailerons.

Brush paint the added nose padding with ‘Humbrol’ Leather (62) with ‘Tamiya’ Hull Red (XF9).

Brush paint the added aileron control access panels (on the underside of the upper wing) and the four mounting points on the top of the fuselage for the lower wing with ‘Mr. Colour’ Stainless Steel (213) or similar.

Brush paint the filler cap on the upper wing fuel tank with ‘Mr. Colour’ Brass (219) or similar.

Brush paint the added control cable outlet ports on the fin (rudder cable ports) and the underside of the upper wing with ‘Humbrol’ Leather (62) or similar.

Decals:

NOTE: *Refer to Part 4 (Decals) for more information on applying decals. The lozenge decals supplied in the kit are replaced by the ‘Aviattic’ linen effect Lozenge (ATT32113) and the linen weave effect (ATT32236).The fuselage sides and bottom are covered in marine plywood so have no decals applied, apart from the serial number and cross.*

Tips:

You can add PVA adhesive (white glue) to the decal water to help adhesion on the decals to the model.

Make sure the surfaces are smooth and gloss coated.

Lay the part on the back of the decal sheets and trace their outline in pencil, then cut to shape. Make sure the correct side of the parts are traced, otherwise you’ll cut a reversed decal.

Cut shape templates from paper for those areas where part outlining is not possible, then use the templates to trace the decal shape.

To conform decal around raised detail or corners, use decal solvent, such as ‘MicroScale’ MicroSol or similar. Stubborn decal can be conformed using ‘Tamiya’ X20A acrylic thinners, but use sparingly and do not touch after application.

I use lint free cotton gloves to smooth the decals onto the surface and remove residual water.

Leave any overhang of decal overnight to thoroughly dry, then carefully cut or sand away the overhang.

Linen weave effect:

The surfaces to have the linen weave effect (ATT32236) decals applied are:

Underside of upper wing
Underside of lower wing
Underside of the ailerons
Underside of the elevators
Underside of the tailplane
Both sides of the rudder
Both sides of the fin.

Linen effect lozenge:

The surfaces to have the linen effect lozenge (ATT32113) decals applied are:

Top of upper wing
Top of lower wing
Top of the ailerons
Top of the elevators
Top of the tailplane.

Kit decals:

NOTE: *The decals supplied are of reasonable quality but are not the normal, 'cookie' cut slide transfer. Instead the decals are printed on sheets and the normal carrier film does not cover decals on the sheets. Therefore each decal will need to be carefully cut out from its sheet before application to the model. Also the surface of these decals are easily damaged, such as from being scratched. Great care is needed handling these decals.*
The instrument panel decal was not used and appropriate instruments from the 'Airscale' Generic WW1 instruments (AS32 WW1) were used instead.

Apply the kit supplied decals to the upper wings and ailerons. The decals need to be cut across the gap between the trailing edge of the wing and the ailerons.

Apply the kit supplied decals to the fuselage sides, underside of the lower wings and the rudder.

Sealing decals:

Once all of the decals have been applied and are fully dry and set, airbrush a semi-matte clear coat over all of the decaled areas, using such as 'Alclad' Light Sheen (ALC-311) or 'Tamiya' Semi-Gloss (X35) or similar.

Weathering decals:

NOTE: *Unlike land based operational aircraft, this aircraft was a prototype seaplane and therefore would not have been as heavily weathered. Therefore some dark weathering was applied to highlight recesses and nail heads, but the main weathering was applied using a lighter colour to represent salt water weathering. Refer to Part 3 (Weathering) for more information on applying weathering effects.*

Apply 'Flory Models' Dark Dirt and Grey fine clay washes.

Once the desired weathering effect has been achieved, seal the weathering by airbrushing a semi-matte clear coat, using such as 'Alclad' Light Sheen (ALC-311) or 'Tamiya' Semi-Gloss (X35) or similar.

Apply by brush 'AK Interactive' Kerosene wash (AK2039) behind the fuel filler on the top of the upper wing.

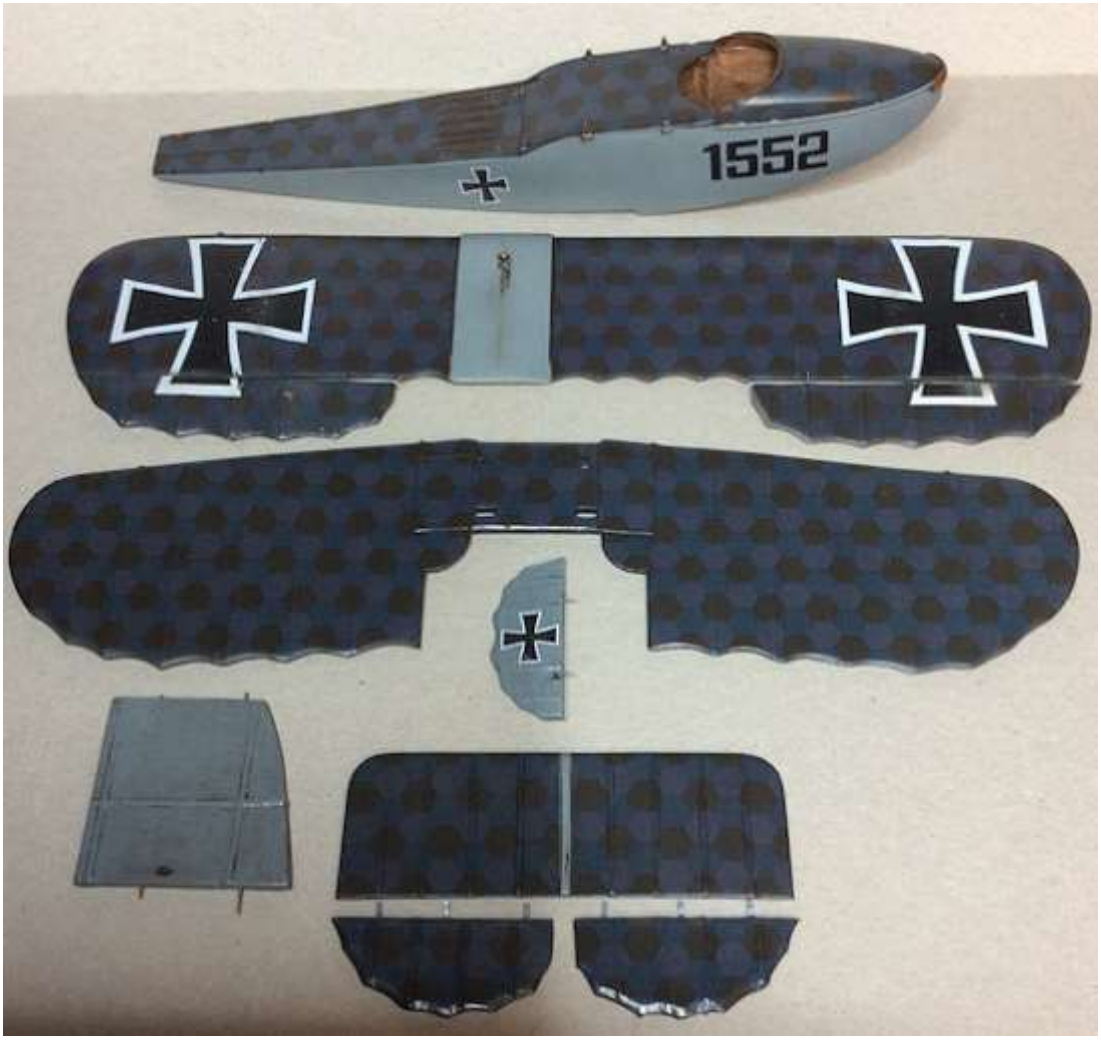
Instrument bezels:

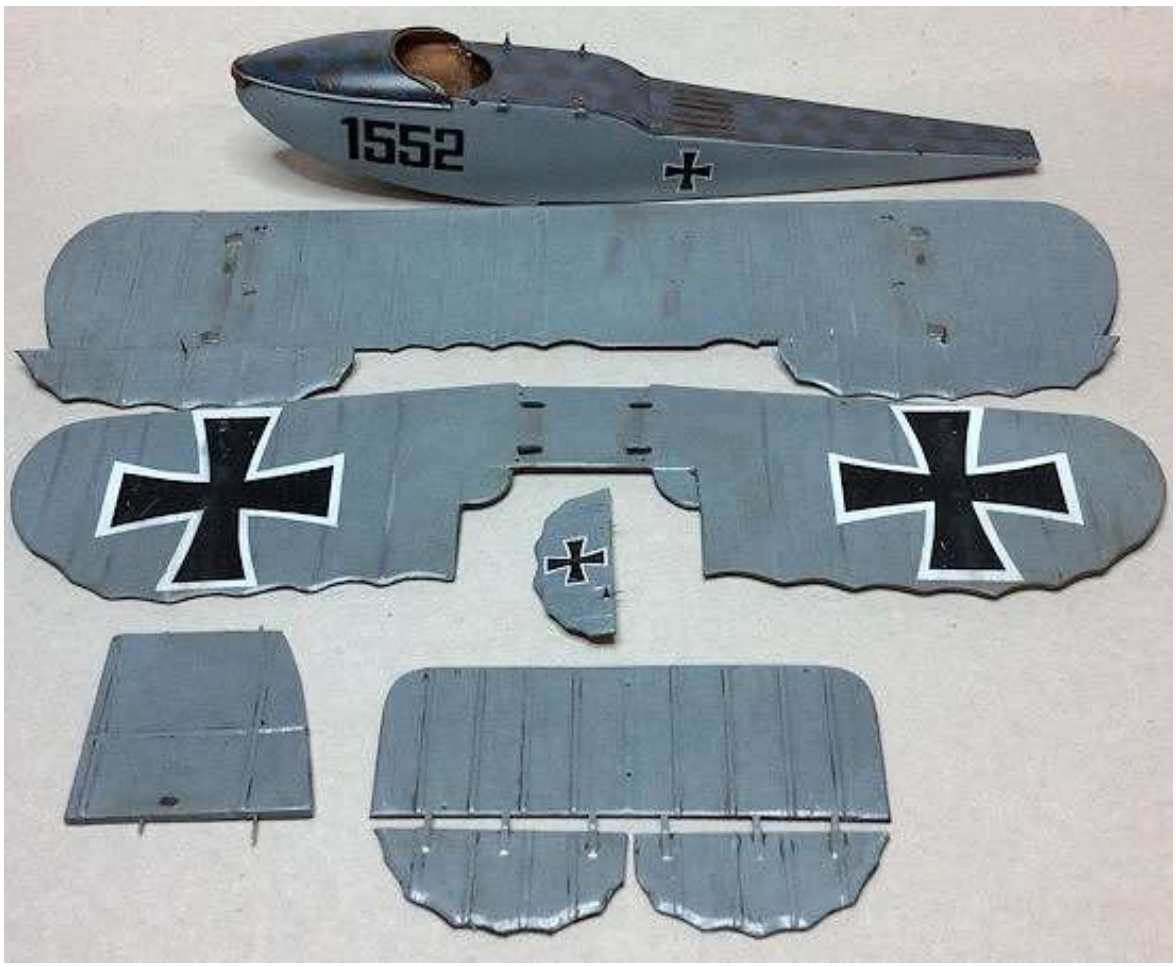
Apply appropriate instruments from the 'Airscale' Generic WW1 instruments (AS32 WW1) to the instrument panel, using 'MicroScale' Krystal Micro Clear or PVA adhesive (White glue).

Hand pump:

Brush paint the body of the cockpit hand pump with Brass, such as 'Mr. Colour' Brass (219) or similar and the handle with 'Tamiya' Hull Red (XF9) or similar.

Secure the hand pump onto the right side of the cockpit and party under the instrument panel, using CA adhesive.


1552


1552

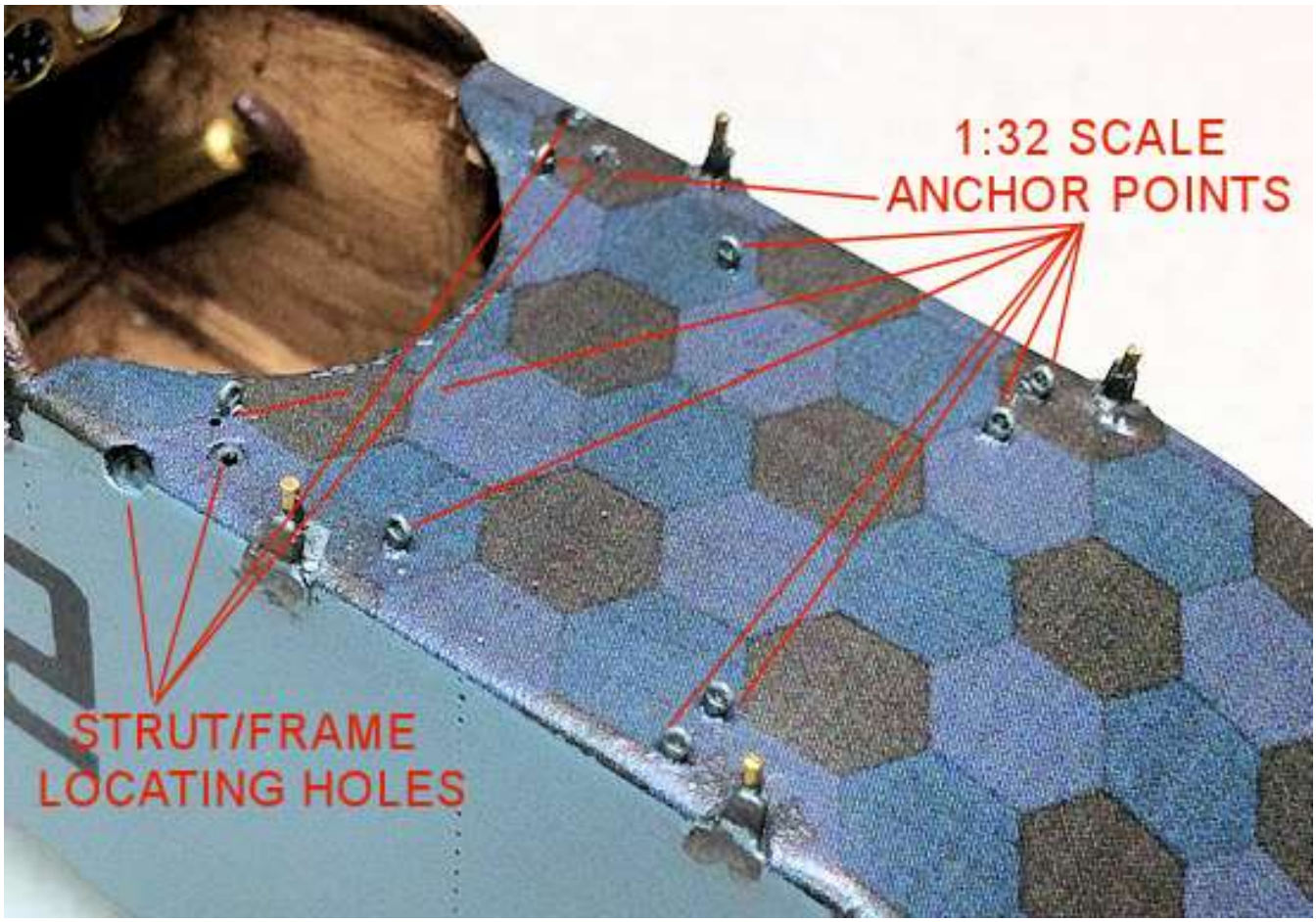
Rigging anchors - fit:

NOTE: *Fit the relevant scale of 'GasPatch' anchor points into the pre-drilled holes as detailed.*

Fuselage anchor points:

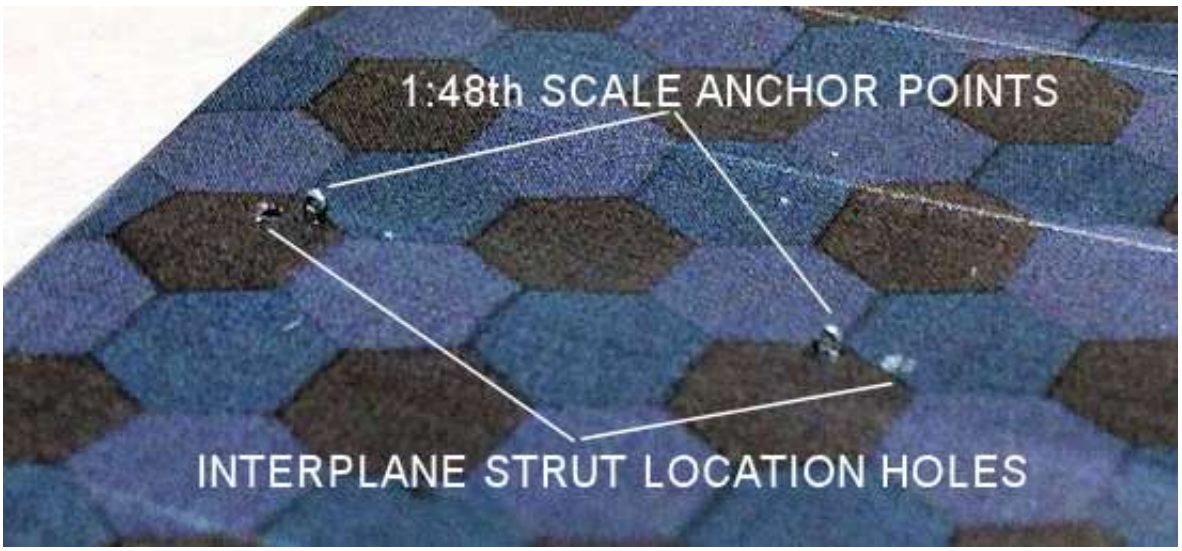
At the wing slot location on the fuselage, secure a 'GasPatch' **1:32nd** scale 'Anchor Point' into each hole, using thin CA adhesive.

At the fuselage top surface forward from the locating holes for the engine support frame, secure a 'GasPatch' **1:32nd** scale 'Anchor Point' into each hole, using thin CA adhesive.



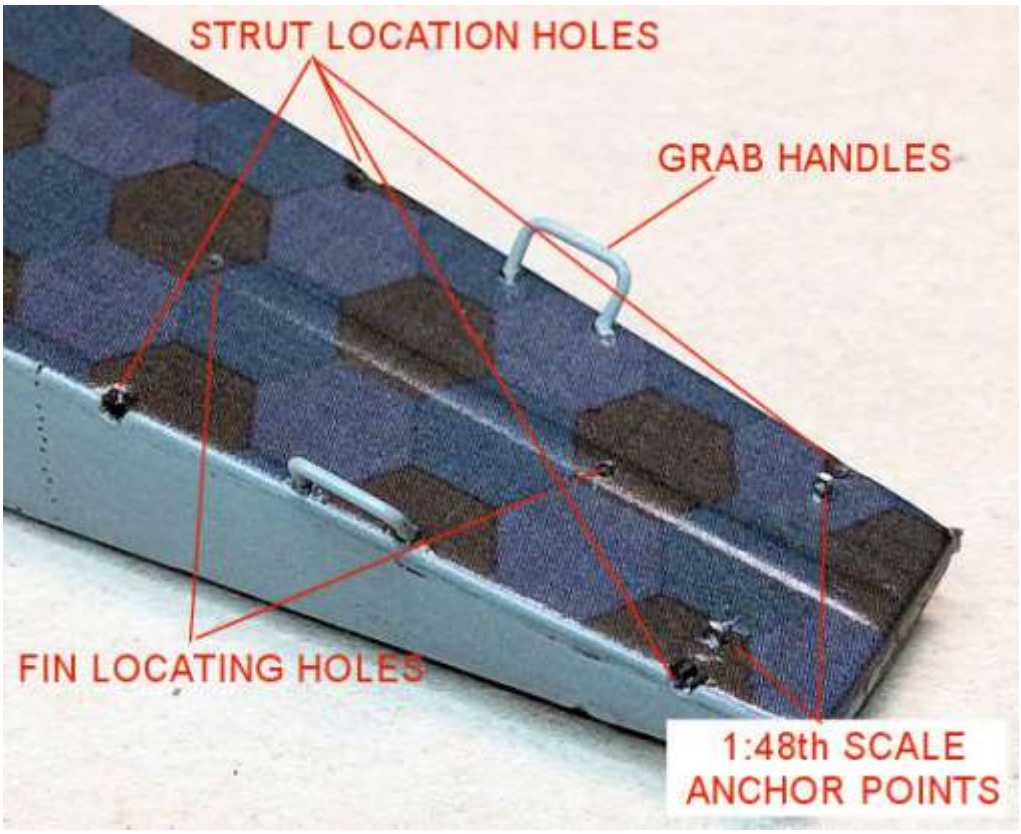
Incidence wires:

On the underside of the upper wing and top surface of the lower wings, secure a 'GasPatch' **1:48th** scale 'Anchor Point' into each hole, using thin CA adhesive.



Fin:

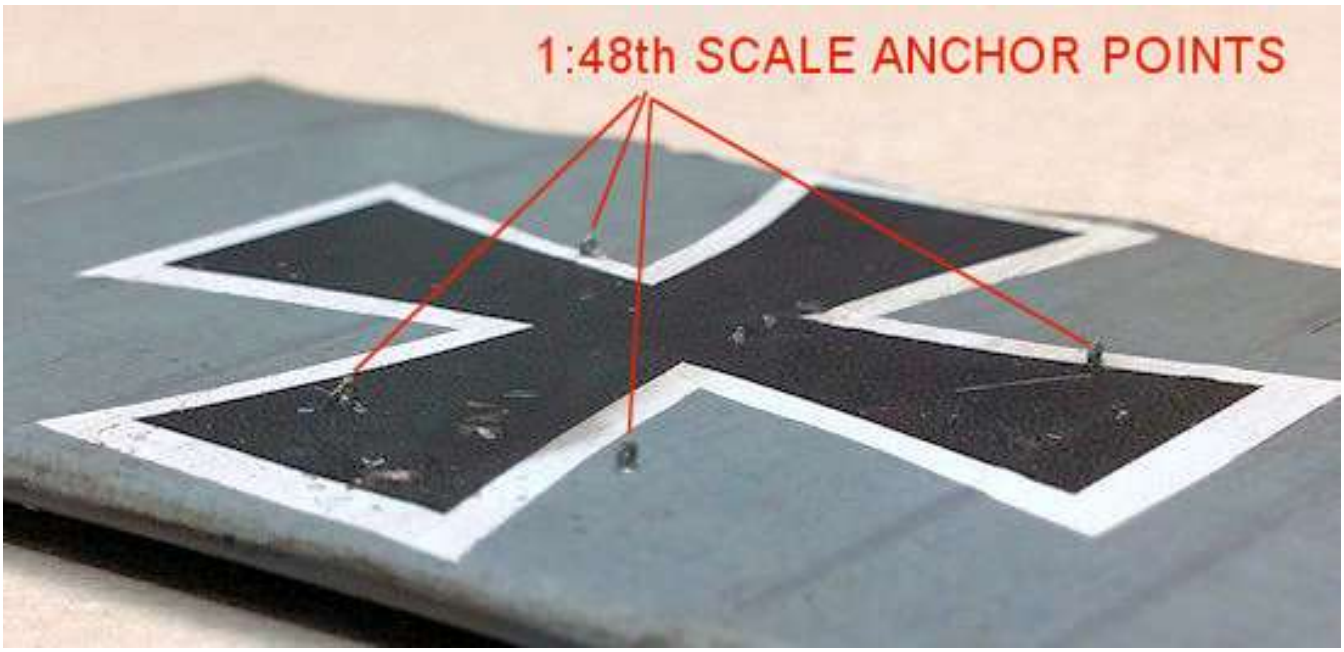
At the fuselage inboard from the rear strut locating hole, secure a ‘GasPatch’ **1:48th** scale ‘Anchor Point’ into the two fuselage holes, using thin CA adhesive.

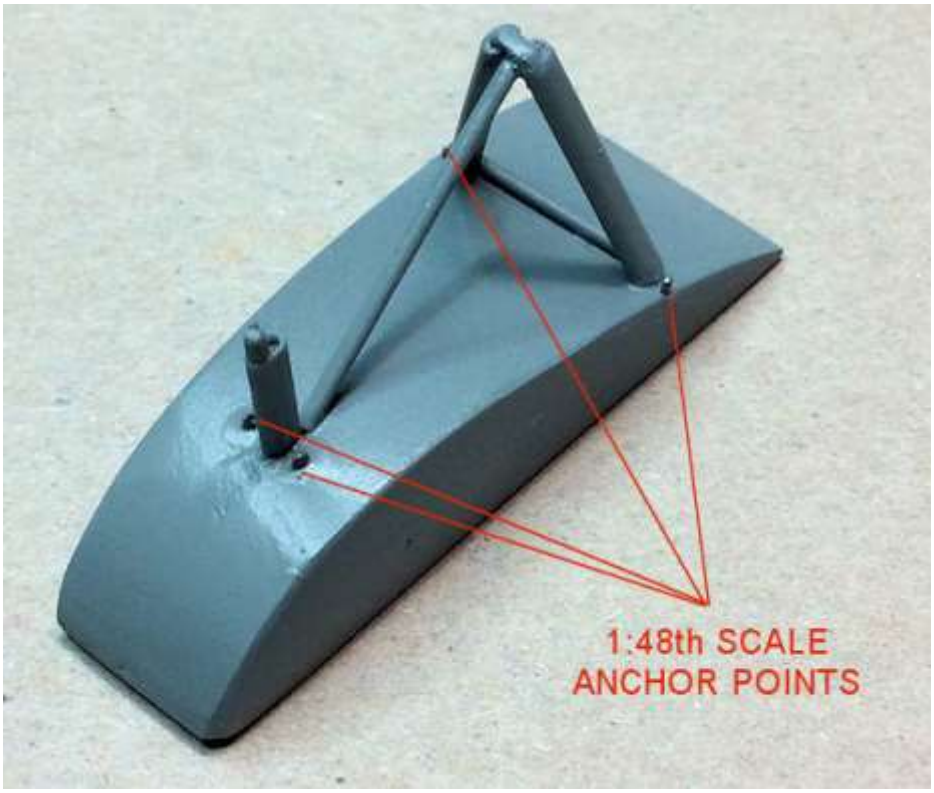


Wing floats:

At the underside of the lower wing, secure a ‘GasPatch’ **1:48th** scale ‘Anchor Point’ into each of drilled holes, using thin CA adhesive.

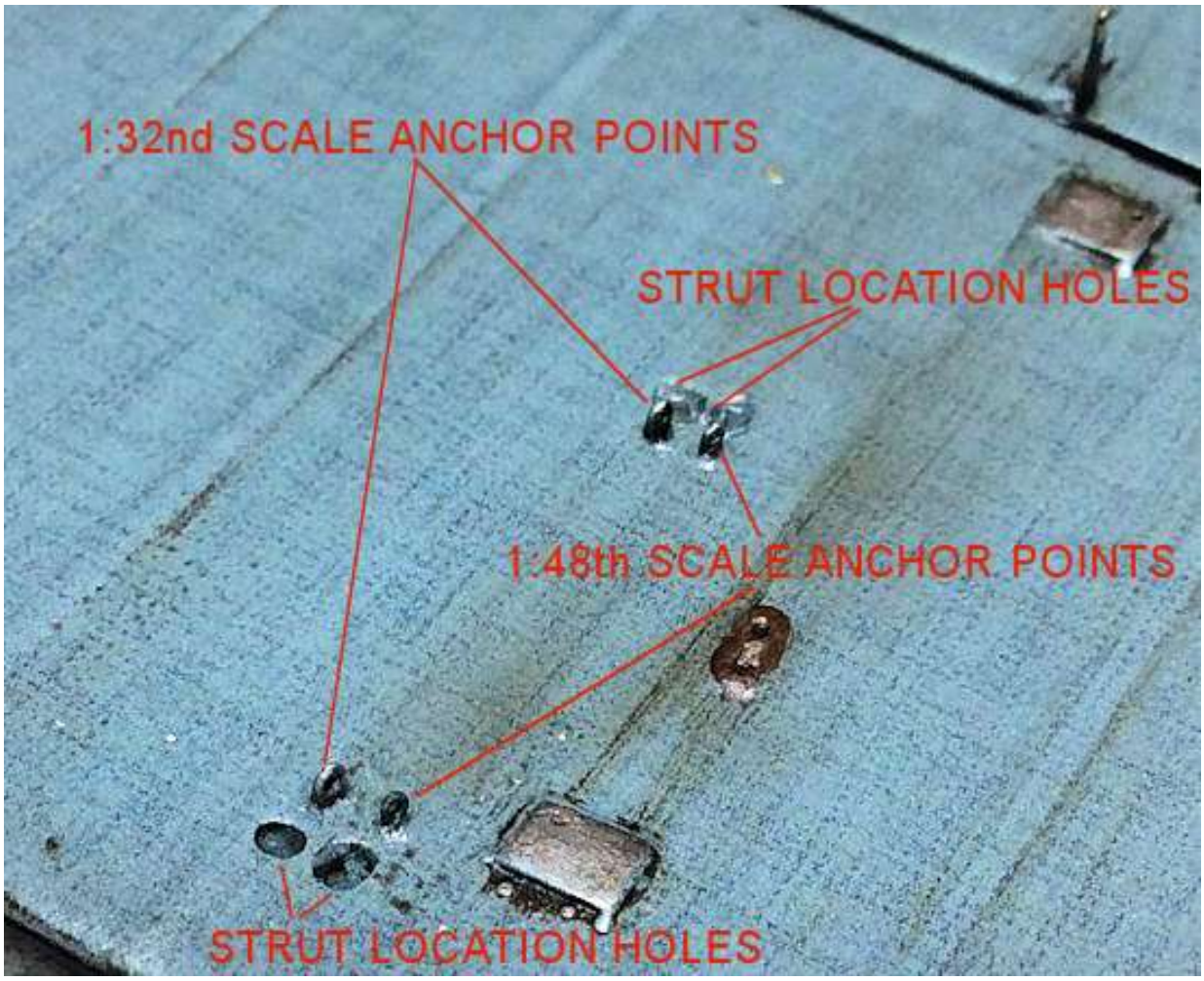
At the wing floats, secure a ‘GasPatch’ **1:48th** scale ‘Anchor Point’ into each of drilled holes, using thin CA adhesive.





Wing bracing wires:

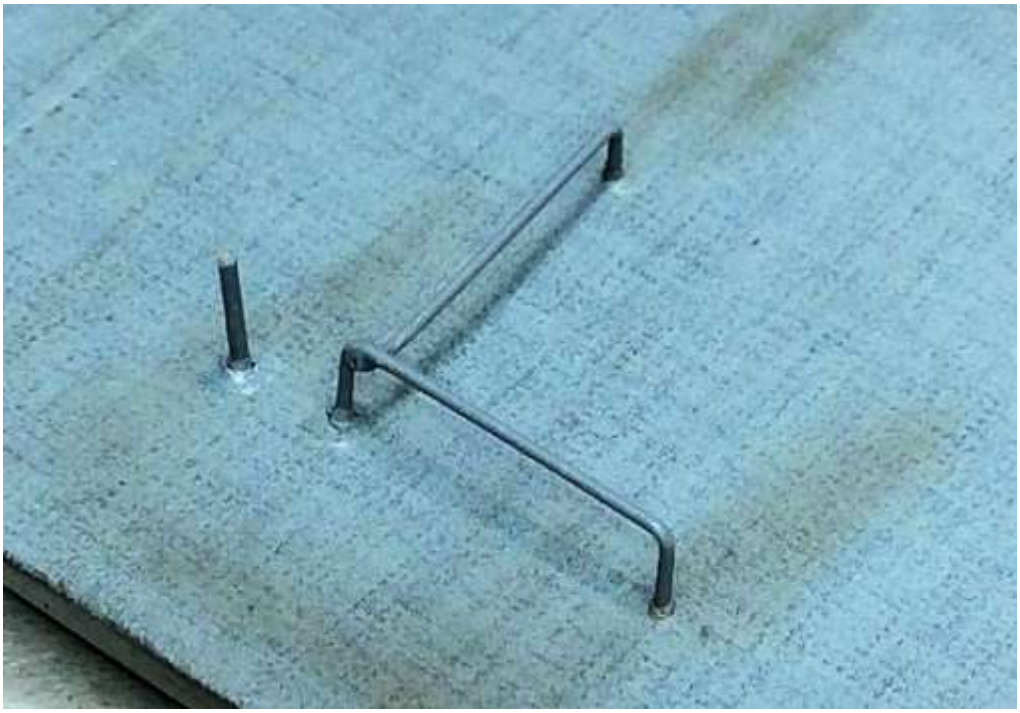
At the underside of the upper wing, secure a ‘GasPatch’ **1:32nd** scale ‘Anchor Point’ into each hole, using thin CA adhesive.



Wing fuel tank pipes:

Secure the created fuel pipes into their pre-drilled holes in the underside of the upper wing, using thin CA adhesive.

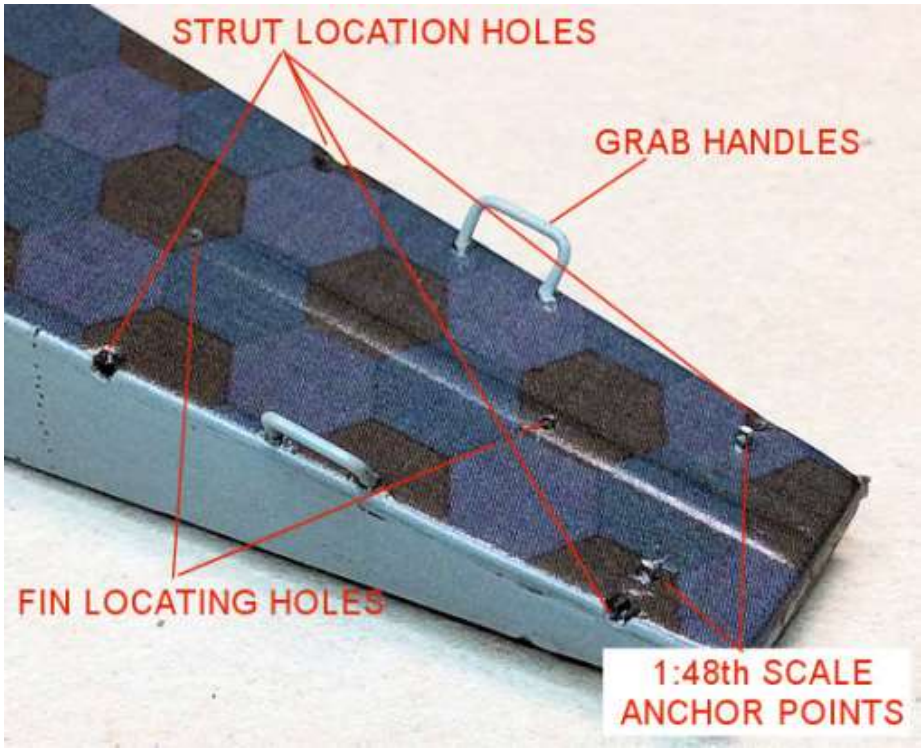
Brush paint ‘Tamiya’ Medium Sea Grey 2 (XF83) or similar over the fuel pipes.



Grab handles:

Secure the two created grab handles into their pre-drilled holes in the top edge of the rear of the fuselage, using thin CA adhesive.

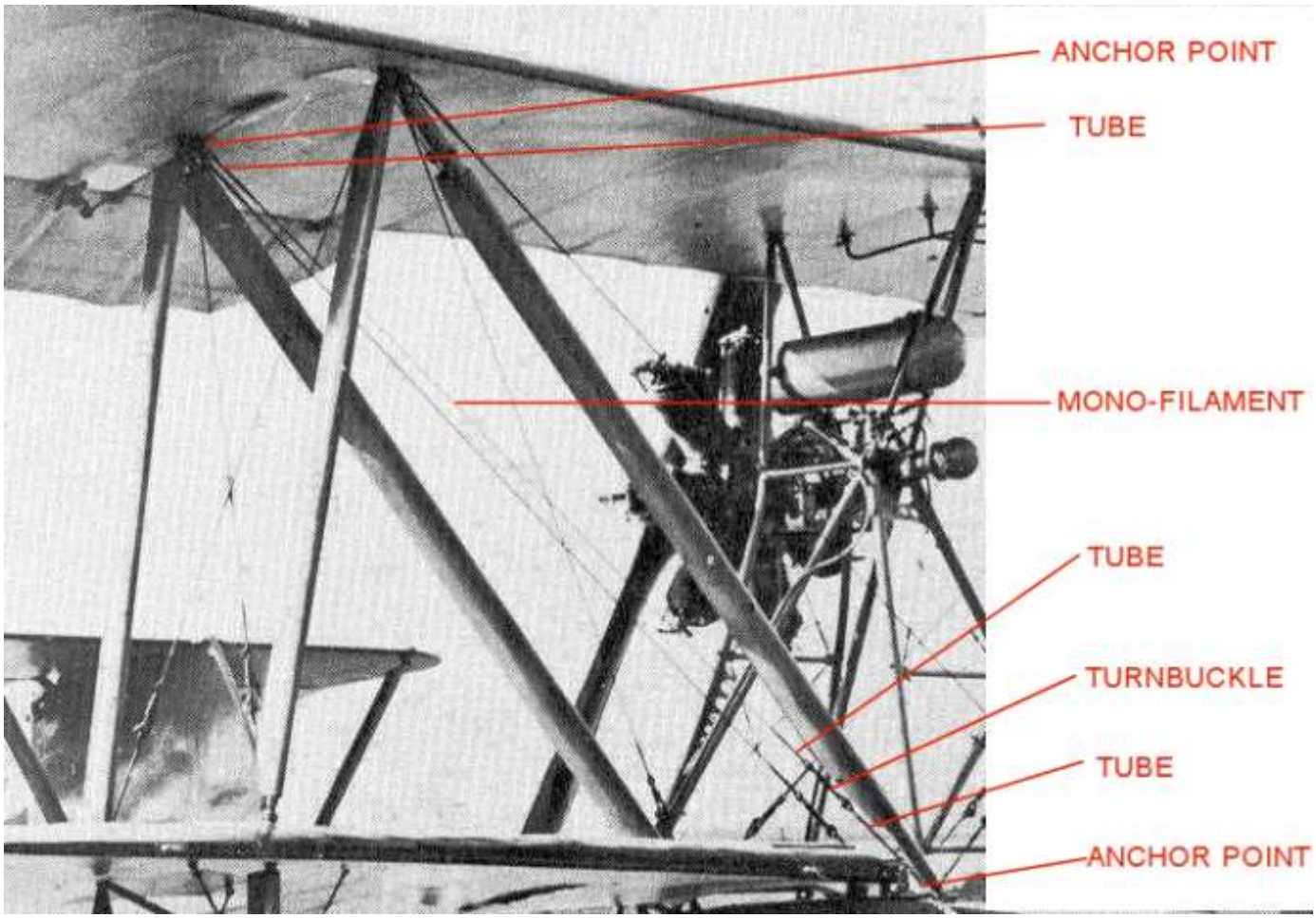
Brush paint ‘Tamiya’ Medium Sea Grey 2 (XF83) or similar over the grab handles.



Pre-rigging:

NOTE: *At this stage before construction of the model, it's best to pre-rig as much of the rigging and control lines as possible, as access will be limited once the various parts are assembled. The rigging is created using Brass micro-tube of 0.4 mm diameter from 'Albion Alloy's', chemically blackened with 'BlackenIt' solution. The turnbuckles used are the metal 1:48th Type C from 'GasPatch' with rigging wires (line) made from 'Steelon' or 'Stroft' 0.08 mm diameter mono-filament (fishing line), attached to the model using the 'Gaspatch' 1:48th or 1:32nd scale metal Anchor Points.*

Fuselage:



NOTE: *The following pre-rigging is carried out at the two anchor points forward from the engine support frame and under the forward slots of the lower wing.*

A length of 0.08 mm diameter line is passed through a blackened 0.4 mm diameter tube then through the 'eye' of one of the four anchor points, then back through the tube.

The other end of the line is passed through a blackened 0.4 mm diameter tube then through the 'eye' of a Type C turnbuckle, then back through the tube.

The two ends of the line are pulled to draw the tube between, **but not touching**, the 'eyes' of the anchor point and turnbuckle.

Apply thin CA adhesive to the line at the turnbuckle end of the tube.

Carefully cut away the two residual end 'tags' of line.

A long length of 0.08 mm diameter line is passed through a blackened 0.4 mm diameter tube, then through the other 'eye' of the turnbuckle, then back through the tube.

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

Apply thin CA adhesive to secure the line to the tube.

Carefully cut away the residual end ‘tag’ of the line at the tube.

Repeat the procedure to add a second line to the anchor point.

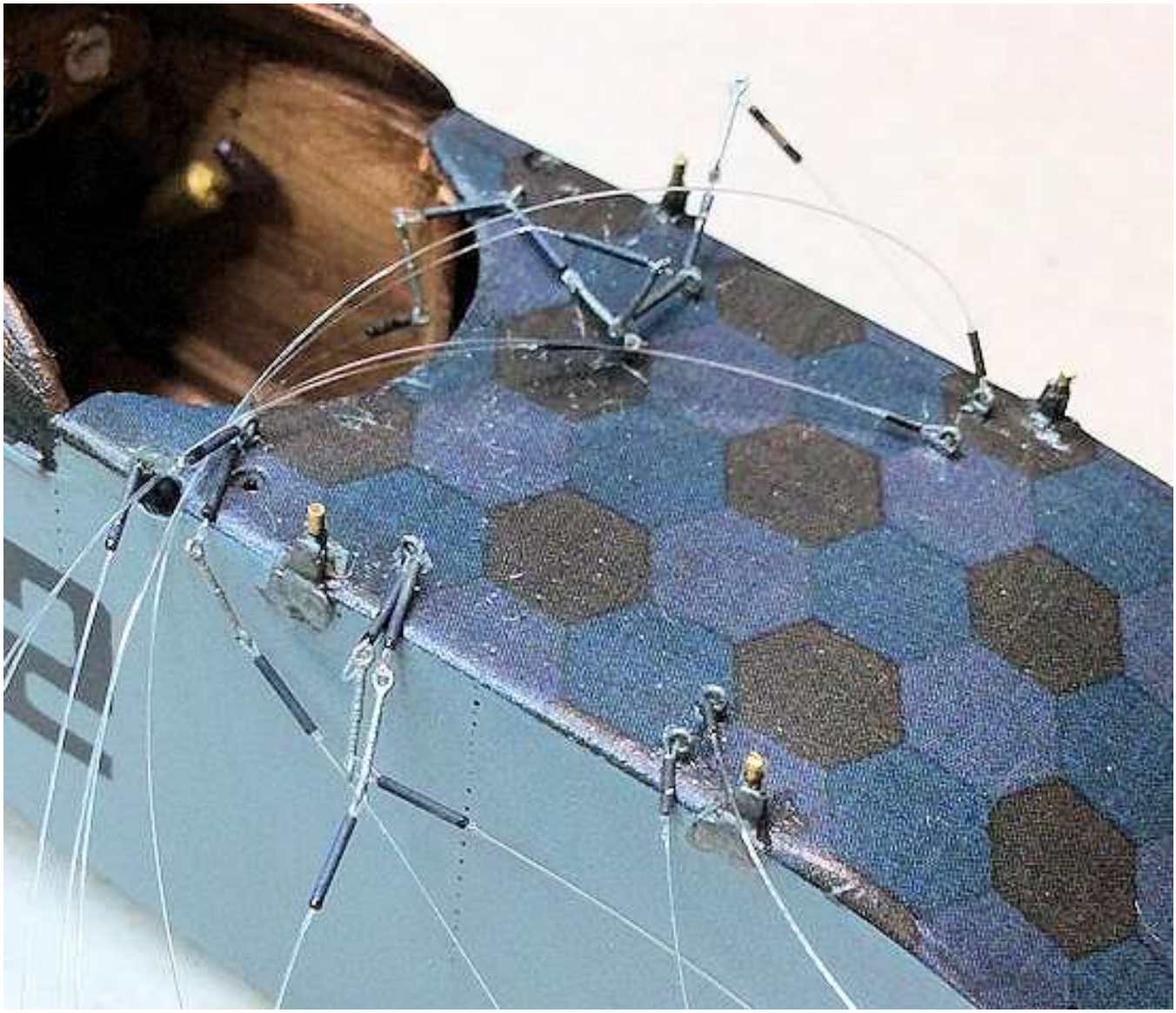
NOTE: *The following pre-rigging is carried out at the two anchor points under the rear slots of the lower wing.*

A long length of 0.08 mm diameter line is passed through a blackened 0.4 mm diameter tube, then through the ’eye’ of one of the four anchor points, then back through the tube.

Slide the tube up to, **but not touching**, the ’eye’ of the anchor point.

Apply thin CA adhesive to secure the line to the tube.

Carefully cut away the residual end ‘tag’ of the line at the tube.



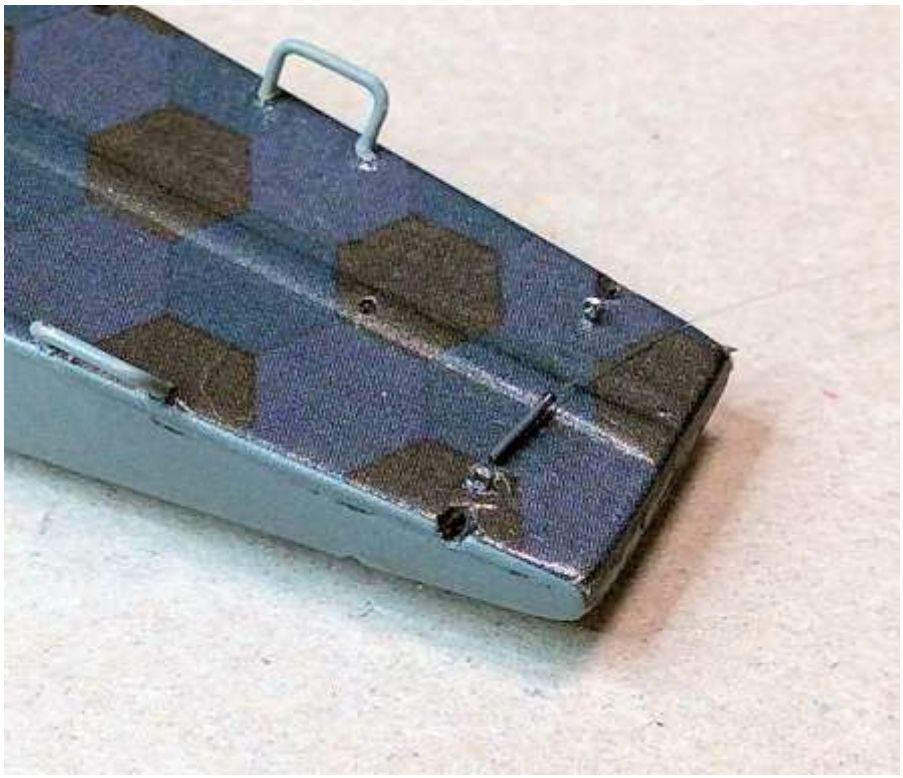
NOTE: *The following pre-rigging is carried out **at one** of the two anchor points at the rear of the fuselage.*

A long length of 0.08 mm diameter line is passed through a blackened 0.4 mm diameter tube, then through the ’eye’ of one of the two anchor points, then back through the tube.

Slide the tube up to, **but not touching**, the ’eye’ of the anchor point.

Apply thin CA adhesive to secure the line to the tube.

Carefully cut away the residual end ‘tag’ of the line at the tube.

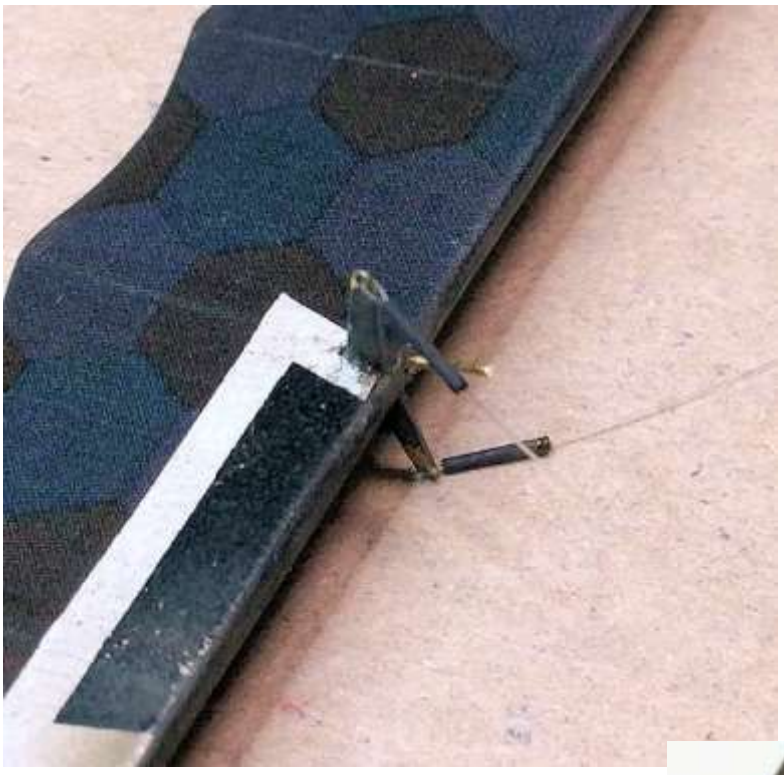


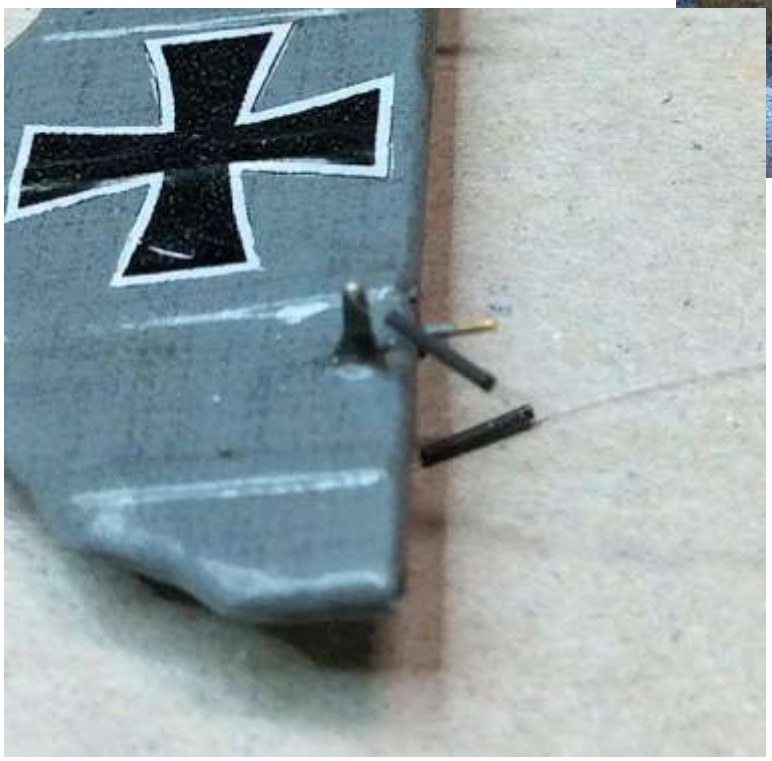
Wing floats:

Use the previous procedure to add a rigging line to the four anchor points on the two wing floats.

Rudder, elevators and ailerons:

Use the previous procedure to add a rigging line to the control horns of the rudder, elevators and ailerons.

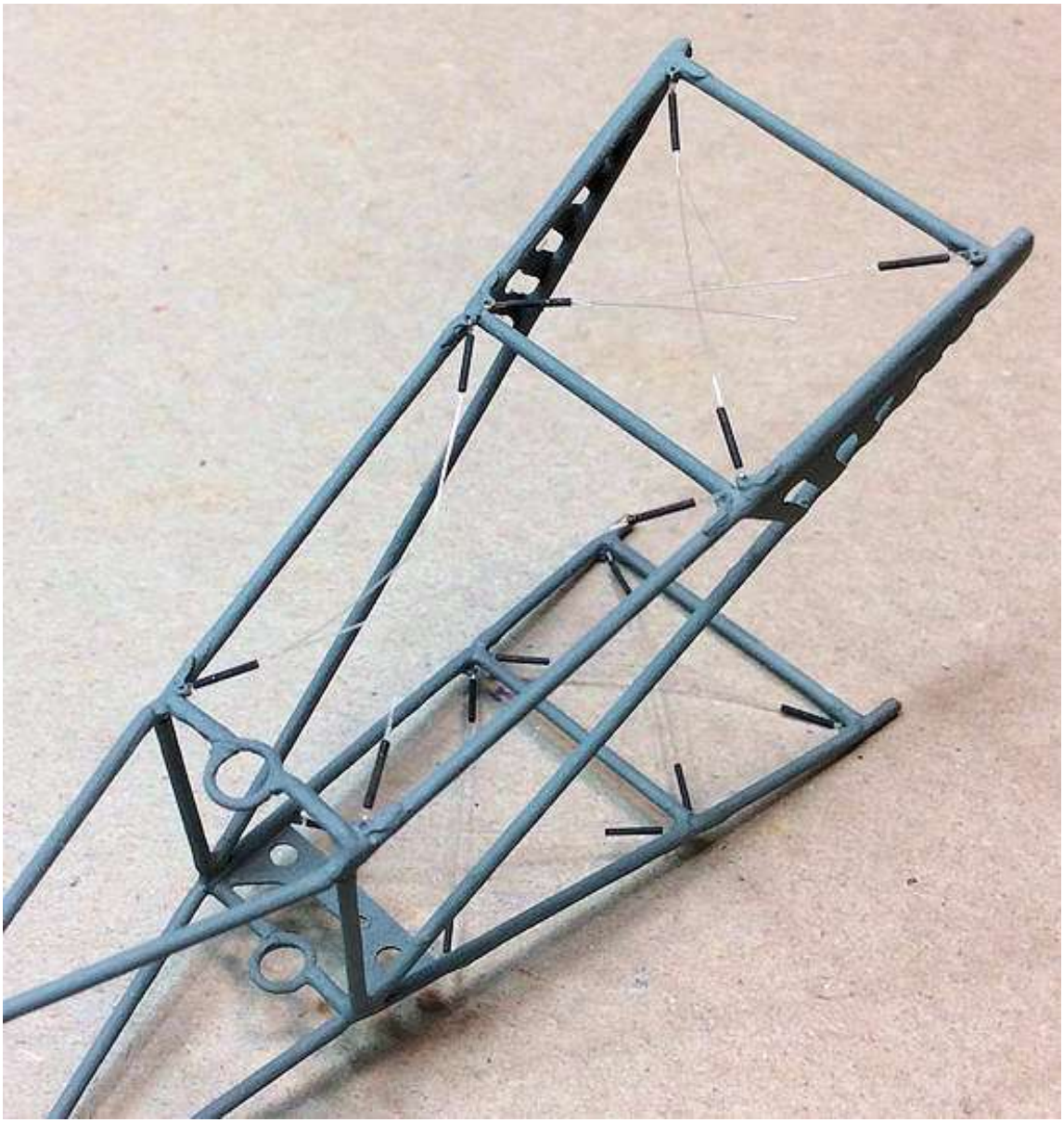




Engine support frame:

NOTE: *When pre-rigging the engine support frame, secure **only one end** of each line, leaving the other end loose. This allows the lines to be tightened and secured later in the build.*

Use the previous procedure to add a bracing across the upper and lower frames at the front and rear of the engine support frame.



Assembly:

Wing floats:

Clear the wing float location holes and rear struts grooves (created in the underside of the lower wing) of any decal and paint.

Secure the two wing floats into their locations on the lower wing.

Pass each wing float bracing line through a blackened 0.4 mm tube then the ’eye’ of its pre-fitted anchor point, then back through the tube.

Pull the line taut with the tube up to, **but not touching**, the anchor point and secure in position using thin CA adhesive.

Carefully cut away the residual end ‘tag’ of the line at the tube.

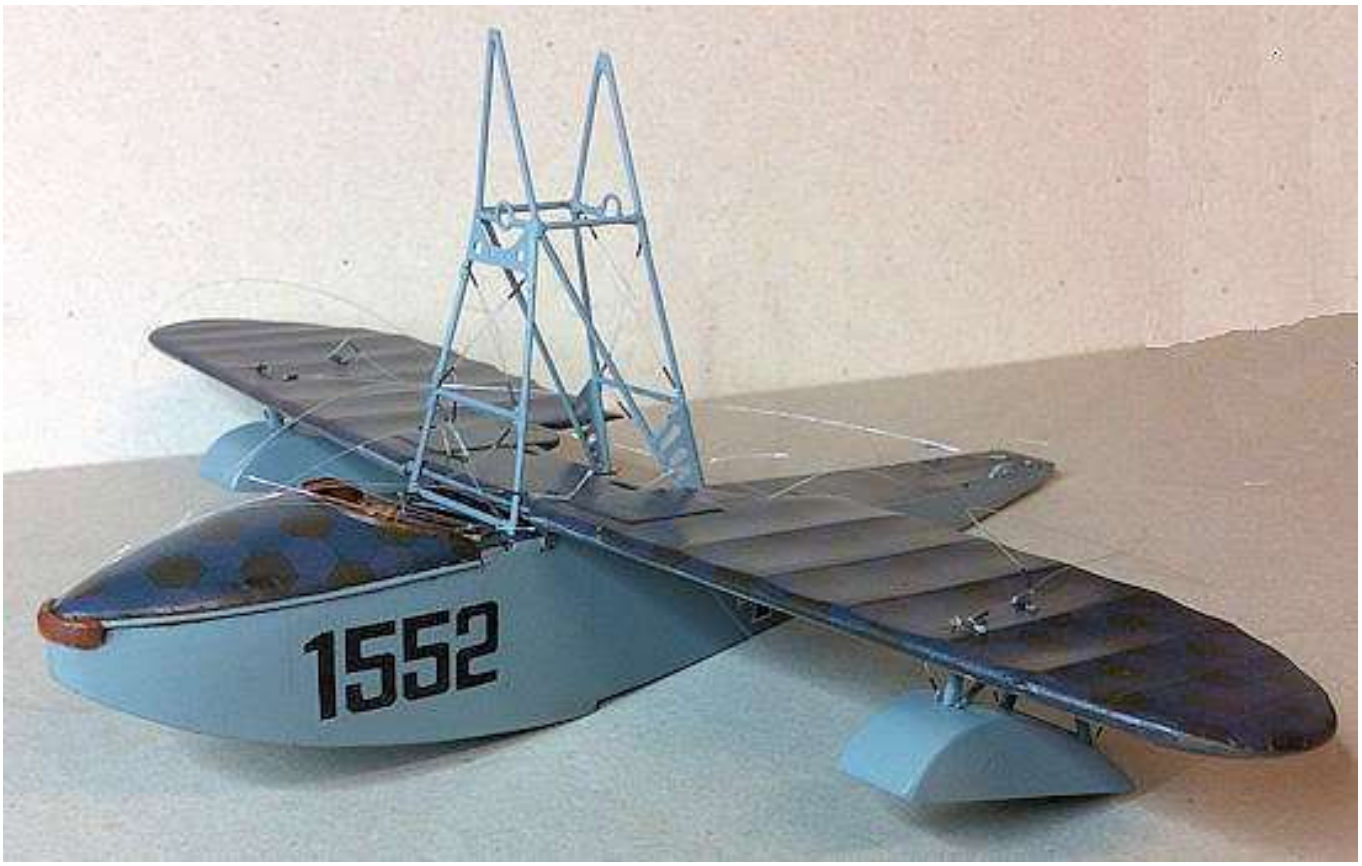
Lower wing:

Pass each pair of fuselage lines through their respective slot in the lower wing.

Carefully locate the lower wing onto its four location on the top of the fuselage.

Make sure the lines and turnbuckles are fully through the slots and not trapped under the wing.

Secure the lower wing to the four locations using thin CA adhesive.



Engine support frame:

Locate the engine support frame fully into its locations on the fuselage and secure in position using thin CA adhesive.

NOTE: *The following procedure should be carried out For each of the eight pre-rigged bracing lines on the engine support frame.*

Pull the loose end of the line taut with the tube up to, **but not touching**, its anchor on the frame.

Secure in position using thin CA adhesive.

Carefully cut away the residual end 'tag' of the line at the tube.

Engine assembly:

Locate the engine shaft through the rear then front 'hoops' of the engine support frame and secure in position using thin CA adhesive.

Locate the carburettor assembly into the front end of the engine shaft using thin CA adhesive.

Locate the oil pump in position at the right, rear of the engine support frame with CA adhesive.

Locate the HT Unit in position at the left, rear of the engine support frame with CA adhesive.

Locate the oil tank in position between the top of the frame 'V' struts, with the filler cap positioned on the top, front of the tank, using thin CA adhesive.

Oil pipes:

Using thin CA adhesive, attach two lengths of 0.3 mm diameter lead wire, such as that from 'PlusModel' or similar, up the front, right strut of the engine support frame, then back and down onto the two rods at the base of the oil pump. These represent the oil feed to the two oil 'pulse meters' in the cockpit, which indicated oil flow pressure to the engine.

Using thin CA adhesive, attach two lengths of 0.3 mm diameter lead wire as before, but up the front, left strut of the engine support frame, then across to the engine shaft, where the two wires should be bent at approximately 90 degrees onto the shaft. These represent the oil supply to the engine from the two oil 'pulse meters' in the cockpit.

Using thin CA adhesive, attach a length of 0.4 mm diameter lead wire, such as that from 'PlusModel' or similar, between the rear underside of the oil tank and the inlet connection on the oil pump.

HT lead:

Using thin CA adhesive, attach a length of 0.3 mm diameter lead wire, such as that from 'PlusModel' or similar, between the front connector on the HT Unit and the top, centre rear of the circular engine back plate. This represents the ignition supply from the HT Unit to the spark plug slip ring at the rear of the engine.

Carburettor control:

Using thin CA adhesive, attach the end of a length of 0.3 mm diameter lead wire, such as that from 'PlusModel' or similar, to a photo-etch 'lever', which I cut from a spare photo-etch turnbuckle.

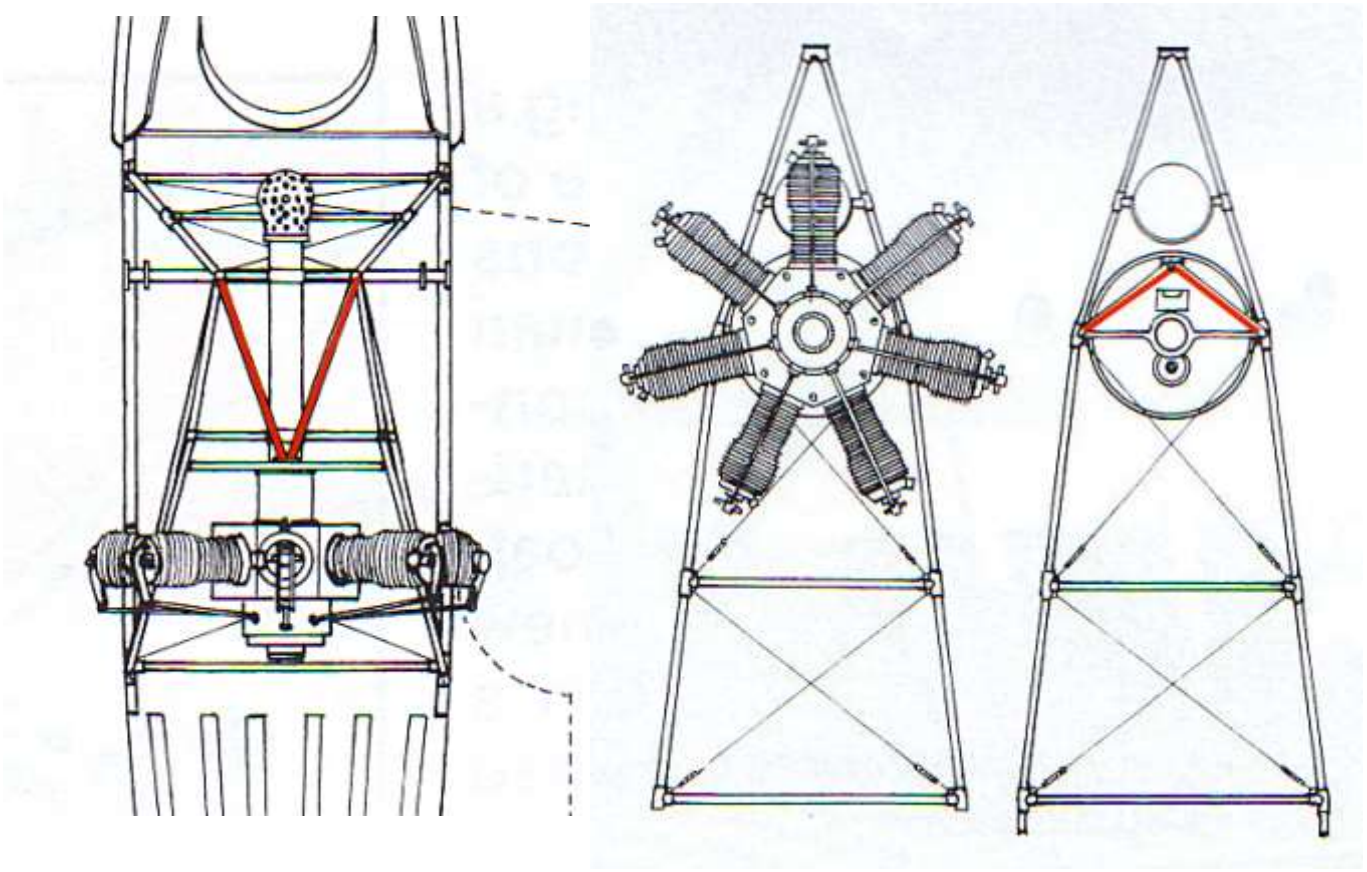
Secure the 'lever' to the top of the carburettor cylinder, which is on the air intake at the front of the engine shaft.

Pass the wire across to the forward, left strut of the engine support frame and then down to the top of the fuselage.

Secure the wire in position using thin CA adhesive.

Sway brace:

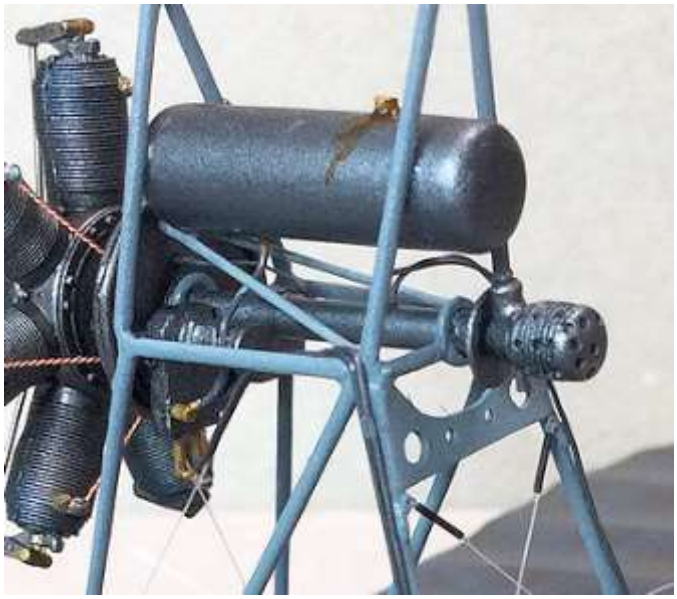
NOTE: *The upper portion of the engine support frame was fitted with a 'V' sway brace between the forward struts and the centre top of the engine circular back plate. This can only be fitted once the engine assembly and associated pipes etc have been fitted.*

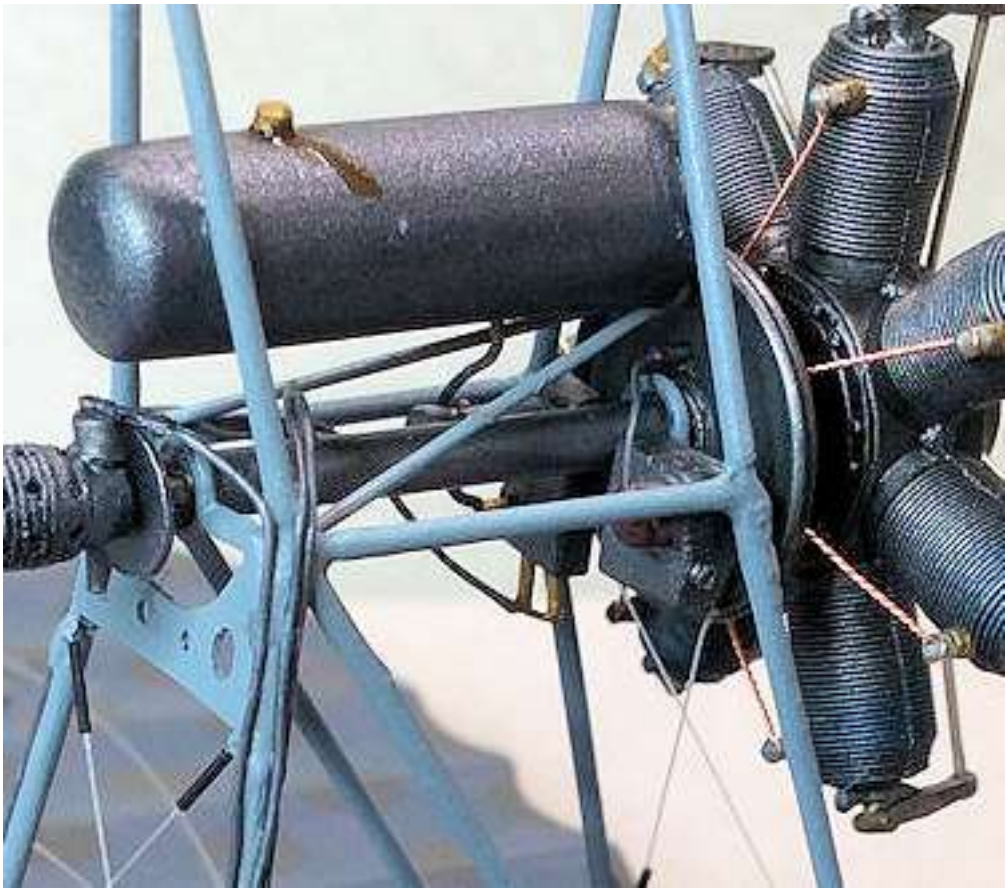


Cut two lengths of 0.5 mm diameter Brass tube, such as 'Albion Alloy's' (MBT05) or similar, long enough to span between the forward struts and the centre top of the engine circular back plate.

Brush paint the two tubes with 'Tamiya' Medium Sea Grey 2 (XF83) or similar.

Secure the two tubes in position with their rear ends together at the top centre of the engine circular back plate and their front ends in the corners of the top cross member at the front of the engine support frame.





Upper wing - fit:

Clean away any paint or primer from the locating rods at the ends of each wing strut.

Clean away any paint or primer from the strut locating holes in the underside of the upper wing and the top surface of the lower wing.

Test fit each strut to ensure it fully locates into its relative location hole.

NOTE: *Make sure the struts are fitted in their correct locations on the model and make sure all pre-rigged lines are kept away from strut location holes.*

Secure the four outer interplane struts into their location holes in the underside of the upper wing, using thin CA adhesive.

Locate the interplane struts on the upper wing into their location holes on the top surface of the lower wing, using thin CA adhesive.

Secure the four interplane struts into the lower wing, using thin CA adhesive.

Locate the two forward inner struts into their location holes in the underside of the upper wing and fuselage at the cockpit.

Secure the two inner struts in position, using thin CA adhesive.

Locate the two rear inner struts into their location holes in the underside of the upper wing and through the rear slots in the lower wing.

Secure the two inner struts in position **on the underside of the upper wing only**, using thin CA adhesive. Do not secure the struts into the rear slots of the lower wing at this stage, to avoid getting adhesive onto the rigging wires at the slots.

Check that the upper wing is correctly aligned to the lower wing, when viewed from above.

If there is any gap between the tops of the engine support frame and the underside of the upper wing, pack the gaps with a small square of appropriately thick plasticard, secured with CA adhesive, then brush paint the inserts with 'Tamiya' Medium Sea Grey 2 (XF83).

Carburettor fuel supply:

NOTE: *The following procedure represents the fuel supply pipe from the pipe gallery under the fuel tank in the upper wing to the carburettor on the front of the engine shaft. The pipe can only fitted once the upper wing has been fitted*

Cut a long length of flexible 'MFH' Black tube (P-961).

Using thin CA adhesive, secure one end of the tube on the front of the added disc behind the carburettor (on the front of the engine shaft).

Loop the tube down slightly then secure in position up the right side of the upper inverted 'V' strut.

Pass the tube across the underside of the wing and secure in position against the base of the fuel pipe gallery.

Tail unit - fit:

Secure the fin into its two pre-drilled location holes on the top, rear of the fuselage, using thin CA adhesive. Make sure the fin is vertical to the fuselage.

Secure the tailplane onto its two locating rods in the top edge of the fin, using thin CA adhesive. Make sure the tailplane is horizontal to the fuselage.

Secure the two elevators to the tailplane trailing edge by using thin CA adhesive on the pre-fitted photo-etch tabs.

Secure the rudder into its two locating holes in the rear edge of the fin, using thin CA adhesive.

Rigging:

NOTE: *When rigging between wings, it's best to rig the inner lines and work outwards. All of the final rigging anchors are without turnbuckles, except for the two rear inner struts. For rigging information, refer to Part 6 (Rigging) of this build log, which has illustrations.*

General:

NOTE: *Where three lines are attached to one anchor point, attach all three before tightening and securing.*

Pass the end of each line through a blackened 0.4 mm diameter tube, then through the 'eye' of the anchor point, then back through the tube.

Keeping the line taut, slide the tube up to, **but not touching**, the 'eye' of the anchor point.

Secure the line in the tube, using thin CA adhesive.

Carefully cut away the residual tag of line at the end of the tube.

Rear inner lines:

NOTE: *Although the two rigging lines from the rear slots in the lower wing should have turnbuckles fitted, the practicality of fitting them once the rear inner struts are fitted is not easily achieved. Therefore I represented these turnbuckles using tube only.*

Pass the end of each line through a blackened 0.4 mm diameter tube, then slide the tube down to the lower wing and secure on the line using thin CA adhesive.

Pass the free end of the line through a 4 mm diameter blacked tube then through the 'eye' of its anchor point, then back through the tube.

Keeping the line taut, slide the tube up to, **but not touching**, the 'eye' of the anchor point.

Secure the line in the tube, using thin CA adhesive.

Carefully cut away the residual tag of line at the end of the tube.

Ailerons:

Secure the two ailerons onto the trailing edge of the upper wing, using thin CA adhesive on the locating rods.

Trim the length of each of the four aileron control lines such that they fit, when held as taut as possible, into their pre-drilled holes in the top and underside of the upper wing.

Secure the lines in position using thin CA adhesive.

Fin:

Pass the free end of the pre-rigged bracing line through a blackened 4 mm diameter tube, then through the pre-drilled hole in the fin.

Pass the free end of the bracing line through two blackened 4 mm diameter tubes, then through the ’eye’ of the anchor point.

Pass the free end of the pre-rigged bracing line back through the closest tube and keeping the line taut, secure the line to that tube, using thin CA adhesive.

Cut away the residual tag of line.

Slide the two top tubes up the line and against the fin.

Secure the two tubes on the line using thin CA adhesive.

Rudder:

Trim the length of each of the two rudder control lines such that they fit, when held as taut as possible, into their pre-drilled holes in the lower, sides of the fin.

Secure the lines in position using thin CA adhesive.

Tightening of rigged lines:

NOTE: *No-matter how careful you are to keep all installed rigging taut, there will be instances when after completing the rigging, one or more of the lines will be slack. This can be remedied by the careful application of heat close to and along the relevant line. The applied heat causes the mono-filament to shrink and causes the line to tighten.*

WARNING: ***Apart from the obvious hazards associated with a heat source, care should also be taken not to apply too much heat, hesitate at one location along the line or touch the line. Otherwise the line will melt and snap. Also take care not to touch the model.***

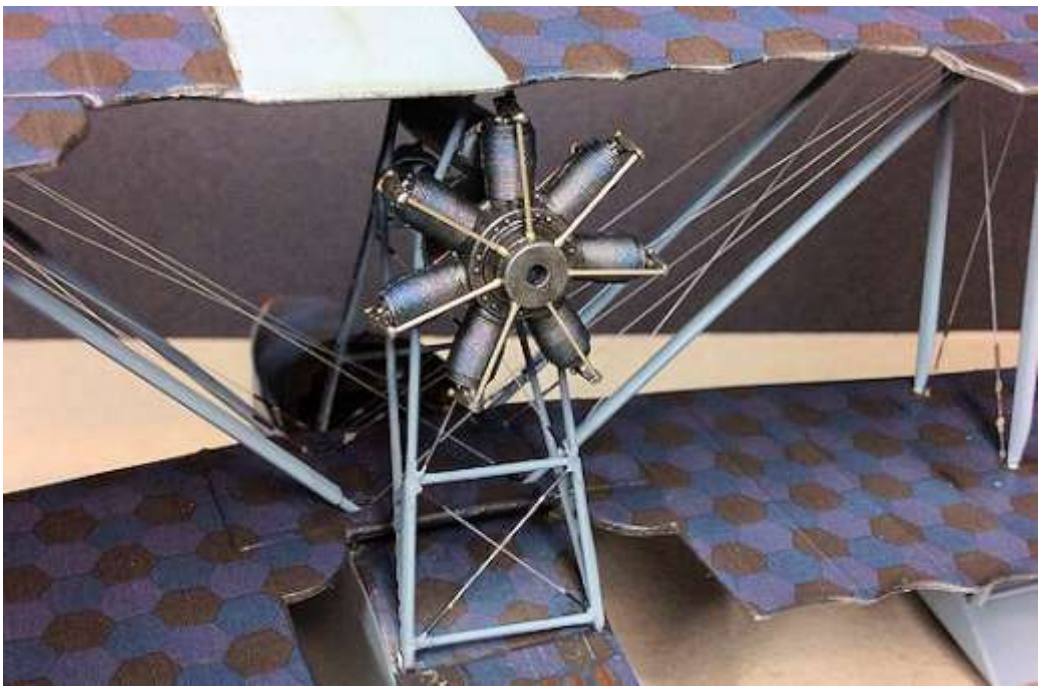
If a rigging line requires tightening a suitable heat source will be required. I use a small electrical soldering iron.

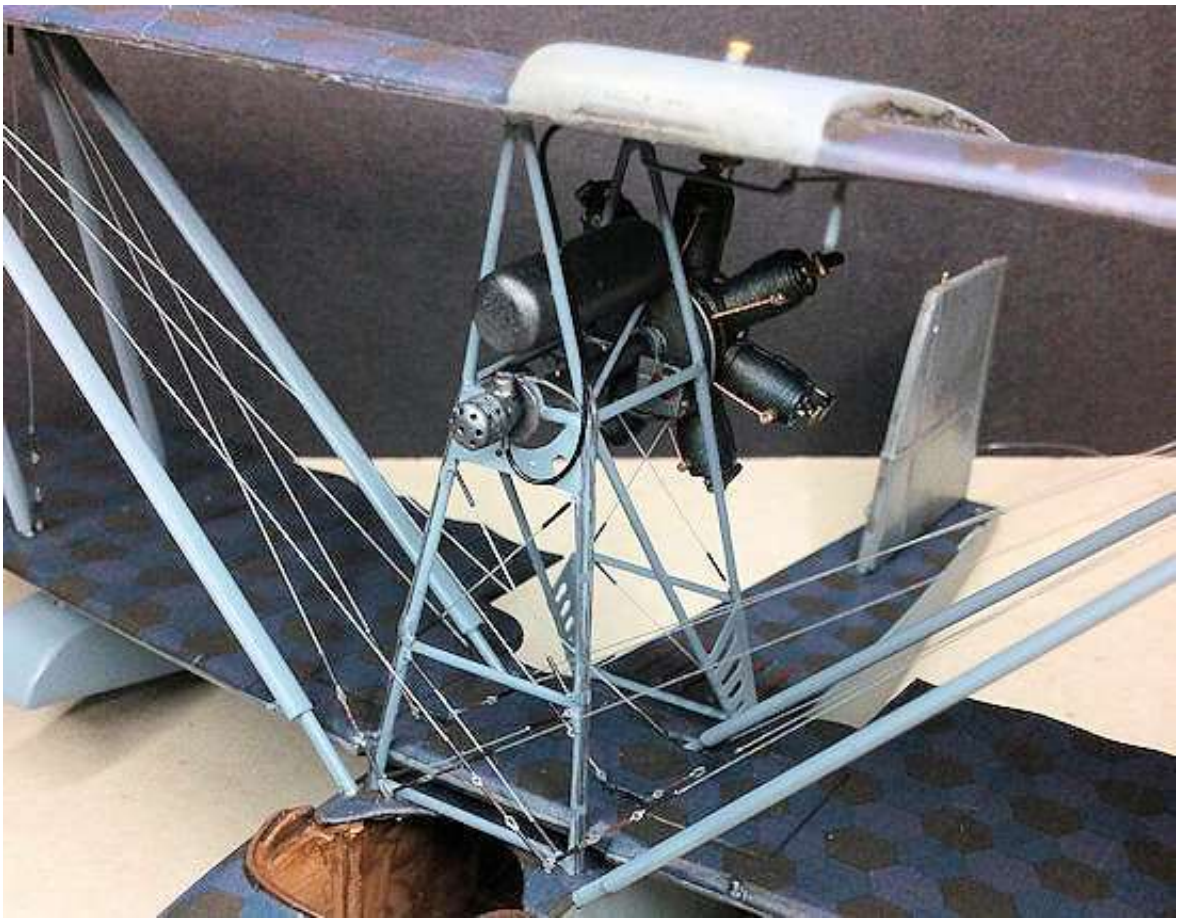
Move the heat source close to and along the line watching for the line to shrink. Keep the heat source moving and avoid touching the line or the model.

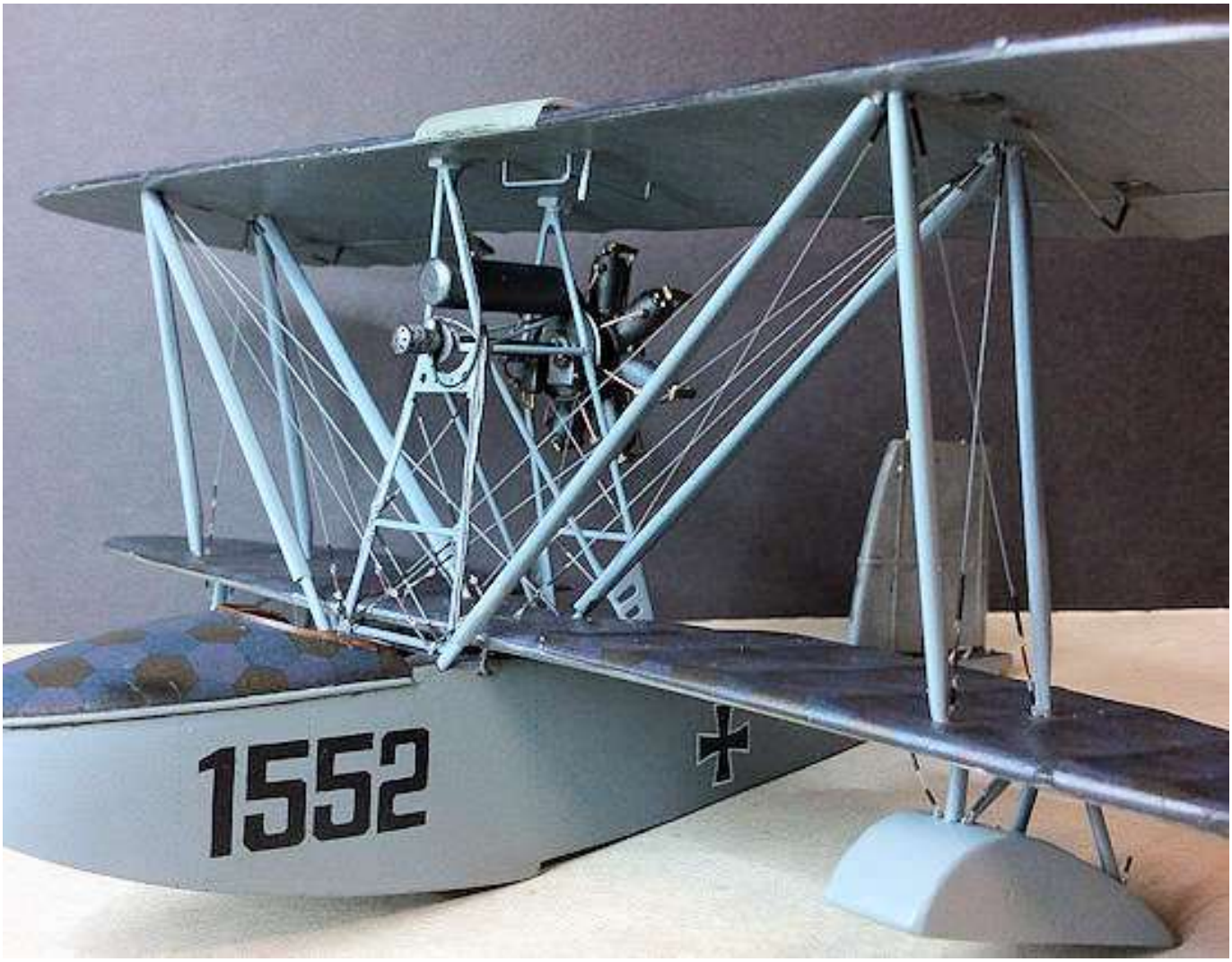
Painting:

Brush paint the centre barrel of each turnbuckle with ‘Tamiya’ Hull Red (XF9) or similar.

Airbrush a light misting coat of semi-matte clear coat, such as ‘Alclad’ Light Sheen (ALC-311) or similar over the rigged lines. This will reduce the shine.



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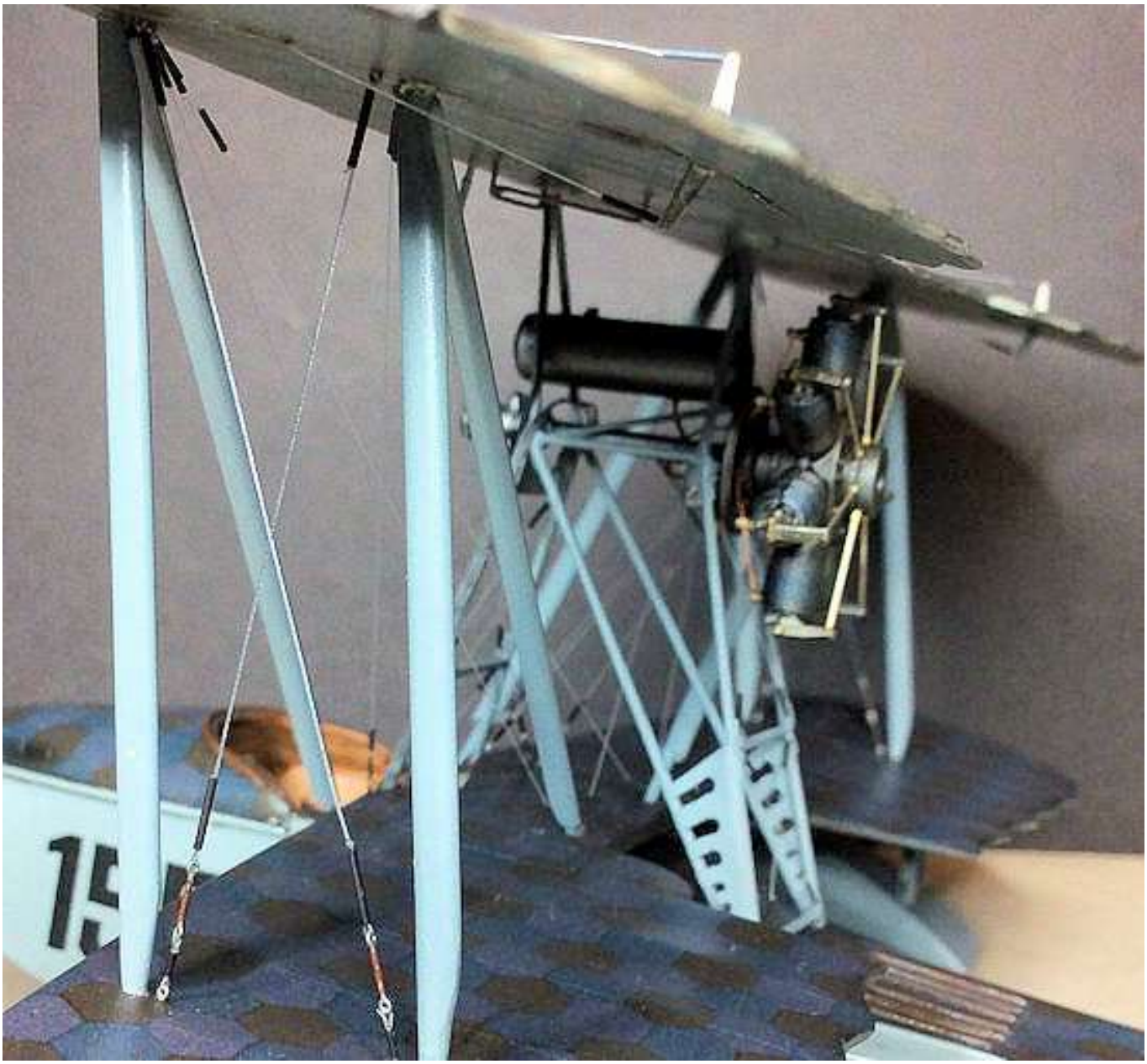

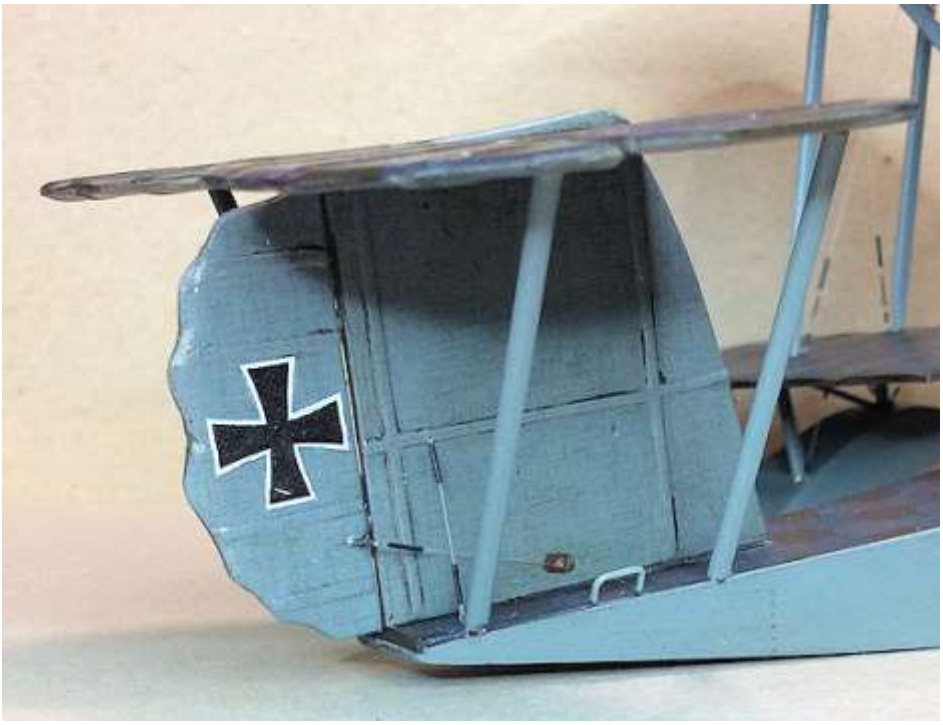

Pilot:

Refer to Part 13 (Figures) of this build log and secure the pilot figure into the mounting block on the floor of the cockpit, using CA adhesive or a small ball of 'UHU' White Tack.

Control column:

Using CA adhesive, secure the control column assemble into the cockpit and between the legs of the pilot figure.

Windscreen:

NOTE: *The windscreen supplied in the kit is a decal and piece of acetate. I chose to replace these with a suitable windscreen from my spares collection.*

The windscreen bottom edge was sanded to match the profile of the top of the fuselage in front of the cockpit. The windscreen was then secured in position using 'MicroScale' Krystal Clear adhesive.

Propeller:

Secure the shaft of the prepared propeller into the pre-drilled hole in the rear of the fitted engine, using PVA adhesive and at the desired position.

PART 13
FIGURES

PART 13 - FIGURES

The figures I chose to use are:

'Wings Cockpit Figures' - (Seated pilot LSK 07A).
'Elan 13' Miniatures German Naval pilot WW1 (EL19),
'Elan 13' RFC Mechanic WW1 (EL41).

NOTE: *The figures are made of resin (refer to Part 5 [Resin] of this build log).*

'Wings Cockpit Figures'- (Seated pilot LSK 07A)

NOTE: *The 'Wings Cockpit' figures - seated pilot (LSK 07A), requires modification in order for it to fit into the cockpit assembly, which was not designed to have a seated figure. The cockpit assembly (pre-painting) has been created in Part 9 (Fuselage) of this build log.*

Preparation:

Scrape or sand away any mould imperfections or seams lines from the pilot figure hand right hand.

Secure the right hand to the arm using CA adhesive, but align the hand with the right knee, which is necessary for it to clear he control column wheel when fitted. This will require cutting the right arm back at an angle.

Cut away the feet from the figure as these will obstruct fitting of the figure into the cockpit and they won't be seen anyway.

Painting:

NOTE: *The figure was painted primarily using ‘‘Tamiya’ acrylic paints, thinned with ‘Tamiya’ X20A thinners.*

Airbrush the figure with a grey primer, such as ‘AK Interactive’ Grey (AK-758) or similar.

Flight suit: ‘AK Interactive’ British Uniform (AK3081), Brown Leather (AK3011) and ‘Tamiya’ Red Brown (XF64).

Helmet: ‘AK Interactive’ British Uniform (AK3081), Brown Leather (AK3011).

Gloves: ‘AK Interactive’ Brown Leather (AK3011).

Harness: ’Tamiya’ Deck Tan (XF55).

Flesh: ‘AK Interactive’ Base Flesh (AK3011), Light Flesh (AK3012), Highlight Flesh (AK3013) and Shadow Flesh (AK3015).

‘Elan 13’ Miniatures German Naval pilot WW1 (EL19)

Preparation:

File or sand the underside of the two feet making sure the model can stand correctly without leaning.

Check the fit of the right hand and head into their locating recesses in the torso of the figure.

Drill a hole of 0.5 mm diameter up through either leg. This will be used to fit a locating rod for holding during painting and for final locating onto the display base.

Using thin CA adhesive, secure a length of 0.5 mm diameter rod, such as from ‘Albion Alloy’s’ or similar, into the pre-drilled hole in the leg of the figure.

Check the figure and sand or scrape away mould seams.

Painting:

Airbrush the figure parts with a grey primer, such as ‘AK Interactive’ Grey (AK-758) or similar.

Outer jacket: ‘Tamiya’ Rubber Black (XF85 and NATO Black (XF69).
Jacket: ‘Tamiya’ Royal Blue (X3) and Rubber Black (XF85).
Trousers and Puttees: ‘Tamiya’ Neutral Grey (XF53) and Ocean Grey 2 (XF82).
Shoes: ‘Tamiya’ Rubber Black (XF85) and Semi-Gloss (X35).
Shirt: ‘Tamiya’ White (XF2) and Deck Tan (XF55).
Tie: ‘Tamiya’ Rubber Black (XF85).
Medals: ‘Mr. Colour’ Stainless Steel (213).
Helmet: ‘Tamiya’ Rubber Black (XF85).
Hat: ‘Tamiya’ Royal Blue (X3), Rubber Black (XF85), Semi-Gloss (X35) and ‘Mr. Colour’ Brass (213).
Flesh: ‘AK Interactive’ Base Flesh (AK3011), Light Flesh (AK3012), Highlight Flesh (AK3013) and Shadow Flesh (AK3015).
Hair: ‘Tamiya’ NATO Brown (XF68).

Assembly:

Using CA adhesive, secure the right hand onto the figure.

Using CA adhesive, secure the head onto the figure.

‘Elan 13’ RFC Mechanic WW1 (EL41)

Preparation:

File or sand the underside of the two feet making sure the model can stand correctly without leaning.

Check the fit of the head into its locating recess in the torso of the figure.

NOTE: *As this RFC figure is to represent a German mechanic, the RFC forage cape needs to be removed.*

Carefully scrape and sand of the forage cap on the head of the figure. I removed it entirely to create a bald headed figure.

Drill a hole of 0.9 mm diameter up through either leg. This will be used to fit a locating rod for holding during painting and for final locating onto the display base.

Using thin CA adhesive, secure a length of 0.8 mm diameter rod, such as from ‘Albion Alloy’s’ or similar, into the pre-drilled hole in the leg of the figure.

Check the figure and sand or scrape away mould seams.

Painting:

Airbrush the figure parts with a grey primer, such as ‘AK Interactive’ Grey (AK-758) or similar.

Overalls: ‘Tamiya’ Neutral Grey (XF53) and Ocean Grey 2 (XF82) with ‘AK Interactive’ Kerosene wash (AK2039).

Shoes: ‘Tamiya’ Red Brown (XF64) and Semi-Gloss (X35).

Shirt: ‘Tamiya’ Light Blue (XF23) and Deck Tan (XF55)

Flesh: ‘AK Interactive’ Base Flesh (AK3011), Light Flesh (AK3012), Highlight Flesh (AK3013) and Shadow Flesh (AK3015).

Assembly:

Using CA adhesive, secure the head onto the figure.

PART 14
DISPLAY BASE

PART 14 - DISPLAY BASE

The display case in made from piano black and clear acrylic sheet of 3mm thickness. The base shoulder, for locating the clear cover, is a second thickness on top of the base plate. This case was purpose built by Paul Moss, who has a retail outlet on Ebay.

www.inperspextive.com

For this display I chose to use the ‘Abandoned Airfield’ display mat (1:32 scale), supplied from ‘Coastal Kits’.

http://www.coastalkits.co.uk/newstore

The display mat consist of a photograph, taken from above and at a slight angle, then printed with odourless latex ink onto laminated matt vinyl over a 3mm thick ‘Foamex’ base board. These mats, when viewed from above, give a good representation of the chosen terrain, but when viewed from ‘ground level’ are obviously flat and featureless.

Cut the mat to the desired shape and large enough to locate the aircraft and figures.

Secure the beaching trolley in position on the fuselage, using thin CA adhesive. Make sure the trolley is fully located on the fuselage and under the engine support frame.

Position the completed aircraft model with the figures and tail trestle and mark the locations of the figures and tail trestle.

Apply PVA adhesive to the underside of the mat and position it onto the display base. Apply pressure on the mat, such as books or similar, until the adhesive dries.

Secure the tail trestle in position on its marks, using thin CA adhesive.

Drill a hole of 0.6 mm diameter into, but not through, the display base at the standing pilot marks.

Drill a hole of 0.9 mm diameter into, but not through, the display base at the standing mechanic marks.

Apply either CA adhesive or PVA (White glue) to the location rods in each of the figures legs and fit them into their respective location holes.

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 under-side 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 was then applied to both scuffed areas and once the adhesive started to set, the stand was carefully position onto the display bae and pressed down to make full contact. The self-adhesive backed information plaque was the positioned onto the stand and pressed to make full contact.

PART 15
COMPLETED MODEL PHOTOGRAPHS


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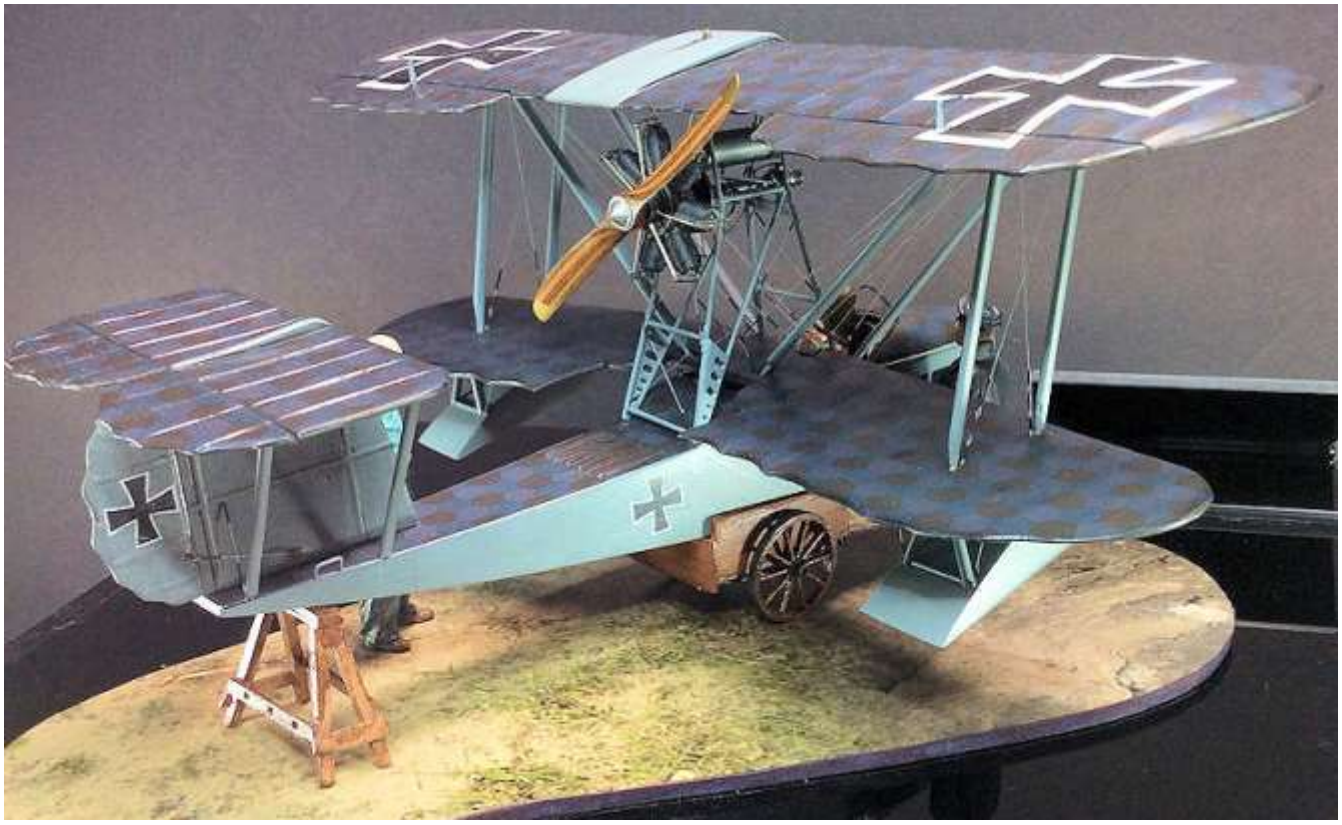


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