World War One Aircraft Models

I have always held a fascination with early military aircraft. After serving for 27 years in the Royal Air Force, I became a Military Aerospace Technical Author. As most modelers, I got involved in the world of construction kits at an early age, but stopped for most of my service career and for some years afterwards.
I started modeling again a few years ago and now enjoy the challenge of building aircraft of World War One. Since posting photographs of my completed models online, various modelers have asked if I would create 'build logs' for my future builds, which is what I now do for each build.
I don't consider myself a 'master' of this craft, but hope to be able to pass on what I have learned. As such, here is my build log, which covers the 1:32 scale model of the Albatros D.I by 'Roden'.

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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

Figure

'Wings Cockpit Figures' leaning pilot (LSK 06).

Decals

'Aviattic' Linen Weave effect (ATT32236), German blue linen (ATT32077),
'Airscale' generic WW1 decals (AS32-WW1), 'Xtradecal' black stripes (XPS1).

3D Printed parts,

'Quinta Studios' 3D printed Albatros D.I set (QD32076).

Propeller

'ProperPlane' Axial propeller for Mercedes 160hp (WP001).

Weapons

'GasPatch' resin Spandau 08 early version 1/32nd scale.

Resin

'Taurus Models' engine fuel primer set (D3219).

Rigging accessories (as required)

'GasPatch Elite Accessories' Turnbuckles 1/48 scale,
'Albion Alloy's' Micro-tube (Brass or Nickel Silver - various diameters).
'Steelon' mono-filament 0.12 mm diameter',
'Stroft' mono-filament 0.08, 0.12 mm diameter.

Photo-etch

'Part' Albatros D.I set (S32-034).

Sundries (as required)

'Araldite' two part epoxy adhesive, Paints ('Tamiya' Acrylic, Humbrol Acrylic,
'Mr. Metal Colour', 'AK Interactive' Primer and micro-filler (Grey AK758, White AK759),
'AK Interactive' Filters and figure paints, Kerosene AK-2039, Oil AK-2019
and Wash AK-2033), 'Alclad II' Lacquers, 'Alclad' Aqua Gloss 600, 'Mr. Colour' Levelling
Thinners, 'Vallejo' Model Colour, PVA Adhesive (e.g. 'MicroScale' Kristal Klear),
'VMS Fleky' CA adhesive (Standard and Thin) and Metal Prep 4K, 'Mr. Colour' Metal Primer R ,
'Bostik' Blue, UHU White Tack, 'AV' Masilla Plastica (401) putty, 'White Spirits',
'De-Lux Materials' Perfect Plastic Putty, Sanding and/or Polishing sticks from 'Flory Models',
'Humbrol' Maskol, 'UHU' White Tack, 'Milliput' two part putty', MicroScale' MicroSol/MicroSet,
'Mr. Surfacer 500, 1000,1200', 'DecoArt Crafters Acrylic' (water based) paints,
'Artool' Ultra Mask sheets, 'Vallejo' Still Water (26.230), 'Milliput' two part clay,
'Plastruct' styrene rod, 'Mr. Surfacer' primer and filler 500 to 1200, 'Hataka' lacquer paints,
'Tamiya' liquid cement, 'PlusModel' lead wire, 'ANYZ' black braided line (AN001),
'Plastic Magic' liquid cement, 'Prismacolor' Verithin Argent Metallique 753, 'Blacken-It' solution
'Bare-Metal' Matte Aluminium foil, 'MFH' black 0.4 mm flexible tube (P-961),
'EZ' stetch line (heavy black).

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,
'Lars op't Hof' Scenery - Pasture Autumn Long (10.34.S).

THE AIRCRAFT

THE AIRCRAFT

General:

References:
Albatros Fighters in Action - (John F. Connors - Squadron/Signal Publications No.46)
Albatros Fighters - (Brian Knight - Windsock Data File special)
Albatros Scouts - (Charles Schaedel - Kookaburra Technical Publications)
Albatros D.I - D.III - (Peter L. Gray - Profile Publications No.127)
Albatros D.I - D.II - (James F. Miller - Osprey Publishing)
Roden kit instruction data.

During 1915 the German Fokker Eindecker fighters were dominant over the current allied aircraft of the time. Eventually however, better designed fighters, such as the De-Havilland DH.2 of the Royal Flying Corps (RFC) and the French Nieuport fighters soon gained the advantage. The German Idflieg (Inspectorate of Flying Troops) sought better designed fighters from German aircraft companies and protypes from Halberstadt and Fokker were being test flown by the Spring of 1916. However these designs, although better, did not surpass the allied aircraft in general performance. The Albatros Flugzeugwerke Gmbh company, which had only produced two seater aircraft, created what was then considered to be a radical design for a fighter, which was designed by Robert Thelen. Following the lead of the allied bi-plane fighters, particularly the French Nieuport's, the prototype Albatros D.I featured a more powerful engine and a streamlined plywood skinned fuselage (semi-monocoque), which differed from it's contemporaries, which had linen covered structure. Performance during flight testing was enough for the Idflieg to place an initial order for 50 aircraft with serial numbers D.422/16 to D.471/16. Although a second batch was ordered with serial numbers D.472/6 to D.521/16, these were never built and were allocated to the improved Albatros D.II, which was already in production. In total, seven units were formed and operated the Albatros D.I, the second unit being Jasta 2, formed at Laguincourt during August 1916 and commanded by Oberleutnant (later Hauptmann) Oswald Boelcke. The introduction of this aircraft caused concern, especially as it proved superior to the RFC DH.2 fighters. However, it's operational career was short and by the end of 1916 the Albatros D.I was being replaced by the newer D.II. Of the 50 aircraft built, some survived to the end of the war, being used as flight trainers.

General characteristics (manufacturer - Johannisthal):

Length: 7.4m (24' 3") **Height:** 2.95m (9' 8") **Upper wingspan:** 8.5m (27' 11")
Lower wingspan: 8m (26' 3") **Wing chord:** Upper and lower 1.6m (5' 3")
Weight: Empty 673 kg (1,484 lb), Loaded 898 kg (1,980 lb)
Maximum speed: 175 km/h
Climb rate: 1,000m (4 min), 2,000m (10 min), 3,000 m (19 min), 4,000m (30 min)
Engine: 160 hp Mercedes D.III six cylinder in-line
Armament: 2 x Spandau LMG 08/15 machine guns (7.92mm calibre)

Specific:

This model represents the Albatros D.I of Ltn. Dieter Collin of Jasta 2 'Boelcke', flying from Berthincourt, September 1916.

This particular Albatros D.I was a pre-production version and had differences to the production aircraft. An Anemometer was fitted to the forward, starboard interplane strut and the expansion tank for the engine cooling system was located at the front of the forward engine cylinder. The propeller fitted was an 'Axial', rather than the more often fitted 'Reschke' type. The serial number of this aircraft has been stated as being D384/16, but it seems this may not be the case.

Although the aircraft was probably delivered in the standard factory finish, it seems possible that the fuselage, fin and tail skid were later painted in an undefined light green colour. The upper surfaces of both wings and tail plane/elevator are often portrayed as being the same green colour as the fuselage. However, it's difficult to tell from photographs due to the gloss surface and daylight reflections. My assumption is that they were more likely to have been the standard brown/green camouflage pattern. The white Crossfield of the Balken Cross markings on the upper wing were painted over, leaving the crossfields on the underside of the lower wing, fuselage and the rudder intact. The underside of both wings, ailerons, tailplane and elevators, including the landing gear assembly, were painted a light blue colour. The propeller spinner, engine panels and wing struts were a light grey colour. The rudder was coloured either white or light cream. Initially this aircraft was flown by Diether Collin and his personal marking of a white 'Co', outlined in black, was added to the fuselage sides, to the rear of the Balken Cross.
Later this aircraft was flown by the Prussian Prince Friedrich Karl, when the markings of Collin were replaced with skull and cross bones on a black background marking. These were applied to the fuselage sides and the propeller spinner.

On the 21st of March 1917, Prince Karl was wounded during combat with a DH.2 fighter of No.32 Squadron (RFC), flown by Lt. Pickthorne. He made a forced lading between the lines but was shot in the spine as he attempted to reach the safety of his own lines and died of his wounds. The aircraft was later captured and given the RFC identification of G-17.

The aircraft at Jasta 2 (at the right) and shows the expansion tank located at the front of the engine cylinders.

Prince Karl (at the left) preparing to fly in the Albatros D.I of Diether Collin.

Aircraft in factory finish

Aircraft later coloured green

THE PILOT

THE PILOT

References:
Aerodrome forum (on-line)
Wikipedia (on-line)

This model represents the Albatros D.I of Ltn. Diether Collin of Jasta 2 'Boelcke', flying from Berthincourt, September 1916.

Diether Collin was born on the 17th of February, 1893 in Lüben, a province of Silesia in Germany (now Poland). After qualifying to fly he was initially assigned to Jasta 22 in November 1916, but was then reassigned to Jasta 2 'Boelcke', where he scored his first victory on the 23rd of November, followed by a second on the 26th of December.

On the 21st of February 1917 he returned to Jasta 22, who were flying the Halberstadt D.II fighter and starting to receive the Albatros D.II and later the D.III. Here he achieved three more victories between 23rd of May and the 6th of September, flying the D.III, the D.V and also the Pfalz D.IIIa fighters. He wounded during the combat of the 6th of September. He recovered from his wounds and returned to Jasta 22 on the 4th of March 1918 and on the 29th of March scored his last victory with Jasta 22.

On the 16th of April 1918 he was appointed to command Jasta 56 flying the D.Va fighter and scored four more victories during May. In June 1916 Jasta 56 had a mix of Pfalz D.IIIa and Fokker D.VII fighters but in July, the remaining Pfalz D.IIIa fighters were withdrawn from use and supplemented with Pfalz D.VIII aircraft. Collin scored three more victories during July flying the Fokker D.VII fighter.

On the 13th of August 1918, Collin was severely wounded during combat with Sopwith Camels of No.204 Squadron (RAF) over Bailleul and later that day died of his wounds, aged 25.

Victories table

	Date	Time	Unit	Opponent	Location
1	23 Nov 1916	1100	Jasta 2	D.H.2	E of Morval
2	26 Dec 1916	1120	Jasta 2	D.H.2	E of Morval
3	23 May 1917		Jasta 22	Nieuport	SW of Laffons
4	05 Sep 1917	1900	Jasta 22	SPAD	Douaumont
5	06 Sep 1917		Jasta 22	Nieuport Scout	E of Charny Bras
6	29 Mar 1918	1645	Jasta 22	SPAD	
7	09 May 1918	1840	Jasta 56	Bristol F.2b	Houthulst Forest
8	09 May 1918		Jasta 56	Sopwith Camel	Ypres
9	14 May 1918	2120	Jasta 56	Sopwith Camel	Kemmel
10	23 May 1918	0930	Jasta 56	D.H.9	Maria-Alter
11	02 Jul 1918	0955	Jasta 56	Bristol F.2b	Ypres
12	04 Jul 1918	0955	Jasta 56	Sopwith Camel	Armentières
13	25 Jul 1918	0940	Jasta 56	Sopwith Camel	W of Ypres

Diether Collin (17th of February, 1893 - 13th of August 1918)

PART 1
MODEL DESCRIPTION

PART 1 - MODEL DESCRIPTION

('Roden' - Kit No: Ro614)

Normally here I would write a basic description of the model, noting any points of interest or flaws. However, there is already an excellent review of the kit by Dave W at the 'WW1 Aircraft Models' forum. Paste the link below into your internet browser to view his review.

Roden 1/32 scale Albatros D.1 (ww1aircraftmodels.com)

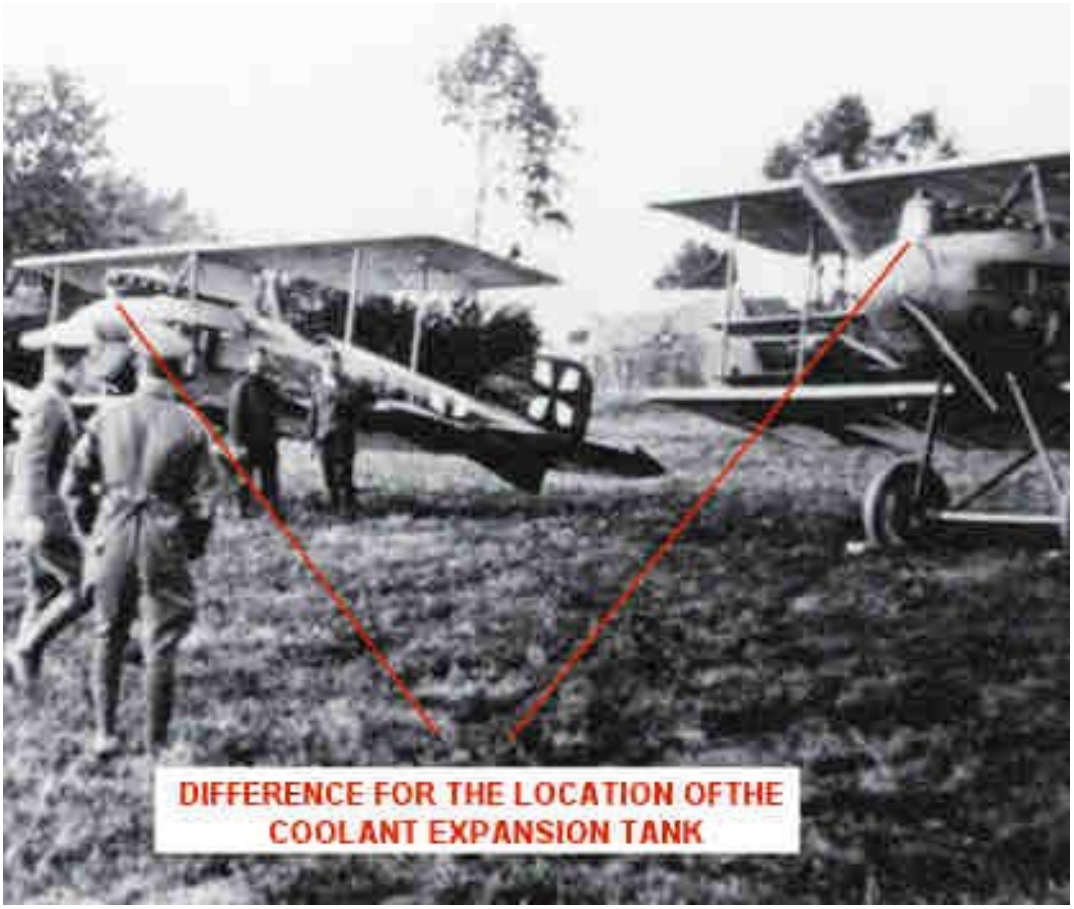
Observations:

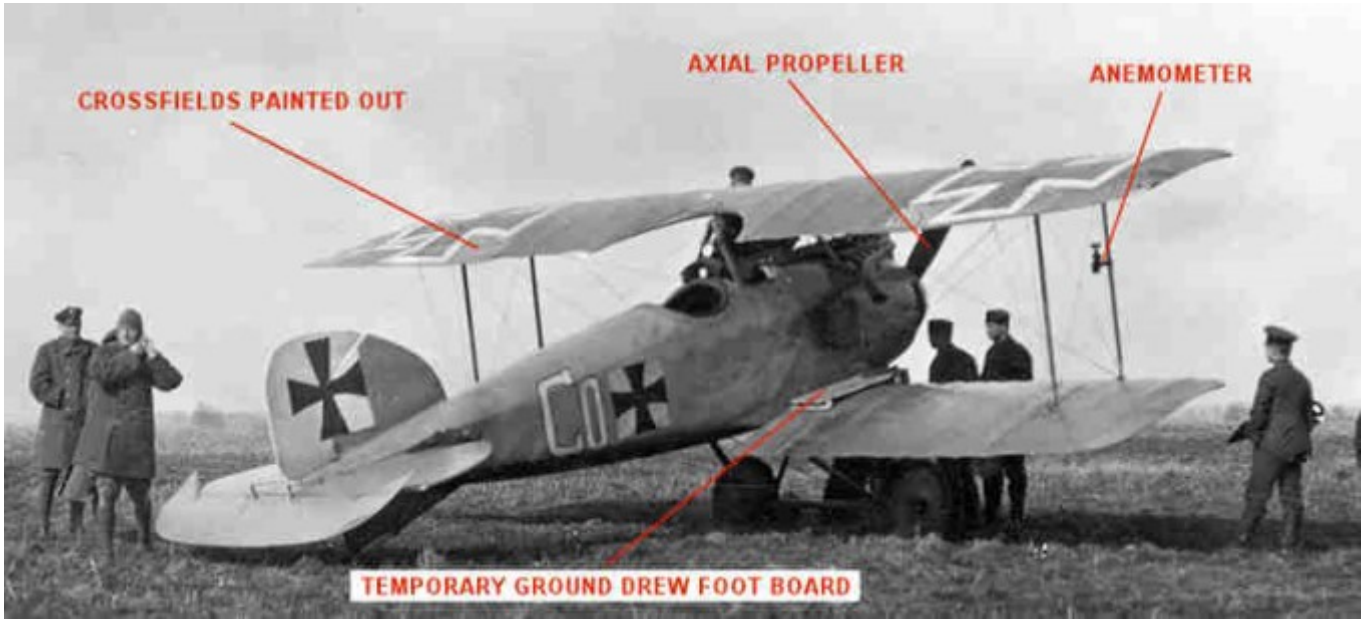
As is usual, most models, when research is done, can be modified or enhanced to better represent the particular aircraft. The following are my initial observations of the kit before building it.

NOTE: *The particular model in the build was a pre-production aircraft from the production batch of 50 ordered. It there fore had several differences from the production version supplied in the kit.*

Differences:

This particular Albatros D.I was a pre-production version and had differences to the production aircraft. An Anemometer was fitted to the forward, starboard interplane strut and the expansion tank for the engine cooling system was located at the front of the forward engine cylinder. The propeller fitted was an 'Axial', rather than the more often fitted 'Reschke' type. The serial number of this aircraft has been stated as being D384/16, but it seems this may not be the case. Although the aircraft was probably delivered in the standard factory finish, it was later painted in an undefined green colour. In addition, the white Crossfield of the Balken Cross markings on the upper wing were painted over, leaving the crossfields on the underside of the lower wing, fuselage and the rudder intact.





Kit parts:

1. I found that two of the fuselage internal frames were snapped on their sprue and needed to be cemented back together.
2. The location of the flying wires are pre-moulded as panels on the upper surface of the lower wing roots. These should be recessed to better represent the actual rigging points (refer to Part 5 - Rigging of this build log).
3. The Axial shaped propeller in the kit (part 12) should be used for this particular aircraft. As an alternative, a wood laminated Axial propeller from ‘ProperPlane’ can be used.
4. Some supplied kit parts are not required and are greyed out in the parts illustration - these can be discarded as they are for the later Albatros D.III onwards versions.
5. Some parts of the kit can be replaced with parts supplied in the ’Part’ Albatros D.I set (S32-034) and the ‘Quinta Studios’ 3D printed Albatros D.I set (QD32076).
6. The two machine guns will be replaced with the ‘GasPatch’ early LMG ‘Spandau’ 08 resin versions.
7. The kit does not supply any rigging photo-etch parts. Therefore turnbuckles and anchor points will be used from ‘GasPatch’ 1:48th scale parts.
8. To better represent the linen covering on the wings, tailplane, rudder, fin, ailerons and the elevators, ‘Aviattic’ clear linen weave effect decals will be applied over the painted relevant surfaces.
9. Normally the engine, as supplied, can be super detailed. However, as very little of the fitted engine will be seen, I chose to build the basic engine with minimal enhancements.
10. As is usual, all kits parts once removed from their sprues, should have all mould flash and seam lines removed before assembly and painting.

PART 2
WOOD EFFECTS
(General)

PART 2 - WOOD EFFECTS (General)

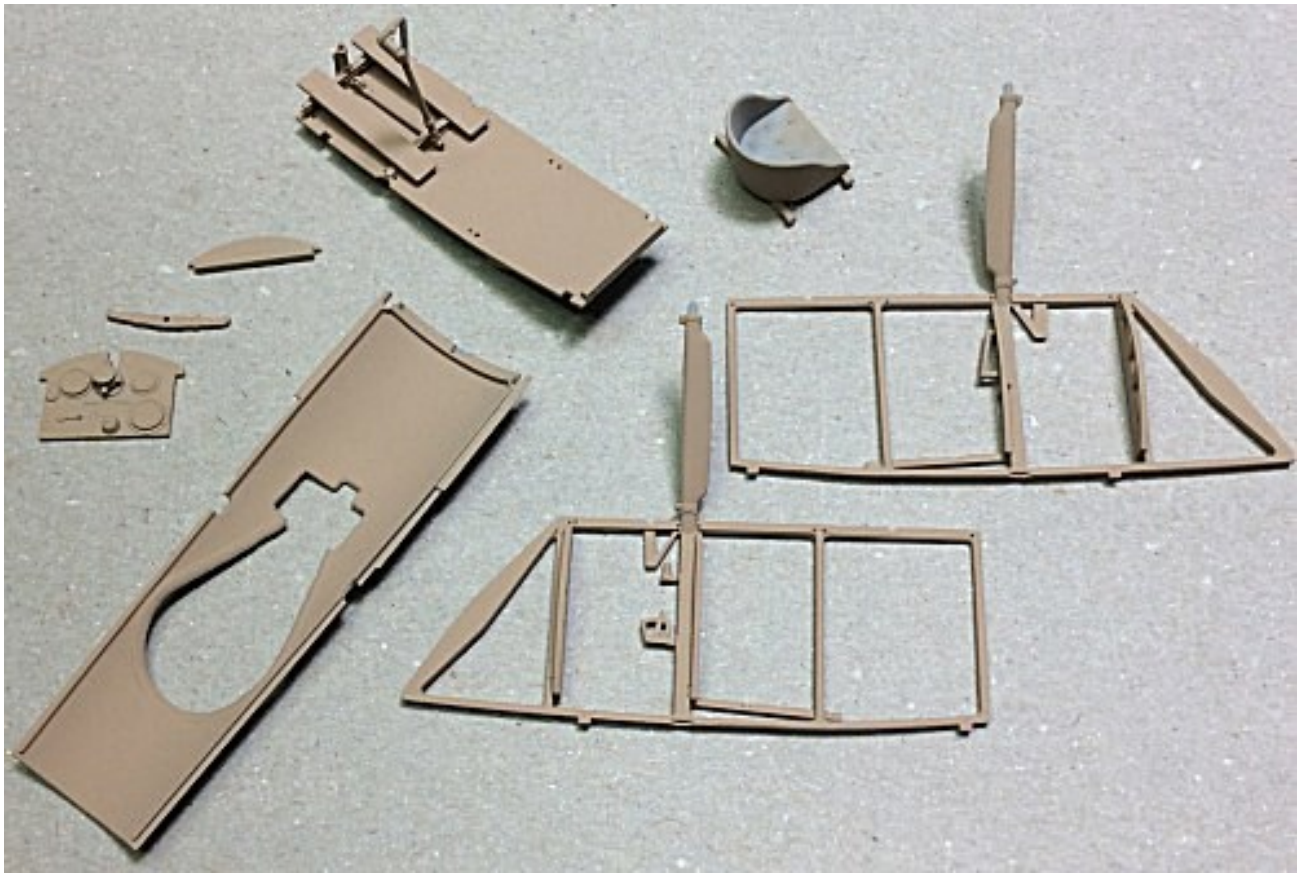
A basic technique:

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.

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

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

First I seal the surface with an airbrushed semi-matte clear coat, such as 'Alclad' Light Sheen (ALC-311), which dries quickly. A gloss coat tends to stop the clay wash 'gripping' the surface when it is applied and it can run off or just puddle. A more matte coat can cause the clay wash to 'grip' too much, making it difficult to remove or even to wash it off completely.

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

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

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

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

To apply the clay wash is just a matter of brushing all over the surface to be weathered. It doesn't matter really how much is applied as it can be left on for any period, as it is easily removed without any effect on the surface underneath. If you don't achieve your desired effect, you can wash it all off and start again. Use a soft brush or absorbent kitchen roll, which are dry or ***very slightly*** dampened, to brush or wipe off the clay wash in the direction of airflow over the model. Even then, dab them onto a dry piece of the paper, until they are almost dry. Any wetter and you'll find that you are removing too much of the clay wash. If that happens you can re-apply the wash and start again. If you're not happy with the final effect, you can easily remove the clay wash by brushing with a wet brush or even airbrush water over the surface. Dry off the surfaces washed and then re-apply the clay wash and try again until you are satisfied. The technique is to 'damp' brush or wipe over the surface to re-activate the clay wash and at the same time, to smear it over areas that had no clay wash. It'll dry within 30 minutes. Then very lightly brush and/or use a piece of damp absorbent paper to remove as much you want until you get the desired effect. Once finished, run the brush under a tap to rinse out any residual clay pigments. Finally, seal the surface with your chosen clear coat, which will seal in the applied clay wash.

Chipping effects:

To give the effect of chipped and weathered paint/varnish to metal engine cowls and forward fuselage panels etc, chipping fluids can be used. To achieve this effect, first prime the areas with a suitable primer then airbrush the metallic finish desired. Once dry, a chipping fluid, such as 'AK Interactive' Medium Chipping fluid or 'Vallejo' chipping fluid is airbrushed over the painted areas. An alternative is to use a cheap hair spray. This forms a barrier which will allow the top coat to be chipped off. Finally the required top coat colour is applied.
Once fully dry, moisten the top coat with water, which softens the paint. Then with a cut down (stiff) brush and wood cocktail stick, gently teased off the top coat paint. Take care when doing this as 'too much chipping' can't really be covered up. In that event you would have wet the top coat and remove it all with an old toothbrush or similar and then when dry, re-spray the top coat and try again. Once the desired effect was achieved, I sealed the surfaces with an airbrushed coat of 'Alclad' Light Sheen (ALC-311).

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

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

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

Water colour pencils:

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

Oil paint: A technique used more frequently now is oil paint ‘dot and drag’. Basically an oil paint of the desired colour is placed onto a piece of cardboard, which over a hour or so, soaks out the oil in the paint, leaving a drier pigment. The pigment is ‘dotted’ onto the painted surface where it is required then dragged with a brush previously wetted with ‘Tamiya’ X20 enamel thinners then wiped virtually dry.
Softly ‘flick’ the brush to drag the pigment in the direction required, which will blend it in a thin layer.
The amount of pigment left showing depends on the effect you require. Always keep the brush wiped clean to avoid a build up of pigment and remoisten and wipe dry often. The more paint you drag, the less pigment is left showing. Blending different coloured pigments can create stains from smoke/gun blast, rain marks/runs, dirt/dust and oil/fuel stains.

A good quality oil paint and thinners are essential to produce a good finish. Some quality oil paints can be too ‘gritty’ when leached of oil, so I use ’Abteilung 502’ oil paints and ‘Tamiya’ Enamel thinners (X20).

PART 4
DECALS
(General)

PART 4 - DECALS (General)

Standard decals (including 'Quinta Studios' 3D printed set):

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 'similar should be airbrushed over the first decals, to provide a barrier against the setting solutions.*

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

Airbrush a sealing coat of 'Alclad' Gloss (ALC-310), '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 need to be cut out from the sheet, so care is required to cut the decals accurately to avoid leaving gaps, especially at the edges, where the white base colour will show. That said, minor gaps may be able to be covered with weathering. For more information, refer to the ‘Aviattic’ instruction sheet supplied with the decals.

Aviattic’ decals are laser printed onto either ‘clear’ or ‘white’ backing, the ‘clear’ being dependent on the base coat you apply and the finished effect you desire. The decals are supplied with very clear instructions on their application, including when to add pre-shading to the base coat, where desired, before you apply the decals. For this model I chose to use the ‘clear’ decals, in order to show the linen effect more visibly.

Application:

If the decal is to be applied without a coloured undercoat (green, brown etc), 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
RIGGING
(General)

PART 5 - RIGGING (General)

General:

The first thing to check is that you have already drilled out the rigging attachment points. Most models have these located on the model, but it's best to carry out research in reference books or research on line before drilling. Some modellers use micro drills manufactured for drilling printed circuit boards etc and these drill bits sometimes have identifying coloured collars fitted to the drill shanks. I have found that care needs to be taken when using these drills, as they are sharp and instead of easing their way into the plastic of the model, they tend to bite in and effectively 'cork screw' their way in, which causes jamming and lots of broken drills. This is not only expensive but can leave broken drill bits in the model, which are virtually impossible to extract. An alternative is to use High Speed Steel (HSS) drill bits, which are cheaper and have less 'bite' when in use, although again, they are very fragile and can very easily be broken.

Some modellers drill through the wings etc of the model and rig by pulling through the rigging line/EZ thread etc, gluing in position and then rubbing down the exposed line 'tag' and then re-painting that area. I prefer to drill only part way into the plastic and attach the applicable rigging fixture with CA adhesive.

With your research complete and all necessary holes pre-drilled, the rigging can start. For the primary rigging, such as flying and landing wires and flight control cables I use mono-filament (fishing line) of 0.08 and 0.12 mm diameter. These are effectively transparent but do give a look of steel, without the need of painting or colouring with a gel pen. The turnbuckles used can be either sintered metal or resin and obtained from 'Gaspatch Models'. Although the newer resin turnbuckles are better detailed, they are resin and therefore can break is stressed in the wrong direction. If in doubt, use the metal versions, which are much stronger.

The basic aircraft external rigging is shown in the following illustrations, adapted from the 'Roden' instructions, part 25. The aircraft is rigged with round, wire wound wires with adjustable turnbuckles.

The kit rigging points will be made using 'GasPatch' turnbuckles and anchor points.

The rigging materials to be used are:

'Stroft GTM' 0.08 mm diameter mono-filament (flight control cables)

'Stroft GTM' 0.12 mm diameter mono-filament (general rigging)

'GasPatch' 1:48th scale metal turnbuckles and anchor points.

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

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

PART 6
ENGINE

PART 6 - ENGINE

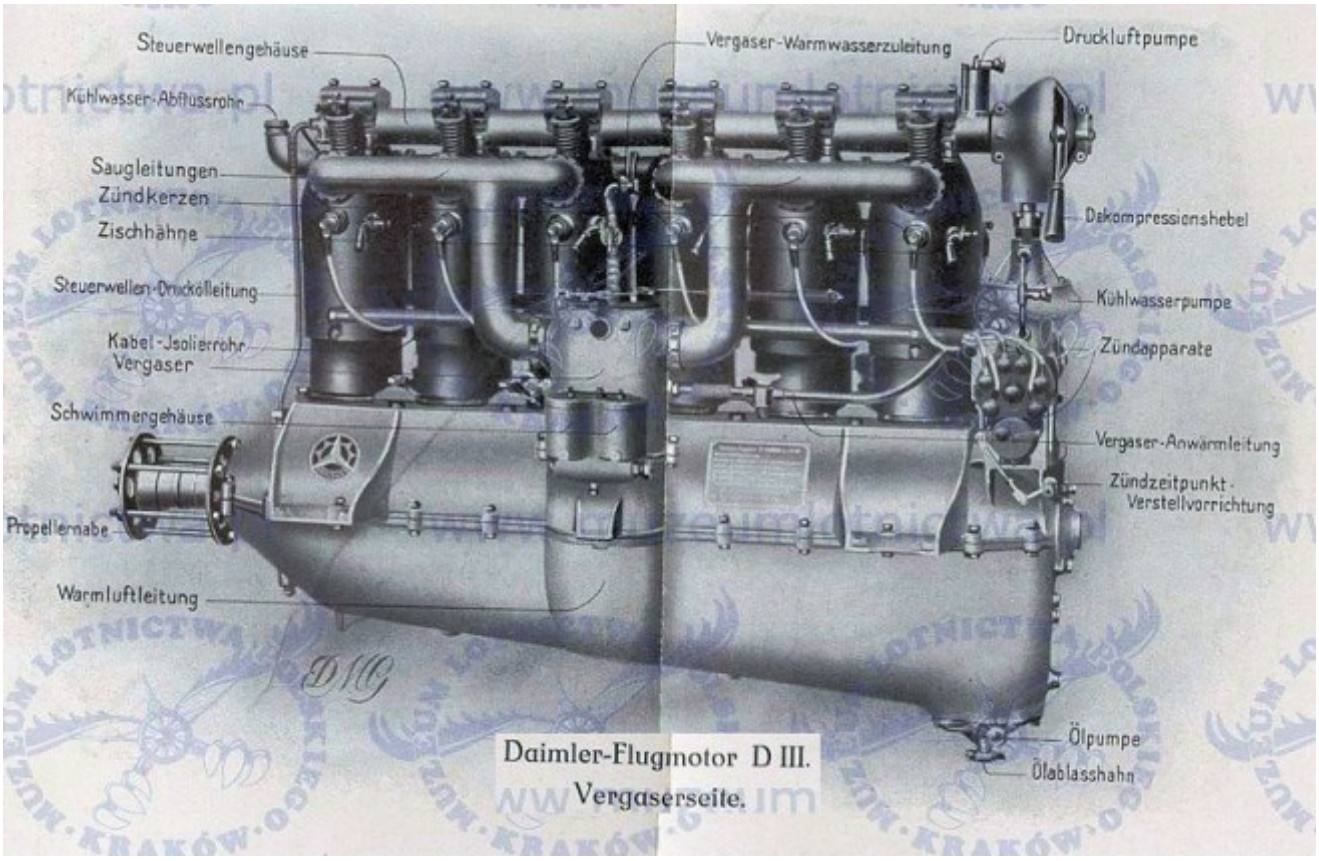
The Albatros D.I was powered by the six cylinder Mercedes D.III (160hp) in-line water cooled engine, which is similar to the Daimler D.III engine shown below.

NOTE:

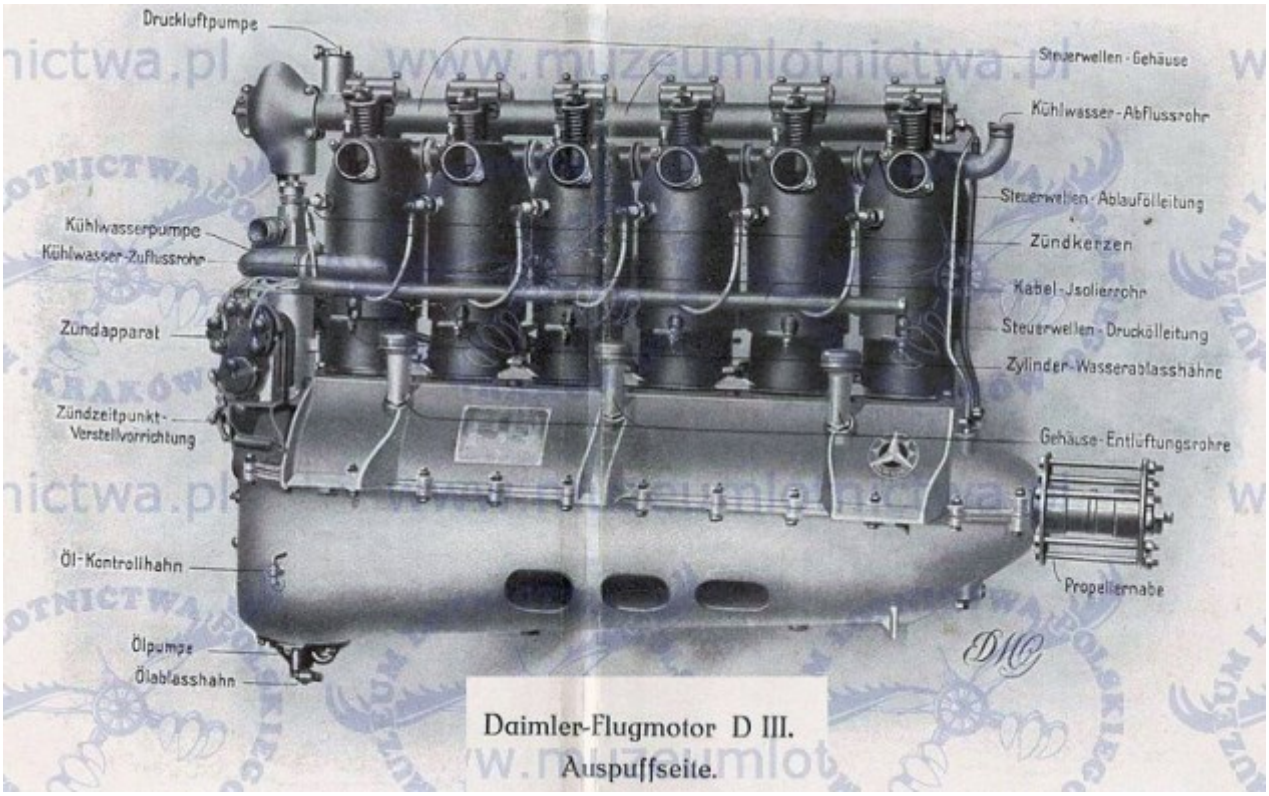
The engine supplied in the kit will be built as supplied, except for the following.

1. *The ignition leads will be made from appropriate diameter lead wire.*
2. *The pre-moulded spark plugs will be replaced (as some were found to be broken off) with appropriate diameter metal tube.*
3. *The two magneto's will be drilled to accept their ignition leads.*
4. *The two ignition lead support tubes (kit parts 6Z) will be replaced by appropriate diameter metal tube.*
5. *The expansion tank for the engine cooling system will need to be added to the front of the engine, including the two rearward routed pipes.*
6. *The engine propeller shaft may need to be replaced to fit the replacement 'ProperPlane' Axial propeller.*
7. *An air control valve will need to be added to the top, rear of the camshaft.*
8. *The coolant supply pipe from the water pump to the bottom rear, right side of the rear cylinder will need to be added.*
9. *An oil pipe will need to be added to the right, front of the engine, between the camshaft housing and the engine sump.*

Below is a 'production' engine and differs in detail from the engine in this particular aircraft.



Below is a 'production' engine and differs in detail from the engine in this particular aircraft.



Preparation:

When removing any kit parts from their sprues, always remove any residual sprue tags and mould seams.

NOTE: *Engine parts 6Z can be discarded.*

Remove engine parts 1Z to 11Z from the kit Z sprue (9Z is the propeller shaft, but is not shown in the assembly instructions).

Remove any residual sprue tags and mould seams.

Assembly:

Assemble the engine by cementing the propeller 9Z shaft into one engine half, then cement the two engine halves (Z10 and Z11) together. Once the cement has set, sand the join seam to merge the two halves.

Cement the overhead camshaft (Z4) onto the top of the six cylinders, making sure the end with the protruding shaft is facing the front of the engine.

Cement the magneto drive (Z2) onto its base at the rear of the engine and the forward top to the rear end of the camshaft.

Cement the two magnetos (Z8) to the bottom sides of the drive and onto the base at the rear of the engine.

Remove the engine bearers 6K and 9K from the kit K sprue and remove any residual sprue tags and mould seams.

Cement the engine bearers onto their engine mountings, making sure they are horizontal when viewed from the rear of the engine.

Modifications:

Spark plugs:

Cut way the existing pre-mould spark plugs from each side of the engine cylinders.

Using the witness marks as guides, drill holes of 0.5 mm diameter into each cylinder.

Magnetos:

Point mark the centre of the six ignition lead connections on the face of both magnetos.

Using the point marks as guides, drill holes of 0.3 mm diameter into the face of both magnetos.

Ignition lead support tubes:

NOTE: *These tubes replace the kit supplied parts 6Z.*

Cut a length of 1.0 mm diameter Brass tube, such as 'Albion Alloy's' MBT10 or similar.

Mark along one side of the tube the position of the exit holes for the six ignition leads.

Using a sharp, strange blade, carefully 'V' nick the tube at the six marks.

Use the nicks as a drill guide and drill through that side only of the tube.

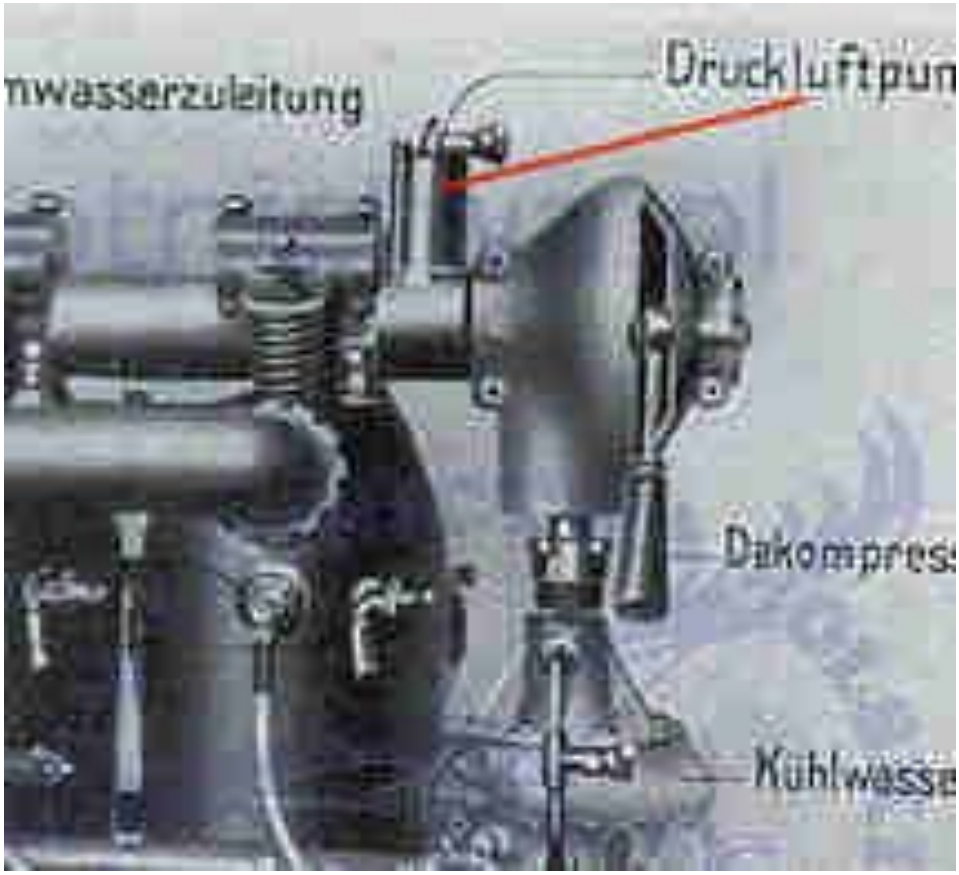
Sand the drilled holes to remove any metal burrs.

Repeat the procedure to create an ignition lead support pipe for the other side of the engine.

Use a triangular needle file to create a slight groove across the six pre-moulded recesses in the sides of the cylinders, for locating the created ignition support tubes.

Air valve:

NOTE: *An air valve was located on the top, rear of the overhead camshaft. This is not supplied in the kit.*

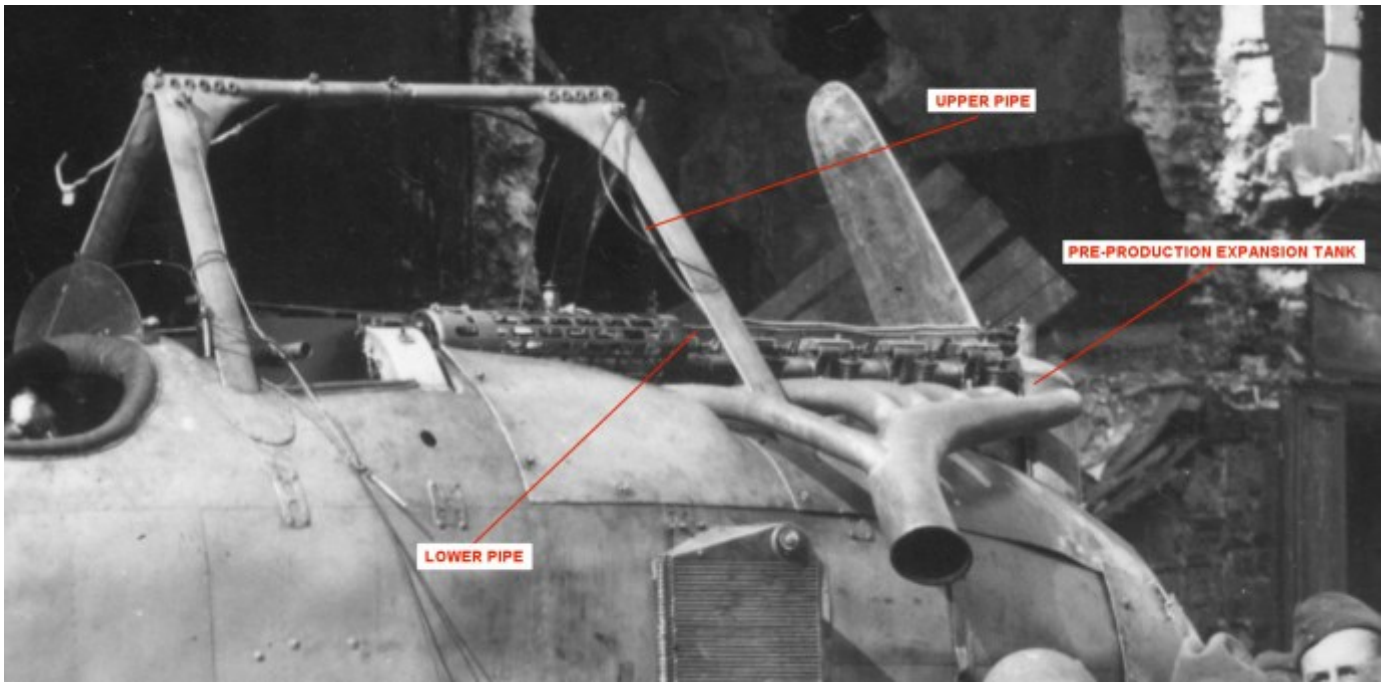


To represent the air valve I used one from my engine 'spares'. However it can be made from a scrap cut od sprue or plastic rod.

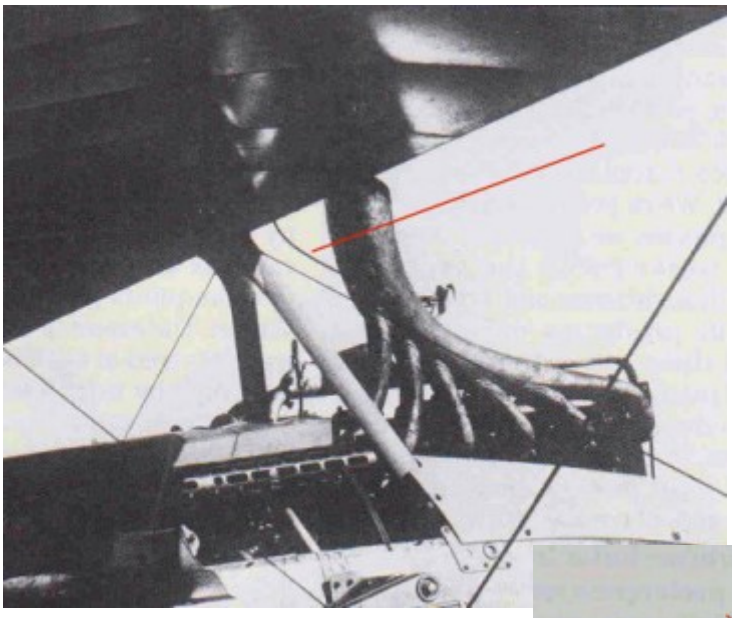
Coolant expansion tank:

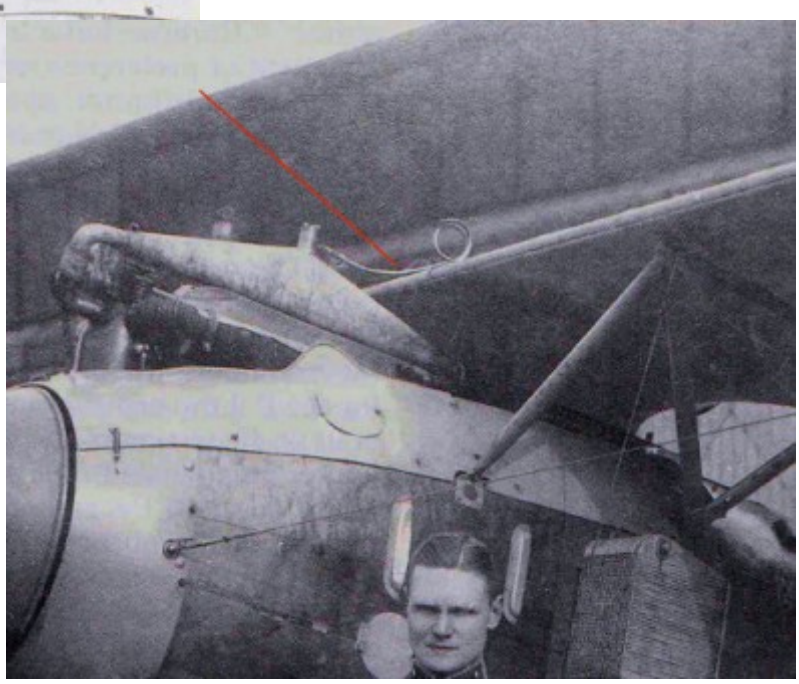
NOTE: *The production aircraft had a larger, triangular shaped expansion tank located along and above the engine and slightly to the left side (as supplied in the kit). However, this particular aircraft was a pre-production build and had a conical coolant expansion tank located at the front of the forward engine cylinder. This was one of possibly only two or three pre-production aircraft with this type of expansion tank. The kit parts are supplied for the production version tank. The pre-production expansion tank is not supplied in the kit.*

*The following photograph is of this aircraft and its **pre-production** expansion tank, after it was captured. It shows two pipes routed rearwards over the engine, from the coolant expansion tank.*



*On **production** aircraft, with the over engine expansion tanks, it can be seen that a pipe was connected to the top of the expansion tank and up over the leading edge of the upper wing. My assumption is that this pipe was intended to release to atmosphere, any excess build up of pressure within the cooling system.*





My assumptions:

The coolant was pumped from the engine driven water pump through a supply pipe connected to the integral gallery pipe at the lower right of the six engine cylinders. The coolant then flowed up through the outer cooling jackets of the six cylinders to the collector pipe at the top of the cylinder bank. From there it flowed forwards into the expansion tank and from there, through supply pipework (no details available) to the two fuselage mounted 'Windhoff' radiators. The coolant flowed through these radiators and was then drawn back to the water pump for it to be re-circulated through the engine.
The two pipes shown on the previous photograph of this aircraft were routed rearwards along the top of the camshaft, with one bending up towards to where the upper wing would be. As this aircraft did not have a flush fitting wing radiator, I can only assume the upper pipe was attached to the upper wing and vented to atmosphere any over pressurization in the cooling system, as with the production aircraft. The lower pipe was possibly routed down inside the fuselage to a cockpit coolant temperature gauge.
As the pre-production expansion tank and the two pipes are not supplied in the kit, they will need to be made.

Expansion tank:

NOTE: *To represent the pre-production expansion tank, I use a cylinder cut from the engine sprue of a 'Wingnut Wings' Mercedes 160 hp engine that was in my 'spares'.*

I cute the two halves of a cylinder from the sprue and cemented them together. The various protrusions were sanded off and the top of the cylinder rounded. The rear face of the cylinder was sanded flat then I used a half round needle file to 'groove' the rear face to fit the profile of the forward engine cylinder. A 1.0 mm diameter hole was then drilled into the top of the rear face and into the stub on the forward engine cylinder, below the camshaft. A short length od 1.0 mm diameter Brass rod was secured into the hole in the rear face, using thin CA adhesive. The rod and tank were then secured in position on the forward cylinder, again using thin CA adhesive.
To represent the top valve I used one from a gun mount in my 'spares'. However it can be made from a scrap cut od sprue or plastic rod.

Camshaft oil pipe:

NOTE: *An oil supply pipe was located between the right, front side of the camshaft housing and the top of the engine case at the bottom of the forward engine cylinder.*

Drill a hole of 0.6 mm diameter into the camshaft housing and also in the engine case.

Cut and bend a length of 0.5 mm diameter Nickel-Silver tube, such as 'Albion Alloy's' NST04 or similar, to fit the tube into the two holes.

Secure the tube into the holes using thin CA adhesive.

NOTE: *At this stage temporarily fit the four engine frames onto the fitted engine bearers, then test fit the engine assembly into the fuselage halves to ensure it will fit correctly and the fuselage halves will fully join. Also modification to the fuselage top decking 5L, by removing material from the front of the engine cylinder cut out, will be required to allow for the added expansion tank.*

Painting:

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

Mask off the engine case and engine bearers, the airbrush the engine cylinders and separately, the carburettor/manifold assembly, two oil filler tubes7Z and oil vent pipe 3Z with black, such as 'Tamiya' Rubber Black (XF85) or similar.

Remove the masking.

Brush paint the following parts as stated or with similar coloured paint:

'Tamiya' Buff (XF57) or similar - the two fitted engine bearers (6K and 9K).

'Mr. Metal Colour' Stainless Steel (213) or similar - engine sump/crankcase, magneto drive 2Z, added air valve, carburettor body 1Z, bands around the two speed selectors 5Z.

'Mr. Metal Colour' Iron (212) or similar - camshaft tube 4Z.

'Mr. Metal Colour' Brass (219) or similar - caps of the two oil filler tubes7Z, the two speed selectors 5Z, the filler cap on the added coolant expansion tank, the cap on the oil tank and the caps on front of the two magnetos 8Z.

'*Tamiya' Hull Red (XF9) or similar* - created ignition lead support tubes, handle on the decompression lever 2Z, magneto front faces 8Z.

'Mr. Metal Colour' Iron (212) 50/50 mix with 'Mr. Metal Colour' Brass (219 or similar - cam shaft covers 4Z and the added coolant expansion tank.

Refer to Part 2 (Wood Effects) of this build log - apply wood effects to the two Buff painted engine bearers (6K and 9K). I brush applied 'DecoArt' crafters acrylic paint (Burnt Umber) to create a wood grain effect.

To give the applied wood effect a varnished sheen, brush 'Tamiya' Clear Yellow (X24) thinned with 'Mr. Colour' self levelling 400 thinners over the engine bearers.

Assembly (continued):

To represent the integral coolant supply pipe at the bottom, right side of the engine cylinders, cut a length of 'ANYZ' black braided line (AN011). Using thin CA adhesive, secure one end to the rear end stub of the integral pipe on the rear cylinder. Route the line over the top of the right magneto and across and down the left, rear of the engine. Secure the end under the bottom, rear of the engine sump, using thin CA adhesive.

Make sure the pre-drilled holes in the faces of the magnetos and ignition lead support tubes are clear of paint.

Using thin CA adhesive, secure the two created ignition lead support tubes in the grooves created in the engine cylinders. Make sure the drilled holes for the ignition leads are facing down.

Cut twelve short and twelve long lengths of 0.3 mm diameter lead wire, such as that from 'PlusModel' or similar.

Cut twelve short lengths of 0.5 mm diameter Nickel-Silver tube, such as 'Albion Alloy's' NST05 or similar.

Using thin CA adhesive, secure a tube into each pre-drilled hole in the engine cylinders, leaving 2mm protruding.

Using thin CA adhesive, secure a short lead wire into each pre-drilled hole in the underside of the ignition lead support tubes.

Loop the wires up and over the tubes and onto the end of the spark plug tubes and secure in position using thin CA adhesive.

Trim away any excess wire at the spark plugs.

Using thin CA adhesive, secure a long lead wire into each pre-drilled hole in the faces of the two magnetos.

NOTE: *In the following step, not all of the wires can be inserted into the end of the ignition lead support tubes. Therefore they should be grouped together as close as possible.*

Loop the wires up and over the magnetos to the rear end of the ignition lead support tubes. Trim the length of each wire then secure to the end of the tube using thin CA adhesive.

Brush paint the leads with 'Tamiya' Dark Yellow (XF60) or similar.

Cement the two oil filler pipes onto the right side of the engine case.

Cement the oil vent pipe 3Z between the engine crankcase and sump.

Cement the oil tank 25K in position on the right engine bearer 9K.

Cement the carburettor/manifold in position on the left side of the engine, making sure it locates fully on the crankcase and cylinder heads.

NOTE: *The upper pipe from the added coolant expansion tank can't be fitted until later in this build, after the upper wing has been fitted.*

To represent the lower of the two pipes routed rearwards from the added coolant expansion tank, cut an long length of 0.4 mm diameter Nickel-Silver tube, such as 'Albion Alloy's' NST04 or similar.

Bend the tube such that it contacts the rear of the air valve on the top of the added coolant expansion tank and along the top of the camshaft. The rear of the tube should end at the rear of the last camshaft cover.

Cut a length of 'MFH' black 0.4 mm flexible tube (P-961) and push it onto the rear end of the tube.

Secure the tube in position on the top of the camshaft cover the using thin CA adhesive.

Route the flexible tube down the left, rear end on the engine and under the rear of the sump. Secure in position using thin CA adhesive.

I used two decals for the engine crankcase data plates, which were from my decal 'spares' collection. These were applied to the forward end of the crankcase and on both sides.

NOTE: *During the next step, test fit the engine and frames assembly into a fuselage half to make sure the frames align correctly to their locations.*

Cement the four engine frames 12K, 13K, 45K and 38K in position over the engine bearers.

Cut two long lengths of 'MFH' black 0.4 mm flexible tube (P-961) and push it onto the rear end of the tube.

Using thin CA adhesive, secure one end of the two flexible tubes to the ends of the fuel inlets at the bottom of the carburettor speed selectors.

NOTE: *The two tubes will be finally secured in position once the engine assembly is fitted into the fuselage.*

Route the two tubes rearwards through the two rear engine frames.

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

To represent the carburettor control rod, cut a long length of 0.4 mm blackened Nickel-Silver tube such as 'Albion Alloy's' NST04 or similar.

Bend and flatten one end of the tube to 45 degrees.

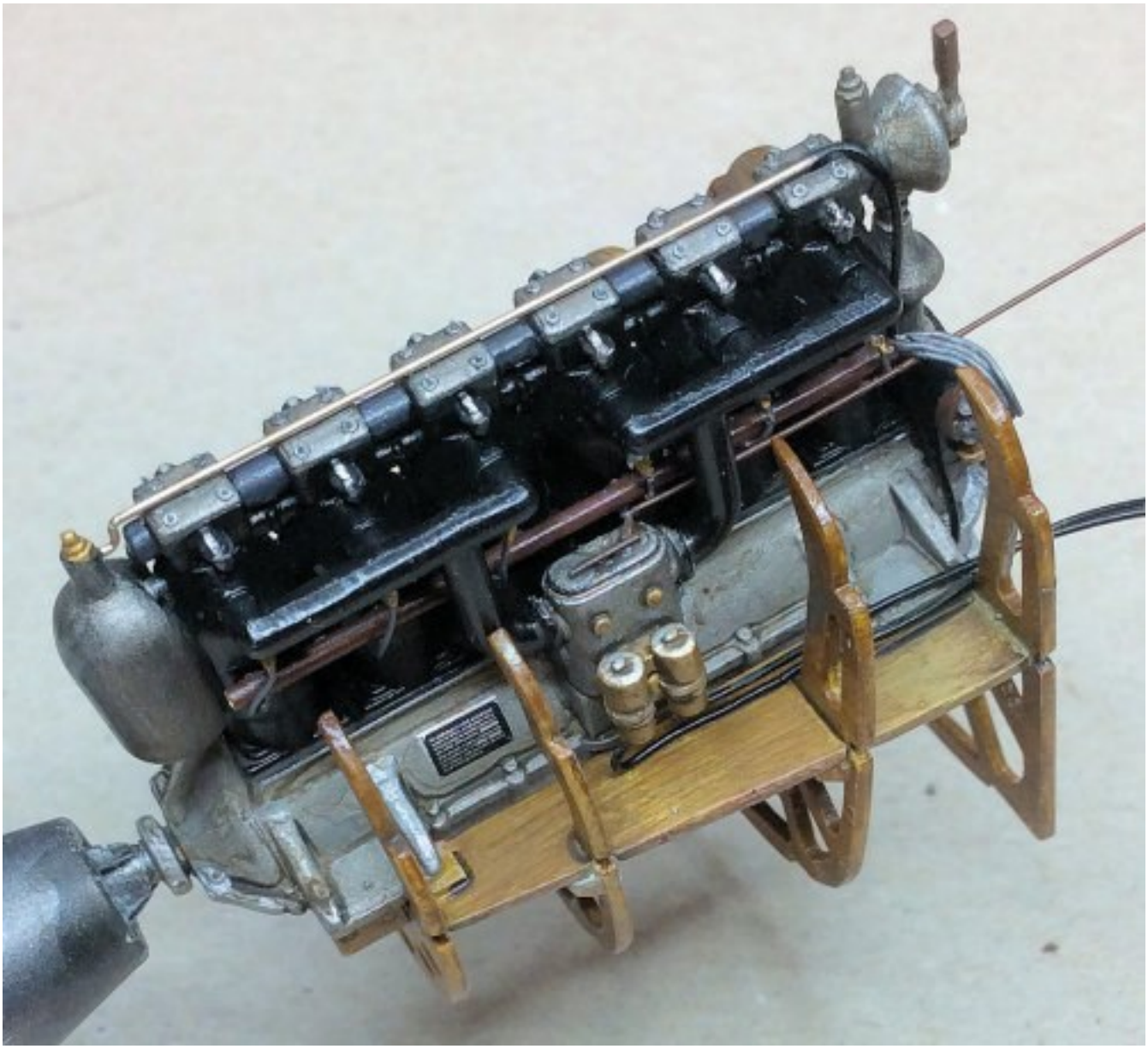
Pass the tube behind the rear induction manifold with the angled, flattened end on the rear, top of the carburettor and secure the tube in position using thin CA adhesive.

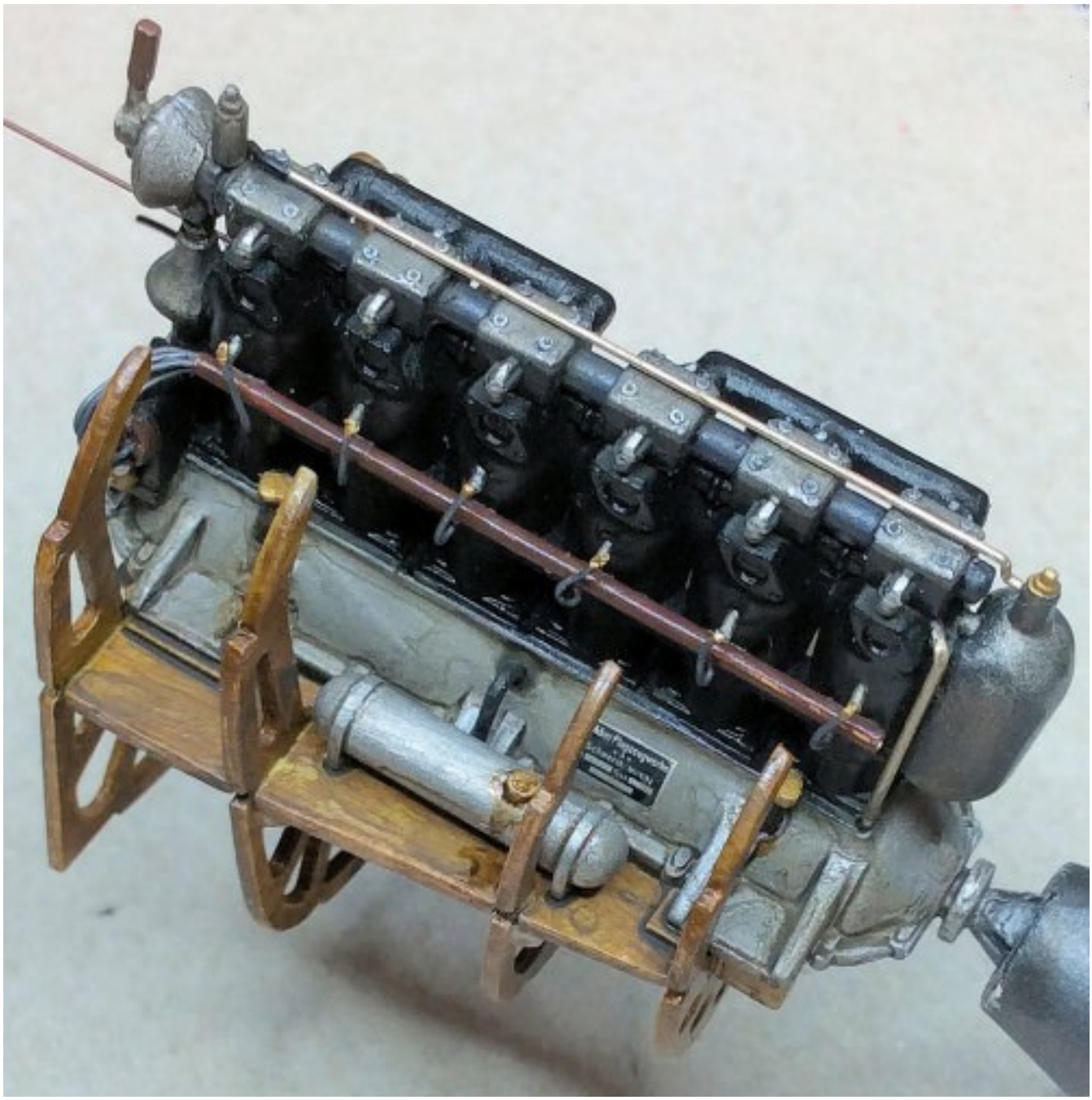
Cut a short length of blackened tube and secure it across the discs of the top of the carburettor, using thin CA adhesive.

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

Weathering - refer to Part 3 (Weathering) - I applied ‘Flory Models’ Dark Dirt fine clay wash over the engine crankcase and sump.

NOTE: *Prior to painting the camshaft I sanded away the corner bolt heads on each of the six cover plates for the valve operating levers. These were added using the base of the fuel primers supplied in the ‘Taurus Models’ set (3224), which were painted with ‘Mr. Metal Colour’ Stainless Steel (213) and inserted into holes of 0.5 mm diameter drilled into each corner of the covers.*



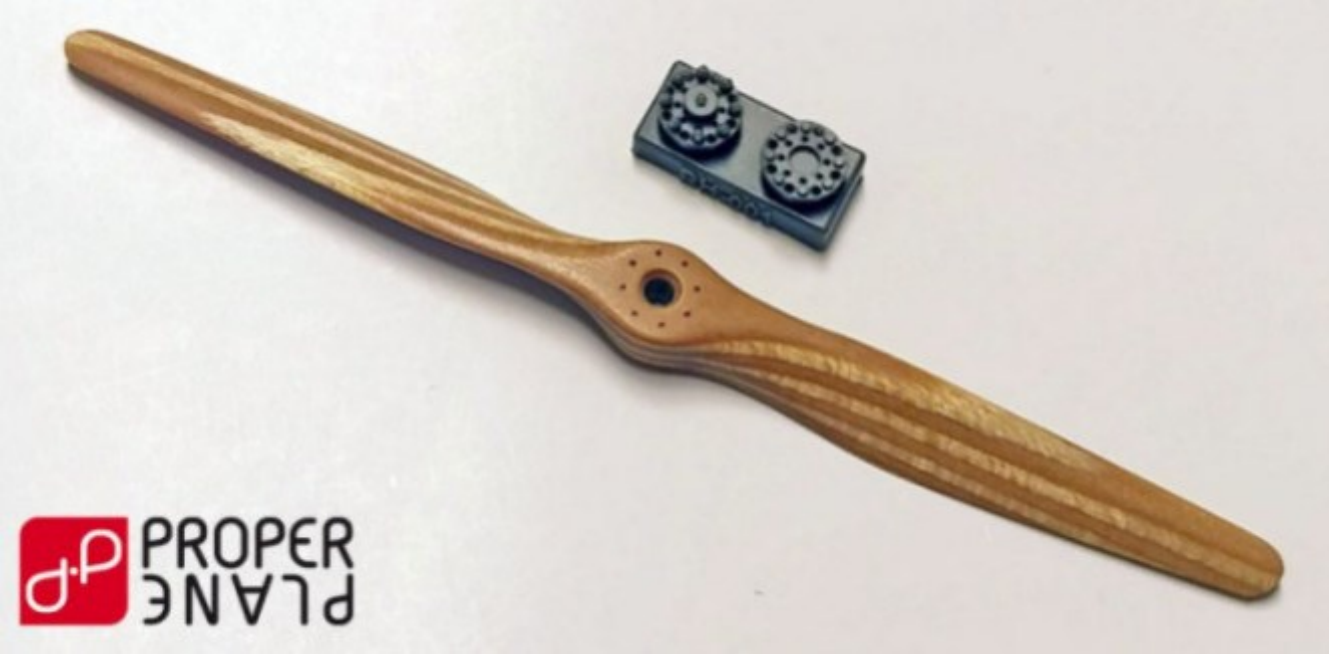


PART 7
PROPELLER

PART 7 - PROPELLER

NOTE: *I chose to replace the kit supplied propeller, but the kit propeller can be used.*

For this build I chose to replace the kit supplied propeller with wood laminated propeller from Alex at 'Proper Plane' (Axial propeller for Mercedes 160hp - WP001). These propellers are supplied pre-varnished and with resin propeller bosses. As such, the engine and the back plate 7K for the propeller spinner will to be modified. The resin propeller bosses will not be used as the spinner completely covers the central area of the propeller.



Preparation:

Cut away the propeller shaft from the engine.

Point mark the centre of the witness mark on the engine where the shaft was located.

Using the witness mark as a guide, drill a hole of 2.0 mm diameter into the engine by gradually increasing the drill size from 0.5 mm to 2.0 mm diameter.

Drill out the hole in the spinner back plate 7K to 2.0 mm diameter.

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

NOTE: *In the following step, make sure you know which face of the propeller hub is forward - refer to photographs of this aircraft to determine the correct orientation of the propeller blades.*

Using thin CA adhesive, secure the cut tube into the hole in the propeller hub with one end flush with the front face of the propeller hub.

Slide the spinner back plate onto the tube and up to the rear face of the propeller (grooved surface facing forward).

Test fit the propeller spinner 14K over the propeller blades and onto the back plate.

Scrape or file the profile of the blade cut outs in the spinner such that it will fit around the propeller blades and fully locate onto the spinner back plate.

Painting:

Airbrush a light coat of 'Tamiya' Hull Red (XF9), thinned with 'Tamiya' X20A thinners. The paint should be applied so that it just starts to tint the propeller (not cover the wood laminations).

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

If available, apply ‘Axial’ decals to the front of the propeller blades. I used spare ‘Wingnut Wings’ decals left over from a previous model build.

Seal the propeller using ‘Alclad’ Light Sheen lacquer (ALC-311).

If desired, lightly sponge brush weathering to the leading edges and tips of the propeller, using ‘Tamiya’ Weathering Master Set B (Rust).

PART 8
WEAPONS

PART 8 - WEAPONS

The kit supplied machine guns are not the correct version of the machine guns and will be replaced by the resin 'GasPatch' Spandau 08 early version 1/32nd scale weapons.

NOTE: *The 'GasPatch' replacement weapons require modification to fit into the fuselage (fuselage modified in Part 9 (Fuselage) of this build log.*

Preparation:

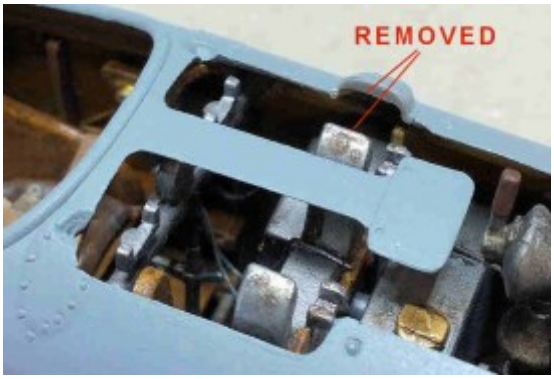
Using thin CA adhesive, secure the barrel into the cooling jacket (through the hole in the front).

NOTE: *The following steps need to be done once the fuselage halves have been joined together (refer to Part 10 Construction - page 65).*

Sand or file away the lower rear and front corners of breech blocks until the 'GasPatch' replacement machine gun will locate into the rear mountings on the cockpit cross bar and onto the front mountings forward from the ammunition tanks.

If necessary, file or sand away the faces of the ammunition chutes to enable the machine guns to locate fully.

Make sure that both machine guns locate horizontally when viewed from the side and are parallel to the fuselage when viewed from above.



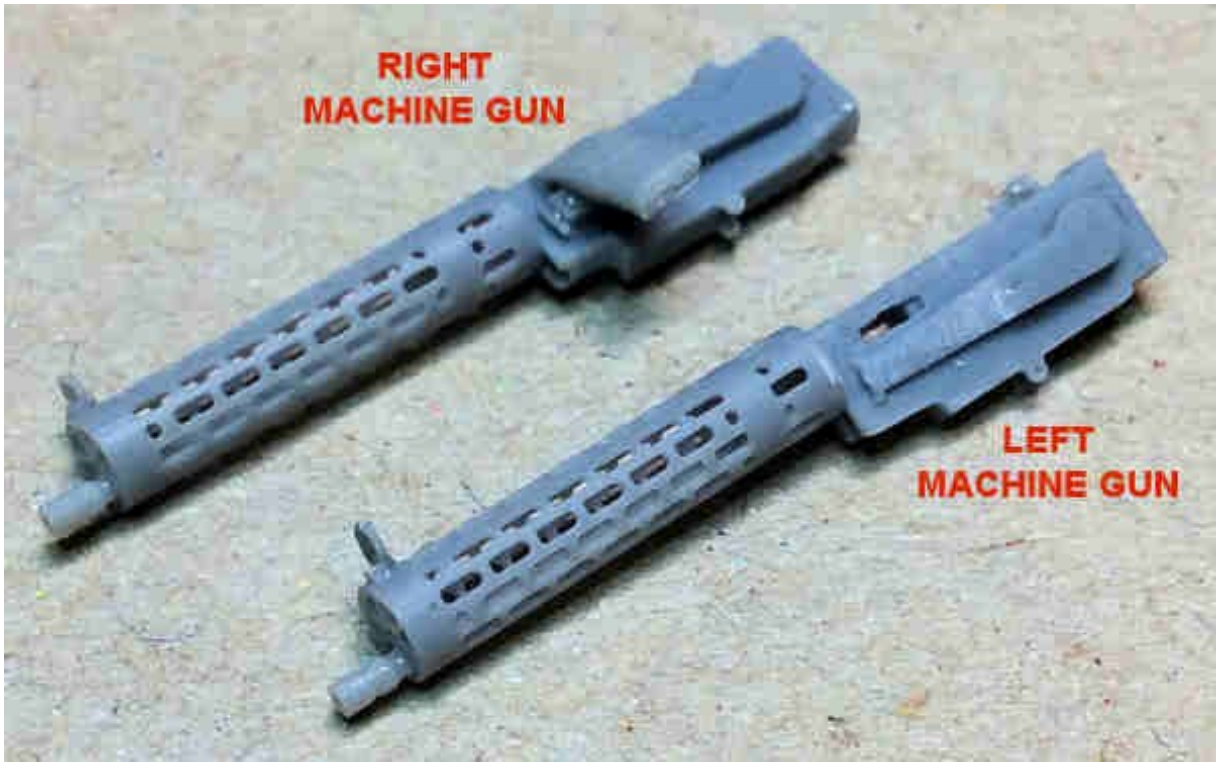
Right machine gun:

Prepare the right ammunition ejection chute 33K and sand away the locating lug on the top face of the chute.

Cut away the bottom half of the chute.

Test locate the chute to make sure when attached to the machine gun, the weapon will locate into the fuselage.

Using thin CA adhesive, secure the chute in position against the left side of the breech block of the right machine gun.



Exhaust pipe:

Temporarily locate the engine exhaust pipe 46K onto the engine with the right machine gun located, making sure they can both fully locate without obstructing each other.

Painting

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

Airbrush the weapon with ‘Alclad’ Gunmetal (ALC-120) or similar.

Brush paint the ammunition chute on the right machine gun with a mix of ‘Mr. Metal Colour’ Stainless Steel (213).

Using ‘Tamiya’ weathering master Set B (Soot), lightly sponge the two machine guns, especially around the gun muzzle areas.

PART 9
CONSTRUCTION

PART 9 - CONSTRUCTION

Preparation:

When removing any kit parts from their sprues, always remove any residual sprue tags and mould seams.

Engine bay:

Prepare engine bay frames 12K, 13K, 38K and 45K

Prepare the oil tank 25K.

Cockpit:

Prepare the control column parts 22K, 28K, 5D and 20K and instrument 29K.

Prepare the hand pump 23K, panels 2K and 32K, rear frame 39K and the starter magneto 15K and 19K and the cross bar 26K

Prepare and cement together the seat assembly 4K and 10K.

Prepare and cement together the seat assembly to the seat floor and frames 3K,36K, 44K and 43K.

Cement the control column cross bar 20K to frame 36K.

Prepare and cement together the fuel tank and ammunition containers 2K, 1K, 37K, 5K and 42K.

Prepare and cement together the rudder bar parts 5D, 17K, 18K and 16K.

Cement together the control column 22K and hand grips 28K.

Cement together the stater handle 19K to the starter magneto 15K.

Fuselage halves:

Prepare the fuselage halves 1L and 2L, including the removal of the top half of the two strut brackets on both fuselage halves.

Drill out the 1.0 mm diameter holes through the fuselage halves for mounting the external side mounted 'Windhoff' box radiators.

Lower wing:

Prepare the lower wing 1G and cockpit decking 5L.

Painting:

Airbrush all parts, assemblies and the inside surfaces of the fuselage halves and cockpit area of the lower wing with a grey primer, such as 'AK Interactive' Grey (AK758) or similar.

Airbrush the inside surfaces of the fuselage halves, cockpit area of the lower wing, seat assembly, engine frames 12K, 13K, 45K and 38K, engine bearers 6K and 9K and fuselage frame 39K with 'Tamiya' Buff (XF57) or similar.

Refer to Part 2 (Wood Effects) of this build log - Apply wood effects to the above parts - I applied 'DecoArt' crafters acrylic paint (Burnt Umber) over the Buff painted surfaces, to create a wood grain effect.

To give the applied wood effect a varnished sheen, airbrush 'Tamiya' Clear Yellow (X24) thinned with 'Mr. Colour' self levelling 400 thinners.

Brush paint the following parts as stated or with similar coloured paint:

> **'*Tamiya' Hull Red (XF9) or similar*** - hand grips 28K on the control column 22K, handle on priming pump 23K and grease pump 30K.

'*Tamiya' Rubber Black XF85 or similar* –starter magneto 15K.

'Mr. Metal Colour' Stainless Steel (213) or similar -control column 22K and lever 5D, Seat cross bar supports on 4K, handle for starter magneto 19K, control lever on panel 2K, the instrument 29K, rudder bar support frame17K, 18K and lever 5D Cross bar 26K.

'Mr. Metal Colour' Brass (219) or similar -grease pump 30K, priming pump 23K and magneto switch on panel 2K.

'*Tamiya' Buff (XF57) or similar* -engine frames 12K, 13K, 45K and 38K, fuselage rear frame 39K, rudder bar 17K and lower frame 16K, frame 37K between fuel and ammunition tanks, panel 2K.

'AK Interactive' Brown Leather (AK3021) and British Leather (AK3081) with '*Tamiya' Hull Red (XF9) highlights* - Pilot's seat cushion.

Seal the painted surfaces with a semi-mat clear coat, such as 'Alclad' Light Sheen (ALC-311), 'Tamiya' Semi-Gloss (X35) or similar.

Refer to Part 2 (Wood Effects) of this build log - apply wood effects to the Buff painted engine frames 12K, 13K, 45K and 38K, fuselage rear frame 39K, rudder bar 17K and lower frame 16K, frame 37K between fuel and ammunition tanks and panel 2K. I brush applied 'DecoArt' crafters acrylic paint (Burnt Umber) to create a wood grain effect.

To give the applied wood effect a varnished sheen, brush 'Tamiya' Clear Yellow (X24) thinned with 'Mr. Colour' self levelling 400 thinners over the engine bearers.

Decals:

NOTE: *The kit supplied decals have no instrument decals. Therefore I applied appropriate sized instrument decals from the 'Airscale' generic WW1 decals (AS32-WW1) set.*

Apply instrument decals to the instrument 29K and on panels 32K and cross bar 26K.

I applied an appropriate information decal from my 'spares' to the left side of the ammunition container 42K.

Brush a clear gloss coat over the instrument decals, such as 'Tamiya' X22 or similar.

Dry brush the lever of the four selectors on panel 32K with 'Mr. Metal Colour' Stainless Steel (213) or similar.

Assembly:

Cut away the pipes from the ends of the grease pump30K and priming pump 23K.

Drill a hole of 0.5 mm diameter into the pumps where the pipes were located.

Using thin CA adhesive, secure cut lengths of 0.4 mm lead wire, such as that from 'PlusModel' or similar, into the drilled holes.

Cement the starter magneto 15/19K and the starter switch panel 2K into their location on the inside of the fuselage left half.

NOTE: *The kit instructions are not clear enough to determine if the engine and fuselage frames should be located onto the locating stubs or either side of the stubs. I found that the fuselage halves would only fully join together if the frames were located to the sides of the stubs, not onto the stubs. Also I found that the sides of the frames needed to be sanded away to allow the fuselage halves to fully join together.*

Locate the engine/frame assembly onto the fuselage right half then locate the fuselage right half. Make sure the fuselage halves fully contact each other and that the engine frames are correctly located onto the side beam on the fuselage halves.

Using masking tape, temporarily secure the fuselage halves together.

NOTE: *In the following steps, the **assemblies are secured only to the fuselage right half**, so that the left half can be removed, leaving the assemblies in position. This will allow correct fitting and alignment of the remaining fuselage internal components and the fuselage left half.*

Apply CA adhesive to the contact surfaces of the front and rear engine frames and the fuselage right half only.

Once the adhesive has set, separate the two fuselage halves and apply cement to the remaining engine frames to secure the engine/frame assembly to the fuselage right half.

Cement the control column assembly and the rudder control lever 5D into position on frame 36K of the seat assembly.

Locate the seat/frame assembly onto the fuselage right half then locate the fuselage right half. Make sure the fuselage halves fully contact each other and that the frames are correctly located onto the side beam on the fuselage halves and the top of the rear frame aligns with the rear edge of the cockpit.

Using masking tape, temporarily secure the fuselage halves together.

Apply CA adhesive to the contact surfaces of the front and rear frames and the fuselage right half only.

Once the adhesive has set, separate the two fuselage halves and apply cement to the remaining frames to secure the seat/frame assembly to the fuselage right half.

Locate the two fuselage halves together and secure with masking tape.

Locate the fuel/ammunition tank assembly up through the underside opening into the cockpit and align the bottom of the frame at its location stubs. Make sure the assembly is vertical in the fuselage and at 90 degrees to the fuselage sides when viewed from above.

Apply CA adhesive to the contact surfaces of the frame and the fuselage right half only.

Once the adhesive has set, separate the two fuselage halves and apply cement to the frame to secure the fuel/ammunition tank assembly to the fuselage right half.

Cement the instrument panel 32K, grease pump 30K and priming pump 23K to their locations on the inside of the fuselage right half.

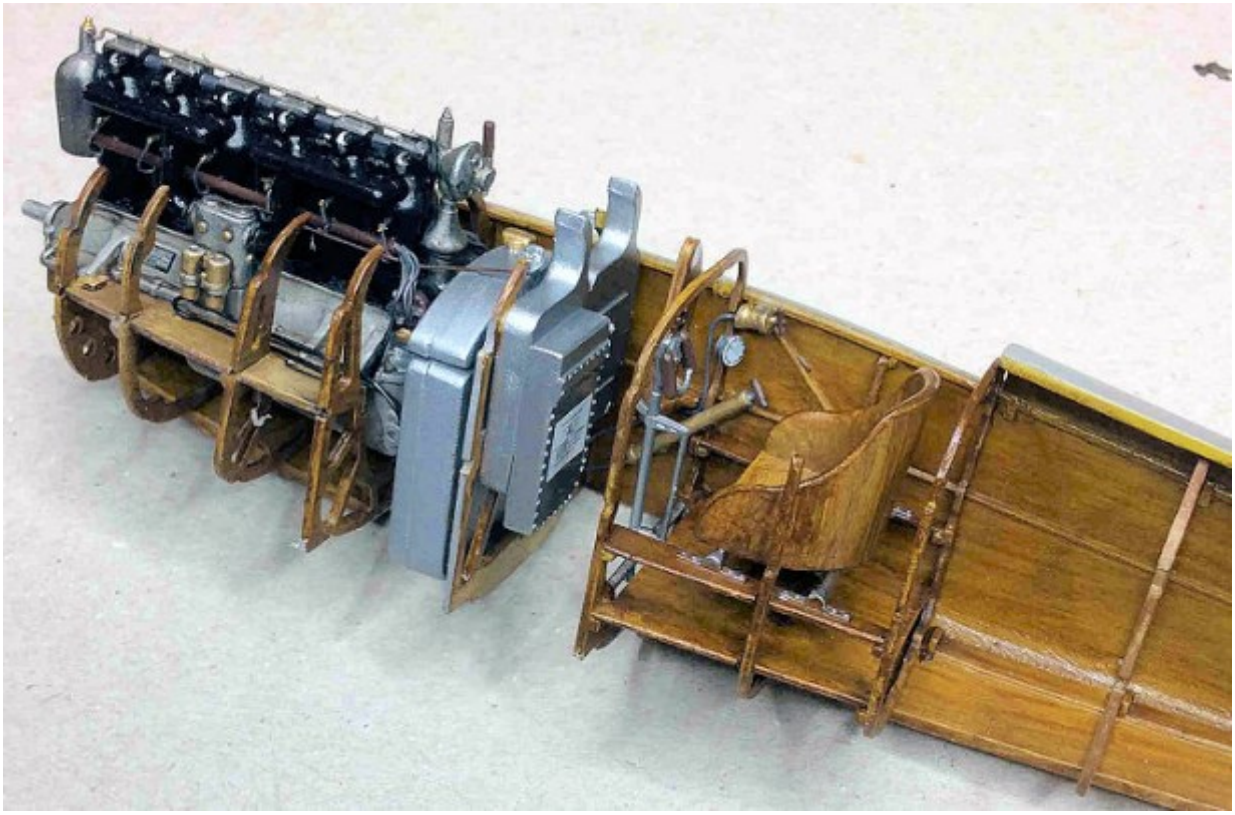
Route the lead wires from both pumps down through the front seat frame and fuel/ammunition tank rear frame, the against the fuselage side. Secure in position using thin CA adhesive.

Cement the fuselage rear frame 39K in position onto the fuselage right half.

Cement the instrument 29K onto its location on the front seat frame.

Route the two flexible pipes from the carburettor down and onto the front face of the fuel tank the secure in position using thin CA adhesive.

Trim the length of the carburettor control rod such that it can pass over the top of the fuel tank and against the tank frame, then secure in position on the tank using thin CA adhesive.



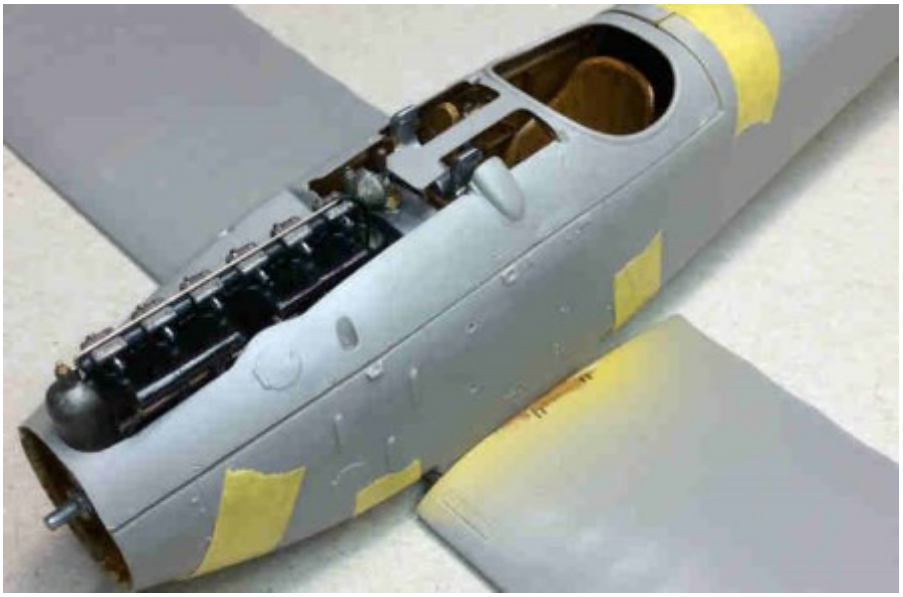
Locate the rudder bar assembly in position at its locating stubs on the lower wing and secure in position using thin CA adhesive.

Test fit the fuselage left half onto the right half and its fitted assemblies. Make sure the fuselage halves fully contact each other and that the various frames are correctly located onto the side beam on the left fuselage half.

Secure the two fuselage halves together with masking tape.

NOTE: *In the following step, some adjustment may be required to mating faces to achieve the correct fit of the lower wing to the fuselage.*

Test fit the lower wing and top decking panel to the fuselage, making sure the rudder bar assembly is clear of obstructions and the lower wing locates fully into the fuselage.



Remove the masking tape to separate the fuselage halves, top decking panel and lower wing.

Seat harness: *The kit does supply the pilot's seat harness. Therefore I used the harness parts from the 'Part' Albatros D.I set (S32-034).*

Cement the pilot's seat cushion 8K onto the pilot's seat.

Remove the seat harness parts 25 and 26 from the photo-etch set.

Remove any remaining tags from the edges of the parts.

Cut away the end fittings on the two shoulder straps on par 25. This will allow the straps to be wrapped around the support cross bar (to be added).

Cut away the bottom half of the end fittings of the lap straps. This will allow them to fit onto the front support bar under the pilot's seat.

Anneal the staps over a naked flame to soften then for bending.

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

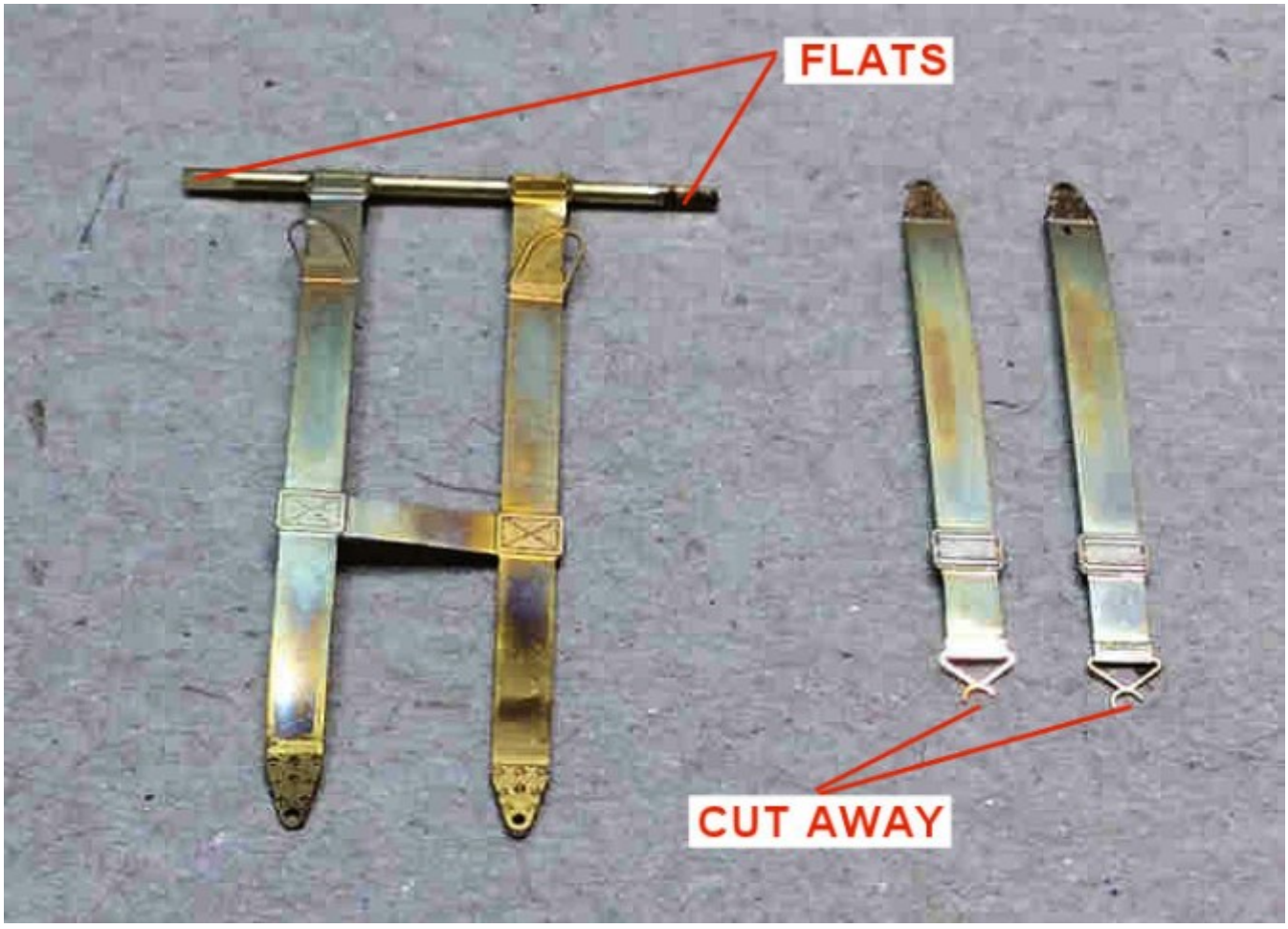
Trim the length of the rod such that is spans across the back of the rear seat frame, at the top, inner notch of the frame.

File the ends of the rod to create flats that will better contact the rear of the frame. The flats should not extend into the visible area of the frame.

Bend the top ends of the shoulder straps over the rod such that the ends of the straps fully wrap around the rod and onto the rear of the straps.

Position the straps centrally on the rod and facing forwards at 90 degrees from the flats.

Secure the straps to the rod using thin CA adhesive.



Brush ‘Mr. Metal Colour’ Metal Primer R or ‘VMS’ Metal Prep 4K over the shoulder and lap straps.

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

Brush ‘Tamiya’ Desert Yellow (XF59) or similar over the two seat belts.

Brush paint the metal fittings on the seat belts and the shoulder strap cross bar with ‘Mr. Metal Colour’ Stainless Steel (213) or similar.

Pass the two shoulder straps through the rear seat frame and over the pilot’s seat.

Secure the flats at the ends of the two seat belts in their position on the back of the rear seat frame, using thin CA adhesive. Make sure the straps a central over the back of the seat.

Bend the straps down and onto the seat cushion and secure in position using thin CA adhesive.

Secure the two laps straps onto the front seat support bar and against the sides of the pilot’s seat.

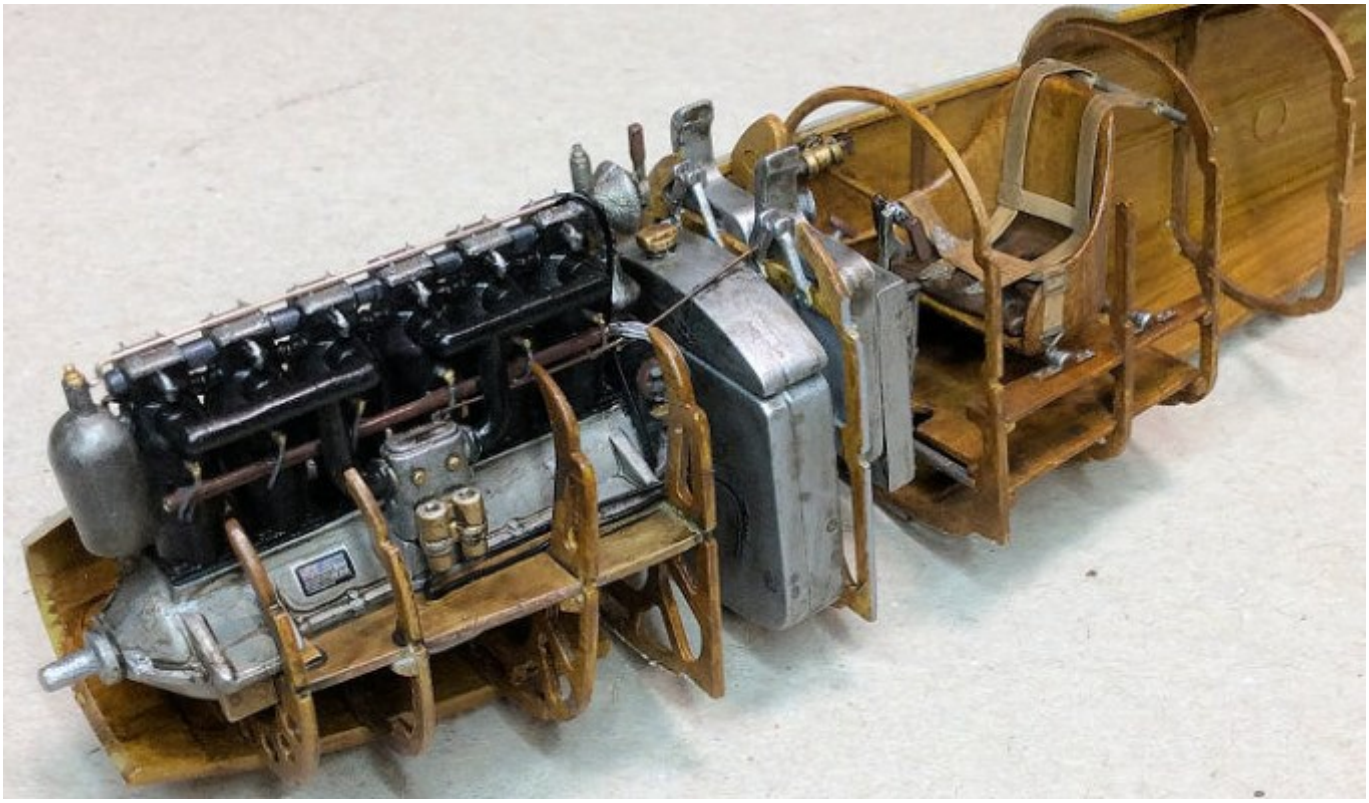
Bend the straps down and onto the seat cushion and secure in position using thin CA adhesive.

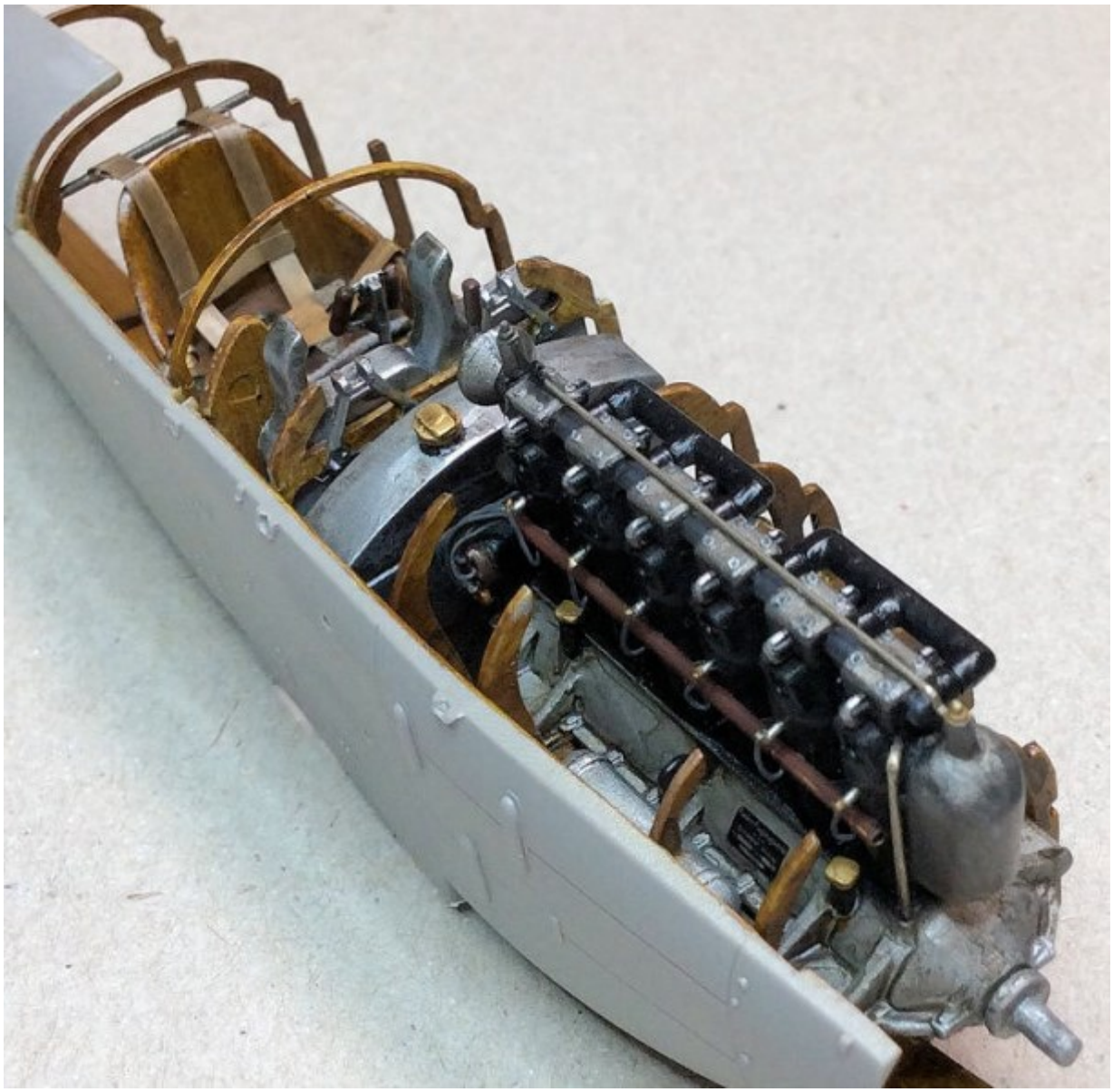
Weathering:

Refer to Part 3 (Weathering) of this build log. Apply your desired weathering to the fuel/ ammunition tank assembly, control column and the seat floor panel. I used ‘Flory Models’ Dark Dirt fine clay wash. Remove the wash as necessary to achieve the weathering effect desired.

Refer to Part 3 (Weathering) of this build log. Apply your desired weathering to the seat straps. I used ‘Flory Models’ Dark Grime fine clay wash. Remove the wash as necessary to achieve the weathering effect desired.

Airbrush a sealing coat of semi-matte clear coat, such as ‘Alclad’ Light Sheen (ALC311) or similar, to seal the applied weathering.





Control rigging:

Rudder control:

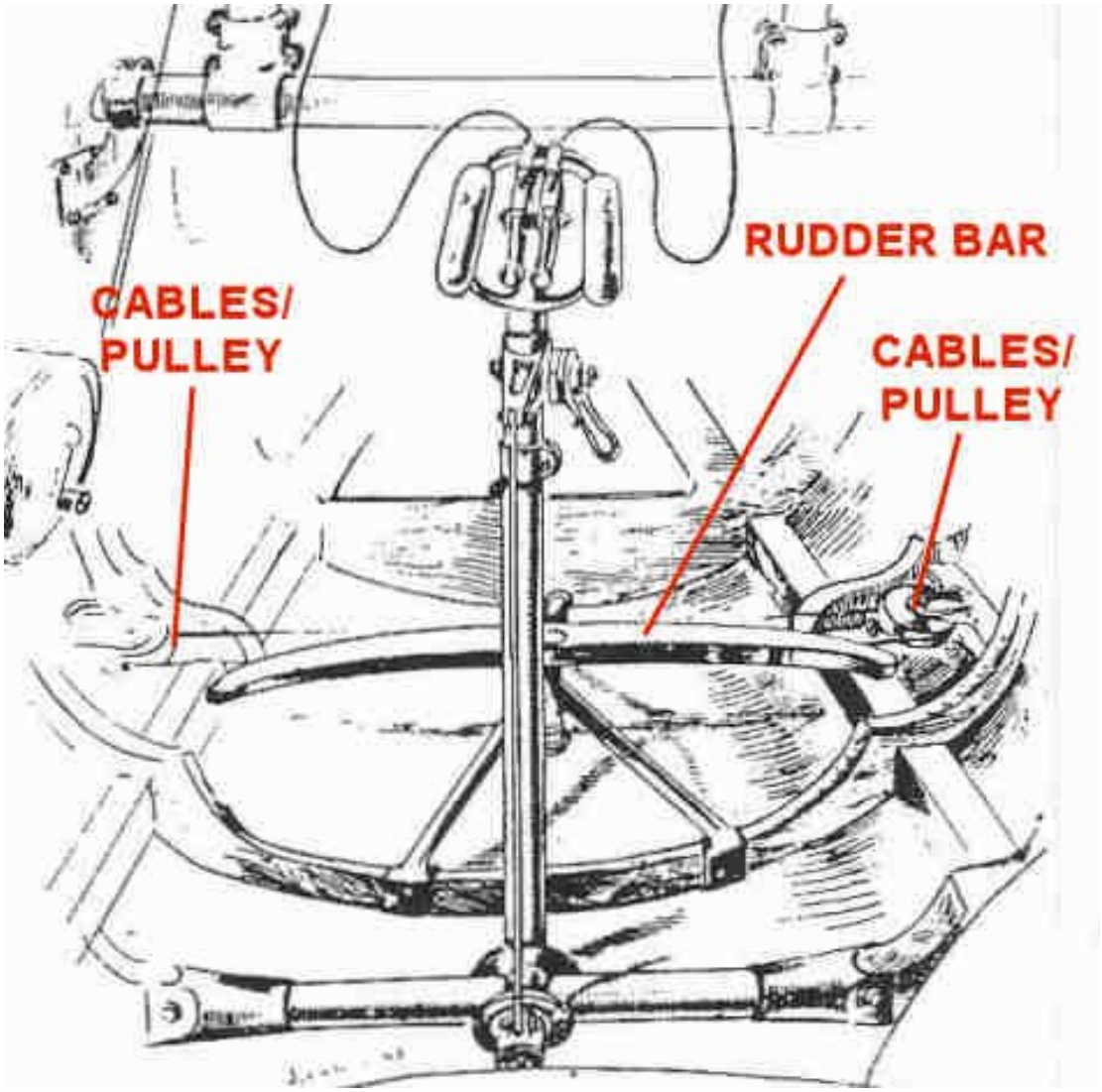
Rudder control cables were attached to a lever located on the rudder bar post, below the rudder bar. Control cables attached to each end of the lever were routed outboard and around pulleys fitted on the inside of the fuselage. The cables were routed rearwards through the fuselage to be attached to the ends of the rudder control horn, which was fitted to the rudder post within the rear of the fuselage. As the pilot pushed the rudder bar either left or right, the cables would cause the rudder to pivot left or right, causing the aircraft yaw in the required direction. Turnbuckles were probably fitted to the cables within the fuselage.

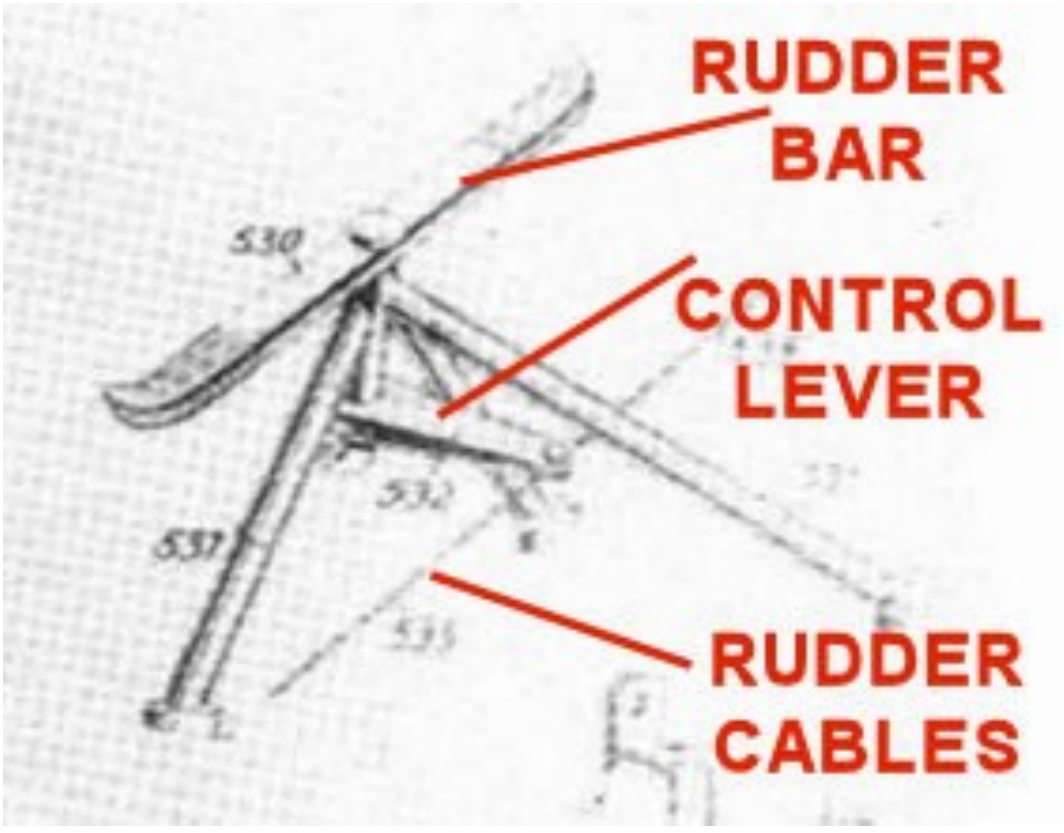
NOTE: *As the rudder control cables were fitted to the lever under the rudder bar and outboard to pulleys in the fuselage sides. The cables were then routed rearwards through the fuselage to the rudder. The kit does not represent the fuselage pulleys and the view of the cables from the closed cockpit is restricted. Therefore the cable is only represented at the rudder bar lever.*

Cut a length of ’EZ’ black fine line and secure it across the rudder lever, using thin CA adhesive.

Pull the line at each side and secure the ends to the sides of the floor of the lower wing.

Cut away any excess line at each side.


CABLES/
PULLEY
RUDDER BAR
CABLES/
PULLEY


RUDDER
BAR
CONTROL
LEVER
RUDDER
CABLES

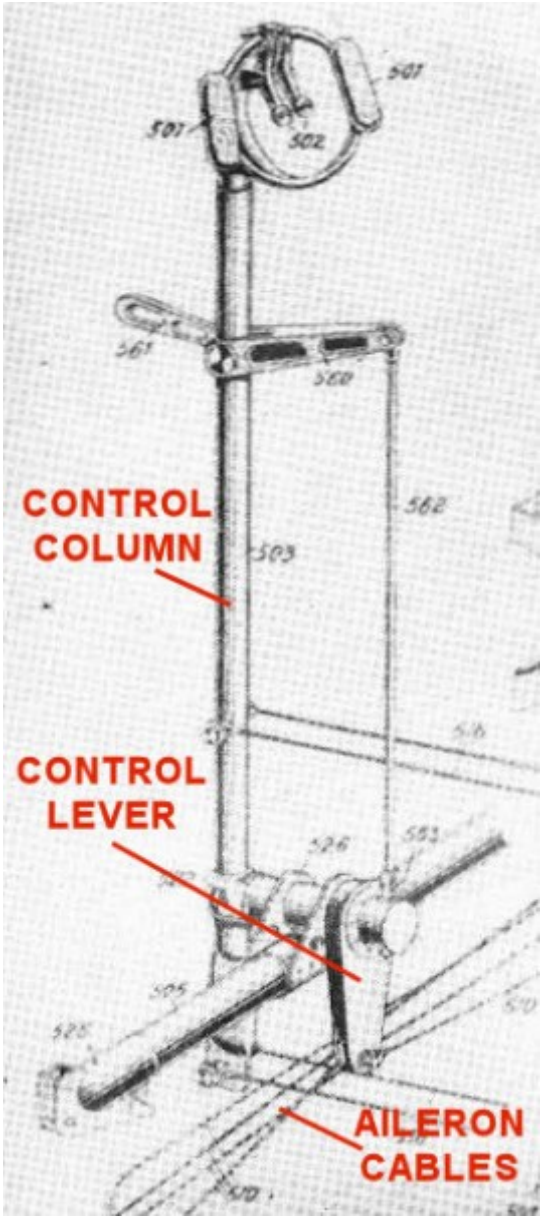
Aileron control:

NOTE: *As the actual aileron control cables were attached to the control lever on the bottom, rear of the control column and effectively under the cockpit floor, very little will be seen from the closed cockpit. Therefore a single cable will be used to represent the cables.*

Cut a length of ’EZ’ black fine line and secure it across the aileron lever, using thin CA adhesive.

Pull the line at each side and secure the ends to the rear, sides of the seat rear frame.

Cut away any excess line at each side.



Elevator control:

NOTE: *The actual elevator control cables were attached to the control column as a pairs, both above and below the aileron control lever on the bottom of the control column. The lower pair of control cables will not be seen from the closed cockpit. Therefore only the upper pair of control cables will be used to represent the cables.*

Cut a long length of ’EZ’ black fine line and secure it to the front of the control column as shown in the above illustration.

Route the two lines under the pilot’s seat to the rear of the fuselage right half.

Pull each line and secure the ends to the bottom, rear of the right fuselage side.

Cut away any excess line.

Trigger control cables:

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

Using thin CA adhesive, secure one end of the two wires into the 'V' recess between the two ammunition feed chutes on the top of the ammunition tank.

Loop the two wire down the back up to the two triggers tabs on the top of the control column.

Trim the length of the wires.

Secure the ends of the wires to the front of the two trigger tabs, using thin CA adhesive.

Starter magneto and switch wires:

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

Using thin CA adhesive, secure one end of one wire to the underside of the switch panel 2K and below the starter switch on the fuselage left side.

Loop the wire down and under the starter magneto and secure in position using thin CA adhesive.

NOTE: *In the following step the other end of the wire will be positioned and fitted only after the fuselage halves have been joined together.*

Using thin CA adhesive, secure one end of the remaining wire to the underside of the starter magneto on the fuselage left side.

Position the wire upwards to clear the cockpit parts when joining the fuselage halves together.

Closing the fuselage:

Check fit the two fuselage halves together and make sure they join fully.

Apply thick (slower) CA adhesive to the bottoms of the engine and fuselage frames on the right fuselage half.

Locate the left fuselage half onto the right half, making sure they join fully.

Hold the fuselage halves together using masking tape.

Apply cement along the fuselage joints. I used clamps to hold together the fin and tail skid fairing.

Once set remove the masking tape.

Starter magneto wire:

Bend the lead wire at the starter magneto around the cockpit fame and against the left side of the fuselage at the side of the ammunition tank.

If necessary, trim the length of the wire.

Secure the wire in position using thin CA adhesive.

Spark advance control rod:

Cut a length of 0.4 mm diameter Nickel-Silver tube, such as 'Albion Alloy's' NST04 or similar.

Bend one end of the tube to a shallow angle.

Test position the tube with the bent end under the spark advance lever on panel 2K and the other end against the left side of the fuselage at the side of the ammunition tank.

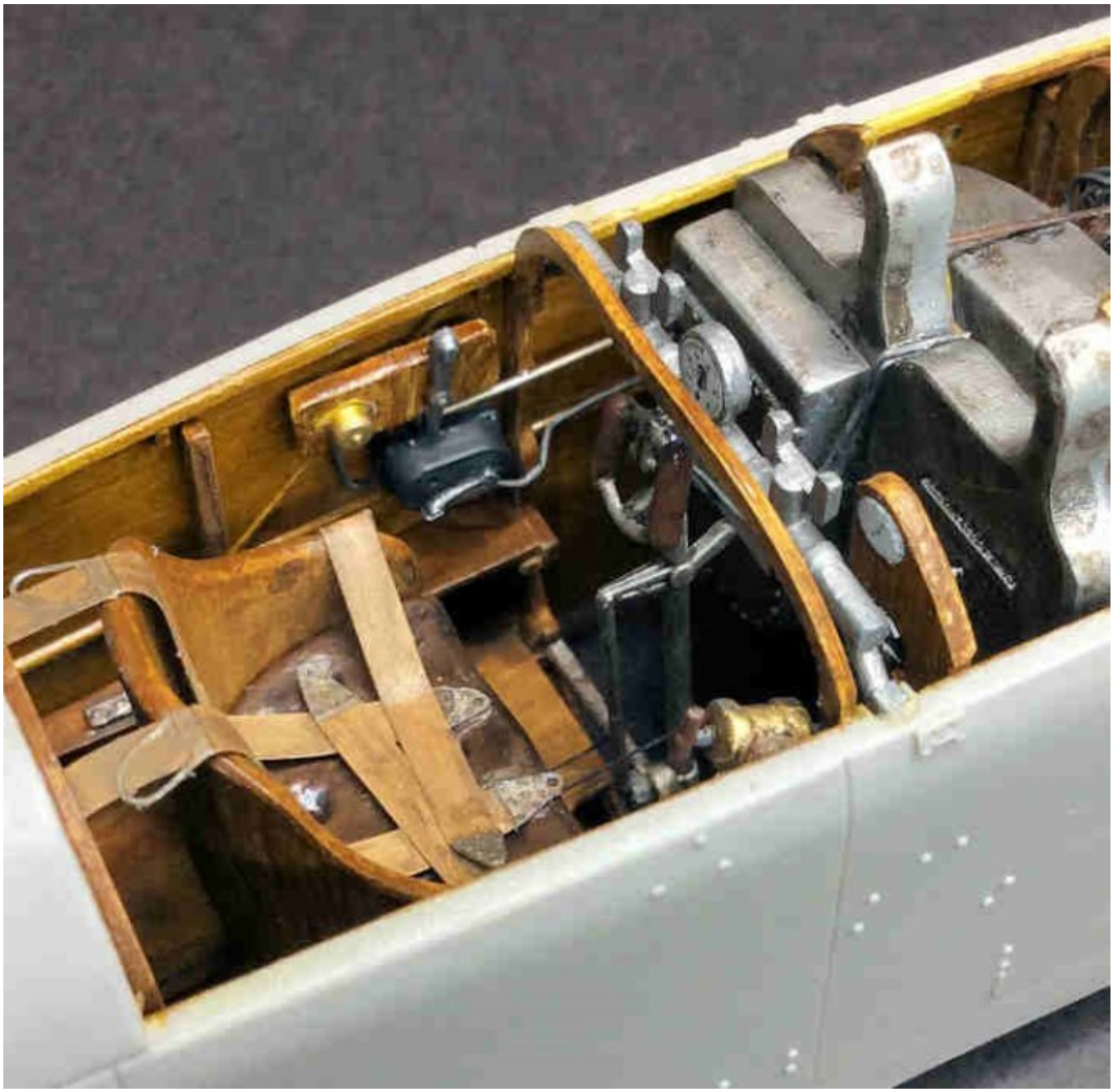
If necessary, trim the length of the tube to achieve a good fit.

Secure the tube in position at the lever and fuselage, using thin CA adhesive.

Cockpit cross bar:

Locate the cockpit cross bar 26K into its locating recesses in the fuselage sides.

Cement the cross bar in position.



Sand or scrape the fuselage seam joints to blend them together. If gaps are evident, they can be filled with applications of ‘Mr. Surfacer’ 500 or 1000 surface primer then sanded, once fully set.

NOTE: *At this stage of the build, it’s best to apply the required paint to the top decking panel. Doing this means the edges of the panel around the exposed engine will not need painting after the panel has been fitted and sanded to blend with the surrounding fuselage.*

Mask off the inside surface of the top decking panel to protect the applied wood finish.

Airbrush the outer surface of the top decking panel with a grey primer, such as ‘AK Interactive’ Grey (AK758) or similar.

Remove the masking.

Test fit the top decking panel onto the fuselage, making sure there is full contact at the three mating surfaces.

Cement the top decking panel in position on the fuselage.

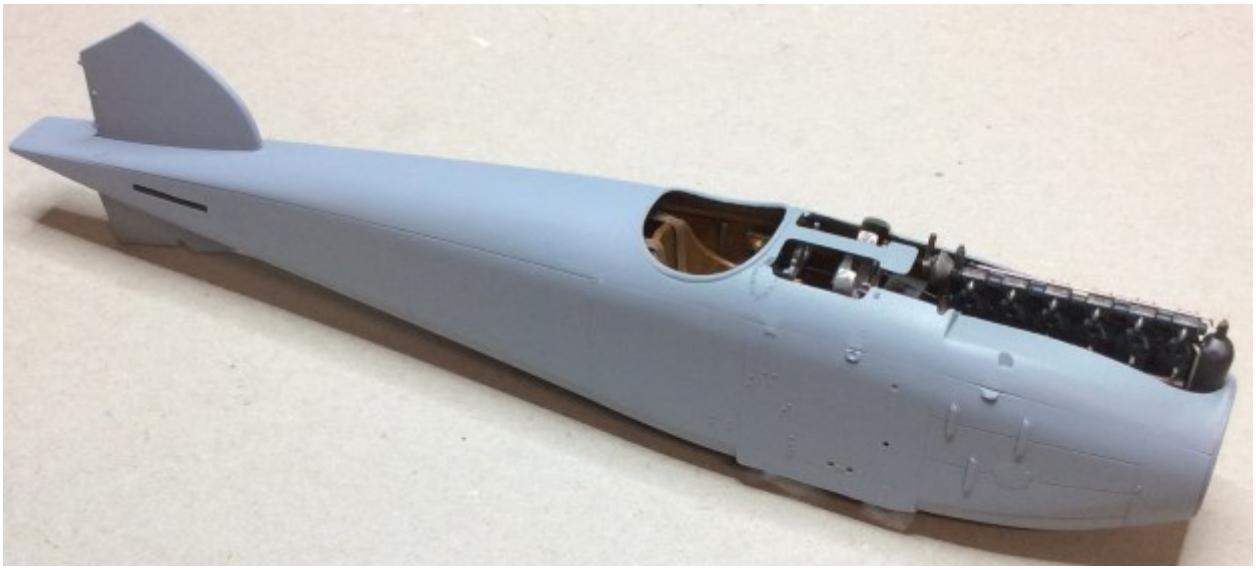
Cement the backplate (7K) for the propeller spinner centrally onto the front of the fuselage.

NOTE: *During the following step, some fuselage surface detail, such as panel lines and panels etc, will be removed. These will be replaced later in the build by re-scribing panel lines and some decals from the 'Quinta Studios' 3D printed Albatros D,I set (QD32076).*

Sand or scrape the three seam joints of the fuselage to blend them to the surrounding fuselage surfaces. If gaps are still evident, they can be filled with applications of 'Mr. Surfacer' 500 or 1000 surface primer then sanded, once fully set.

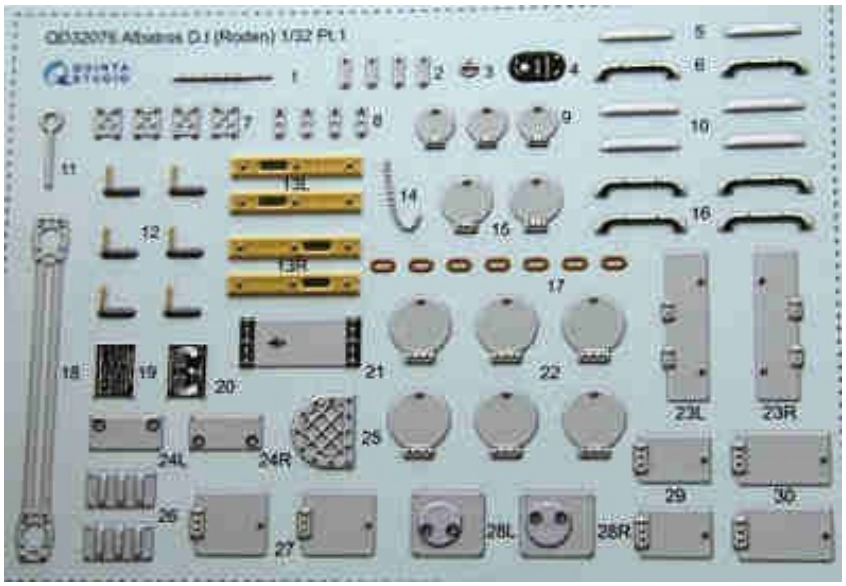
Machine gun preparation:

At this stage of the build, refer to Part 9 (Weapons) for the preparation of the two machine guns and any changes required to the fuselage top decking panel.



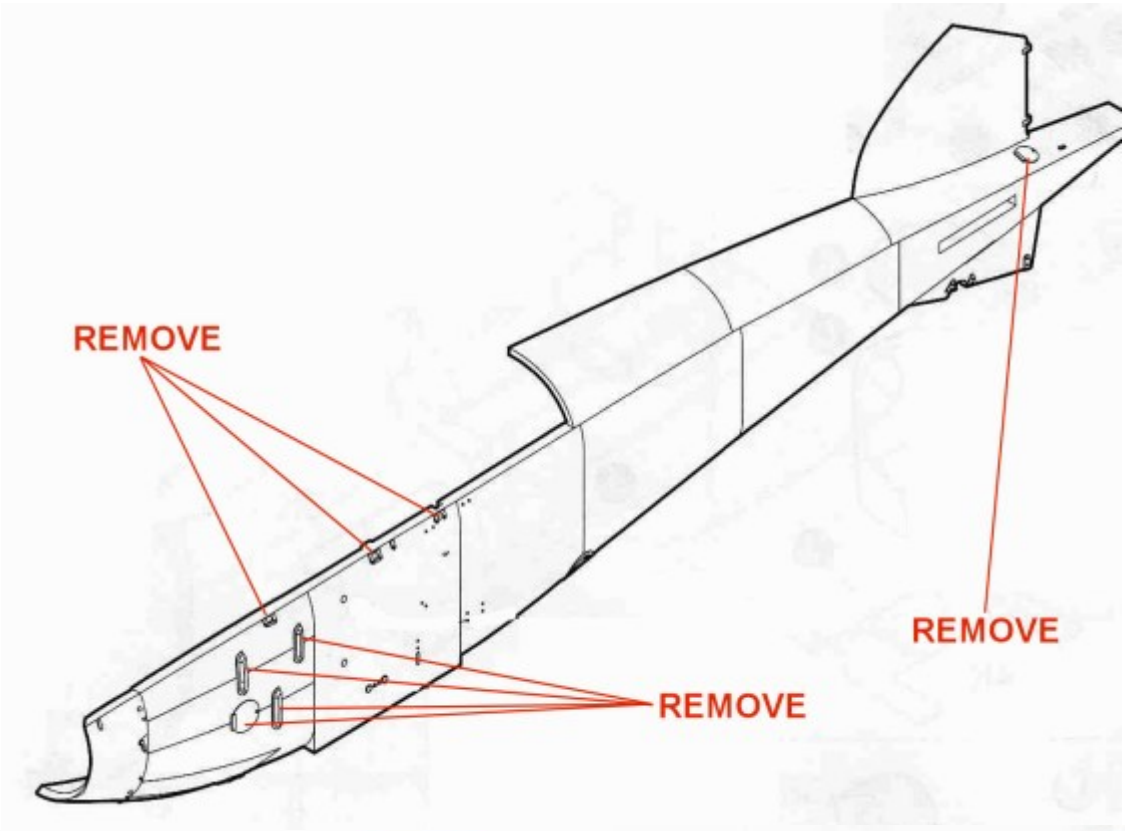
Fuselage external detail:

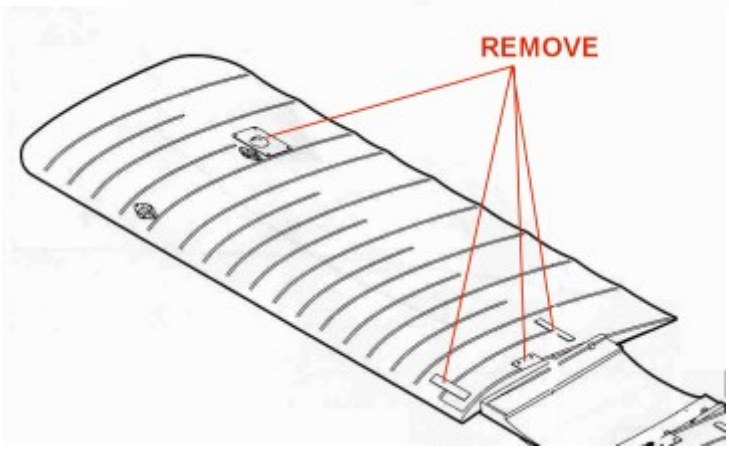
NOTE: *I chose to replace the following fuselage external details with some from the Part 1 sheet of the 'Quinta Studios' 3D printed Albatros D.I set (QD32076).*

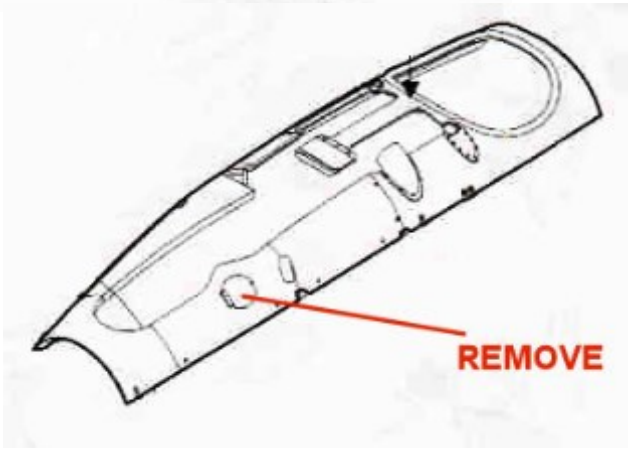


To prepare the fuselage and lower wings for the application of the 3D printed decals later in this build, sand off the following pre-moulded details from both sides of the fuselage and the both ides of the lower wings.

NOTE: *There are four panels on the upper surface of each of the lower wings. The three inboard panels on the underside of the lower wings are located and shaped differently.*







To prepare the fuselage underside for the application of the 3D printed decals later in this build, sand off the following pre-moulded details from the forward, underside of the fuselage

The two round access panels.

The two louvred vent panels.

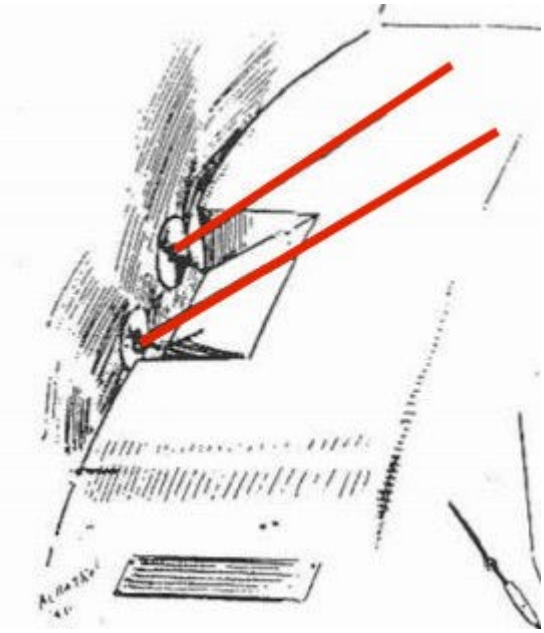
The landing gear cross strap.

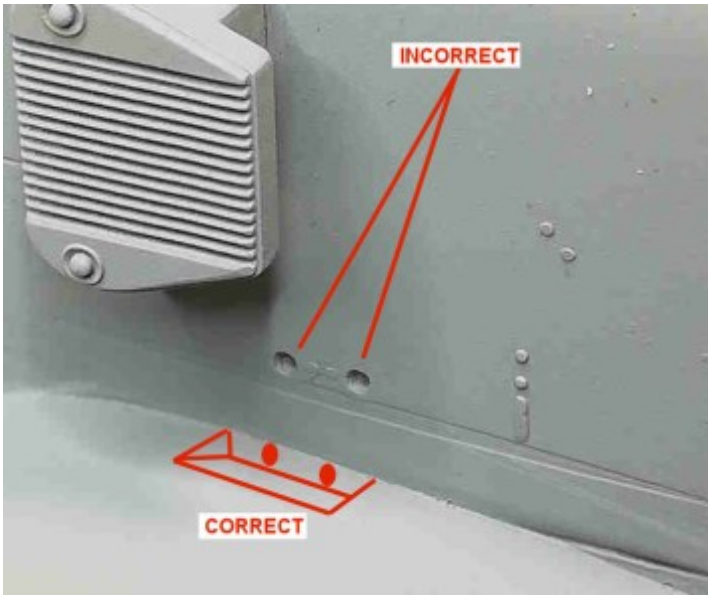
If necessary, brush 'Mr. Surfacer' surface primer 500 or 1000 over the areas and once fully dry, sand away to blend with the surrounding areas.

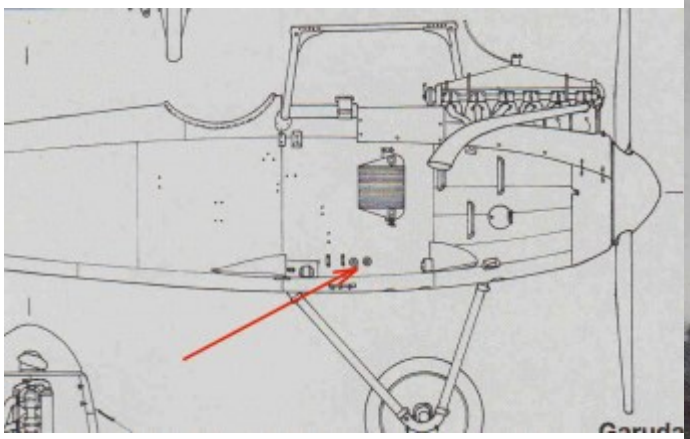
If necessary, carefully any panel lines that may have been sanded away.

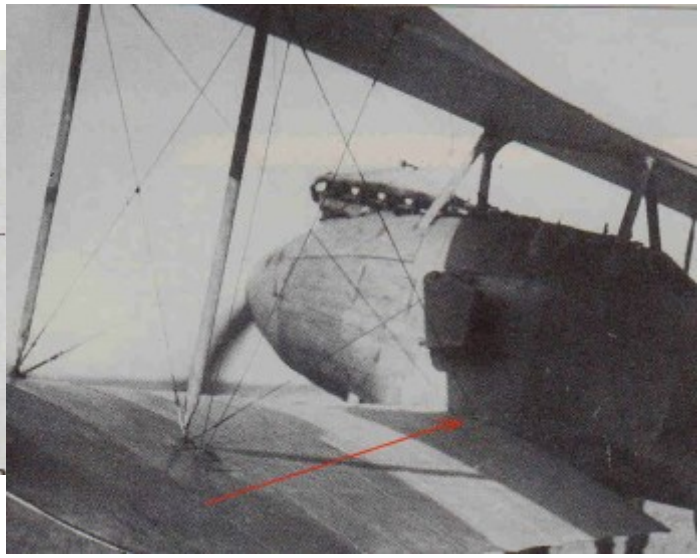
Flying wire recess:

NOTE: *The two flying wires on each side of the lower wing were attached at the wing roots. The kit has two pre-moulded holes for these wires, located in the fuselage sides, up from the lower wing roots. This is not correct. Drawings and photographs of the Albatros D.I show that in fact, the flying wires were attached into the fuselage through a plate that covered a recess in the upper surface of the lower wing roots. Therefore the model will need to be modified to represent the correct attachments.*









NOTE: *The pre-moulded panels in the lower wing roots will be covered by the 'Quinta Studios' 3D printed Albatros D.I set (QD32076), parts 24L and 24R.*

Fill the two pre-moulded holes on both fuselage sides with a model filler.

Sand the filled holes to blend with the surrounding fuselage surface.

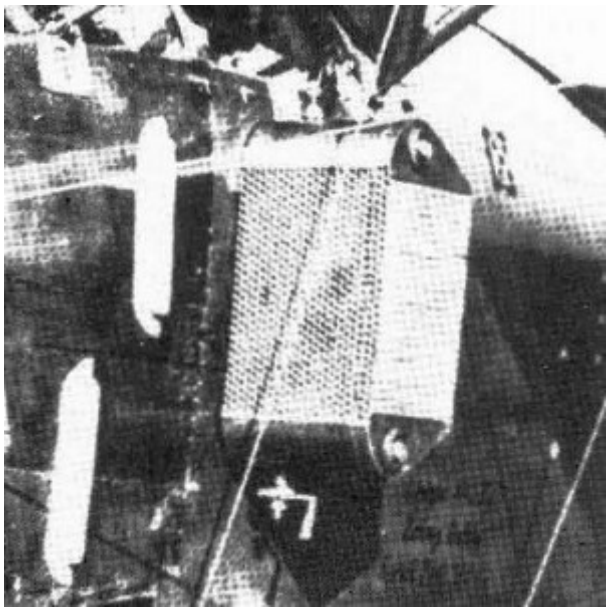
If necessary they can be further filled with applications of 'Mr. Surfacer' 500 or 1000 surface primer then sanded, once fully set.

Windhoff' side radiators:

Assemble the two radiators 6H and 7H. If necessary file the edges of 6H to obtain a good fit inside 7H. Make sure the inner edge of 6H is flush with the edges of 7H so it will locate correctly against the fuselage.

Cement the two radiators onto their locations on the fuselage sides.

NOTE: *I chose to enhance the radiator grills by using spare photo-etch grill and part of the 'Part' Albatros D.I set (S32-034) photo-etch set. Also add a drain cock on the underside of each radiator.*



Remove the two photo-etch parts 92 from the 'Part' Albatros D.I set (S32-034).

Cut off the front perforated grill from the parts.

Test fit the front grills onto the front of the fitted 'Windhoff' radiators and cut or diamond file the vertical edges to achieve a correct fit.

The rear grills were cut from spare photo-etch grill sheet. And bent to fit at the rear of the radiators.

Tail planes:

Cement the tail planes halves 1D and 8D together.

Sand over the edges to blend the joint seams.

Test fit the tail planes into their locating slots in the fuselage rear and adjust as required to achieve full fit.

Cement the tail planes halves 1D and 8D into their locating slots in rear of the fuselage.

Lower wing:

Cement the lower wing into the fuselage, taking care to avoid damaging the fitted rudder bar assembly. Make sure the lower wing fully locates into the fuselage and is horizontal to the fuselage when viewed from the front.

Check for any gaps or misaligned structure around the wing to fuselage joint. If necessary file or sand to blend the parts. Any gaps should be filled by applying a modelling putty or brushing on 'Mr. Surfacer' surface primer 500, then sanding once dry.

Cement into position the wing root fairings 2H, 3H, 40K and 41K.

Check for any gaps around the fairings. Any gaps should be filled by applying a modelling putty or brushing on 'Mr. Surfacer' surface primer 500, then sanding once dry.

Painting (continued):

Mask off the cockpit opening, engine and the painted top decking panel.

Airbrush the fuselage, fin, tail skid fairing, lower wings and tail planes with a grey primer, such as 'AK Interactive' Grey (AK758) or similar.

Mask off the fuselage and lower wings at the wing roots to leave just the grey coloured area (see below) on the top decking panel and around the nose of the fuselage.

Airbrush the around the nose of the fuselage with 'Tamiya' Medium Sea Grey (XF83) or similar.

Mask off the grey painted area on the top decking panel and around the nose of the fuselage, the fin and rear of the fuselage and the underside of the tail planes.

Airbrush the fuselage, fin and tail skid fairing with 'Tamiya' Cockpit Green (XF71) mixed with White (X2) at approximately a ratio of 60/40.

Remove all masking.

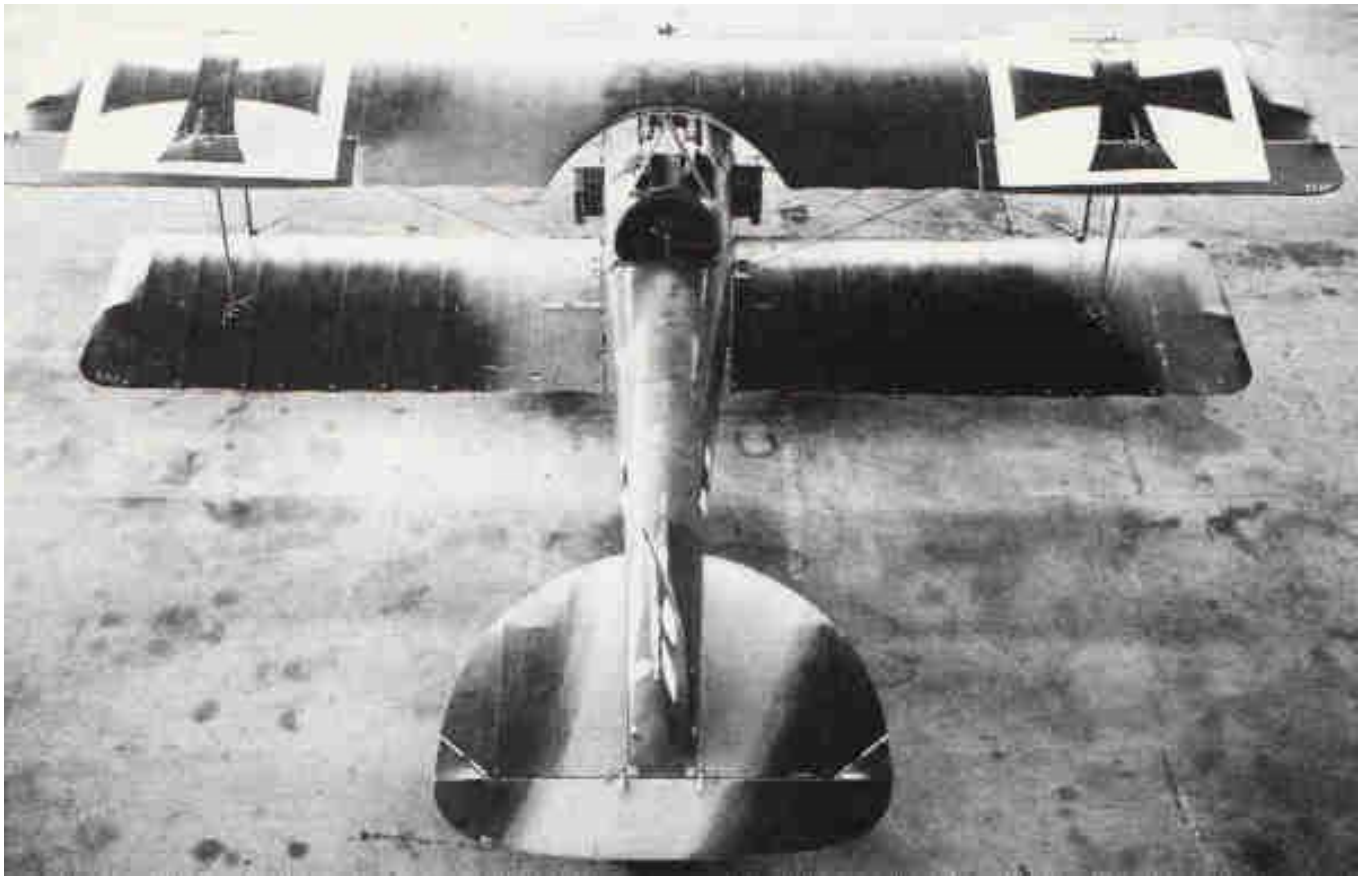
Airbrush the rudder with 'Tamiya' White (X2) with Buff (XF55) mixed, to create a slightly off white colour.

Upper camouflage:

NOTE: *The camouflage applied to Albatros fighter aircraft varied between the manufacturers. The early Albatros D.I and D.II aircraft were made by either 'Albatros-Flugzeugwerke GmbH' or by its subsidiary company 'Ostdeutsche Albatros Werke' (OAW) or finally by 'Luftverkehrsgesellschaft mbH (L.V.G).*
Only fifty Albatros D.I aircraft were made from the initial production order, as the D.II was already being produced. As an early pre-production aircraft, it was almost certainly manufactured by 'Albatros-Flugzeugwerke GmbH' and likely was initially finished in the standard colour scheme of a treated natural plywood fuselage, which was later coloured light green. The underside of the wings, tail plane and elevator were of a light blue colour and their upper surfaces were likely a green and brown camouflage. Although some sources suggest a third colour of a faded light green may have been used, three colour schemes were predominately applied to aircraft manufactured by L.V.G.

However, for this particular aircraft, it's not clear whether the upper surfaces of the wings, tail plane and elevators were left in the factory finish or were coloured the same light green as the fuselage. Photographs taken of this aircraft (refer to 'The Aircraft' part of this build log) seem to shown slight colour changes in the upper surfaces, which could be indicative of the two or three coloured camouflage, but equally, could be variations of the single applied green colour, due to the lighting conditions and type of film used. Most modellers have tended to follow the colour profiles created over time and have coloured the upper surfaces the same light green as the fuselage.
However I've chosen to adopt the Albatros factory two colour camouflage scheme, as some evidence suggests this could be correct and in addition, it adds a variation to most of the models I've seen of this aircraft. It should be noted that as can be seen on the following page, variations of this colour scheme were possible between the manufacturer and the operational squadrons.

Examples of typical two tone Green and Brown camouflage.



NOTE: *As a painting guide, refer to the previous colour profile illustration.*

Mask off the surfaces of the model leaving just the upper surfaces of the lower and upper wings, the tail plane and elevator.

Temporarily fit the ailerons onto the upper wing and the elevator to the tail planes. These can be held in position by applying masking tape to the undersides.

Mix ‘Tamiya’ J.A. Green (XF13) with White (X2) to an approximate ratio of 80/20.

Airbrush the green colour camouflage markings over the upper surfaces of the lower and upper wings, ailerons, tail plane and elevator.

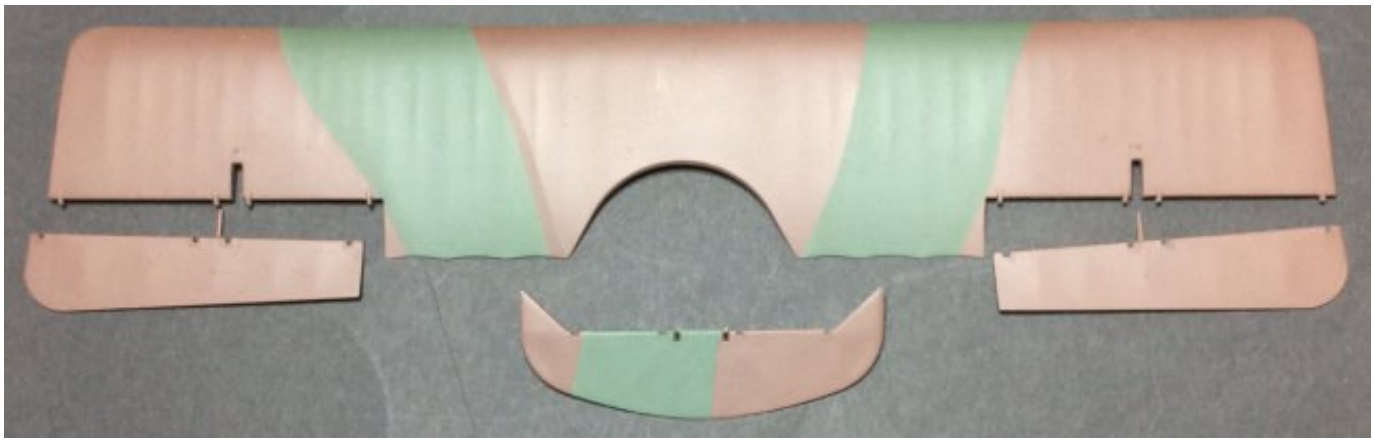
Mask over the applied green painted areas with the mask edges inside the green (to be able to paint over the green airbrushed faded edges).

Mix ‘Tamiya’ Flat Brown (XF10) with White (X2) to an approximate ratio of 80/20.

Airbrush the brown colour camouflage markings between the green painted areas.

Remove all making, then the ailerons and the elevator.

Airbrush both sides of the upper and lower wings, ailerons, tail planes and elevator with a gloss clear coat, such as ‘Alclad’ Aqua Gloss 600 or similar (preparation for decals).

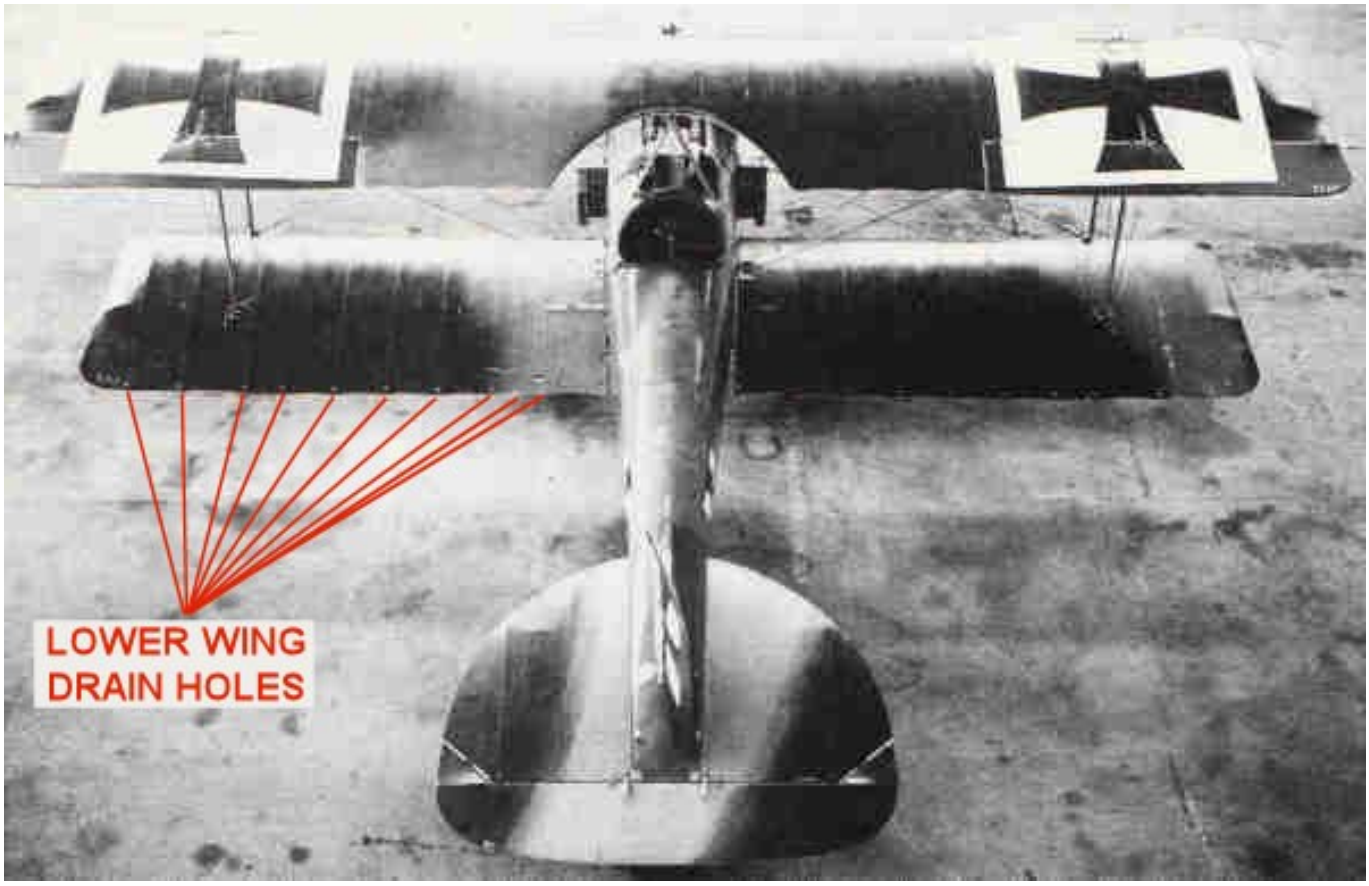


Underside colour:

NOTE: *The underside of the wings, ailerons, tail plane and elevator were a light blue colour, which will be created later using the 'Aviattic' white backed German blue linen (ATT32077) decal.*

Wing drain holes:

NOTE: *The trailing edge of the lower wing had drain holes at the end of each wing rib. These are not represented on the kit lower wing.*



On the underside of the lower wings, point mark the pre-moulded wing ribs 3mm back from the wing trailing edges.

Using the point marks as a guide, drill holes of 0.6 mm diameter through the trailing edges of the wings.

Panel nail lines:

The plywood panels covering the fuselage were nailed to the fuselage internal structure. These nails, although flush with the surface of the panels, were visible.
There are aftermarket resin strips available that are intended to represent these nail lines. They can also be represented by indenting the surface of the model with such as an appropriate 'Rosie the Riveter' tool, or similar.
However, in reality, the nails used were small and even when close to the aircraft, they were barely visible to the naked eye, as shown in the following photograph. In addition, this particular aircraft was painted over the original aircraft sealed wood surface, which would have covered the nail heads even more.
Therefore I chose not to represent the nail lines on this particular model.

Decals:

NOTE: *The wings, tail plane, ailerons, elevator and rudder with be covered with the tail plane 'Aviattic' Linen Weave effect (ATT32236) and German blue linen (ATT32077) decals.*

Make sure the surfaces to have decals have been prepared with a smooth, clear and glossy finish (I used 'Alclad' Aqua Gloss 600).

Underside surfaces:

Cut away the white border around the 'Aviattic' German blue linen (ATT32077) decal sheet to avoid it from accidently showing on your cut decals.

Place the model onto a sheet of white paper and trace the outline of the undersides of the two lower wings, tail planes and the elevator onto the sheet of paper.

Cut out each of the paper templates.

Test position the templates onto the underside surfaces and check that the templates align correctly with the edges.

NOTE: *In the following step, make sure the templates are correctly correct orientated on the rear of the decal sheet. If not, you will end up cutting a 'reversed' decal*.

Place the templates onto the rear face of the decal sheet and carefully trace their outline onto the sheet.

NOTE: *The large single decal for the underside of the upper wing can be cut into sections (one centre and two outer) to make them easier to apply, rather than one single decal.*

Cut out each of the traced decals from the decal sheet.

NOTE: *Adding PVA adhesive into the decal water will aid in the adhesion of the decals to the model surfaces.*

Immerse each decal into the warm decal water for approximately ten seconds then place (rear side down) onto a non-absorbent surface.

Brush the model surface area for a decal with the decal water.

Slide the decal into position on the model surface.

Position the decal then use a soft, wide brush to brush out residual water from under the decal.

Finally use either soft kitchen roll tissue or as I do, wearing lint free cotton gloves, carefully press out and residual water from the centre of the decal outwards to the model edges.

To allow the decal to fully conform over holes or raised detail on the model surface, prick or cut the decal around the detail then press out any trapped air or water.

Allow the decal to fully dry overnight.

If necessary, use a fine sander or scalpel blade to trim off any overhanging decal at the edges.

Upper surfaces:

To apply decals to the upper surfaces of the wings, ailerons, tail plane and elevator, repeat the procedure for applying the underside decals, but using instead the 'Aviattic' Linen Weave effect (ATT32236) decal sheet.

Kit decals:

NOTE: *The wing kit supplied decals are not only very fragile and easily cracked or shattered when applying, they are not correct for this particular aircraft. The two 'Eisemes Kreuz' on the upper wing of the actual aircraft had thick white borders. Those under the lower wings would have had no white borders as they were applied over the light blue coloured linen. Also the 'Co' markings of Dieter Collins need to be made.*
Therefore the kit decals were scanned into Paint Shop Pro graphics software and test printed to achieve the correct sizes. The 'Co' markings were created from scratch. They were then printed on white inkjet water slide decal paper and allowed to fully dry, after which they were lightly sprayed with 'Krylon' acrylic sealer to seal the ink and prevent the ink bleeding when immersed in water for applying to the model.

The decal for each side of the fin and rudder will need to be cut into two sections and applied separately to the fin and the rudder (yet to be fitted). The rudder section does not have any white border.

Make sure the smaller of the crosses are applied to the fuselage and the slightly larger crosses are applied to the fin/rudder.

Carefully cut out each decal, including the centre of the letter 'o' in the 'Co' decal. When cutting out the black edged only decals (underwing crosses, the 'Co' and rudder), cut against the black edges, otherwise the white decal backing will show at the edges.

Apply the decals as for normal decals an use a cotton bud to roll out the decal water. If any ink colour leeches at the edges, wipe it away with a damp and clean cotton bud.

Apply the 'Aviattic' Linen Weave effect (ATT32236) decal to both sides of the rudder and applied decal markings.

'Quinta Studio' 3D decals:

NOTE: *Although marketed as 3D decals, the 'Quinta Studio' product is in fact a 'polymerized vinyl', but printed on decal paper. 'Quinta Studio' recommend that these 'decals' are fixed in position using a PVA adhesive, although 'Microscale' Micro Metal Foil adhesive or a clear coat such as 'Tamiya' X22 can be used. For smaller parts, CA adhesive can be used, but accurate positioning of the decal is necessary due to the rapid setting of the adhesive. It is recommended that decal solutions, such as 'Microscale' MicroSol or Set and others* ***are not*** *used as they can damage the decals. It is also recommended that once removed from the decal sheet, the decal should be allowed to dry for approximately 20-30 minutes before being adhered to the surface of the model, although the rear of each decal can be dried with absorbent paper towel.*

There are videos on 'YouTube' you can refer to for more information on applying these decals, by searching for 'applying Quinta Studio decals'.

Refer to the 'Quinta Studio' instructions for the positioning of the various external decals from Part 1 sheet in the decal set. The four wing root strip (parts 13) ***were not used*** *as the were considered to be too thick. Instead the photo-etch parts 100 were used from the 'Part' Albatros D.I set (S32-034).*

Airbrush the upper wing and the fuselage/lower wing assembly with a semi-matte clear coat, such as 'Alclad' Light Sheen (ALC-311) or an acrylic equivalent, such as 'Tamiya' Semi-Gloss (X35) or similar. This will provide a better surface for applying the 'Quinta Studio' decals and for applying the weathering effect after the decals have been applied.

Following the instructions, cut out a decal from the sheet and immerse in warm water for approximately ten seconds.

Slide the decal off its backing sheet and place on it on an absorbent paper towel.

Lightly press each side of the decal to remove any residual water.

Check where the decal should be applied on the model.

Apply a small amount of PVA adhesive onto the model where the decal is to be applied.

Apply the decal in position on the model and using a cotton bud, roll out excess PVA adhesive from the under the decal.

Use a clean cotton bud dampened with clean water to remove any PVA adhesive from around the decal.

Continue to apply all of the external decals, in their correct positions, on the model.

NOTE: *The following steps are only necessary if the decal or their edges are not fully bonded to the model surfaces.*

If necessary, apply a small amount of thin CA adhesive to the edges of the decals to reinforce the bond to the model surfaces.

Use a clean cotton bud to roll off any residual CA adhesive from around the edges of the decal.

If desired, brush on the various decals a thinned coat of matching colours.

Datum line:

NOTE: *The aircraft had a thin, black datum line that was midway up the fuselage and spanned from behind the forward vent louvre and through the 'Windhoff' radiator to midway below the cockpit opening.*

To represent the datum lines I applied the thinnest black strips from the 'Xtradecal' Black Parallel Strips (XPS1) sheet. Four strips of the required length were cut and applied as for normal decals.

Photo-etch:

NOTE: *The photo-etch parts 100 were used from the 'Part' Albatros D.I set (S32-034) instead of the 3D printed parts 13 from the 'Quinta Studio' Albatros D.I set (QD32076).*

Cut out the four 100 photo-strips from the 'Part' set.

Sand or file away any residual tags on the edges of the strips.

Sand both sides of each strip to give a better surface for adhesive and painting.

Brush paint the four strips with 'Tamiya' Flat Earth (XF52) or similar.

Using PVA adhesive, secure the four strips in position on the top surface of the lower wing at the wing roots.

If necessary, add thin CA adhesive around the edges of the strips to add extra bonding to the model surface.

Weathering:

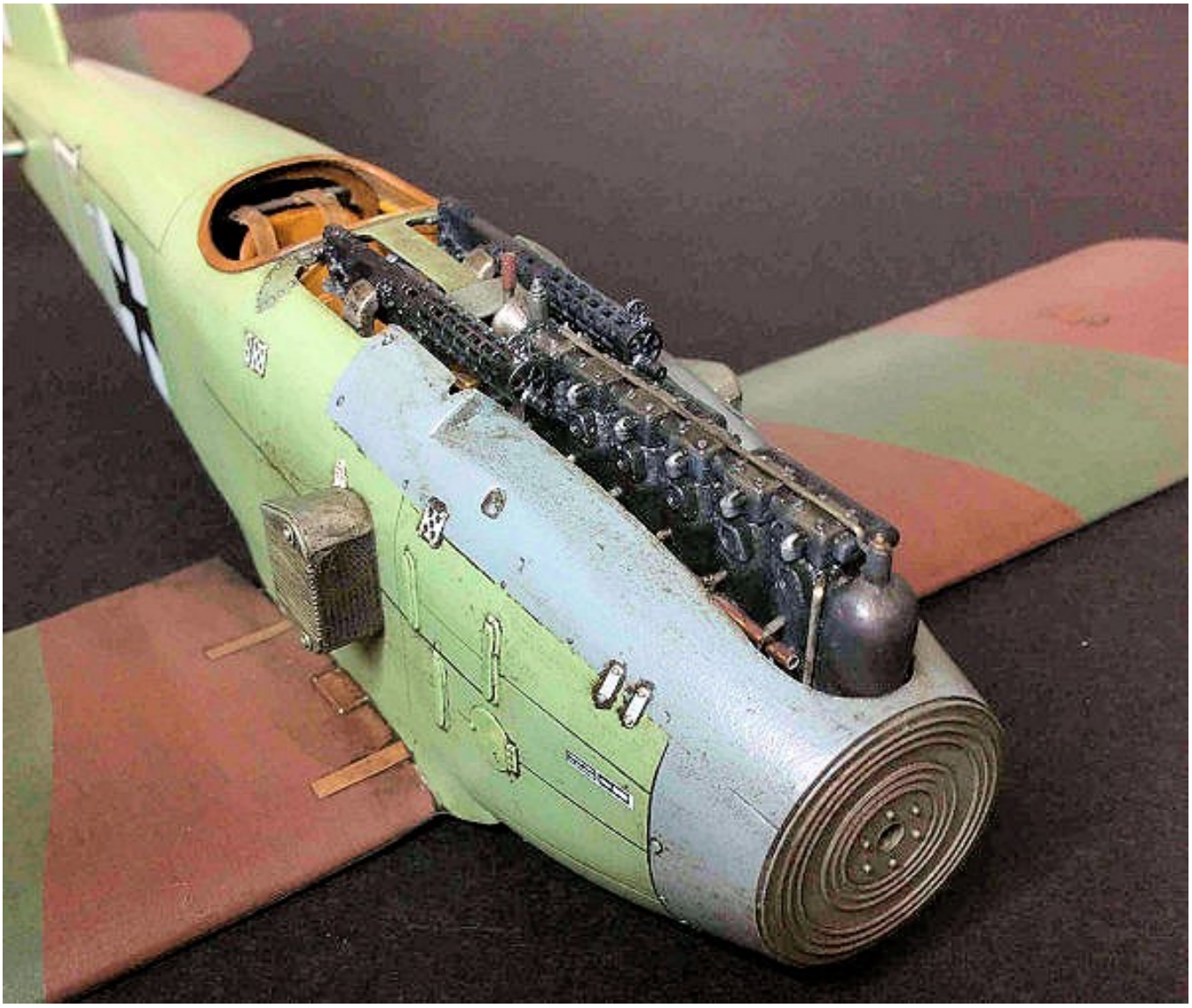
NOTE: *The upper wing and the fuselage/lower wing assembly have already had a semi-matte clear coat, such as 'Alclad' Light Sheen (ALC-311) or an acrylic equivalent, such as 'Tamiya' Semi-Gloss (X35) or similar applied.*

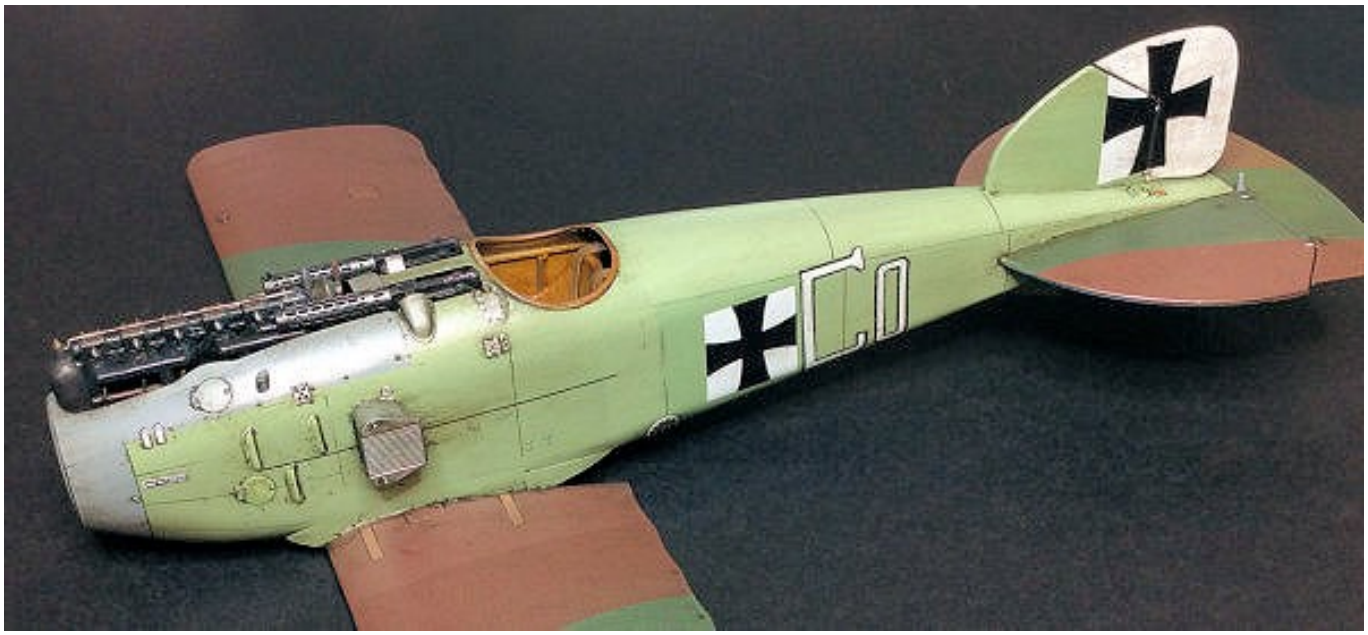
Airbrush the ailerons, rudder and elevator with a semi-matte clear coat, such as 'Alclad' Light Sheen (ALC-311) or an acrylic equivalent, such as 'Tamiya' Semi-Gloss (X35) or similar.

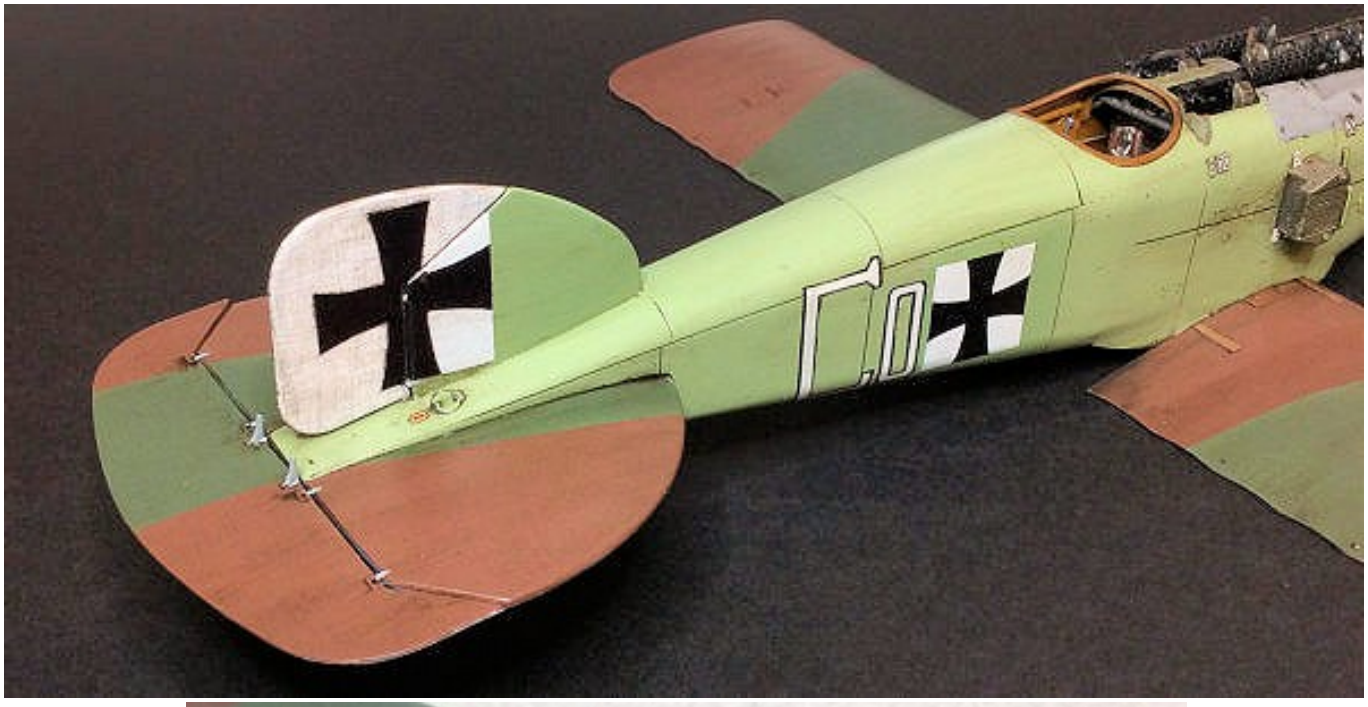
NOTE: *When removing the clay wash, use a soft brush around the applied 'Quinta Studio' decals. This should prevent the decals from being rubbed of f the model surfaces,*

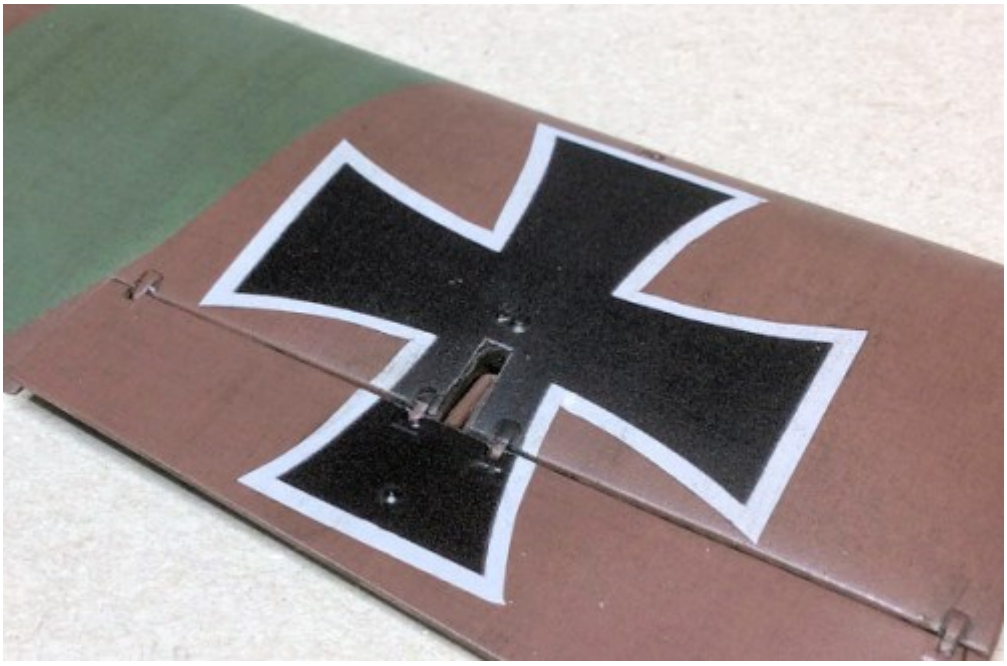
Refer to Part 3 (Weathering) of this build log - Apply the desired weathering effect to these parts of the model. I used 'Flory Models' Dark Dirt fine clay wash.

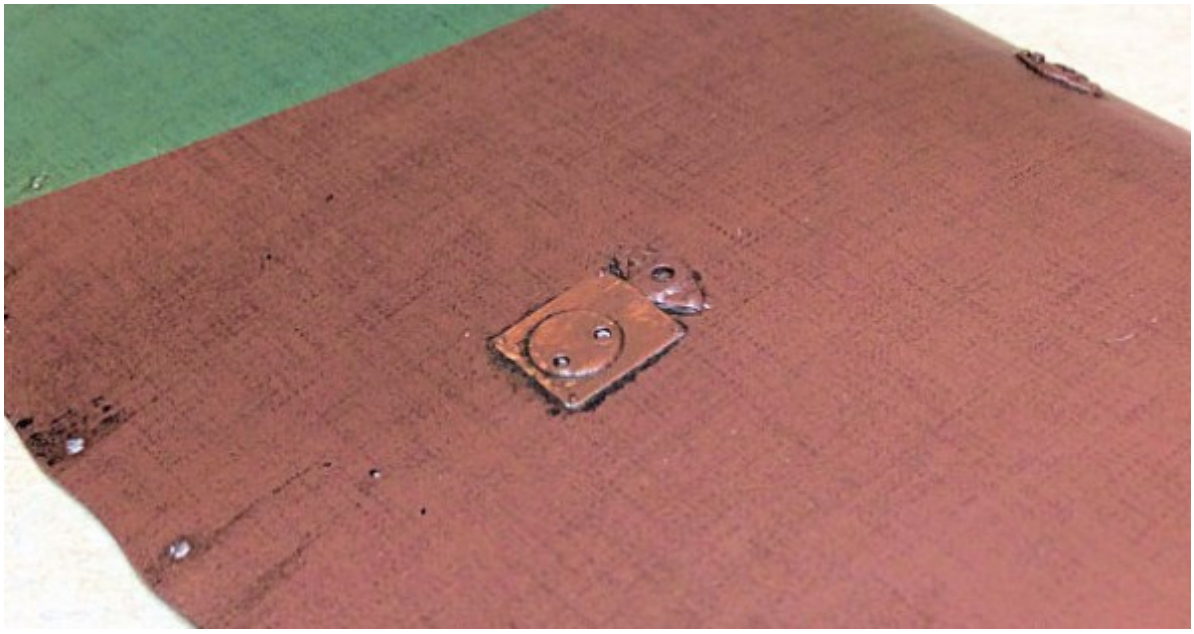
Once the desired weathering effect has been achieved, seal the weathering by airbrushing the weathered surfaces with a semi-matte clear coat, such as 'Alclad' Light Sheen (ALC-311) or an acrylic equivalent, such as 'Tamiya' Semi-Gloss (X35) or similar.

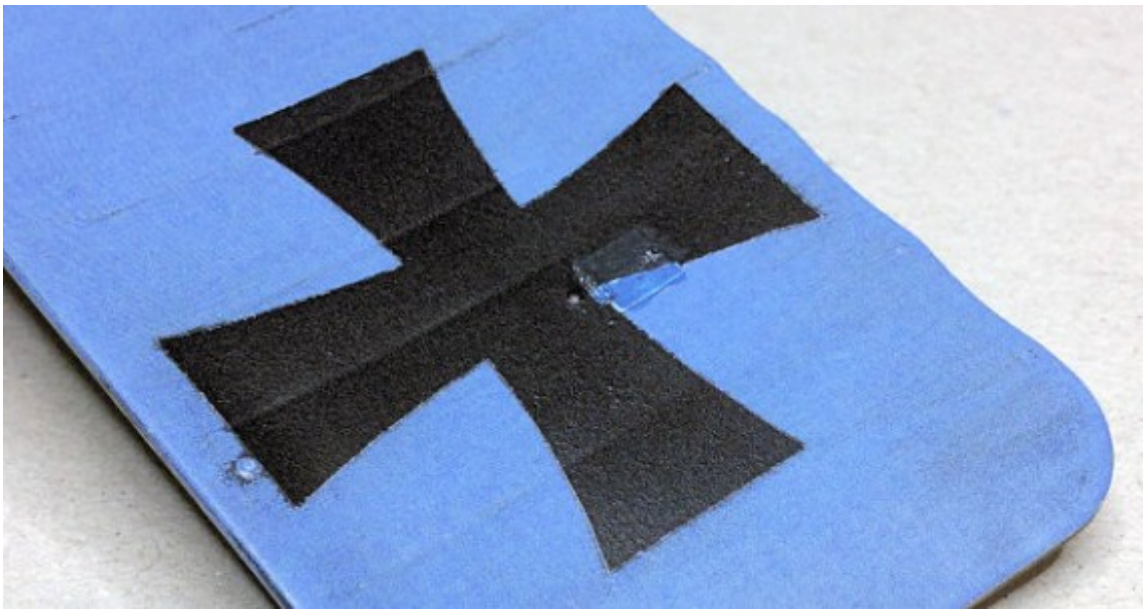












Preparation (continued):

WARNING: *Take care when handling the thinner kit parts, such as the struts. I snapped two struts due to the soft styrene used to mould the parts. They had to be drilled and metal pinned back together.*

Prepare the following landing gear parts:

NOTE: *The landing gear rear cross bar 4L will be replaced by metal tube.*

Outer wheel covers 12D, wheel retainers 9D, wheels 6D, 'V' struts 4D and axle 3L.

Prepare the following airframe parts:

Rudder 6L, elevator 11K, elevator control horns 11D, upper wing 2G, ailerons 34K and 35K, interplane struts 9H, fuselage cabane struts 1H and 4H, tail skid 31K and propeller spinner 14K.

Elevator control horns:

Cement the two control horns 11D into their location slots in the leading edge of the elevator 11K.

Drill a rigging hole of 0.2 mm diameter through each end of the two control horns (front to rear).

Ailerons:

Sand over the edges to remove any mould seams.

Test fit the ailerons into their locations in the upper wing and adjust as required to achieve full fit.

Interplane struts:

NOTE: *The kit supplied interplane struts 9H have thin locating pegs, which are not only weak but are smaller than the pre-moulded recesses in the upper and lower wings. Therefore I decided to replace them with metal pins.*

Cut away the locating pegs from the ends of the four interplane struts.

Point mark the centre of the ends of the struts.

Drill a hole of 0.4 mm diameter into the ends of the struts.

Cut short lengths of 0.4 mm diameter Brass rod, such as that from 'Albion Alloy's' or similar.

Insert the rods into the pre-drilled holes in the struts and if the fit is not tight enough, apply cement around the rods.

Drill a hole of 0.4 mm diameter into the strut location recesses in both the upper and lower wings, making sure not to drill through the wings.

Fuselage cabane struts:

Test locate the fuselage cabane struts 1H and 4H into their location recesses in the fuselage decking panel. Sand the bottom of the struts to achieve a full fit into the recesses.

Landing gear:

NOTE: *The landing gear rear cross bar 4L will be replaced by metal tube. The kit supplied landing gear struts 4D have short and weak locating pegs. Therefore I decided to replace them with metal pins.*

Cut away the locating pegs from the ends of the four landing gear struts.

Point mark the centre of the ends of the struts.

Drill a hole of 0.5 mm diameter into the ends of the struts.

Cut short lengths of 0.5 mm diameter Brass rod, such as that from ’Albion Alloy’s’ or similar.

Insert the rods into the pre-drilled holes in the struts and if the fit is not tight enough, apply cement around the rods.

Drill a hole of 0.9 mm diameter through the lower pre-moulded recess in the bottom of the rear landing gear struts.

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

Pass the 0.8 mm diameter rod through the pre-drilled holes in the rear struts.

Drill a hole of 0.5 mm diameter through the fuselage at the four location recesses for the landing gear struts. The holes should be drilled as close as possible to the angle the struts will be when fitted as the strut/axle assembly.

Test fit the struts into the pre-drilled holes in the fuselage, bending the location rods as required to achieve the correct spread with the axle held in position.

Make sure the added rod between the landing gear struts has its ends flush with the outside of the rear struts.

Locate the two struts in position on the fuselage and hold in position by using masking tape or ‘UHU’ white tack.

Pass the axle through the hoops in the landing gear struts and hold centrally against the bottom curve of the struts.

Cement the axle in position on the struts.

Apply thin CA adhesive to the rod to secure it in the rear struts of the landing gear.

Once the adhesives have fully set, remove the landing gear assembly from the fuselage.

NOTE: *A representation of the axle ‘bungee’ cord suspension will be added later, which will add better fixing of the axle on the landing gear struts.*

Propeller spinner:

NOTE: *The following steps are necessary to ensure the replacement 'ProperPlane' propeller will locate fully into the propeller spinner.*

Test fit the 'ProperPlane' propeller into the spinner, making sure the propeller blades are correctly orientated (the propeller is not the wrong way around).

Where necessary, carefully file or sand away the two blade openings in the spinner such that the blades of the propeller locate in the openings and that it is not protruding past the rear edge of the spinner.

Locate the propeller onto the engine propeller shaft then locate the sinner over the propeller and onto the spinner backplate.

Make sure the propeller and spinner can be fully located onto the backplate.

Remove the spinner and propeller.

Painting (continued):

Airbrush a grey primer, such as 'AK Interactive Grey (AK-758) or similar, over the following parts:

> Outer wheel covers, wheels, landing gear assembly, interplane struts, fuselage cabane struts, tail skid and propeller spinner.

Airbrush 'Tamiya' Medium Sea Grey (XF83) or similar, over the following parts:

> Interplane struts, fuselage cabane struts, hinges and control levers/horns of the ailerons/ elevator and the propeller spinner.

Cockpit padding:

Brush paint the padding around the cockpit opening with 'AK Interactive' Brown Leather (AK3031), thinned with 'AK Interactive' acrylic thinners.

Landing gear:

NOTE: *Now that the light blue underside decals have been applied, the colour for the landing gear and wheel covers can be mixed to match, as far as possible, the same colour.*

Mix 'Tamiya' Flat Blue (XF8) with White (X2) to a ratio of approximately a 60:40 ratio.

Airbrush the mixed paint over a scrap piece of plastic card that has been primed with the same primer used on the model - 'AK Interactive' Grey (AK-758) or similar.

Check the colour match to the applied decals and if necessary add more blue or white to achieve the best colour match.

Airbrush the mixed colour over the landing gear assembly.

NOTE: *To airbrush the front and back covers of the wheels without spraying the surrounding tyres, I use a circle drawing tool (Linex 1217 T).*

Select the best sized hole in the drawing tool that matches the covers (not including tyres) of the wheels. Position the wheel under the hole.

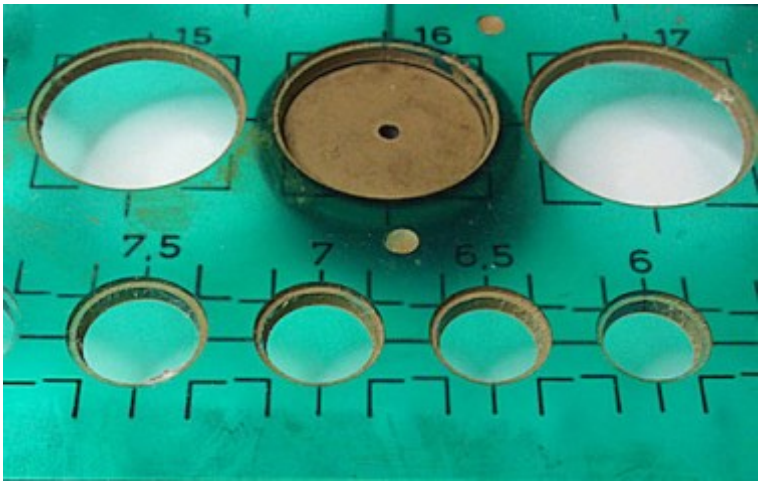
Airbrush the mixed colour over the front covers and the back covers (using the drawing tool).

Tail skid:

Brush paint the tail skid with 'Tamiya' Buff (XF57) or similar.

Refer to Part 3 (Weathering) of this build log and apply the weathering - I used 'Flory Models' Dark Dirt clay wash, then painted the metal fittings with 'Tamiya' Medium Sea Grey (XF83).

Example of using the drawing tool.



Machine guns - fit:

Using CA adhesive, secure both machine guns in position in their fuselage slots and onto the front and rear support brackets. Make sure both weapons are horizontal to the fuselage when viewed from the side and aligned and parallel to each other when viewed from above.

Weathering:

Airbrush the outer wheel covers, wheels, landing gear assembly, interplane struts, fuselage cabane struts, tail skid and propeller spinner with a semi-matte clear coat, such as ‘Alclad’ Light Sheen (ALC-311) or an acrylic equivalent, such as ’Tamiya’ Semi-Gloss (X35) or similar.

Refer to Part 3 (Weathering) of this build log - Apply the weathering effect. I used ‘Flory Models’ Dark Dirt fine clay wash.

Once the desired weathering effect has been achieved, seal the weathering by airbrushing the weathered surfaces with a semi-matte clear coat, such as ‘Alclad’ Light Sheen (ALC-311) or an acrylic equivalent, such as ’Tamiya’ Semi-Gloss (X35) or similar.

‘Windhoff’ radiators:

Carefully brush paint both ‘Windhoff’ radiators with ‘Mr. Metal Colour’ Stainless Steel (213) or similar.

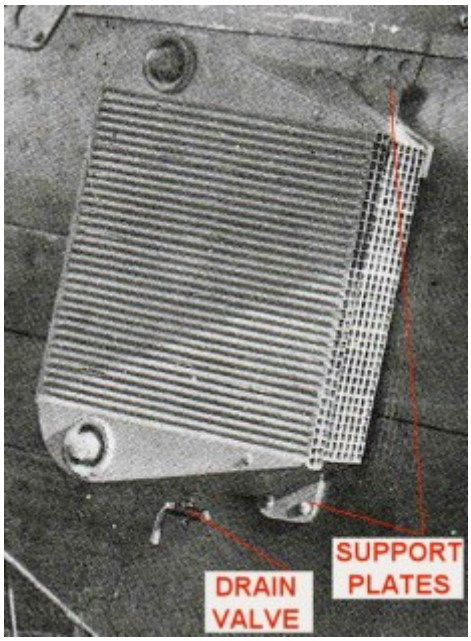
NOTE: *Keep the photo-etch moving across the flame to avoid melting the photo-etch.*

Wave each of the pre-prepared photo-etch radiator grills over a naked flame to discolour the photo-etch.

Using thin CA adhesive, secure each photo-etch grill in position on its radiator.

Brush ‘AK Interactive’ Kerosene (AK3029) wash over each of the grills.

If necessary, dampen a cotton bud with an enamel thinners and remove any wash on the top surface of each grill leaving the wash between the grill mesh.



Support brackets:

NOTE: *The ‘Windhoff’ radiators were secured to the fuselage with plates, which are not supplied in the kit. I chose to replicate these plates with the unused end fittings of the seat harness from the Part 2 sheet of the ‘Quinta Studios’ 3D printed Albatros D.I set (QD32076).*

Cut the metal end fittings from the four seat harness straps. The fittings should be cut such that when applied to the fuselage, the bottom is against the radiator with the fitting vertical on the fuselage.

Immerse each decal into warm water for approximately ten seconds.

Slide each decal off its backing sheet and place on it on an absorbent paper towel.

Lightly press each side of the decal to remove any residual water.

Check where the decals should be applied on the model.

Apply a small amount of PVA adhesive onto the model where the decal is to be applied.

Apply the decal in position on the model and using a cotton bud, roll out excess PVA adhesive from the under the decal.

Use a clean cotton bud dampened with clean water to remove any PVA adhesive from around the decal.

Drain valves:

NOTE: *The radiators were fitted with a drain valve located on the bottom of each of the radiators. These are not supplied in the kit. To represent the drain valves, I used resin engine cylinders fuel Primers from the 'Taurus Models' set (D3219).*

Separate two levers from the 'Taurus Models' set (D3219).

Leave the body of the valves on their resin casting block and using CA adhesive, secure the levers to the body two valves.

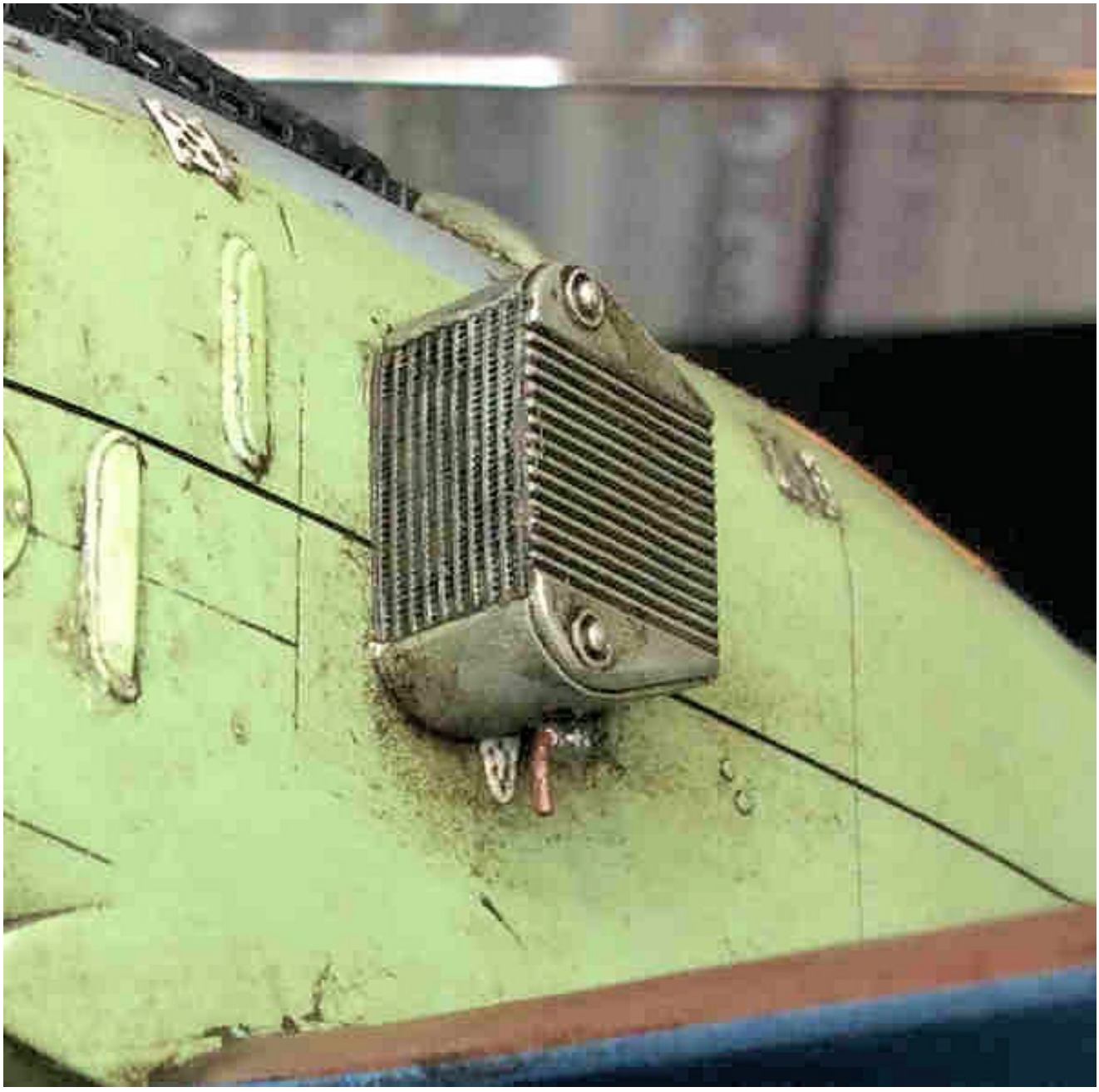
Prime the valve assemblies with a grey primer, such as 'AK Interactive' Grey (AK-758) or similar.

Brush paint the valve bodies with 'Mr. Metal Colour' Stainless Steel (213) or similar.

Brush paint the valve levers with 'Tamiya' Hull Red (XF9) or similar.

Carefully cut away the two valve assemblies from the casting block.

Using CA adhesive, secure the valves in position centrally on the underside of the 'Windhoff' radiators (see previous photograph).

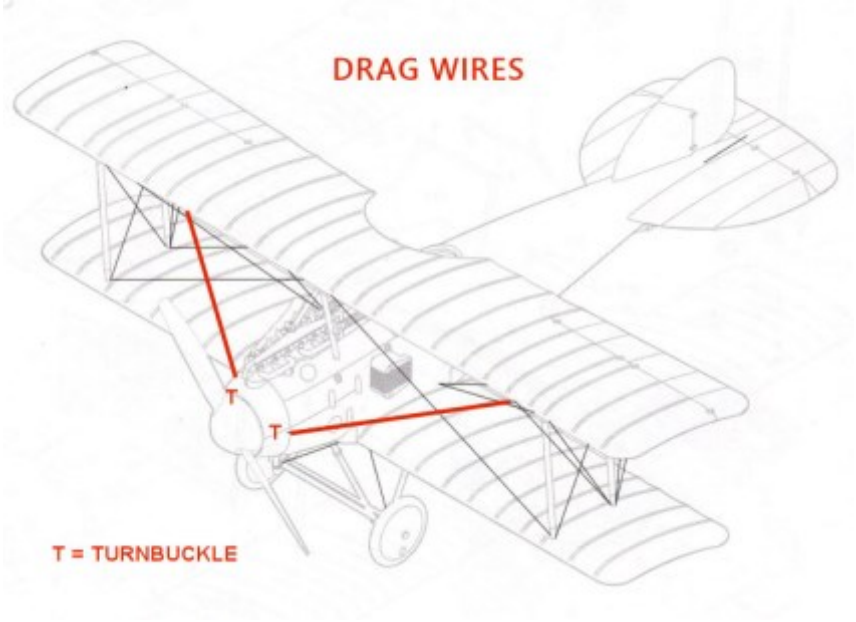


External pre-rigging:

NOTE: *Before the upper wing is fitted it is best to pre-rig the model. The rigging illustration shown in the kit instructions is not totally accurate. The following illustrations outline the various rigging used on this aircraft and where the adjustable turnbuckles were fitted.*

Drag wires:

NOTE: *Drag wires were used to restrain the upper wing to the fuselage, to prevent the tendency of the wing to be pushed rearwards by airflow during flight. A wire was attached to each side of the forward fuselage with the opposite ends being attached to the underside of the upper wing, inboard from the top of the forward interplane struts. Turnbuckles were fitted to the fuselage end of the wires.*



Drill a hole of 0.3 mm diameter through each side of the fuselage, at the upper pre-moulded stub (see above illustration). The hole should be drilled at the appropriate angle such that the wire, when fitted, will span to the top of the front interplane stuts. Using thin CA adhesive, secure a 'GasPatch' 1:48th scale turnbuckle (Type A) into each hole. Carefully ben the turnbuckles to align with the top of the front interplane struts, when fitted.

Drill a hole of 0.3 mm diameter into, **but not through**, the strut fitting on the underside of the upper wing for the front interplane stuts (see above illustration). The hole should be drilled at the appropriate angle such that the wire, when fitted, will span to the pre-drilled hole in the fuselage. Using thin CA adhesive, secure a 'GasPatch' 1:48th scale Anchor Point into each hole.

Cut two long lengths of 'Stroft' 0.12 mm diameter mono-filament (fishing line) or similar.

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

Pass the lines through a blackened 0.5 mm diameter brass tube then through the eye of the fitted Anchor points on the underside of the upper wing.

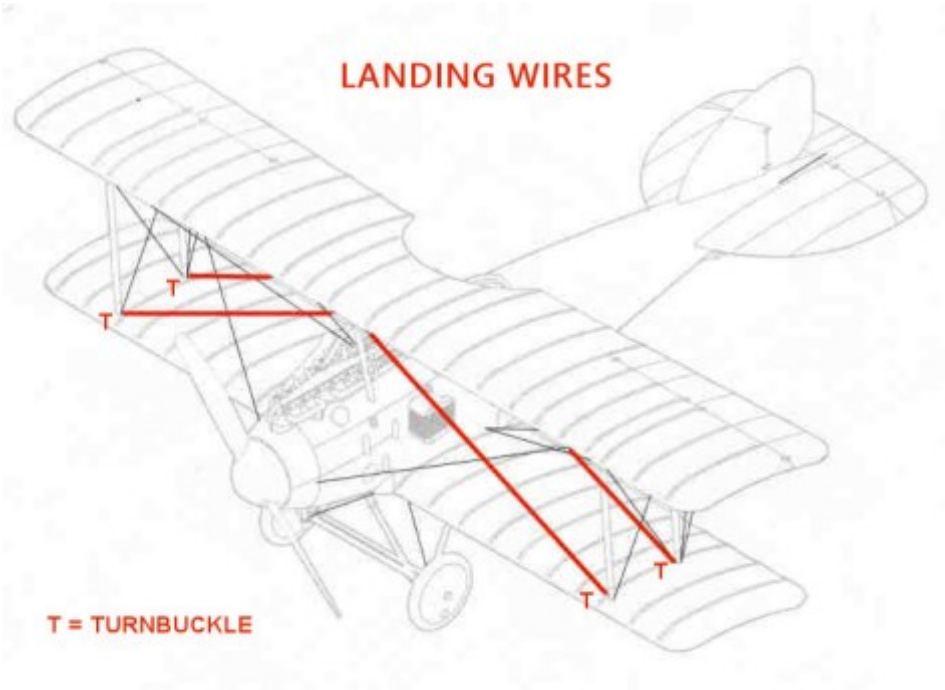
Loop the end of the lines back through the tubes and slide the tubes up to, **but not touching**, the eye of the Anchor points.

NOTE: *When securing lines in the tube, apply the adhesive to the two lines from the tube, not at the turnbuckle end of the tube. This should prevent the lines being secured to the turnbuckle, allowing it to move freely in the loop of the line.*

Secure the lines in the tube using thin CA adhesive then cut away the residual end tag of line.

Landing wires:

NOTE: *Landing wires were used to restrain the wings when the aircraft was at low speed or on the ground. A wire was attached between the bottom of each interplane strut and the top of the associated fuselage cabane struts. Turnbuckles were fitted to the wires at the interplane struts.*



Drill a hole of 0.3 mm diameter through the top of the front and rear struts on the two fuselage cabane strut halves (see following illustration).

Drill a hole of 0.3 mm diameter into, **but not through**, the interplane strut fittings on the upper surface of the lower wings (see following illustration). The holes should be drilled at the appropriate angle such that the wires, when fitted, will span to the pre-drilled holes in the fuselage cabane struts.

Cut a long length of 'Stroft' 0.12 mm diameter mono-filament (fishing line) or similar.

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

Pass the line through a blackened 0.5 mm diameter brass tube the through the eye of a 'GasPatch' 1:48th scale turnbuckle (Type A).

Loop the end of the line back through the tube and slide the tube up to, **but not touching**, the eye of the turnbuckle.

NOTE: *When securing lines in the tube, apply the adhesive to the two lines from the tube, not at the turnbuckle end of the tube. This should prevent the lines being secured to the turnbuckle, allowing it to move freely in the loop of the line.*

Secure the lines in the tube using thin CA adhesive then cut away the residual end tag of line.

Repeat the procedure to create four turnbuckle lines.

Using 'UHU' white tack or similar, temporarily locate the fuselage cabane strut halves together into their locating recesses on the decking panel on the forward, top of the fuselage.

Using thin CA adhesive, secure each landing wire turnbuckle into its pre-drilled hole.

Remove the fuselage cabane struts halves.

Insert the tang of each turnbuckle into its pre-drilled hole, inboard from the four interplane strut fitting on the upper surface of the lower wing.

Hold the free end of each line taut against its pre-drilled locating hole in the fuselage cabane strut assembly and check that the turnbuckle is correctly aligned and the rigging line is straight. If necessary, carefully bend the turnbuckle to achieve the correct alignment.

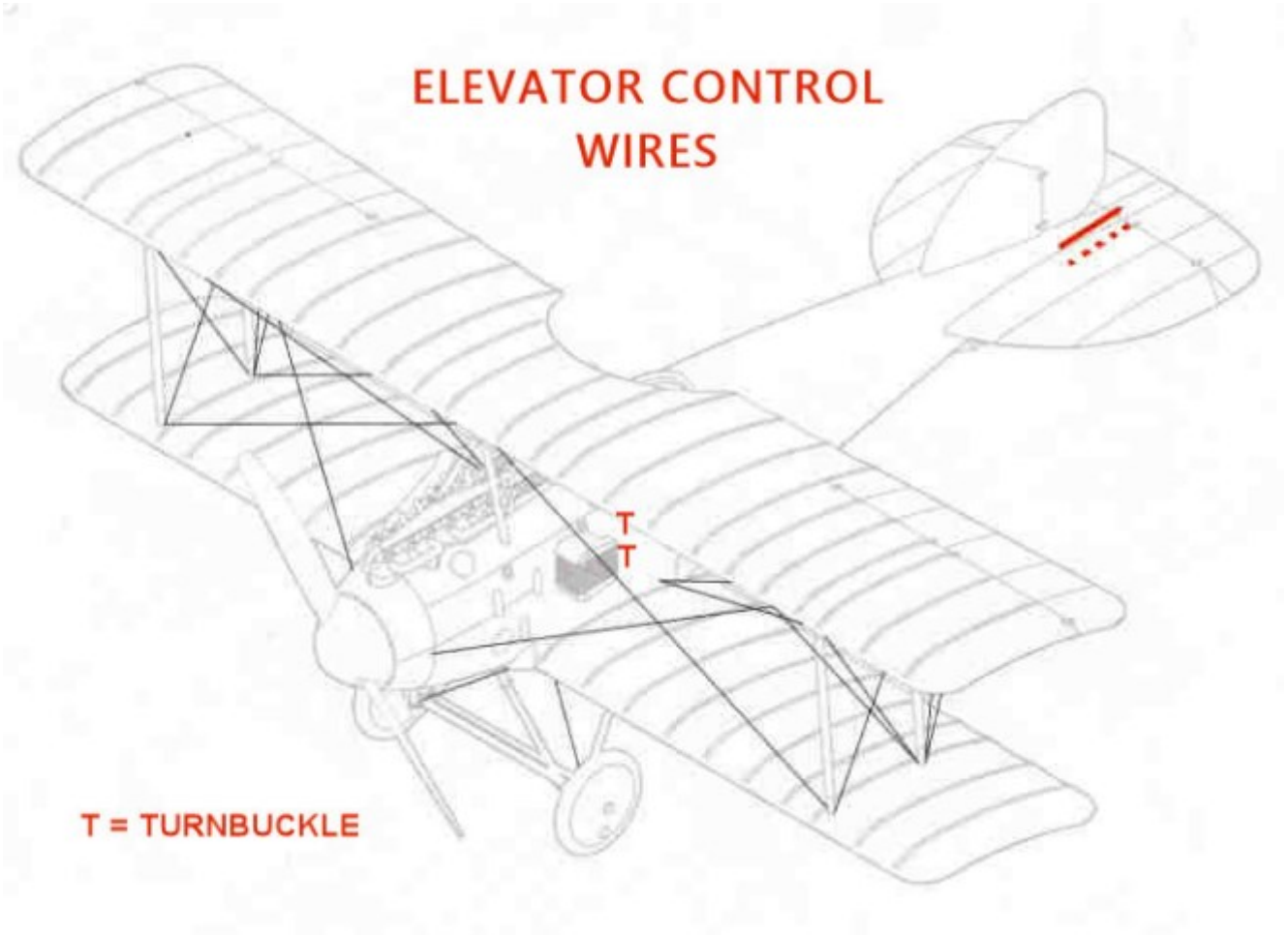
Elevator control wires:

NOTE: *Two elevator control wires were attached the upper section of the pilot's control column, above its pivot point. Two more wires attached to the lower section of the control column, below its pivot point. The upper wires were routed rearwards through the fuselage to exit each side of the fin and rudder assembly. The wires were then attached to the upper control horns of the elevator. The two lower wires were similarly routed but attached to the underside control horns on the elevator. As the pilot moved the control column forwards or rearwards, the control wires would react in association, moving the elevator either up or down, causing the aircraft to pitch down or up. Turnbuckles were most likely fitted to the wires within the fuselage.*

Drill a hole of 0.3 mm diameter through the four pre-fitted elevator wire exit ports on upper and underside of the fuselage rear (see following illustration). The holes should be drilled at the appropriate angle such that the wires, when fitted, will span to the ends of the elevator control horns.

Cut four long lengths of 'Stroft' 0.12 mm diameter mono-filament (fishing line) or similar.

Using thin CA adhesive, secure a line into each of the pre-drilled hole in the exit ports for the elevator control lines on the top and underside of the rear of the fuselage.



Flying wires:

NOTE: *Flying wires were used to restrain the wings during flight. A wire was attached between the top of each interplane strut and routed diagonally down through a cover plate at the lower wing root recesses then into the fuselage. Turnbuckles were fitted to the wires at the interplane struts.*

Drill a hole of 0.3 mm diameter into, **but not through**, the front and rear interplane strut fittings on the underside of the upper wing (see previous illustrations). The holes should be drilled at the appropriate angle such that the wire, when fitted, will span to the pre-fitted cover plates at the lower wing roots.

Drill a hole of 0.3 mm diameter into the fuselage, through each of the two holes in the pre-fitted cover plates at the lower wing roots (see previous illustrations). The holes should be drilled at the appropriate angle such that the wires, when fitted, will span to the top of the front and rear interplane struts.

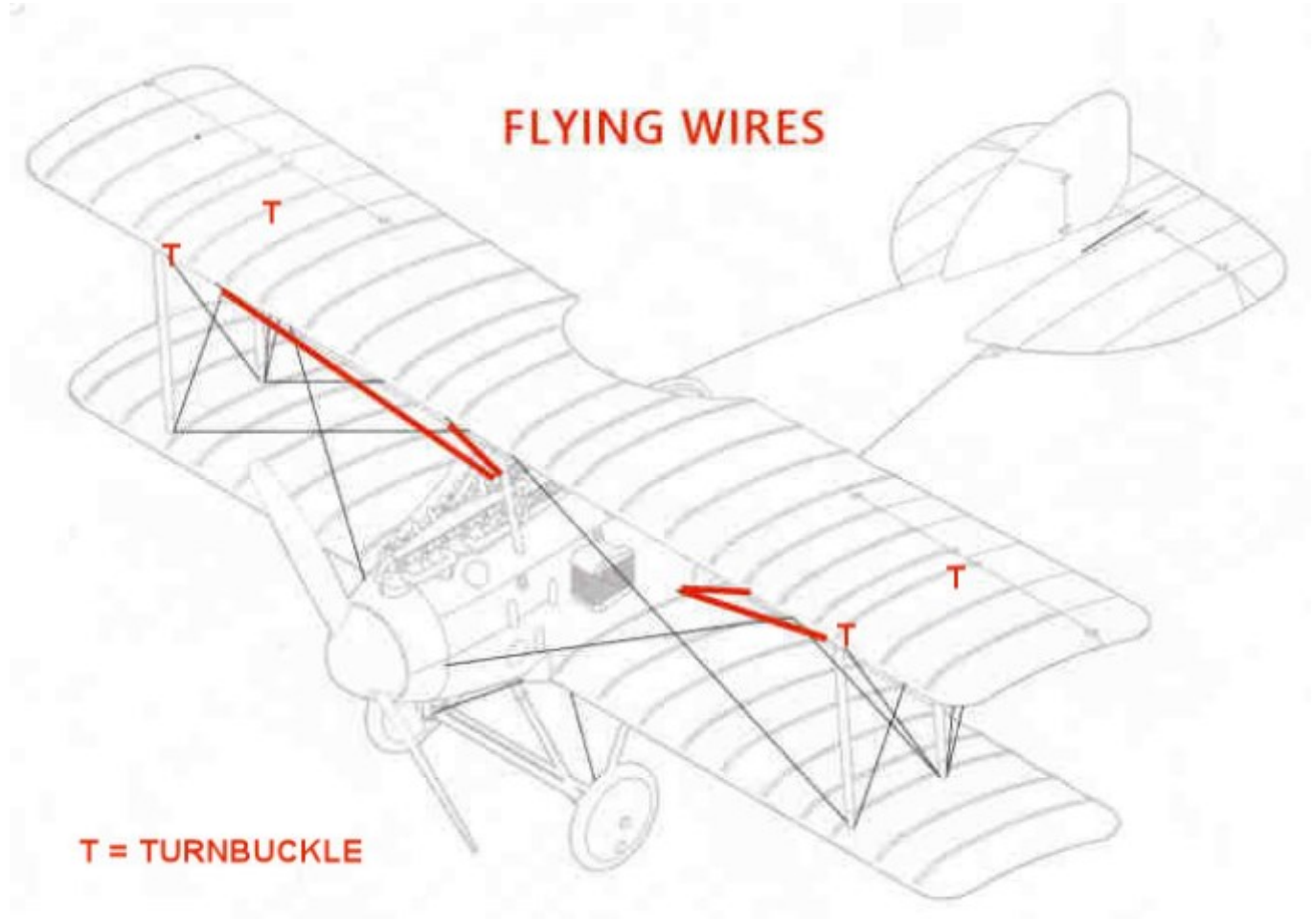
Cut four long lengths of 'Stroft' 0.12 mm diameter mono-filament (fishing line) or similar.

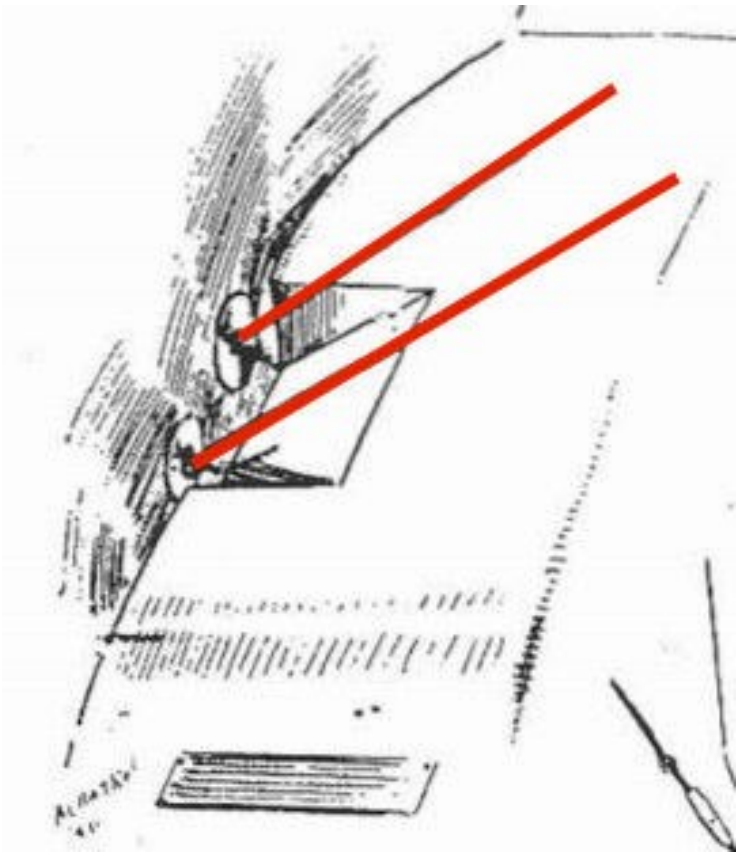
Using thin CA adhesive, secure each line into its pre-drilled hole through the cover plates at the lower wing roots.

Insert the tang of a 'GasPatch' 1:48th scale turnbuckle (Type A) into each of the four pre-drilled holes, inboard from the four interplane strut fitting on the underside of the upper wing.

The turnbuckles should be angled down at approximately twenty degrees. If necessary, carefully bend the turnbuckles to achieve the correct angle.

Using thin CA adhesive, secure each turnbuckle into its pre-drilled hole.





Aileron control cables:

NOTE: *The two ailerons were controlled by cables from the control column being routed outboard through the lower wings, then externally up to both the aileron operating levers and the undersides of the ailerons. When the pilot moved the control column either left or right, a lever fitted on the bottom, rear of the control column would move the wires, routed over pulleys, to each aileron. One aileron would be moved downwards and the opposite aileron upwards, causing the aircraft to roll either left or right. Turnbuckles were fitted to the aileron operating levers and undersides of the ailerons.*

Drill a hole of 0.3 mm diameter into, **but not through**, the front end of the two aileron control levers (see previous illustrations). The holes should be drilled vertically through the levers.

Drill a hole of 0.3 mm diameter into, **but not through**, the underside of the two ailerons, aligned behind the control levers and midway across the ailerons (see previous illustrations).

Drill a hole of 0.3 mm diameter into, **but not through**, the two holes in the aileron control access panels on the upper surface of the lower wings (see previous illustrations).

Cut four long lengths of ‘Stroft’ 0.12 mm diameter mono-filament (fishing line) or similar.

Using thin CA adhesive, secure each line into its pre-drilled hole through the aileron access cover plates on the upper surface of the lower wings, at the rear of the rear interplane struts. roots.

Using thin CA adhesive, secure a ‘GasPatch’ 1:48th scale Anchor Point into the pre-drilled hole on the underside of the two ailerons.

Cut four long lengths of ‘Stroft’ 0.08 mm diameter mono-filament (fishing line) or similar.

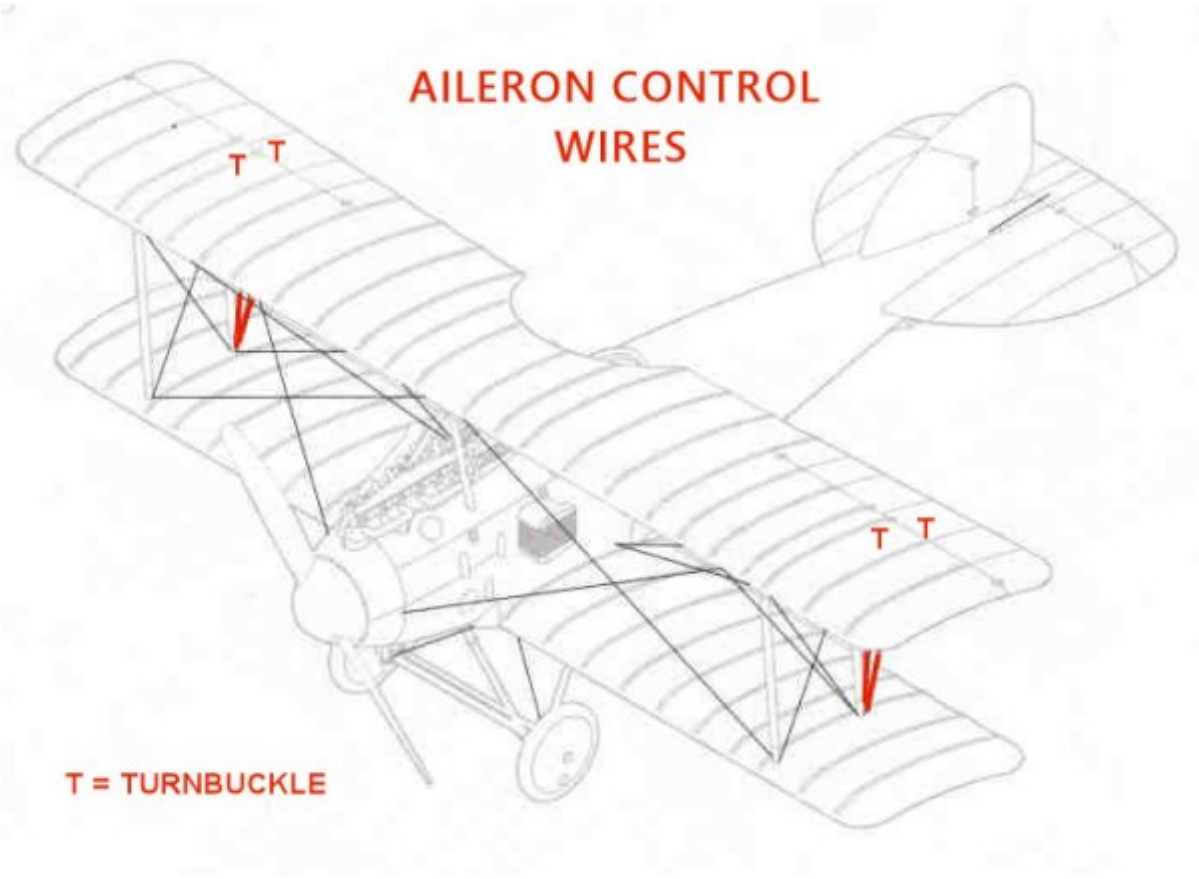
Pass each of the lines through the ‘eye’ end of a ‘GasPatch’ 1:48th scale double ended turnbuckle (Type C).

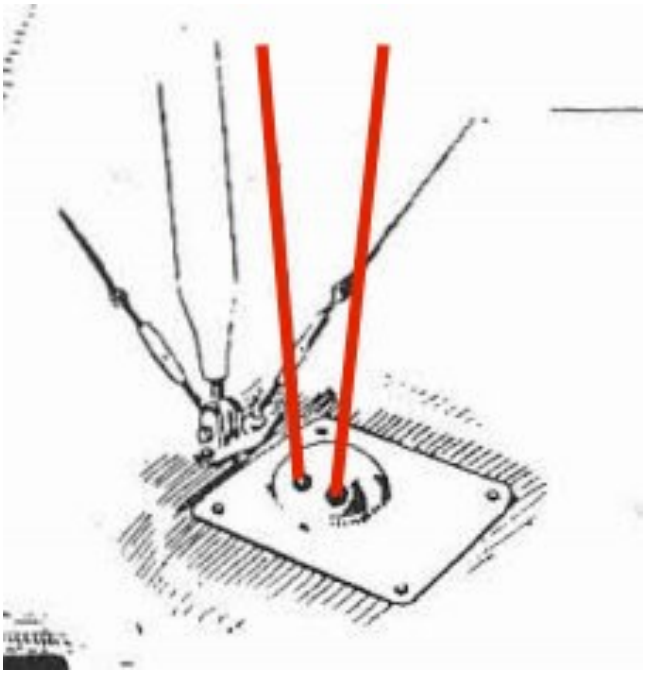
Aileron control lever:

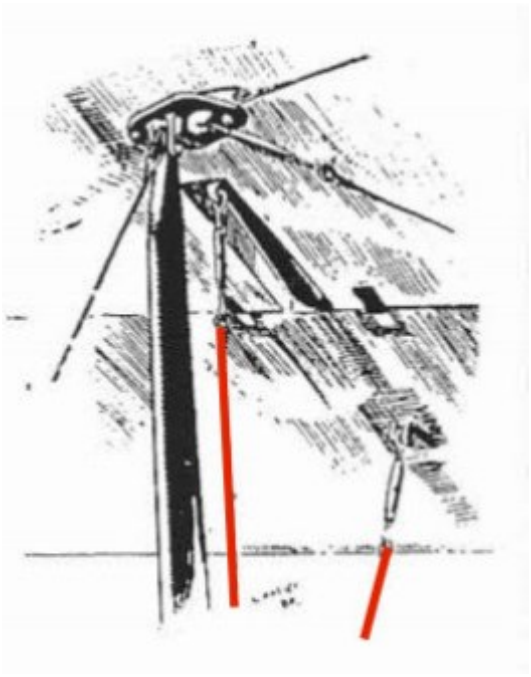
For both aileron control levers, pass both ends of a turnbuckle line through the pre-drilled hole in the underside of the lever.

Pull the two lines from the top of the lever to pull the turnbuckle up to, **but not touching,** the lever. Make sure the turnbuckle is free to move then secure the lines to the top of the lever using thin CA adhesive.

Cut away any residual tags of line at the top of the lever..







Incidence wires:

NOTE: *Incidence wires were used to maintain the alignment of the upper and lower wings. Two wires, diagonally crossed, were attached between the bottom and top of the two interplane struts on both sides of the aircraft. Turnbuckles were fitted to the wires at the bottom of the struts.*

Drill holes of 0.3 mm diameter into, **but not through**, the strut fittings on the underside of the upper wing for the front and rear interplane stuts (see above illustration). The holes should be drilled at the appropriate angle such that the wires, when fitted, will span diagonally down to the base of the opposite interplane strut. Using thin CA adhesive, secure a 'GasPatch' 1:48th scale Anchor Point into each hole.

Drill holes of 0.3 mm diameter into, **but not through**, the strut fittings on the upper surface of the lower wings for the front and rear interplane stuts (see above illustration). The holes should be drilled at the appropriate angle such that the wires, when fitted, will span diagonally up to the top of the opposite interplane strut. Using thin CA adhesive, secure a 'GasPatch' 1:48th scale turnbuckle (Type A) into each hole. Carefully bend the turnbuckles to align diagonally with the tops of the interplane struts, when fitted.

Cut four long lengths of 'Stroft' 0.12 mm diameter mono-filament (fishing line) or similar.

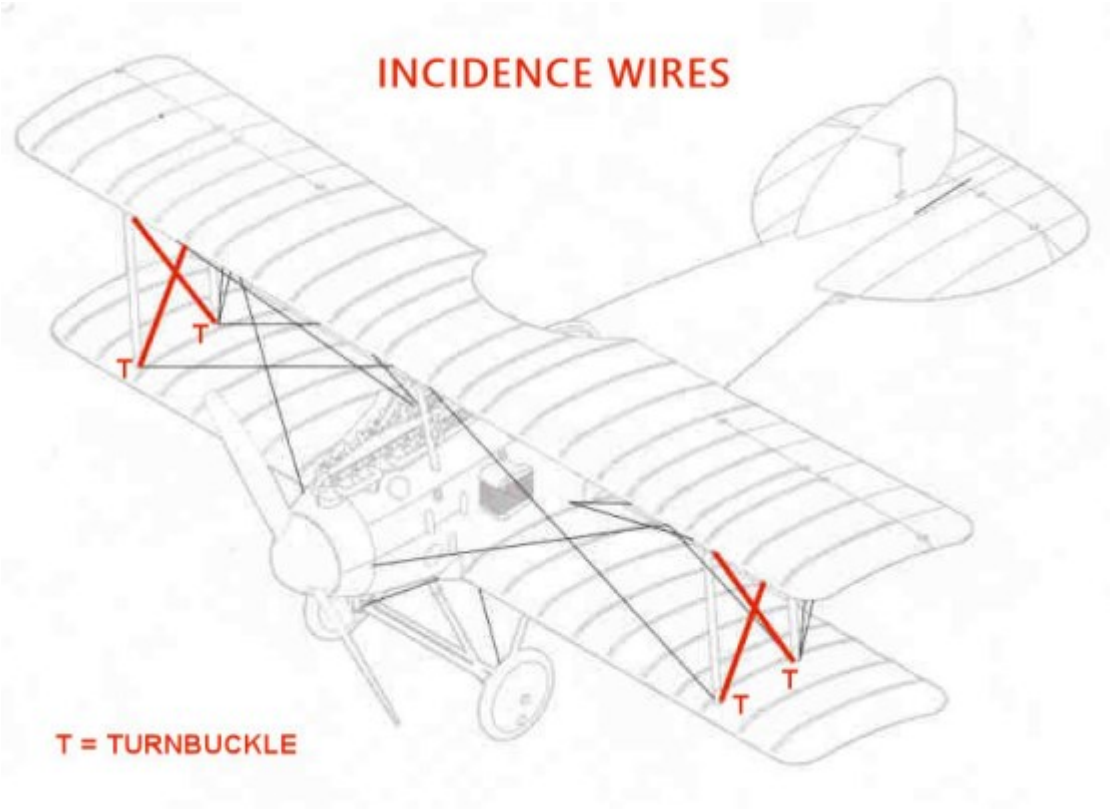
NOTE: *Most metal tube can be chemically blackened by immersion is solutions, such as 'Blacken -It' or similar.*

Pass the lines through a blackened 0.5 mm diameter brass tube the through the eye of the fitted Anchor points on the underside of the upper wing.

Loop the end of the line back through the tube and slide the tube up to, **but not touching**, the eye of the Anchor points.

NOTE: *When securing lines in the tube, apply the adhesive to the two lines from the tube, not at the turnbuckle end of the tube. This should prevent the lines being secured to the turnbuckle, allowing it to move freely in the loop of the line.*

Secure the lines in the tube using thin CA adhesive then cut away the residual end tag of line.



Landing gear wires:

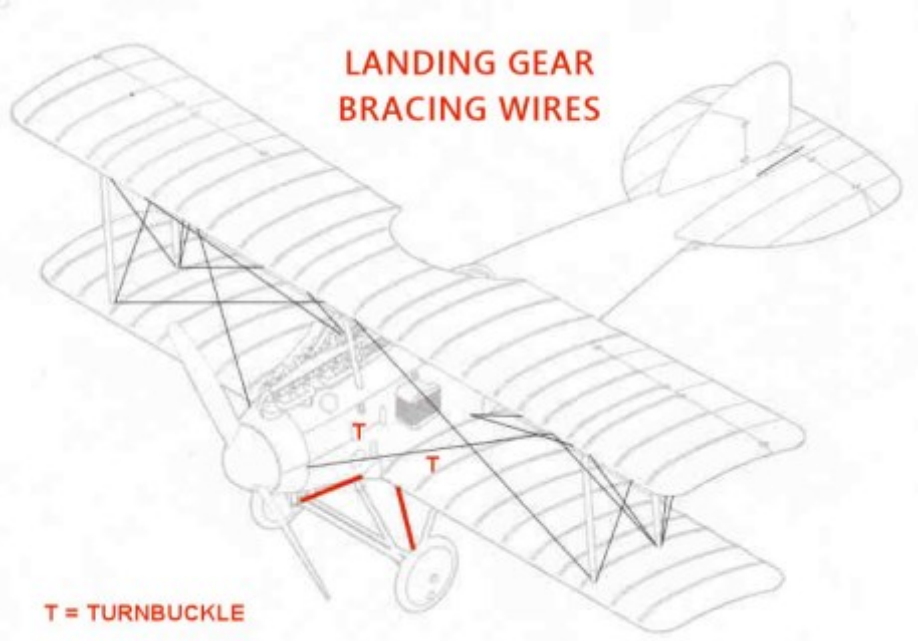
NOTE: *Landing gear bracing wires were used to stiffen the stuts of the landing gear and reduce the amount of flexing the struts were subjected to during landing. Two wires, diagonally crossed, were attached between the bottom of the rear landing gear struts and opposite tops of the rear struts. Turnbuckles were fitted to the wires at the top of the struts.*

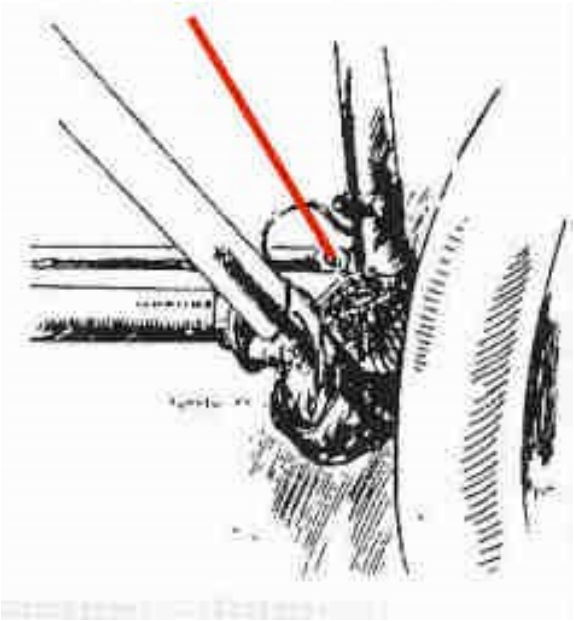
Drill a hole of 0.3 mm diameter through the bottom of the two rear struts of the landing gear (see previous illustrations).

Drill a hole of 0.3 mm diameter into the underside of the fuselage, just inboard from each of the location holes for the rear landing gear struts (see previous illustrations).

Using thin CA adhesive, secure a 'GasPatch' 1:48th scale turnbuckle (Type A) into the holes in the underside of the fuselage. Carefully bend the turnbuckles to align diagonally with the bottom of the landing gear rear struts when fitted.

Using thin CA adhesive, secure a 'GasPatch' 1:48th scale Anchor Point into the pre-drilled hole at the base of the landing gear rear struts. The eye end of the Anchor points should be at the inside face of the struts.





Rudder - fit:

Use cement or CA adhesive to secure the rudder onto the rear of the fin.

Elevator - fit:

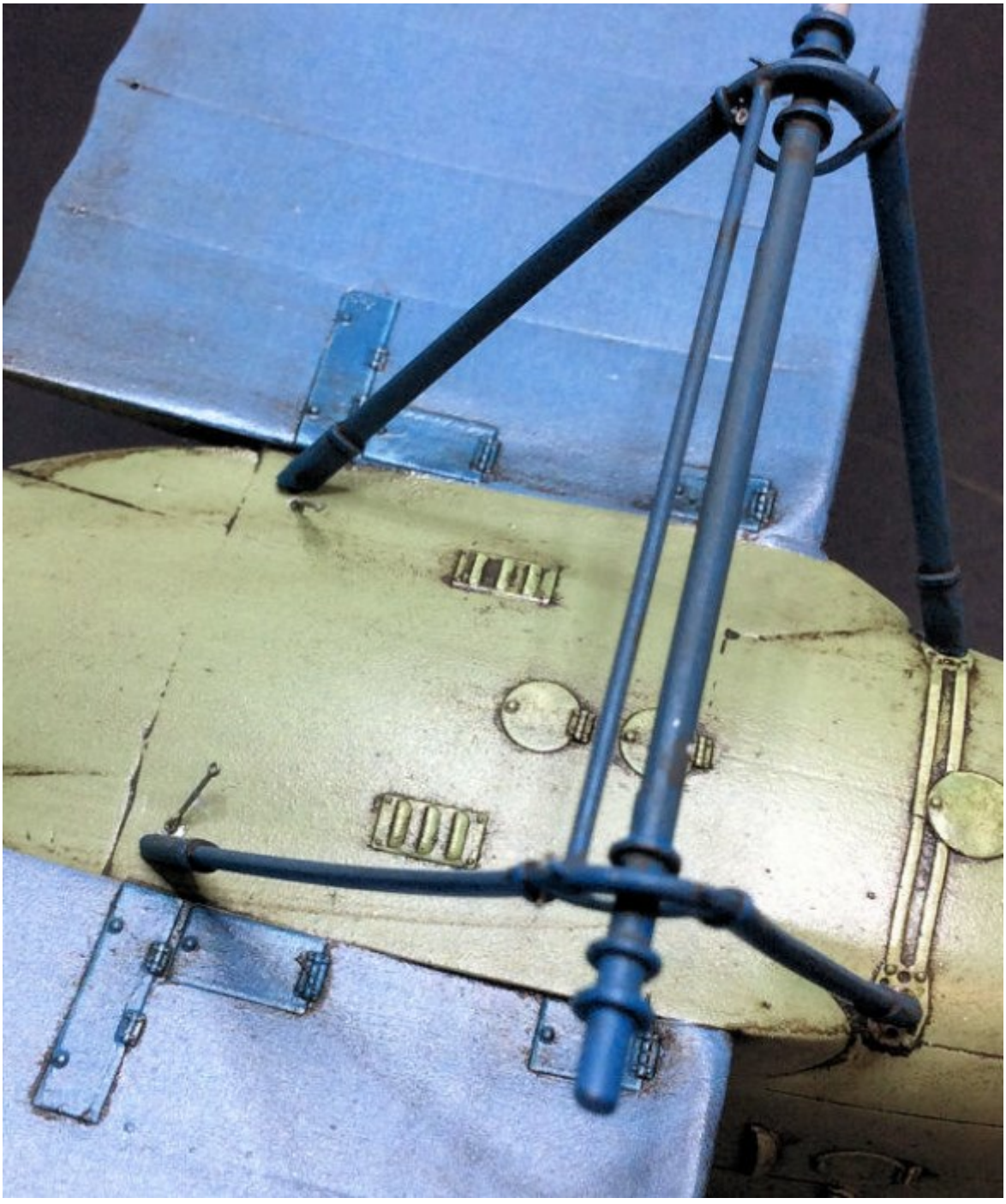
NOTE: *During the following step, make sure the pre-rigged lines for the elevator control wires are kept clear of the adhesive and are on the correct sides of the elevator.*

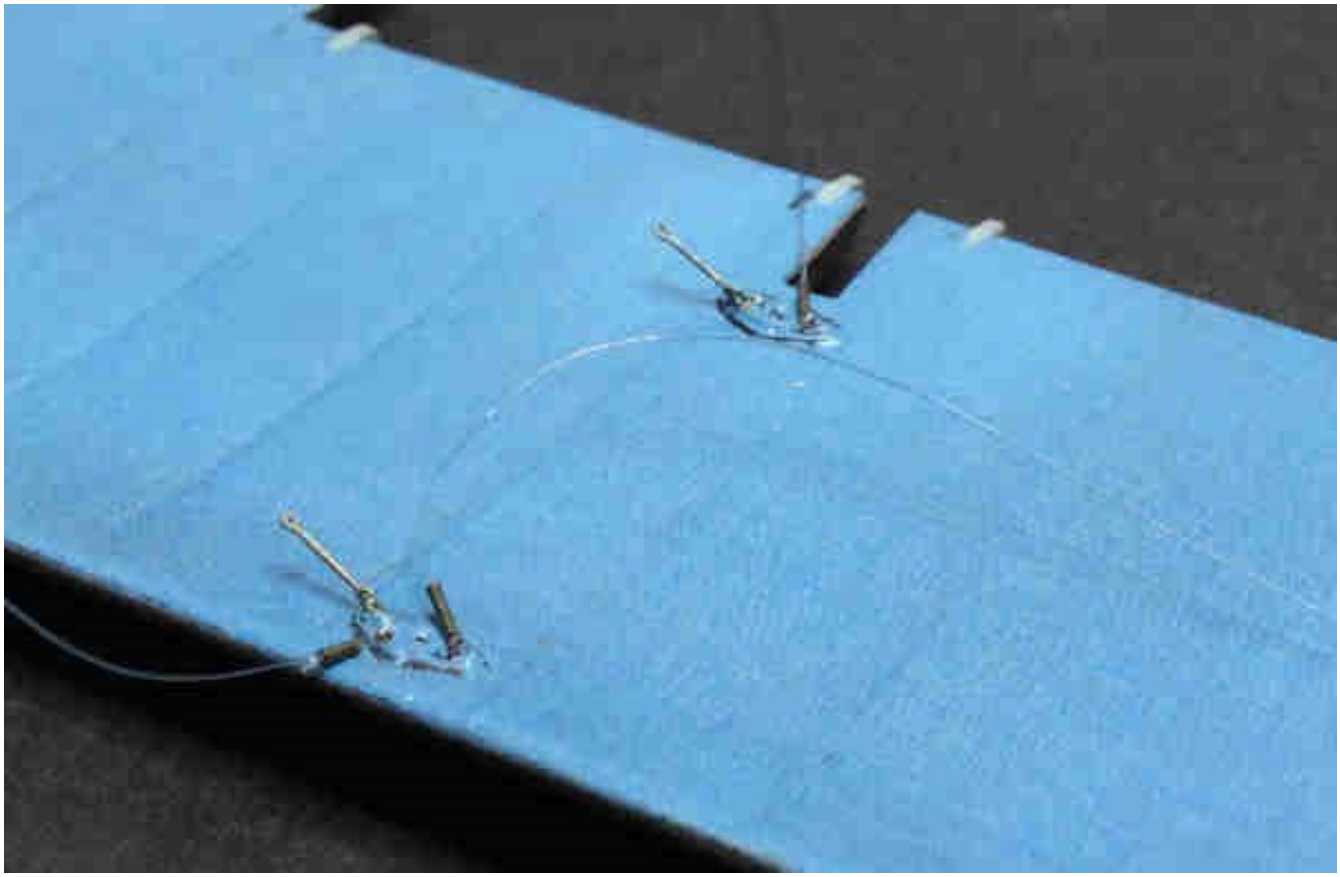
Use cement or CA adhesive to secure the elevator onto the rear of the tail plane.

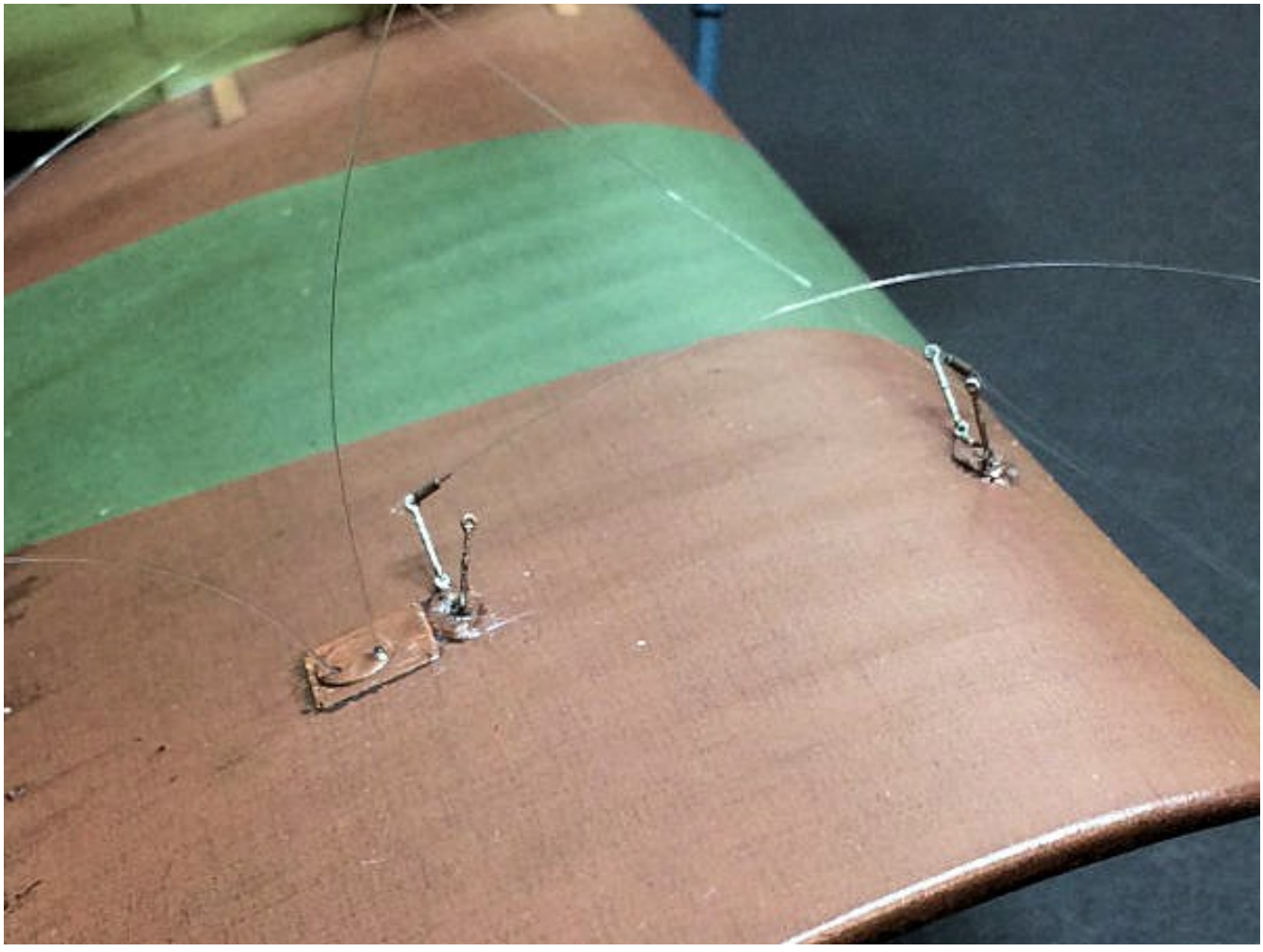
Landing gear - fit:

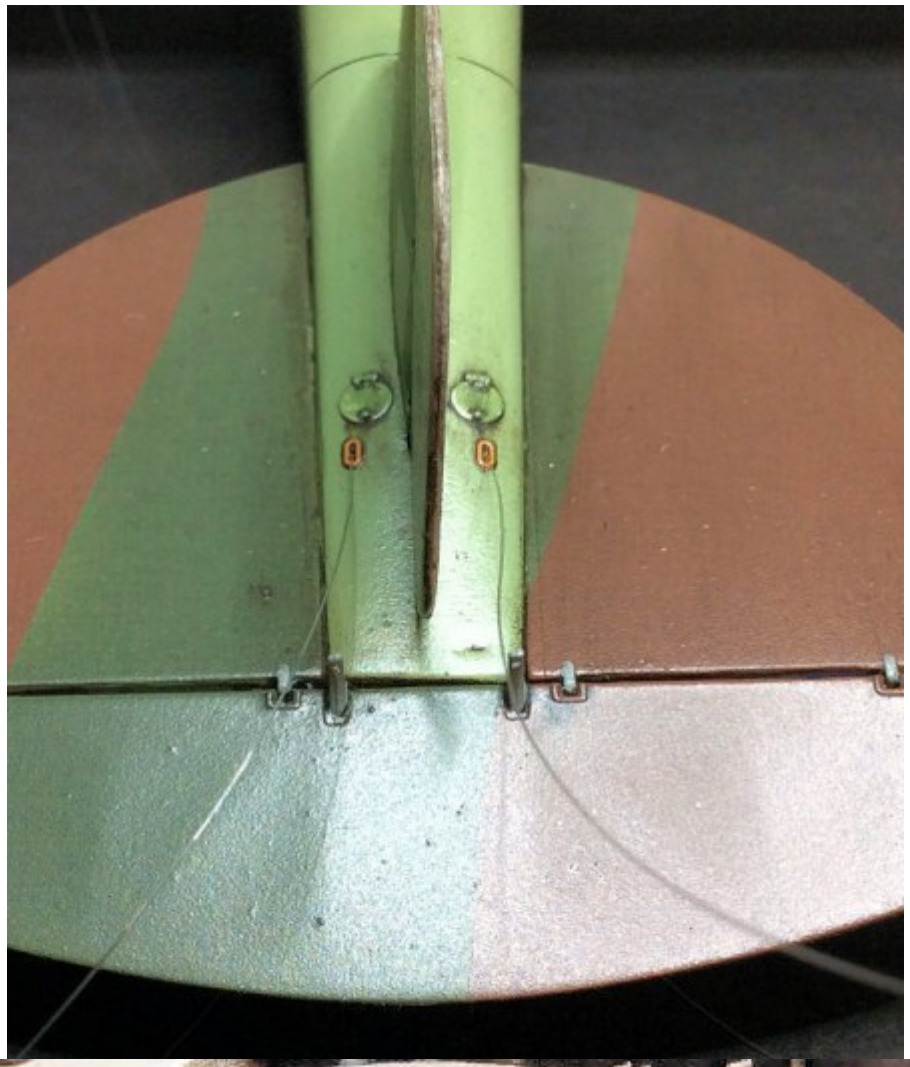
NOTE: *During the following step, make sure the shorter of the landing gear struts are the forward struts and the longer, the rear struts.*

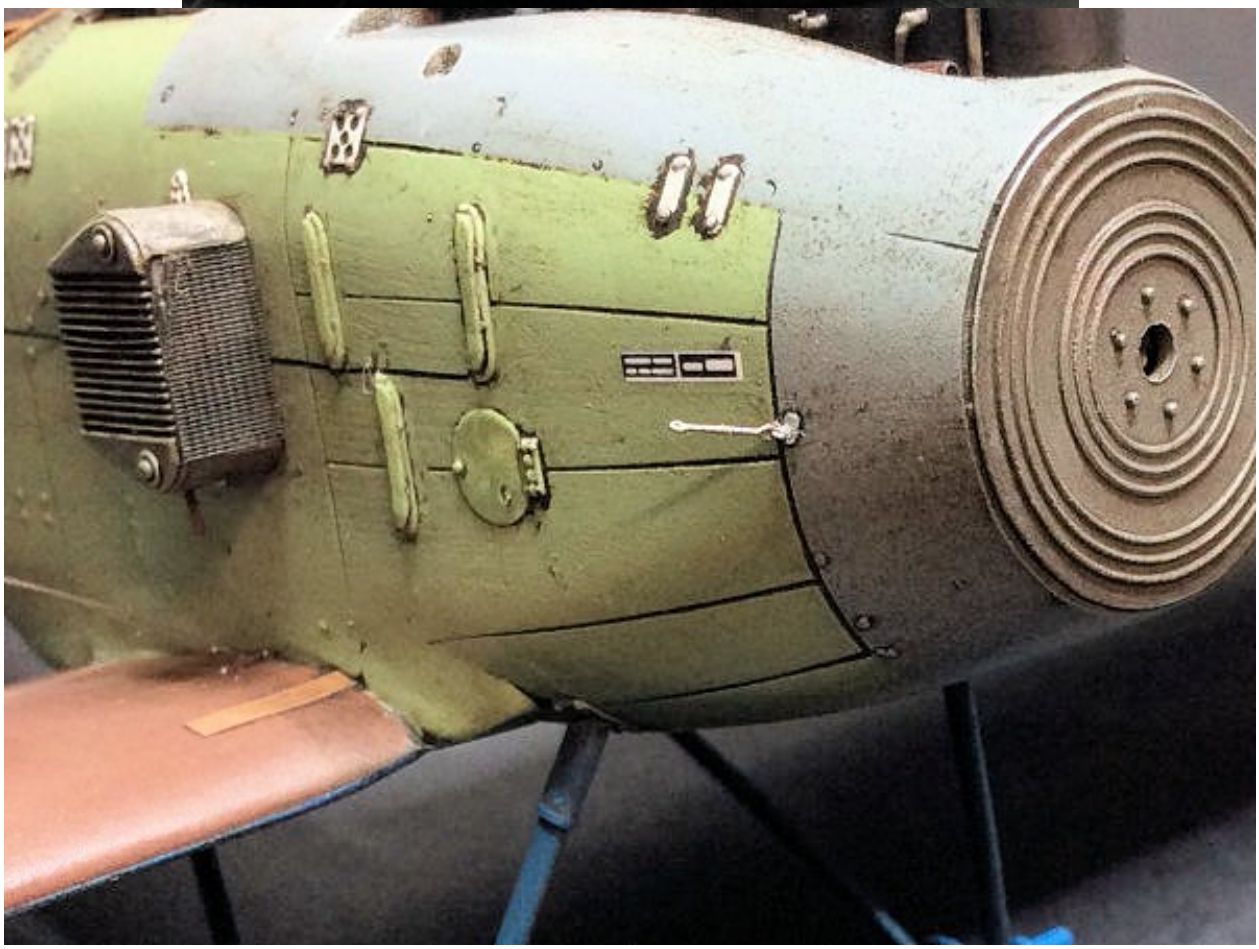
Use CA adhesive to secure the four struts of the landing gear into their locating holes on the underside of the fuselage.











Turnbuckles - paint:

Brush paint the centre barrels of each turnbuckle with ‘Mr. Metal Colour’ Iron (212) or similar.

Upper wing - fit:

Using CA adhesive, secure each of the four interplane struts into their location holes in the underside of the upper wing. Make sure the adhesive does not contact any of the pre-rigged lines. Also make sure that the struts are:

Parallel to each other when viewed from the sides.

Aligned vertically to each other when viewed from the front.

Angled rearwards by approximately ten degrees.

NOTE: *In the following step, if necessary, the correct position of the upper wing can be achieved by carefully moving the wing to flex the interplane struts and bend their locating rods in the wings.*

Temporarily locate the struts on the upper wing into their location holes on the top surface of the lower wing making sure the struts fully locate. Make sure that:

The upper wing is parallel to the lower wings when viewed from above.

The upper wing is aligned to the lower wings when viewed from the sides.

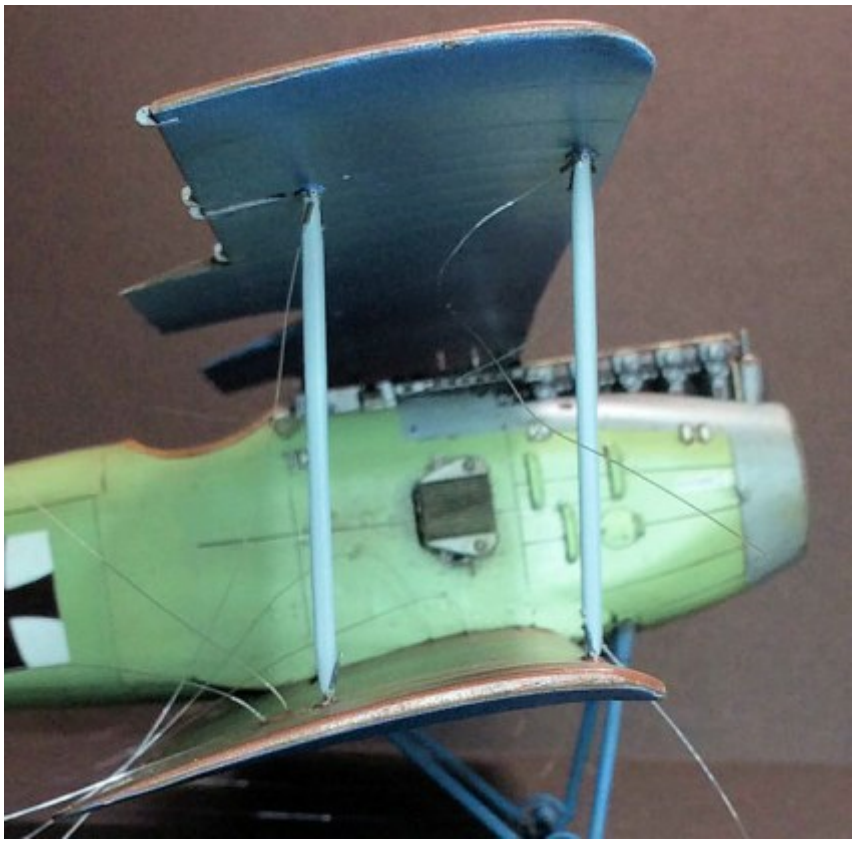
The leading edge of the upper wing is aligned with the front edge of the fifth camshaft cover from the front of the engine (rear of the front cabane strut locating recesses).

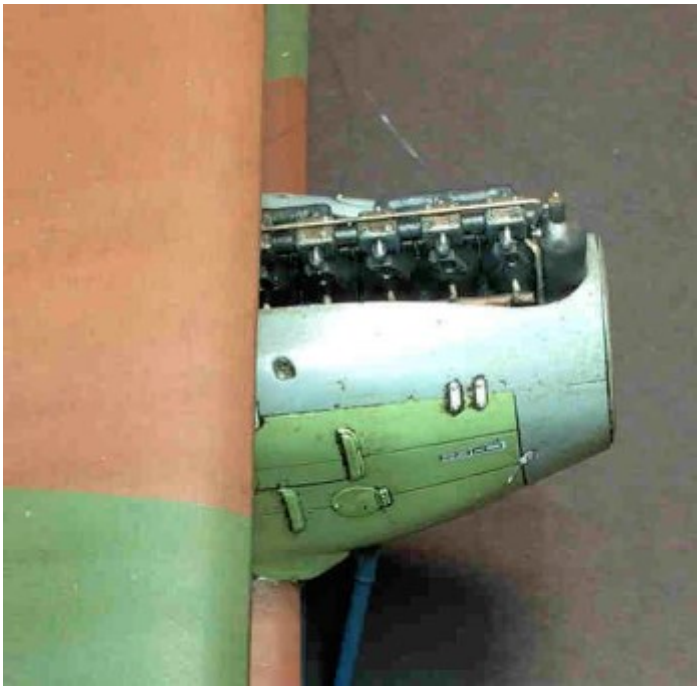
Remove the upper wing and struts assembly.

NOTE: *During the next step make sure all pre-rigged lines are kept clear of the adhesive.*

Apply CA adhesive to the four interplane locating holes in the upper surface of the lower wings.

Fully locate the struts on the upper wing into their location holes on the top surface of the lower wing making sure the struts fully locate, making sure the upper wing is correctly aligned and positioned.





Fuselage cabane struts:

NOTE: *During the fitting of the upper wing the cabane forward struts snapped. The plastic is of a harder type and the breaks were clean and sharp. Therefore, I believe the struts snapped across stress lines in the parts, created when the parts were released from their moulds. Rather than trying to pin and glue what are already weak struts, I chose to replace the front struts with profiled Brass tube with reinforcing Brass rod (see below) and plastic card fillet panels with an Anchor point under the leading edge of the upper wing.*

Kit supplied Cabane struts:

NOTE: *During the following steps, handle the model with care as until the fuselage cabane struts are fitted, the upper wing is only held in place by the four interplane struts. The wing is therefore subject to movement and the interplane struts can be easily broken.*

Test locate each of the fuselage Cabane strut halves into their locations in the fuselage upper decking panel. The top of the struts should locate into the front and rear recesses in the underside of the upper wing.

Using cement or CA adhesive, secure the two Cabane strut halves in position between the fuselage and upper wing, with their top cross bars together.

Ailerons - fit:

Locate the two ailerons onto their hinges on the upper wing.

Make sure the ailerons are correctly positioned to the upper wing.

> Cockpit control column has been fitted offset from the vertical - For example if the control column is leaning to the left, the left aileron should be angled slightly up and the right aileron slightly down by the same amount.
>
> If the control column was fitted vertically in the cockpit, both ailerons should be aligned with the upper wing.

Using cement or CA adhesive, secure the two ailerons in position on the upper wing.

Final rigging - general:

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

Turnbuckle to Anchor point:

NOTE: *The following procedure is for attaching a turnbuckle to a fitted Anchor point:*

Cut a length of 0.08 mm diameter mono-filament, such as 'Stroft' GTM or similar.

Pass the line through a short and blackened 0.4 mm diameter Brass tube, such as that from 'Albion Alloy's' MBT04 or similar.

Pass one end of the line through an 'eye' end of the turnbuckle then loop it back through the tube.

Pass the other end of the line through the 'eye' of the fitted Anchor point then loop it back through the tube.

Pull the two line ends to position the tube between, **but not touching**, the 'eye' ends of the turnbuckle and Anchor point.

NOTE: *In the following step, the intention is for the turnbuckle to be free to move in the loop of line from the tube and for the loop of line to be free to move in the Anchor point. This allows the rigged line to self align between its rigging points.*

Secure the lines in the tube by applying thin CA adhesive to the turnbuckle end of the tube. Apply the adhesive sparingly, otherwise it may run onto the 'eye' ends and fix the assembly in position.

Carefully cut away any residual end tags of line at the tube ends.

Line to turnbuckles:

NOTE: *The following procedure is for attaching a pre-rigged line to a turnbuckle:*

Pass the pre-rigged 0.12 mm diameter mono-filament line through a short and blackened 0.5 mm diameter Brass tube, such as that from 'Albion Alloy's' MBT05 or similar.

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

Leave the loop of line loose until final attachment of the line is required, as follows:

> Keeping the line taut, pull the line end to position the tube up to, **but not touching**, the 'eye' end of the turnbuckle.
>
> **NOTE:** *In the following step, the intention is for the turnbuckle to be free to move in the loop of line from the tube. This allows the rigged line to self align between its rigging points.*

Secure the lines in the tube by applying thin CA adhesive to the end of the tube furthest from the turnbuckle. Apply the adhesive sparingly, otherwise it may run onto the ‘eye’ end of the turnbuckle and fix it in position.

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

Line to Anchor point:

NOTE: *The following procedure is for attaching a pre-rigged line to a fitted Anchor point:*

Pass the pre-rigged 0.12 mm diameter mono-filament line through a short and blackened 0.5 mm diameter Brass tube, such as that from ‘Albion Alloy’s’ MBT05 or similar.

Pass the end of the line through the ‘eye’ end of the fitted Anchor point then loop it back through the tube.

Leave the loop of line loose until final attachment of the line is required, as follows:

Keeping the line taut, pull the line end to position the tube up to, **but not touching**, the ‘eye’ end of the Anchor point.

NOTE: *In the following step, the intention is for the line to be free to move in the ‘eye’ of the Anchor point. This allows the rigged line to self align between its rigging points.*

Secure the lines in the tube by applying thin CA adhesive to the end of the tube furthest from the Anchor point. Apply the adhesive sparingly, otherwise it may run onto the ‘eye’ end of the Anchor point and fix it in position.

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

Final rigging:

NOTE 1: *Refer to the previous ‘Final rigging - general’ for information on attaching line to turn-buckles and Anchor points.*

NOTE 2: *Most metal tube can be chemically blackened by immersion is solutions, such as ‘Blacken-It’ or similar.*

Elevator control wires:

Pass each of the four pre-rigged elevator control lines through a short and blackened 0.4 mm diameter Brass tube, such as that from ‘Albion Alloy’s’ MBT04 or similar.

Pass the end of each line through the pre-drilled hole in the end of its elevator control horn.

Pull the line taut from the rear of the control horns.

Move the tubes away from the control horns.

Secure the lines in control horns using thin CA adhesive.

Carefully cut away the residual end tags of line at the rear of the control horns.

Slide the tubes up to the control horns and secure in position using thin CA adhesive.

Landing gear wires:

NOTE: *Refer to the previous ‘Line to turnbuckles’ and ‘Line to Anchor point’ paragraphs.*

Attach the pre-rigged landing gear lines to their fitted turnbuckles, leaving the loop of line loose.

Attach the pre-rigged landing gear lines diagonally across to their fitted Anchor points, leaving the loop of line loose.

Final attach the landing gear lines to their fitted turnbuckles.

Keeping the lines taut, final attach the lines to their Anchor points.

Landing wires:

NOTE: *Refer to the previous 'Line to turnbuckles' paragraph. On my model the front landing wires are attached to a pre-fitted Anchor point.*

Front landing wires:

Pass the free ends of the pre-rigged front landing wires through a blackened 0.4 mm diameter tube, such as 'Albion Alloy's' MBT04 or similar.

Pass the free ends of the lines through the pre-drilled holes in the top of the front fuselage cabane struts.

Move the tubes away from the cabane struts.

Keeping the lines taut, secure them to the cabane struts using thin CA adhesive.

Cut away any residual end tag of line from between the rear cabane struts.

Slide the tubes up to the cabane struts and secure in position using thin CA adhesive.

Rear landing wires:

Pass the free ends of the pre-rigged rear landing wires through a blackened 0.4 mm diameter tube, such as 'Albion Alloy's' MBT04 or similar.

Pass the free ends of the lines through the pre-drilled holes in the top of the rear fuselage cabane struts.

Move the tubes away from the cabane struts.

Keeping the lines taut, secure them to the cabane struts using thin CA adhesive.

Cut away any residual end tag of line from between the rear cabane struts.

Slide the tubes up to the cabane struts and secure in position using thin CA adhesive.

Flying wires:

NOTE: *Refer to the previous 'Line to turnbuckles' paragraph.*

Keeping each of the four pre-rigged flying lines taut, final attach the lines to their pre-fitted fitted turnbuckles.

Incidence wires:

NOTE: *Refer to the previous 'Line to turnbuckles' paragraph.*

Keeping each of the four pre-rigged incidence lines taut, final attach the lines diagonally to their pre-fitted fitted turnbuckles at the base on the interplane struts.

Aileron control wires:

Aileron levers:

NOTE: *Refer to the previous 'Line to turnbuckles' paragraph.*

Keeping each of the two forward pre-rigged aileron control lever lines taut, final attach the lines to their pre-fitted fitted turnbuckles on the levers.

Aileron undersides:

Pass the free ends of the two rear pre-rigged aileron control lines through a blackened 0.4 mm diameter tube, such as 'Albion Alloy's' MBT04 or similar.

Pass the free ends of the lines through the pre-fitted Anchor points on the underside of the ailerons, then loop them back through the tubes.

Keeping the lines taut, move the tubes up to the Anchor points.

Secure the tubes to the lines using thin CA adhesive.

Cut away any residual end tag of line from the end of the tubes.

Drag wires:

NOTE: *Refer to the previous 'Line to turnbuckles' paragraph.*

Keeping each of the two pre-rigged drag lines taut, final attach the lines to their pre-fitted fitted turnbuckles.

Tightening of rigged lines:

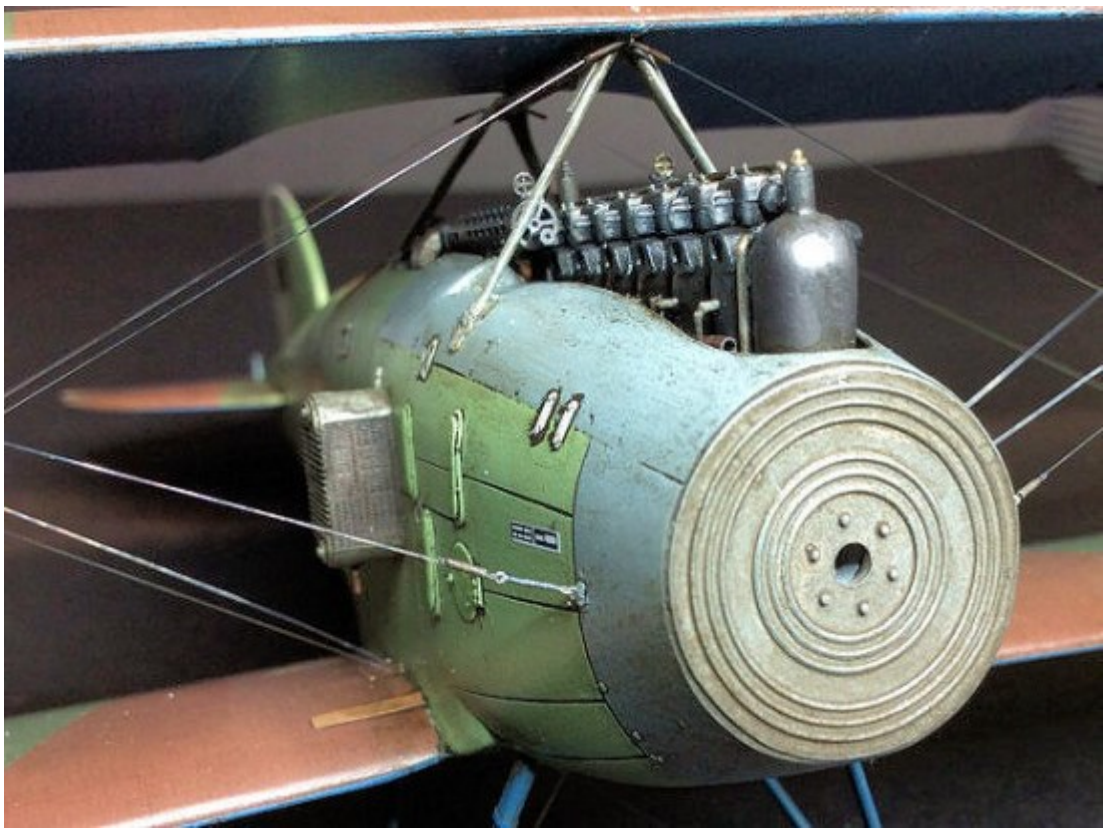
NOTE: *No-matter how careful you are to keep all installed rigging taut, there will be instances when after completing the rigging, one or more of the lines will be slack. This can be remedied by the careful application of heat close to and along the relevant line. Heat causes the mono-filament to shrink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

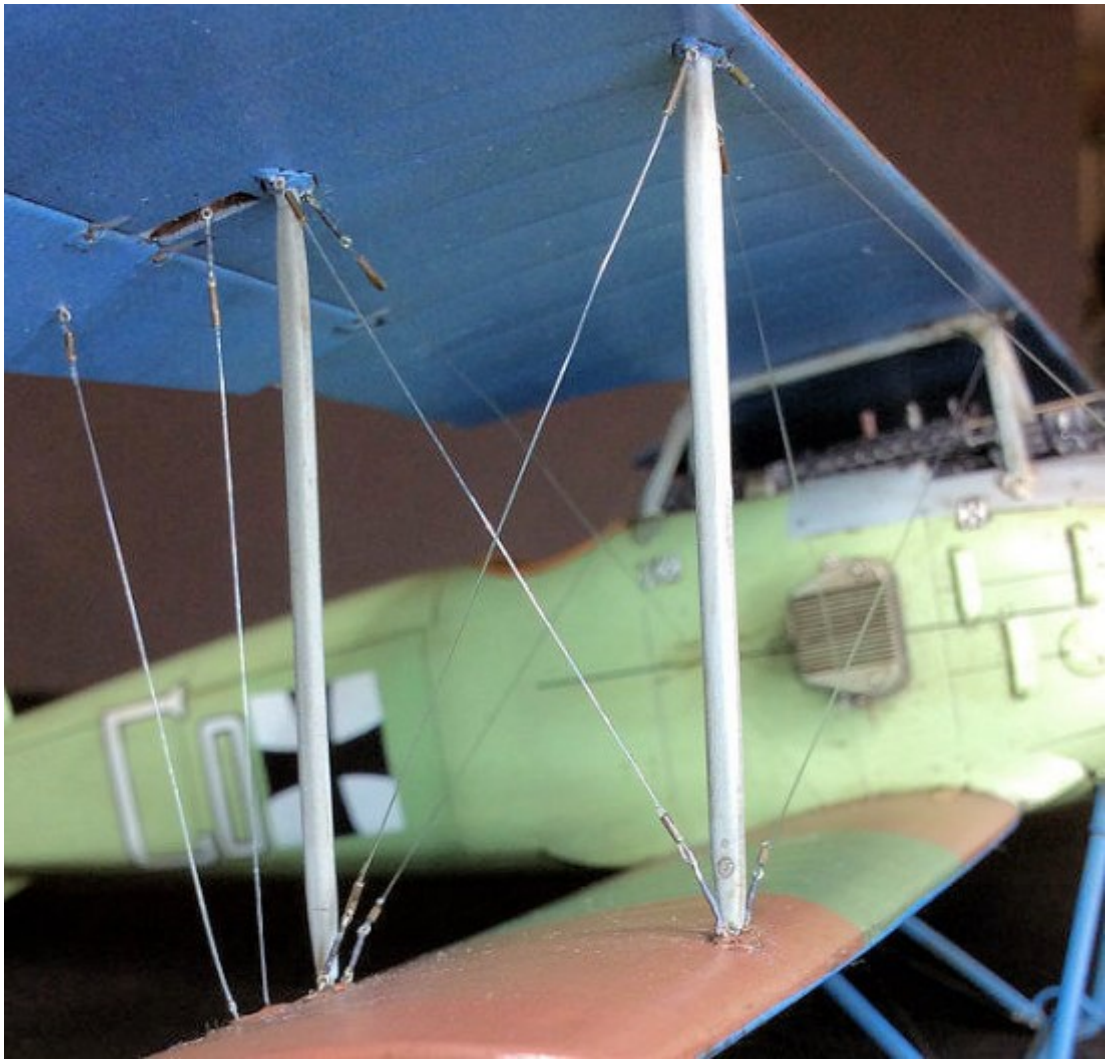
WARNING: ***Apart from the obvious hazards associated with a heat source, care should also be taken not to apply too much heat, hesitate at one location along the line or touch the line. Otherwise the line will melt and snap. Also take care not to touch the model.***
If a rigging line requires tightening a suitable heat source will be required. I use a small electrical soldering iron.

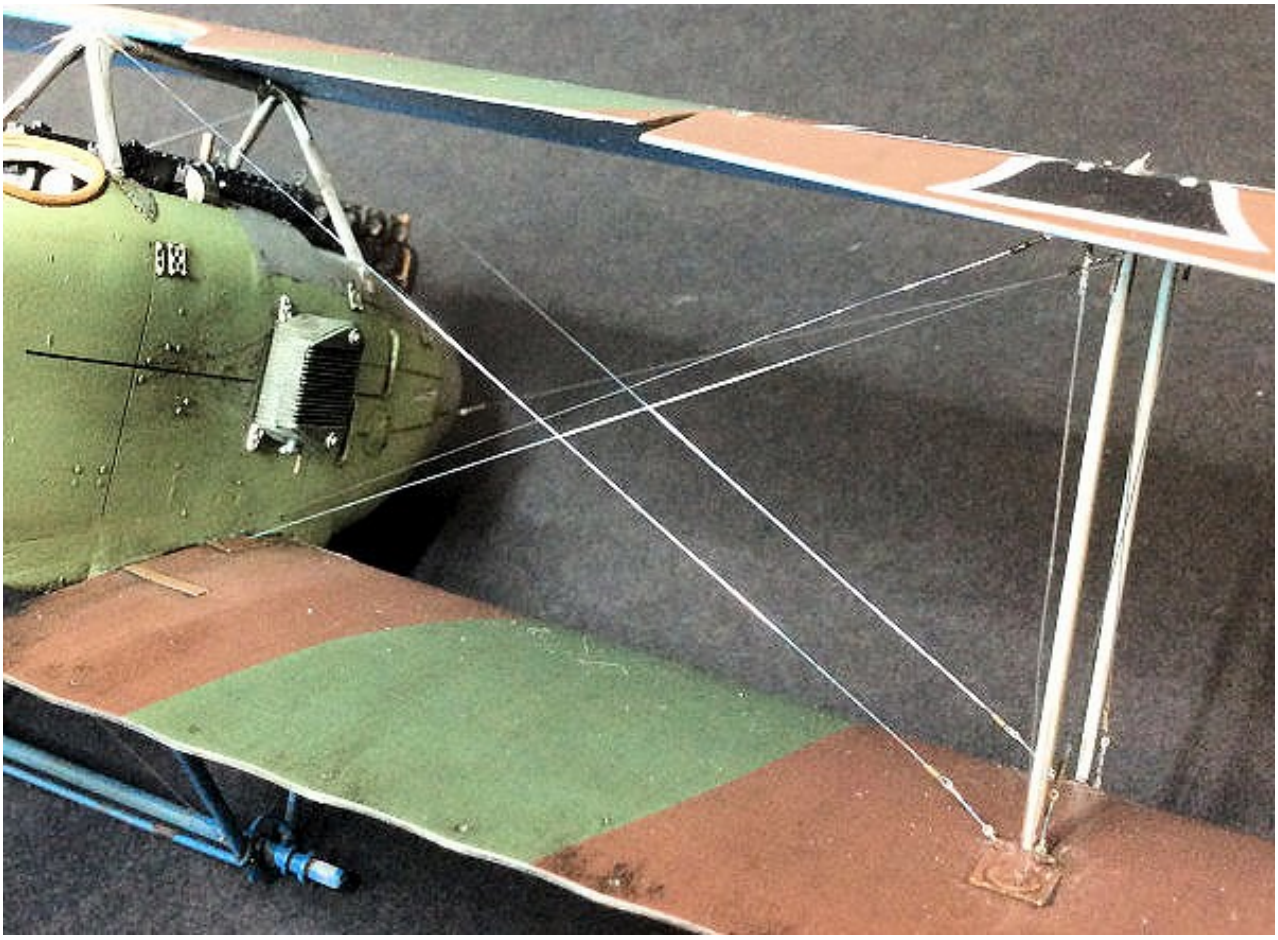
Move the heat source close to and along the line watching for the line to shrink. Keep the heat source moving and avoid touching the line or the model.

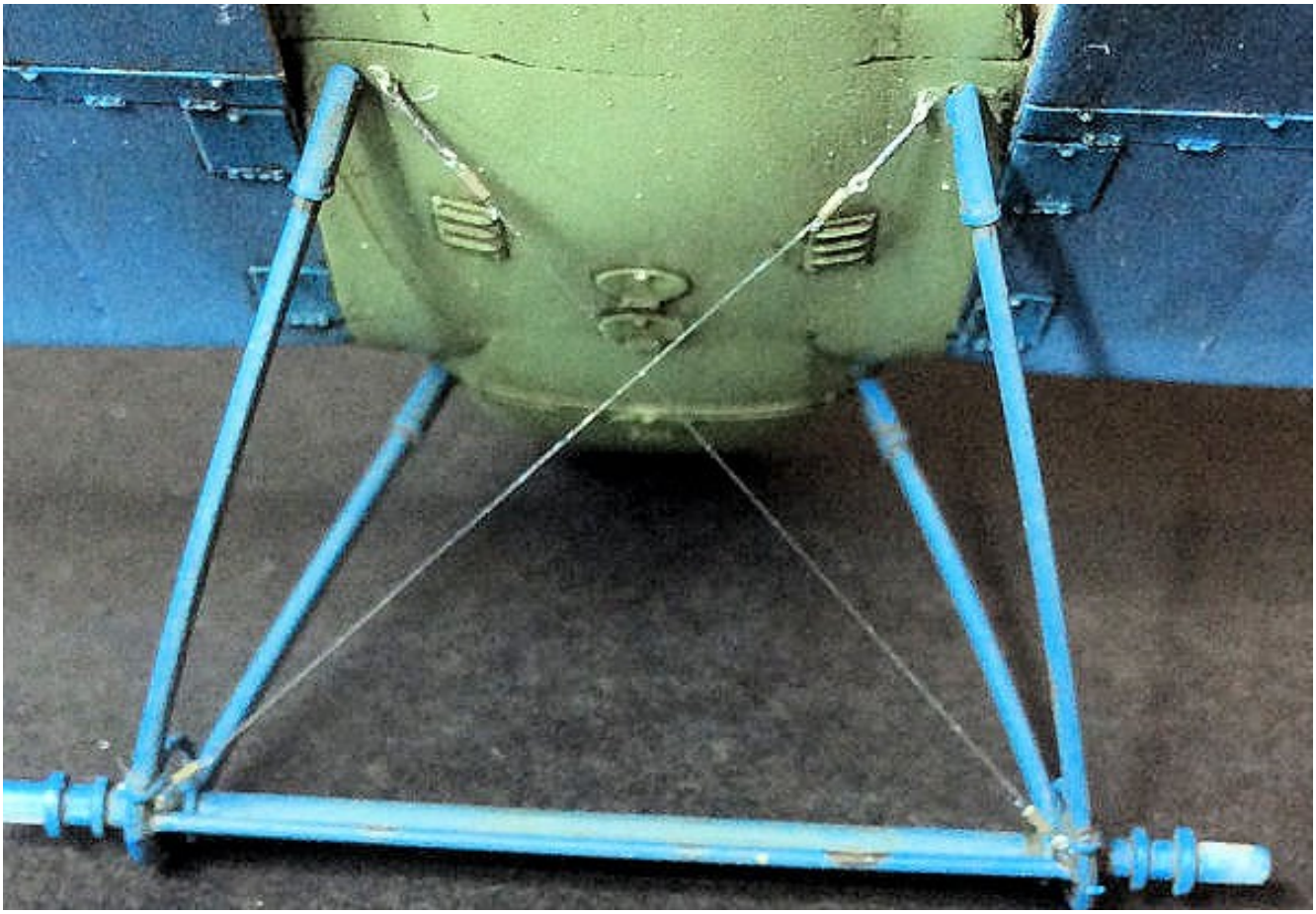
Rigging - finish:

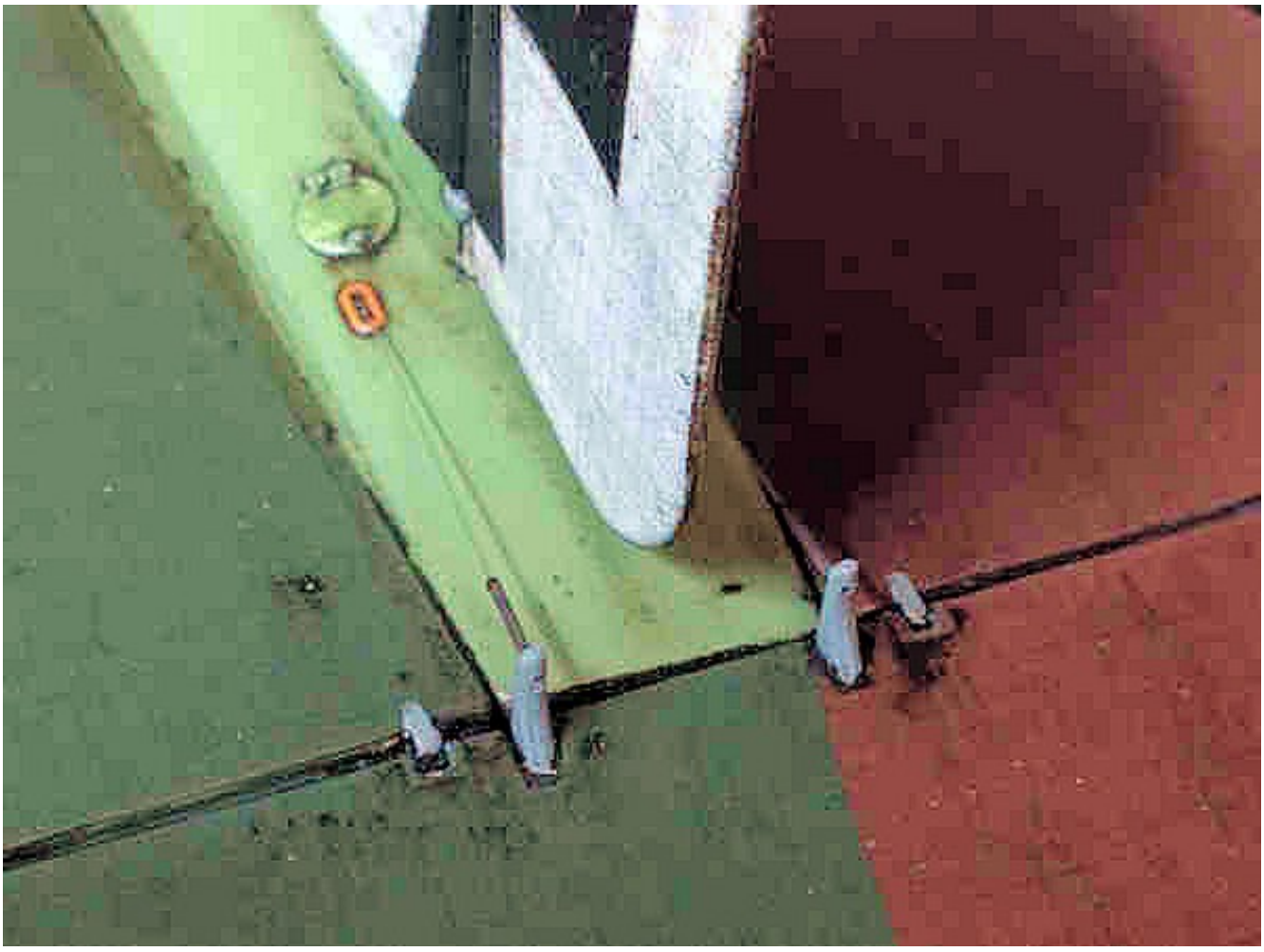
To lessen the transparent and surface gloss of the applied rigging, airbrush the rigging lines with a light coat semi-matte clear coat, such as 'Alclad' Light Sheen (ALC311) or similar.





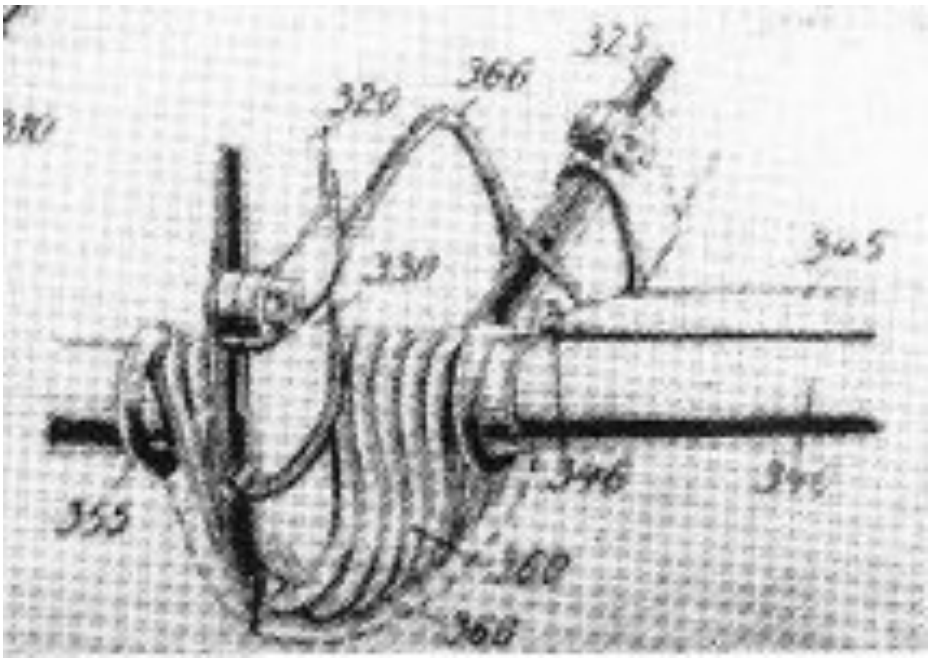






Landing gear suspension:

NOTE: *'Bungee' type cord was wrapped up and over the axle and bottom of the landing gear struts. This controlled the amount of flex the axle and wheels were subjected to when the aircraft was on the ground (weight on), but also restrained the axle and wheels in the landing gear struts when the aircraft was airborne.*



Cut a long length of 'EZ' stetch line (heavy black).

Using thin CA adhesive, secure one end of the line to the top of the axle, inboard from the outer rim.

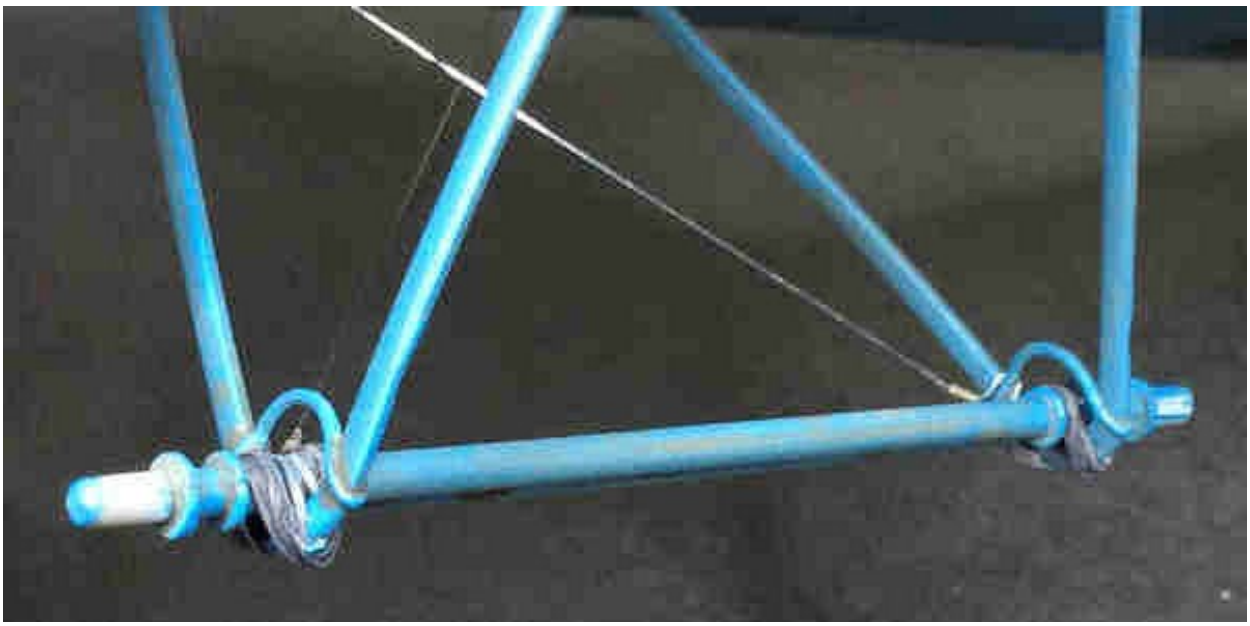
Wrap the line down under the strut then up and over the axle, outboard of the inner rim.

Wrap the line down under the rear of the strut then up and over the axle, inboard of the outer rim.

Continue to wrap the line around the axle, securing it in position using thin CA adhesive.

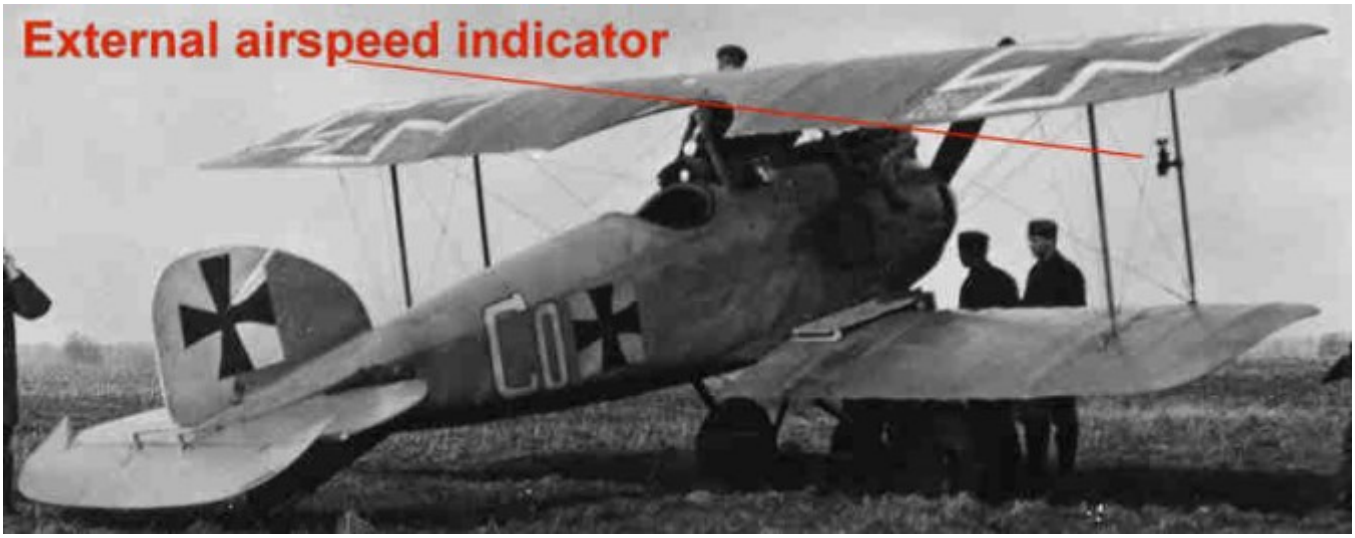
Cut away the end tag of line.

Repeat the procedure on the opposite end of the axle.



External airspeed Anemometer:

NOTE: *This particular aircraft was fitted with an external airspeed Anemometer , which was attached inboard on the right, front interplane strut. This will be represented by an 'spare' Anemometer indicator from a part used 'Wingnut Wings' kit.*



Cut the Anemometer and rotating head from their sprues and remove any sprue tags by sanding.

File or sand the end of the rectangular mounting such that when the Anemometer is positioned on the inside face of the front, right interplane strut, it's angled towards the cockpit.

Drill two 0.4 mm diameter holes vertically spaced and through the sides of the rectangular mounting.

Prime the Anemometer and rotating head with a grey primer, such as 'AK Interactive' Grey (AK758) or similar.

Brush paint the Anemometer and rotating head with 'Tamiya' Rubber Black (XF85) or similar.

Gloss coat the Anemometer dial face with 'Tamiya' Clear gloss (X22) or similar.

Apply the Anemometer dial decal.

Gloss coat the Anemometer decal with 'Tamiya' Clear gloss (X22) or similar.

Cut two lengths of 0.3 mm diameter 'PlusModel' lead wire or similar.

Pass the lead wires through the pre-drilled holes with one end of the wires flush with a side of the mounting and secure in position using thin CA adhesive.

Position the mating face of the Anemometer rectangular mounting onto the inside of the front right interplane strut, with the Anemometer aligned with the strut and angled towards the cockpit.

Secure the Anemometer to the strut using thin CA adhesive.

Wrap the two wires parallel to each other around the strut the cut the ends of the wires such that they finish at the holes at the side of the Anemometer rectangular mounting.

Secure the wires to the strut and mounting using thin CA adhesive.

Secure the rotating head to the top of the Anemometer using thin CA adhesive.

Engine exhaust pipe:

NOTE: *The kit supplied engine exhaust pipe is moulded solid, so has no opening at the exit. Also, my kit part had a deep mis-mould which required filling.*

Scrape or sand away any mould seam likes around the exhaust pipe.

Drill out the exit opening in the end of the pipe. Make sure you don't drill too deep or through the sides of the pipe.

Fill any imperfections with a modelling paste and once fully set, sand to blend with the surrounding area.

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

Airbrush the exhaust pipe with 'Alclad' Exhaust Manifold (ALC-123) or similar.

Brush the exhaust pipe with 'Flory Models' Brown fine clay wash.

Once the wash is dry, lightly finger rub the surfaces to reveal most of the underlying gun metal finish.

Brush paint the inside of the exhaust exit port with 'Tamiya' Rubber Black (XF85) or similar

Lightly sponge 'Tamiya' Weather Master Set D (Burnt Blue) around the ends of the individual exhaust outlet pipes.

Sponge 'Tamiya' Weather Master Set B (Soot) around the exit port of the exhaust pipe.

Wheels:

Cement the two wheel covers into the outboard recesses in the wheels.

Cement the two wheels onto the ends of the axle, making sure the wheels are vertical when viewed from the front.

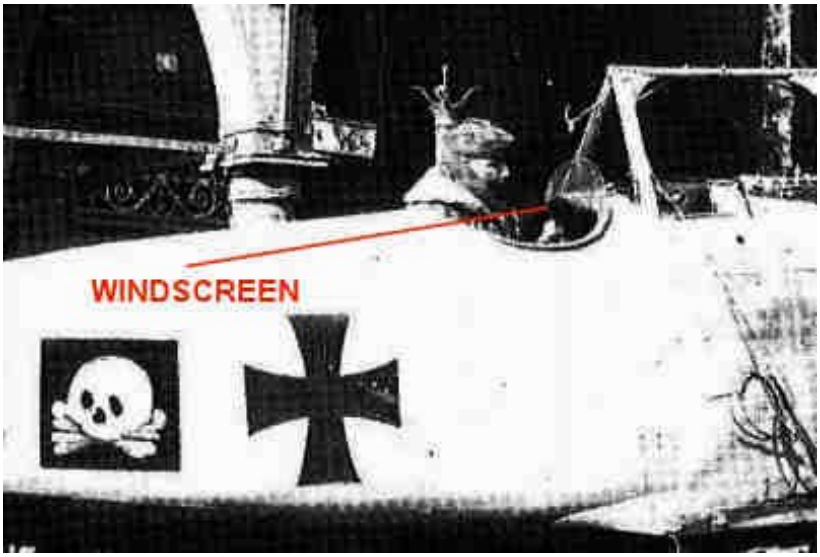
Refer to Part 3 (Weathering) - Apply 'Flory Models' Grime clay wash around the tyres of the wheels and on the underside of the lower wing, to create wheel dirt spray.

Tail skid:

Cement the tail skid onto the tail skid fairing under the rear of the fuselage.

Windscreen:

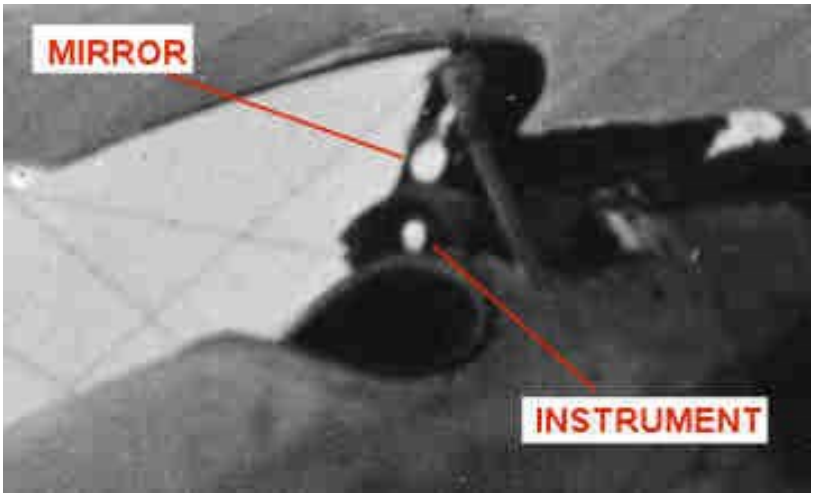
NOTE: *The kit supplied windscreen is an outlined acetate sheet, which is not the best option. The following photograph shows the windscreen as it was fitted to this aircraft after it was shot down when flown by Prince Friedrich Karl. Therefore I chose to use an appropriate 'spare' windscreen from an 'Albatros kit from 'Wingnut Wings'.*



I brush painted the outer rim of the windscreen with 'Tamiya' Medium Sea Grey (XF83). Once dry the windscreen was secured in position using 'Microscale' Micro Kristal Klear adhesive.

Mirror and instrument:

NOTE: *Photographs of this aircraft show what appears to be a mirror mounted above the cockpit between the rear cabane struts. Also an instrument located in front of the cockpit, behind the windscreen. To represent the mirror and instrument, I used two appropriate parts from my 'spares' collection*



Mirror:

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

Brush paint mirror part with ‘Tamiya’ Medium Sea Grey (XF83) or similar.

Brush paint the face of the mirror with ‘Mr. Metal Colour’ Stainless Steel (213) or similar.

Gloss coat the face of the mirror with thinned ‘Tamiya’ Clear Yellow (X24) or similar.

Secure the mirror part towards the top and between the two rear cabane struts using thin CA adhesive.

Instrument:

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

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

Gloss coat the instrument dial face with ‘Tamiya’ Clear gloss (X22) or similar.

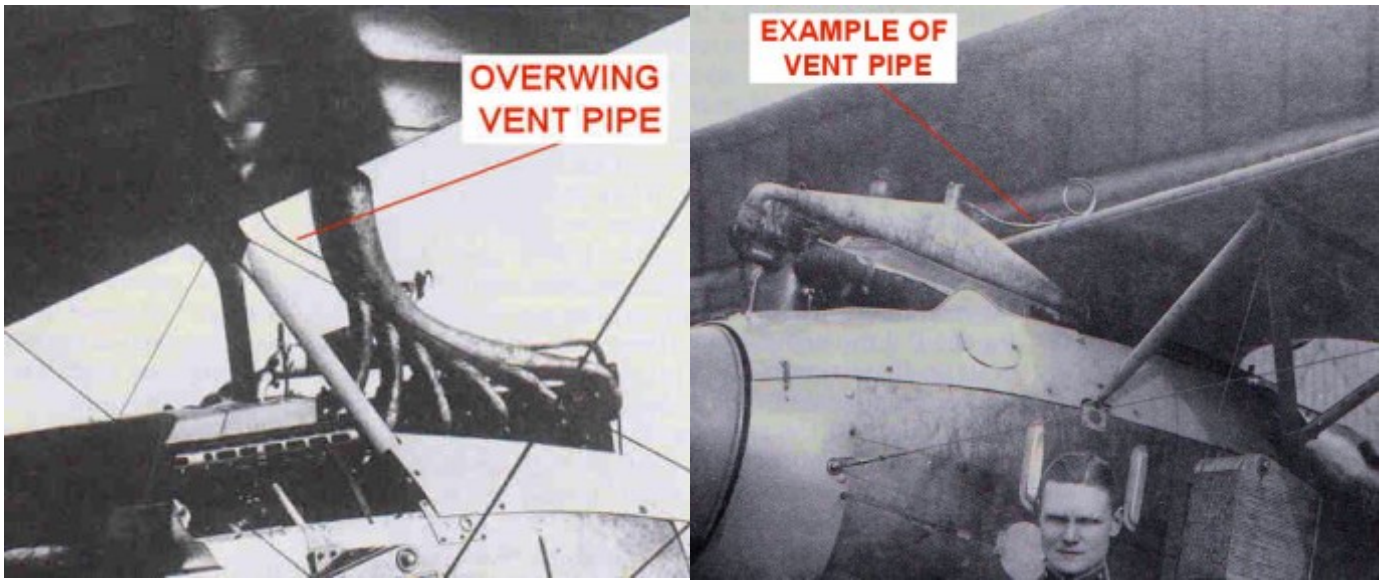
Apply and appropriate instrument dial decal.

Gloss coat the instrument decal with ‘Tamiya’ Clear gloss (X22) or similar.

Using ‘Microscale’ Micro Kristal Klear adhesive, secure the instrument centrally on the fuselage in front of the cockpit opening and as close as possible to the cockpit rim.

Coolant system vent pipe:

NOTE: *The engine cooling system was fitted with pipe that was routed between the top, front of the engine and over the leading edge of the upper wing.*



Drill a hole of 0.4 mm diameter into the leading edge of the upper wing and inline with the centre of the engine camshaft.

Using thin CA adhesive, secure a **1:32nd** scale ‘GasPatch’ Anchor point into the hole, making sure the ‘eye’ of the Anchor point is aligned across the wing.

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

Bend one end of the tube into a loop.

Pass the straight part of the tube through the ‘eye’ of the Anchor point and position it under the loop.

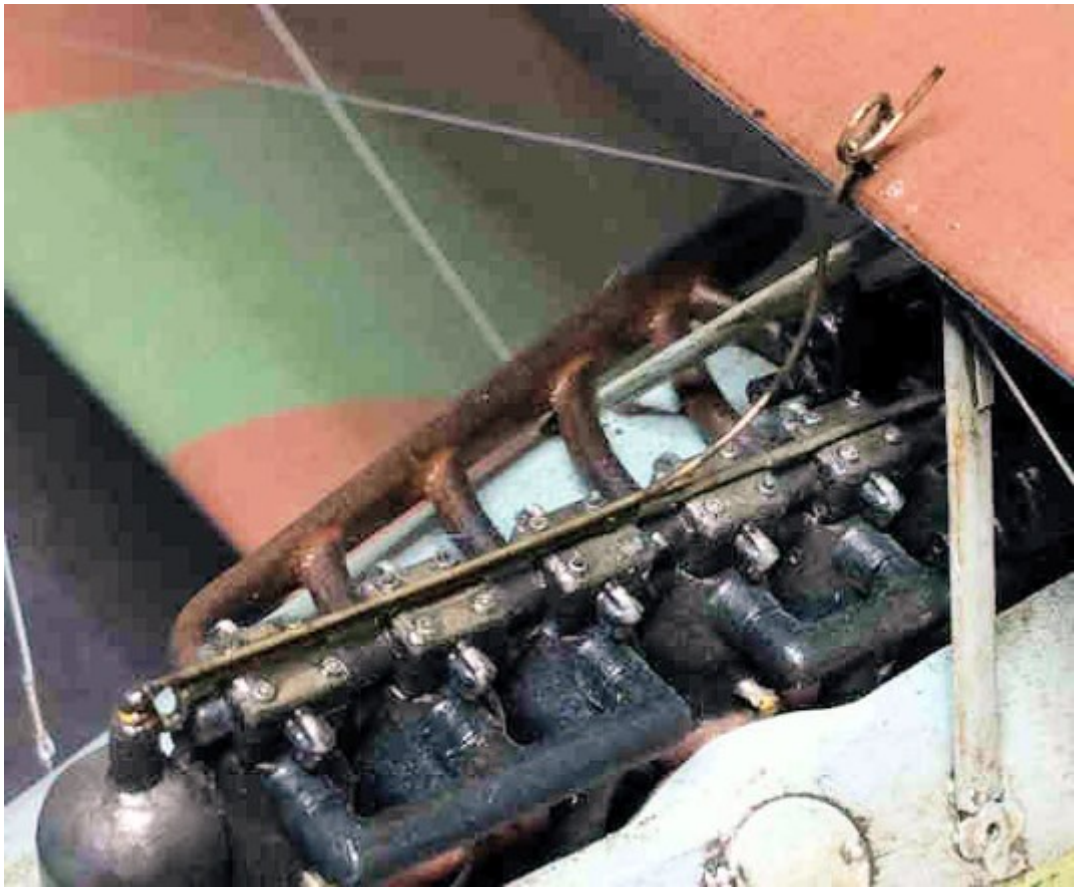
Secure the Anchor point to the tube using thin CA adhesive.

Using thin CA adhesive, secure the Anchor point into the pre-drilled hole in the upper wing.

Bend the tube down to the top of the engine such that it will lay along the engine to the valve at the front of the engine.

Cut the tube so that it fits behind the valve.

Secure the pipe along the top of the engine using CA adhesive.



Exhaust pipe - fit:

Locate the exhaust pipe around the cabane strut and onto the exhaust ports on the top, right side of the engine.

Secure the exhaust pipe in position using CA adhesive.

Propeller - fit:

Locate the propeller shaft into the pre-drilled hole in the back plate on the front of the fuselage.

Locate the propeller spinner over the propeller blades and fully onto the back plate.

Secure the propeller spinner onto the back plate using thin CA adhesive.

Refer to Part 3 (Weathering) of this build log. I applied ‘Flory Models’ Dark Dirt clay wash onto the propeller spinner.

Final sheen coat:

Cover the windscreen.

Airbrush a light coat of ‘Alclad’ Light Sheen (ALC311) or similar over the propeller sinner, the weathering applied to the wheels and underside of the lower wing and all of the added rigging.

PART 10
FIGURE

PART 10- FIGURE

The figure I chose to use is the 'Wings Cockpit Figures' leaning pilot (LSK 06), sculpted by Doug Craner.

NOTE: *This resin figure requires assembly as it's supplied in four pieces, which are the main body, left arm, right foot and the head. Due to detail on the four pieces, it's best to paint the pieces* ***before assembly*** *of the figure.*

Preparation:

Remove the mould sprue gates from the four pieces, but leave the locating stems on the left arm and right foot. Make sure the figures cane (Geschwaderstock) is not accidently cut away as being a mould sprue gate.

Drill a hole of 0.8 mm diameter up into the centre of the left leg, the neck of the head and if necessary, deepen the hole in the right leg.

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

Using thin CA adhesive, secure a rod into the pre-drilled hole in the left leg. This will be used to mount the figure on the display base.

Insert, but don't glue, a rod into the pre-drilled hole in the neck of the head. This will be used to hold the head for painting.

Painting:

NOTE: *During painting, the main body and head can be held by the inserted rods and the right foot and left arm by the pre-moulded locating stems.*

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

Brush paint the figure as follows:

Coat - 'AK Interactive' Brown Leather (AK3031) mixed with German Uniform Shadow (AK3093) for shadow highlights. Mr. Colour Metal' Stainless Steel for buttons. 'Tamiya' Rubber Black (XF85) collar with Buff (XF57) dry brushed highlights.

Gaiters and Shoes - 'AK Interactive' British Uniform (AK3081) mixed with German Uniform Shadow (AK3093) for shadow highlights. 'Tamiya' Weathering Master Set A (Mud) on shoes.

Helmet - 'AK Interactive' Brown Leather (AK3031) mixed with German Uniform Shadow (AK3093) to darken. 'AK Interactive' British Uniform Light (AK3082) mixed with Brown Leather (AK3031) head straps.

NOTE: *Before continuing, airbrush the coat, left arm, gaiters and shoes with a clear coat of 'Alclad' Light Sheen (ALC311) or similar, to give a leather sheen to the surfaces.*

Trousers, jacket and hat - 'AK Interactive' German Uniform Light (AK3092) mixed with 'Tamiya' Medium Sea Grey (XF83). Add 'Tamiya' Ocean Grey (XF82) into the mix for shadow highlights. Mr. Colour Metal' Stainless Steel for buttons. 'AK Interactive' Red Emblem (AK3126) for the piping.

Jacket collar - 'Tamiya' Rubber Black (XF85) with 'AK Interactive' Red Emblem (AK3126)for piping.

Scarf - 'AK Interactive' Faded White (AK3029) mixed with 'Tamiya' Buff (XF57) and thinned Smoke (X19) for shadow contrast.

Goggles on left of coat - 'AK Interactive' British Uniform Light (AK3082) mixed with Brown Leather (AK3031) straps. 'Tamiya' Rubber Black (XF85) goggle rimes with Clear Yellow (X24) lenses.

Cane (Geschwaderstock) - 'AK Interactive' Brown Leather (AK3031) with 'Tamiya' Flat Earth (XF52) bands, Deck Tan (XF55) handle and 'Mr. Metal Colour' Brass (219) tip. Sheen the cane with 'Tamiya' Gloss (X22) clear coat.

Hat detail - Tamiya' Rubber Black (XF85) band and peak with Red (X7) piping. 'Mr. Colour Metal' Stainless Steel for hat studs.

Flesh - 'Citadel' Cadian Flesh base, Kislev Flesh highlights and mixed with 'Bugmans Glow' for the lips. Lighter flesh highlights with 'Model Colour' Light Flesh (70.928). 'Tamiya' Rubber Black (XF85) eyes and brows.

Hair - 'Tamiya' Rubber Black (XF85).

Assembly:

Using CA adhesive, secure the right foot in the right leg and the left arm onto the body.

Remove the rod from the head and using CA adhesive, secure the head onto the main body.

PART 11
DISPLAY BASE

PART 11 - DISPLAY BASE

The display case is made from two sheets of 3mm thick Piano Black Acrylic sheet cemented together with a transparent top fabricated from 3mm thick Clear Acrylic sheet. This was custom made for me by Paul Moss at 'Inperspextive' (Ebay). The name plaque was also made by an on -line retailer 'The Engraving Shop'.

The grass mat was cut to shape from a sheet of 'Lars op't Hof' Scenery - Pasture Autumn Long (10.34.S). The cut mat was then positioned on the base and the model and figure test placed to achieve the best effect and to make sure the transparent cover of the case would be able to be located without touching the model. The model and figure were then removed with the grass mat left in position on the display base. The edges of the grass mat were then carefully lifted and a soft marker pen was used to mark the outline of the grass mat, but approximately 5 mm inside the mat edge. The grass mat was then removed and the area of the display base inside the marks was scuffed using a coarse grit sand paper, in order to give a key for the adhesive.

NOTE: *When applying the adhesive, make sure it is not applied too thickly and close to the edges of the finally positioned grass mat. Otherwise the adhesive may be squeezed out from under the grass mat once weight is applied to hold down the mat during setting of the adhesive.*

A coat of PVA adhesive (white glue) was applied to the scuffed area on the display base and to the back of the grass mat. The grass mat was then laid onto the PVA adhesive and positioned correctly. Light pressure was applied to ensure the mat was in contact with the adhesive.

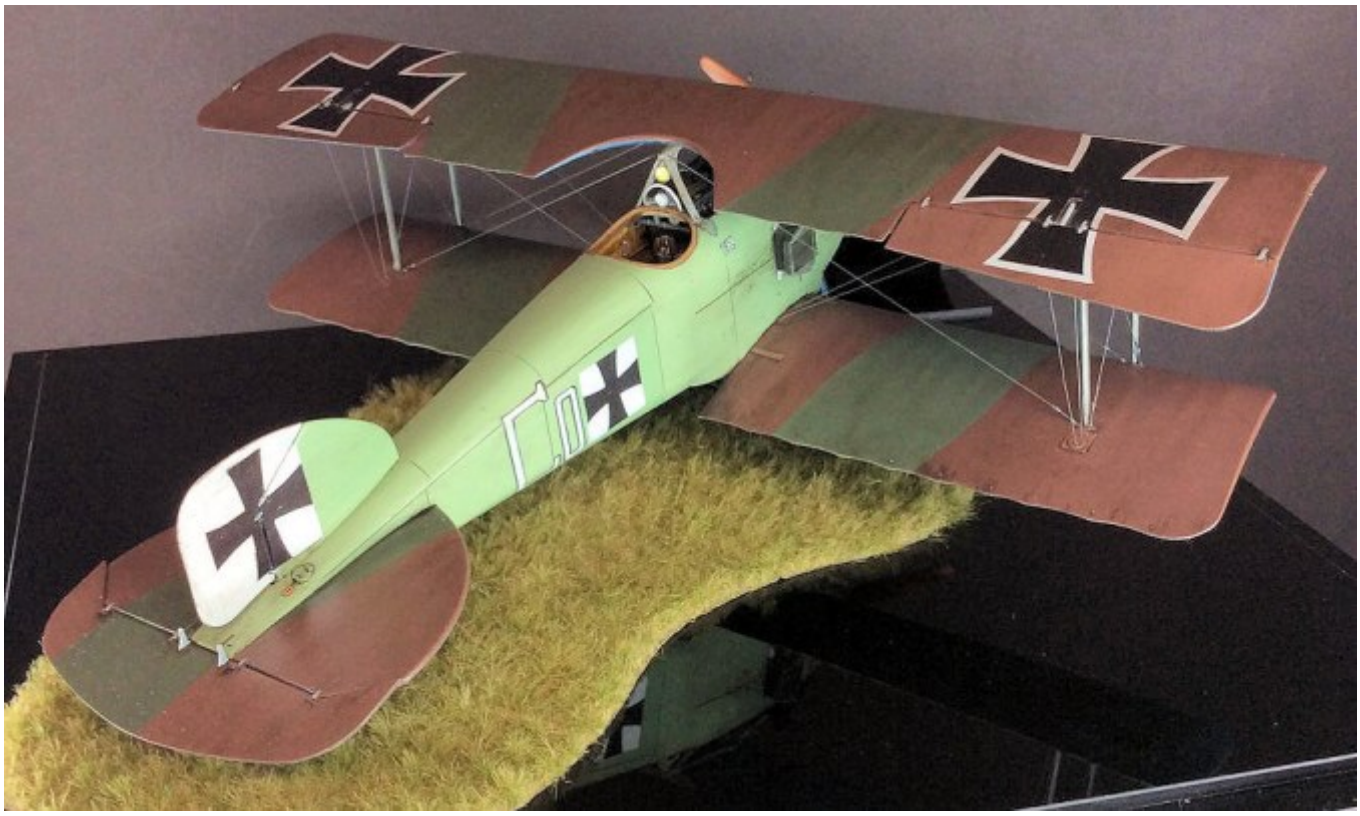
Finally an acrylic plaque stand was positioned to the left, front corner of the display base (just in from the edges of the shoulder for locating the transparent acrylic cover. The area on the underside of the stand and its contact are on the display base were scuffed using a coarse grit sand paper, in order to give a key for the adhesive. A thin coat of contact adhesive 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.

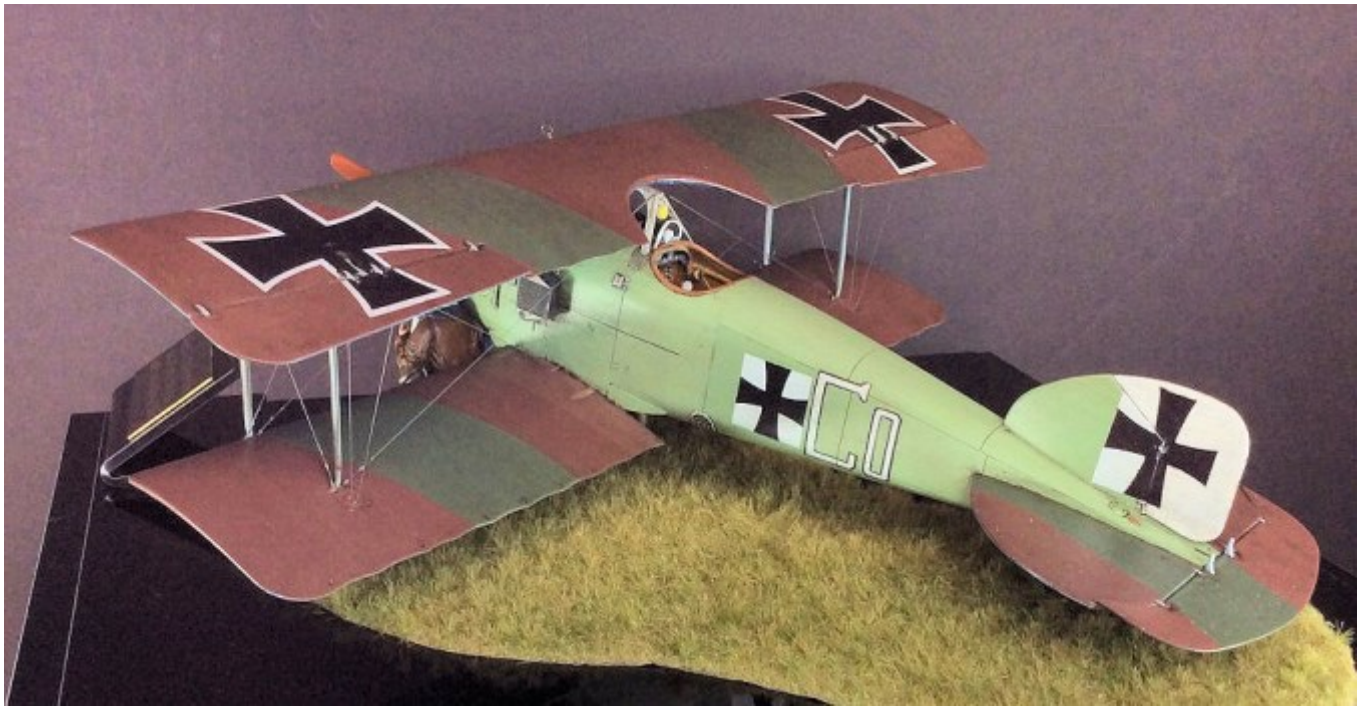
The model and figures were then positioned on the base in their final positions and the support pin in the figures leg marked into the grass mat. A hole of 1.0 mm diameter was then drilled through the grass mat and into, but not through, the base. The hole were cleared of residual acrylic to ensure the pin in the figure would fully locate. The figure was then test fitted and where necessary, the support pin was snipped to the required length to fully locate into the display base.

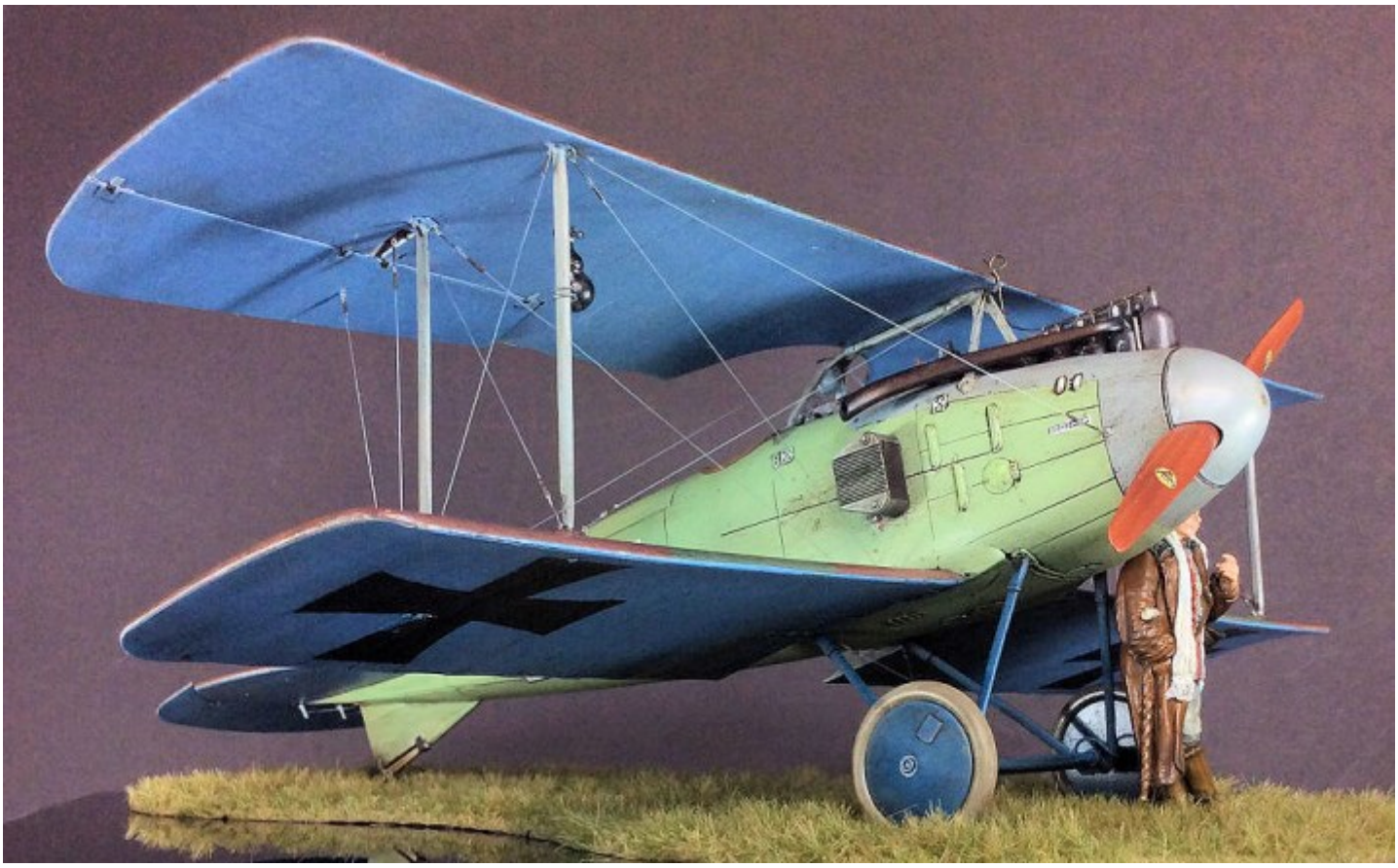
NOTE: *The aircraft model is not secured to the display base as this can cause shock damage to the model if the display is transported to shows etc. For that the aircraft model would be packed separately for transporting.*

Thin CA adhesive or PVA adhesive was then applied to the support pin of the figure, which was then located, in the desired position, into the pre-drilled location hole. The aircraft itself, being light in weight, will tend to sit on top of the grass on the mat, rather than seat fully down, as would a real aircraft. Therefore the location of the aircraft wheels and tail skid were marked onto the grass mat and those areas scrapped through the mat to create slight and unobstructed troughs, into which the aircraft could be located.

PART 12
COMPLETED MODEL PHOTOGRAPHS







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