World War One Aircraft Models

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

I started modelling again in 2015 and now enjoy the challenge of building aircraft of World War One. Since posting photographs of my completed models online, I've been asked if I would create fully detailed 'build logs' for future builds.

I don't consider myself a 'master' of this hobby, but hope to be able to pass on what I have learned. As such, here is my build log, which covers a model of the 'Lukgraph' resin cast 1:32 scale kit of an Austro-Hungarian Albatros D.III (OEFFAG) fighter.

Mike 'Sandbagger' Norris

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

Completed: August 2026

CONTENTS

INTRODUCTION

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

AFTER MARKET

AFTER MARKET

Figure
‘Aviattic’ Standing pilot (ATTRES 031).

Propeller
‘LF Models’ Wotan Type 1 propeller (3202).

Decals
‘Aviattic’ Off White on Linen (ATT32241),
‘Airscale’ WW1 generic dial decals (AS32 WW1),
‘LF Models’ Austro-Hungarian labels (C3205).

3D Printed
‘Proper Plane’ Albatros D.V/D.Va louvers (RD-011).

Rigging accessories (as required)
‘Albion Alloy’s’ 0.5 mm diameter Brass tube (MBT05),
‘Steelon’ or ‘Stroft GTM’ fishing line (0.08 mm and 0.12 mm diameter),
‘Proper Plane’ 3D printed turnbuckles (RD-005 and RD-018),
‘HGW’ 1/32nd scale Spoke Eyelets (132129).

Paints (as required)
‘Tamiya’ Acrylic, Humbrol Acrylic, ‘Mr. Metal Color’, ‘Alclad II’ Lacquers,
‘AK Interactive’ Primer (Grey AK758, White AK759) and figure paints (various),
’Tamiya’ Fine Surface Primer (Grey/White), ‘Tamiya’ Paint Retarder,
‘AK Interactive’ Acrylic Thinner (AK712), ‘Mig’ A-Stand Aqua Gloss (A.Mig-2503),
‘MRP’ acrylic lacquers, ‘Windsor & Newton’ Griffin Alkyd oil paint, ‘Citadel’ Colour (various),
‘Mr. Surfacer’ 500/1000/1200/1500, ‘Mr. Finishing Surfacer’ 1500, ’Mr. Color’ Levelling Thinners 400.

Sundries (as required)
PVA Adhesive (e.g. ’MicroScale’ Micro Krystal Clear),
‘PlusModel’ lead wire (various), ‘MicroScale’ MicroSol/MicroSet decal solutions,
‘VMS Fleky’ CA adhesive (Slow or Thin or Resin), ‘Araldite’ two-part epoxy,
‘MFH’ 0.4 mm diameter flexible black tube (P-961), Copper wire various diameters,
‘Tamiya’ masking sheet and tapes (various widths), ‘Prismacolor’ Verithin pencil ‘Argent Metallique’,
’UHU’ White Tack, ‘Abteilung 502’ Liquid Mask, ‘De-Solv-It’ Sticky Stuff Remover,
AMMO Mig photoetch Burnishing Fluid (A.MIG-2021), ‘Plastruct’ styrene strip,
‘EZ’ heavy stretch line (White or Black), ‘Signo’ uni-ball silver pen (UM-153),
‘VMS’ Metal prep 4K, ‘Mig’ photoetch burnishing fluid (A.MIG-2021).

Weathering mediums (as required)
‘AK Interactive’ (Kerosene AK-2039, Engine Oil AK-2019),
‘Tamiya’ Weathering Master sets,
‘Flory Models’ Clay washes or Pigments.

Display Base
‘Polak’ Wild Meadow - variation C (4703).
‘Inperspective’ custom made acrylic base and cover,
Information plaque from ‘TLS Engraving Ltd’.

PART 1
AIRCRAFT DESCRIPTION

PART 1 - AIRCRAFT DESCRIPTION

References:

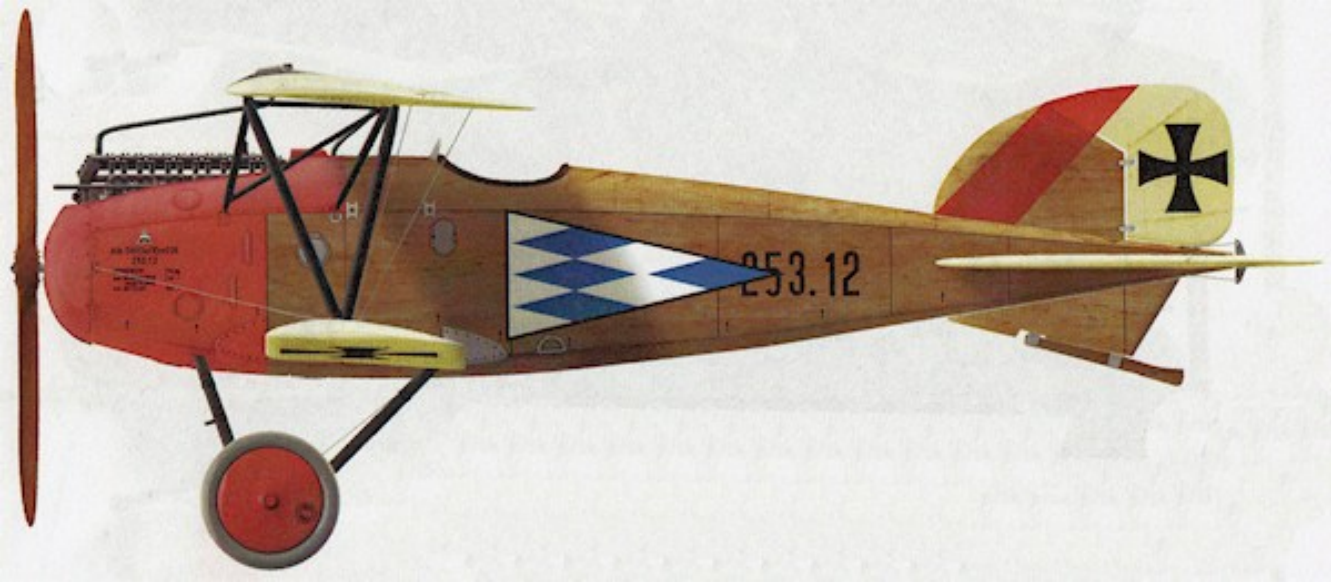
‘Windsock’ Data File No:19 - Albatros D.III (Oef) (P.M. Grosz).
‘Windsock’ Data File 1 - Albatros D.III (Ray Rimmel).
‘Flying Machines RU’ - https://flyingmachines.ru
‘Lukgraph’ Instruction notes.

In the autumn of 1916, Oesterreichische Flugzeugfabrik AG (Oeffag) obtained a licence to build the Albatros D.III at Wiener-Neustadt. Deliveries commenced in May 1917. The aircraft were known as ‘Oef’ Albatros D.III in Austro-Hungary and just Oeffag D.III in Poland.
The Oef aircraft were built in three main versions (series 53.2, 153, 253) using the 138, 149, or 168 kW (185, 200, or 225 hp) Austro-Daimler engines respectively. The Austro-Daimlers provided improved performance over the Mercedes D.IIIa engine. For cold weather operations, Oef aircraft featured a winter cowling which fully enclosed the cylinder heads. Austrian pilots often removed the propeller spinner from early production aircraft, since it was prone to falling off in flight. Beginning with aircraft 112 of the series 153 production run, Oeffag introduced a new rounded nose that eliminated the spinner. Remarkably, German wind-tunnel tests showed that the simple rounded nose improved propeller efficiency and raised the top speed by 14 km/h (8.7 mph).
All Oef variants were armed with two 8 mm (.315 in) Schwarzlose M07/12 machine guns.
In most aircraft, the guns were buried in the fuselage, where they were inaccessible to the pilot. The Schwarzlose proved to be somewhat less reliable than the 7.92 mm (.312 in) LMG 08/15, due to problems with synchronization gear. The Schwarzlose also had a poor rate of fire until the 1916 model was provided with a modification developed by Ludwig Kral.
At the request of pilots, the guns were relocated to the upper fuselage decking late in the series 253 production run. It helped to warm up the guns at high altitude. This created a new problem as the Schwarzlose operated via blowback and the weapon contained a cartridge oiler to prevent cases from sticking in the chamber while the extractor ripped their rims off. With guns mounted directly in front of the pilot, oil released during firing interfered with aim.
Oeffag engineers noted the wing failures of the German Albatros D.III in service, so modified the lower wing to use thicker ribs and spar flanges. These changes, including more powerful engines, the distinctive rounded nose and the reinforced airframe as well as other detail improvements, largely resolved the structural problems that had plagued German versions of the D.III. In service, the Oef aircraft proved to be popular, robust, and effective. Oeffag built approximately 526 D.III aircraft between May 1917 and the Armistice (586 in total according to other publications).

Specifications:

- Crew: 1
- Length: 7.35 m (24 ft 1 in).
- Upper wingspan: 9 m (29 ft 6 in).
- Lower wingspan: 8.73 m (28 ft 8 in).
- Height: 2.8 m (9 ft 2 in).
- Wing area: 20.56 m^2 (221.3 sq ft).
- Empty weight: 710 kg (1,565 lb).
- Gross weight: 987 kg (2,176 lb).
- Engine: Austro-Daimler 200hp 6-cylinder water-cooled in-line piston engine, 150 kW (200 hp).
- Propeller: 2-bladed fixed-pitch wooden propeller.
- Maximum speed: 188 km/h (117 mph, 102 kn).
- Time to altitude: 1,000 m (3,300 ft) in 2 minutes 35 seconds.
- Time to altitude: 2,000 m (6,600 ft) in 6 minutes 35 seconds.
- Time to altitude: 3,000 m (9,800 ft) in 11 minutes 20 seconds.
- Time to altitude: 4,000 m (13,000 ft) in 18 minutes 50 seconds.

- Time to altitude: 5,000 m (16,000 ft) in 33 minutes.
- Wing loading: 48.1 kg/m^2 (9.9 lb/sq ft).
- Weapons: 2 × 8 mm (0.315 in) ‘Schwarzlose’ 07/12 machine guns.



PART 2
THE PILOT

PART 2 - THE PILOT

References:

'Wikipedia' online resource.

Ludwig Hautzmayer was born on the 25th of April 1893 in Fürstenfeld, Austria. He studied mechanical engineering at the Technical University in Graz and was an active sportsman, enjoying motorcycle racing, mountaineering, and swimming.
He was a pre-war reserve infantry officer. When war broke out he was mobilized and served in the 7th Infantry Regiment as a reserve officer. He served on the Russian Front but eventually suffered a serious leg wound on the 8th of September 1914. After convalescing, he successfully transferred to the Austro-Hungarian Aviation Troops.

Initially, Hautzmayer trained as an aerial observer at Aspern Airfield. In March 1915, he was assigned to Fliegerkompanie 15 (Flik 15), on the Eastern Front, in the dual roles of aerial observer and technical officer. In May 1915, Flik 15 was instrumental in directing artillery barrages essential to the success of Field Marshal August von Mackensen's Galician offensive. The Field Marshal then campaigned in Serbia later in the year and again, Hautzmayer was in the air in his Albatros B.I. Hautzmayer flew 40 combat missions with Flik 15 during these battles and was awarded both the Bronze and Silver Military Merit Medals while serving with Flik 15.

In November 1915, he trained as a fighter pilot and completed training by February 1916. He was immediately posted to the Isonzo Front to Fliegerkompanie 19 (Flik 19), a new general service squadron commanded by Hauptmann (Captain) Adolf Heyrowsky. Flik 19 operated both two-seat reconnaissance aircraft and single-seat fighters. It was in a Fokker Eindecker single seat fighter, flown on his first combat sortie, that Hautzmayer forced down and into capture an Italian Caproni bomber for his initial victory. His second victory came on the 29th of April 1916, when he was flying a two-seat Hansa-Brandenburg C.I. His observer/gunner was Benno Fiala Ritter von Fernbrugg. When he shot down a Caudron on the 9th of August 1916, he was again flying the Fokker Eindecker. He would add only one more victory on the 28th of August 1917, downing a Italian Caproni while flying an Oef D.III fighter. During this period, Hautzmayer received for his valour two awards of the Military Merit Cros Third Class with War Decorations and Swords, the Order of the Iron Crown with War Decorations and Swords, and a promotion to Oberleutnant.

In February 1918, he was transferred to a dedicated fighter Squadron, Fliegerkompanie 51J. His fifth victory came with them on the 13th of March 1918, when he shared a win with his commanding officer, Fernbrugg.

On the 20th of March 1918, Hautzmayer was transferred to another dedicated fighter squadron, Fliegerkompanie 61J. He was one of the first Austro-Hungarian reserve officers appointed to command a squadron. He led Flik 61J to war's end, scoring late victories on the 7th and 27th of October 1918 to bring his total victories to seven.

1	18 Feb 1916	Flik 19	Fokker E.III (03.52)	Caproni Ca.I	Merna, near Gorizia
2	29 Apr 1916	Flik 19	Hansa-Brandenburg C.I (26.08)	Bomber	San Daniele
3	09 Aug 1916	Flik 19	Fokker E.III (03.42)	Caudron	
4	28 Aug 1917	Flik 19	Albatros D.III (53.62)	Caproni [2]	Monfalcone
5	13 Mar 1918	Flik 51J	Albatros D.III (153.142)	SIA 7B [3]	N of Spresiano
6	07 Oct 1918	Flik 61J	Albatros D.III (253.26)	EA	W of San Dona di Piave
7	27 Oct 1918	Flik 61J	Albatros D.III (253.?)	Ansaldo S.V.A.	Portobuffole airfield

From left: Lt. Dr. Josef Hoffmann von Ostenhof, Lt. Ludwig Hautzmayer and Lt. Friedrich Dechant at FLIK 51/J, Ghirano Airfield, January 1918

After WW1, Hautzmayer married a Hungarian woman, chose to become a Hungarian citizen, changed his name to Lajos Tatai, and began learning Magyar. Hautzmayer worked as a captain for various airlines, initially for the Hungarian MALERT and from 1927 with the Austrian OeLAG.

It was while flying with Dutch airline KLM that he was killed in a crash on December the 9th, 1936.

The airport of Croydon, England, was shrouded in fog with visibility fluctuating at around 50 metres and all aircraft were operating under so-called ‘QBI’ (a Q code denoting that all operations have to be performed under instrument flight rules) conditions. Crews were following a white line laid out approximately East-West on the grass surface of Croydon's landing area during their take-off runs (a normal procedure at several airports in the United Kingdom at the time, that had been in use at Croydon since 1931). A number of departures by this method had already been made that day by the time the KLM DC-2 took off, including a Swissair DC-2 about 25 minutes beforehand. The KLM DC-2 named 'Lijster' started its take off run along the white line but after about 200 yards (183 m), it veered off the line to the left and on becoming airborne headed south towards rising ground instead of in the normal westerly direction. After flying over the southern boundary of the airport, the aircraft hit the chimney of a house on Hillcrest Road, Purley, then crashed into an empty house on the opposite side of the street. The aircraft, the house and an adjoining house (also empty at the time) were destroyed in the crash and ensuing fire.

One passenger and the stewardess survived while all 15 other occupants were killed, among them:

Admiral Salomon Arvid Achates Lindmann, former Prime Minister of Sweden.
Juan de la Cierva y Cordoniu, the inventor of the Autogyro in 1923 and the vertical take-off in 1934.

At that time, this accident was considered as the worst air crash in the UK in terms of the number of the fatalities.

Crew:

Pilot - Lajos Tatai (Ludwig Hautzmayer).

Radio Operator - Pieter Cornelis van Bemmel Valentijn.

Flight Engineer - Jaap Verkerk.

Stewardess - Hilde Bongertman.

It was determined by the UK Accidents Investigation Branch that the pilot had failed to maintain directional control of the aircraft and also demonstrated 'poor judgement' in not throttling down the engines and abandoning the take-off after it had departed the runway.

PART 3
KIT
REVIEW

PART 3 - KIT REVIEW

('Lukgraph' - Austro-Hungarian Albatros D.III Oeffag 153/253 (F32-044)

web site: https://lukgraph.pl/en_GB/c/scale-132/31

NOTE: *This model is the initial resin cast kit,* ***not the latest 3D printed*** *kit.*

This kit comprises resin cast parts, 3D printed parts and photo-etch details.

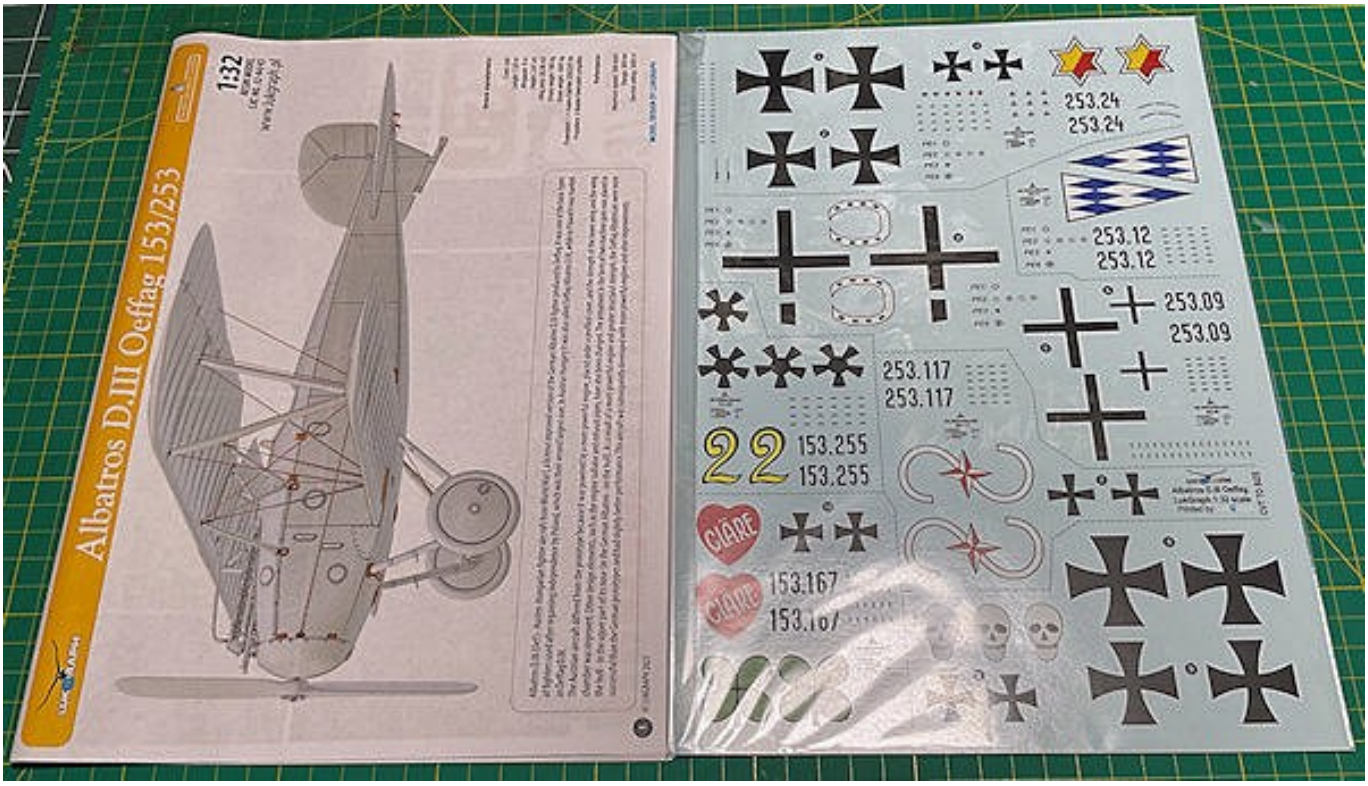
The resin cast parts are the fuselage, wheels, wings and other external flight control surfaces.
The 3D printed parts cover all other components of the model including all fuselage internal parts.

The resin casts parts are of good quality with no obvious surface imperfections or distortion. Holes for metal support rods are cast within parts and appropriate metal rods are supplied in the kit.

The 3D printed parts are supplied as seven printed collections. Being 3D printed means that care must be taken when handling small parts or when drilling, sanding etc, due to the fragility of 3D printed resin. In particular, care should be taken when removing parts from their support trees. Sharp nippers do to cut through the resin support trees. Alternatively, although an expensive option, is to use an ultrasonic blade cutter, but extreme care needs to be taken as the blade move extremely fast and will cut through flesh if care is not taken when in use.

The assembly instructions with colour schemes are supplied with the kit. All of the kit colour schemes are covered with the decal sheet supplied with the kit.

Any corrections or enhancements carried out on this model are covered in the relevant Parts of this build log.


Albatros D.III Oeffag 153/253
1:32
253.24
253.24
253.12
253.12
253.09
253.09
253.117
253.117
22
153.255
153.255
CLÄRE
153.167

PART 4
THE MODEL

PART 4 - THE AIRCRAFT MODELLED

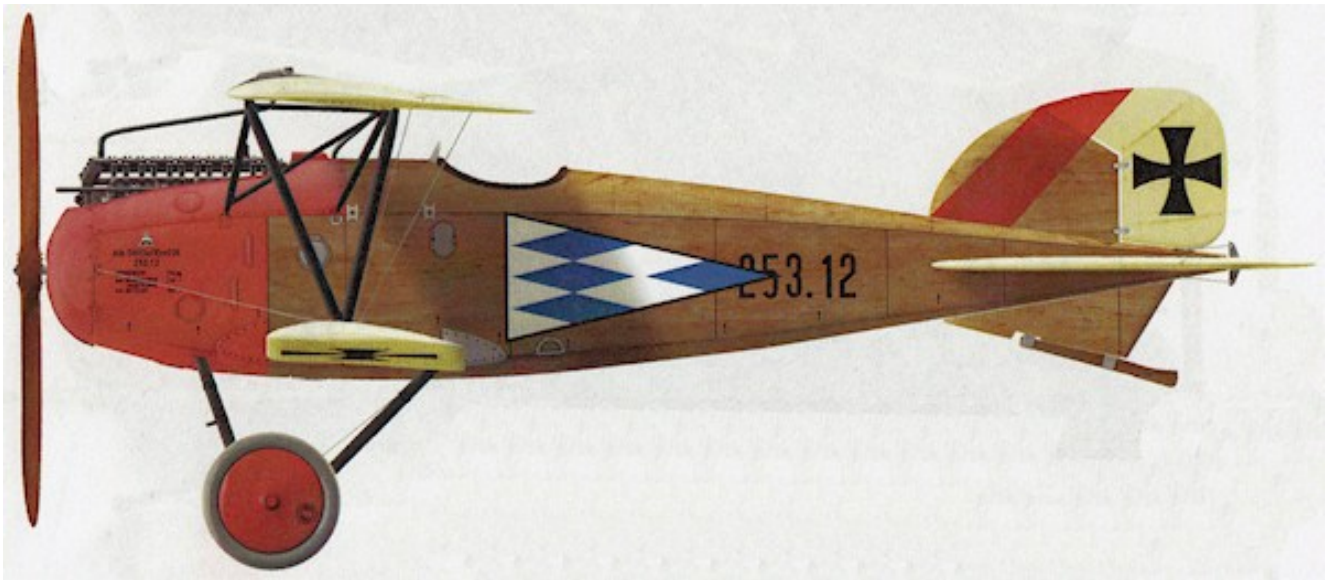
References:

‘Wikipedia’ online resource.
‘Flying Machines RU’ - https://flyingmachines.ru
‘Lukgraph’ Instruction notes.

The aircraft modelled is D.III (Oef), Series 253.12 as flown by Oberleutenant in der Reserve Ludwig Hautzmayer, Commanding Officer of Flik 61/J, operating from Ghirano, Italy, during the Summer of 1918.

This aircraft was fitted with engine serial number 23015 during June 1918 whilst with Flik 61/J at Ghirano, Italy. The aircraft was severely damaged during an emergency landing at the Portobuffoie airfield on October the 4th 1918 while being flown by Lt. Fp. Henryk Skoczdopole, who was not injured in the crash.

The aircraft had the plywood fuselage and fin covered in a protective clear varnish, most likely Shellac. The fuselage forward panels, metal spinner and wheel covers were painted red. The upper and lower wings, elevators, tailplanes and rudder were covered with clear doped linen (CDL). A red stripe was painted across the fin to denote that this was the Commanding Officer’s aircraft. A personal fuselage marking, presumably that for the pilot Hautzmayer, was applied to both sides of the fuselage and partly obscured the serial number.



PART 5
WOOD EFFECTS

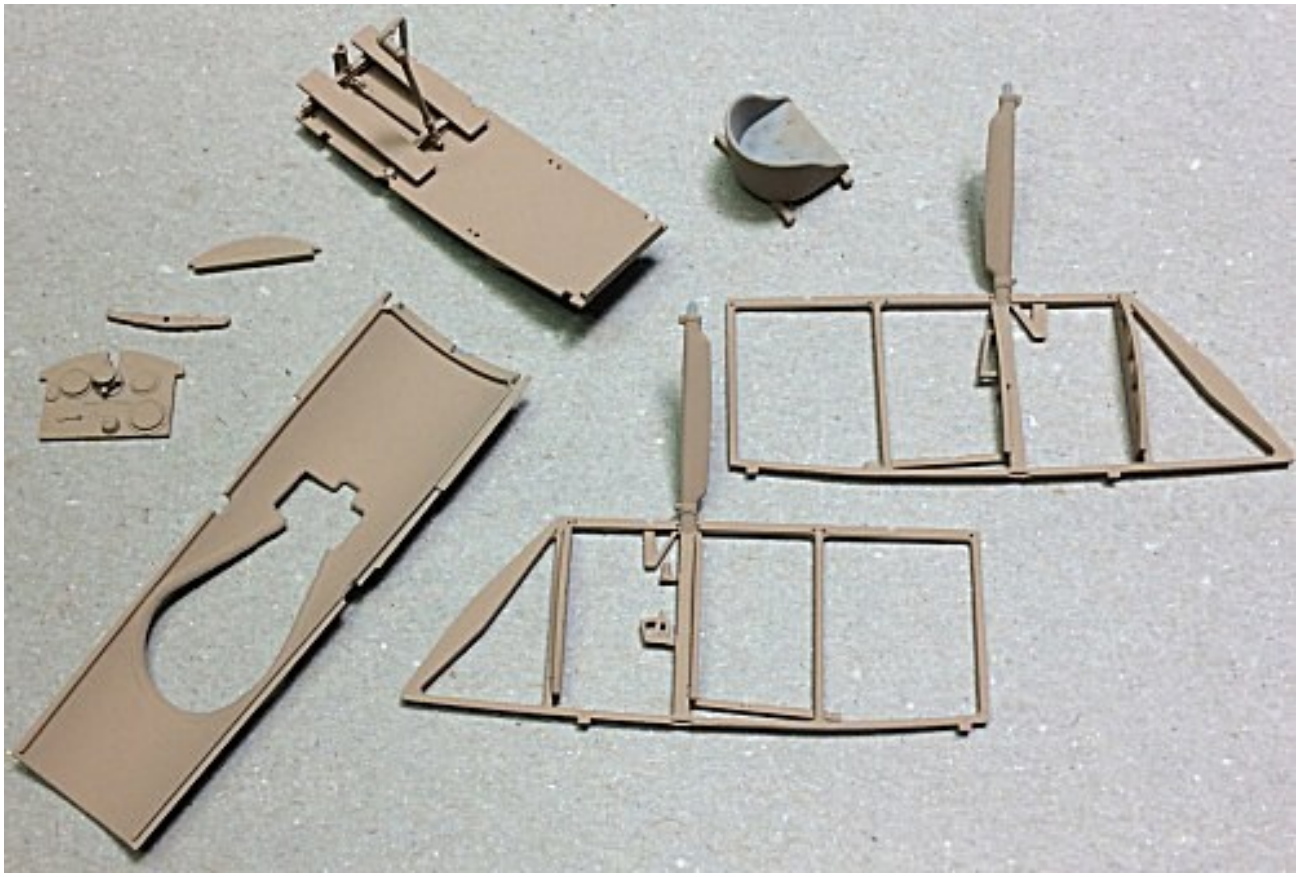
PART 5 - WOOD EFFECTS

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 aftermarket companies produce accurate wood decals, which can be used to cover larger areas, such as cockpit decking and fuselage panels. However, decals can't easily be used to create realistic wood finish to smaller items or parts that don't lend themselves to having decals applied. To do this requires brush painting, using such as oil paints, which can be enhanced with various washes or filters.
The first thing to do is to ensure the model parts are cleaned, normally with warm water with washing up fluid and something like an old tooth brush. Once cleaned and thoroughly dried, the primer coat can be applied. I use 'AK Interactive' Grey (AK758) or White (AK759) primer.
Once the primer is dry, you can start applying the wood effect to the applicable cockpit items, such the cockpit framework, decking, seat supports, rudder bar, instrument panel and of course, the wing struts. With practice, this method can also be used on fuselage panels and propellers.

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

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



Wood effect - Method 1:

‘DecoArt Crafters’ acrylic paints:

For the next step I use ‘DecoArt Crafters’ acrylic paints, either Burnt Umber or Burnt Sienna. These are similar to standard acrylic oil paints, but are water based instead of oil-based. This paint is not as thick as oil-based paint and is creamier, so can be brushed and controlled more easily. Also, as it is water based, it’s easy to clean your brushes, and if really necessary, can be thinned slightly with water.
In addition, the paints dry as quickly as normal acrylic paints, avoiding the disadvantage of using true oil paints, which can take days to fully dry.

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

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

Once painting is complete, clean the brush in water.

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

Wood effect - Method 2:

Windsor & Newton' Griffin (Alkyd) oil paints:

Mask off the area as required.

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

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

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

Leave the oil paint to settle for about ten minutes.

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

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

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

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

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

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

Surface finish:

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 normally add 'Mr. Color' Levelling Thinners, which does improve airbrushing and avoids pooling.

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 clear 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 6
WEATHERING

PART 6 - WEATHERING

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

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

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

NOTE 1: The glossier 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 cause the wash to become thick and unusable.

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

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

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

Chipping effects:

To give the effect of chipped and weathered paint/varnish to metal engine cowls and forward fuselage panels etc, chipping fluids can be used. To achieve this effect, first prime the areas with a suitable primer then airbrush the metallic finish desired. Once dry, a chipping fluid, such as 'AK Interactive' Medium Chipping fluid or 'Vallejo' chipping fluid is airbrushed over the painted areas. An alternative is to use a cheap hair spray. This forms a barrier which will allow the top coat to be chipped off. Finally, the required top coat colour is applied.
Once fully dry, moisten the top coat with water, which softens the paint. Then with a cut down (stiff) brush and wood cocktail stick, gently teased off the top coat paint. Take care when doing this as 'too much chipping' can't really be covered up. In that event you would have wet the top coat and remove it all with an old toothbrush or similar and then when dry, re-spray the top coat and try again. Once the desired effect was achieved, I sealed the surfaces with an airbrushed coat of 'Tamiya' Semi-Gloss (X35).

'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 'homemade' 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 an hour or so, soaks out the oil in the paint, leaving a drier pigment. The pigment is ‘dotted’ onto the painted surface where it is required then dragged with a brush previously wetted with ‘Tamiya’ X20 enamel thinners then wiped virtually dry.

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

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

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

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

PART 7
DECALS

PART 7 - DECALS

Kit supplied decals:

NOTE: *The following is applicable for decals on painted surfaces. 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 a clear gloss coat should be airbrushed over the first applied decals, to provide a barrier against the setting solutions.*

These decals are not 'cookie' cut, but are part of the decal sheet carrier film. Therefore they need to be cut out, carefully around the decal edges before application.

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

Airbrush a clear gloss sealing coat, such as 'Mig' A-Stand Aqua Gloss (A.Mig-2503), 'Tamiya' Clear (X22), 'MRP' Super Clear Gloss Varnish (MRP-048) or similar 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.

Remove the decal from its backing sheet after it has released in 'warm' water.

Carefully move the decal into the correct position.

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 roll a dry cotton bud (Q-tip) over the decal in the same manner. Finally, wearing cotton gloves, I apply slight pressure and slide my fingers across the decal to finally push the decal onto the surface.

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

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.

To 'knock back' the sheen of the decals and painted surfaces for applying weathering effects (refer to Part 6 of this build log), for example 'Flory' clay washes or oil paint, I airbrush a semi-gloss clear coat, such as 'Tamiya' Semi-Gloss (X35) or similar.

'Aviattic' decals:

The 'Aviattic' decals are different in both production techniques and application to those of the more traditional decal manufacturers.

Traditional decals are normally created using processes such as silk screen printing and are pre-shaped for the particular model markings. When placed in warm water they will detach from the backing sheet and can then be slid onto the model surface and when they are correctly positioned, wiped with a semi-dry brush or cotton bud etc, to expel any water from under the decal. Once fully dry, decal softeners, such as 'MicroSol' and/or 'MicroSet' can be applied, if necessary, to 'weld' the decal to the model surface. Finally a sealing coat of acrylic or lacquer gloss, semi-matt or flat is applied over the decal, to seal and protect the seal and protect the decal.

The 'Aviattic' decals are laser printed onto a very fine carrier film and although this film is thin, the decals are remarkably resilient and somewhat 'stretchy' when being applied. This allows them to be more easily moved and positioned before being finally applied. Also with most other decals, I've used softeners to help the decals conform to surface irregularities and contours, which is something I've found is not really required for 'Aviattic' decals, due to the nature of the carrier film. In addition, unless the decals has been printed pre-shaped ('cookie cut'), the decals will need to be cut out from the sheet, so care is required to cut the decals accurately to avoid leaving gaps, especially at the edges, where the white base colour will show.

That said, minor gaps may be able to be covered with weathering. For more information, refer to the ‘Aviattic’ instruction sheet supplied with the decals. Aviattic’ decals are laser printed onto either ‘clear’ or ‘white’ backing, the ‘clear’ being dependent on the base coat you apply and the finished effect you desire. The decals are supplied with very clear instructions on their application, including when to add pre-shading to the base coat, where desired, before you apply the decals.

Application:

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

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

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

Airbrush at least two light sealing coats of a clear coat such as ’‘Mig’ A-Stand Aqua Gloss (A.Mig-2503), ‘Tamiya’ Gloss (X22), ‘MRP’ Super Clear Gloss Varnish (MRP-048) or similar over the painted surface to 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 any water from under the decal.

Adhere the decal to the model part surface by either pressure rolling over the decal with cotton buds or, as I do, by wearing lint free cotton gloves and 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 lightly 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 8
RESIN

PART 8 - RESIN

This model contains resin cast and 3D printed parts, as opposed to the normal plastic used.

The reason for resin kit/parts is that in the past, using resin made it possible to produce much finer detail on kit parts than the plastic kit equivalents. Today, there are many producers of resin kits, particularly after market replacement parts. However, plastic kit manufacturers have come a long way now and kits, such as those from 'Wingnut Wings' and 'Copper State' are equal to, if not better than resin kits. Manufacturers of resin or 3D printed kits may make kits to order or have 'limited' runs, although aftermarket parts are usually readily available. Working with resin or 3D prints does present different challenges to the modeller, especially if it's the first time of building using resin.

The properties of resin differ radically to those of plastic kits. Below I have listed what I have found to be the primary differences for resin or 3D printed kits/parts from plastic (styrene) kits:

When resin kits are cast in their moulds or 3D printed, a cast release agent or residual print resin may be present on the surface of the kit/parts. These can prevent paint or adhesives from adhering to the surfaces. The easiest way to remove cast release agent is to carefully and fully wash all of the model parts in warm soapy water, using an old, soft tooth brush, then thoroughly rinse all of the parts and leave to dry. Alternatively wipe the parts with such as 'Tamiya' X20A thinners or with a commercially available Isopropyl Alcohol (90% or higher grade).

Cast or 3D printed resin, by its nature, is very brittle and can be damaged or broken easily, especially when handling small parts. This is particularly evident when separating the individual items from the resin cast or from the 3D printed support 'trees'. The best way to remove item is to cut them away with a fine-toothed razor saw or single blade cutters, then clean off any residual stubs on the edges of the parts.

Once parts are removed from resin casts, they may have 'resin flash' around or amongst parts, especially small items. This is easily removed with a sharp scalpel blade. Heavier residue can be scraped, filed or sanded away. Print layer lines may be evident on 3D printed parts, which if possible, should be sanded away.

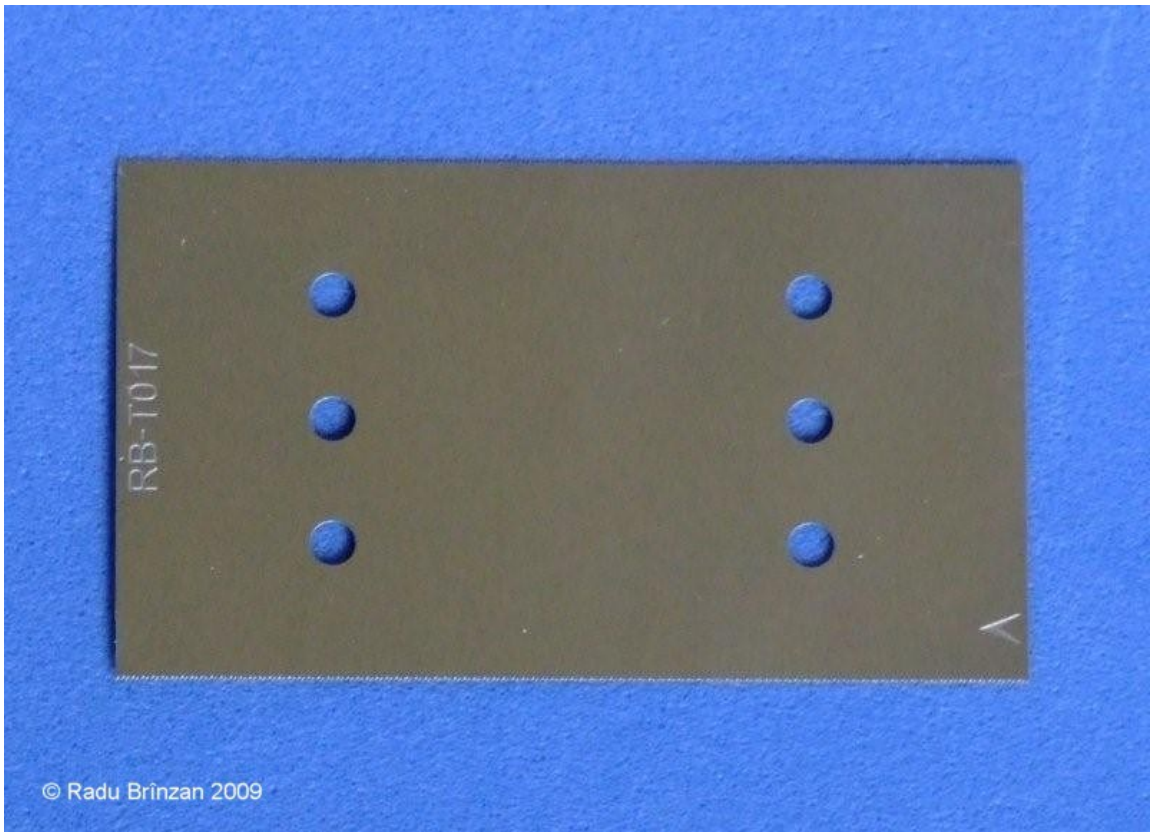
Plastic kits are assembled using solvent adhesives, which melt the surface where it is applied and 'weld' the joint together. Resin cast or 3D prints however will not react to this type of adhesive and can really only be glued using Cyanoacrylate (CA) adhesive. This adhesive reacts to moisture in the air and on the surface to be joined. As most people know, it will also bond skin to whatever it touches, if the skin has CA adhesive on it. Obviously extreme care needs to be exercised when assembling resin kits using CA adhesive. It's always a good idea to have CA release agent available to use if necessary. Good ventilation is also advisable as the fumes from CA adhesive are noticeable and can irritate the eyes and lungs.

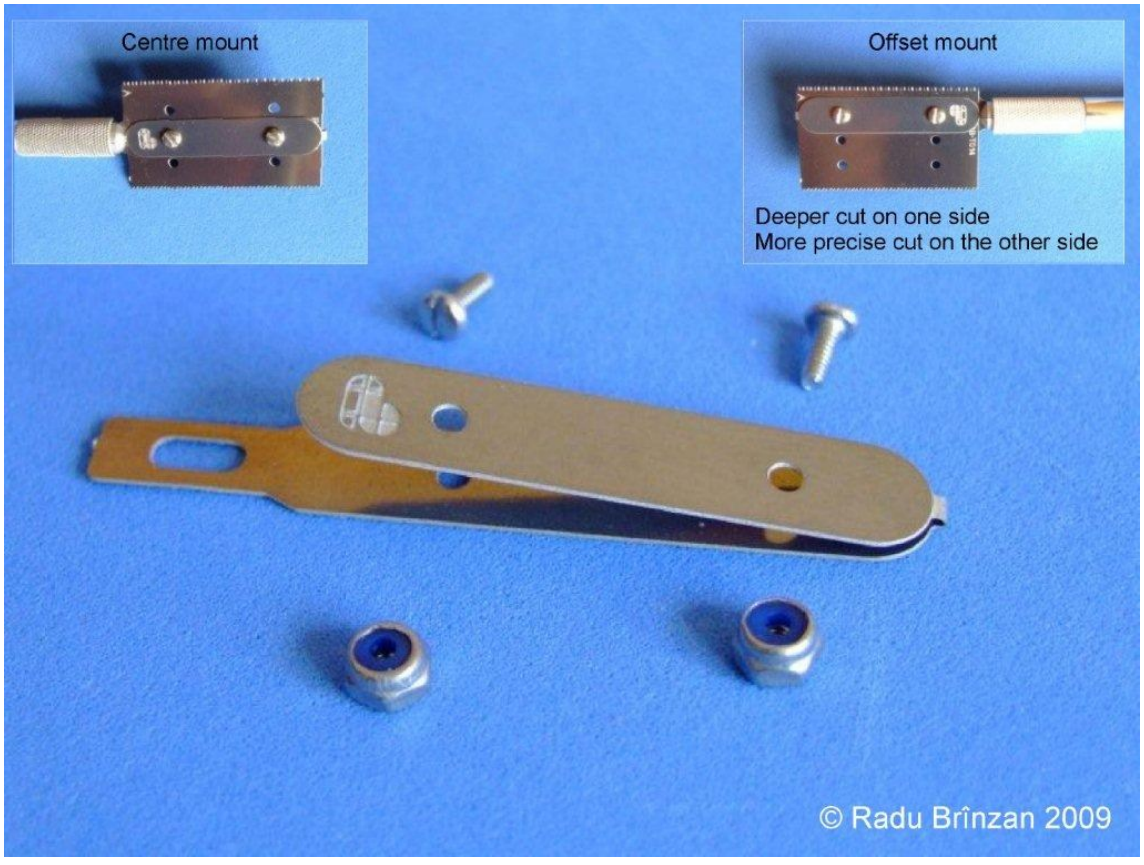
Cutting, sanding and drilling resin will create swarf and more importantly, resin dust. The dust is particular is dangerous, especially if inhaled. Therefore, always vacuum the working area and yourself, regularly. If you have a face mask or filtered respirator and find you can wear it whilst working,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

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

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

To separate resin parts from the thin moulding backing sheet, use sharp scissors or a scalpel blade. To separate larger parts from the moulding base block, use a fine modeller saw. The saw I use has a double sided and fine ’drag’ saw blade and with its holder, which was available from ’RB Productions’.





PART 9
RIGGING

PART 9 - RIGGING

References:

'Windsock' Data File No:19 - Albatros D.III (Oef) (P.M. Grosz).
'Windsock' Data File 1 - Albatros D.III (Ray Rimmel).
'Flying Machines RU' - https://flyingmachines.ru
'Lukgraph' Instruction notes.

General:

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

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

With your research complete the rigging can be planned for the model in the subsequent Parts of this build log.

This aircraft had structural wires and control cables that were of the standard wound type with adjustable turnbuckles fitted for adjusting the tension of the wires and cables. The materials used for the rigging and the aftermarket turnbuckles used are described in the relevant Parts of this build log.

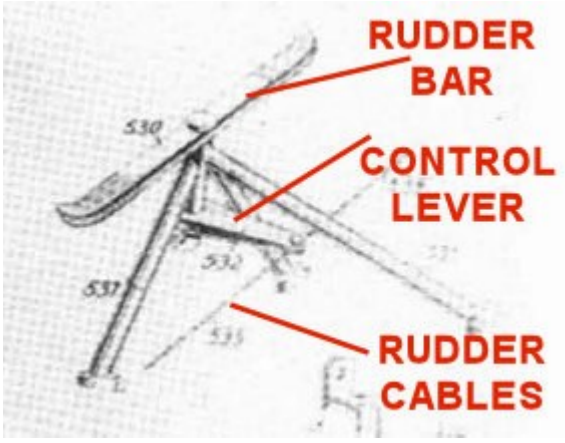
Control rigging:

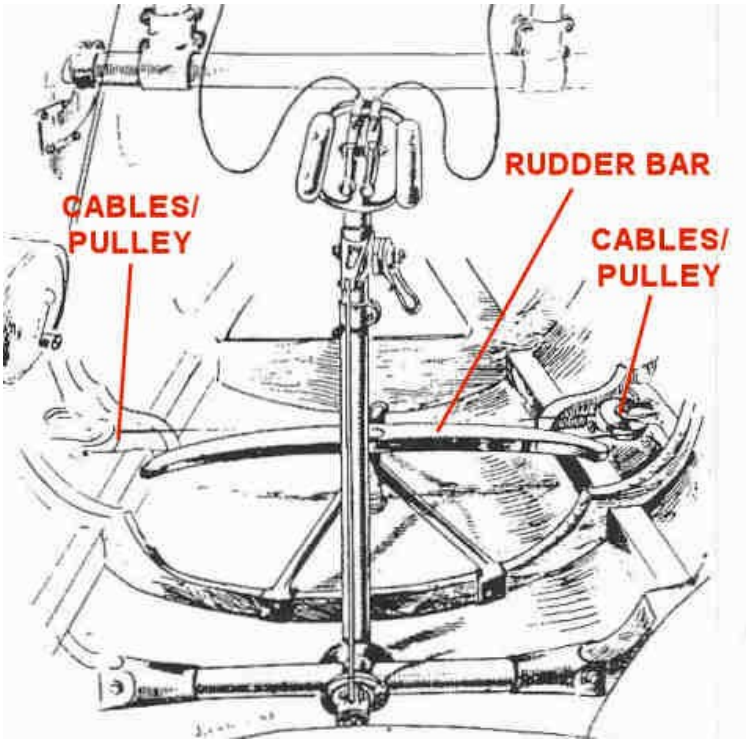
NOTE: *As I could not find definitive information for the fuselage internal flight controls and cables for Oef built aircraft, the following descriptions are based on the German built Albatross D.I and II aircraft, on which the Oef built aircraft were based.*

Rudder control:

Single rudder control cables were attached to a lever attached to the bottom of the rudder bar post. This lever faced forwards in the cockpit. The control cables were attached to the forward end of the lever and 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 lever would turn in the required direction and the control cable on side would tension while the opposite cable relaxed. This would cause the rudder to pivot left or right, causing the aircraft turn (yaw) in the required direction.
Turnbuckles were probably fitted to the cables within the fuselage.





Aileron control:

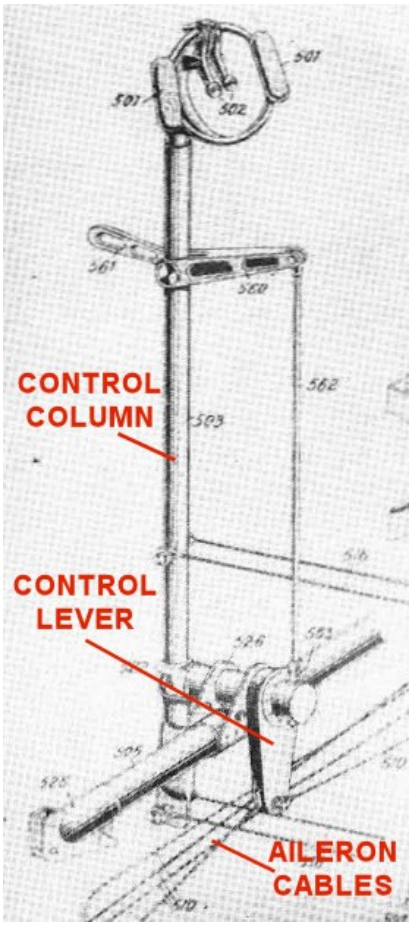
NOTE: *As the actual aileron control cables were attached to the control lever on the bottom, rear of the control column and effectively under the cockpit floor, very little will be seen from the closed cockpit.*

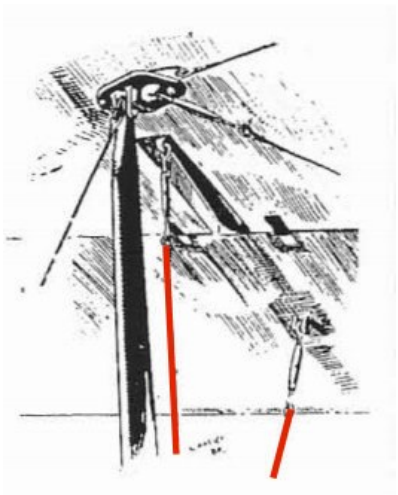
A short torque tube was fitted to the bottom, rear of the control column and a control lever was attached to its rear end. Aileron control cables were routed across the cockpit and around pulleys and were then routed out of the fuselage and through the lower wings. At both lower wings, two aileron control cables from the cockpit were routed up and out of the lower wings close to the bottom of the interplane 'V' struts. One cable was routed up and attached to the aileron bell-crank lever on the leading edge of the aileron. The lever was inside a housing in the trailing edge of the upper wing.

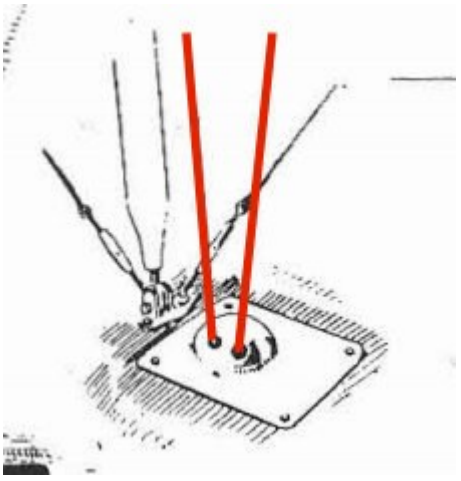
The second cable was routed up and attached to the aileron, midway between its leading and trailing edges.

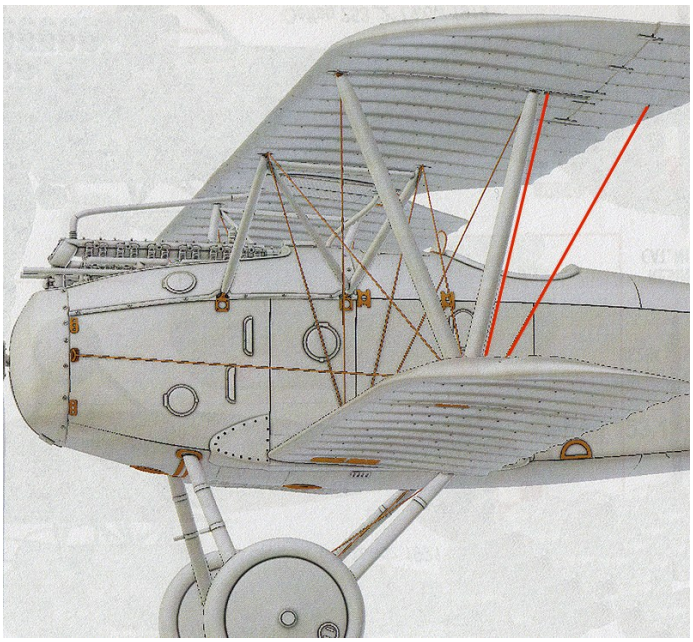
As the pilot moved the control column left or right, the torque tube lever would rotate and tension the control cables on one side and relax the cables on the opposite side. This would cause one aileron to move up or down and the opposite aileron to move in the opposite direction, causing the aircraft to roll (bank) in the required direction.

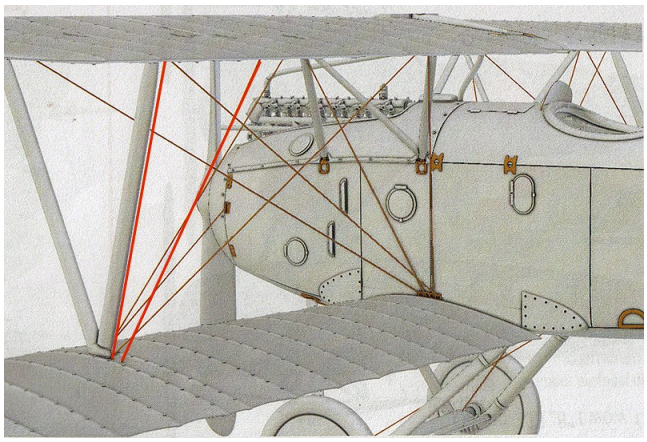
Turnbuckles were fitted at the aileron and its bell-crank lever in the wing.





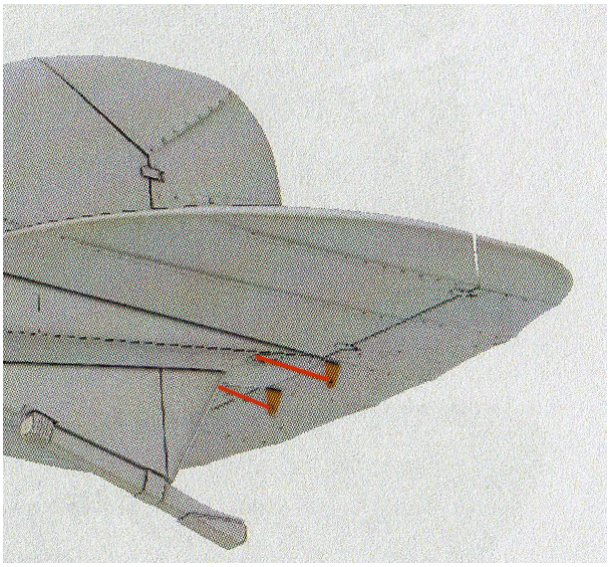


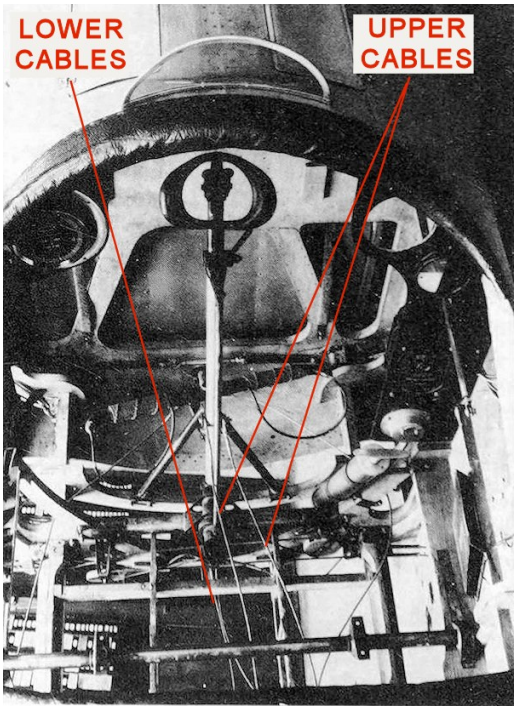




Elevator control:

The 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 are not visible as they are below the cockpit floor. Both pairs of cables were routed rearwards and crossed as they passed through the fuselage. The cables exited through openings in the upper and undersides of the fuselage rear. The upper cables were routed rearwards to be attached to the ends of the elevator control horns on the underside of the elevator. The lower cables were routed rearwards to be attached to the ends of the elevator control horns on the upper side of the elevator.
Turnbuckles were fitted in the cables within the fuselage.
As the pilot pulled back on the control column, the attached lower cables would tension and the upper cables relax. This caused the elevator to lift up and the aircraft to climb (pitch) up. The reverse would happen if the control column was pushed forwards.

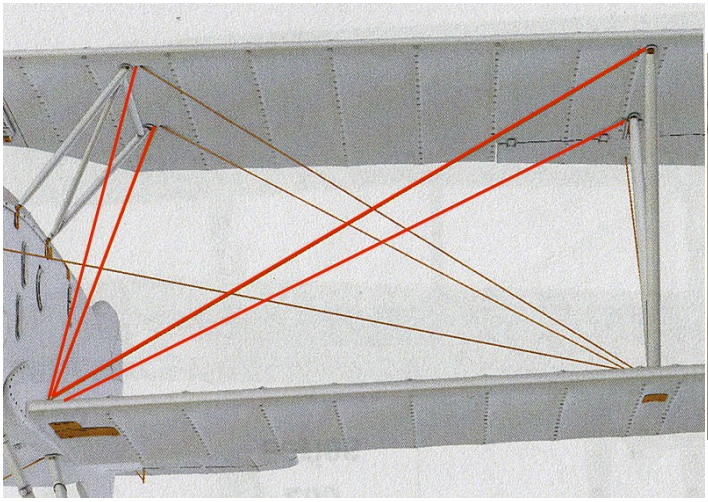




Structural rigging:

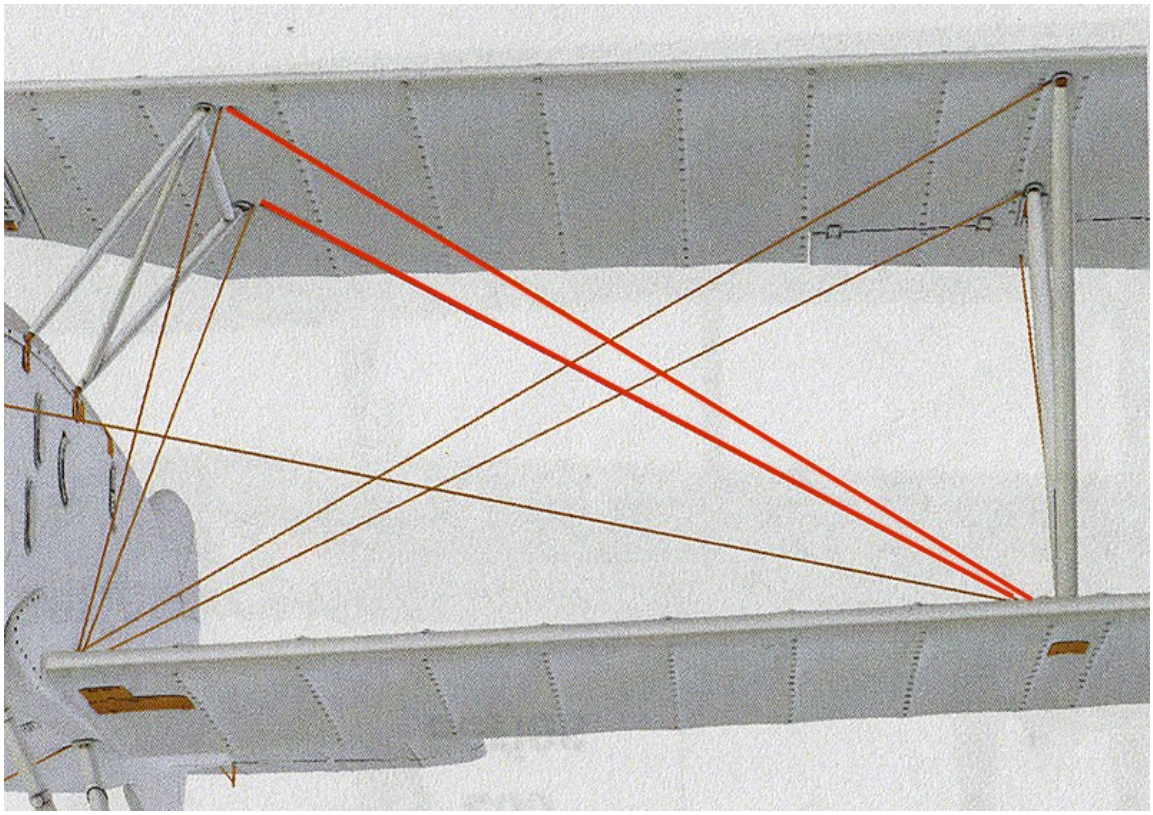
Flying wires:

The lower wing roots were fitted with a spherical ended turnbuckle plate to which two flying wires were attached. These wire were routed diagonally up and up to the underside of the upper wing, inboard from the tops of the interplane ‘V’ struts. As second pair of wires were attached to rigging plates at the outer edge of the turnbuckle plate on the lower wing roots. These wires were routed up and the underside of the upper wing, outboard from the tops of the fuselage cabane ‘Z’ struts.
Turnbuckles for the inner flying wires were fitted at the fuselage/lower wing root ends.
Turnbuckles for the outer flying wires were fitted at upper wing ends.



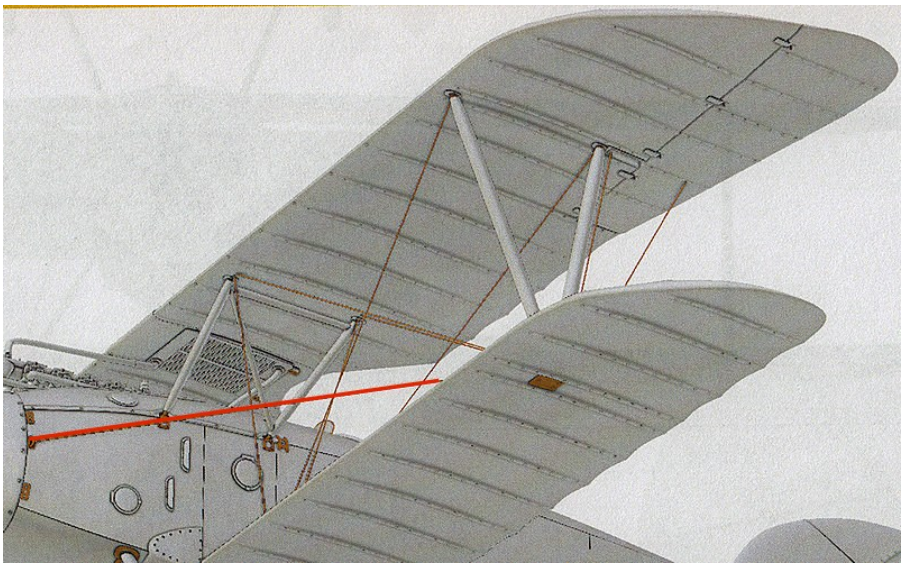
Landing wires:

Two landing wires were attached to the underside of the upper wing, outboard from the tops of the fuselage cabane ‘Z’ struts and diagonally down to the top surface of the lower wings, inboard from the bottom of the interplane ‘V’ struts.
Turnbuckles were fitted in the wires at the lower wing ends.



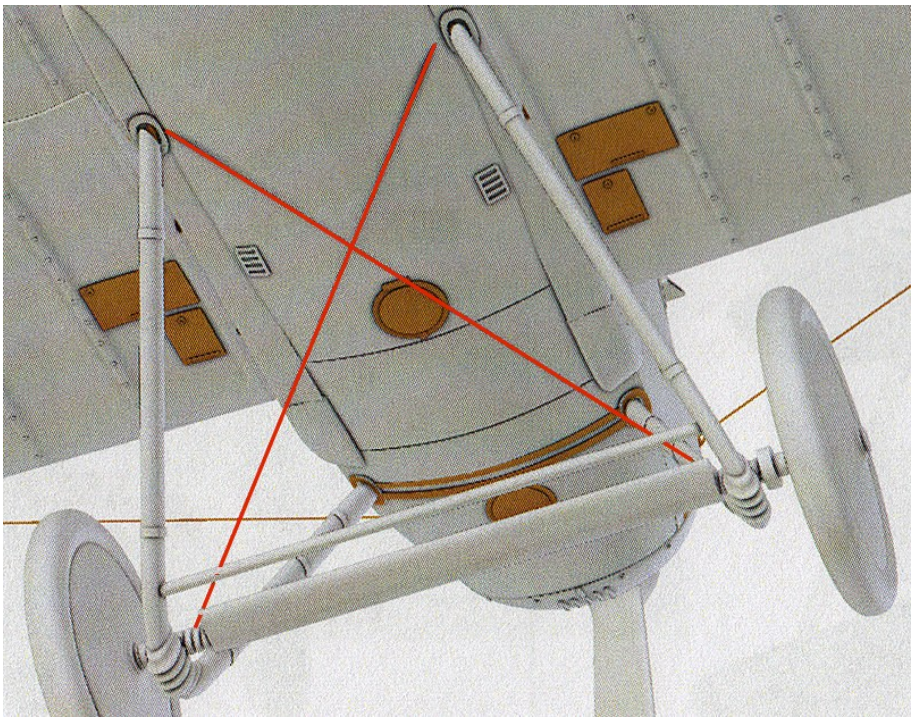
Drag wires:

A drag wire was fitted between the rear edge of the fuselage nose and the top surface of the lower wings, inboard from the bottom of the interplane 'V' struts.
Turnbuckles were fitted in the wires at the fuselage ends.



Landing gear bracing wires:

Diagonally crossed bracing wires were fitted between the out ends of the landing gear axle and the underside of the fuselage, inboard from the tops of the landing gear rear struts.
Turnbuckles were fitted in the wires at the fuselage ends.



PART 10
PREPARATION AND MODIFICATIONS

PART 10 - PREPARATION AND MODIFICATIONS

References:

'Windsock' Data File No:19 - Albatros D.III (Oef) (P.M. Grosz).
'Windsock' Data File 1 - Albatros D.III (Ray Rimmel).
'Flying Machines RU' - https://flyingmachines.ru
'Lukgraph' Instruction notes.

NOTE: *Working with model parts made in any form of resin, cast or 3D printed, is hazardous to health, especially when sanding or drilling resin, when small airborne particles can be inhaled. Refer to Part 7 (Resin) of this build log.*

Cast resin parts:

Carefully remove the following parts from their casting blocks:

Ailerons (x 2).
Tailplanes (x 2) - take care - do not remove the three elevator hinges on the trailing edges.
Elevator.
Tailskid.
Fin.
Rudder.
Wheels.
Upper wing centre section.

File or sand smooth the cut edges.

File or sand out the five (5) pre-molded hinge recesses in the leading edge of the ailerons.

File or sand out the four (4) pre-molded hinge recesses in the leading edge of the elevator.

File or sand out the two (2) pre-molded hinge recesses in the leading edge of the rudder.

Check for any surface imperfections and if necessary, fill and sand smooth to blend with the surrounding surfaces. Take care to not remove any cast surface details from the parts.

Upper wing:

NOTE: *The upper wings halves have an internally cast support rod which spans the wing halves from the wing roots to wing tips. The wing tips may have openings at the tips at the support rod ends and if so, these require filling.*

Using an appropriate modelling filler and if necessary, fill any support rod openings in the tips of the upper and lower wings. I use a UV setting clear resin to fill the openings.

Allow the filler to fully set then sand smooth to blend with the surrounding surfaces. Take care to not remove any cast surface details from the parts.

At the two pre-cast indents in the wing roots of the upper wing halves, drill holes of 1.2 mm diameter as far as possible into the wing halves. Make sure the holes are drilled centrally and parallel to the wing leading/trailing edges.

Using the kit supplied 1.2 mm diameter steel rods, check that the drilled holes can fully accept the rods.

NOTE: *The kit supplied 1.2 mm diameter steel rod is intended to be cut to provide the short support rods for the upper and lower wings. However, I prefer to use as much length of support rod as possible for cast resin kit as the wings are heavy. Therefore, more rod than the kit provides is supplied by 'Albion Alloy's' or similar retailers.*

Using as guides the two pre-cast dimples in both sides of the upper wing centre section, drill holes of 1.2 mm diameter through the centre section. Make sure the holes are drilled centrally and parallel to the centre section leading/trailing edges.

Using 1.2 mm diameter steel rods, check that the rods can pass completely through the drilled holes.

Cut two lengths of 1.2mm diameter rod, such as ‘Albion Alloy’s’ MBT12 or similar. The length of the rods should span the two upper wing halves and the centre section when joined with the rods inserted in the pre-drilled holes.

Using thin CA adhesive, secure the two rods fully into the two pre-drilled holes in one of the upper wing halves.

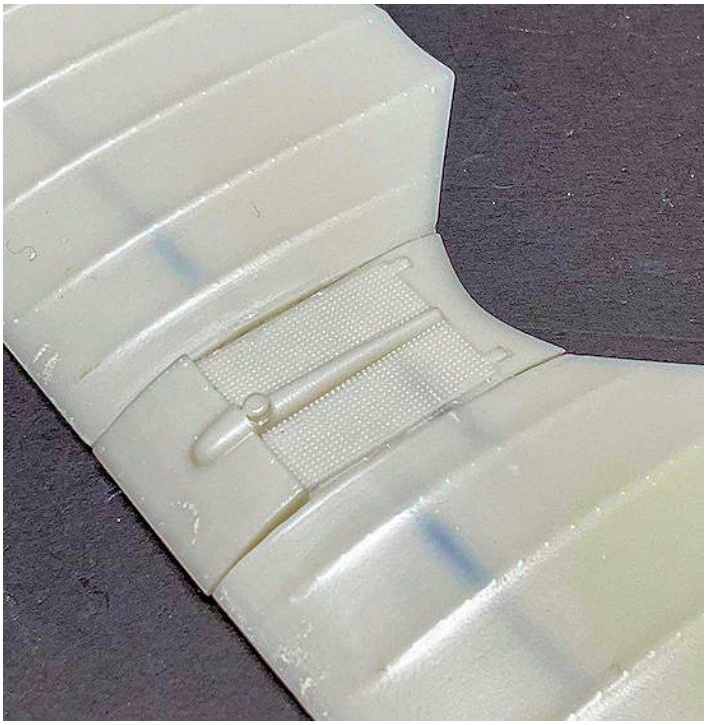
Slide the centre section fully onto the two rods and fully against the upper wing.

Using thin CA adhesive, secure the centre section onto the two rods and against the upper wing half.

Slide the opposite upper wing half fully onto the two rods and against the centre section.

Using thin CA adhesive, secure the upper wing half fully onto the two rods and against the centre section.

Make sure the wing halves and centre section are aligned to each other and their leading edges are inline.



Check for any obvious gaps in the joints and necessary, fill with a modelling filler and leave to set. Then sand to blend the filled gap with the surrounding surfaces, taking care to not remove any cast surface detail.

Lower wing:

NOTE: *The lower wings have an internally cast support rod which spans the wing halves from the wing roots to wing tips. The wing tips may have openings at the tips at the support rod ends and if so, these require filling.*

Using an appropriate modelling filler and if necessary, fill any support rod openings in the tips of the lower wing halves. I use a UV setting clear resin to fill the openings.

Allow the filler to fully set then sand smooth to blend with the surrounding surfaces. Take care to not remove any cast surface details from the parts.

At the two pre-cast indents in the wing roots of the lower wing halves, drill holes of 1.2 mm diameter as far as possible into the wing halves. Make sure the holes are drilled centrally and parallel to the wing leading/ trailing edges.

Using the two pre-cast dimples in the lower wing roots on the two fuselage halves, drill holes of 1.2 mm diameter through the fuselage halves, making sure the holes are drilled at 90 degrees to the fuselage sides.

Using the kit supplied 1.2 mm diameter steel rods, check that the drilled holes in the lower wing and fuselage halves can fully accept the rods.

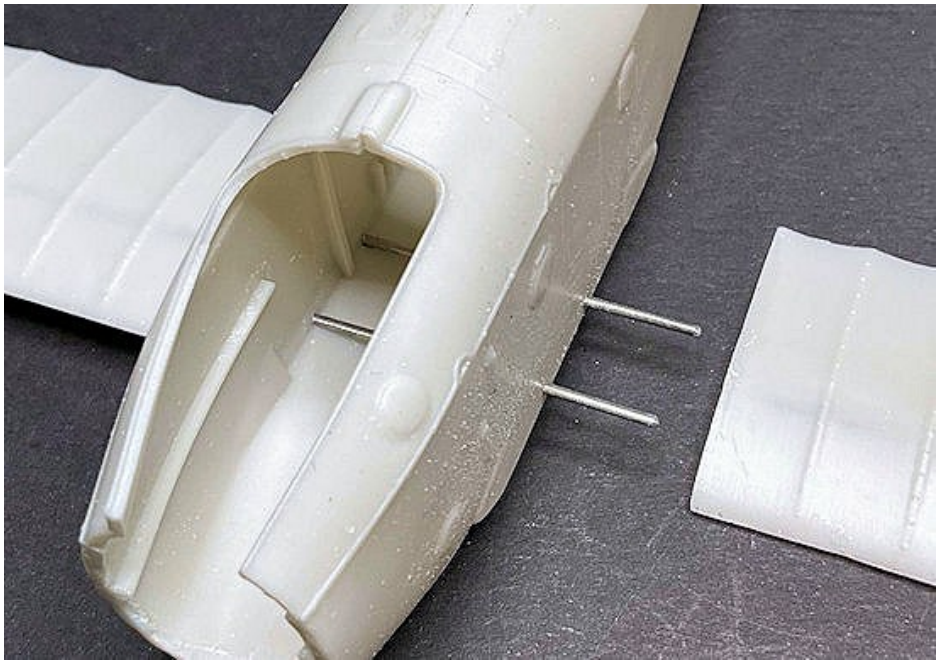
Using thin CA adhesive, secure the two rods fully into the two pre-drilled holes in one of the lower wing halves.

Temporarily join together the two fuselage halves using masking tape or similar.

Pass the two wing rods through the pre-drilled holes in the fuselage wing roots, making sure the wing root contacts fully the fuselage.

Cut the protruding rods such that the opposite lower wing half can be fully located onto the rods and against the fuselage wing root.

Remove the lower wings and separate the fuselage halves.



Modifications:

Ailerons:

NOTE: *The following steps are only necessary if the two upper wing ailerons are to be positioned other than inline with the wing. The following applies to both ailerons.*

Point mark three locations centrally on the aileron leading edge and between the outer two and centre two hinge recesses.

Using the point marks as guides, drill holes of 0.6 mm diameter into the aileron leading edge, making sure the holes are drilled at 90 degrees to the leading edge and are parallel with the ailerons top/bottom surfaces.

Cut three short lengths of 0.6 mm diameter Brass rod, such as that from ’Albion Alloy’s’ or similar. The rods should be long enough to be fully inserted into the holes with approximately 6mm protruding.

Using thin CA adhesive, secure the rods fully into the pre-drilled holes in the aileron leading edge.

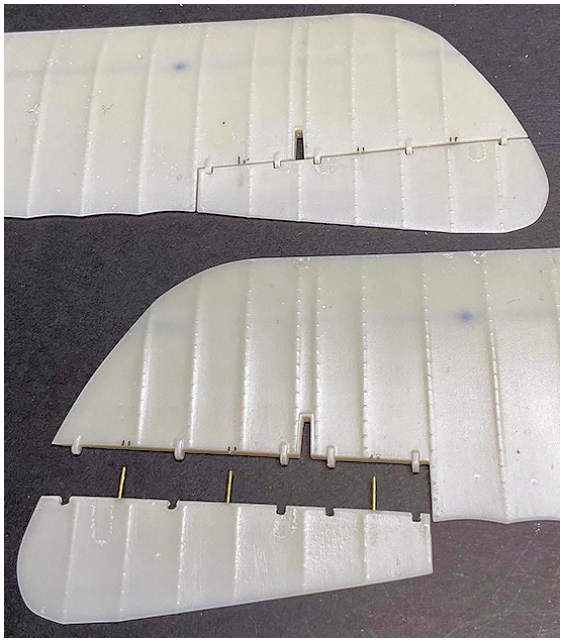
Position the aileron against its location on the upper wing.

Mark the position of the three rods onto the trailing edge of the upper wing.

Point mark the three positions centrally on the wing trailing edge.

Using the point marks as guides, drill holes of 0.6 mm diameter into the wing trailing edge, making sure the holes are drilled at 90 degrees to the trailing edge and are parallel with the wing top/bottom surfaces.

Test fit the aileron into the upper wing.



Tailplanes:

NOTE: *The following applies to both tailplanes. The two tailplanes are intended to be fixed into the fuselage halves by a butt joint shoulder into a shallow recess. I prefer to add support rods to strengthen the joints.*

Point mark two locations centrally on the shoulder joint of the tailplane.

Using the point marks as guides, drill holes of 0.5 mm diameter into the shoulder, making sure the holes are drilled at 90 degrees to the shoulder joint edge and are parallel with the tailplane top/bottom surfaces.

Cut two short lengths of 0.5 mm diameter Brass rod, such as that from 'Albion Alloy's' or similar. The rods should be long enough to be fully inserted into the holes with approximately 5mm protruding.

Using thin CA adhesive, secure the rods fully into the pre-drilled holes in the tailplane.

Position the tailplane against its location recess in the fuselage side.

Mark the position of the two rods in the fuselage recess.

Point mark the two positions centrally in the fuselage recess.

Using the point marks as guides, drill holes of 0.5 mm diameter through the fuselage side, making sure the holes are drilled at 90 degrees to the fuselage recess and at 90 degrees to the fuselage side.

Test fit the tailplane into the fuselage.

Elevator:

NOTE: *The following steps are only necessary if the elevator is to be positioned other than inline with the tailplane.*

To position the elevator on the tailplanes, other than being inline, use the previous procedure to add two support rods to both tailplanes.

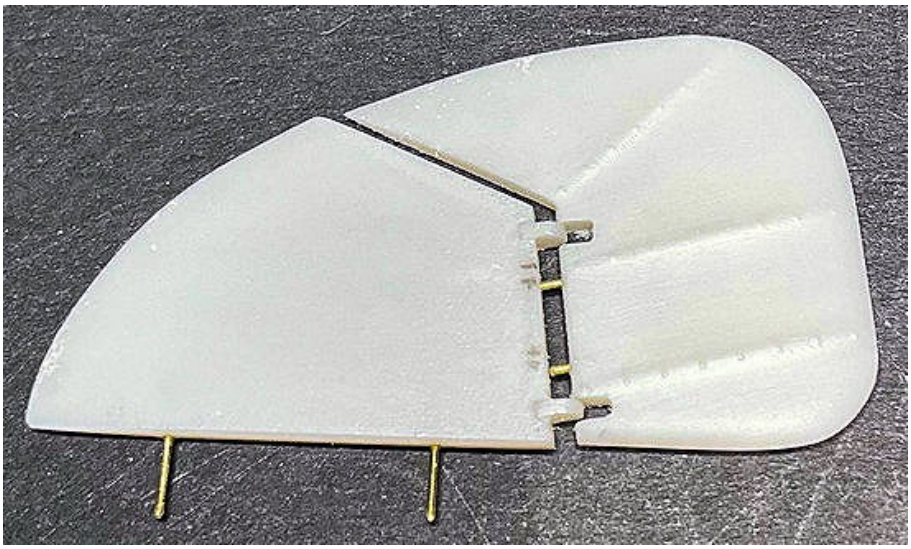
Fin:

NOTE: *The fin is intended to be fixed onto the fuselage halves (when joined) by just a butt joint. I chose to add support rods. The fin will not be fitted into the fuselage until later in this build log.*

To position the fin on the fuselage (when joined), use the previous procedure to add two support rods to the fin.

Rudder:

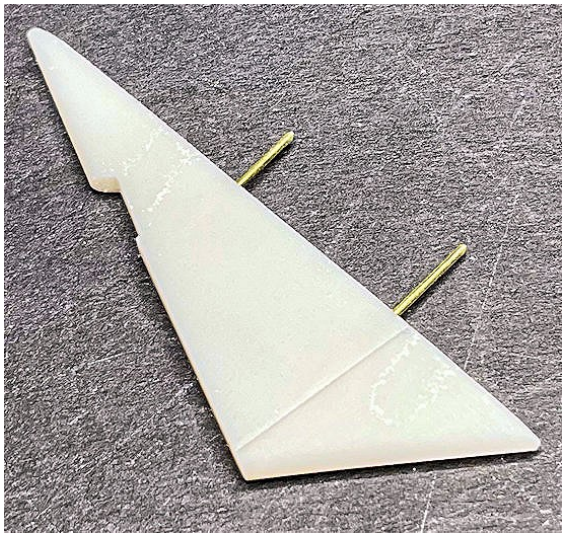
To position the rudder onto the fin (when joined), use the previous procedure to add two support rods to the rudder.



Tail skid:

NOTE: *The tail skid is intended to be fixed onto the fuselage halves (when joined) by just a butt joint. I chose to add support rods. The tail skid will not be fitted into the fuselage until later in this build log.*

To position the tail skid onto the fuselage (when joined), use the previous procedure to add two support rods to the tail skid.

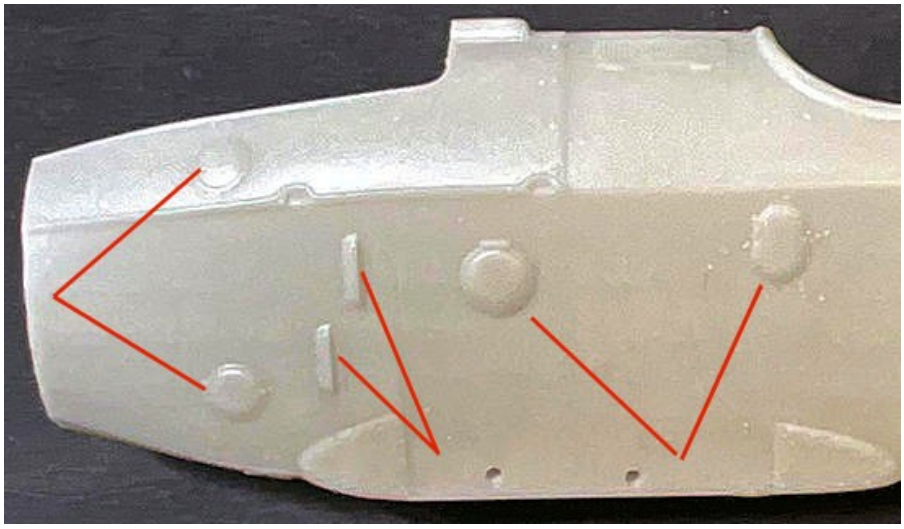


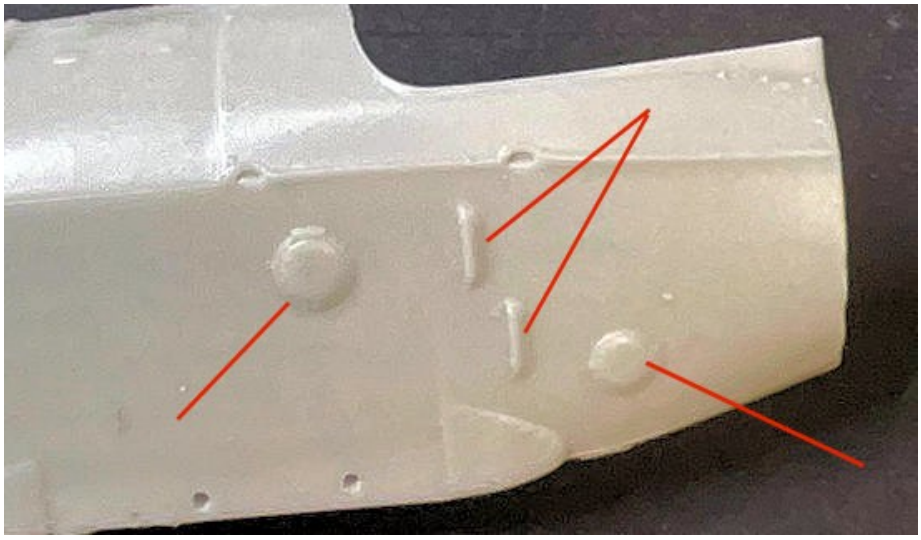
Fuselage halves:

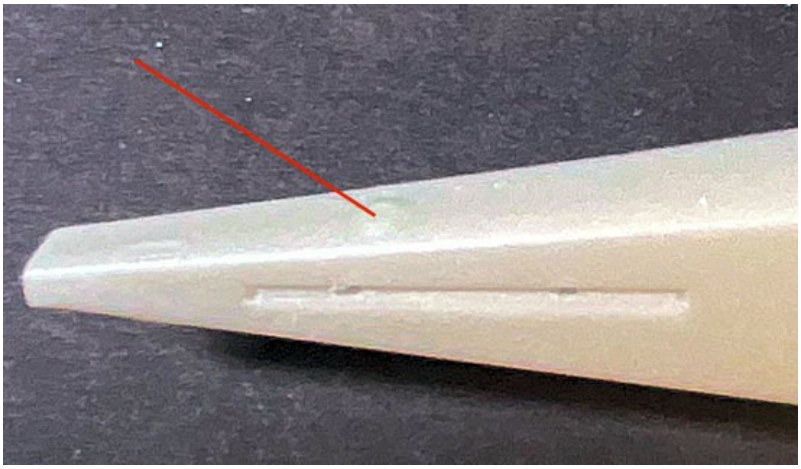
NOTE: *The kit has the option to replace the cast hatch panels on the fuselage with more realistic photo-etch parts. I chose also to replace the cooling louvres on the fuselage sides with more realistic parts. Some of the replacement photo-etch hatch panels will be added later in this build.*

Refer to the following photographs.
Drill holes of 0.5 mm diameter through each of the hatch panels and cooling louvres to be removed. These holes will show where to add the photo-etch and 3D printed parts replacement parts.

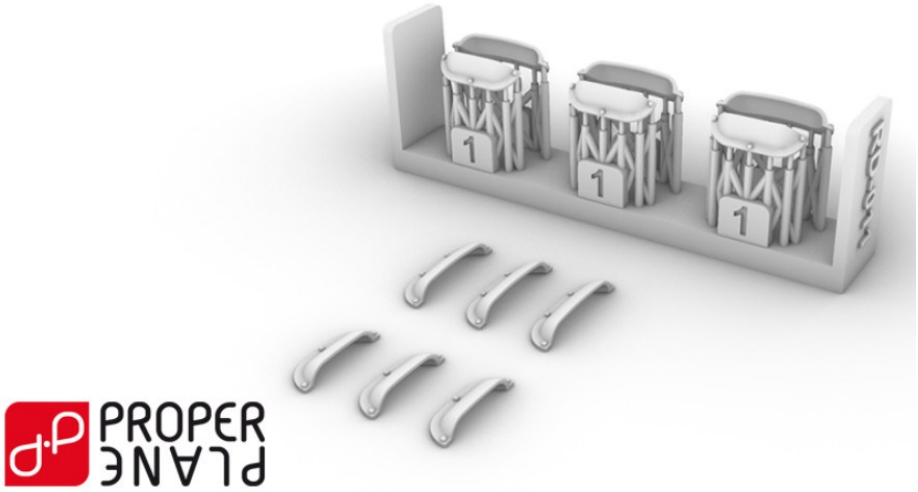
Carefully sand away the cast hatch panels and cooling louvres from the two fuselage halves.







NOTE: *The replacement cooling louvres used are the 3D printed 'Proper Plane' Albatros D.V/D.Va louvers (RD-011) set.*



The forward fuselage area for this aircraft is painted red, including the hatch panels and cooling louvres in that area. As such the applicable replacement photo-etch and 3D printed parts need to be added to the fuselage halves before painting.

Carefully remove four (4) of the larger number two (2) cooling louvres from the 'Proper Plane' louvres sets.

Carefully sand away any residual print stubs from the louvres.

Remove the three (3) hatch panels (No.14) from the kit supplied photo-etch sheet.

Carefully file or sand away any residual photo-etch stubs from the edges of the panels.

Lightly sand the both sides of the panels to provide a suitable surface for adhesive and paint.

If necessary, use a fine scriber to re-instate any sanded away fuselage plywood panel lines.

If necessary, use a 0.5 mm diameter drill to re-instate the rivets around the forward and rear wing root plates.

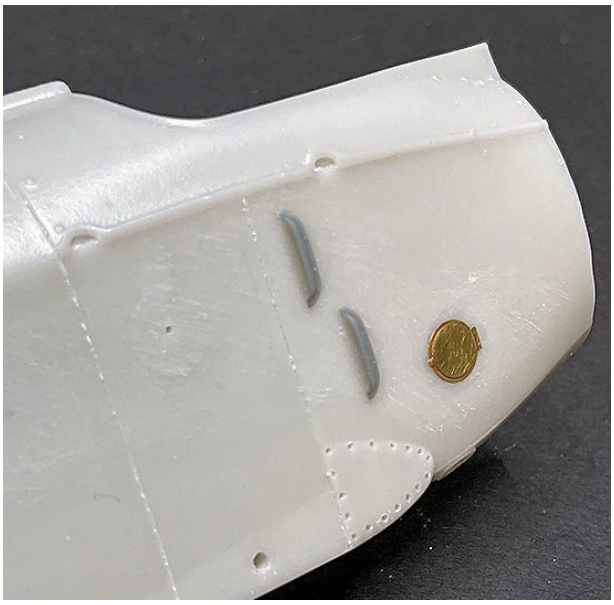
NOTE: *In the following steps, use the previously drilled holes in the fuselage as location points for the parts.*

Use thin CA adhesive to secure two (2) hatch panels (No.17) in position on the fuselage left half. The hinges on the panels should face forwards on the fuselage.

Use thin CA adhesive to secure two (2) 3D printed cooling louvres (No.2) on the fuselage left half. The open side of the louvres should face rearwards on the fuselage.

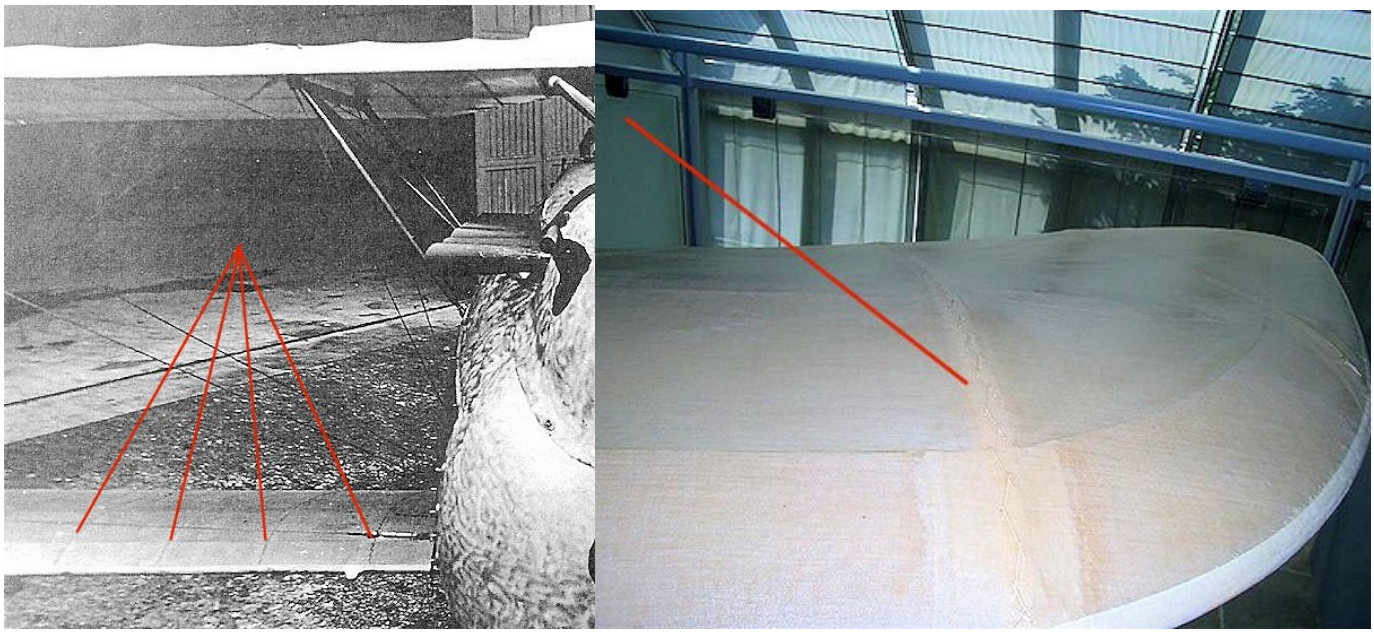
Use thin CA adhesive to secure one (1) hatch panel (No.17) in position on the fuselage right half. The hinge on the panel should face forwards on the fuselage.

Use thin CA adhesive to secure two (2) 3D printed cooling louvres (No.2) on the fuselage right half. The open side of the louvres should face rearwards on the fuselage.



Flight surface rib tapes:

NOTE: *The kit flight surfaces have been cast with traditional rib tapes securing the linen covering to their rib structures. However, Oef D.III's had their linen coverings stitched directly to the ribs, and therefore did not require the reinforcing rib tapes to be added. Koloman Mayrhofer researched this when building his reproduction Oef D.III aircraft, which were thoroughly researched and built using original drawings. As can be seen in the following photographs, the flight surface were stitched without any ribs tapes.*



NOTE: *As the stitching is flat to the surface and sealed, they are less visible than the standard rib tape stitching. Therefore, I chose not to add any stitching to the flight surfaces.*

Scrape, file or sand off the cast and raised rib tapes from both sides of the following:

Upper wing.
Lower wings.
Ailerons.
Tailplanes.
Elevator.
Rudder.

Airbrush the surfaces with a grey primer, such as 'AK Interactive' Grey (AK758) or similar as this will show any areas that require further sanding.

Check the surfaces for any obvious imperfections or areas that require further attention. Sand those areas then re-prime and check again, until a smooth enough surface is achieved.

3D printed parts:

NOTE: *Due to the fragility of resins used in 3D printing, printed parts should be handled with care, especially when drilling, sanding etc. In particular, care should be taken when removing parts from their support trees. Sharp nippers do to cut through the resin support trees. Alternatively, although an expensive option, is to use an ultrasonic blade cutter, but extreme care needs to be taken as the blade move extremely fast and will cut through flesh if care is not taken when in use.*

Carefully remove the all of the 3D printed parts from their support tree.

Carefully sand away any residual tree stubs for the edges of the parts.

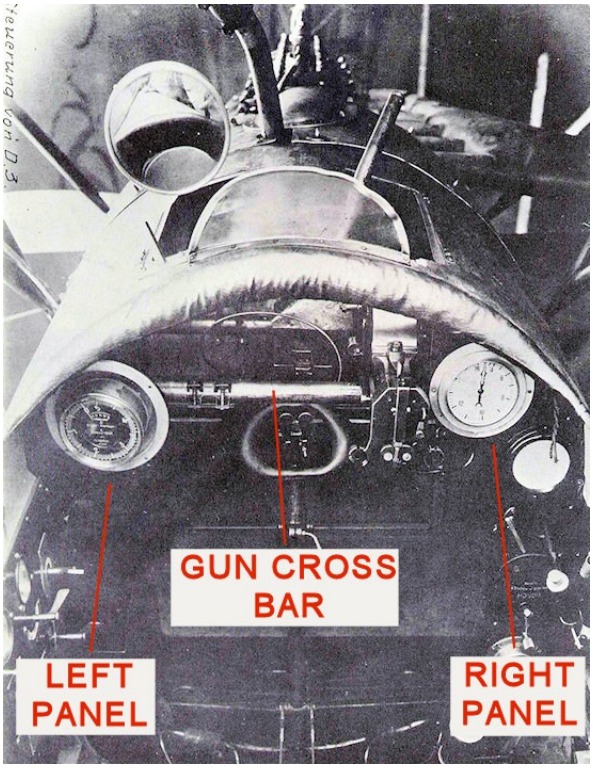
Modifications (continued):

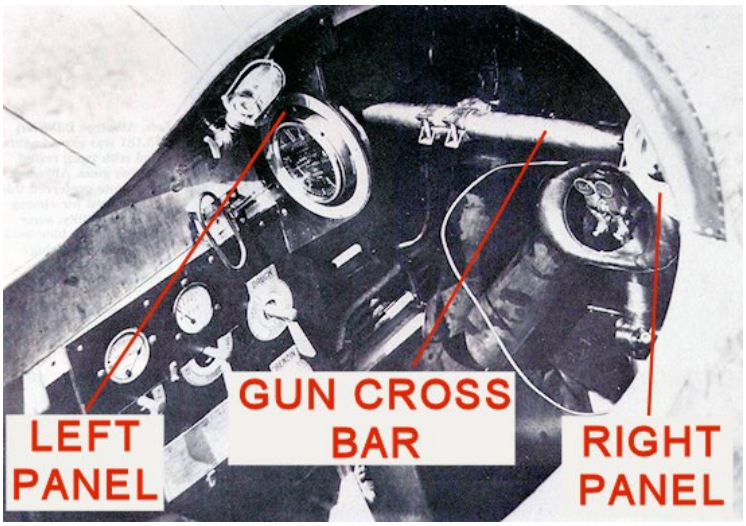
Cockpit instrument panel:

NOTE: *The cockpit parts are 3D printed and some are not correct for a Oef 253 series D.III aircraft, like the one being modelled. The corrections needed for a 253 series aircraft include:*

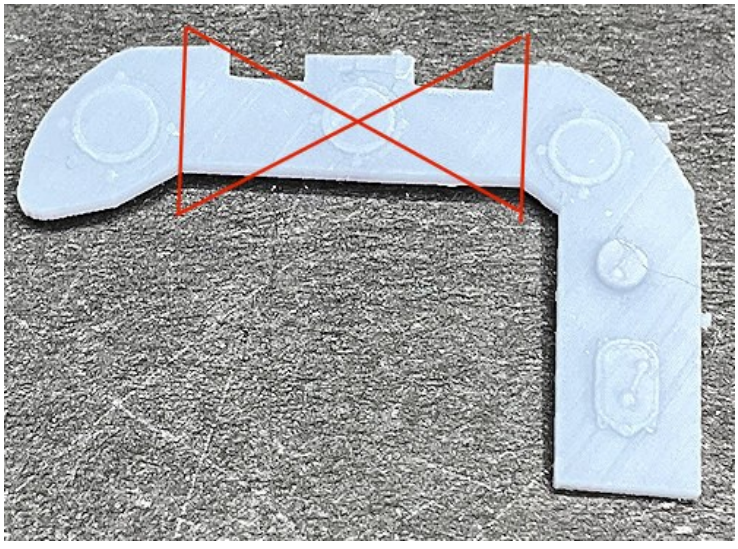
The pilot's instrument panel should be two separate panels, which leaves space for the rear of the two internally mounted machine guns. The central instrument is not required on the kit panel.

There should be a gun mounting cross bar spanning the cockpit under the rear of the two machineguns. The gun mounting cross bar will be added during the cockpit build.





Refer to the following photograph and cut the instrument panel to remove the centre section, which is not required.



Pilot's seat:

NOTE: *The pilot's seat supplied in the kit is relevant for a German built Albatros D.III, bit it seems not for an Oef D.III aircraft, which usually had a seat with large lightening holes in the seat back. The following photograph is one of Koloman Mayrhofer's reproduction Oef D.III aircraft. His actual aircraft were thoroughly researched and built using original drawings. As can be seen in the photograph, the pilot's seat has large lightening holes.*

Due to the fragility of resins used in 3D printing, printed parts should be handled with care, especially when drilling, sanding etc.

Using small diameter drills and increasing in size, drill four holes through the seat back and one through each seat side. The two holes at the bottom of the seat back are lager in diameter than the other four holes. Once the holes are big enough in diameter, use a small round needle file to file the hole diameters to an appropriate diameter.

Strut rods:

NOTE: *The 3D printed struts supplied in the kit have shallow holes in their ends for adding appropriate metal rods. The intention is to make the stut to model attachment more positive and stronger. The struts that require rods are shown on Page 8 of the kit instructions and are the following:*

Landing gear struts (x 2).

Interplane 'V' struts (x 2).

Fuselage cabane struts (x 2).

Avoid flexing the drill sideways when drilling out the holes. Any undue pressure against the thin walls of the struts can break away the material at the hole.

Annealing photo-etch parts or Brass rod/tube is done by applying heat from such as a cigarette lighter or similar, along the part until the metal changes to a grey colour. This softens the metal allowing it to be formed/bent more easily. Avoid melting photo-etch parts by keeping the heat source moving over the part. Also avoid heating very small parts as these may easily melt.

Interplane 'V' struts:

Using the three pre-printed holes in both struts as guides, drill holes of 0.8 mm diameter into the struts, making sure to keep the drill central in the struts.

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

Using thin CA adhesive, secure the rods into the pre-drilled holes in the struts.

NOTE: *During the following step, make sure you do not drill completely through the wings. The drilled holes need to be at the correct angle to align with the struts.*

Using a drill of 0.8 mm diameter, deepen the interplane strut single locating recess in the top surfaces of both lower wings and the two locating recesses in both sides of the underside of the upper wing.

Test fit the interplane struts into their locating holes, making sure the struts insert fully and the struts are vertical in the wings.

Fuselage cabane struts:

Using the four pre-printed holes in both struts as guides, drill holes of 0.5 mm diameter into the struts, making sure to keep the drill central in the struts.

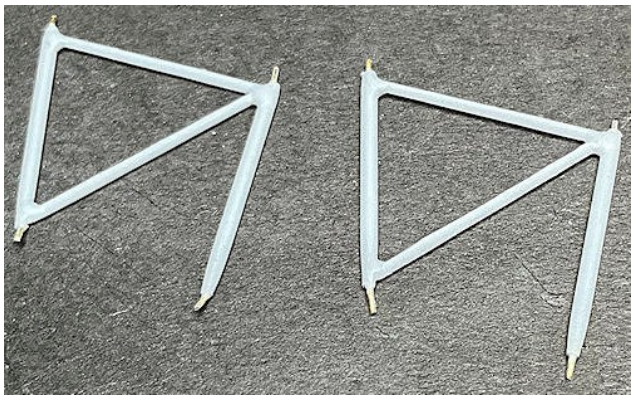
Cut eight short lengths of annealed 0.5 mm diameter Brass rod, such as that from 'Albion Alloy's' or similar.

Using thin CA adhesive, secure the rods into the pre-drilled holes in the struts.

NOTE: *During the following step, make sure you do not drill completely through the wings. The drilled holes need to be at the correct angle to align with the struts.*

Using a drill of 0.6 mm diameter and the molded strut locations, drill holes into the fuselage upper edges and into, **but not through**, the underside of the upper wing.

Test fit the interplane struts into their locating holes. Carefully bend the rods to allow them to be fully inserted into the fuselage and wing holes such that when fitted into the fuselage holes, the fuselage cabane struts are at the correct angle to align with the holes in the upper wing.



Landing gear struts:

Using the two pre-printed holes in tops of both struts as guides, drill holes of 0.8 mm diameter into the struts, making sure to keep the drill central in the struts.

NOTE: *During the following step, make sure the drilled holes are at the correct angle to align with the landing gear struts.*

Using a drill of 0.8 mm diameter and the molded strut locations at the bottom edges of the fuselage, drill holes into the fuselage.

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

Using thin CA adhesive, secure the rods into the pre-drilled holes in the struts.

Test fit the landing gear struts into their locating holes in the fuselage. Carefully bend the rods to allow them to be fully inserted into the fuselage such that the struts are angled out correctly. Use the landing gear axle as a guide for the spread/angle of the struts.

NOTE: *I chose to replace the kit supplied bracing bar between the rear struts with 1.0 mm diameter Brass rod. This gives greater strength to the assembly.*

Using the kit bracing bar as a length guide, cut a length of 1.0 mm Diameter Brass rod, such as that from ‘Albion Alloy’s’ or similar.

With the two landing gear struts temporarily fitted into the fuselage, insert the Brass rod into the locating recesses on the inner side of the landing gear rear struts.

Secure the rod in the struts using thin CA adhesive.

Position the landing gear axle centrally onto the bottom ‘V’ of the struts with the tapered edge at the rear.

Secure the axle onto the struts using thin CA adhesive.

NOTE: *The following step is to add a more secure attachment of the axle to the landing gear struts. As intended, the axle is just a butt joint onto the struts and the downward weight of the completed model could cause the axle to break away from the struts.*

For both ends of the axle, cut a length of 0.2 mm copper wire or similar and wrap it over the axle ends and the strut. Twist the ends of the wire together to tighten the grip of the wire. Secure the wire in position using thin CA adhesive then cut away most of the end tag of twisted wire.

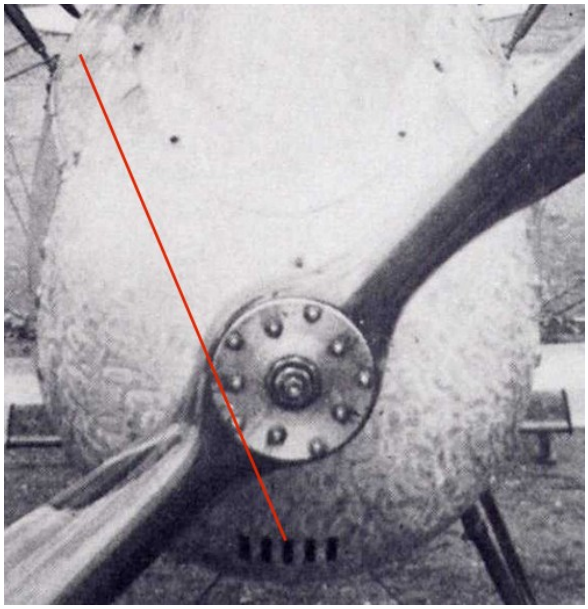
Nose cowl:

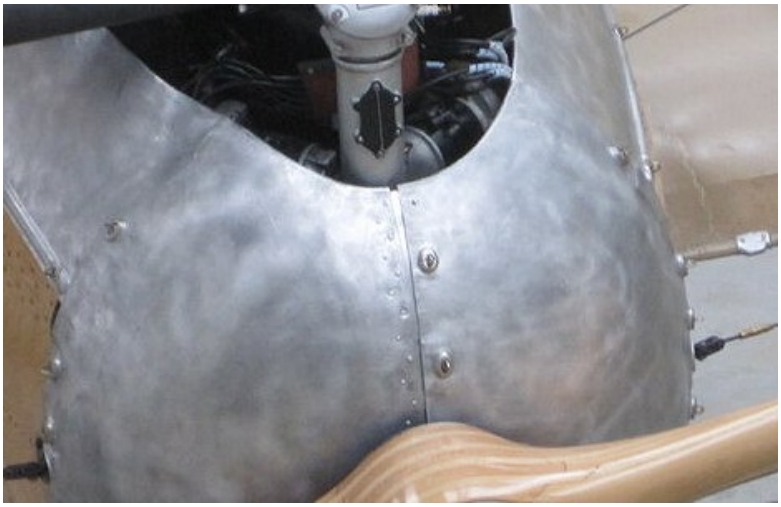
NOTE:

1. The nose cowl was made in two halves which were joined down the centre, front of the cowl. The kit supplied cowl has a heavy raised seam, not a shallow join line.

2. The five cooling slots in the bottom, centre of the cowl have been printed as raised ridges, not as slots.

3. *The outer edges of the nose cowl overlap the edges of the fuselage halves when the halves are temporarily joined together.*





Temporarily join together the two fuselage halves then offer up the nose cowl to check edge alignment.

Check the fit of the nose cowl against the front of the joined fuselage halves. If there is any overhang of the cowl at the fuselage edges, carefully sand away the outer edges of the cowl until they align to the fuselage edges.

Sand away the raised centre seam down the front of the nose cowl and carefully scribe the centre joint line down the centre of the nose cowl.

Carefully cut out a rectangle from the bottom, centre of the nose cowl to remove the five raised cooling 'slots'

Carefully chamfer the inner edges of the cut out to reduce their thickness.

Cur four short lengths of plastic card or rod to fit into the cut out and at the width required to leave five equally spaced slots.

Apply a strip of masking tape to the inside of the cowl to cover the cut out.

Using thin CA adhesive, secure the four lengths of plastic card or rod into the cut out to create five equally spaced slots.

Carefully remove the strip of masking tape.

Carefully sand the front surface of the cowl around the cut out, to remove any slight ridges between the surface of the cowl and the added slot bars.

If necessary, use a 0.4 mm diameter drill to create shallow recesses to re-instate the outer edge fasteners that were remove during sanding and add fasteners down the centre join line.

The following photograph shows the modified nose cowl after it was painted in Part 14 (Fuselage Construction) of this build log.

Aileron levers:

NOTE: *The kit does not supply operating levers for the two ailerons.*

Temporarily fit the two ailerons into the upper wing.

Mark the centre of the upper wing opening for the levers onto the leading edge of the ailerons.

Remove the ailerons and using the marks as guides, point mark the centre of the aileron leading edges.

Using the point marks as guides, drill holes of 0.8 mm diameter into the ailerons.

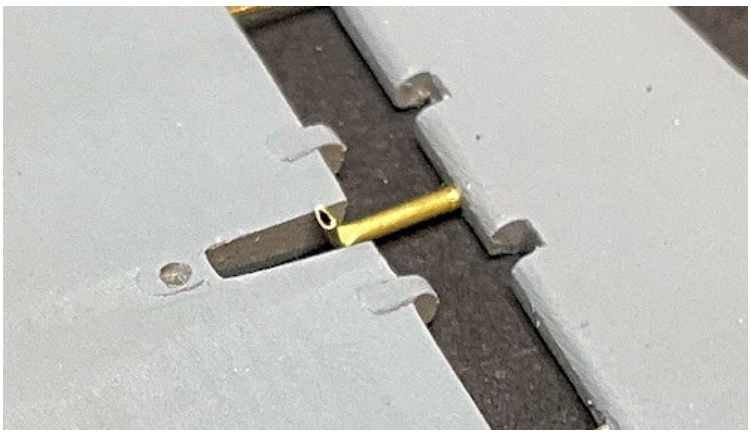
Cut two lengths of 0.8 mm diameter Brass rod, such as ’Albion Alloy’s MBT08 or similar.

Bend one end of the tubes to 90 degrees, making sure the bore of the tubes are not completely flattened (leave a slight gap).

Insert the straight end on the tubes fully into the drilled holes and locate the ailerons onto the upper wing, noting how much, if any, of the tubes need to be removed to allow the ailerons to fully locate with the bent ends close to the upper wing.

Trim the tube lengths as required.

Secure the tubes fully into the ailerons using thin CA adhesive.



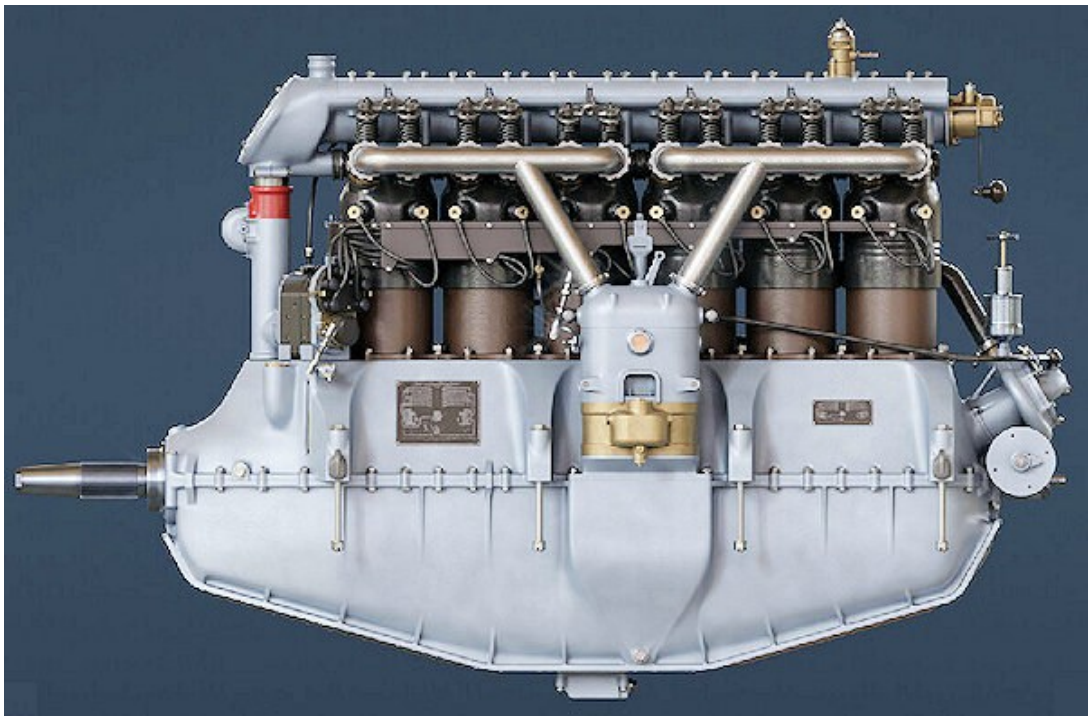
PART 11
ENGINE

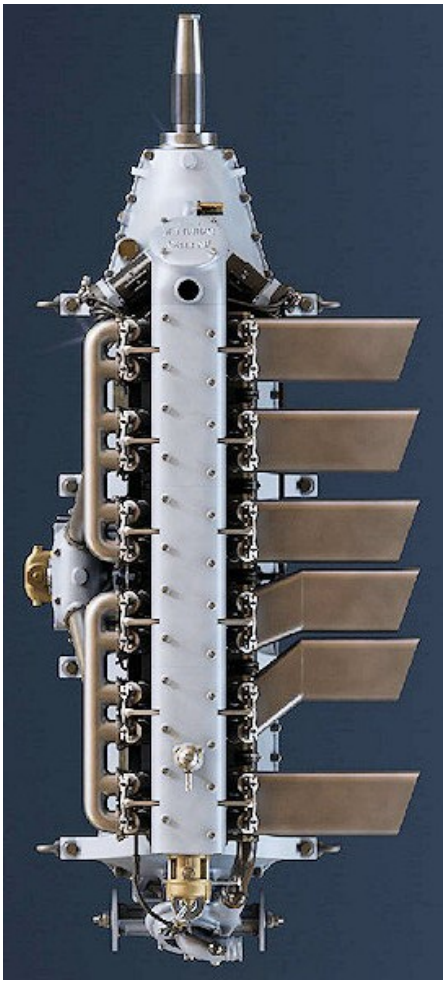
PART 11 - ENGINE

NOTE: *The engine fitted in the 253 series of Oef D.III fighters was the Austro-Daimler 168 kW (225 hp) six cylinder water cooled engine.*

References:

‘Windsock Data File No:19 - Albatros D.III (Oef) (P.M. Grosz).
‘Wikipedia’ online resource and ‘Lukgraph’ Instruction notes





NOTE: *Refer to Part 7 (Resin) of this build log. Due to the fragility of resins used in 3D printing, printed parts should be handled with care, especially when drilling, sanding etc. In particular, care should be taken when removing parts from their support trees. Sharp nippers do to cut through the resin support trees. Alternatively, although an expensive option, is to use an ultrasonic blade cutter, but extreme care needs to be taken as the blade move extremely fast and will cut through flesh if care is not taken when in use.*
The kit parts required to construct the engine are detailed on Page 5 of the kit instructions. The parts must be secured in position using 'VMS Fleky' CA adhesive (Thin or Slow) or similar CA adhesive.

Preparation:

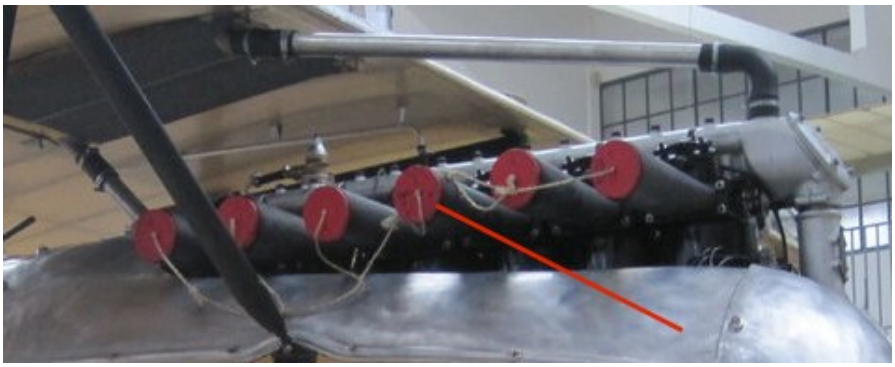
Carefully remove the all of the 3D printed parts from their support tree.

Carefully sand away any residual tree stubs for the edges of the parts.

Modifications:

Exhaust pipes:

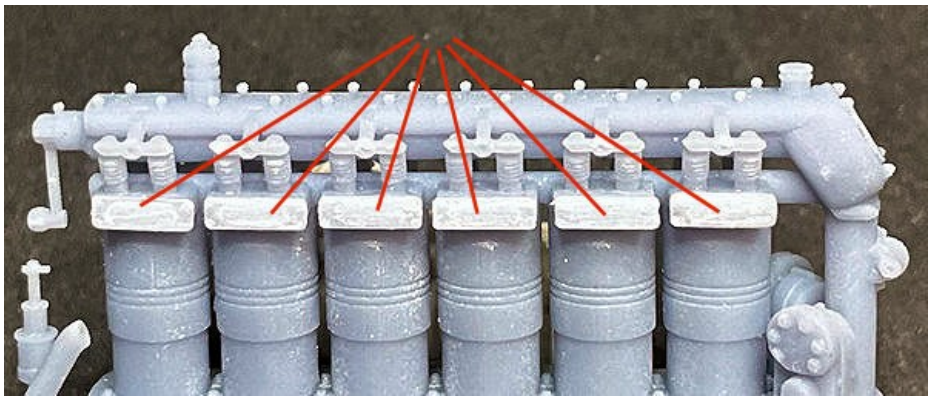
NOTE: The kit supplied engine exhaust pipes are flattened along their entire length, but most photographs of the aircraft show the exhaust pipes at the engine end being flattened, but then changing to tubular shape at their outer ends.



File or sand away the locating stub on the engine side of the exhaust pipe flanges.

Carefully cut away the exhaust pipes close to the flange.

Using thin CA adhesive, secure each flange centrally onto the exhaust outlets of the engine cylinders.



Cut a 10 mm length of 2.0 mm diameter Brass tube, such as ‘Albion Alloy’s’ (MBT20) or similar.

Using flat pliers, carefully flatten one end of the tube and reduce the flattening outboard to approximately half way along. The bore of the flattened end should be approximately 0.5 mm wide.

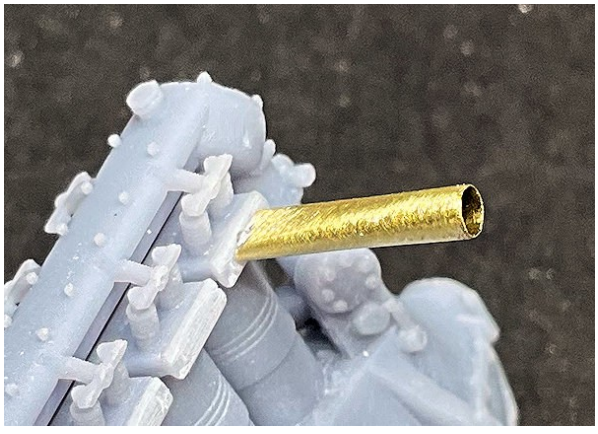
Cut a length of 0.5 mm diameter Brass rod, such as that from ’Albion Alloy’s’ or similar.

Insert the rod centrally into the flattened end of the tube, leaving approximately 4 mm protruding.

Secure the rod in the tube using either thicker, slow setting CA adhesive or soft solder the rod in the tube.

Drill a hole of 0.5 mm diameter centrally into an exhaust flange.

Test fit the exhaust pipe into the engine, making sure it’s 90 degrees to the engine when viewed from above and from the front.



Repeat the procedure to create the remaining five exhaust pipes.

Prepare for painting by brushing ‘VMS’ Metal prep 4K or similar over the exhaust pipes and allow to full dry.

Propeller shaft:

NOTE: *The locating hole in the front of the engine for the propeller shaft was slightly larger than the shaft on the propeller. Therefore, in Part 12 (Propeller) of this build log, the propeller was modified to accept a 2.0 mm diameter shaft for a more positive fit.*

Drill a hole of 2.0 mm diameter into the existing propeller shaft locating hole in the front of the engine.

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

Insert the tube fully into the drilled hole.

Mark the tube 6 mm from the engine.

Remove the tube and cut the tube away at the mark.

Secure the tube fully into the engine using thin CA adhesive.

Assembly:

NOTE: *The curved end of the ignition lead support tube (left side of the engine) should be separate from the support tube itself, to allow the ignition leads from the right side magneto to exit and be attached to the spark plugs on the left side of the engine.*

Using thin CA adhesive, secure:

The curved end of the ignition support tube to the front of the forward engine cylinder.

The ignition support housing to the left side of the engine cylinders, under the spark plugs.

The coolant pipe to the right side of the engine cylinders and against the engine rear coolant tube.

The carburettor housing/induction pipes onto its mounting on the left side of the engine and the induction pipes into the locating recesses in the cylinder heads.

Painting:

NOTE: *The kit parts required to construct the engine are detailed on Page 5 of the kit instructions.*

Airbrush the engine assembly and the created exhaust pipes, with a black base coat, such as 'MRP' Night Camouflage WW1 (MRP-255) or similar.

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

Brush paint the engine and components with stated paints or similar:

'Tamiya' Flat Aluminium (XF16) - Engine sump and crankcase, camshaft drive shaft and cover, carburettor housing, rear components.

'Tamiya' Gun Metal (X10) - Carburettor induction pipes, ignition lead support housing, valve tappets and springs, sump underside plates.

'Tamiya' Metallic Grey (XF56) - Cylinder lower halves, spark plugs.

'Tamiya' Red (X7) - Top of camshaft drive shaft.

'Tamiya' Hul Red (XF9) - Front face of magnetos, handle on de-compression lever.

'Mr. Metal Color' Brass (219) - Bottom of carburettor housing, de-compression lever housing, top air valve, bottom cylinder of magnetos.

Decals:

NOTE: *The kit does not supply decals for the engine data plates. Therefore I used appropriate decals from my 'spares' collection of decals.*

Brush a clear gloss coat, such as 'Tamiya' Clear (X22) or similar, over the two data plates on the crank-case left side and on the crankcase under the right side magneto.

Refer to Part 7 (Decals) of this build log for more information. Apply the appropriate decals to the clear coated areas of the crankcase.

Weathering:

To provide a good weathering surface on the engine, airbrush as semi-gloss clear coat, such as ‘Tamiya’ Semi-Gloss (X35) or similar over the entire engine.

NOTE: *Refer to Part 6 (Weathering) of this build log. I chose to use the ‘Flory Models’ Dark Dirt fine clay wash.*

Brush ‘Flory Models’ Dart Dirt wash over the engine sump and crankcase.

Remove the wash to achieve the desired weathering effect.

Brush ’AK Interactive’ Kerosene wash (AL2039) over the camshaft and valve gear.

Modifications (continued):

NOTE: *The kit does not supply ignition leads or additional pipework.*

Ignition leads

Drill holes of 0.4 m diameter into the six ignition lead connection point of the two magnetos.

Cut twelve lengths of 0.3 mm diameter lead wire, such as that from ‘PlusModel’ or similar.

Using thin CA adhesive, secure a wire into each of the drilled holes.

From the ride side magneto, loop each of the six wires up to the end of the curved ignition lead support housing on the front of the forward cylinder.

Cut the wires to the correct length.

Using thin CA adhesive, secure the six wires onto the end of the curved housing.

Repeat the procedure to attach the six wires from the left side magneto to the end of the straight ignition lead support hosing.

Cut twelve lengths of 0.3 mm diameter lead wire, such as that from ‘PlusModel’ or similar.

Using thin CA adhesive, secure two wires onto each engine cylinder below the ignition lead support housing on the left side of the engine.

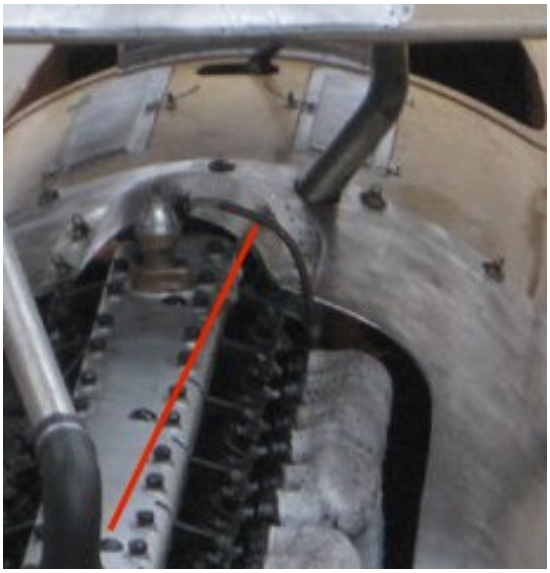
Loop each pair of wires up to the two spark plugs for that engine cylinder.

Cut the wires to the correct length.

Using thin CA adhesive, secure each wire to its spark plug.

Pipework

NOTE: *A pipe was connected to the valve on the top, rear of the camshaft cover. It’s not clear where the other end of this pipe was attached to, but lower, rear of the engine is not really visible once the engine is fitted.*



Drill a hole of 0.4 m diameter into, **but not through**, the left side of the valve.

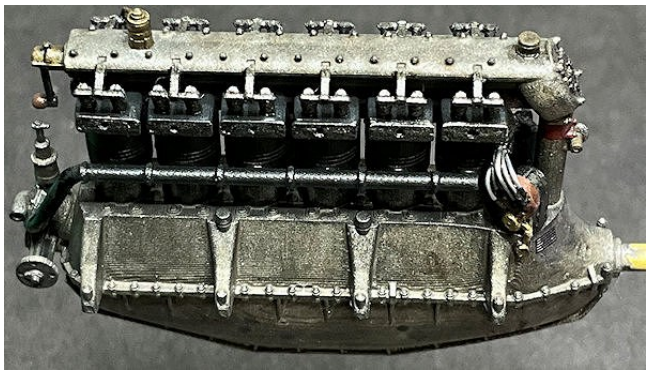
Cut a length of 0.3 mm diameter lead wire, such as that from ‘PlusModel’ or similar.

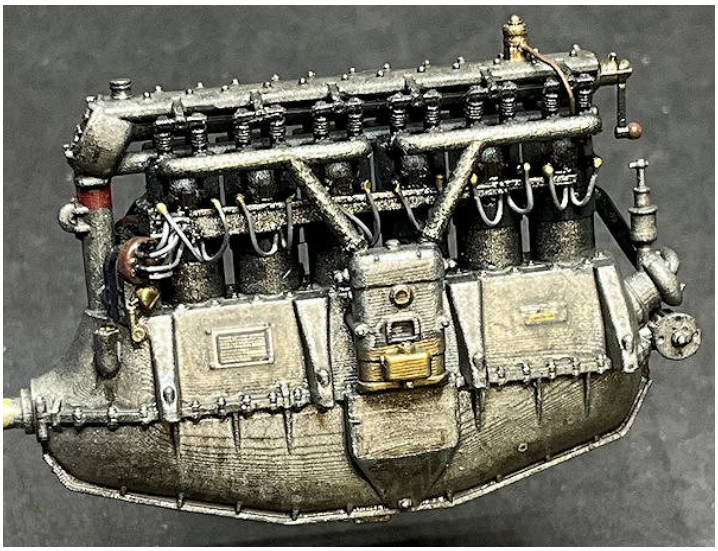
Using thin CA adhesive, secure the wire into the drilled hole.

Loop the wire over the valve gear and down behind the rear carburettor induction manifold.

Using thin CA adhesive, secure the wire onto the back of the rear engine cylinder.

Brush paint the wire with ‘Mr. Metal Color’ Copper (215) or similar.





PART 12
PROPELLER

PART 12 - PROPELLER

References:

‘Windsock’ Data File 1 - Albatros D.III (Ray Rimmel).
‘Flying Machines RU’ - https://flyingmachines.ru
‘Windsock Data File No:19 - Albatros D.III (Oef) (P.M. Grosz).

NOTE: *The kit supplies two different propellers, one for a 153 series aircraft and the other for a 253 series aircraft. The 153 series propeller looks to be a Knoller-Jaray Wien type, but the other propeller is not. The ‘Windsock’ Data File No:19 - Albatros D.III (Oef) (P.M. Grosz) has photographs of 253 series aircraft with propellers that appear to be neither of those in the kit. However, the ‘Wotan’ Type 1 (3202) propeller from ‘LF Models’ seems a fairly good match to the shape of those photographs. Therefore, I chose to use the ‘LF Models’ propeller, but with Knoller-Jaray Wien logos.*

Modifications:

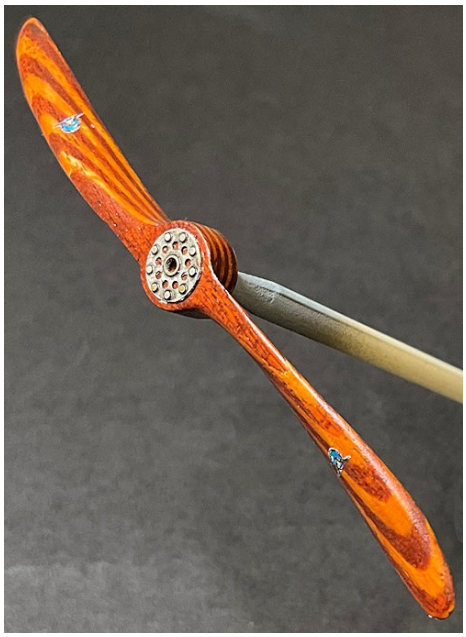
NOTE: *The locating hole in the front of the engine for the propeller shaft was slightly larger than the shaft on the propeller. Therefore, in Part 11 (Engine) of this build log, the locating hole was drilled out to 2.0 mm diameter to accept a 2.0 mm diameter shaft from the engine.*

Drill a hole of 2.0 mm diameter into the rear of the propeller.

Decals:

NOTE: *Refer the Part 7 (Decals) of this build log for more information. The kit does not supply decals for the propellers. The only photographs I’ve found that show the propeller logos from manufacturers ‘Knoller-Jaray Wien’ (below left) and possibly ‘Lohner Werke’ (below right). The decals are in the ‘LF Models’ Austro-Hungarian labels (C3205) set.*

The individual decals on the ‘LF Models’ decal set are not separate, but are part of the carrier film on the sheet. Therefore, each decal needs to be carefully cut from the sheet and as close as possible to the edges of the decal.



Cut out two ‘Jaray-Wien’ decals from the sheet and apply the to the blades, with the wings of the decals facing to wards the tips of the propeller blades.

Painting:

Brush the front crush plate with ‘Mr. Metal Color’ Stainless Steel (213) or similar.

Seal the decals and painted propeller by airbrushing it with a semi-matte clear coat, such as ‘Tamiya’ Semi-Gloss (X35) or similar.

PART 13
WEAPONS

PART 13 - WEAPONS

References:

‘Windsock’ Data File 1 - Albatros D.III (Ray Rimmel).
‘Flying Machines RU’ - https://flyingmachines.ru
‘Windsock Data File No:19 - Albatros D.III (Oef) (P.M. Grosz).

NOTE: *Working with model parts made in any form of resin is hazardous to health, especially when for example, sanding or drilling resin, when small airborne particles can be inhaled. Refer to Part 7 (Resin) of this build log. Due to the fragility of resins used in 3D printing, printed parts should be handled with care. The parts must be secured in position using ‘VMS Fleky’ CA adhesive (Thin or Slow) or similar CA adhesive.*

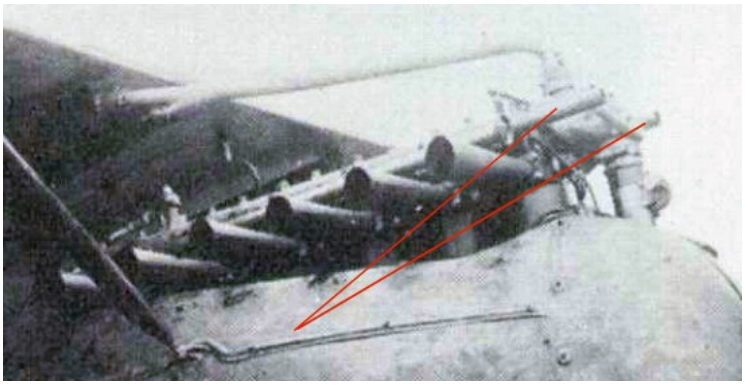
Painting:

Airbrush the two machine guns with a gloss black, such as ‘Tamiya’ Gloss Black (X1) or similar.

NOTE: *Dry brush by using a domed and soft brush, which has been dipped in the paint. Dab the brush on an absorbent paper to remove the liquid paint, leaving paint pigment on the brush.*

Dry brush around the two machine guns with ‘Mr. Color’ Super Iron 2 (203) or similar, to create a worn metallic surface.

NOTE: *Blast barrels, made from metal tube, are to be fitted onto the barrels of the machine guns. These blast tubes extend forwards along the sides of the engine with the forward ends protruding over the engine panels. However, as supplied, the gun barrels sit too low in the fuselage, causing engine components to block access for adding the blast barrels correctly. Therefore, I chose to cut away the barrels from the machine guns so that blast barrels can be more easily located later in the build.*



Cut off the barrels of the two machine guns, leaving a short stub at the front of the breach blocks.

The two machine guns are shown test fitted into the fuselage.

Fitting is carried out in Part 14 (Fuselage Construction) of this build log.

PART 14
FUSELAGE CONSTRUCTION

PART 14 - FUSELAGE CONSTRUCTION

References:

'Windsock' Data File No:19 - Albatros D.III (Oef) (P.M. Grosz).
'Windsock' Data File 1 - Albatros D.III (Ray Rimmel).
'Flying Machines RU' - https://flyingmachines.ru
'Lukgraph' Instruction notes.

NOTE: *Working with model parts made in any form of resin is hazardous to health, especially when for example, sanding or drilling resin, when small airborne particles can be inhaled. Refer to Part 7 (Resin) of this build log. Due to the fragility of resins used in 3D printing, printed parts should be handled with care.*

Assembly:

NOTE: *Make sure all paints and primer **are removed from mating surfaces** before assembling the model parts. The kit parts required to construct the cockpit are detailed on Pages 3 and 4 of the kit instructions. The parts must be secured in position using 'VMS Fleky' CA adhesive (Thin or Slow) or similar CA adhesive.*

Using slow CA adhesive, attach the forward bulkhead against its locating shoulder in the fuselage right half.

Temporarily join the fuselage halves together, making sure the bulkhead is fully against both fuselage locating shoulders.

Once the adhesive has set, separate the fuselage halves.

Insert the rear end of the control column shaft into its locating hole in the fuselage former.

Insert the front end of the shaft into its locating hole in the forward bulkhead and the fuselage former into its locating recess in the fuselage right half.

Temporarily join the fuselage halves together, making sure the fuselage former locates into its fuselage recess and the forward bulkhead against its locating shoulder in the fuselage left half.

Apply thin CA adhesive to secure the fuselage former into the fuselage right half. Once the adhesive has set, separate the fuselage halves.

Secure the instrument panel and storage container into their locating recesses in the fuselage left half.

Insert the fuselage former/rudder bar into its locating recess in the fuselage right half.

Temporarily join the fuselage halves together, making sure the former locates under the storage container in the fuselage left half.

Apply thin CA adhesive to secure the fuselage former into the fuselage right half.

Once the adhesive has set, separate the fuselage halves.

NOTE: *The following step is necessary to allow the seat frame to fully contact its locating shoulder in the fuselage right half.*

File or sand away the underside of the instrument on the underside of the right seat support frame.

Secure the pilot's seat onto the seat support frame.

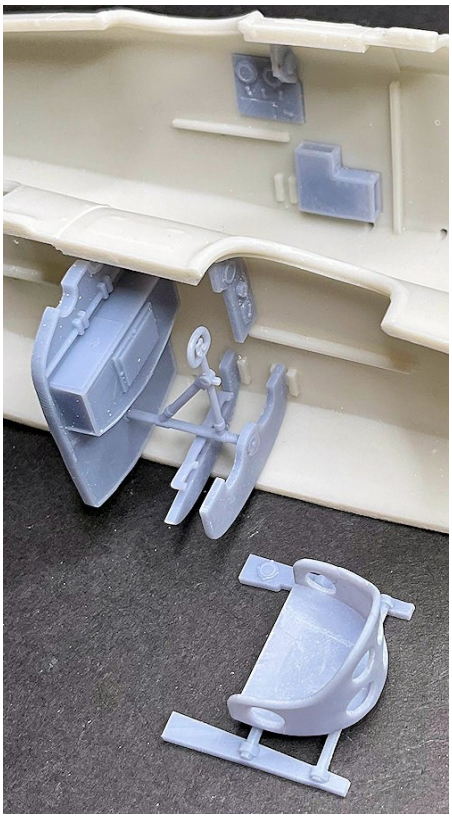
Hold the seat frame onto its locating shoulder on the fuselage right half and at 90 degrees to the fuselage half.

Secure the right half of the cut instrument panel vertically against the fuselage with its bottom edge onto the seat support member.

Apply thin CA adhesive to secure the instrument panel onto the fuselage right half.

Secure the left half of the cut instrument panel vertically against the fuselage left half with its bottom edge in the corner cut out of the fitted instrument panel on the fuselage side.

Apply thin CA adhesive to secure the instrument panel onto the fuselage right half.

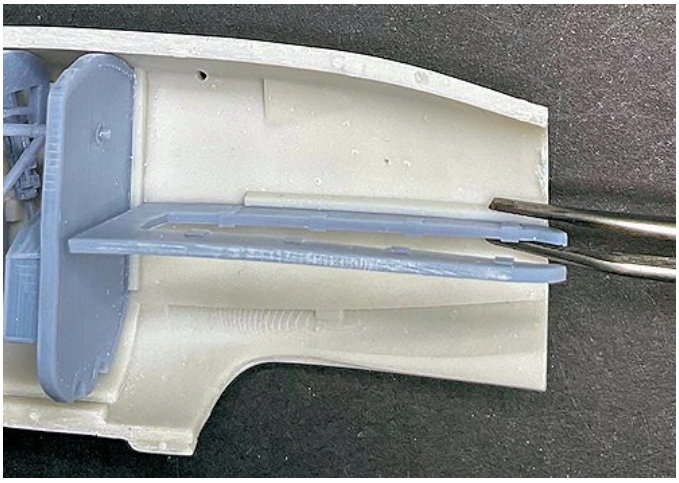


NOTE: *The following steps are required due to the engine bearer being slightly bowed.*

Refer to the following photograph and clamp the rear of the engine bearer frame onto its locating shoulder in the fuselage right half, making sure the rear end of the bearer is against the shoulder of the forward bulkhead.

Secure the rear of the engine bearer frame to the fuselage side.

Once the adhesive has set, clamp the front of the engine bearer frame onto the locating shoulder and secure in position on the engine bearer.

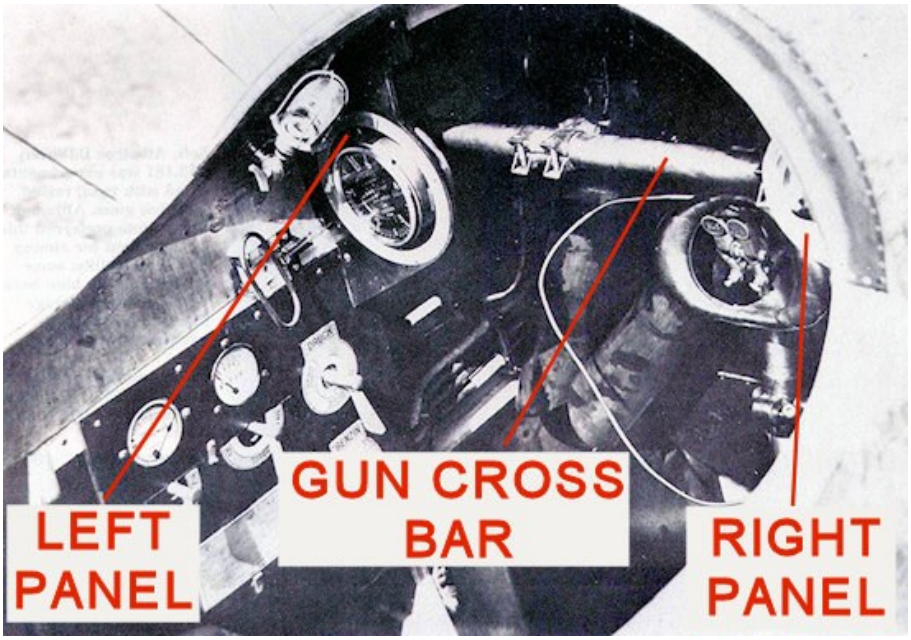


Temporarily join the two fuselage halves, making sure they join fully. You may need to move the left side of the engine bearer to allow it to rest correctly on the top of its location shoulder in the fuselage left half.

Modifications:

Cockpit instrument panel:

NOTE: *The cockpit parts are 3D printed and some are not correct for a Oef 253 series D.III aircraft, like the one being modelled. There should be a gun mounting cross bar spanning the cockpit under the rear of the two machine guns and behind the pilot's instrument panels.*



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

Cut a 2.5 mm length of 1.2 mm diameter Brass tube, such as ‘Albion Alloy’s’ MBT12 or similar.

Position on of the kit supplied machine guns into the fuselage right half as follows:

The barrel in the trough at the top of the forward bulkhead.

The front of the body of the weapon against the forward bulkhead.

The top of the weapons body in the molded trough in the inner top of the fuselage half.

Holding the weapon horizontal in the fuselage half, mark the rear underside of the weapon onto the side of the fuselage. The mark should be just above the rear of the instrument in the pilot’s right instrument panel and close the rear of the panel.

Using the mark as a guide, carefully drill a 1.0 mm diameter recess into the fuselage side, making sure to not drill completely through the fuselage side.

Insert the two rods into the tube, making sure the tube is positioned equally onto the rods.

Using thin CA adhesive, secure the two rods into the tube, making sure the rods and tube are all aligned.

Locate one of the rods into the drilled recess in the fuselage right half and note how much of the rods needs to be removed to align the tube centrally between the two troughs in the forward bulkhead.

Cut the rod accordingly then insert that rod end into the drilled recess in the fuselage side.

Temporarily join the two fuselage halves and note how much rod needs removing at the fuselage left side to allow the fuselage halves to fully join.

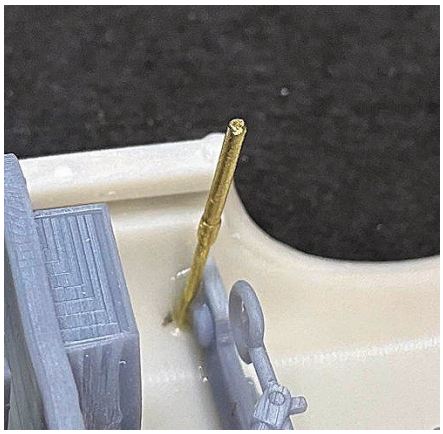
Cut that rods length accordingly.

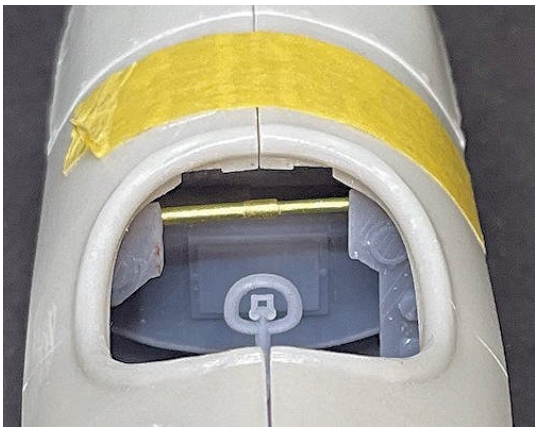
NOTE: *To provide a secure attachment but allow time for positioning, I used two part epoxy resin adhesive, such as ‘Araldite two-part epoxy’ or similar.*

Insert the rod end, as before, into the drilled recess in the fuselage right side and secure in position, making sure the rod/tube assembly is 90 degrees to the fuselage side when viewed from above and horizontal across the cockpit.

As the adhesive starts to set, temporarily join the two fuselage halves and if necessary, correct the position the rod/tube in the cockpit.

Once the adhesive has set, separate the two fuselage halves.





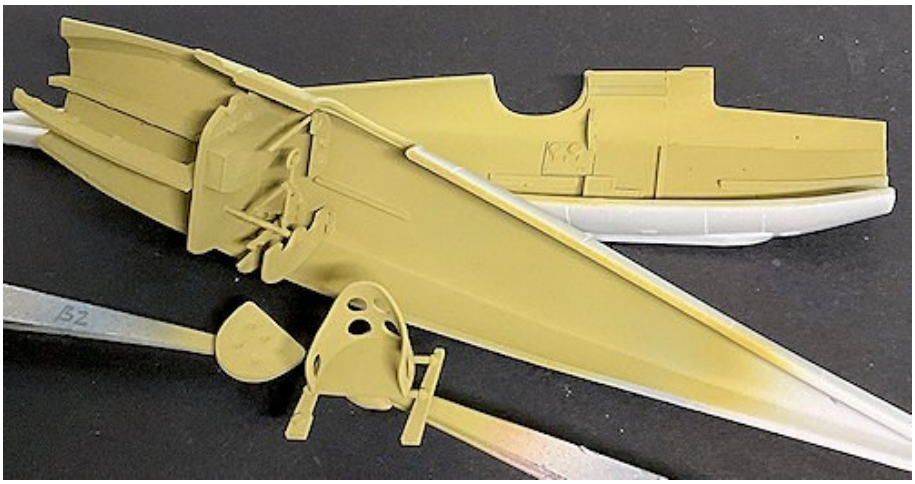
Painting:

Airbrush the hand pressure pump with a gloss black, such as 'Tamiya' Gloss Black (X1) or similar.

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

Inner surface and components of fuselage right half.
Inner surface and components of fuselage left half.
Pilot's seat/frame assembly.
Pilot's seat cushion.

Airbrush the grey primed surfaces with 'Tamiya' Dark Yellow (XF60) or similar.



Wood effect:

NOTE: *Refer to Part 5 (Wood Effects) of this build log for more information.*

The light colour wood effect for the internal fuselage and frames etc was created using 'Windsor & Newton' Griffin (Alkyd) ***Raw Sienna*** *paint.*

When applying the oil paint, avoid applying too much over instruments and other details as this may obscure any surface details.

Lighter wood:

Brush a covering coat of the 'Windsor & Newton' Griffin Alkyd **Raw Sienna** paint over the following:

Inner surface and components of fuselage right half (not the engine bearer frame, control column or the gun mounting cross bar).
Inner surface and components of fuselage left half (not the storage container).
Pilot's seat (not the support frame).
Pilot's seat cushion.

Leave the oil paint to settle for approximately a minute.

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

Dip a soft brush into the White Spirit then wipe the brush on a sheet of kitchen roll (which should not deposit any fibres in the oil paint) to remove most of the White Spirit.

Brush the oil paint in the required direction of the wood grain and keep wiping the brush on the sheet to remove residual oil paint.

Repeat dipping and wiping the brush in the White Spirits and brushing the oil paint until the desired density and effect is achieved.

Leave the oil paint to fully dry. It should be touch dry in an hour or so and fully dry within 12 hours.

Darker wood:

NOTE: *The dark colour wood effect for the engine bearer and seat support frames was created using 'Windsor & Newton' Griffin (Alkyd) Burnt Umber paint.*

Use the same procedure, applying 'Windsor & Newton' Griffin Alkyd **Burnt Umber** paint over the engine bearer and seat support frames.

Leather effect:

NOTE: *The leather effect on the pilot's seat cushion was created using 'Ammo-Mig' Oil brusher (Earth and Dark Brown).*

To create a leather effect, first apply the 'Ammo-Mig' Oil brusher (Earth) and when semi-dry, stipple brush on the 'Ammo-Mig' Oil brusher (Dark Brown).

Detail painting:

Brush paint the cockpit details as follows, using the stated detailed or similar:

'Mr. Metal Color' Brass (219) - starter switch on right instrument panel and hand pressure pump.

'Mr. Metal Color' Stainless Steel (213) - metal container and two instruments with switches on fuselage left half, instrument on panel, fuselage right half,

'Tamiya' Grey Green (XF76) - pilots seat support bars, control column assembly, cross bar on ammunition container and added gun support cross bar on fuselage right half.

'Tamiya' Red Brown (XF64) - panel on fuselage left half, panel on ammunition container on fuselage right half.

'Tamiya' Flat Black (XF1) - starter magneto on right instrument panel, instrument on left panel.

'Tamiya' Hull Red (XF9) - starter

'Humbrol' Leather (62) - hand grips on control column.

Decals:

NOTE: *Refer to Part 7 (Decals) of this build log. The instrument decals supplied are part of the sheet carrier film and therefore need to be cut out from the sheet. Even using suitable hole punches, achieving an accurate cut is difficult. Therefore I chose not to use the kit decal and instead used appropriate decals from the 'Airscale' WW1 generic dial decals (AS32 WW1) set.*

I did not used the photo-etch instrument surrounds supplied in the kit.

I applied appropriate decals to the cockpit instruments and panels, as shown in the following photographs.

To represent the glass lenses of the instruments, brush 'Tamiya' clear gloss (X22) over the instrument decals. As an alternative, I used clear UV curing resin.

Assembly (continued):

NOTE: *Make sure all paints and primer* ***are removed from mating surfaces*** *before assembling the model parts. The parts must be secured in position using 'VMS Fleky' CA adhesive (Thin or Slow) or similar CA adhesive.*

Using thin CA adhesive, secure the pilots seat cushion onto the pilots seat.

Using thin CA adhesive, secure the two machine guns into the fuselage right half. The lower, rear of the guns locate onto the added support cross bar. The front of the guns, with the remaining stub of the cut off barrels locate into the gun troughs, with the lower, front of the breach blocks against the rear of the cockpit frame.

Brush paint the pilots seat cushion with a semi-gloss clear coat, such as 'Tamiya' Semi-Gloss (X35) or similar.

Brush paint the four photo-etch seat straps (not the metal fittings) with 'Tamiya' Desert Yellow (XF59) or similar.

Fit the looped anchor ends of the two lap straps over the outer ends of the pilots rear support bar.

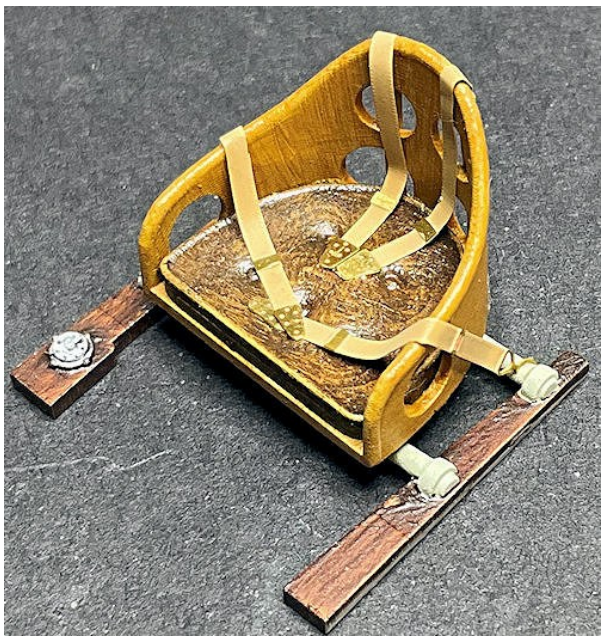
Pass the straps up and forwards over the edge of the seat and down onto the seat cushion.

Secure the straps to the rear support bar and seat cushion, using thin CA adhesive.

Secure the anchor ends of the two shoulder straps onto the bottom, rear of the pilots seat, using thin CA adhesive.

Pass the vertically up and over the top edge of the seat and down onto the seat cushion.

Secure the straps to the rear of the seat and seat cushion, using thin CA adhesive.



Bend the two photo-etch foot straps into a curve with their ends bent so they will fit over the rudder bar extensions.

Using thin CA adhesive, secure the two foot straps onto the rudder bar ends.

Brush paint the straps with ‘Humbrol’ Leather (62) or similar.

Using thin CA adhesive, secure the photo-etch throttle quadrant onto the bottom of the throttle lever.

Bend inboard slightly just the handle of the throttle lever.

NOTE: *The throttle ‘rod’ is not realistic as it’s flat, not round.*

Cut off the flat throttle ‘rod’ from the throttle lever.

Using thin CA adhesive, secure the throttle and quadrant onto the fuselage right half.

Cut a short length of 0.3 mm diameter Nickel-Silver rod, such as that from ‘Albion Alloy’s or similar.

Using thin CA adhesive, secure the rod onto the fuselage right half, between the throttle lever and the right instrument panel.

Modifications (continued):

Flight control cables:

NOTE: *Refer to Part 9 (Rigging) of this build log. The design of this kit does not include the rudder, aileron or elevator connection points or pulleys and makes it virtually impossible to modify and add these to the cockpit. Therefore, I chose to not add any cockpit flight controls cables.*

Hand pressure pump pipe:

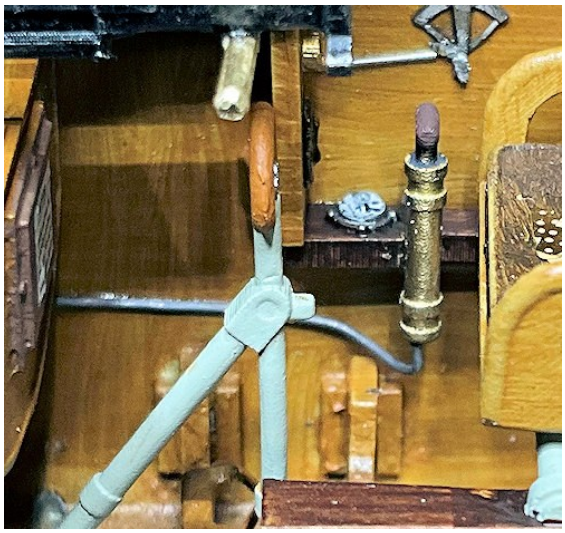
Using thin CA adhesive, secure the hand pressure pump against the forward, inner edge of the right side of the pilots seat.

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

Using thin CA adhesive, secure the forward end of the wire onto the fuselage right half.

Bend the rear end of the wire in then up to the bottom of the pump.

Using thin CA adhesive, secure the end of the wire onto the bottom of the pump.



Gun trigger cables:

NOTE: *The German Albatros aircraft were armed with 'Spandau' LMG machine guns that were operated by trigger cables that were attached to trigger pads on the control column. As I could not find photographic evidence for the OEFFAG aircraft, I've assumed trigger cables were fitted the same to operate the two 'Schwarzlose' 07/12 machine guns.*

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

Bend one end of both wires to 90 degrees.

Using thin CA adhesive, secure the bent end of the wires to the underside of the breach blocks of the machine guns.

Loop the two wires down the up to the rear of the trigger pads on the control column.

Using thin CA adhesive, secure the ends of the wires to the rear of the trigger pads on the control column.

Assembly (continued):

NOTE: *Make sure all paints and primer **are removed from mating surfaces** before assembling the model parts. The parts must be secured in position using 'VMS Fleky' CA adhesive (Thin or Slow) or similar CA adhesive.*

Test join the two fuselage halves, making sure the halves can be fully joined without any obstructions from the parts inside the fuselage.

Apply a thicker, slow setting CA adhesive to the listed locations on the fuselage left half:

Over the top surface of the engine bearer locating shoulder.

Into the locating recess for the cockpit floor cross member.

Down the fuselage side at the rear of the cockpit bulkhead locating shoulder.

Over the top surface of the pilots seat locating shoulder.

Carefully join the two fuselage halves, making sure they join fully without restriction and the previously listed parts are fully joined. Also that the fuselage edges are aligned to each other.

Use masking tape to hold the fuselage halves together.

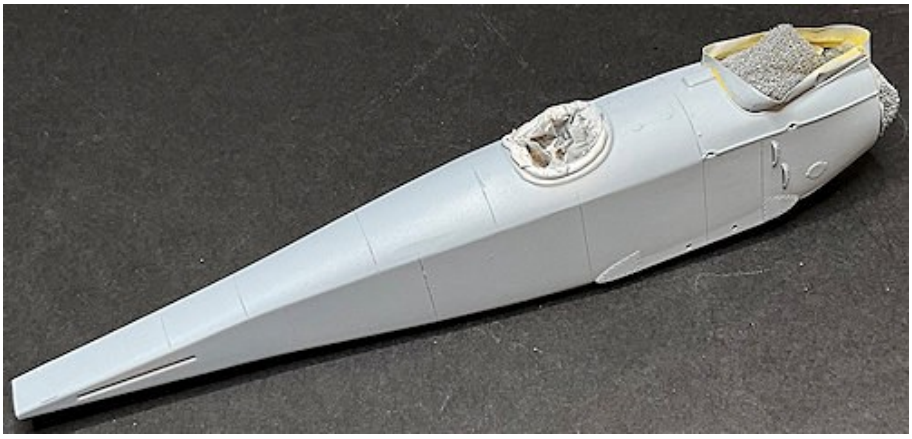
Apply thin CA adhesive along the fuselage joints.

Once the adhesive has set, remove the masking tape and apply thin CA adhesive along the fuselage joints to bond the fuselage together.

Sand across the fuselage joints to blend the surfaces together.

Check if there are any obvious gaps along the fuselage joints. If so, fill with either 'Mr. Surfacer' 500 or 'Mr. Hobby' dissolved putty or similar. Once fully set, sand across the affected areas then re-check and repeat until a good joint is achieved.

As a final check, blank off the cockpit and engine bay area and airbrush a grey primer, such as 'AK Interactive' (AK758) or similar along the fuselage joints. This will show any remaining joint gaps or surface imperfections, which can then be addressed.



Temporarily fit the rudder onto the rear of the fin.

Position the fin onto the top, rear of the fuselage with the rear edge of the rudder aligned to the rear edge of the fuselage.

Mark the location of the two added support rods in the bottom of the fin to the centre line of the fuselage.

Point mark the location of the rods into the fuselage.

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

Using thin CA adhesive, secure the fin into the fuselage, making sure the fin is vertical when viewed from the rear.

Position the tail skid onto the bottom, rear of the fuselage with its front end aligned to the front end of the fin.

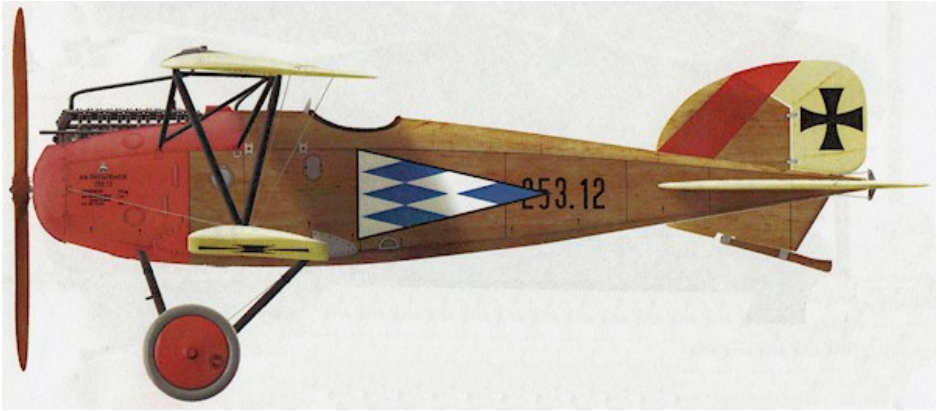
Mark the location of the two added support rods in the top edge of the tail skid to the centre line of the fuselage.

Point mark the location of the rods into the fuselage.

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

Using thin CA adhesive, secure the tail skid into the fuselage, making sure the tail skid is vertical when viewed from the rear.

Painting (continued):



NOTE: *Refer to the above illustration as a painting guide.*

Make sure the fuselage masking still in place.

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

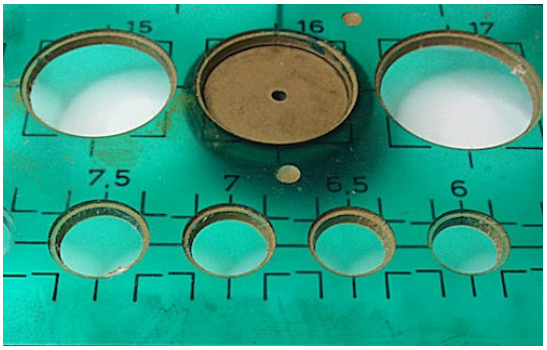
The fuselage, fin and tail skid.

The two wheels.

The nose cowl.

Mask off the fuselage, leaving just the forward red area exposed.

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



Airbrush the wheel inner and outer wheel covers with ‘Tamiya’ Red (XF7) and Black (XF1) to a ratio of approximately 85/15%.

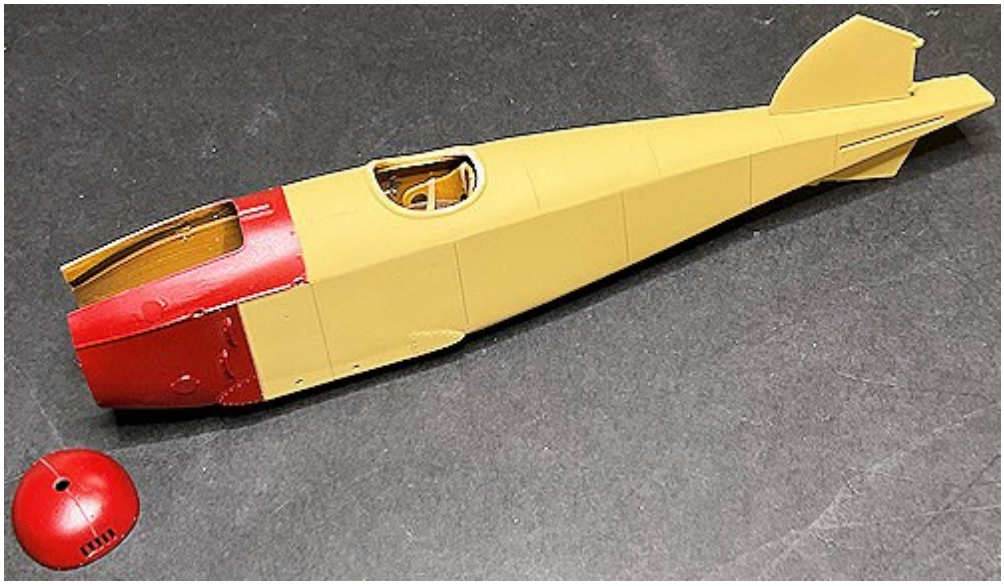
Airbrush the forward exposed area of the fuselage and the nose cowl with ‘Tamiya’ Red (XF7) and Black (XF1) to a ratio of approximately 85/15%.

Remove the fuselage masking for the forward red area, leaving the cockpit masked off.

Mask off the forward red painted area of the fuselage.

Airbrush the exposed fuselage, fin and tail skid with ’Tamiya’ Dark Yellow (XF60) or similar.

Remove the cockpit masking, leaving the red area masking in place.



Wood effects:

NOTE: *Refer to **Method 2** in **Part 5 (Wood Effects)** of this build log for more information. Refer to the previous illustration for the wood painted areas of the fuselage (fuselage, fin and tail skid). I chose to use Windsor & Newton’ **Raw Sienna** Griffin (Alkyd) oil paint.*

To create different wood grain effect to individual panels, apply the oil paint in one of two methods:

> Mask around alternate individual fuselage panels, apply the wood effect then leave to fully dry. Then remove masking and mask off the painted panels and apply the wood effect to the remaining panels.
>
> Apply the wood effect to the entire fuselage, brushing each panel slightly different to adjacent panels.

Remove all fuselage masking and allow the oil painted surfaces to fully dry.

Modifications (continued):

Fuselage panel nails:

NOTE: *The plywood panels covering the fuselage, fin and tail skid were fastened to the internal structures using nails. The supplied kit does not have the nails molded into the model. Although not strictly accurate, I represented the nailing of the panels, using a ‘Rosie the Riveter’ 1.0 mm 1/32nd scale riveting tool. The applied nail lines are based on photographs from:*

> Vintage Aviator Ltd
>
> *https://jamesfahey.smugmug.com/*
>
> Koloman Mayrhofer reproduction
>
> *https://www.youtube.com/watch?v=frvYnELUh44*

Referring to the previously listed online data, I scribed in the various nail lines, using strips of masking tape as guides to maintain straight lines.

NOTE: *Refer to **Part 6 (Weathering)** of this build log for more information.*

I brush applied ‘Flory Models’ Dark Dirt fine clay wash along each of the nail lines. Once dry, the excess was removed with a moistened piece of absorbent kitchen roll.

Seal and protect the oil painted surfaces by airbrushing with a semi-gloss clear coat, such as ‘Tamiya’ Semi-Gloss (X35) or similar.

NOTE: *Refer to Page 7 of the kit instruction manual for the relevant photo-etch parts required for the fuselage.*

To key applied paints, lightly sand the relevant parts on the kit supplied photo-etch sheet.

Remove the relevant parts from the photo-etch sheet and cut away and tags of metal from their edges.

Temporarily stick the relevant parts, visible sides uppermost, onto strips of masking tape or similar.

Brush ‘VMS’ Metal prep 4K or similar over the sides of the parts that will be visible when they are fitted to the fuselage.

Allow at least 30 minutes for the solution to fully dry.

Airbrush all of the parts with ‘MRP’ Black night camouflage WW1 (MRP-255) or similar.

Remove from the tape all parts that should remain black.

Airbrush the remaining parts with ‘Alclad’ Duraluminium (ALC-102) or similar.

Carefully scrape away any paints from the two gun access panels forward from the cockpit and from the rear plates of the lower wings, located on the bottom edge of the fuselage.

Mask off the areas surrounding the access panels and plates.

Airbrush the panels and plates with ‘MRP’ Black night camouflage WW1 (MRP-255) or similar.

Airbrush the panels and plates with ‘Alclad’ Duraluminium (ALC-102) or similar.

Remove all masking.

Brush paint the cockpit surround padding with ‘Humbrol’ Leather (62) or similar.

Assembly (continued):

NOTE: *This part of the fuselage build concerns fitting of the various kit supplied fuselage photo-etch parts. Refer to **Page 7** and **Page 13** of the kit instruction manual for the location of the various photo-etch parts.*

Make sure all paint is removed from the fuselage location contact points of the various parts. Use thin CA adhesive to secure the parts to the fuselage.

Points to note:

When fitting the under fuselage twin strap (Part 25), I found it was too wide and did not position correctly over the two landing gear locating holes. Therefore, I cut one of the end flanges off, secured that to the model, the trimmed the length of the two straps until it could be fitted over its landing gear locating hole with the strap ends against the fitted flange.

When locating the rigging anchors (Part 26) onto the fuselage - Insert the wing with the fitted support rods fully into the fuselage. Lightly mark the fuselage at the top of the wing and below the fuselage rear cabane strut locating hole. Withdraw the wing and using a slow setting CA adhesive, position the part on the fuselage with the four rings just above the top surface of the wing. Check by fully inserting the wing into the fuselage and adjust the position of the part before the adhesive sets. With the wing still inserted into the fuselage, fully locate the opposite wing and repeat the procedure then remove the wings from the fuselage.

The four fuselage brackets (Part10) need to be slightly bent to allow them to fit over the edge of the fuselage.

The loop on the forward anchor points (Part 13) should be slightly bent outwards before fitting.

The two under fuselage access hatches (Part 16) should be slightly curved to allow the to fit the curve of the fuselage underside.

When fitting fuselage brackets (Part 11 and 12), make sure they do not cover the locating holes for the fuselage cabane struts.

NOTE: *Refer to **Part 6 (Weathering)** of this build log for more information.*

I brush applied ‘Flory Models’ Dark Dirt fine clay wash around the photo-etch parts and the painted cockpit surround padding. Once dry, the excess was removed with a moistened piece of absorbent kitchen roll.

NOTE: *Dry brush by using a domed and soft brush, which has been dipped in the paint. Dab the brush on an absorbent paper to remove the liquid paint, leaving paint pigment on the brush.*

Dry brush the leading edges of the round access hatches and the cooling louvres with ‘Mr. Color’ Super Iron 2 (203) or similar, to create worn metallic edges.

Seal and protect the fuselage, applied parts and weathering by airbrushing with a semi-gloss clear coat, such as ‘Tamiya’ Semi-Gloss (X35) or similar.

NOTE: *Make sure all paint is removed from mating surfaces. When locating the engine assembly into the fuselage, tip the front of the engine down and into the fuselage the level it and move it rearwards onto its locating points.*

Apply thin CA adhesive to the eight locating pads on the engine bearers in the fuselage.

Locate and secure the engine assembly into the fuselage.

Using thin CA adhesive, secure the nose cowl to the front of the fuselage.

Using thin CA adhesive, secure the six created exhaust pipes into their pre-drilled locating holes in the top, right side of the engine.

NOTE: *Refer to **Part 6 (Weathering)** of this build log for more information.*

I brush applied 'Flory Models' Dark Dirt fine clay wash over the nose cowl and once dry, the excess was removed with a moistened piece of absorbent kitchen roll.

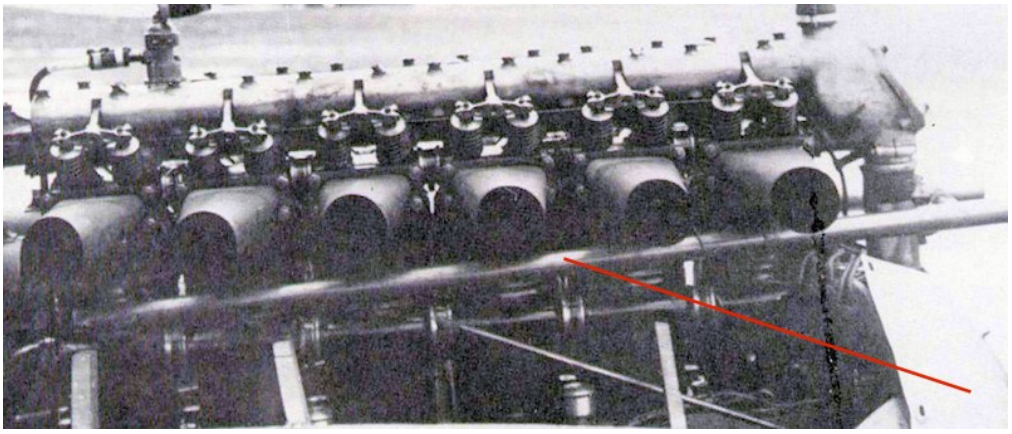
Seal and protect the nose cowl and weathering by airbrushing with a semi-gloss clear coat, such as 'Tamiya' Semi-Gloss (X35) or similar.

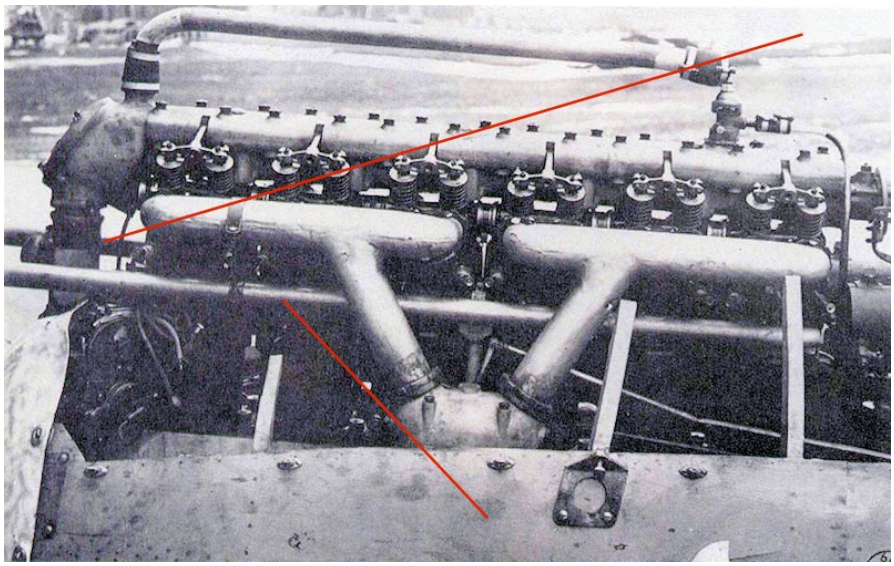
Lightly sponge 'Tamiya' Weathering Master Set B (Soot) around the open ends of the exhaust pipes.

Modifications (continued):

Gun blast tubes:

NOTE: *The kit supplied blast tubes for the two machine guns were previously removed, so now need to be added. The blast tubes were fitted over or under the carburettor induction manifolds and exhaust pipes, depending on whether the two machine guns were fitted low or high in the fuselage. The kit has the guns fitted low.*





Cut two lengths of 0.8 mm diameter Brass tube, such as ‘Albion Alloy’s (MBT08) or similar. The length of the tubes should such that when inserted under the carburettor induction manifolds and exhaust pipes and pushed back onto the front of the machine guns, the front of the tubes are parallel and protrude over the top of the nose cowl.

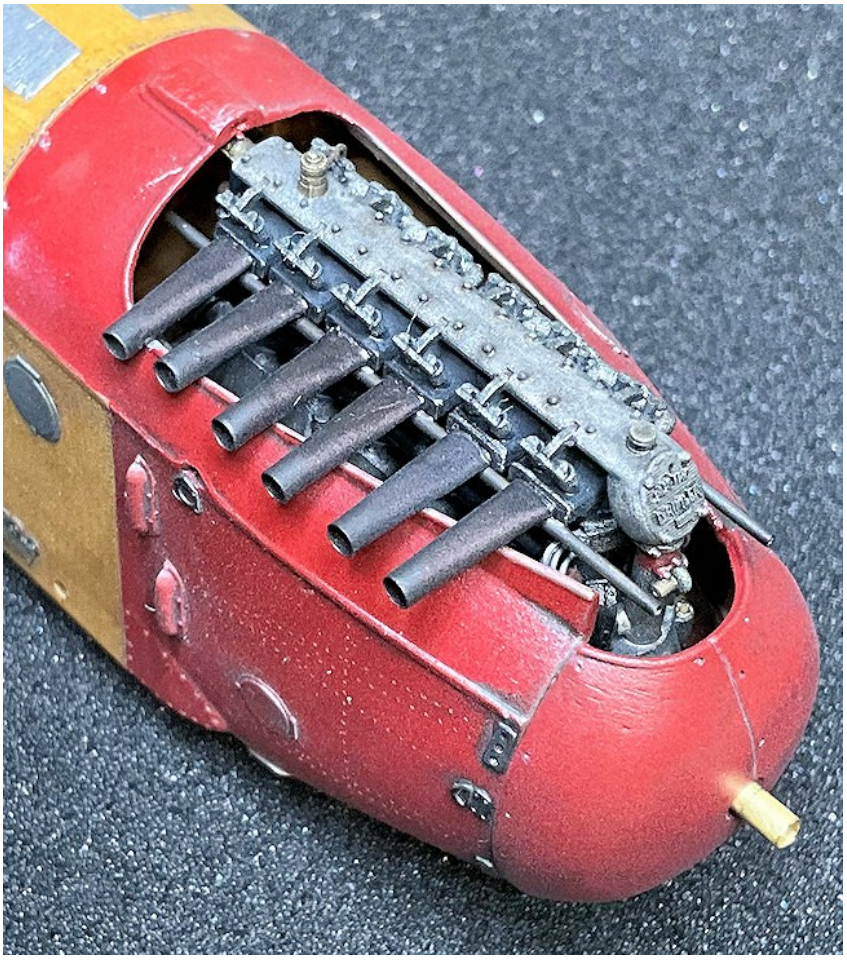
Immerse the two tubes into ‘Mig’ photoetch burnishing fluid (A.MIG-2021) or similar to darken the Brass surface.

Position a tube under the carburettor induction manifolds and against the front of the left machine gun.

Using thin CA adhesive, secure the tube to the induction manifolds.

Position the second tube under the exhaust pipes and against the front of the right machine gun.

Using thin CA adhesive, secure the tube to the induction manifolds.



Tail skid:

NOTE: *The kit supplied tail skid is intended to be butt jointed only onto the tail skid fairing. I chose to add rods to strengthen the joint.*

Drill holes of 0.5 mm diameter through the tail skid - one at the upper end and one midway along the skid.

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

Using thin CA adhesive, secure the rods into the drilled holes.

Offer up the tail skid to its location on the tail skid fairing.

Mark the position of the two added rods onto the bottom edge of the tail skid fairing.

Using the point marks as guides, drill holes of 0.6 mm diameter into the tail skid fairing.

Test fit the tail skid into the fairing, making sure the top of the skid fully contacts the fairing.

Painting (continued):

Wood effects:

NOTE: *Refer to **Method 2** in **Part 5 (Wood Effects)** of this build log for more information. I chose to use Windsor & Newton' **Burnt Umber** Griffin (Alkyd) oil paint.*

Apply the oil paint along the tail skid then allow the oil painted surfaces to fully dry.

Brush paint the metal skid shoe with 'Mr. Metal Color' Stainless Steel (213) or similar.

Brush paint the 'bungee' type suspension cord (at the top end of the tail skid) with 'Tamiya' Buff (XF57) or similar.

Lightly brush 'AK Interactive' Kerosene (AK-2039) over the painted 'bungee' cords.

Assembly (continued):

Using thin CA adhesive, secure the tail skid into the tail skid fairing.

PART 15
EXTERNAL CONSTRUCTION

PART 15 - EXTERNAL CONSTRUCTION

References:

‘Windsock’ Data File No:19 - Albatros D.III (Oef) (P.M. Grosz).
‘Windsock’ Data File 1 - Albatros D.III (Ray Rimmel).
‘Flying Machines RU’ - https://flyingmachines.ru
‘Lukgraph’ Instruction notes.

NOTE: *Working with model parts made in any form of resin is hazardous to health, especially when for example, sanding or drilling resin, when small airborne particles can be inhaled. Refer to Part 7 (Resin) of this build log. Due to the fragility of resins used in 3D printing, printed parts should be handled with care.*

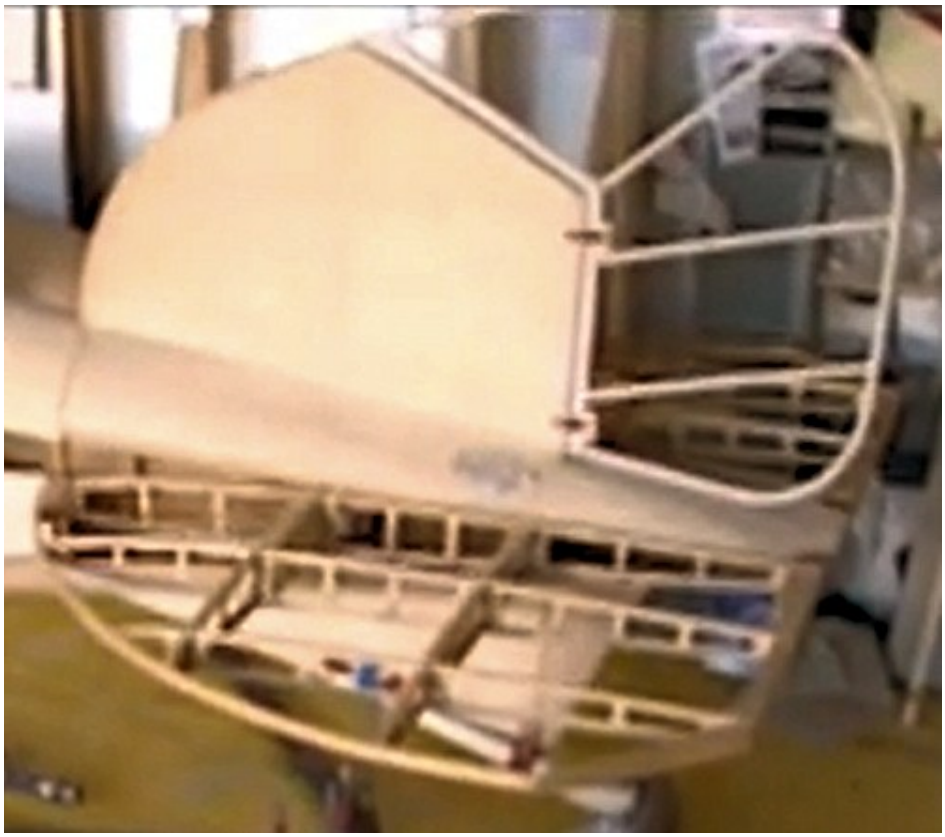
Painting:

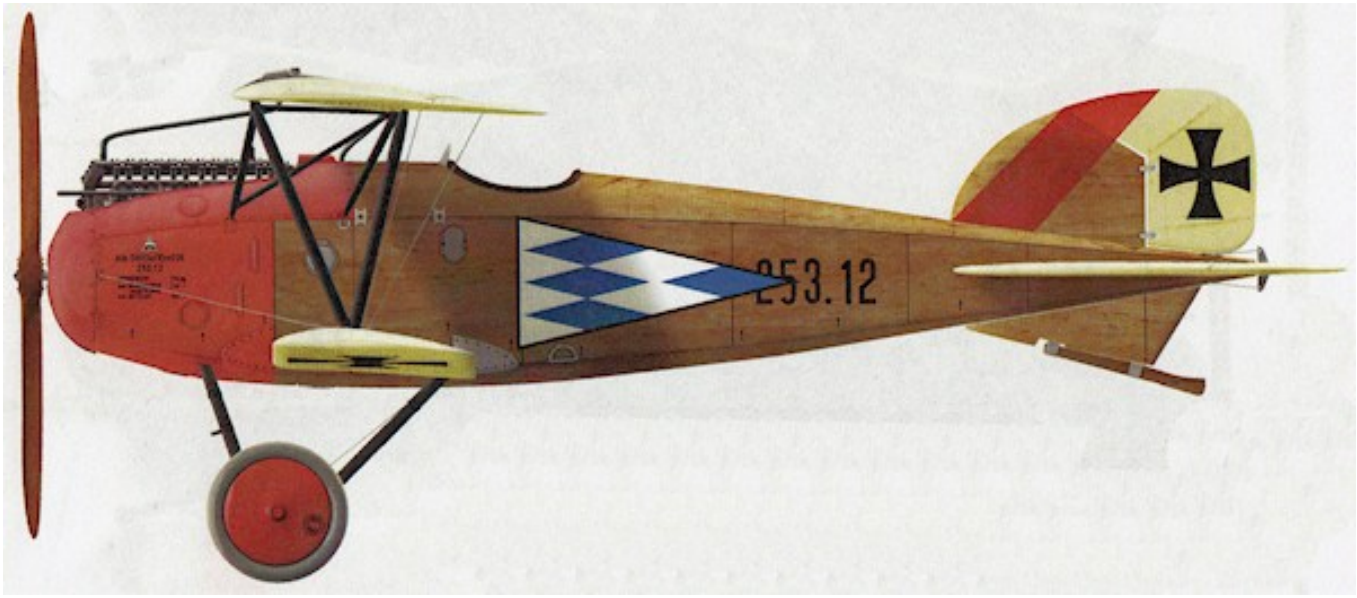
Airbrush the following with a grey primer, such as ‘AK Interactive’ Grey (AK758) or similar:

Upper wing.
Lower wings.
Ailerons.
Tailplanes.
Elevator.
Rudder.
Landing gear assembly.
Cabane and Interplane ‘V’ struts.

Airbrush the following with ’MRP’ Night Camouflage WW1 (MRP-255) or similar:

Fuselage cabane struts.
Interplane ’V’ struts.
Landing gear assembly.




253.12

Airbrush ‘MRP’ Khaki Green 3/G3 (MRP-333) or similar over both sides of the following:

Upper wing.

Lower wings.

Tailplanes.

Elevator.

Rudder.

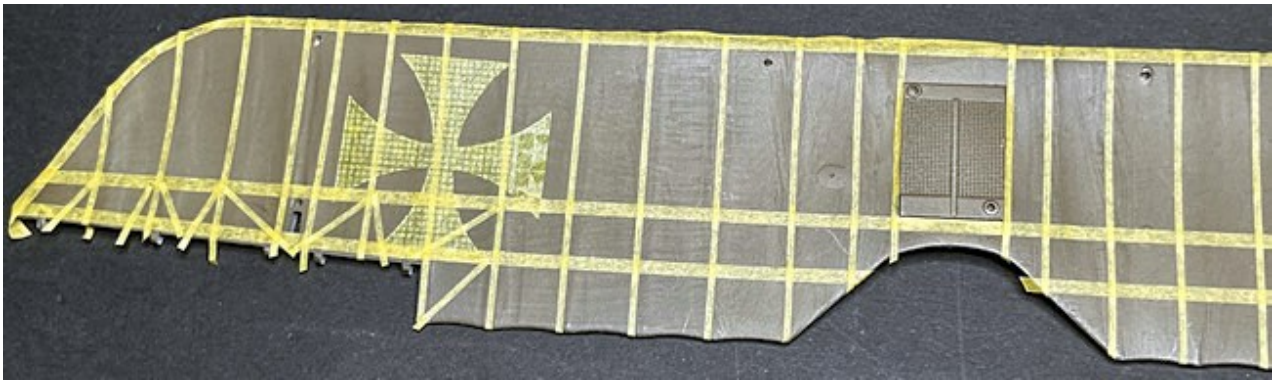
NOTE: *The previous photographs show the internal structure of the wings and tail unit of the aircraft that were created by Koloman Mayrhofer during the build of the reproduction aircraft. The previous illustrations show the location of the wing and fuselage markings. Both can be used as a guide for painting the internal structures and markings.*

Upper wing - underside surface:

NOTE: *National markings applied to the top surface of the upper wing on Clear Doped Linen (CDL) will show through the underside of the wing as faded markings. This is due to sunlight penetrating through the CDL covered wing to show ’shadows of the internal structures and National markings.*

Position the two upper wing crosses that were removed from the masking sheet onto the underside of the upper wing

Using 1.0, 2.0 and 3.0 mm width strips of masking tape, mask off the internal structure on the underside surface of the upper wing.

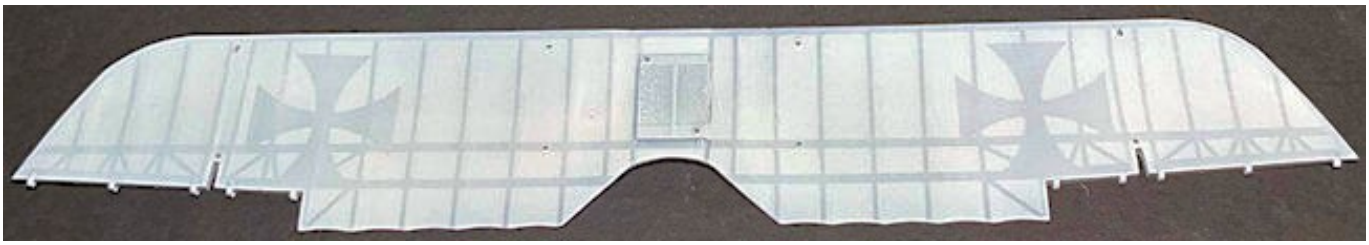


Lightly airbrush the surface with coats of ‘MRP’ Clear Doped Linen (MRP-256) or similar, to partially fade the exposed painted surface.

Remove the masking.

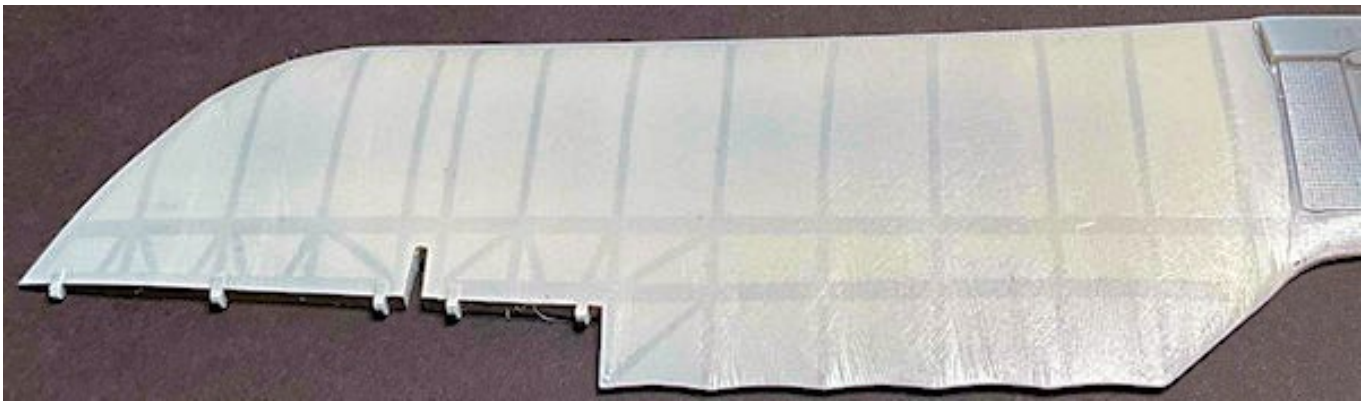
Lightly airbrush over the surface with ‘MRP’ Clear Doped Linen (MRP-256) or similar to fade back the now exposed structures and the surfaces between. Airbrush light coats allowing the paint to dry between coats until the structures and National markings have faded back to the intensity shown below.

Check that the painted surface is smooth and free of any surface imperfections. If necessary, lightly sand the surface to achieve a smooth finish.



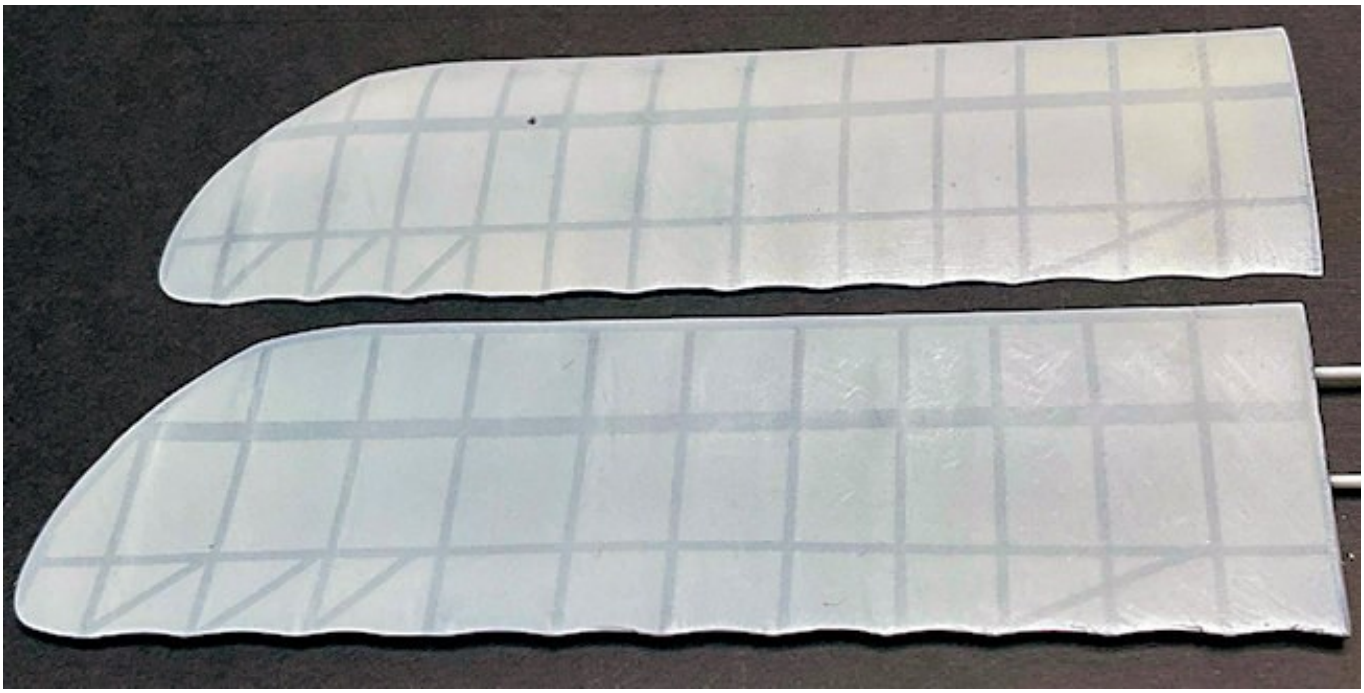
Upper wing - top surface:

Repeat the previous procedure on the top surface of the upper wing, but without adding the National markings, which will be painted later in this build.



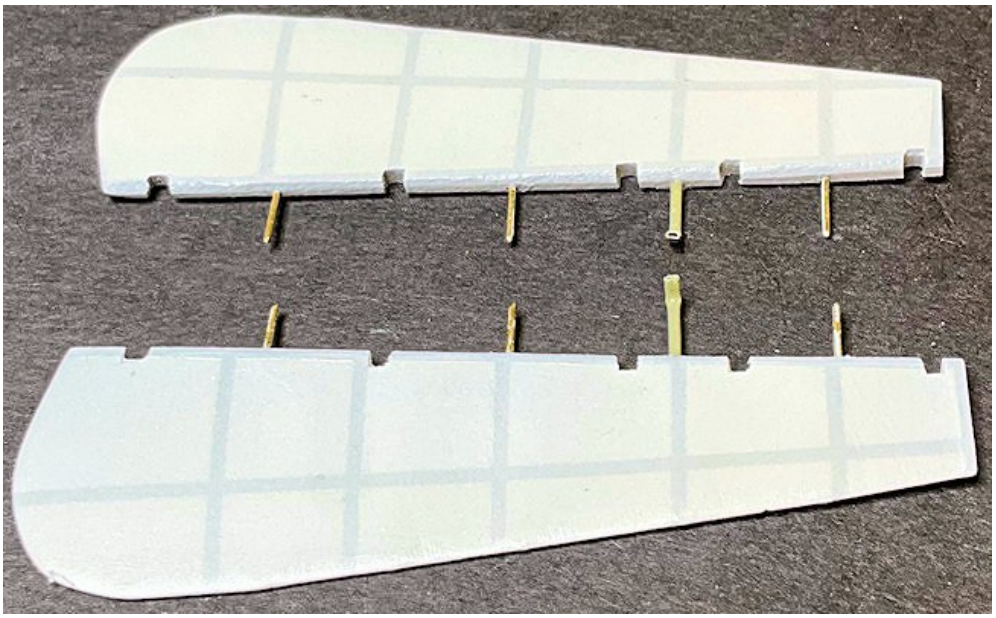
Lower wings:

Repeat the previous procedure on the top and underside surfaces of the lower wings, but without adding the National markings, which will be painted later in this build.



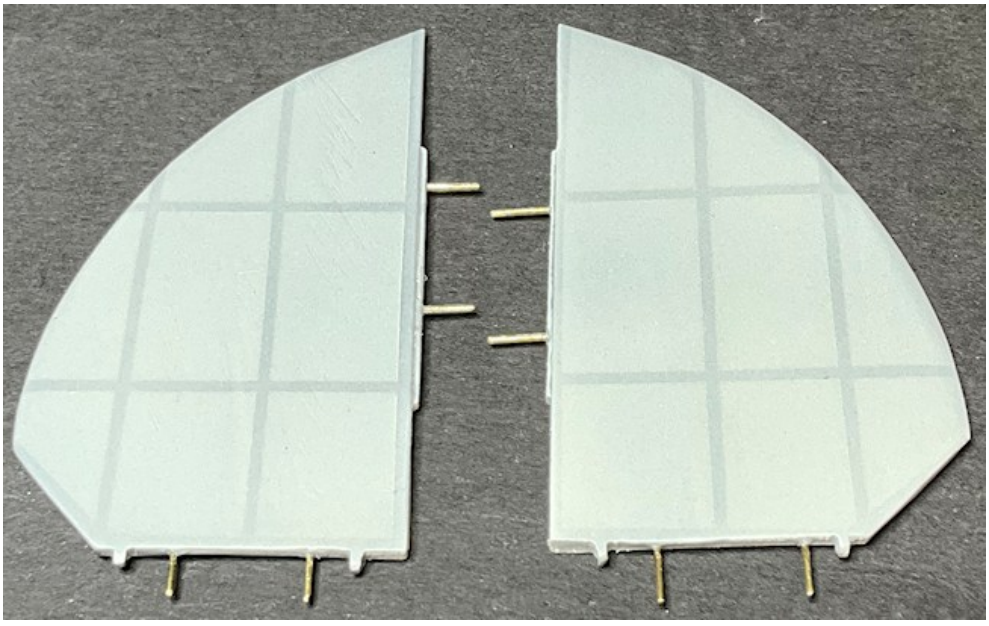
Ailerons:

Repeat the previous procedure on the top and underside surfaces of the two ailerons, using 1.0 mm wide strips of masking tape.



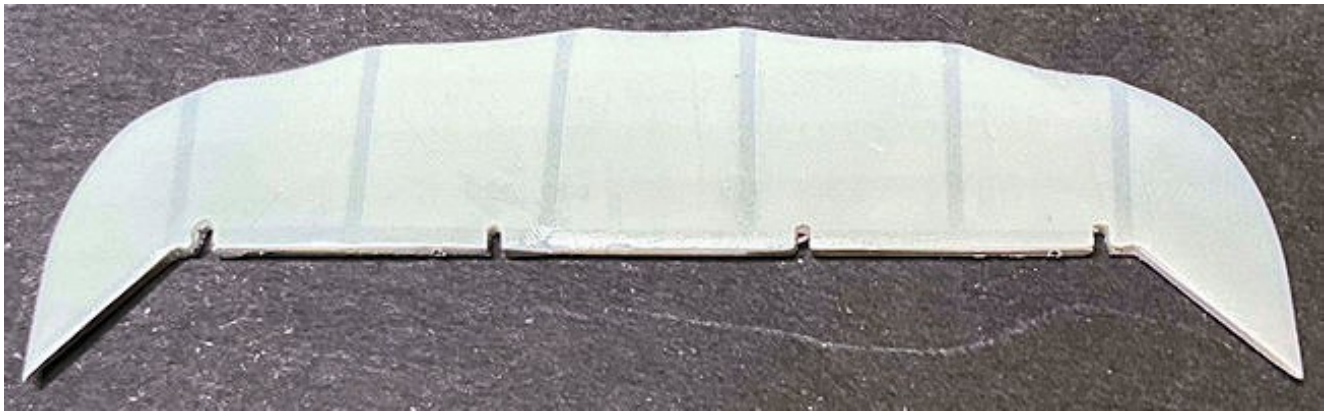
Tailplanes:

Repeat the previous procedure on the top and underside surfaces of the two tailplanes, using 1.0 mm wide strips of masking tape.



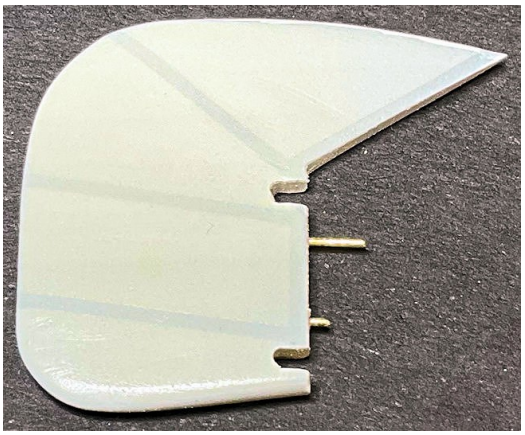
Elevator:

Repeat the previous procedure on the top and underside surfaces of the elevator, using 1.0 mm wide strips of masking tape.



Rudder:

Repeat the previous procedure on both sides of the rudder, using 1.0 mm wide strips of masking tape.



Surface finish:

To prepare a good, smooth surface for decal application, airbrush the surfaces of the following with a clear, gloss coat, such as 'MRP' Super Clear Gloss Varnish (MRP-048) or similar.

Wings.
Ailerons.
Tailplanes.
Elevator.
Rudder.

Photo-etch parts:

NOTE: *The photo-etch parts required for the upper and lower wings are detailed on pages 9 and 10 of the kit Instructions:*

Lower wing access panels - 22 x2, 23 x2, 24 x2.
Upper wing radiator brackets - 29 x 2.

To key applied paints, lightly sand the relevant parts on the kit supplied photo-etch sheet.

Remove the relevant parts from the photo-etch sheet and cut away and tags of metal from their edges.

Temporarily stick the relevant parts, visible sides uppermost, onto strips of masking tape or similar.

Brush 'VMS' Metal prep 4K or similar over the sides of the parts that will be visible when they are fitted to the fuselage.

Allow at least 30 minutes for the solution to fully dry.

Airbrush all of the parts with 'Alclad' Duraluminium (ALC-120) or similar.

Decals:

NOTE: *Refer to Part 7 (Decals) of this build log for more information on applying these decals. These 'Aviattic' decals are not 'cookie cut' (pre-shaped), but are supplied as A4 sheets. Therefore, care is required to ensure the decals are cut out accurately to fit the various areas of the model. Make sure you cut away the white border around the decal sheet before cutting out the decals, otherwise the cut decals may include parts of the white borders.*

Application:

Make sure you trace the decal outlines onto the **rear surface** of the decal sheet. Don't apply too much pressure when outlining out the decals, otherwise the outline may show through on the printed decal surface.

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

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

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

Wet the model surface with clean water.

NOTE: *Apply the upper surface decals first followed by the underside decals. Make sure the edges of the decals do not overlap, as this will 'double' the decal and will show as being darker.*

Soak the decal in the prepared decal water for around 30 seconds or long enough to be able to move the decal on its backing sheet.

Lift the decal on its backing sheet from the water.

NOTE: *Make sure the decal does not fold over on itself, as it will be difficult to separate a fold once out of the water.*

Carefully slide the decal off one end of the backing paper and position the decal end onto the model and holding that end, slide out the backing paper to locate the remainder of the decal onto the model surface.

Position the decal correctly on the model surface.

Using a soft and wide brush, smooth out the decal, removing any residual water from underneath and smoothing the decal onto the surface. Continue this along the length of the decal, taking care not to touch the decal surfaces with your fingers, as this will cause ripples in the decal. If you must touch the decal, wet your fingers first.

Once the decal is smoothed down onto the model surface, apply pressure across the decal with a soft and dry tissue paper or cotton bud. This will expel any remaining water and press the decal onto the model surface. Check over the decal to make sure there are no tears, folds or trapped air bubbles, which need to be rectified before the decal sets.

Once the decals have set and if necessary, apply 'MicroSol' or similar decal solution around any lifted edges of the decals. Where decals cover location holes or other openings, such as wing strut location holes, aileron pulley apertures, prick or cut through the decal into the hole or opening then lightly 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. Applying too much X20A can melt and damage the decal.

Allow these decals to fully set.

Upper wing:

NOTE: *Due to the width of the upper wing, it is advisable to cut two separate decals that join at the centre line of the wing. The decals to be applied to the linen covered areas of the model will be cut from* ***'Aviattic' Off White on Linen (ATT32241)*** *decal sheets.*

Lay the top surface of the upper wing onto the rear of the decal sheet and lightly trace the outline of the left then the right sides of the wing. Make sure you roll the wing from leading to trailing edge, to allow for the curvature of the wing surface.

Carefully cut out the decals from the sheet.

Check the decals against the wing to make sure they will fit and align correctly to the wing edges.

Using the previously described application procedure, apply the decals to the wing.

Repeat the procedure to apply decals to the underside of the upper wing.

Lower wings:

NOTE: *The decals for the lower wings can be cut as single decals.*

Repeat the procedure to apply decals to both sides of the following:

Lower wings, Tailplanes, Ailerons, Elevator, Rudder.

Wing and rudder markings:

NOTE: *The decals supplied with the kit are translucent. When applied the painted surface detail on the model may show through the decal. To avoid this I chose to use masks to airbrush the wing and rudder crosses.*

To create the masks I first scanned the kit decals then sized them in Paint Shop Pro on my PC.

These were then cut on ‘Tamiya’ masking sheet, using my ‘Cricut’ Air 2 craft cutter machine.

The markings themselves were then carefully removed from the sheet, leaving the marking openings in the sheet.

Position the large crosses onto the top surface of the upper wing.

Position the medium size crosses onto the underside surface of the lower wings.

Position the small crosses onto both sides of the rudder.

Add extra masking around the edges of the masks, to avoid overspray.

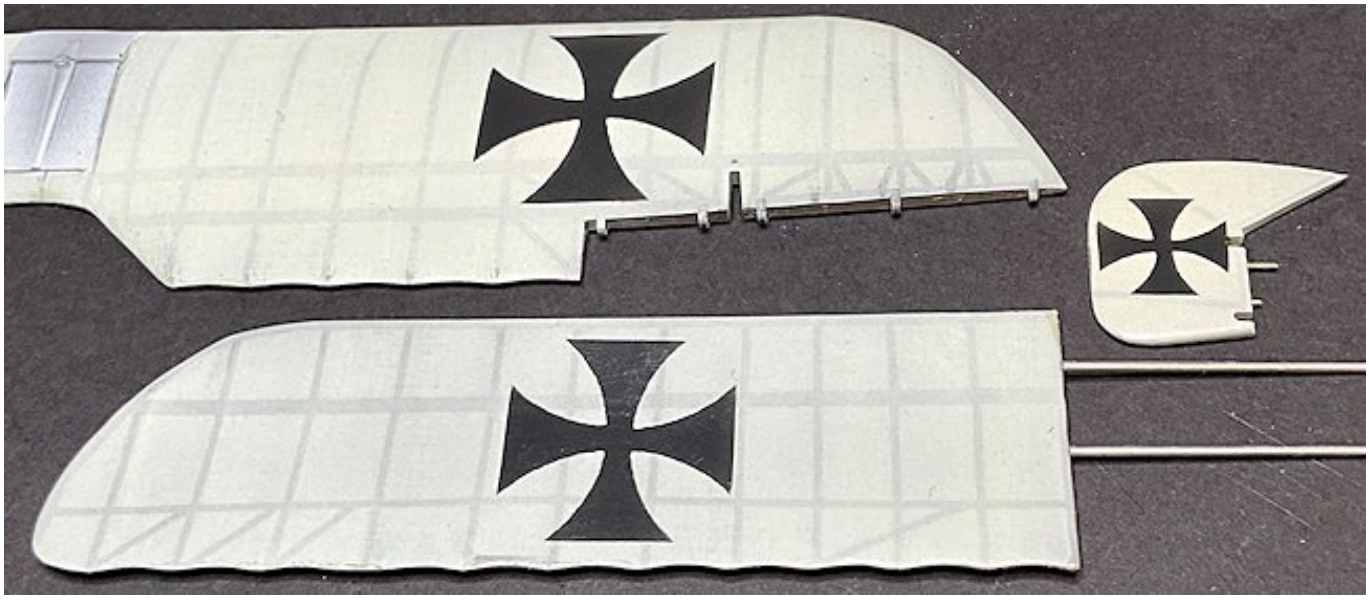
Airbrush a light ‘gripper’ coat of ’MRP’ Night Camouflage WW1 (MRP-255) or similar over the masks.

Airbrush ’MRP’ Night Camouflage WW1 (MRP-255) or similar over the masks.

Remove the masking and the masks.

Sealing:

To protect and seal the applied decals and provide a good weathering surface, airbrush them with a semi-matte clear coat, such as ‘Tamiya’ Semi-Gloss (X35) or similar.



Handling parts:

Even when applied and sealed, the decals can easily be damaged if handled roughly or scraped with a sharp edge. Once decals have been applied, I use either lint free cotton or rubber surgical gloves when handling those surfaces.

Modifications:

Landing gear suspension cords:

NOTE: *Although the landing gear has the 'bungee' type suspension cords added, they can be enhanced by using 'EZ' stretch line (White heavy).*

Cut a long length of the 'EZ' line.

Using thin CA adhesive, secure one end of the line onto the underside of the landing gear cords on one side of the axle.

Wrap the line up and across over the axle and down the opposite side.

Continue to wrap the line diagonally around the axle to cover the landing gear cords, securing at points using thin CA adhesive.

Cut the excess of the line away and secure the end of the line onto the wrapped lines using thin CA adhesive.
Repeat the procedure to cover the cords on the opposite end of the axle.

Brush 'AK Interactive' Kerosene wash over the cords.

Assembly (continued):

NOTE: *Make sure all paints etc are removed from the mating surfaces of the parts.*

Using thin CA adhesive, secure the rudder in position on the trailing edge of the fin.

Painting (continued):

Fin and rudder stripe:

Refer to the previous colour illustration of the fuselage and mask off the fuselage, fin and rudder to leave just the red stripe area exposed.

Airbrush the exposed area of the fin and rudder with 'Tamiya' Red (XF7) and Black (XF1) to a ratio of approximately 85/15%.

Remove all of the masking.

Assembly (continued):

Wing photo-etch parts:

NOTE: *Make sure all paints etc are removed from the mating surfaces of the parts. The photo-etch parts required for the upper and lower wings are detailed on pages 9 and 10 of the kit Instructions:*

Lower wing access panels - 22 x2, 23 x2, 24 x2.

Upper wing radiator brackets - 29 x 2.

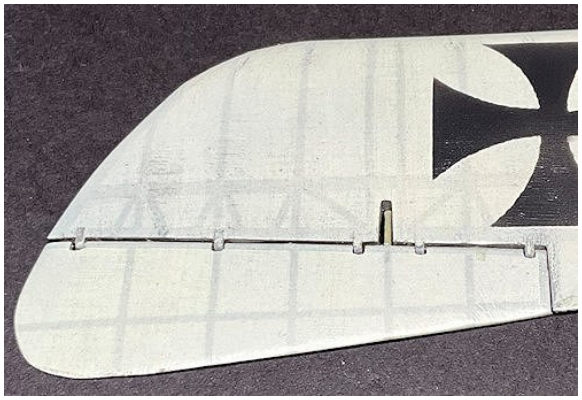
Using thin CA adhesive, secure the photo-etch parts to the underside of the lower wings.

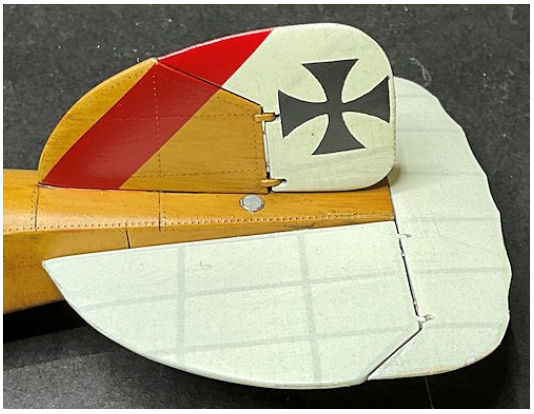
Using thin CA adhesive, secure two radiator brackets to the top and underside of the upper wing.

Using thin CA adhesive, secure the two tailplanes fully into their locating slots in the fuselage rear sides, making sure they are horizontal to the fuselage when viewed from the front or rear.

Temporarily fit the elevator to the tailplanes to check they are all aligned.

Using thin CA adhesive, secure the two ailerons fully onto the trailing edge of the upper wing.





Weathering:

NOTE: *Refer to **Part 6 (Weathering)** of this build log for more information.*

Brush 'Flory Models' Dark Dirt fine clay wash over the upper and lower wings and once dry, remove the excess with a moistened piece of absorbent kitchen roll.

Brush 'AK Interactive' Kerosene wash over both sides of the radiator in the upper wing.

Seal and protect the applied weathering by airbrushing with a semi-gloss clear coat, such as 'Tamiya' Semi-Gloss (X35) or similar.

Pre-rigging:

NOTE: *Refer to Part 9 (Rigging) of this build log for more information. **Refer to Pre-rigging (continued)** to see **where the pre-rigged locations and fittings are located**.*

Inner flying wires:

NOTE: *The two inner flying wires at both lower wings attach to the fuselage through the two inner holes in the fuselage anchor plates.*

Drill a hole of 0.4 mm diameter into the fuselage in the two inner holes of the fitted rigging bracket at the fuselage lower to wing joint. The holes need to be angled to align with the tops of the fuselage cabane struts when fitted.

Drill a hole of 0.3 mm diameter into, **but not through**, the underside of the upper wing outboard from the locating holes for the fuselage cabane struts.

Outer flying wires:

NOTE: *The two outer flying wires at both lower wings attach to the fuselage through the two outer holes in the fuselage anchor plates.*

Drill a hole of 0.3 mm diameter into the fuselage in the two outer holes of the fitted rigging bracket at the fuselage lower to wing joint. The holes need to be angled to align with the tops of the interplane 'V' struts when fitted.

Drill a hole of 0.4 mm diameter into, **but not through**, the underside of the upper wing inboard from the upper wing locating holes for the interplane 'V' struts.

Landing wires:

Drill two holes of 0.4 mm diameter into, **but not through**, the top surface of the lower wings, inboard from the wing locating holes for the interplane 'V' struts.

Drag wires:

Drill a hole of 0.3 mm diameter into, **but not through**, the top surface of the lower wings and forward from the locating hole for the wing interplane 'V' struts.

Aileron control cables:

Drill a hole of 0.3 mm diameter through both ailerons, midway rearwards and aligned to the added aileron operating levers.

Drill two holes of 0.3 mm diameter into, **but not through**, the top surface of the lower wings, outboard and rearwards from the locating holes for the interplane 'V' struts.

Elevator control cables:

NOTE: *The photo-etch parts control horns (28 x 4) for the elevator are detailed on page 8 of the kit instructions.*

Drill a hole of 0.3 mm diameter at a shallow rearward angle into the four elevator cable outlets in the top and underside of the fuselage, each side of the fin.

Temporarily fit the elevator onto the trailing edge of the tailplanes and mark the leading edge inline with the elevator cable holes in the fuselage.

Remove the elevator.

Using a sharp modelling chisel press into the elevator marks to create locating grooves for the elevator control horns (photo-etch parts28).

Using thin CA adhesive, secure the control horns firmly into the created grooves.

Brush paint the control horns with 'Tamiya' Grey Green (XF73) or similar.

Landing gear bracing wires:

Drill a hole of 0.3 mm diameter through the outer ends of the landing gear axle fairing.

Drill a hole of 0.4 mm diameter into the underside of the fuselage inboard from the locating holes for the landing gear rear struts. The holes need to be angled to align with the holes drilled in the landing gear axle fairing when the landing gear assembly is fitted.

Assembly (continued):

NOTE: *Make sure all paints etc are removed from the mating surfaces of the parts.*

Using thin CA adhesive, secure the elevator fully onto the trailing edge of the tailplanes.

Using thin CA adhesive, secure the lower wing with the fitted support rods fully into the locating holes in the fuselage, making sure the wing tip is elevated by approximately 2 degrees (required dihedral).

Using thin CA adhesive, secure the opposite lower wing fully onto the exposed support rods, making sure the wing tip is also elevated by approximately 2 degrees (required dihedral).

Using thin CA adhesive, secure the

Pre-rigging (continued):

Example:

NOTE: *Control cables are created using 0.4 mm diameter tube and 0.08 mm diameter mono-filament. Rigging wires are created using 0.5 mm diameter tube and 0.12 mm diameter mono-filament.*

Brush paint the centre barrel of the turnbuckle with 'Mr. Metal Color' Copper (215) or similar.

Cut a longer than necessary length of the required mono-filament line.

Cut a short length of required blackened Brass tube

Pass one end of the line through the tube then then through the 'eye' end of the turnbuckle or rigging hole in the control horn or 'HGW' eyelet.

Loop the line back through the tube.

Slide the tube up to, **but not touching**, the ‘eye’ end of the turnbuckle or rigging hole in the control horn or anchor point.

Using thin CA adhesive, secure the lines in the tube end farthest from the ‘eye’ end of the turnbuckle or rigging hole in the control horn or anchor point.

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

If necessary, use a 0.3 mm diameter drill to clear any residual adhesive from the rigging hole in the ‘HGW’ eyelet.

Inner flying wires:

NOTE: *Refer to Part 9 (Rigging) of this build log for more information. The two inner flying wires at both lower wings attach to the fuselage through the two inner holes in the fuselage anchor plates.*

The materials used are:

‘Proper Plane’ 3D printed turnbuckles (RD-018),

‘HGW’ 1/32nd scale Spoke Eyelets (132129).

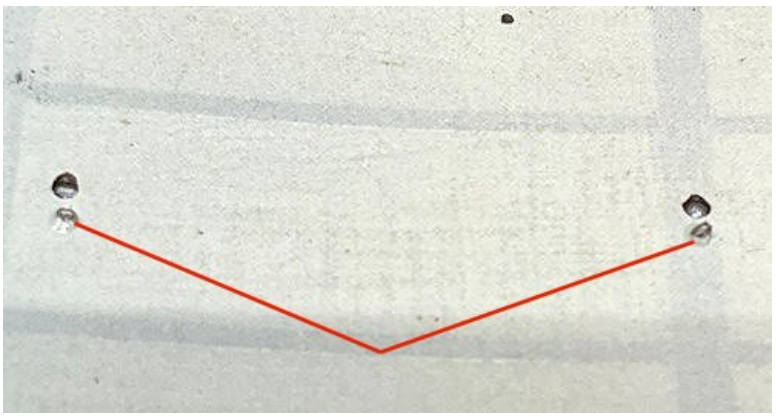
‘Steelon’ or ‘Stroft’ 0.12 mm diameter mono-filament

‘Albion Alloy’s’ 0.5 mm diameter (blackened) Brass tube.

Following the previous example, prepare four pre-rigged turnbuckle lines.

Using thin CA adhesive, secure the leg of the turnbuckles into the two inner holes in the fuselage anchor plates, making sure they are angled towards the tops of the fuselage cabane struts (when fitted).

Using thin CA adhesive, secure an eyelet into the pre-drilled holes in the underside of the upper wing, outboard from the locating holes for the fuselage cabane struts. The eyelets should be inline with the leading and trailing edges of the wing.



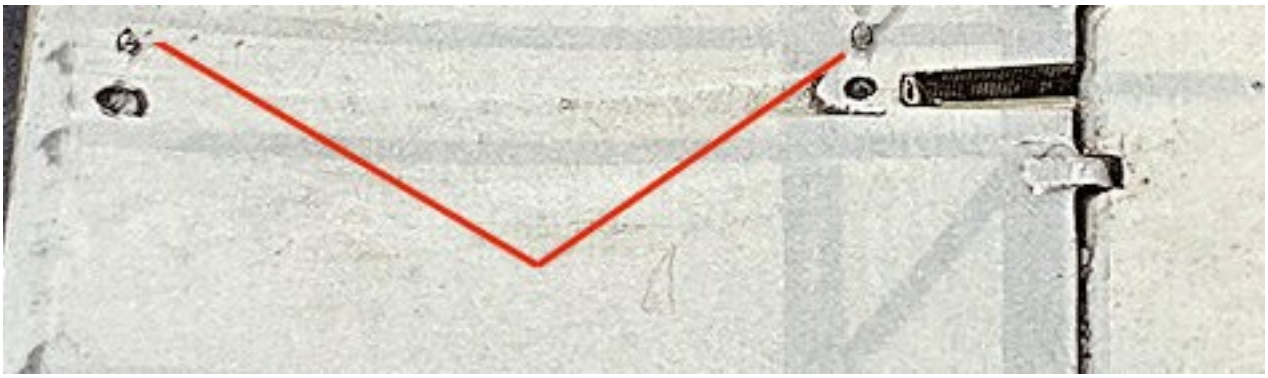
Outer flying wires:

NOTE: *The two outer flying wires at both lower wings attach to the fuselage through the two outer holes in the fuselage anchor plates.*

The materials used are:

HGW' 1/32nd scale Spoke Eyelets (132129).

Using thin CA adhesive, secure an eyelet into the pre-drilled holes in the underside of the upper wing, inboard from the locating holes for the interplane 'V' struts. The eyelets should be inline with the leading and trailing edges of the wing.



Landing wires:

NOTE: *The materials used are:*

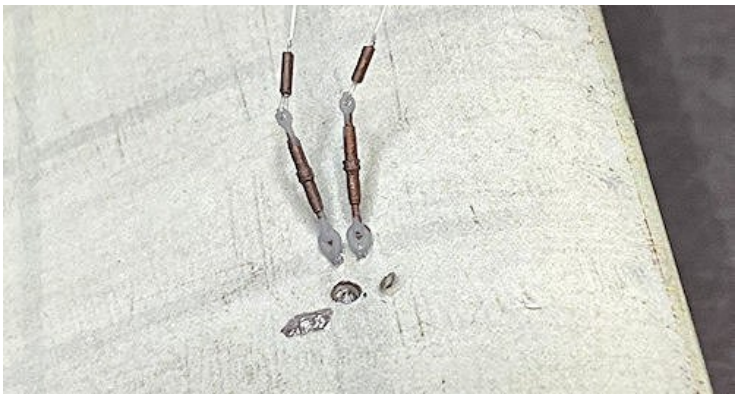
'Proper Plane' 3D printed turnbuckles (RD-018),

'Steelon' or 'Stroft' 0.12 mm diameter mono-filament

'Albion Alloy's' 0.5 mm diameter (blackened) Brass tube.

Following the previous example, prepare four pre-rigged turnbuckle lines.

Using thin CA adhesive, secure the leg of the turnbuckles into the pre-drilled holes in the top surface of the lower wings, inboard from the locating holes for the interplane 'V' struts. The turnbuckles should be angled towards the tops of the fuselage cabane struts (when fitted).



Drag wires:

NOTE: *The materials used are:*

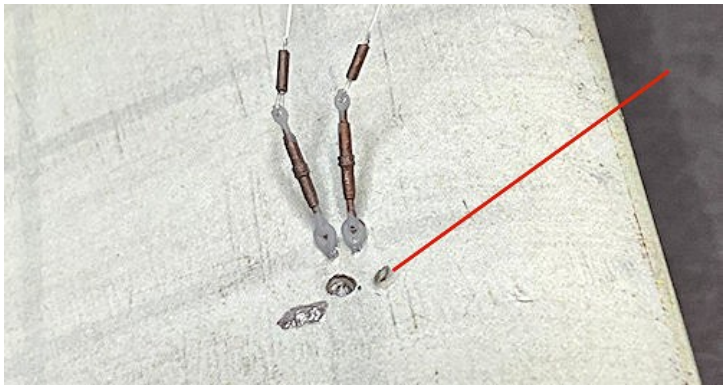
'Proper Plane' 3D printed turnbuckles (RD-005),

'HGW' 1/32nd scale Spoke Eyelets (132129).

'Steelon' or 'Stroft' 0.12 mm diameter mono-filament

'Albion Alloy's' 0.5 mm diameter (blackened) Brass tube.

Using thin CA adhesive, secure an eyelet into the pre-drilled holes in the top surface of the lower wings, forward from the locating holes for the interplane 'V' struts. The eyelets should be inline with the front of the fuselage.



Following the previous example, prepare two pre-rigged turnbuckle lines with a line attached to both ends of the turnbuckles.

Following the previous example, attach one line to the hole in the fitted photo-etch rigging plate, located at the rear edge of the fuselage nose cowl. Leave approximately 10.0 mm of line between the plate and the turnbuckle.

Landing gear bracing wires:

NOTE: *The materials used are:*

'Proper Plane' 3D printed turnbuckles (RD-018),

'Steelon' or 'Stroft' 0.12 mm diameter mono-filament

'Albion Alloy's' 0.4 and 0.5 mm diameter (blackened) Brass tube.

To add rigidity to the landing gear assembly, the bracing wires can be final rigged.

Following the previous example, prepare two pre-rigged turnbuckle lines.

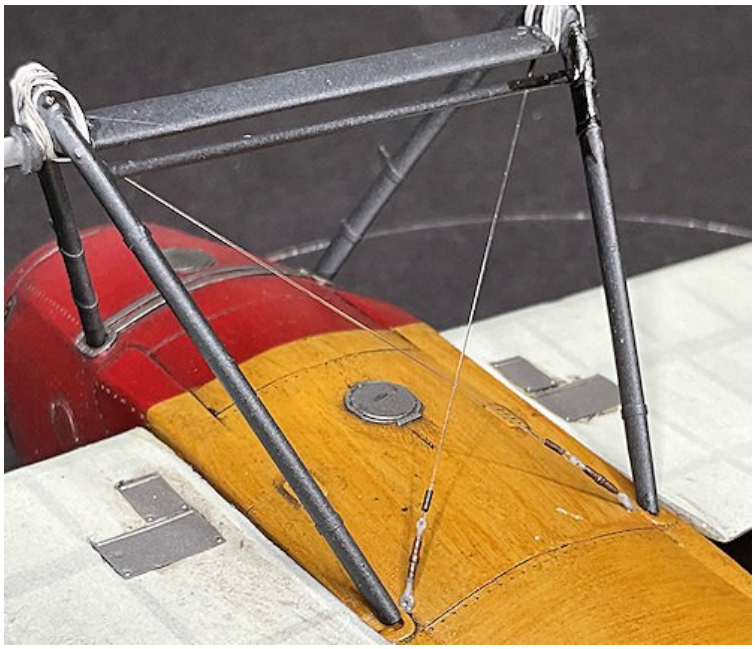
Using thin CA adhesive, secure the leg of the turnbuckles into the pre-drilled holes in the underside of the fuselage, inboard from the landing gear rear struts. The turnbuckles should be angled diagonally towards the pre-drilled holes in the axle fairing.

Slide a 0.4 mm tube onto both lines then pass the lines across and through the pre-drilled holes in the axle fairing.

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

Cut away any residual line at the under side of the axle fairing.

Slide the 0.4 mm tubes up to the top of the axle fairing and secure in position using thin CA adhesive.



Aileron control cables:

NOTE: *The materials used are:*

'Proper Plane' 3D printed turnbuckles (RD-005),
'Steelon' or 'Stroft' 0.08 mm diameter mono-filament
'Albion Alloy's' 0.4 mm diameter (blackened) Brass tube.

Following the previous example, prepare four pre-rigged turnbuckle lines with a line attached to both ends of the turnbuckles.

On two of the prepared lines, cut one of the lines short.

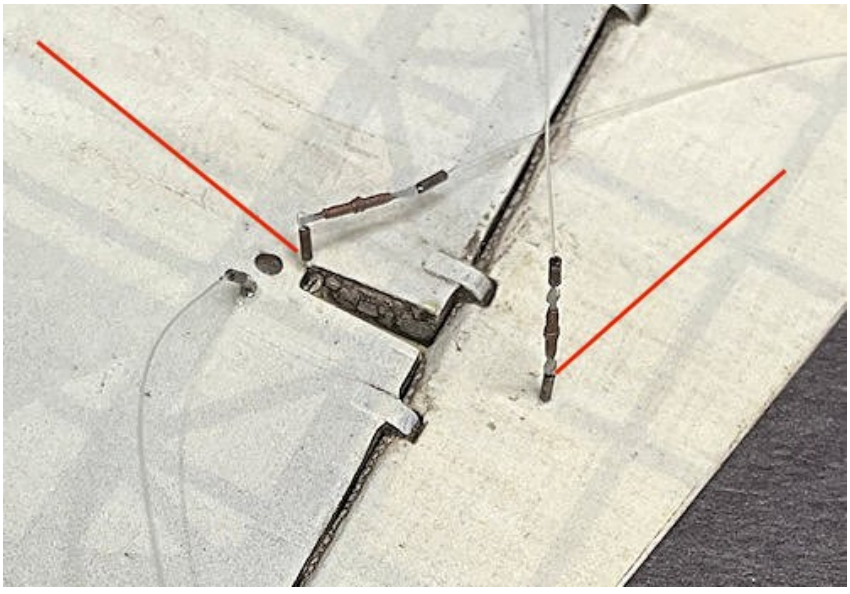
Using thin CA adhesive, secure the shortened lines into the open end of the added aileron control levers.

From the underside of the two ailerons, pass one line of the remaining two prepared lines through the pre-drilled hole in the ailerons.

Pull the lines to position the turnbuckle tube against the ailerons.

Using thin CA adhesive, secure the lines in the ailerons.

Cut away any residual protruding line at the top surface of the ailerons.



Assembly (continued):

NOTE: *Make sure all paints etc are removed from the mating surfaces of the parts.*

Using thin CA adhesive, secure the two wheels onto the ends of the landing gear axle, making sure the wheels are vertical when viewed from the front and parallel to the fuselage when viewed from above.

NOTE: *During the following steps, avoid over stressing the fuselage cabane struts and the interplane 'V' struts, as the resin material is easily broken if flexed too much.*

Lay the upper wing down with its underside facing up.

Using thin CA adhesive, secure the two fuselage cabane struts into their locating holes on the underside of the wing, making sure to not contaminate and pre-rigged lines and fittings.

Carefully locate the bottoms of the fuselage cabane struts into their locating holes in the upper edges of the fuselage.

Using thin CA adhesive, secure the bottoms of the fuselage cabane struts into their locating holes.

Fit an interplane 'V' strut into its locating holes in the underside of the upper wing and top surface of the lower wing, making sure the locating rods in the strut ends filly insert into the wings.

Using thin CA adhesive, secure the interplane 'V' strut into the wings.

Repeat the procedure to fit the opposite interplane 'V' strut.

Rigging - final tensioning:

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

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

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

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

Final rigging:

NOTE: *Refer to Part 9 (Rigging) of this build log for more information.*

Example:

NOTE: *Control cables are created using 0.4 mm diameter tube and 0.08 mm diameter mono-filament. Rigging wires are created using 0.5 mm diameter tube and 0.12 mm diameter mono-filament.*

Brush paint the centre barrel of the turnbuckle with 'Mr. Metal Color' Copper (215) or similar.

Cut a longer than necessary length of the required mono-filament line.

Cut a short length of required blackened Brass tube

Pass one end of the line through the tube then then through the 'eye' end of the turnbuckle or rigging hole in the control horn or 'HGW' eyelet.

Loop the line back through the tube.

Slide the tube up to, **but not touching**, the 'eye' end of the turnbuckle or rigging hole in the control horn or anchor point.

Using thin CA adhesive, secure the lines in the tube end farthest from the 'eye' end of the turnbuckle or rigging hole in the control horn or anchor point.

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

If necessary, use a 0.3 mm diameter drill to clear any residual adhesive from the rigging hole in the 'HGW' eyelet.

Inner flying wires:

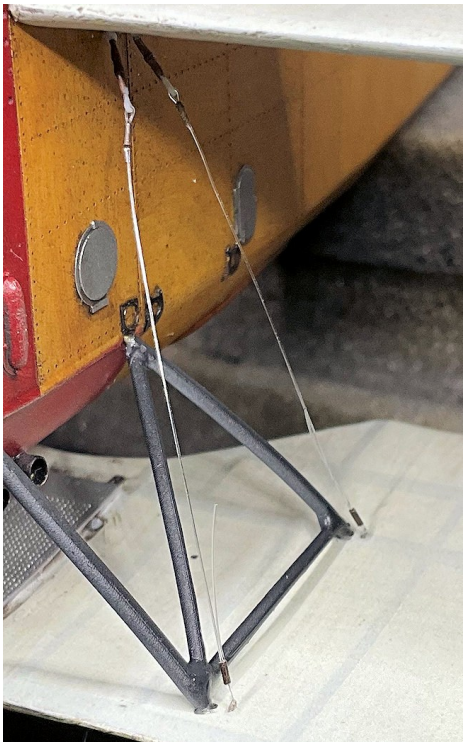
The materials used are:

'Steelon' or 'Stroft' 0.12 mm diameter mono-filament

'Albion Alloy's' 0.5 mm diameter (blackened) Brass tube.

Following the previous example, attach each inner flying wire to its fitted eyelet in the underside of the upper wing, outboard from the fuselage cane struts, making sure to keep the lines taut.

Do not secure the lines in the eyelets yet. This will be done after the landing wires are fitted as they share the same eyelets as the inner flying wires.



Outer flying wires:

The materials used are:

'Proper Plane' 3D printed turnbuckles (RD-005).

HGW' 1/32nd scale Spoke Eyelets (132129).

'Steelon' or 'Stroft' 0.12 mm diameter mono-filament

'Albion Alloy's' 0.5 mm diameter (blackened) Brass tube.

Following the previous example, prepare four pre-rigged turnbuckle lines with a line attached to both ends of the turnbuckles.

Pass one of the lines through the rigging hole in a fitted eyelet.

Loop the line back and through the rigging hole in the eyelet.

Tighten the line, making sure there is approximately 10 mm of exposed line between the turnbuckle and the eyelet.

Using thin CA adhesive, secure the line in the eyelet using thin CA adhesive.

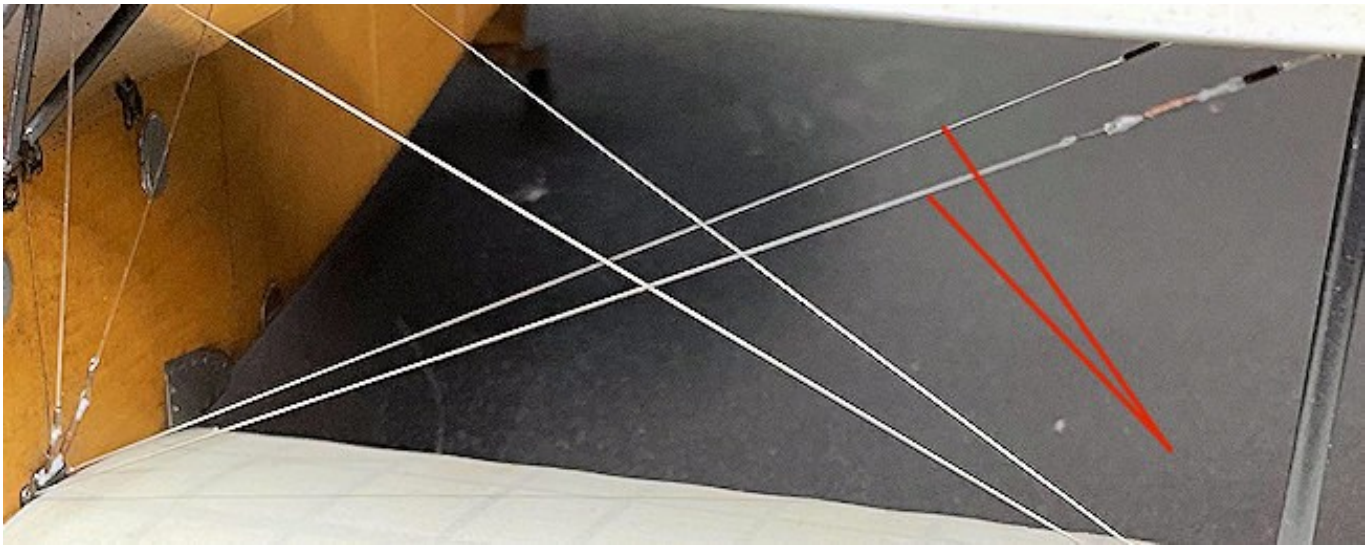
Cut away any residual protruding line at the eyelet.

Pass the line diagonally down and into its outer locating hole in the wing root rigging bracket.

Trim the length of the line so it can be fully inserted into its outer hole in the wing root rigging plate.

Keeping the line taut, secure it in its rigging hole using thin CA adhesive.

Repeat the procedure to attach the remaining three flying wires.



Landing wires:

The materials used are:

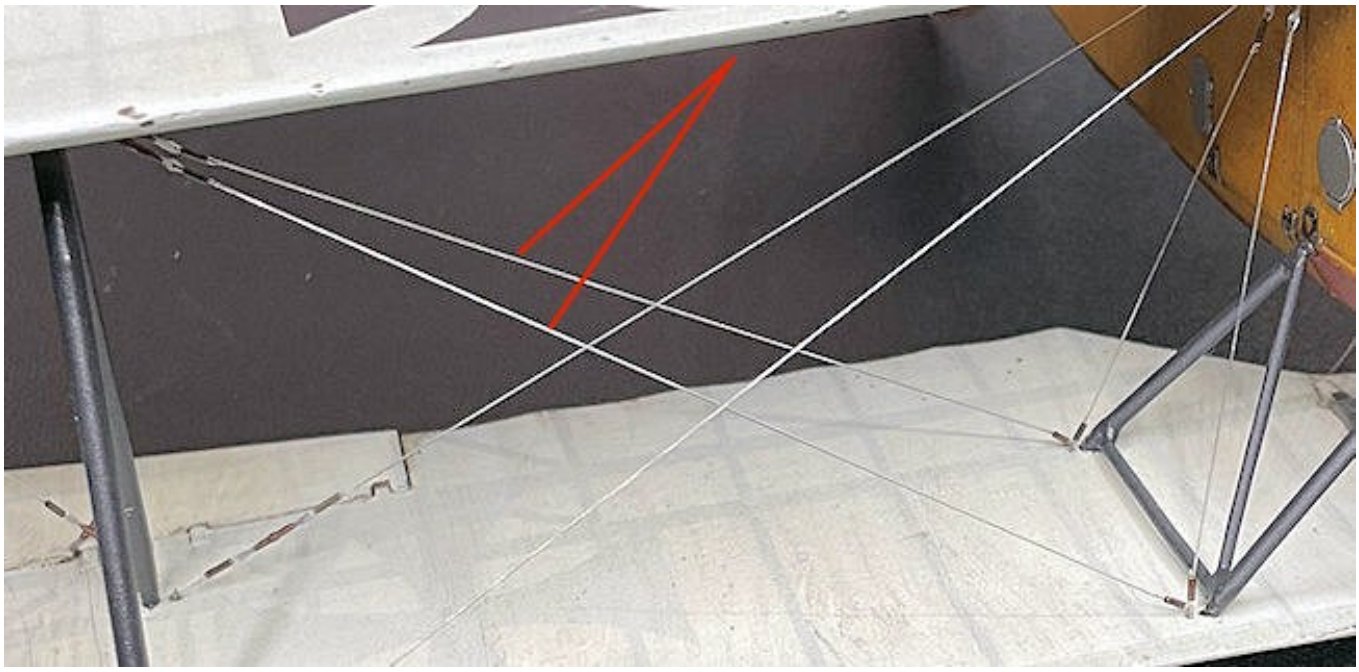
'Steelon' or 'Stroft' 0.12 mm diameter mono-filament

'Albion Alloy's' 0.5 mm diameter (blackened) Brass tube.

The landing wires share the eyelets for the inner flying wires.

Following the previous example, attach each landing wire to its fitted eyelet in the underside of the upper wing, outboard from the fuselage cane struts, making sure to keep the lines taut.

Make sure the **four inner flying wires and landing wires** are taut **before securing them in their eyelets**.



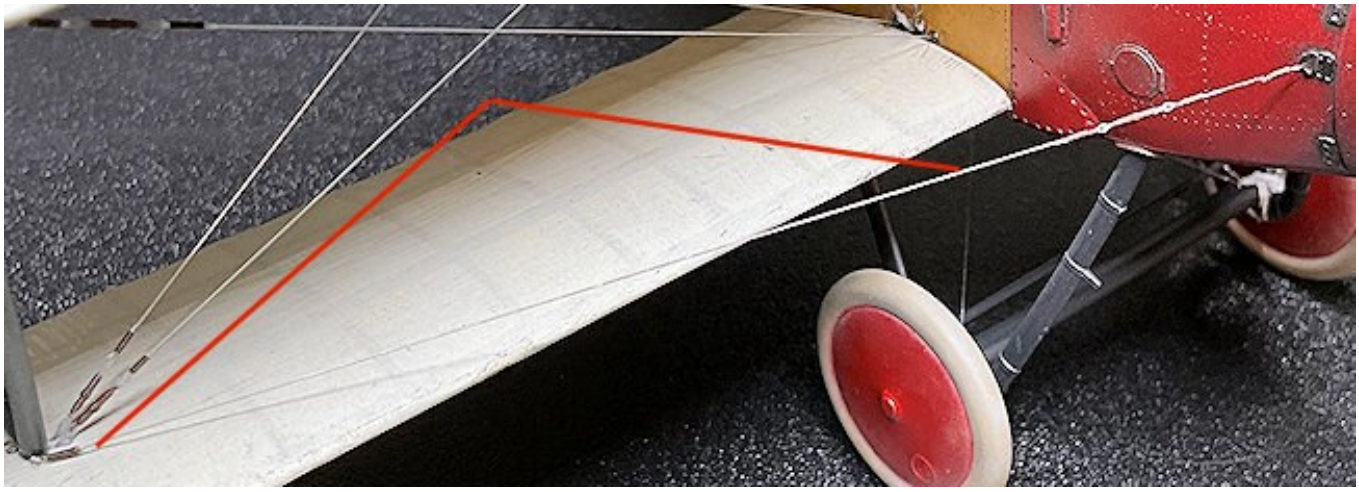
Drag wires:

The materials used are:

'Steelon' or 'Stroft' 0.12 mm diameter mono-filament

'Albion Alloy's' 0.5 mm diameter (blackened) Brass tube.

Following the previous example, attach the two drag wires to their fitted eyelet in the top surface of the lower wings, at the bottom of the interplane 'V' struts.



Aileron control cables:

NOTE: *No more materials are required for the aileron control cables.*

Trim the length of the forward aileron control lines so when taut, they can be fully inserted into the forward of the two pre-drilled holes in the top surface of the lower wings at the interplane 'V' struts.

Trim the length of the rear aileron control lines so when taut, they can be fully inserted into the rear of the two pre-drilled holes in the top surface of the lower wings at the interplane 'V' struts.

Keeping the lines taut, secure them into the relevant pre-drilled holes in the lower wings, using thin CA adhesive.

Elevator control cables:

NOTE: *The materials used are:*

'Steelon' or 'Stroft' 0.08 mm diameter mono-filament

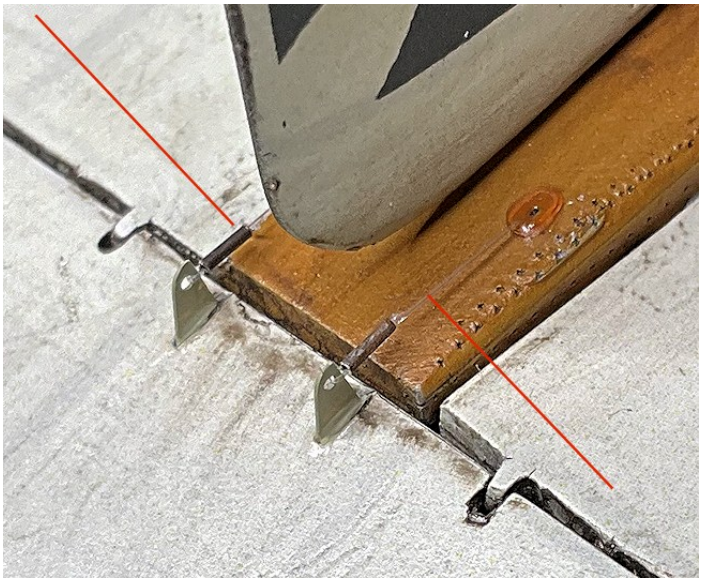
'Albion Alloy's' 0.5 mm diameter (blackened) Brass tube.

Cut four lengths of line.

Insert one end of each line into the pre-drilled elevator control cable outlets holes in the top and underside rear of the fuselage.

Using thin CA adhesive, secure the lines in the holes.

Following the previous example, attach each line to its elevator control horn.



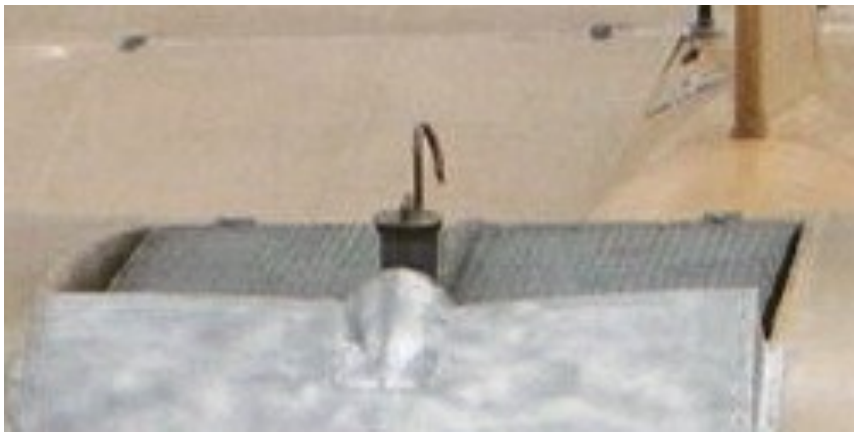
Finish:

To remove the glaze from the added mono-filament rigging, airbrush a light coat of semi-matte clear coat, such as 'Tamiya' Semi-Gloss (X35) or similar.

Modifications (continued):

Radiator vent pipe:

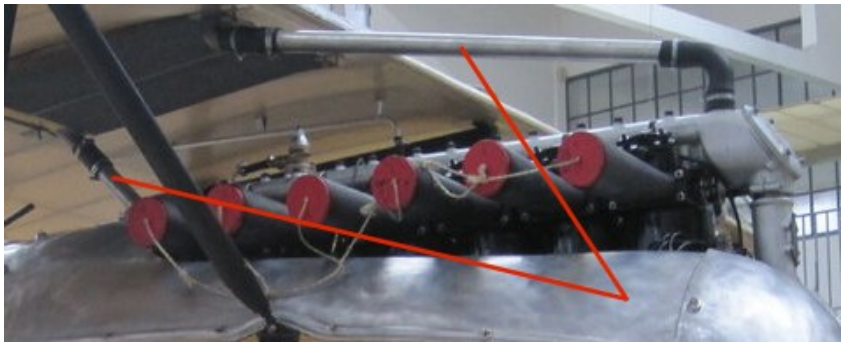
NOTE: *The radiator on the Koloman Mayrhofer reproduction aircraft has a vent pipe, which is not represented in the kit. However, all photographs I've seen of this aircraft do not show a radiator vent pipe. Therefore, I chose to not fit one.*

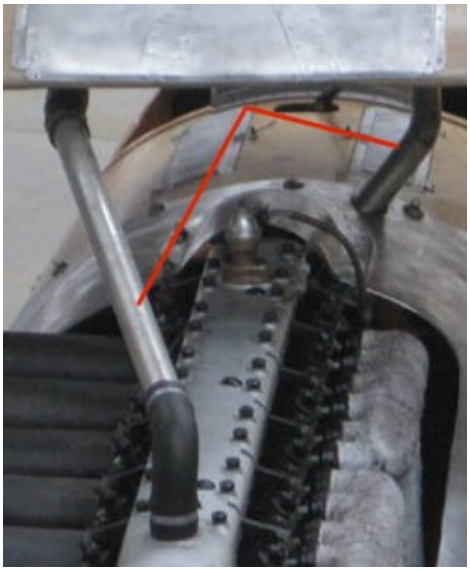


Engine coolant pipes:

Front pipe:

NOTE: *When I test fitted the front, over engine coolant pipe, I found it was too short and the ends did not reach their location in the upper wing and on the engine.*





I first cut away a section of the pipe then cut a length of 1.1 mm diameter Brass pipe from 'Albion Alloy's (MBT11). This was fitted between the pipes halves and test fitted and its length adjusted as required. The Brass tube was secured in position using thin CA adhesive.

The pipe was then primed and painted:

Pipe - 'Mr. Metal Color' Stainless Steel (213) or similar.

Hose end fittings - 'Tamiya' Rubber Black (XF85) or similar.

Rear pipe:

NOTE: *When I test fitted the rear coolant pipe, I found it was too long to be correctly positioned on the fuselage.*

The bottom of the pipe was sequentially cut until the pipe could be fitted into its locating recess in the rear, left of the radiator with the bottom of the pipe resting on the top of the fuselage.

The pipe was then primed and painted:

Pipe - ‘Mr. Metal Color’ Stainless Steel (213) or similar.

Hose end fittings - ‘Tamiya’ Rubber Black (XF85) or similar.

Anemometer (speedometer):

NOTE: *The wind driven Anemometer is intended to be just butt joined onto the interplane ‘V’ strut. However, this is a weak joint and liable to fail. Therefore, I chose to pin the part onto the strut.*

I drilled a hole of 0.3 mm diameter centrally into the mounting of the Anemometer. A short length of 0.3 mm diameter Brass rod from ’Albion Alloy’s’. This was secured into the drilled hole using thin CA adhesive. A hole of 0.3 mm diameter was then drilled horizontally through the rear strut of the right interplane ’V’ strut.

The Anemometer was then primed and painted:

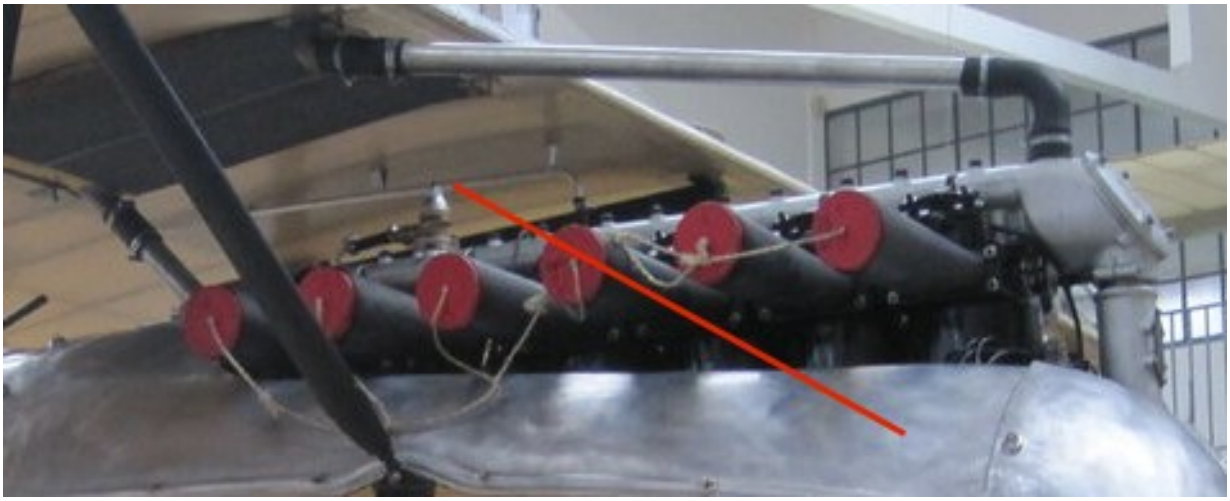
Body - ‘Tamiya’ Rubber Black (XF85) or similar.

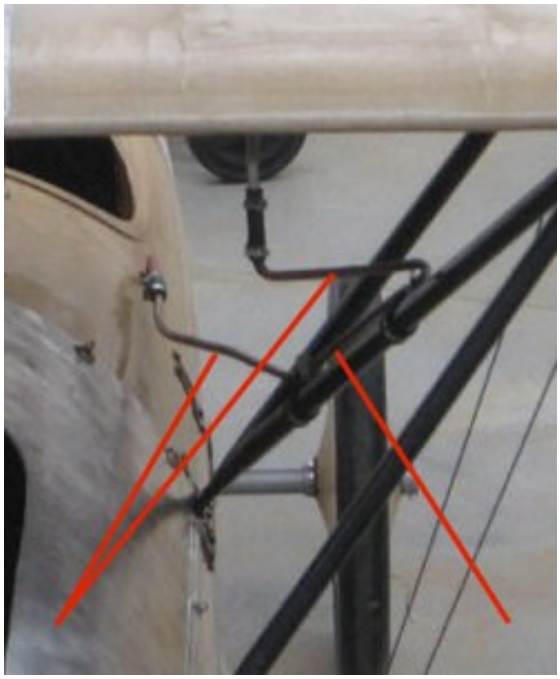
Wind cups - ‘Mr. Metal Color’ Stainless Steel (213) or similar.

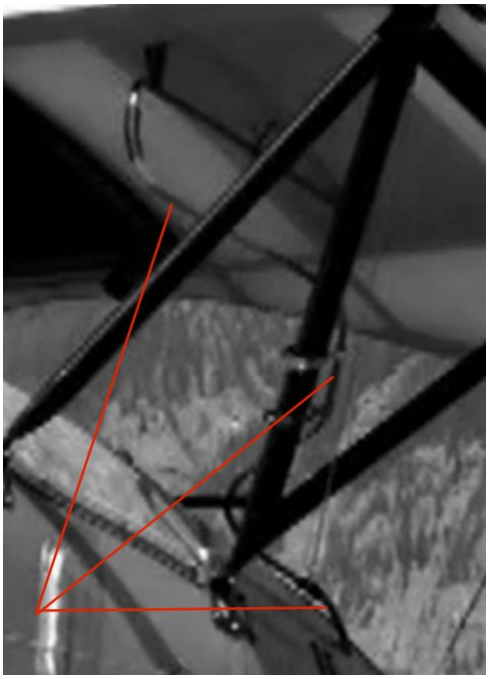
A suitable sized dial decal was applied from the ‘Airscale’ WW1 generic dial decals (AS32 WW1) set.

Auxiliary fuel pipe:

NOTE: *Photographs of the aircraft, including those of Koloman Mayrhofer reproduction aircraft, show what appears to be a fuel pipe from the underside of the upper wing, where presumably an auxiliary fuel tank was located. The pipe was routed down the fuselage cabane struts and through the side of the fuselage.*







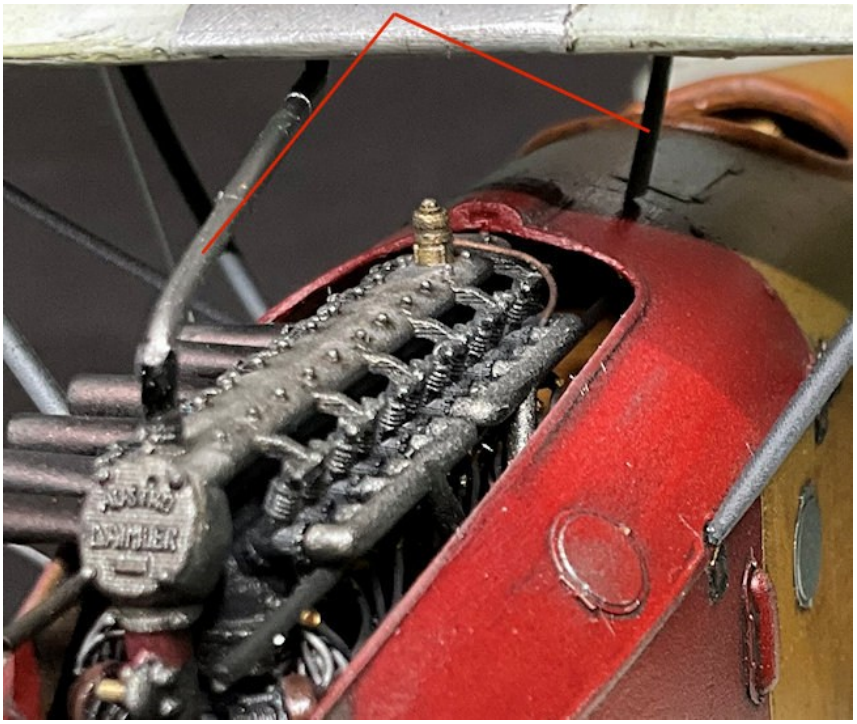
To represent the auxiliary fuel pipe, I first drilled a hole of 0.6 mm diameter through the left side of the fuselage, forward from the cockpit. I then cut a long length of 0.5 mm diameter lead wire from ‘PlusModel’. One end of the wire was secured in the drilled hole using thin CA adhesive. The wire was then routed forwards and out to the rear cabane strut then horizontally forward to the diagonal cabane strut. The wire was secured to both struts using thin CA adhesive. The wire was then routed up the diagonal strut and secured in position before being routed inboard and forwards to the underside of the upper wing, midway between the cabane strut and the left side of the radiator. At the wing underside, the wire was tightly looped rearwards along the underside of the wing and parallel to the fuselage. Finally, the wire was secured to the underside of the wing using thin CA adhesive.
To represent the hose end fittings and pipe to strut claps, I brush painted ‘Tamiya’ Rubber Black (XF85).

Assembly (continued):

NOTE: *Make sure all paints etc are removed from the mating surfaces of the parts.*

Engine coolant pipes:

Using CA adhesive, secure the two coolant pipes in position between the engine/fuselage and the upper wing radiator.



Propeller:

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

Anemometer (speedometer):

Using CA adhesive, secure the Anemometer into the pre-drilled hole in the rear strut of the right interplane 'V' strut.

Windscreen:

NOTE: *The supplied windscreen comprises a photo-etch frame and an acrylic sheet printed screen. Unfortunately, the 'carpet monster' swallowed up the photo-etch frame!!. Therefore I modified a injection molded windscreen from my 'spares' collection. The frame surround was brush painted with 'Mr. Metal Color' Stainless Steel (213). The windscreen was secured in position using PVA adhesive (white glue).*

Decals (continued):

NOTE: *Refer to Part 7 (Decals) of this build log for more information. These decals are not 'cookie' cut, but are part of the decal sheet carrier film. Therefore they need to be cut out, carefully around the decal edges before application. Due to these decal being translucent, the surface beneath may show through the decal. Therefore, a second set of decals can be requested from 'Lukgraph', which can be overlayed on the originals.*

Carefully cut out the following decals from the kit supplied sheet:

Fuselage data and logo (x 1).
Fuselage triangular marking (x 2).
Fuselage serial number (x 2).
Small serial numbers (x 14).

NOTE: Refer to the following photographs for the location of the various decals.

Airbrush the areas to have decals with a clear gloss coat, such as 'Tamiya' Clear Gloss (X22) or similar.

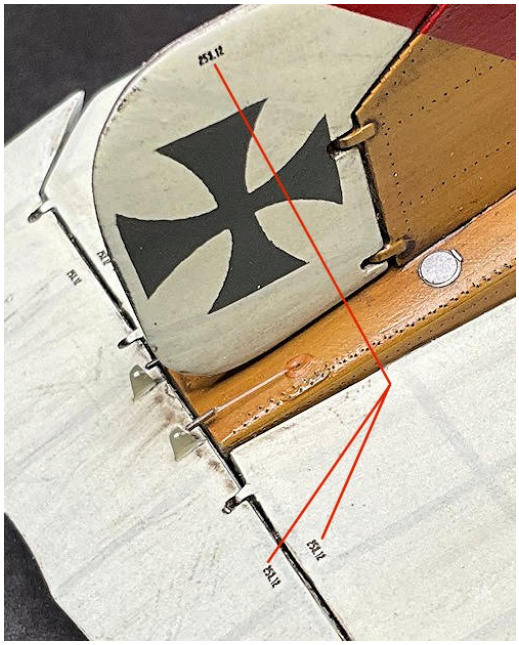
NOTE: '*Lukgraph' decals are very thin and fragile. Apply plenty of water onto the model and basically 'float' the decal off its backing sheet and onto the model. When positioning the decal, take care as they can easily fold over themselves.*

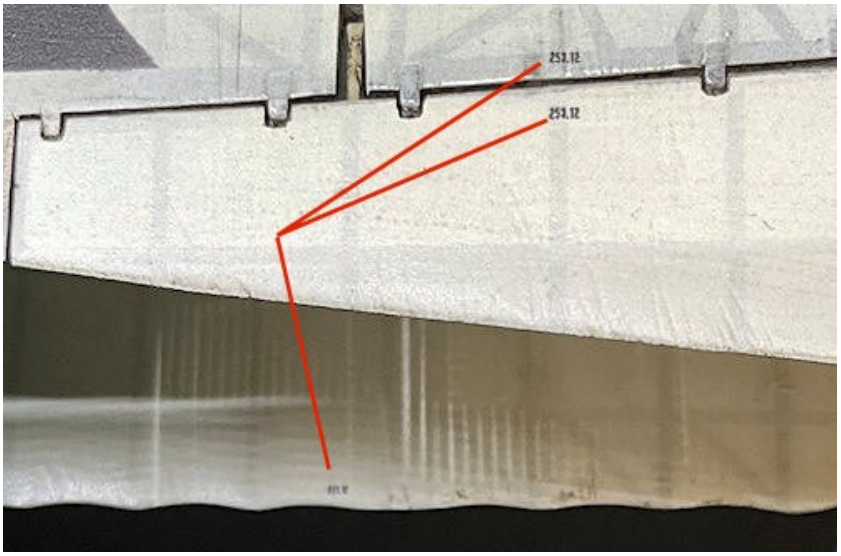
Apply the decals in the correct locations.

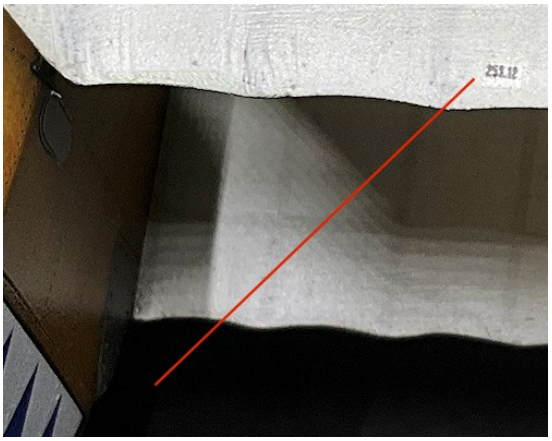
Once fully set, check if the decals are showing any of the surface detail underneath. The decals on the painted surfaces of this model were good enough. However, a different colour scheme may require second decals.

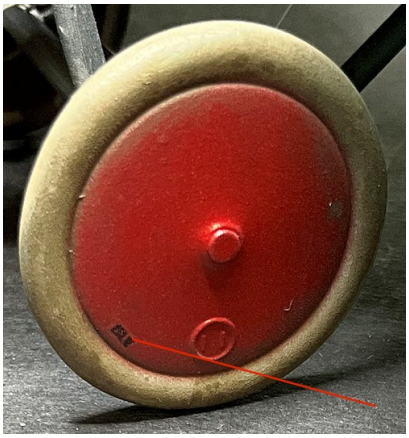
If necessary, apply second decals over the first (as supplied on request from 'Lukgraph'.

Seal and protect the applied decals with a semi-gloss clear coat, such as 'Tamiya' Semi-Gloss (X35) or similar.









Final weathering:

NOTE: *Refer to Part 6 (Weathering) of this build log. I chose to use the 'Flory Models' Grime fine clay wash.*

Brush 'Flory Models' Grime wash over the tyres, leading edges of the landing gear and the tail skid.

Brush 'Flory Models' Dark Dirt wash over the triangular fuselage markings.

Remove the washes to achieve the desired weathering effect.

Lightly sponge 'Tamiya' Weather Master Set A (Mud) along the leading edges of the propeller.

Lightly brush 'AK Interactive' Kerosene wash (AK2039) across both sides of the radiator matrix.

Lightly brush 'AK Interactive' Engine Oil wash (AK2019) behind the radiator filler cap.

PART 16
FIGURE

PART 16 - FIGURE

The figure I chose to use with this model is the 'Aviattic' Standing pilot (ATTRES 031).

NOTE: *Refer to Part 8 (Resin) of this build log. Working with model parts made in any form of resin is hazardous to health, especially when for example, sanding or drilling resin, when small airborne particles can be inhaled.*

Preparation:

NOTE: *Although the 'Aviattic' figure is well sculpted, I found the head to be slightly too small for the body. Therefore, I replaced the head with one that was more in-scale.*

Carefully cut away the head from the figure an file or sand the remining neck to level with the collar on the figure.

Drill a hole of 0.8 mm diameter centrally into the neck of the body.

Drill a hole of 0.8 mm diameter centrally into the neck of the replacement head.

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

Secure the rod fully into the pre-drilled hole in the neck of the figure using thin CA adhesive..

Secure the head fully onto the protruding rod, using thin CA adhesive.

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

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

Secure the rod fully into the pre-drilled hole in the leg of the figure, using thin CA adhesive.

Painting:

NOTE: *The figure was painted using 'AK Interactive' and 'Tamiya' acrylic paints. Thin the 'AK' paints with their acrylic thinners (AK712).*

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

Leg covers - 'AK Interactive' Beige Brown (AK3054). 'Mr. Colour' Stainless Steel (213) buckles.

Shoes - 'Tamiya' Flat Black (X1).

Jacket - 'AK Interactive' German Uniform Light (AK3092). 'Mr. Colour' Stainless Steel (213) buttons.

Flight Jacket - 'AK Interactive' British Uniform (AK3081). 'Mr. Colour' Stainless Steel (213) cuff buttons.

Fur edge 'AK Interactive' Faded White (AK3029) dry brushed with British Uniform (AK3081).

Trousers - 'AK Interactive' French Uniform Light (AK3102).

Helmet - 'AK Interactive' Brown Leather (AK3031).

Goggles - 'AK Interactive' Brown Leather (AK3031) with 'Tamiya' Clear Yellow (X24) lenses.

Flesh:

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

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

Finish:

Brush the flight jacket, gaiters/shoes and helmet with a semi-matte clear coat, such as 'Tamiya' Semi-Gloss (X35) or similar.

Lightly sponge 'Tamiya' Weathering Master Set A (Mud) over the shoes.

Lightly sponge 'Tamiya' Weathering Master Set D (Oil Stain) over the elbows of the flight jacket.

PART 17
DISPLAY BASE

PART 17 - DISPLAY BASE

The display case in made from piano black and clear acrylic sheet of 3mm thickness. The Base plinth is 5 mm thick. The shoulder around the plinth is for locating the clear cover and is a second thickness on top of the base plate. This case was purpose built by Paul Moss, who has a retail outlet on Ebay - www.inperspextive.com

The grass mat used was the 'Polak' Wild Meadow - variation C (4703).

The information plaque was engraved by 'TLS Engraving Ltd'.

Grass mat:

The grass mat was cut to the desired shape with the model positioned on top. The mat was laid onto the display base and positioned to ensure the model would clear the display top when located. A soft pencil was used to lightly trace the outline of the mat on the display base. Inside the marked area was scuffed using sand paper, to provide a grip surface for the adhesive. The plastic baking sheet was peeled away from the grass mat and then PVA (white glue) adhesive was applied to the scuffed area and the grass mat was then laid back onto the base, aligned to the pencil outline and gently pushed down to make proper contact. The grass mat was covered with a sheet of paper and several heavy books were then stacked onto the paper, to press the grass mat fully in contact with the display base. The books and paper were removed after several hours, when the edges of the grass mat were checked for contact (apply more PVA adhesive if not). The grass was gently brushed to remove any flatness.

Aircraft model:

The aircraft was not fixed to the display base, but left as 'free standing'. Although this may not be as secure as fixing the model to the display base, it does mean the model will not be subjected to shock loading when being moved around, as it might be if fixed on the display. However, the location of the wheels and tail skids were scored through the grass mat to give the model a firmer location.

Figure:

With the model positioned on the grass mat, the figure was positioned on the base in its final position and the location of the rod in the leg marked on the grass mat. A hole of 1.0 mm was drilled through the grass mat and into (not through) the base plinth. PVA or thin CA adhesive was then applied to the rod of the figure, which was then carefully seated into the drilled hole. Light pressure was applied to the figure to ensure it was fully located into the base.

Information plaque:

The acrylic stand for the information plaque was scuffed with sand paper on its bottom surface. It was then position in the left corner of the display base and its outline lightly scored with a pointed scriber. The area inside the scribed outline was scuffed with sand paper. An adhesive, such as a contact or two-part epoxy adhesive was applied to the scuffed surfaces and the stand positioned onto the scribed outline on the display base. Once the adhesive had fully set, the information plaque was secured onto the stand, using the self-adhesive tape on the rear face of the plaque.

PART 18
COMPLETED MODEL PHOTOGRAPHS


253.12


253.12


253.12


253.12

END