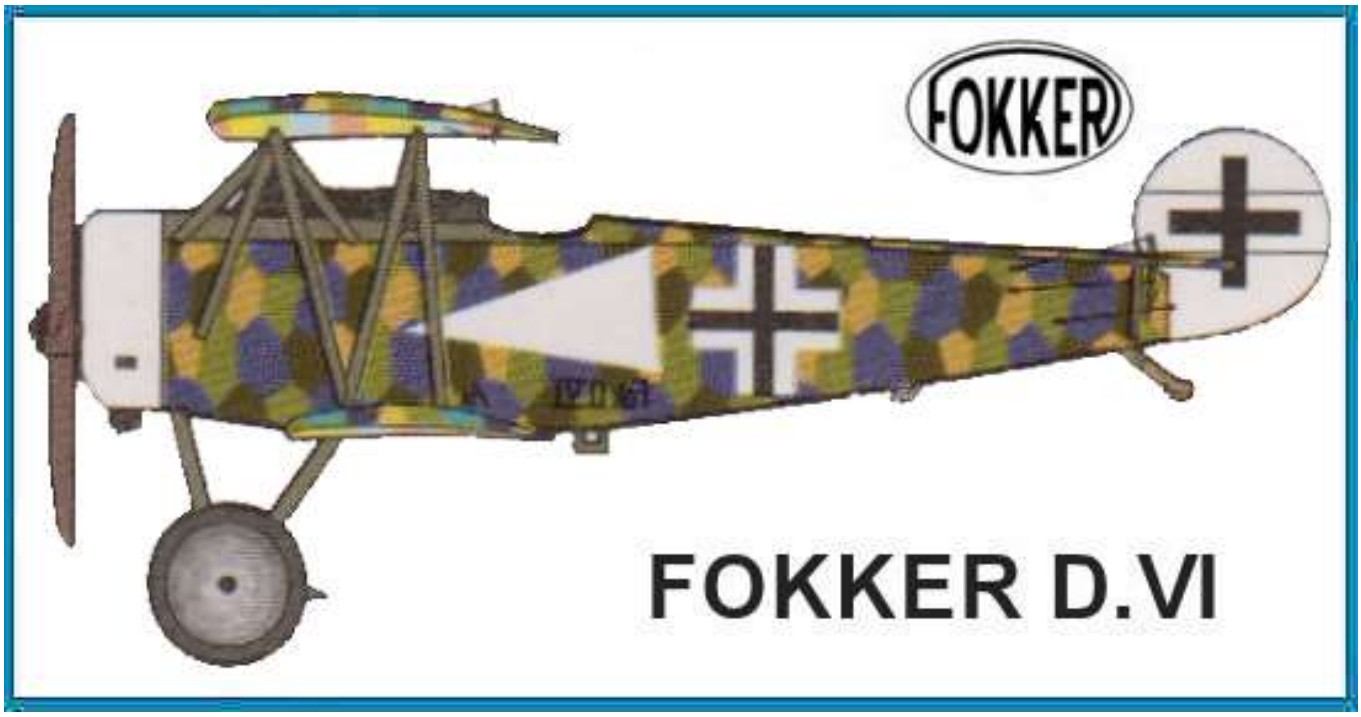


World War One Aircraft Models

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

Mike 'Sandbagger' Norris

sandbaggeruk@sky.com

Completed: April 2022

CONTENTS

INTRODUCTION

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

Sorted

AFTER MARKET

AFTER MARKET

Figures

'Elan13' German pilot WW1 (EL25).

Decals

'Aviattic' clear four colour lozenge faded (ATT32008) and (ATT32010),
'Aviattic' white-backed four colour lozenge faded (ATT32071) and (ATT32069) (rib tapes),
'Aviattic' white-backed German Blue (ATT32077), Fokker DR.1 clear streaked (ATT32062),
'Aviattic' Fokker streaked set (ATT32062), 'Airscale' generic WW1 instruments (AS32 WW1),
'MicroScale' MicroSol/MicroSet (as required).

Weapons

'GasPatch' 08/15 Spandau.

Resin parts

'Aviattic' resin engine cowl (ATTRES 004) and Fokker seat (ATTRES 022),
'Taurus Models' Fokker cowl fasteners (3224).

Photo-etch

'Aviattic' Fokker DR.I/D.VI set (ATTPE011), 'PART' DR.1 set (S32-028),
'RB Productions' radiator mesh (RB-T027).

Rigging accessories (as required)

'GasPatch Elite Accessories' turnbuckles/anchor points 1/48 scale,
'Albion Alloy's' Micro-tube Brass or Nickel Silver tube (0.4 and 0.5 mm diameter).
'Steelon' mono-filament (fishing line) 0.12 mm or 'Stroft GTM' 0.08 mm diameter.

Sundries (as required)

'Araldite' two part epoxy adhesive, Paints ('Tamiya' Acrylic, Humbrol Acrylic,
'Mr. Metal Colour', 'AK Interactive' Primer and micro-filler (Grey AK758, White AK759),
'AK Interactive' Filters (Wood AK-261) and figure paints, Kerosene AK-2039, Oil AK-2019
and Wash AK-2033), 'Alclad II' Lacquers, 'Alclad' Aqua Gloss 600, 'Mr. Colour' Levelling
Thinners, 'Vallejo' Model Colour, PVA Adhesive or 'MicroScale' Kristal Klear,
'VMS Fleky' CA adhesive (Standard and Thin) and Metal Prep 4K, 'Mr. Colour' Metal Primer R ,
'Bostik' Blue or UHU White Tack, 'AV' Masilla Plastica (401) putty, 'White Spirits',
'De-Lux Materials' Perfect Plastic Putty, Sanding and/or Polishing sticks from 'Flory Models',
'Humbrol' Maskol, 'Milliput' two part putty', 'Green Stuff' two part putty, 'UHU' White Tack,
'Vallejo' Still Water (26.230), 'Mr. Surfacer 500, 1000,1200', 'DecoArt Crafters Acrylic' (water
based) paints, 'Artool' Ultra Mask sheets, 'Plastruct' styrene rod, 'Mr. Surfacer' primer and filler
500 to 1200, 'Hataka' lacquer paints, 'Tamiya' liquid cement, 'PlusModel' lead wire,
'ANYZ' 0.8 mm Black braided line (AN015), 'Plastic Magic' liquid cement, 'Prismacolor' Verithin
Argent Metallique 753, 'Blacken-It' solution, 'Bare-Metal' Matte Aluminium foil,
'MFH' black 0.4 mm flexible tube (P-961), 'EZ' stetch line (fine or heavy black),
'Xtradecal' White letter/numerals (72158), 'Revell' Contacta Professional cement (39604),
'Citadel' paints range, 'MRP' paints, 'Krylon Industrial' Crystal Clear Acryli-Quik,
'Ammo' acrylic filter Ochre (AMIG0822).

Weathering mediums (as required)

'Flory' Clay washes, Flory Pigments, AK Interactive engine washes,
'Tamiya' Weathering Master (Set C, D and E), 'Derwent' Inktense 24 ink pencils.

Display Base

Etched Plaque (name plate), 'Inperspective' custom made Acrylic base and cover,
'Polak' Wild Meadow (Variation G - 4707).

HOME DEFENCE UNITS

HOME DEFENCE UNITS

References:

The ‘Aerodrome.com’ online forum.

NOTE: *This is a translation of Der militärische Heimatluftschutz im Bereich der Festung Köln und der Flugplatz Hangelar – Hartmut Küper/Horst Schuh (page 117, etc.) from Luftkrieg über Front und Heimat 1914/18 (Flieger und Luftschiffer zwischen Westfront und Rhein) by Horst Schuh.*

At the end of February 1917 there were the following Kampfeinsitzerstaffeln (Kests):

Kest 1 (Mannheim- Sandhofen) formed 10th August 1916
Kest 2 (Saarbrücken) formed 10th August 1916
Kest 3 (Karlsruhe) formed 14th of July 1916
Kest 4 (Böblingen) formed 7th of August 1916
Kest 5 (Freiburg) formed 2nd of August 1916
Kest 6 (Bonn-Hangelar) formed 1st of August 1916
Kest 7 (Düsseldorf) formed7th February 1917
Kest 8 (initially destined for Hamburg, but was eventually attached to 4. Army in Flanders) formed 19th February 1917
Kest 9 (Mainz) formed 20th February 1917

The co-operation between the squadrons and their training was in the hands of the staff officer of the airfield in the home area (Stoflheim), which was initially at Karlsruhe and from February 1917 at Frankfurt am Main. On February 22, 1918, it was converted into a command post (Koflheim), and in September 1918, the commander of the Jagdstaffel was reformed into a homeland (Kojastheim) after the renaming of the battlefield squadrons.
On the 6th of April 1917, the United States declared war on the German Empire. In anticipation of an offensive of the Allies in the Somme area, the front was voluntarily withdrawn from the strongly fortified "Siegfriedstellung" (line Saint Laurent (Arras) to La Fere-Vailly). With a great deal of material and energy, the Allies attacked the German positions in April and May. The strong opposing pressure the German airmen were facing in the defensive battles on the Aisne, near Arras, and in the Champagne, necessitated a concentrated deployment of the Jagdstaffeln stationed in the west at focal points. The gaps created by the armies were filled by the Kampfeinsitzerstaffeln. Kest 3, 5, 7 and 8 came to the front. The loss in the home air defence system was compensated for by dividing individual Kampfeinsitzerstaffeln into two halves.
Kest 1 was divided into Halbstaffeln/half-squadrons on the 15th of April 1917, with Kest1a stationed at Mannheim and Kest 1b at Karlsruhe. Kest 4, was divided into the Halbstaffeln on the 15th of April 1917, with Kest 4a stationed at Böblingen and Kest 4b at Freiburg.
Around the turn of the year 1917/1918 Kest 5, 7 and 8 returned to the homeland, while Kest 3 remained at the front.

On the 29th of October 1918, the Kest’s were renamed to Jasta’s until the end of the war:

Kest 1a and 1b - Jasta 90 - based at Mannheim
Kest 2 – Jasta 82 - based at Saarbrücken
Kest 3 – Jasta 83 - based at Mörchingen
Kest 4a and 4b - Jasta 84 based at Böblingen
Kest 5 – Jasta 85 - based at Lahr-Dinglingen
Kest 6 – Jasta 86 - based at Bonn-Hangelar
Kest 7 – Jasta 87 - based at Düsseldorf
Kest 8 – Jasta 88 - based at Bitsch
Kest 9 – Jasta 89 - based at EOW Mainz

THE AIRCRAFT

THE AIRCRAFT

References:

'Windsock' data file No.84 (P.M. Grosz)
Online 'Wikipedia'

General:
In late 1917, Fokker-Flugzeugwerke built two small biplane prototypes designated V.13. These aircraft combined a set of scaled-down Fokker D.VII wings with the fuselage and with empennage closely resembling those of the earlier Fokker DR.I triplane. The first prototype was fitted with an 82 kW (110 hp) 'Oberursel' Ur.II rotary engine, while the second was fitted with a 119 kW (160 hp) 'Siemens-Halske' Sh.III bi-rotary engine. Fokker submitted both prototypes at the Adlershof fighter trials in late January 1918. At that time, Fokker replaced the engine in the first prototype with a 108 kW (145 hp) 'Oberursel' Ur.III engine. The test pilots found the V.13 prototypes to be manoeuvrable and easy to fly. Therefore the 'Idflieg' issued an initial production contract after the V.13s were ultimately judged to be the best rotary powered entries of the competition.

Service:
The new aircraft, designated as the Fokker D.VI, passed its 'Typenprüfung' (official type test) on 15 March 1918. The production aircraft utilized the Oberursel Ur.II, which was the only readily available German rotary engine. The 'Idflieg' authorized low level production pending availability of the more powerful 'Goebel' Goe.III engine. Between May and August 1918, a total of 60 aircraft were delivered, after which the contract for the remaining 210 aircraft was cancelled in favour of the newer Fokker E.V monoplane fighter. Seven aircraft were delivered to the Austro-Hungarian Air Service (Luftfahrtruppen), 6 of which were subsequently captured by the invading Romanian troops. The remaining aircraft was written off in 1926.
In service, the Fokker D.VI was hampered by the low power from its 'Oberursel' Ur.II engine. Moreover, the lack of castor oil and the poor quality of 'Voltol' (an synthetic lubricant), severely reduced engine life and reliability. Nevertheless, the Fokker D.VI remained in frontline service until September 1918, and continued to serve in training and home defence units until the war ended.

Specifications:
Length: 5.9 m
Wingspan upper wing: 7.20 m
Wingspan lower wing: 5.81 m
Height: 2.65 m
Ground angle - 15 degrees
Wing area: 17.7 m^2
Empty weight: 395 kg
Gross weight: 588 kg
Powerplant: 'Oberursel' Ur.II (110 hp) rotary
Propeller - 'Axial'
Maximum speed: 197 km/h
Range: 300 km
Endurance: 1 hours 30 minutes
Service ceiling: 6,000 m
Armament - 2 × 7.92 mm LMG 08/15 'Spandau' machine guns

The model represented in this build is a Fokker D.VI of Kest 1a (Home Defence) Staffeln, operating from Mannheim in South-West Germany during the Summer of 1918.

There a very few colour profiles of the Fokker D.VI. I found only two profiles for this aircraft and the one below is from the kit box art.

Colour scheme:

The aircraft were delivered during the early period of changing the national markings to the 'Balken Kreuz'. As such most of the aircraft were covered in four colour lozenge linen. The upper surface lozenge colours were Dull Blue, Deep Turquois Green/Green, Olive Brown/Dark Blond and Pea Green/Absinthe Green. The underside surfaces lozenge colours were Dull China Blue, Dull Grey/Green, Brazen Yellow/Yellow Ochre and Greyish Rose.

Fokker ignored the specifications of the ‘Idflieg’ and used their standard method of covering the wings, with the lozenge pattern applied horizontally across the top and underside of the wings and the fuselage, with wing border and wing rib tapes of the same pattern. For the ailerons, the elevator, tailplane and the fuselage sides, the lozenge pattern was applied vertically (front to rear and top to bottom).

The struts and control levers (horns) for the flight surfaces were probably the standard colours, which were grey on earlier aircraft the green on later aircraft.

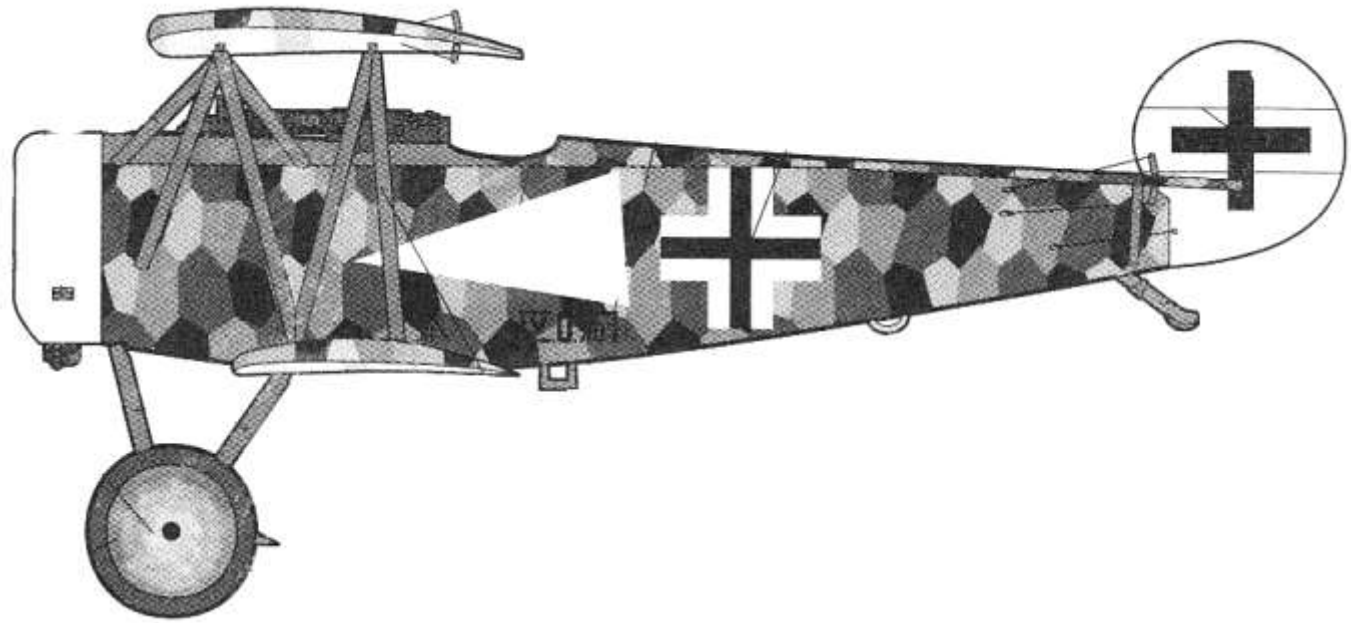
On earlier aircraft, the fairing over the landing gear axle was brush painted with the ’Fokker’ streaked effect of dark and light green or green and brown. Later aircraft were painted with dark green. Some aircraft had light blue painted on the underside of the axle fairing.

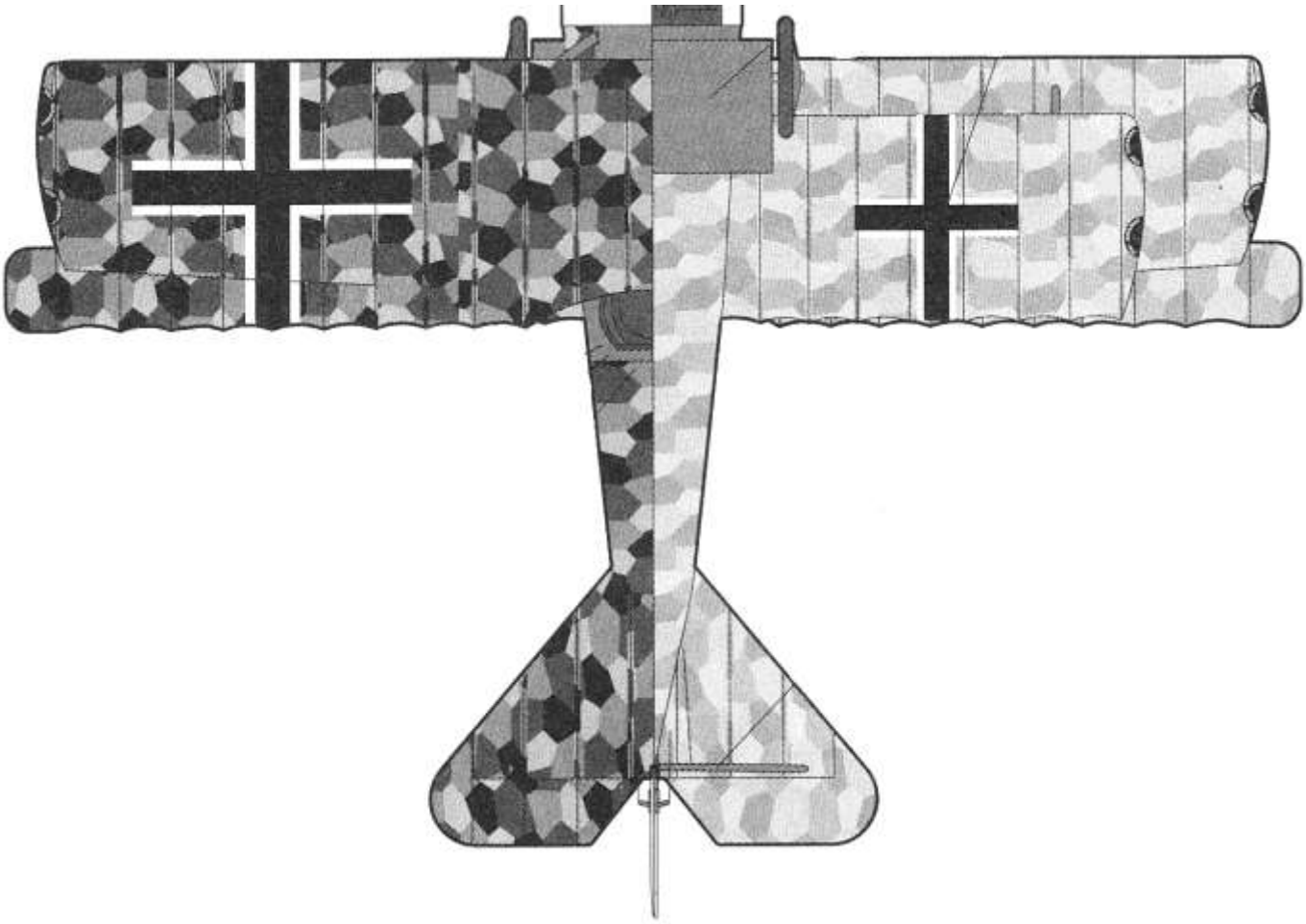
The linen wheel covers were normally painted with dark green or had an olive green outer rim with a lighter green centre. Some aircraft had wheel covers of lozenge linen.

Normally, engine cowls were painted with dark green, although their were some exceptions.

<u>Example of wheel covers</u>

<u>Example of the direction of the lozenge covering.</u>





This particular aircraft has an airspeed anemometer fitted at the bottom of the port interplane struts.

Also the engine cowl was of a lighter colour than the standard dark green commonly used.

The following guides illustrate the difference between actual colours and the same colours created on the orthochromatic film commonly used in WW1.

FULL COLOR

ORTHOCHROMATIC

When comparing the white of the aircraft rudder, which was standard at the time, the engine cowl looks to be a slightly darker shade. That shade matches the yellow colour illustrated in the above colour guides. Therefore I chose to paint the cowl of this model yellow and not white, as shown in the colour profile.

PART 1
MODEL DESCRIPTION

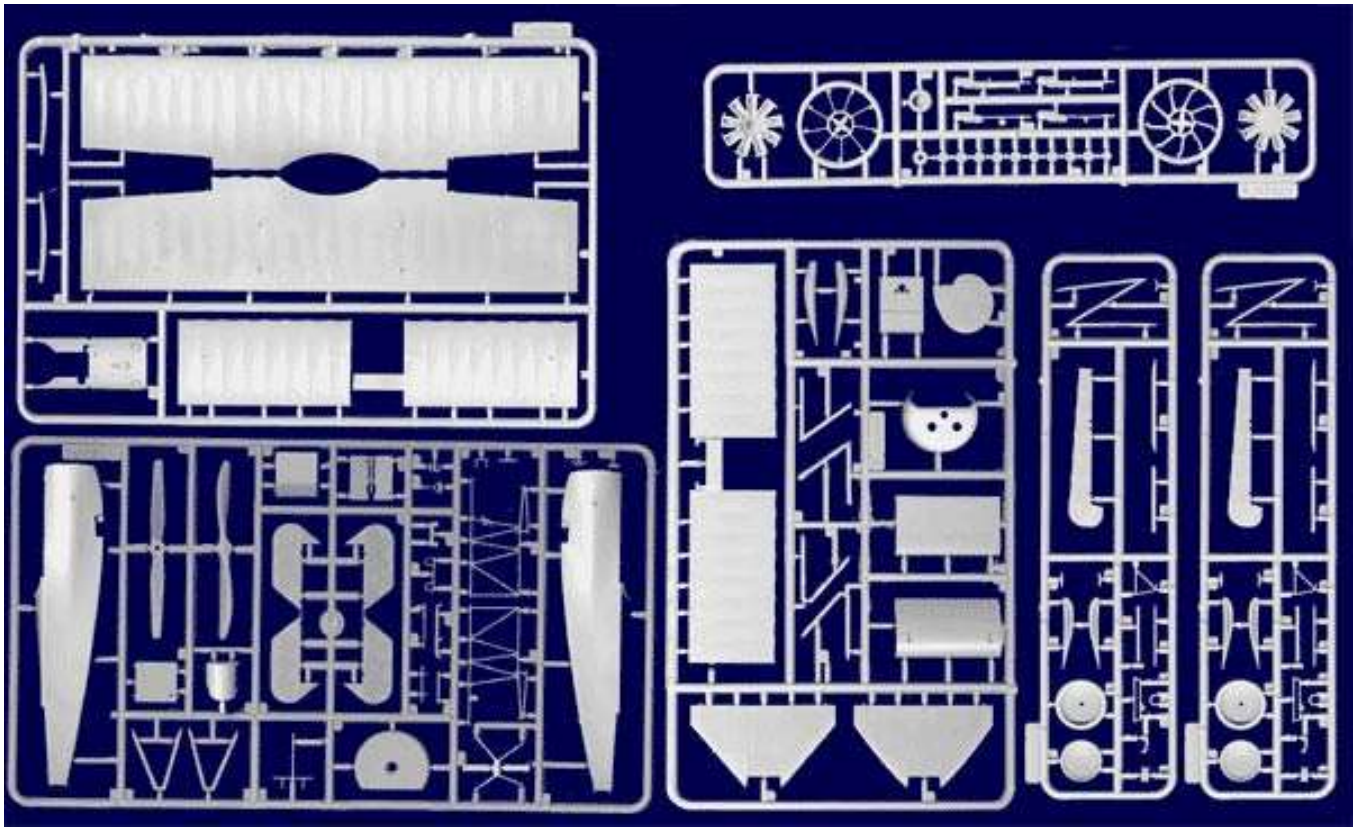
PART 1 - MODEL DESCRIPTION

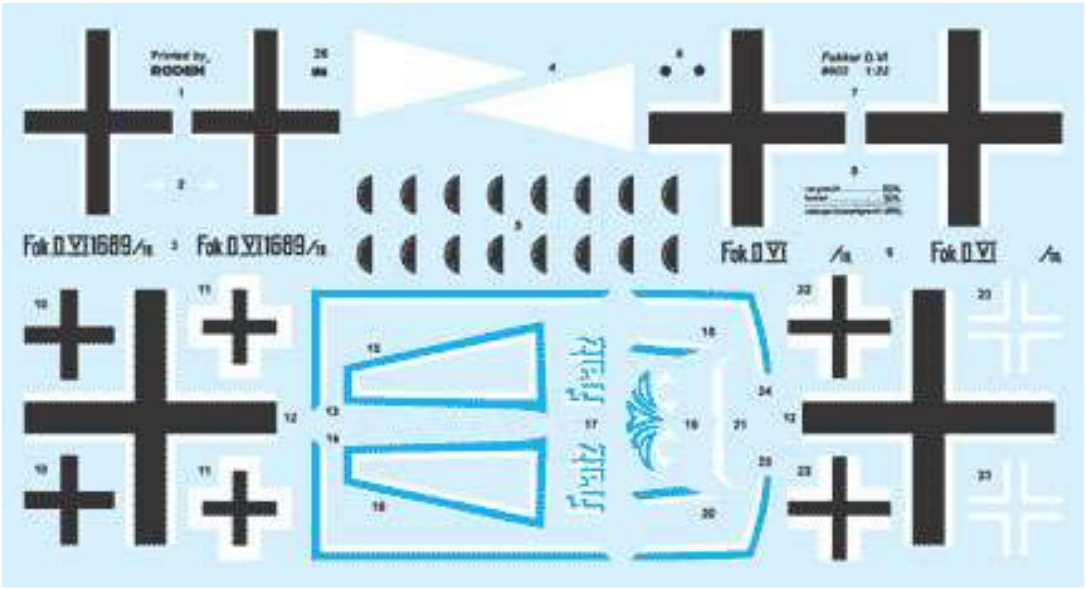
(Based on 'Roden' kit Ro 603)

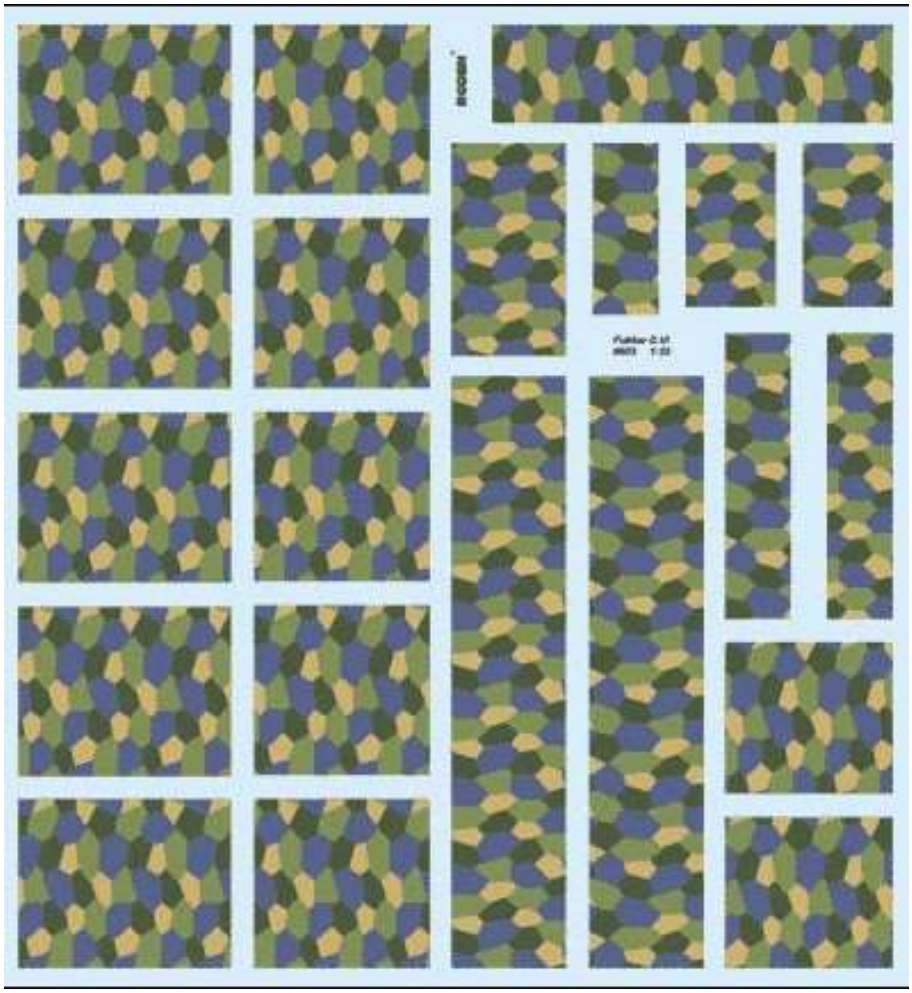
This particular aircraft has been a 'Roden' release for some time as the moulding of the kit parts shows. There are six sprues containing the various parts and many have some mould flash that will need to be removed. Also some of the larger parts show signs of where the moulds have been ground or reworked. The imperfections are easily remedied by careful sanding or scraping.

The engine cowl and machine guns supplied in the kit will be replaced with resin parts from both 'Aviattic' and 'GasPatch.

The lozenge decals supplied in the kit are rather gaudy in colour and 'Roden' decals can prove problematic during application. Therefore only individual markings will be used. The lozenge decals will be replaced with appropriate decals from 'Aviattic'.







NOTE: *These kit supplied decals will be replaced by decals from 'Aviattic'.*

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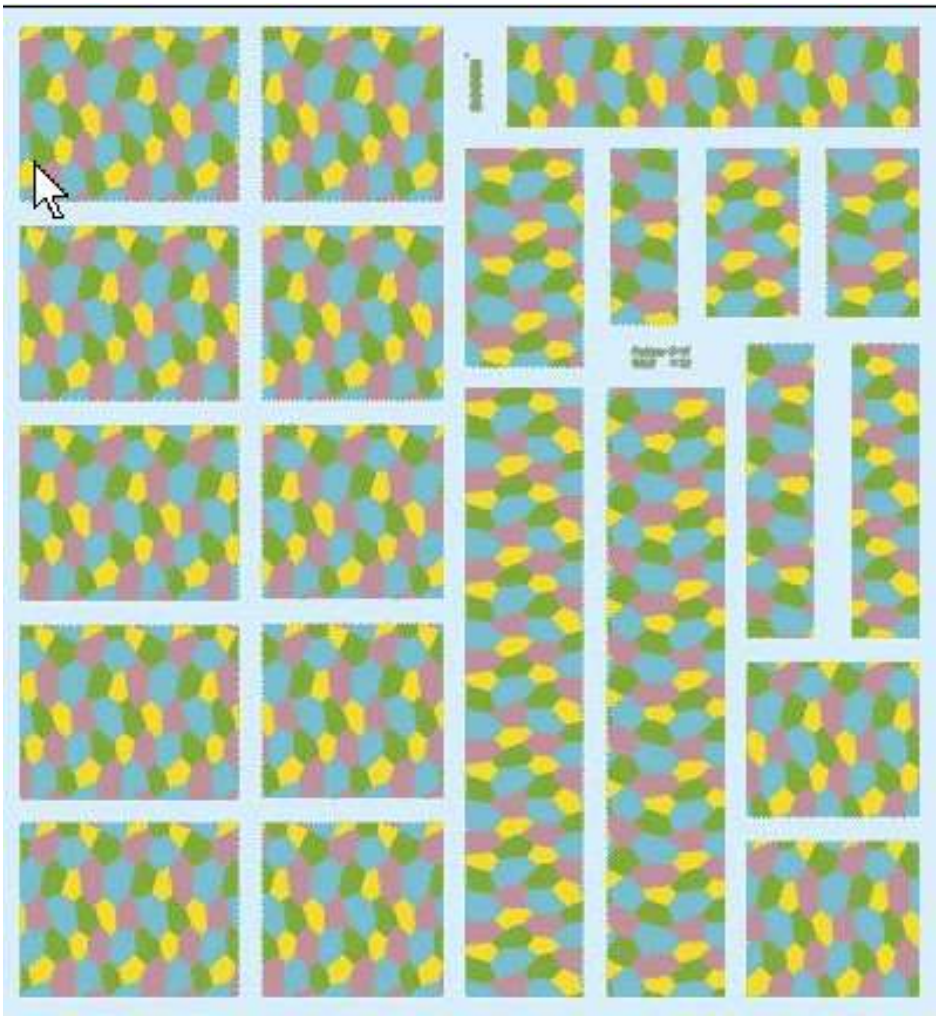


PART 2
WOOD EFFECTS
(General)

PART 2 - WOOD EFFECTS (General)

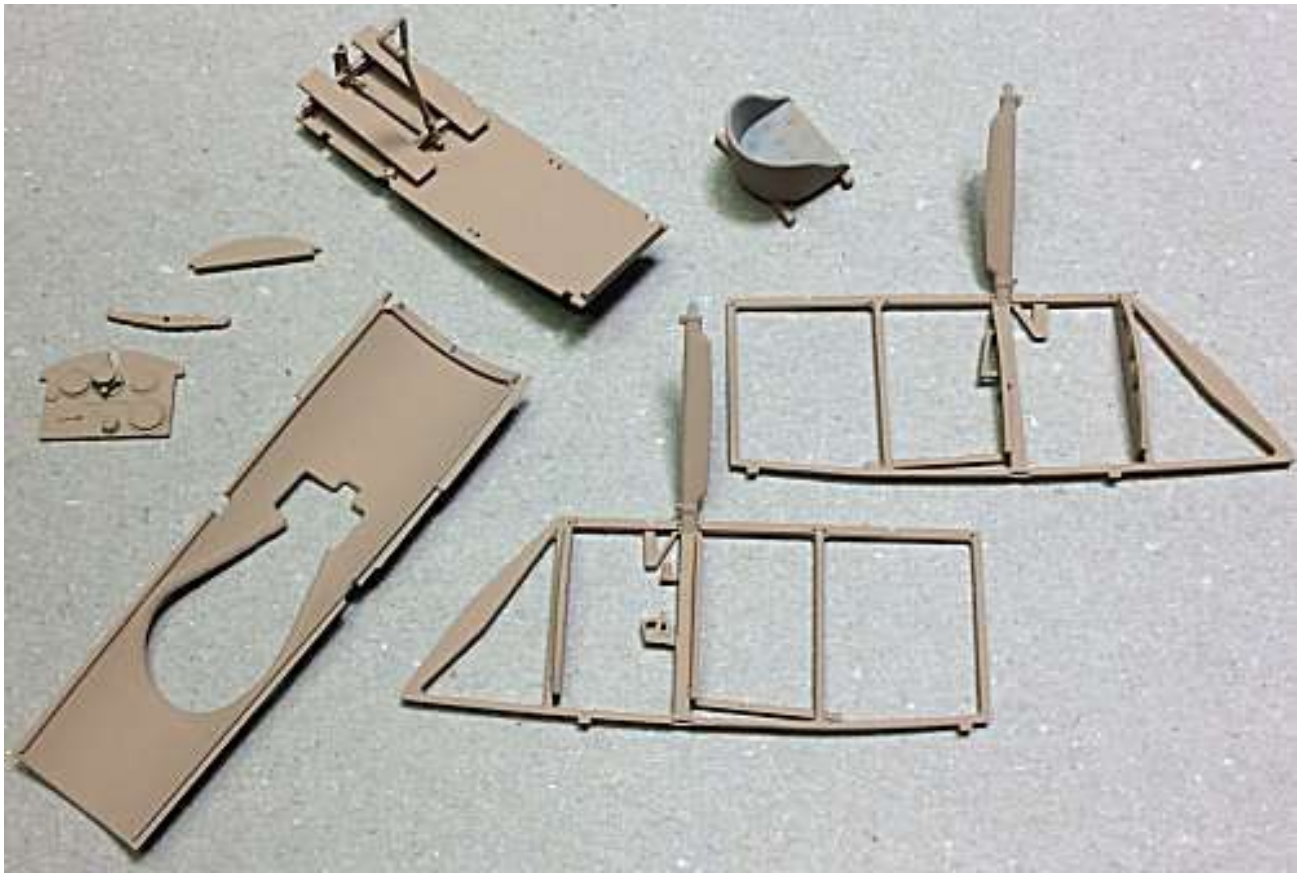
A basic technique:

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

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

To start, apply a suitable base colour. For most painting I use an airbrush and only resort to brush painting when dealing with small items, when I add a few drops of 'Mr. Colour' 400 Self Levelling Thinner', which aids brush painting. For most wood effect, I use 'Tamiya' Wooden Deck Tan (XF78) or Dark Yellow (XF60), suitably thinned with 'Mr. Colour' 400 Self Levelling Thinner'. Allow this base coat to fully dry (if you can't smell the paint, then it's dry).

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



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

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

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

Once painting is complete, clean the brush in water.

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

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

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

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

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

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

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

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

PART 3
WEATHERING
(General)

PART 3 - WEATHERING (General)

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

Flory Model clay washes:

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

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

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

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

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

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

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

Chipping effects:

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

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

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

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

Water colour pencils:

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

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

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

PART 4
DECALS
(General)

PART 4 - DECALS (General)

Standard decals:

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

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

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

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

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

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

Carefully move the decal into the correct position.

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

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

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

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

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

'Aviattic' linen effect decals:

The 'Aviattic' decals are different in both production techniques and application to those of the more traditional decal manufacturers. Traditional decals are normally created using processes such as silk screen printing and are pre-shaped for the particular model markings. When placed in warm water they will detach from the backing sheet and can then be slid onto the model surface and when they are correctly positioned, wiped with a semi-dry brush or cotton bud etc, to expel any water from under the decal. Once fully dry, decal softeners, such as 'MicroSol' and/or 'MicroSet' can be applied, if necessary, to 'weld' the decal to the model surface. Finally a sealing coat of acrylic or lacquer gloss, semi-matt or flat is applied over the decal, to seal and protect the seal and protect the decal. However, 'Aviattic' decals are laser printed onto a very fine carrier film and although this film is thin, the decals are remarkably resilient and somewhat 'stretchy' when being applied. This allows them to be more easily moved and positioned before being finally applied. Also with most other decals, I've used softeners to help the decals conform to surface irregularities and contours, which is something I've found is not really required for 'Aviattic' decals, due to the nature of the carrier film.

In addition, the decals need to be cut out from the sheet, so care is
required to cut the decals accurately to avoid leaving gaps, especially at the edges, where the white base colour will show. That said, minor gaps may be able to be covered with weathering. For more information, refer to the 'Aviattic' instruction sheet supplied with the decals.

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

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

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

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

Airbrush the required base colours to the model surfaces.

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

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

NOTE: *The surface must be pre-wet with like warm water with. Care needs to be taken when you slide the decal from the backing sheet and onto the model surface, as the thin decal can fold over on itself.*

Soak each decal in warm water for approximately 20 seconds.

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

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

Align the decal to the shape of the model part.

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

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

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

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

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

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

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

PART 5
RIGGING
(General)

PART 5 - RIGGING (General)

General:

The first thing to check is that you have already drilled out the rigging attachment points. Most models have these located on the model, but it's best to carry out research in reference books or research on line before drilling. Some modellers use micro drills manufactured for drilling printed circuit boards etc and these drill bits sometimes have identifying coloured collars fitted to the drill shanks. I have found that care needs to be taken when using these drills, as they are sharp and instead of easing their way into the styrene 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 styrene and attach the applicable rigging fixture with CA adhesive.

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

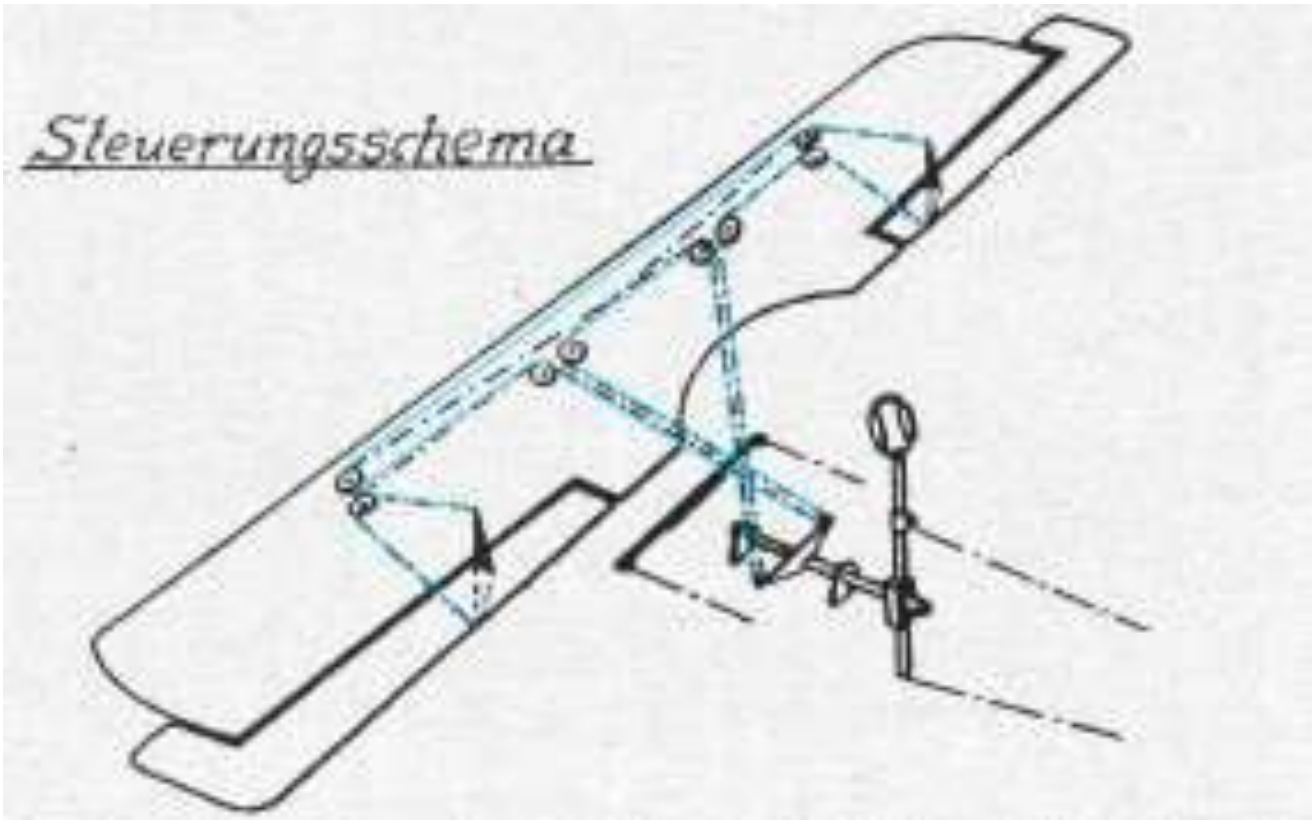
'Steelon' or 'Stroft GTM' 0.08 and 0.12 mm diameter mono-filament

'GasPatch' 1/48th metal turnbuckles.

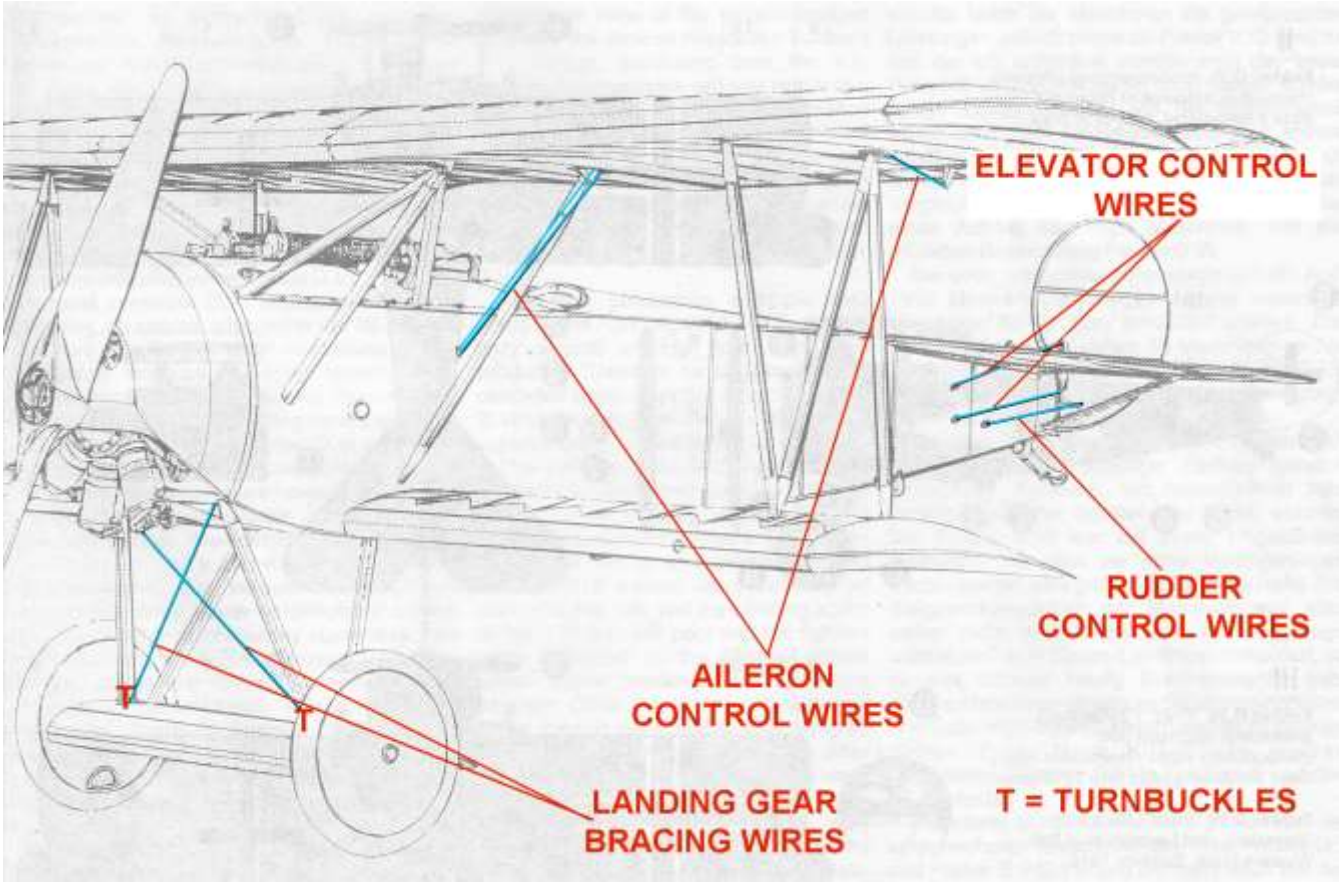
NOTE: *Most metal tube can be chemically blackened by immersion is solutions, such as Blacken-It' or similar.*

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

Aileron control wires



External rigging wires



Rigging examples:

Standard cable turnbuckles:

NOTE: *Only the bracing wire across the landing gear axle fairing require visible standard type turnbuckles.*

Cut a short length of blackened 0.4 mm diameter Nickel-Silver tube, such as that supplied from ‘Albion Alloys’ (MBT04 or NST05) or similar.

Deburr the tube by running a 0.2 mm or 0.3 mm diameter drill through the tube.

NOTE: *Always cut the length of line **much longer** than needed to span between its attachment points.*

Cut a long length of 0.08 mm diameter mono-filament.

Pass the line through the tube, then trough the ‘eye of a ‘GasPatch’ resin turnbuckle (Type C).

Pass the line back and through the tube.

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

Secure the lines to the tube end away from the turnbuckle, using thin CA adhesive.

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

PART 6
ENGINE

PART 6 - ENGINE

Preparation:

Remove engine parts 1E to 5E, 8E, 9E and 10E from sprue E.

Remove any sprue tags or obvious mould seam lines.

Assembly:

Cement engine halves 1E and 10E together, making sure the individual cylinders are aligned correctly.

Cement the nine cylinder heads to the engine cylinders, making sure detailed sides are facing rearwards on the cylinders.

Cement the engine shaft 8E into the rear of the engine half 1E.

NOTE: *The following two steps are only necessary if the engine is to be fixed in position.*

Cement the engine outer shaft 5E onto 5E.

Cement the end cap 3E onto the end of the 8E shaft.

NOTE: *The following two steps are only necessary if the engine is to rotate in the model.*

Locate the engine outer shaft 5E onto 5E.

Cement the end cap 3E onto the end of the 8E shaft, making sure cement does not secure the outer shaft 5E to 8E (free to rotate).

Painting:

Prime all parts using ‘AK Interactive’ Black Primer and micro-filler (AK757) or similar.

Airbrush all of the engine parts with a gloss black, such as ‘Tamiya’ Gloss Black (X1) or similar.

Airbrush the engine cylinder assembly (E1, 4 and 10E) using ‘Alclad’ Steel (ALC-112) or similar.

Airbrush the intake manifold (2E) using ‘Alclad’ Exhaust Manifold (ALC-123) or similar.

Airbrush the push rods (9E) using ‘Alclad’ Stainless Steel (ALC-115) or similar

Brush paint the 18 spark plugs using ‘Tamiya’ Flat White (XF2) mixed with a drop of Buff (XF57).

Apply an engine wash of ‘AK Interactive’ Engine Wash (AK2033).

Airbrush the engine with a light coat of semi-matte clear coat, such as ‘Alclad’ Light Sheen (ALC-311) or similar.

Apply lightly by sponge ‘Tamiya’ Weathering Master (Set D - Burnt Blue) to the induction pipes at the cylinder heads and the tops area of the cylinders.

Apply lightly by sponge ‘Tamiya’ Weathering Master (Set B - Soot) to the cylinder heads at the opposite side to the induction pipes (the exhaust valve).

Assembly (continued):

Cement the push rods (9E) onto the shaft (8E) making sure the ends of the push rods are aligned correctly to their cylinder heads.

Cement the intake manifold (2E) onto the shaft (8E) making sure the ends of the manifolds are aligned correctly to their cylinder heads.

NOTE: *In the following steps, the nine pairs of ignition leads are attached between the spark plugs and slip ring on the outer shaft (8E) at the rear of the engine.*

Cut nine lengths of ‘EZ’ Black stretch line (Fine).

Using thin CA adhesive, secure one end of one line to a spark plug.

Pull the line slightly and using thin CA adhesive, secure the opposite end of the line to the slip ring at the rear of the engine.

Cut away the excess line at the slip ring.

Repeat the procedure to add lines to the remaining eight spark plugs.

Engine cowl:

NOTE: *The kit supplied engine cowl (3B) will be replaced with the ‘Aviattic’ resin engine cowl (ATTRES 004), as being a more accurate representation.*

Remove the engine cowl from its resin casting block.

Remove any residual mould flash or surface artifacts.

Carefully sand the rear edge of the cowl flat and to the rear edge of the rear band around the cowl.

Carefully drill and cut out the three circular openings in the front of the cowl.

Remove the engine bulkhead (19C) and frame (8C) from their sprues and remove any residual mould flash and seam lines.

Cement the frame in position on the rear of the bulkhead.

Test fit the engine into its location recess/hole in the front of the bulkhead. Make sure the rear shaft locates fully into the engine bulkhead.

Remove the engine from the bulkhead.

Test fit the resin cowl onto the bulkhead, making sure it locates fully onto its recess and is aligned correctly.

NOTE: *During the following step, you may find that the tops of the engine cylinders that are not visible inside the cowl, may need to be either filed or sanded to allow the engine cowl to locate correctly without contacting the cylinders.*

Relocate the engine into the bulkhead then test fit the resin engine cowl and the kit propeller. Make sure the cowl fits over the engine and locates fully against the bulkhead and the engine propeller shaft is central in its hole in the cowl.

PART 7
PROPELLER

PART 7 - PROPELLER

NOTE: *For this build I chose to use the kit supplied propeller, as it represents the propeller that is shown in the photograph of the actual aircraft. I believe it is possibly a 'Heine' propeller.*

Preparation:

Remove the propeller from sprue and remove any mould flash or obvious seams.

Slightly drill into the inner, larger holes in the propeller boss using a 0.8 mm diameter drill.

Slightly drill into the outer, smaller paired holes in the propeller boss using a 0.3 mm diameter drill.

Painting:

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

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

Refer to Part 2 (Wood Effects) of this build log. Create the desired wood effect - I used 'DecoArt' Burnt Umber crafters acrylic paint.

Decals:

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

NOTE: *The kit supplied decals for the propeller will be replaced with 'Wingnut Wings' spare decals for the 'Heine' logo and data text, as these will be more accurate to this propeller.*

Apply the 'Heine' and text decals to the propeller.

Airbrush the propeller with a semi-matte clear coat, such as 'Alclad' Light Sheen (311) or similar mixed with a small amount of 'Tamiya' Clear Orange (X26).

Brush paint the propeller hub plate with 'Mr. Colour' Dark Iron (214) or similar and once dry, buff as desired to create the metallic effect.

PART 8
WEAPONS

PART 8 - WEAPONS

NOTE: *The kit supplied machine guns will be replaced with 'GasPatch' 08/15 Spandau weapons. Only the two machine guns and their barrels will be used.*

Preparation:

Secure the barrels into the machine guns using thin CA adhesive.

Secure the padded butts in position on the rear of the breech blocks of the machine guns, using thin CA adhesive.

File away the synchronisation connection lug of the forward, underside of the breech block on both machine guns (not required).

Cut away the extended 'tube' at the front of the lower mounting fixture (not required)

Painting:

Airbrush prime the weapons with a gloss black primer, such as 'Tamiya' Semi-Gloss Black (X18) or similar.

Lightly airbrush the weapons with 'Alclad' Gunmetal (ALC-120) or similar.

Using 'Tamiya' weathering master Set C (Gun metal), lightly brush over both machine guns, particularly the perforated cooling jackets.

Using 'Tamiya' weathering master Set B (Soot), lightly sponge around the gun muzzle.

Brush paint the ammunition ports on either side of the breech blocks with a mix of 'Mr. Colour' Bronze (215) and Brass (219).

Brush paint the padded butts with 'AK Interactive' Brown Leather (AK3031) or similar.

Brush paint the padded butts with 'Tamiya' Semi-Matte Gloss (X35) or similar.

PART 9
FUSELAGE

PART 9 - FUSELAGE

NOTE: *Some photo-etch parts from the 'Aviattic' Fokker DR.I/D.VI set (ATTPE011) and 'PART' DR.1 set (S32-028) will be used to replace or supplement kit supplied parts.*

Preparation:

Remove the following kit parts from their sprues and remove any mould flash, obvious seams or ejector pin artifacts:

Fuselage halves (C3 and 29)
Tailplane (9) (straight leading edge)
Fuselage decking panel (A2)
Cockpit side frames (C5 and C6)
Seat support frames (6D)
Seat frame (2B)
Cockpit floor (C17)
Gun support (C22)
Rudder bar (C14)
Aileron control lever (C2)
Compass (C13)
Control column (C15)
Hand grip (C12)
Tail skid (C10)
Hand pressure pump (C11)
Ammunition tanks (D4)
Fuel tank (halves (C20 and C27).

Assembly:

File away the carburettor intakes on the forward, sides of the fuselage, as these will interfere with applying the fuselage decals later in this build. They will be replaced with tubing.

Drill holes of 1.6 mm diameter through the fuselage where the carburettor intakes were located.

Cement the fuel tank halves together.

Sand the edges of the fuel tank to blend them with the surrounding surfaces.

Remove the two photo-etch cockpit triangular side boards (1) from the 'PART' DR.1 (S32-028) set and remove any edge tags.

Remove the floor boards (4 and 5) from the 'PART' DR.1 (S32-028) set and remove any edge tags.

Remove the linen backing (2) from the 'PART' DR.1 (S32-028) set and remove any edge tags.

NOTE: *The kit supplied seat frame (B2) is intended to be fitted with the outer frame and cross bar facing forward into the cockpit. However, like the Fokker DR.1 photograph below, the seat frame was most likely covered with linen and also with a linen top, through which the pilot's seat harness straps were passed to be attached behind the seat frame.*

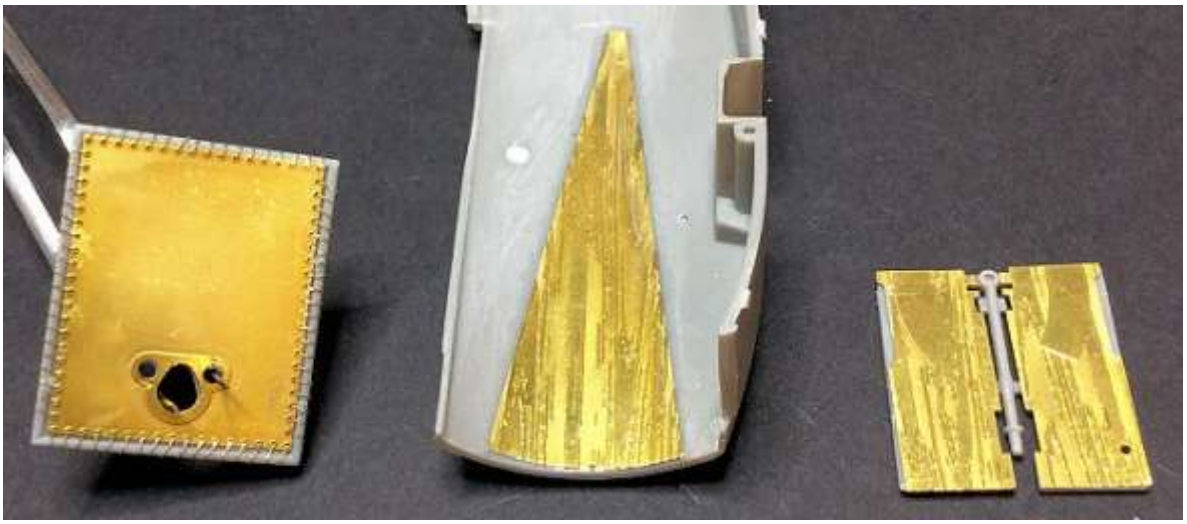
Scrape or sand away the pre-moulded cross bar from the seat frame.

Apply thin CA adhesive to the face of the seat frame, locate the photo-etch backing in position and clamp until the adhesive sets.

Wrap the cords around the frame edges and secure in position using thin CA adhesive.

Use thin CA adhesive to secure the cockpit triangular side boards centrally along the inside of fuselage halves.

Use thin CA adhesive to secure the cockpit floorboards onto the cockpit floor.



Cement the rudder bar to its locator lug on the gun support.

Cement the control column onto the torsion bar between the cockpit floor boards. Tilt the column slightly left or right if the upper wing ailerons are to be angled from the wing.

Cement the hand grip onto the top of the control column.

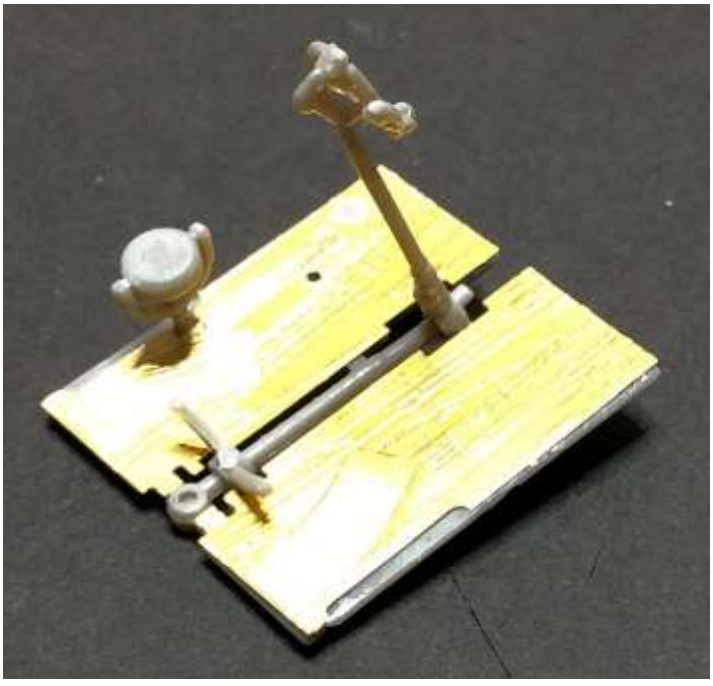
Drill a hole of 0.2 mm diameter through the end of both lever (C2).

Cement the aileron control lever (C2) in position on the control column torsion bar.

Drill through the hole for locating the compass in the cockpit floor boards, using a drill of 1.1 mm diameter. The hole should be drilled farther forward than the existing hole so as to avoid contacting the seat or the pressure hand pump.

Cement the compass into its pre-drilled hole.

Cement the hand pressure pump onto its locations on the cockpit right side frame.



NOTE: *The kit supplied pilot seat will be replaced by the 'Aviattic' resin Fokker seat (ATTRES 022). Therefore the mounting of the seat requires slight modification.*

Cut the 'Aviattic' resin seat and cushion from their casting blocks and sand away any casting flash or surface artifacts.

Drill a hole of 0.6 mm diameter through the centre of the seat back and at the seat base level.

Hold the seat centrally onto the photo-etch frame using 'UHU' white tack or similar. The underside of the seat should be at the top of the raised photo-etch cables port.

Drill through the hole in the seat and through the photo-etch/kit seat frame.

Pass a length of 0.6 mm diameter tube, such as 'Albion Alloy's' MBT06 or similar, through the hole in the seat and frame. This will position the seat correctly and hold it in position.

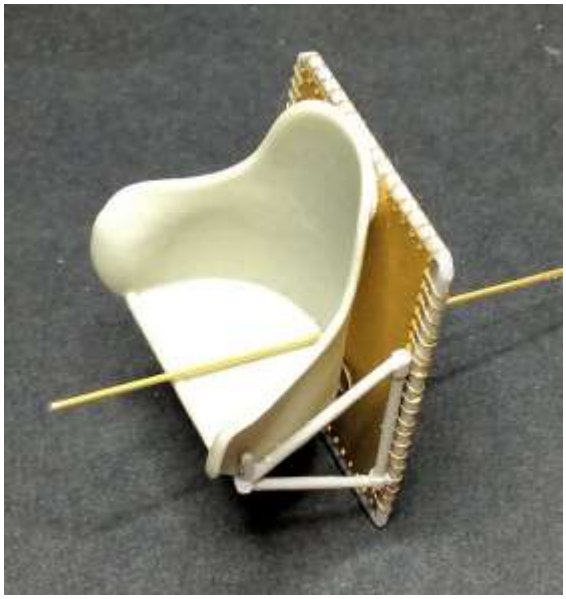
With the seat held in position, locate the two side frames onto the seat and seat frame.

Apply CA adhesive to the front of the seat to secure the side frames onto the seat. Do not apply cement the rear of the side frames to the seat frame.

Cut the tube such that it is rear from the from edge of the seat and protruding through the back of the seat frame.

Secure the tube in position using thin CA adhesive.

Cut a groove in the underside of the seat cushion so that it will locate fully onto the seat base.

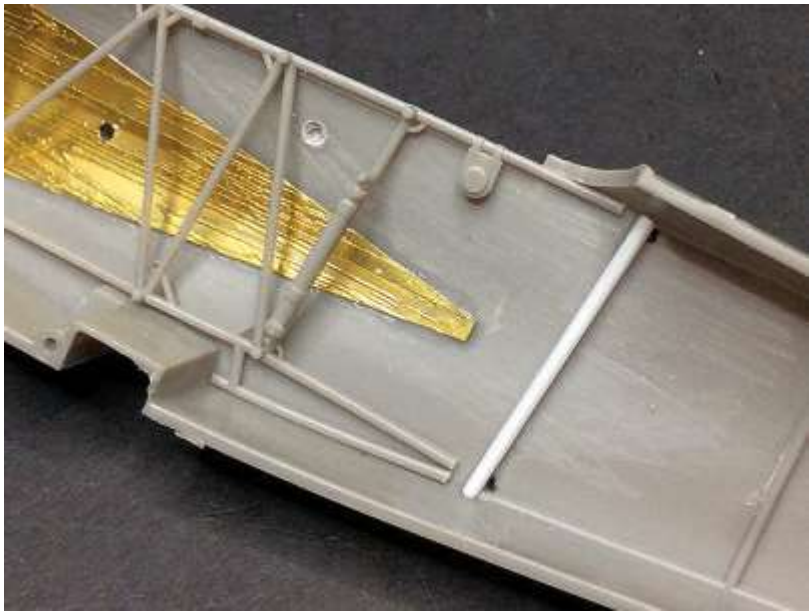


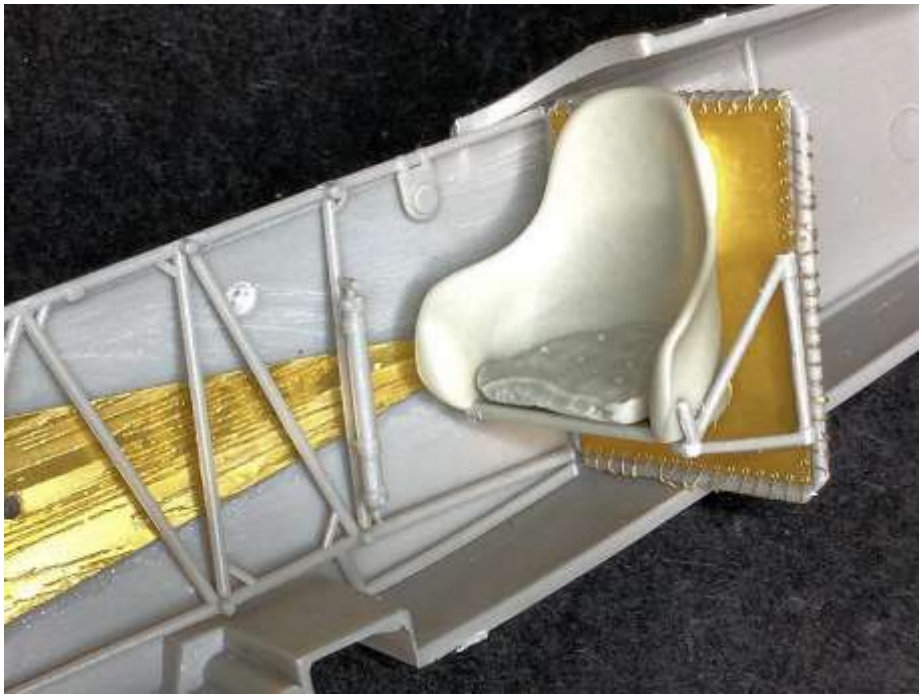
Cut two lengths of 1.0 mm styrene rod or similar to fit at the inside of the fuselage halves between the front of the top and bottom pre-moulded rails.

Secure the rods in position using CA adhesive.

Cut the rear ends of the cockpit side rails such that when located in the fuselage halves, the photo-etched seat frame will locate in the gap between them and the added styrene rods.

Test fit the cockpit side frames, seat and seat frame into the fuselage haves.





NOTE: *The cockpit triangular side boards had wood beading strips fitted on the outer edges and across the centre line.*

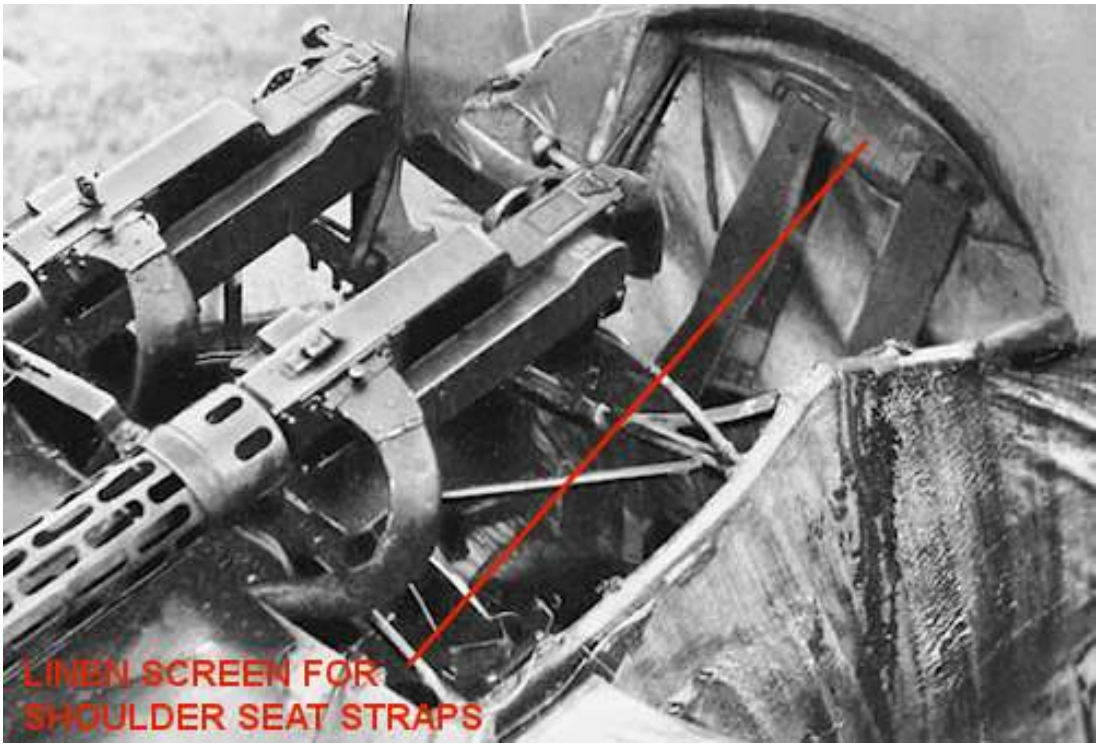
Cut six lengths of 0.5 mm wide styrene strip, such as that from 'Plastruct' or similar.

Cement a strip along both outer edges of the two cockpit triangular side boards.

Using thin CA adhesive, secure a strip along the centre line of both cockpit triangular side boards.

Cut away any overhang of strip at the front edge of the fuselage halves.

NOTE: *The seat support frame on this aircraft most likely had a linen wind baffle screen fitted between the top of the frame and inside of the fuselage. The pilot's shoulder harness straps passed through slots in the screen to be attached behind the frame. The following photograph shows this screen as fitted to the Fokker Dr.1, which was the basis for the Fokker D.VI.*



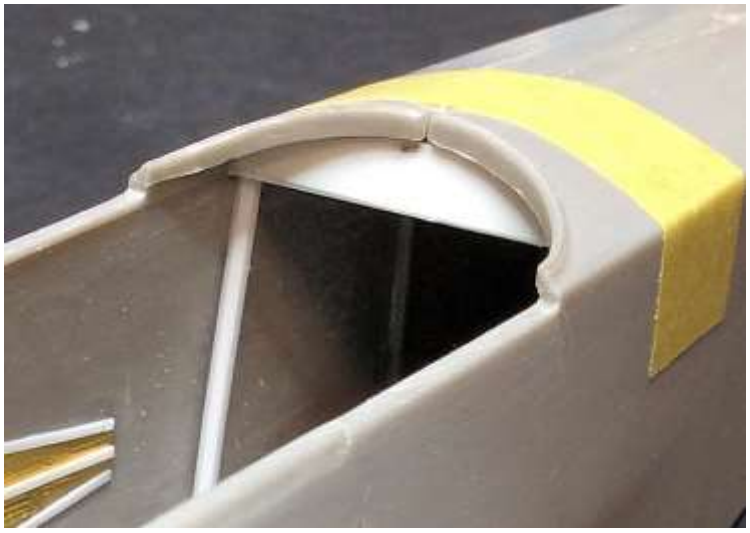
Temporarily join the two fuselage halves together, using masking tape.

Cut a strip of 0.5 mm thick styrene card.

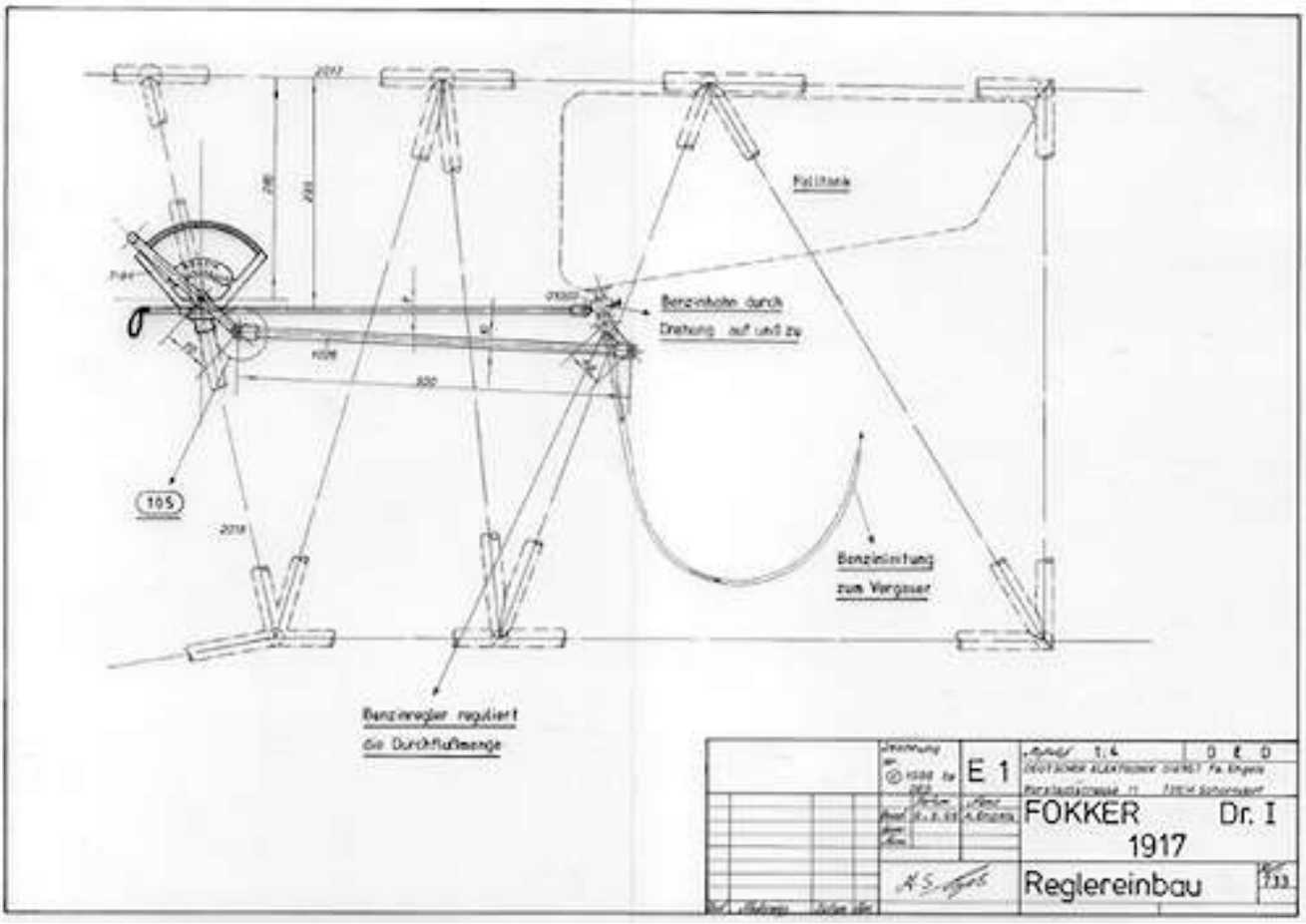
Cut and shape the strip such that it fits into the internal curve of the fuselage with its bottom straight edge just below the top cross member of the seat support frame when positioned into the fuselage.

NOTE: *During the following step, cement the part onto the **right fuselage half only**, as the fuselage halves need to be separated to continued the build.*

Cement the ‘wind baffle screen‘ onto the added styrene rods and the internal curve of the right fuselage half only.



NOTE: *My assumption is that the cockpit engine controls would have been similar to those of the earlier Fokker DR.1, as shown in the following DR.1 drawing.*



Cut a long length of 0.5 and 0.4 mm diameter tubes, such as ‘Albion Alloy’s’ MBT05 and MBT04 or similar.

Cut a short length of 0.7 mm diameter tube, such as ‘Albion Alloy’s’ MBT07 or similar.

Secure the 0.7 mm tube onto one end of the 0.5 mm diameter tube, using thin CA adhesive.

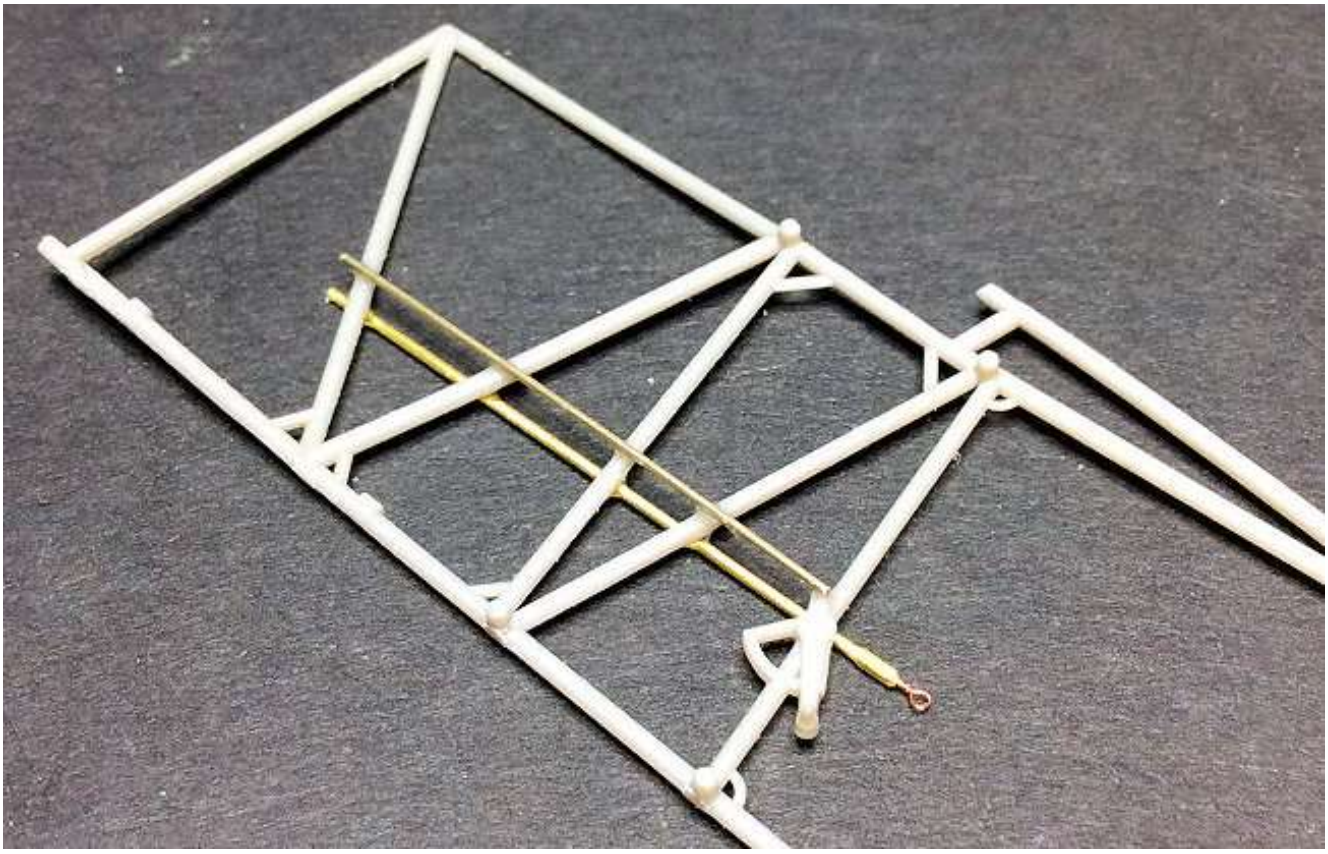
Cut a length of 0.015 mm diameter copper wire or similar.

Loop the copper wire around a 0.4 mm diameter drill bit and twist the two ends of the wire to create a looped end.

Insert the ‘tail’ of the wire loop into the bore of the 0.5 mm tube at the 0.7 mm end and secure in position using thin CA adhesive.

Using thin CA adhesive, secure the 0.4 mm diameter tube with one end on the base of the throttle lever and the remainder on the inside face of the four struts on the cockpit left side frame.

Using thin CA adhesive, secure the 0.5/0.7 mm diameter tube with the 0.7 mm tube to the rear of the throttle lever and the remainder on the outside face of the four struts on the cockpit left side frame.



Pre-rigging:

Carry out the following on both of the fuselage halves:

Using a 0.4 mm diameter drill, drill into the three control cable exit ports (rudder and the elevator) and through the rear sides of the fuselage halves. Drill along the ports to form slots.

Using a 0.4 mm diameter drill and using the pre-moulded indents on the inside of the fuselage, up and rear from the holes for the carburettor air intakes. The holes should be drilled from the inside of the fuselage halves and up and forward to create exit holes for the twin aileron control wires.

Painting:

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

Airbrush the two ammunition tanks, the pilot's seat and support frames and the gun support/ rudder pedals with 'Tamiya' Gloss Black (X1) or similar.

Airbrush the two ammunition tanks and the pilot's seat with 'Alclad' Duraluminium (ALC102) or similar.

Airbrush the fuel tank with 'Alclad' Steel (ALC112) or similar.

Airbrush the two cockpit side frames with 'Tamiya' Cockpit Green (XF71) mixed with 20% J.A. Green (XF13) or similar.

Airbrush the inside of the two fuselage halves, cockpit floor boards, pilot's seat support frame and underside of the fuselage decking panel with 'Tamiya' Deck Tan (XF55) or similar.

Brush paint the control column/torque tube, aileron lever, compass, starter switch mounting and added throttle control tubes with 'Tamiya' Rubber Black (XF85) or similar.

Brush paint the throttle quadrant and trigger pads on the control column hand grip with 'Mr. Colour' Stainless Steel (213) or similar.

Brush paint the pressure hand pump and starter switch with 'Mr. Colour' Brass (219) or similar.

Brush paint the wire loop in the added engine control tube with 'Tamiya' Red (X7) or similar.

Brush paint the handles on the hand grip, throttle handle and pressure hand pump with 'Tamiya' Hull Red (XF9) or similar.

Brush paint the two seat side frames and outer frame of the seat support frame with 'Tamiya' Cockpit Green (XF71) mixed with 20% J.A. Green (XF13) or similar.

Brush paint the seat cushion with 'AK Interactive' Leather (AK3031) with British Uniform (AK3081) and British Uniform Light (AK3082) highlights.

Wood effect:

NOTE: *Refer to PART 2 (Wood Effects) of this build log for more information.*

Apply the desired wood effect fish to the floor boards, underside of the fuselage decking panel and the triangular side panels on the insides of the fuselage halves. For this used 'DecoArt' Crafters acrylic (Burnt Umber).

Brush paint the floor board foot skids with 'Mr. Colour' Stainless Steel (213) or similar.

Internal decals:

NOTE: *The Lozenge decals used are the 'Aviattic' clear four colour lozenge faded (ATT32071) and the instruments 'Airscale' generic WW1 instruments (AS32 WW1). For more information refer to Part 4 (Decals) of this build log.*

Lozenge:

Cut out two decals from the 'Aviattic' decal sheet such that they cover the forward inside of the fuselage halves, from the seat frame location to the front edge of the fuselage. The orientation of the lozenge pattern should be vertical, as on the sheet.

Apply the decals over the fuselage, including the added photo-etch triangular side panels.

Carefully roll a cotton bud over **one side only** of the decal to bed it down onto the surface and remove residual water.

Slice along the edge of the triangular side panel and across the end.

Slice down the centre of the decal and remove that section from the triangular side panel.

Position the other side of the decal and roll out to bed it down onto the surface and remove any residual water.

Slice along the edge of the triangular side panel and remove that section from the triangular side panel.

Cut out a decal from the ‘Aviattic’ decal sheet such that it covers the seat support frame, from the inner edges of the outer frame. The orientation of the lozenge pattern should be vertical, as on the sheet.

Apply the decal over the seat support frame.

Carefully roll a cotton bud over the decal to bed it down onto the surface and remove residual any water.

Pierce through the holes for the control wires and seat mounting tube and apply ‘Tamiya’ X20A thinners to melt and conform the decal into the holes.

Cut out a decal from the ‘Aviattic’ decal sheet such that it covers the added wind baffle screen. The orientation of the lozenge pattern should be vertical, as on the sheet.

Apply the decal over the wind baffle screen.

Carefully roll a cotton bud over the decal to bed it down onto the surface and remove residual any water.

Tachometer:

The Tachometer was made from a shaped section of round styrene, cut from a kit sprue, primed and brush painted with ‘Tamiya’ Semi-Gloss Black (X18). An appropriate decal from the ’Airscale’ generic WW1 instruments (AS32 WW1) set was applied.

The Tachometer was then cemented in position on the cockpit left side frame.

Altimeter:

The Altimeter was made from a shaped section of round styrene, cut from a kit sprue, primed and brush painted with ‘Tamiya’ Semi-Gloss Black (X18). An appropriate decal from the ’Airscale’ generic WW1 instruments (AS32 WW1) set was applied.

The Altimeter was then cemented in position on the cockpit right side frame.

Compass:

An appropriate decal from the ’Airscale’ generic WW1 instruments (AS32 WW1) set was applied to the top of the fitted compass.

The brass compass outer ring was removed from the ‘PART’ DR.1 set (S32-028) and secured around the decal, using ‘MicroScale’ Kristal Klear PVS adhesive.

Ammunition container:

An appropriate chart decal from my ‘spares’ was applied to the rear ammunition container, facing towards the pilot.

Weathering:

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

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

Apply the desired weathering to the painted and wood effect parts. I used the ‘Flory Models’ Dark Dirt’ fine clay wash.

Seal all painted and treated parts by airbrushing with a semi-matte clear coat, such as ‘Alclad’ Light Sheen (ALC311) or similar.

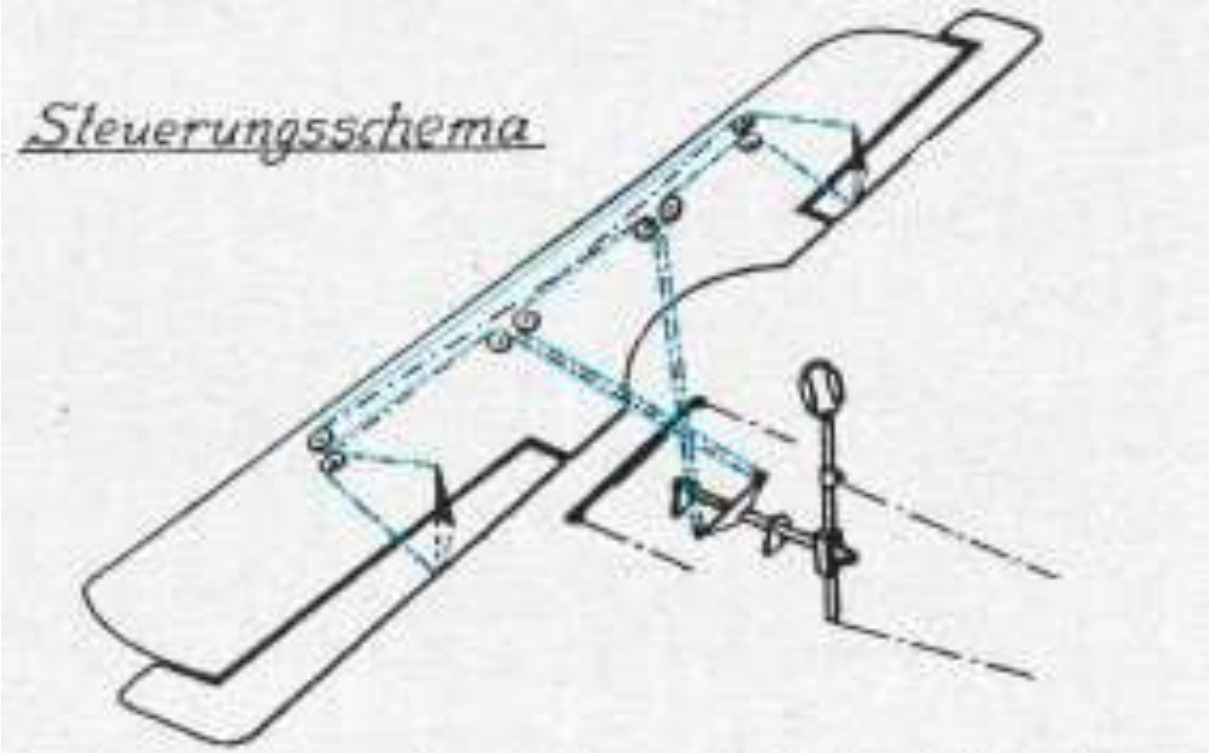
Control cables:

NOTE: *Brass or Nickel-Silver tube can be chemically blackened by immersion in a blackening solution, such as ‘Blacken-It’ or similar, then washed in clean water.*

Ailerons:

Cut two short lengths of ‘blackened’ 0.4 mm diameter tube, such as ‘Albion Alloy’s’ (MBT04) or similar.

Cut two long lengths of ‘Stroft’ 0.08 mm diameter mono-filament or similar. The length of each should be long enough to pass from the aileron control levers on the cockpit floor and up out of the pre-drilled holes in the fuselage to the underside of the upper wing.



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

Slide a tube onto the line then pass the opposite end of the line through the tube.

Slide the tube up to, **but not touching**, the end of the lever, making sure the two lines are the same length from the tube.

NOTE: *During the following step the loop of line through the lever end should be able to moves and not be fixed in position.*

Secure the lines in the tube by applying a small amount of thin CA adhesive to the end of the tube farthest from the lever.

Repeat the procedure to add a line to the opposite aileron lever.

Cut away any residual tail of line at the end of the tubes.

Elevator:

NOTE: *The only elevator control cables visible in the cockpit are the upper twin cables as the lower cables are under the foot boards.*

Cut two short lengths of ‘blackened’ 0.4 mm diameter tube, such as ‘Albion Alloy’s’ (MBT04) or similar.

Cut a long length of ‘Stroft’ 0.08 mm diameter mono-filament or similar.

Pass one end of a line through the two tubes.

Using thin CA adhesive, secure the two tubes at the centre of the line, but leaving a 2 mm gap between them.

Loop the line around the control column facing rearwards and at the stubs above the pivot, with the two tubes at the sides.

Secure the line to the control column using thin CA adhesive.

Rudder:

Drill a hole of 0.2 mm diameter through the rear of the centre flange of the rudder bar.

Cut two short lengths of ‘blackened’ 0.4 mm diameter tube, such as ‘Albion Alloy’s’ (MBT04) or similar.

Cut two long lengths of ‘Stroft’ 0.08 mm diameter mono-filament or similar.

Pass one end of a line through the pre-drilled hole in the rudder bar.

Slide a tube onto the line then pass the opposite end of the line through the tube.

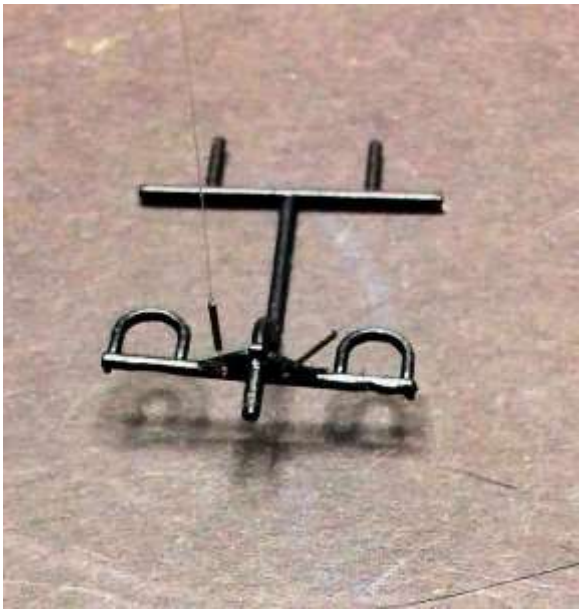
Slide the tube up to, **but not touching**, the rudder bar.

NOTE: *During the following step the loop of line through the rudder bar should be able to move and not be fixed in position.*

Secure the lines in the tube by applying a small amount of thin CA adhesive to the end of the tube farthest from the rudder bar.

Repeat the procedure to add a line to the opposite side of the rudder bar.

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



Pilot's seat:

Locate the pilot's seat onto the seat support frame, inserting the added locating rod through the pre-drilled hole in the seat frame.

Align the seat centrally, with the two side frames in contact, against the seat frame.

Secure the seat to the frame using CA adhesive or two part epoxy adhesive, such as 'Araldite' or similar.

Pilot's seat harness:

Cut the two shoulder and two lap straps from the 'PART' DR.1 set (S32-028) set.

Anneal the satraps over a naked flame to soften the photo-etch straps. Take care to not overheat the photo-etch or it may melt.

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

Airbrush the four straps with 'Tamiya' Wooden Deck Tan (XF78) or similar.

Use a pencil to colour the metal fittings of the straps.

Cut the attachment bracket end of each lap strap to shorten the overall length.

Secure the two lap strap ends down the sides of the seat cushion and across the cushion, using thin CA adhesive.

Secure the attachment ends of the two shoulder straps onto the rear of the seat support frame, using thin CA adhesive.

Bend the shoulder straps over the seat top and down to the seat cushion.

Secure the shoulder straps onto the seat and cushion, using thin CA adhesive.

Dust the four straps with a dark pigment, such as 'Flory Models' Dark Dirt or similar.

Bracing wires:

NOTE: *The only cockpit bracing wires that will be visible once the fuselage is 'closed up' will be the cross bracing wires adjacent to the pilot's seat in the cockpit side frames.*

Cut four short lengths of 'blackened' 0.4 mm diameter tube, such as 'Albion Alloy's' (MBT04) or similar.

Cut four long lengths of 'Stroft' 0.08 mm diameter mono-filament or similar.

Slide a tube onto a line then pass the end of the line through a pre-moulded 'loop' in the forward corner of the rear bay of a cockpit side frame.

Loop the line back and through the tube.

Slide the tube up to, **but not touching**, bar of the frame loop.

NOTE: *During the following step the loop of line should be able to move and not be fixed in position.*

Secure the lines in the tube by applying a small amount of thin CA adhesive to the end of the tube farthest from the frame.

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

Repeat the procedure to add a line to the opposite corner loop on the frame.

Repeat the procedure to add two lines to the other cockpit side frame.

Assembly (continued):

NOTE: *During the following steps, keep test fitting the left fuselage half to ensure the parts locate fully and are aligned correctly.*

Cement the cockpit side frames in position in their fuselage half, making sure there is stull a gap between the rear ends of the frames and the added seat frame styrene support rods.

Pass the free ends of the added cross bracing lines diagonally (to cross each other) to the top and bottom of the added seat frame styrene support rods.

Pass the line behind or through the added seat frame styrene support rods. If necessary drill an appropriate sized hole through the rods.

Slightly tension each line and secure the free ends to the inside of the fuselage, using CA adhesive.

Cut away any residual line from the fuselage.

Cement the seat and support frame assembly in position against the added styrene rod support on the right fuselage half.

Cement in position the floor boards assembly, making sure all of the pre-rigged control lines are kept clear of adhesive and that they are not trapped under the parts.

Pass the free ends of the elevator control line rearwards and through the outer control line ports at the bottom of the seat support frame.

Slightly tension each line and secure the free ends to the rear face of the seat support frame, using CA adhesive.

Cut away any residual line from the support frame.

Pass the free ends of the two aileron control lines pre-rigged on the **left aileron control lever** across and through the pre-drilled hole in the **fuselage right half**.

Temporarily hold the lines on the outside of the fuselage half, using masking tape.

NOTE: *The kit instructions are vague regards the actual location of the two ammunition tanks (4D) and how the top of the support bar (C22) is positioned at the tanks. Also the locating lugs on each side of the ammunition tanks do not give a positive bond to the cockpit side frames. I chose therefore to modify these parts.*

Cement the rudder bar/support bar into its locating recess at the front of the torsion bar, making sure it is vertical and horizontal across the cockpit.

Pass the free ends of the rudder control lines rearwards and through the centre control line port at the bottom of the seat support frame.

Slightly tension each line and secure the free ends to the rear face of the seat support frame, using CA adhesive.

Cut away any residual line from the support frame.

Temporarily join together the two halves of the fuselage.

Cement the two ammunition tanks together, making sure they are aligned to each other with the applied decal facing the pilot's seat.

Cement the fuel tank onto the front face of the forward ammunition tank, making sure the tanks are aligned to each other.

File or sand away the side locating lugs on the ammunition tanks, fuel tank and the forward locating stubs on the cockpit side frames.

Locate the fuselage decking panel (A2) onto the fuselage and pencil mark the fuselage sides where the two ammunition chutes (D2) will be located.

Remove the decking panel and test fit the ammunition/fuel tanks assembly between the cockpit side frames aligned to the pencil marks. The tanks should be an interference fit between the top of the side frames.

As the vertical top section of the rudder bar/support bar will be under the ammunition tanks, snip away the top section of the bar such that the bottom of the ammunition tanks will not contact it when they are fitted.

Separate the fuselage halves.

Pass the free ends of the two aileron control lines pre-rigged on the **right aileron control lever** across and through the pre-drilled hole in the **fuselage left half**.

Join together the two halves of the fuselage, holding them together with masking tape.

Temporarily hold the right aileron control lines on the outside of the left fuselage half, using masking tape.

Cement the engine bulkhead in position on the front of the fuselage, making sure the outer edge is flush with the fuselage front edges.

Apply cement along the fuselage mating seam.

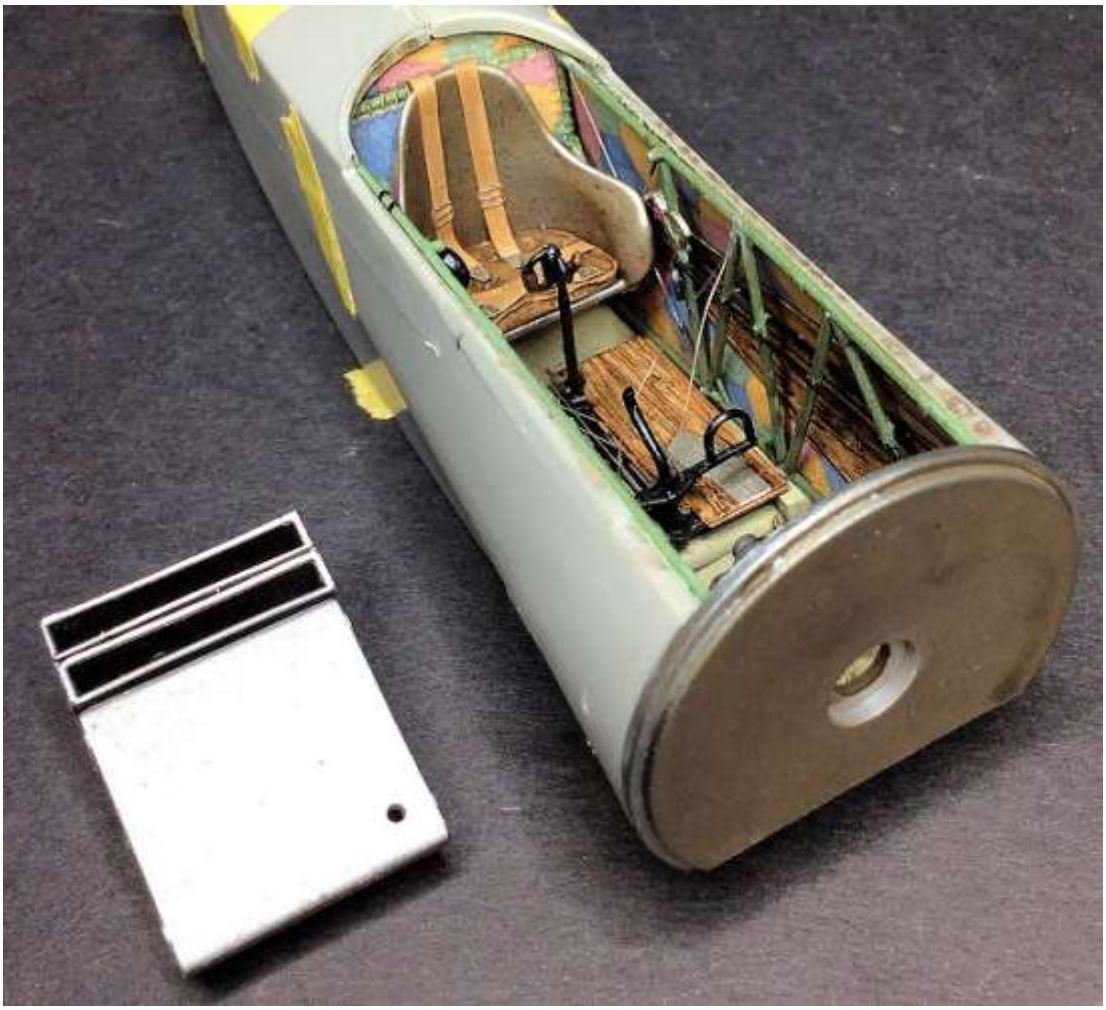
Once the applied cement has fully set, remove the masking tapes from the fuselage.

Apply cement along any section of the fuselage mating seam that may need reinforcing.

Check fit the fuselage decking panel, making sure it locates fully between the engine bulkhead and cockpit sides.

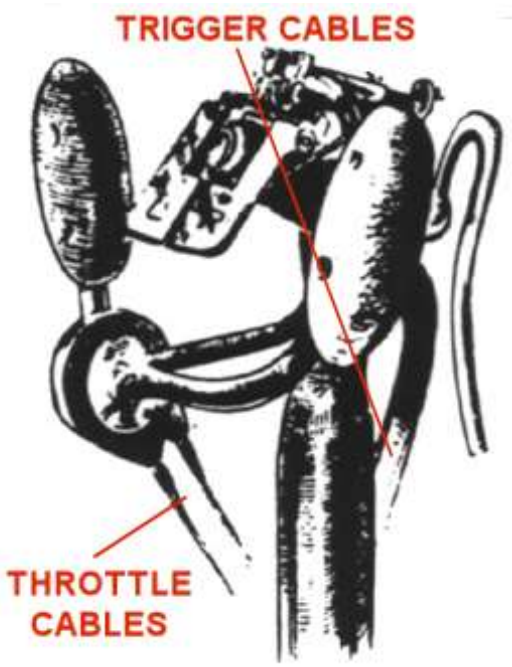
Check the seam joint between the fuselage halves. If necessary, fill any gaps or steps with 'Mr. Surfacer' 500 or similar.

Sand the joint between the fuselage halves to blend them together.



Throttle cable:

NOTE: *The hand throttle on the control column was connected to the carburettor was by a single cable routed around a pulley then through a single cover tube down and along the torsion bar.*



Cut a length of ‘MFH’ Black colour tube (P-961).

Using thin CA adhesive, secure one end of the tube to the front of the hand throttle at the left of the control column hand grip.

NOTE: *in the following step, the free end of the should be routed along the torsion bar and between the aileron control levers.*

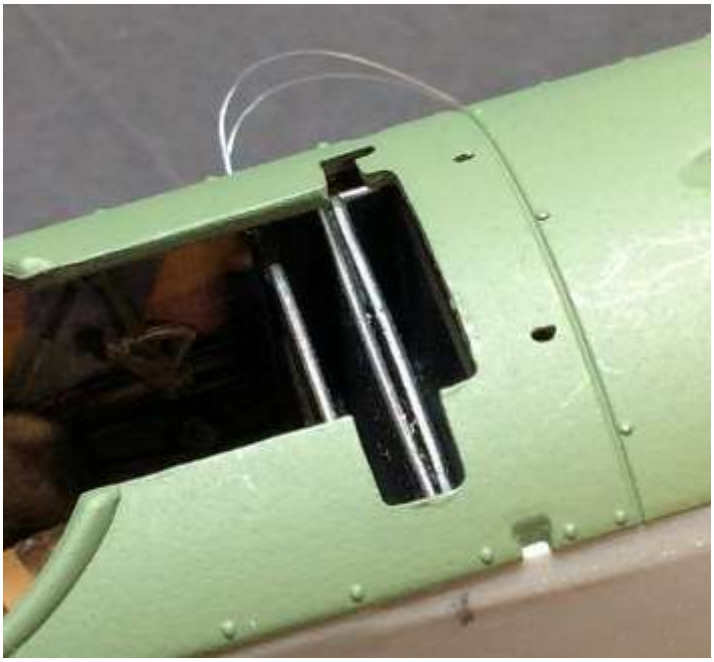
Slightly bow the tube then secure it to the front of the control column using thin CA adhesive.

Fuel tank:

Temporarily locate the decking panel (A2) in position on the fuselage.

Pencil mark the sides of the fuselage for the centre of the two outer cut-outs in the decking panel.

Cement the ammunition containers/fuel tank assembly between the cockpit side frame, with the centre of the ammunition containers aligned with the pencil marks and the assembly flush with the top of the side frames.



Synchronisation cables:

NOTE: *The two machine guns were synchronised from the engine (to fire between the propeller arc) by a cable routed between the synchroniser and under the ammunition containers to the breech block of each machine gun.*

Cut two long lengths of 'MFH' Black colour tube (P-961).

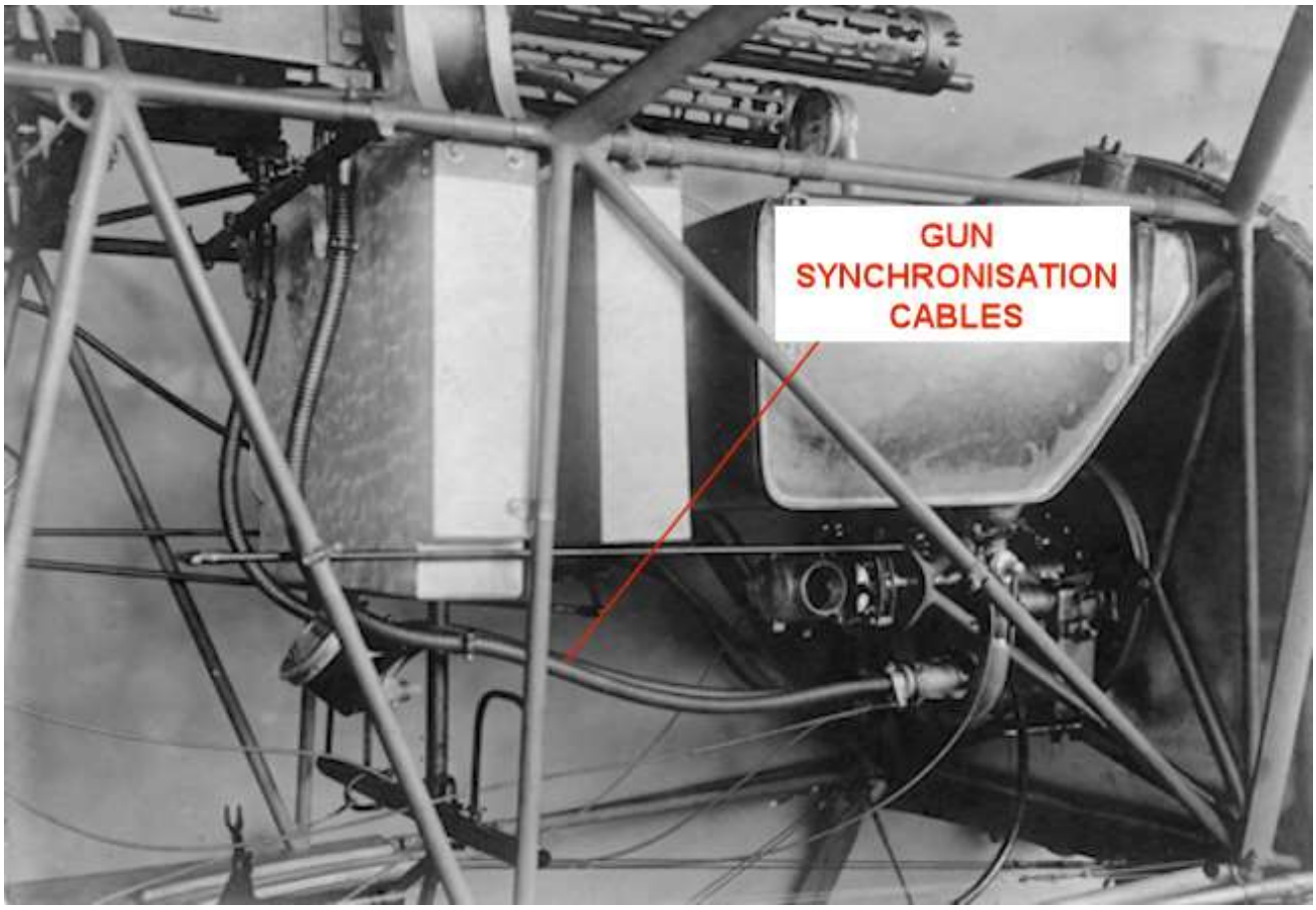
Temporarily locate the decking panel (A2) in position on the fuselage.

Hold each machine gun in position on the decking panel with the lower front mounting fixture at the edge of the panel opening. Pencil mark the top edge of the rear ammunition container at the forward end of their breech blocks.

Remove the machine guns and decking panel.

NOTE: *During the following step, leave the end of the tube slightly protruding above the edge of the ammunition container.*

Using thin CA adhesive, secure one end of the tubes at the pencil marks on the front of the rear ammunition container, looping the opposite ends of the tubes forward and under the ammunition container.



Trigger cables:

NOTE: *The two machine guns were fired by triggers on the hand grip of the control column and connected to the guns by single operating cables. Due to the confined area in the cockpit, I chose not to represent these cables.*

Gun support bar:

NOTE: *The kit supplied gun support bar (C16) is weak and easily broken. I chose to replace the bar with metal tubing.*

Cut away the two stubs on the cockpit side frames for locating the gun support bar.

Carefully cut a notch into the cockpit side fames at the removed stubs.

Cut a length of 0.7 mm diameter tube, such as ‘Albion Alloy’s’ MBT07 or similar. The length of the tube should be such that it is an interference fit into the created notches.

Brush paint the tube with ‘Tamiya’ Cockpit Green (XF71) mixed with 20% J.A. Green (XF13) or similar.

Secure the tube in the notches and across the cockpit, using thin CA adhesive.

Decking panel - fit:

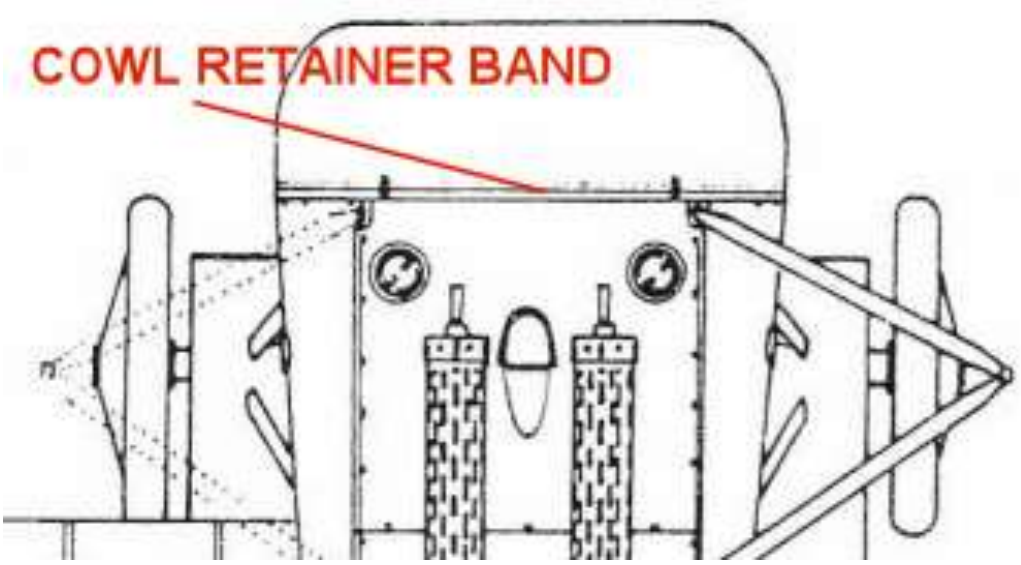
Cement the fuselage decking panel onto the fuselage, making sure it fully locates centrally and between the engine bulkhead and cockpit sides.

If necessary, file or sand the edges of the decking panel to blend with the fuselage sides. The pre -moulded side fasteners on the decking panel should be removed anyway, as they will be replaced with the more accurate resin ‘Fokker’ type fasteners from ‘Taurus Models’.

Mask off the cockpit and fuselage leaving the decking panel exposed.

Cowl retaining band:

NOTE: *The kit supplied engine cowl has been replaced with the ‘Aviattic’ resin version, which has the cowl retaining band pre-moulded on the rear edge of the cowl. As such, when located onto the engine bulkhead, there are two retainer bands visible. Therefore the recess on the bulkhead requires filling.*



Dependent on how deep the bulkhead recess is, it can be filled with either modelling putty or ’Mr. Surfacer’ 500 or similar.

NOTE: *During the following step, keep test fitting the resin cowl onto the bulkhead, making sure the cowl outer edge aligns with the sanded surfaces.*

Once fully set, carefully sand across the front of the decking panel and around the fuselage joints to blend them with the engine bulkhead. Make sure the filler is sanded flat to blend with the edge of the bulkhead and without any curvature.

Airbrush the decking panel with ‘Tamiya’ Cockpit Green (XF71) mixed with 20% J.A. Green (XF13) or similar.

Remove the masking.

Machine guns - fit:

Hold each machine gun in position on the decking panel and pencil mark the side of the breech blocks above the added support bar.

Remove the machine guns.

Drill a hole of 0.7 mm diameter vertically into, **but not through**, the underside of the breech blocks and aligned with the pencil marks.

Cut two short lengths of 0.6 mm diameter tube, such as 'Albion Alloy's' MBT06 or similar.

Secure the tubes into the pre-drilled holes in the breech blocks, using thin CA adhesive.

Hold each machine gun in position on the decking panel and note how much of each tube requires removing to enable the tubes to rest on the previously added support bar.

Carefully file or sand away the excess tube as required.

Brush paint the tubes with 'Tamiya' Cockpit Green (XF71) mixed with 20% J.A. Green (XF13) or similar.

NOTE: *During the following step, secure the weapons at their contact points on the decking panel. Make sure the weapons are vertically mounted and parallel to each other.*

Using thin CA adhesive, secure the machine guns into each side of the decking panel cut-out.

Remove the two ammunition feed chutes (D1) and ejection chutes (D2) from their sprue and remove any sprue tags or seam lines.

Test fit each feed and election chute and scrape, file or sand them where required to achieve a correct fit with their tops aligned to the inlet/outlet ports in the gun breech blocks.

Remove an ammunition belt from the 'PART' DR.1 set (S32-028).

Scrape or file the ammunition belt from the feed chute for the right machine gun.

Cut away the bullet heads from the right side of the belt such that the belt will fit into the recess created in the feed chute.

Using thin CA adhesive, secure the ammunition belt into the recess of the feed chute.

Bend the ammunition belt to form a 'snake' shape that will be inserted in the feed ammunition container for thar machine gun.

Airbrush the two feed and ejection chutes with 'AK Interactive' Grey (AK758) or similar.

Airbrush the two feed and ejection chutes with 'Alclad' Steel (ALC112) or similar.

Brush paint the ammunition rounds with 'Mr. Colour' Brass (219) or similar.

Brush paint the ammunition central belt with 'Tamiya' Dark Yellow (XF60) or similar.

NOTE: *When locating the ammunition feed chute to the **left machine gun**, feed the ammunition belt into the rear ammunition container.*

Secure the ammunition feed and ejection chutes in position using thin CA adhesive, making sure their tops are aligned to the ports in the gun breech blocks.

Blast plates:

Remove the two machine gun blast plates (6) from the 'Aviattic' Fokker DR.1 photo-etch set (ATTPE011).

Remove any photo-etch tags from the edges of the plates.

Anneal (soften) the plates over a naked flame, such as a cigarette lighter.

Carefully bend the two plates until they conform to the curvature of the top, front of the decking panel.

Airbrush the plates with a gloss Black, such as ‘Tamiya’ Gloss Black (X1) or similar.

Airbrush the two plates with ‘Alclad’ Steel (ALC112) or similar.

Using thin CA adhesive, secure the two plates centrally under the muzzle of the machine guns.

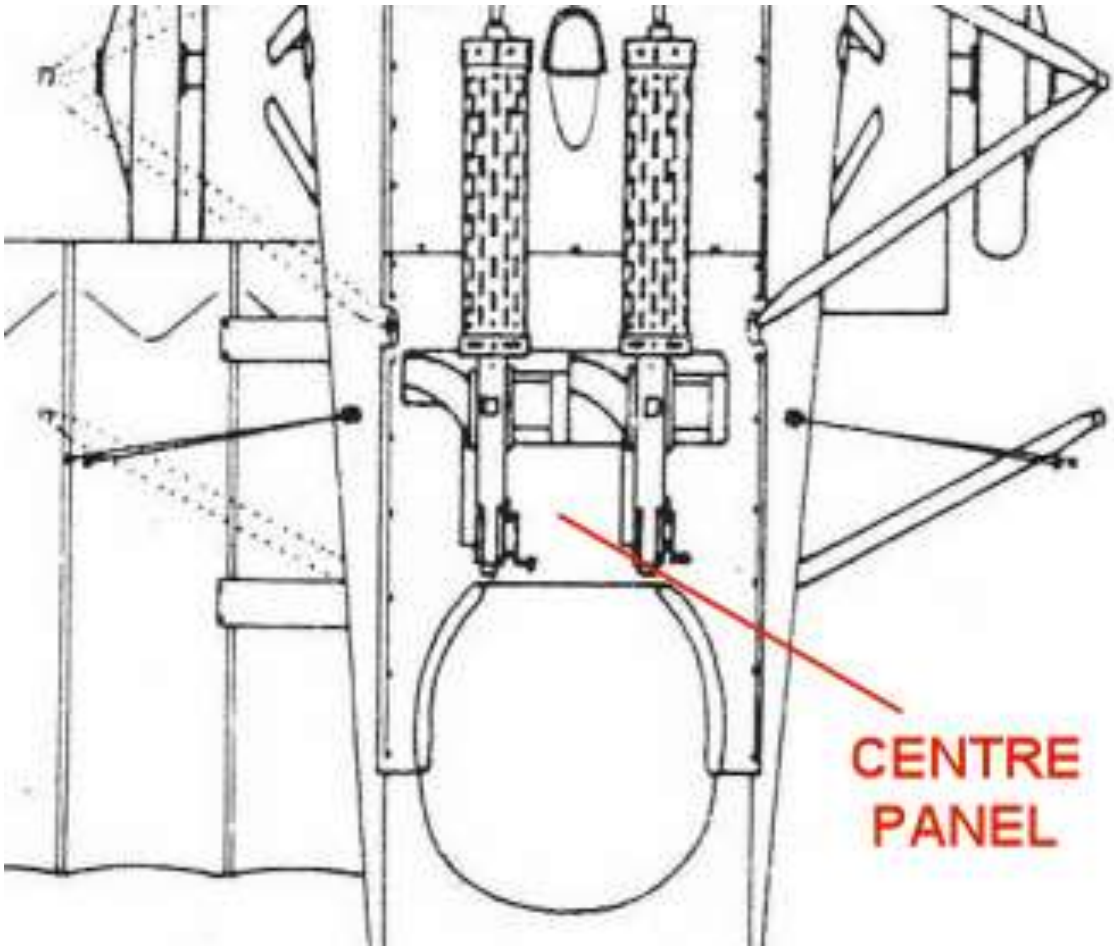
Rounds counter:

Select an applicable decal from the ’Airscale’ generic WW1 instruments (AS32 WW1) set.

Apply the decal to the instrument face in the recess on the decking panel.

Decking rear panel:

NOTE: *The kit supplied decking panel is missing the panel fitted at the rear and between the breech blocks of the two machine guns. Now the weapons are fitted, the panel can be added.*

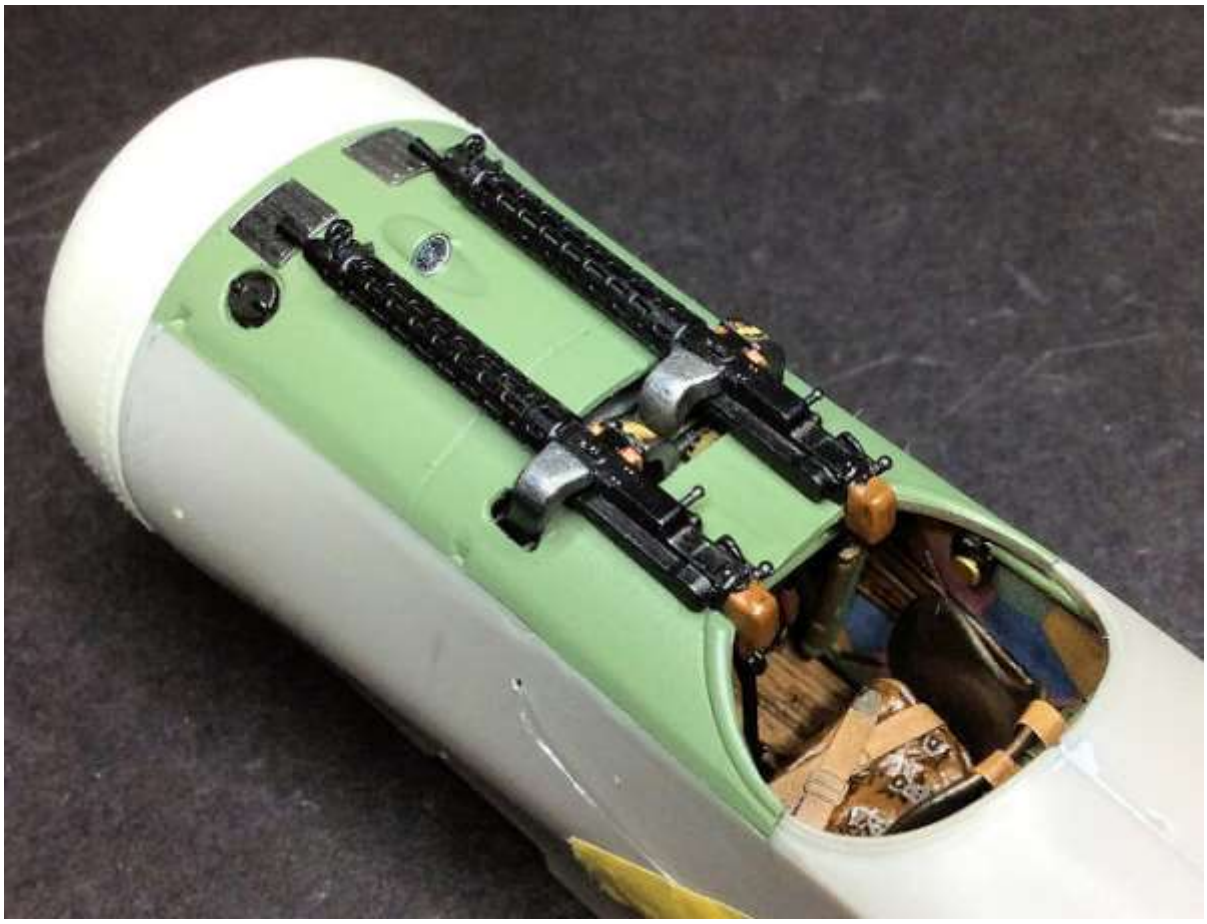


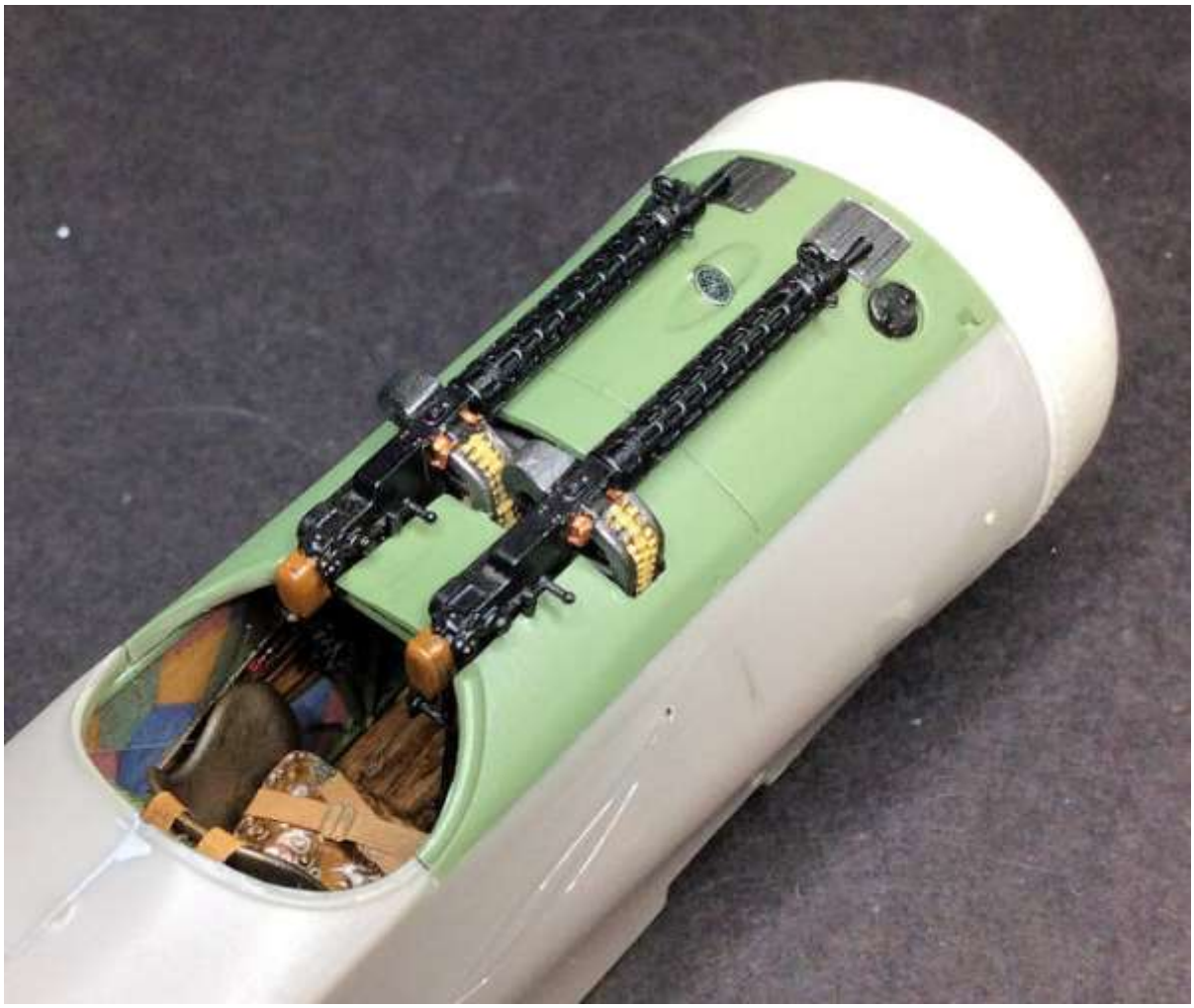
Cut a rectangle from 0.5 mm thick plastic card such that it is an interference fit between the breech blocks of the two machine guns.

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

Airbrush the panel with ‘Tamiya’ Cockpit Green (XF71) mixed with 20% J.A. Green (XF13) or similar.

Using thin CA adhesive, secure the panel between the breech blocks with its front edge against the ammunition feed cutes.





Tailplane:

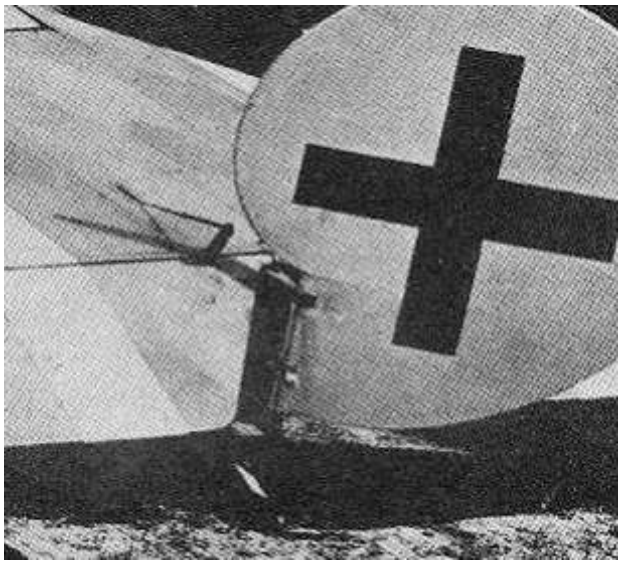
NOTE: *The tailplane has on the top and undersides surfaces pre-moulded cable ports. These are for the control cable routed from the fuselage sides and through the tailplane to the top of the elevator control horn. However, these ports are not aligned correctly.*

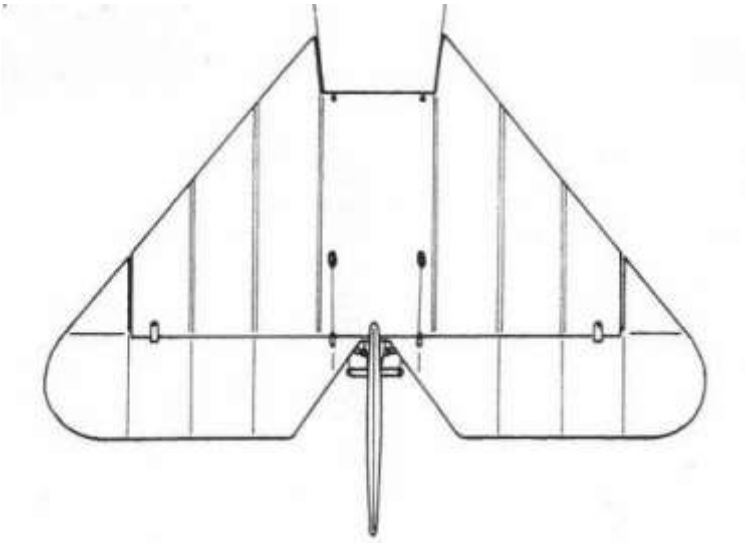
Sand way the pre-moulded cable ports on the underside of the tailplane. The **underside** is where the cable ports are closer to the rear edge of the tailplane

Drill a line of holes vertically through the pre-moulded cable ports on the top surface of the tailplane.

Drill across the holes to form a slot through the cable ports.

NOTE: *The kit tailplane locates in its recess on the top, rear of the fuselage. However, when compared to photographs and drawings, it seems when fitted it leaves too much of the top rear of the fuselage visible. Therefore a modification is required.*





Make sure the front face of the tailplane location is flat across the top, rear of the fuselage.

Cut a 2.0 mm wide strip of 1.0 mm thick plastic card and profile the ends to match the sides of the fuselage.

Cement the strip in position on the tailplane recess and against its front face.

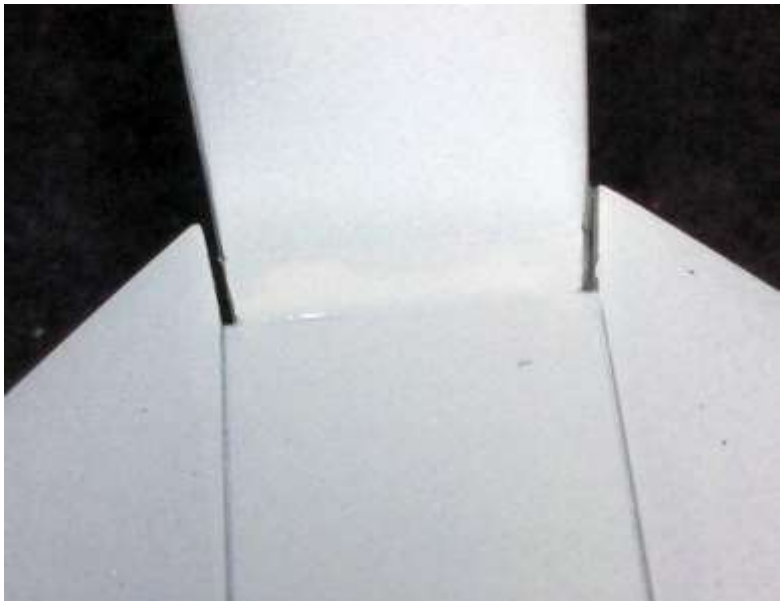
Cement the tailplane in position on the fuselage.

Check the seam joint between the fuselage, added strip and tailplane. If necessary, fill any gaps or steps with modelling putty or ‘Mr. Surfacer’ 500 or similar.

Sand the joint between the fuselage, insert and tailplane leading edge to blend them together.

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

Check for any obvious joints and if necessary, refill, sand and reprime to achieve a blended surface.



Priming:

NOTE: *The 'Aviattic' lozenge decal (ATT32008) for the upper surfaces and fuselage is 'clear' backed, which means an appropriate light base colour, such as white, tan or grey, needs to be applied before the decal. This will allow the weave effect of the decal to show through.*

To avoid paint on the aileron control lines, use masking tape to secure the ends of each pair together then slice along the edge to remove excess tape. The lines can then be pushed inside the cockpit leaving the masked ends protruding from the hole in the fuselage sides.

Mask off the complete decking panel assembly and the cockpit opening. I used a thin roll of 'UHU' white tack around the cockpit rim and masking tape over the decking panel.

Cut out the long strip of stitching (63) from the 'PART' DR.1 photo-etch set (S32-028) and trim its length to 92 mm.

Using thin CA adhesive, secure the stitching along the fuselage joint on the underside of the fuselage. The rear end should be position at the front edge of the cut-out for the tail skid.

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

Fine sand or polish the primed surfaces to achieve a smooth, imperfection free surface.

To prepare for the application of decals, airbrush the primed surfaces with a clear gloss coat, such as 'Alclad' Aqua Gloss 600 or similar.

Decals:

NOTE: *Refer to (The Aircraft' part of this build log for more information - Fokker ignored the specifications of the 'Idflieg' and used their standard method of covering the fuselage, with the lozenge pattern applied to the fuselage sides vertically (top to bottom). The top and underside lozenge was applied horizontally across the fuselage (side to side).*
The 'Aviattic' lozenge decal sheets are not 'cookie cut' to the required shapes, but are part of the overall carrier film on the sheet. Therefore you will need to carefully cut the individual decals from the sheet, using the models parts as the shape and size guides.

Fuselage sides:

NOTE: *The correction direction of the lozenge pattern – vertically (top to bottom).*

Hold tracing paper to the fuselage sides and trace their outline. Mark the location of the aileron control lines.

Cut out the tracing paper template including a slit from the top edge for the aileron control lines.

Check its positioning against the fuselage.

Hold the templates onto the blank side of the 'Aviattic' lozenge sheet (**ATT32008**) and pencil the outlines. Make sure the lozenge pattern is correctly orientated.

Carefully cut out the fuselage decals from the sheet.

Hold the cut decals onto the fuselage sides and check the shape of the cut decal aligns with edges of the fuselage.

Refer to Part 4 (Decals) of this build log - apply the decals to the sides of the fuselage.

To protect the already applied lozenge decals and to provide a suitable surface for applying the aircraft markings decals, airbrush a sealing coat of gloss (e.g., 'Alclad' Aqua Gloss ALC-600 or similar) over the applied lozenge decals.

Fuselage top and underside:

NOTE: *The correction direction of the lozenge pattern – horizontally (side to side).*

Use the same procedure to add the decal (**ATT32008**) to the top of the fuselage and (**ATT32010**) to the underside of the fuselage.

Top surface of elevator and tailplane:

NOTE: *The correction direction of the lozenge pattern - vertically across the elevator and tailplane (front to back). Take care handling the elevator as the centre operating bar is very fragile and easily broken.*

Use the same procedure to apply the same decal *(**ATT32008**)* to the top surface of the elevator and tailplane. These decals can be applied as a single decals.

Underside of tailplane and elevator:

NOTE: *The correction direction of the lozenge pattern - vertically across the elevator and tailplane (front to back). Take care handling the elevator as the centre operating bar is very fragile and easily broken.*

Use the same procedure to apply the same decal *(**ATT32010**)* to the underside of the elevator and tailplane. These decals can be applied as a single decals.

Rib tapes - tailplane and elevator:

NOTE: *The decal sheet used for rib tapes is the 'Aviattic' lozenge sheet (**ATT32069**) and (**ATT**. Each rib tape will need to be cut from the decal sheet.*

From the decal sheet, cut strips of approximately 1.0 mm width and slightly longer than the chord of the tailplane (three locations - leading edge to its trailing edge).

Dampen the area on the lozenge decal where the rib tape is to be applied.

Soak a rib tape decal in warm water for approximately 20 seconds.

Position the rib tape across the tailplane.

Roll out any residual water from under the decal, using a cotton bud.

If necessary, gently brush a decal solution (e.g. 'MicroSol' or similar) along the rib tape to help conform it onto the lozenge decal.

Any decal edges or ends that will not fully conform to the surface can be dampened with 'Tamiya' X20A thinners, which will soften and adhere the decal to the model.

Repeat the procedure to apply all of the rib tapes required on the upper surface.

Apply the remaining rib tape decals - Elevator top surface (**ATT32069**), tailplane and elevator underside (**ATT32071**).

Kit decals:

NOTE: *Take care when applying the 'Roden' kit decals as they are known to be easy cracked or chipped and some can have problems adhering to the model surface.*

Refer to the kit instructions and apply the relevant decals to the fuselage.

Removing residual decal:

Any decal that is not required, such as overhanging decal on model edges etc, can be removed. Once the applied decal is fully set, use the edge of a medium sanding stick or a sharp blade, such as a scalpel or shielded razor blade, to carefully sand or cut away the decal back to the model edge.

Cockpit padding:

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


Fok D VI

PART 10
CONSTRUCTION

PART 10 - CONSTRUCTION

NOTE: *Some photo-etch parts from the 'Aviattic' Fokker DR.I/D.VI set (ATTPE011) and 'PART' DR.1 set (S32-028) will be used to replace or supplement kit supplied parts.*

Preparation:

Remove the following kit parts from their sprues and remove any mould flash, kit sprue tags, obvious seams or ejector pin artifacts:

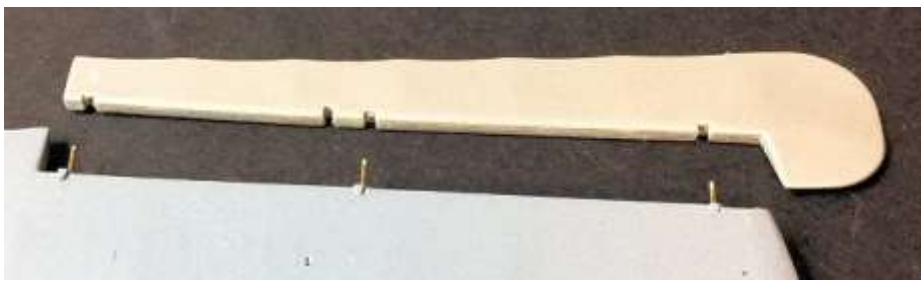
Lower wing halves (1A and 14B)
Lower wing end caps (6B and 7B)
Upper wing halves (3A and 4A)
Upper wing end caps (5A and 8A)
Axle fairing halves (4B and 5B)
Axles halves (7D)
Wheels (9D)
Wheel outer covers (8D)
Tailplane (B9)
Elevator (C21)
Ailerons (D16)
Rudder (B1)

Assembly:

Cement axle fairing halves together.
Sand the edges of the axle fairing assembly to blend them with the surrounding surfaces.
Cement the half axles into the wheels.
Cement the upper wing halves together.
Cement the end caps to the upper wing.
Sand the joint seams around the upper wing and end caps to blend them together.
Cement the lower wing halves together.
Cement the end caps to the lower wing.
Sand the joint seams around the lower wing and end caps to blend them together.

Ailerons:

File or sand away the aileron hinge stubs on the upper wing.
Point mark the centre of the stub witness marks for drilling.
Drill a hole of 0.5 mm diameter at the point marks.
Point mark for drilling the centre of the hinge recesses in each aileron.
Drill a hole of 0.5 mm diameter into the ailerons point marks.
Cut six short lengths of 0.4 mm diameter rod, such as 'Albion Alloy's' MBR04 or similar.
Secure each rod into a hole, using thin CA adhesive.
Test fit the ailerons onto their added locating rods and trim their lengths to achieve a full fit of the ailerons onto the upper wing.



Priming:

NOTE: *The 'Aviattic' lozenge decal (ATT32010) for the upper surfaces and fuselage is 'clear' backed, which means an appropriate light base colour, such as white, tan or grey, needs to be applied before the decal. This will allow the weave effect of the decal to show through.*

Airbrush the upper and lower wings, ailerons and axle fairing with a white primer, such as 'AK Interactive' White (AK759) or similar.

Fine sand or polish the primed surfaces to achieve a smooth, imperfection free surface.

To prepare for the application of decals, airbrush the primed surfaces with a clear gloss coat, such as 'Alclad' Aqua Gloss 600 or similar.

Decals:

NOTE: *Refer to (The Aircraft) part of this build log for more information - Fokker ignored the specifications of the 'Idflieg' and used their standard method of covering the wings, with the lozenge pattern applied horizontally across the top and underside of the wings and the fuselage. The upper wing had border tape, cut from the same lozenge, applied across the centre section of the trailing edge, between the inboard edges of the ailerons. The lower wings had border tape applied across the entire trailing edges. Each of the wing ribs also had tapes of the same pattern. For the ailerons, the elevator, tailplane and the fuselage sides, the lozenge pattern was applied vertically (front to rear and top to bottom).*
The 'Aviattic' lozenge decal sheets are not 'cookie cut' to the required shapes, but are part of the overall carrier film on the sheet. Therefore you will need to carefully cut the individual decals from the sheet, using the models parts as the shape and size guides.

Underside of upper wing and ailerons:

NOTE: *The correction direction of the lozenge pattern - horizontally across the wing (tip to tip).*

Hold the 'Aviattic' lozenge sheet (**ATT32010**) onto the underside of the upper wing with the decal side showing.

Working from the other side of the wing, using a soft tip ink pen or similar, trace the outline of the wing onto the rear side of the decal sheet.

Carefully cut out the wing decal from the sheet.

Cut the decal into two halves as this will make it easier to apply the large decals.

Lay the cut decal onto the underside of the upper wing and check the shape of the cut decal aligns with the wing.

When aligned press down on the decal to push the strut location projections through the decal.

Refer to Part 4 (Decals) of this build log - apply the decals to the underside of the upper wing.

NOTE: *The correction direction of the lozenge pattern - vertically across the ailerons (front to back).*

Use the same procedure to apply the decals to the underside of both upper wing ailerons.

To protect the already applied lozenge decals and to provide a suitable surface for applying the rib tape decals, airbrush a sealing coat of gloss (e.g., 'Alclad' Aqua Gloss ALC-600 or similar) over the applied lozenge decals.

Underside of lower wings:

NOTE: *The correction direction of the lozenge pattern - horizontally across the wing (tip to tip).*

Use the same procedure to apply the decals to the underside of the lower wings. These decals can be applied as a single decals.

Top surface of upper wing and ailerons:

NOTE: *The correction direction of the lozenge pattern - horizontally across the wing (tip to tip).*

Apply the decals *(**ATT32008**)* to the top surface of the upper wing and ailerons, using the same procedure carried out to apply the decals to the underside of the upper wing and ailerons.

Top surface of lower wings:

NOTE: *The correction direction of the lozenge pattern - horizontally across the wing (tip to tip).*

Apply the decals *(**ATT32008**)* to the top surface of the lower wings, following the same procedure carried out to apply the decals to the underside of the upper wing and ailerons. These decals can be applied as a single decals.

Rib tapes - upper wing top surface:

NOTE: *The decal sheet used for rib tapes is the 'Aviattic' lozenge sheet (**ATT32069**) and (**ATT**. The decal strips supplied are **not wide enough** to span the chord of the upper wing. Therefore each rib tape will need to be created with **two strips of decal**.*

From the decal sheet, cut strips of approximately 1.0 mm width and slightly longer than the chord of the wing (leading edge to its trailing edge).

Dampen the area on the lozenge decal where the rib tape is to be applied.

Soak a rib tape decal in warm water for approximately 20 seconds.

Position the rib tape along the pre-moulded rib tapes on the wing.

Roll out any residual water from under the decal, using a cotton bud.

If necessary, gently brush a decal solution (e.g. 'MicroSol' or similar) along the rib tape to help conform it onto the lozenge decal.

Any decal edges or ends that will not fully conform to the surface can be dampened with 'Tamiya' X20A thinners, which will soften and adhere the decal to the model.

Repeat the procedure to apply all of the rib tapes required.

Add approximately1.0 mm wide decal strips:

Upper wing - across the centre section of the trailing edge, between the inboard edges of the ailerons.

Lower wings - Across the entire trailing edge of the wings.

Remaining rib tape surfaces:

Apply the remaining rib tape decals:

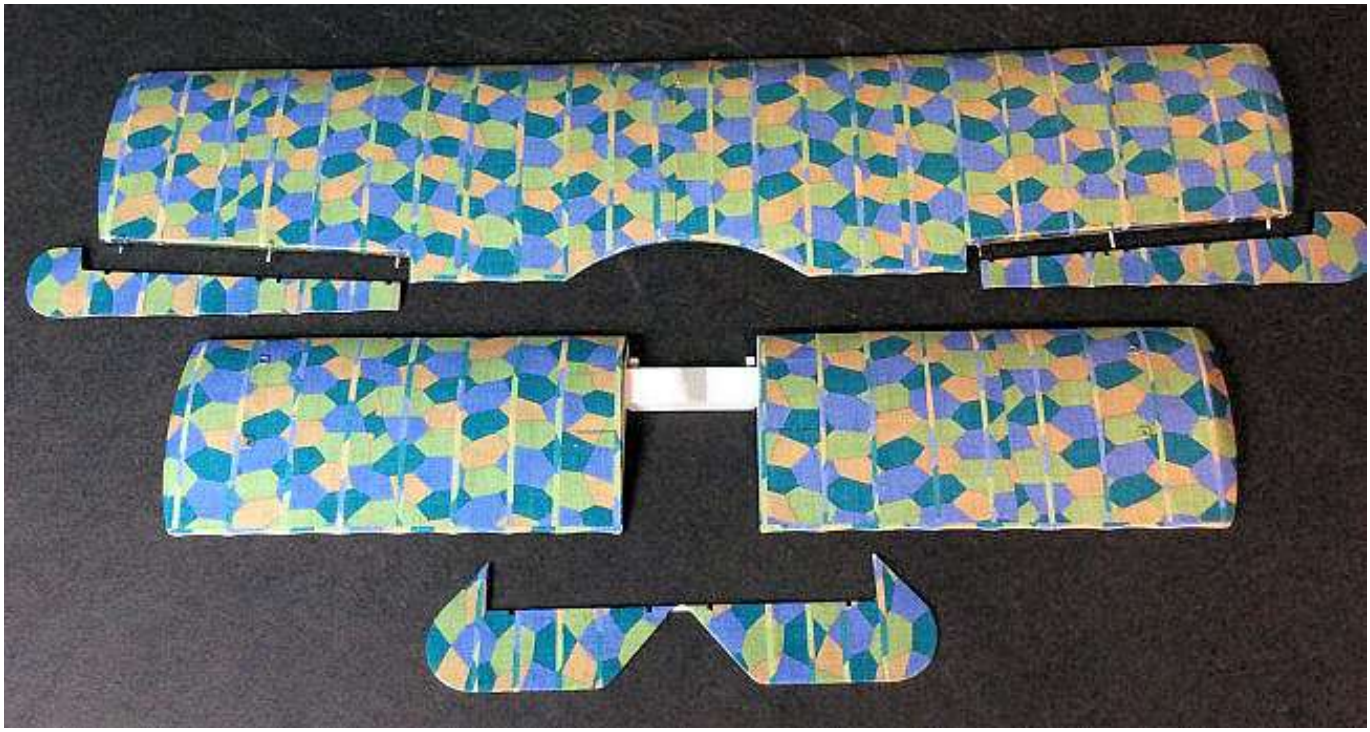
Underside - Upper and lower wing and ailerons (**ATT32071**).

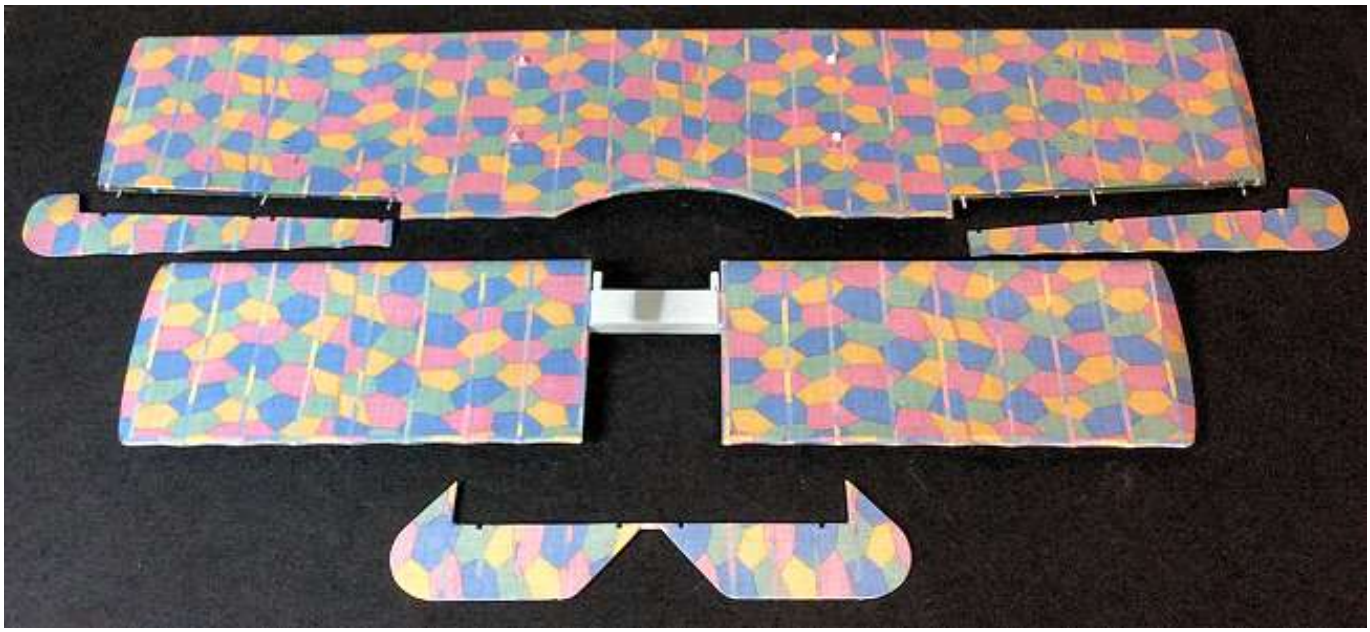
Top surface - Upper and lower wing and ailerons (**ATT32069**).

Axle fairing:

Airbrush the top surface and sides of the axle fairing with 'Tamiya' Cockpit Green (XF71) mixed with 20% J.A. Green (XF13) or similar.

Cut and apply a decal from the 'Aviattic' white-backed German Blue (ATT32077) sheet to the underside of the axle fairing.





Kit decals:

NOTE: *Take care when applying the 'Roden' kit decals as they are known to be easy cracked or chipped and some can have problems adhering to the model surface.*

Refer to the kit instructions and apply the relevant decals to the wings, ailerons and rudder.

To protect the applied decals, airbrush a sealing clear coat of semi-matte, such as 'Alclad' Light Sheen (ALC311) or similar, over applied decals. This will also provide a good surface for applying weathering.

Removing residual decal:

Any decal that is not required, such as overhanging decal on model edges etc, can be removed. Once the applied decal is fully set, use the edge of a medium sanding stick or a sharp blade, such as a scalpel or shielded razor blade, to carefully sand or cut away the decal back to the model edge.

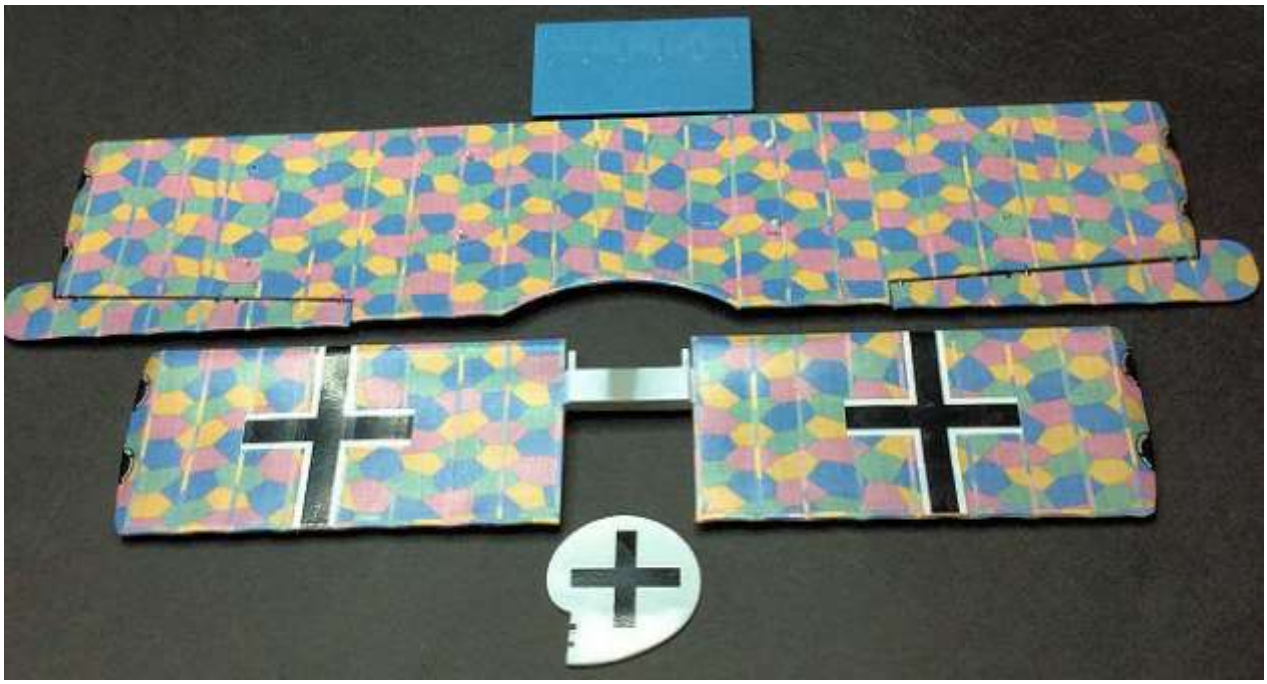


Photo-etch panels:

NOTE: *The underside forward panels on the fuselage will be added from the 'Aviattic' Fokker DR.I/D.VI set (ATTPE011) set. The lower wing needs to be fitted before adding the panels.*

Check fit the lower wing into the fuselage. Make sure the wing can be fully located without undue pressure, as this can cause the wing to bow instead of remaining flat. I found that the sides of the lower wing needed to be filed out particularly at the top edges as these were contacting the fuselage sides, preventing the wing from locating fully. Once located the centre 'spar' of the lower wing should be flush with the underside of the fuselage.

Cement the lower wing into the fuselage, making sure it is flush with the underside of the fuselage and horizontal to the fuselage when viewed from the front.

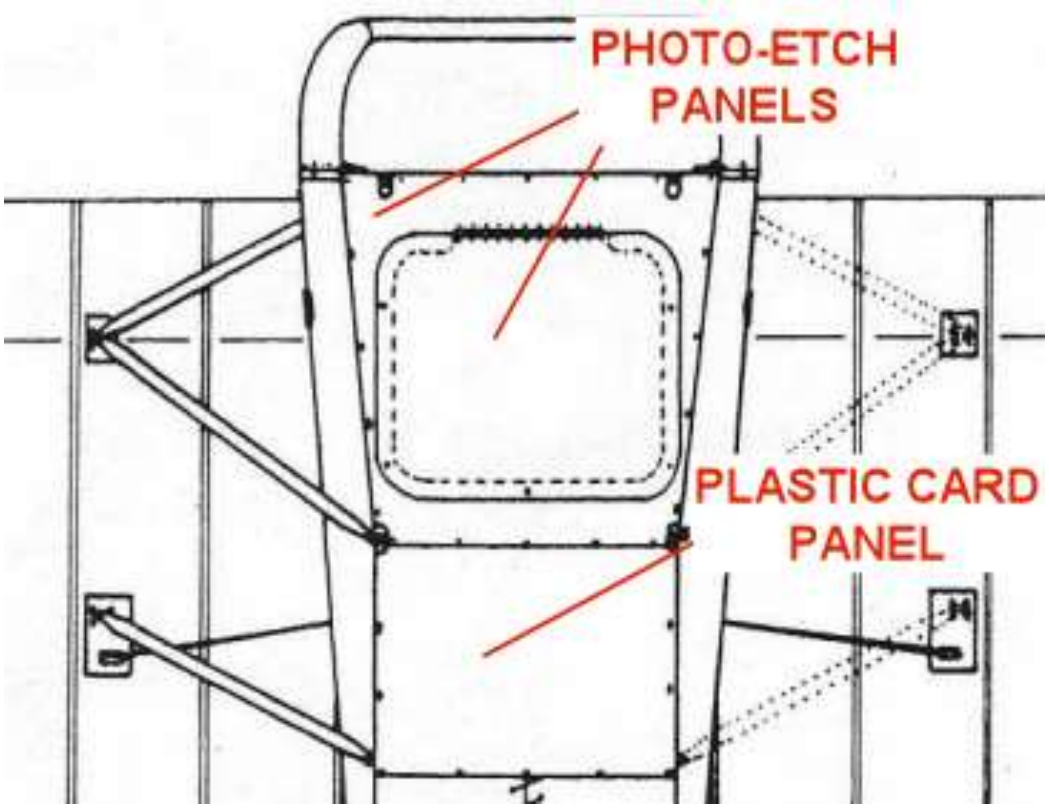
If necessary, file or sand across the lower wing 'spar' and fuselage to blend them together.

Remove the under fuselage panels (7 and 17) from the ‘Aviattic’ set.

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

Lightly sand the rear surfaces (that will be secured to the model) of the panels.

From 0.2 mm thick plastic card, cut a rectangle 22 mm x 18 mm. This will represent the rear panel on the underside of the fuselage.



Airbrush the visible side of each panel with a grey primer, such as ‘AK Interactive’ Grey (AK758) or similar.

Airbrush each panel with ‘Alclad’ Duraluminium (ALS102) or similar.

Lightly spray a cheap hairspray over each panel (base for subsequent chipping).

Airbrush each panel with ‘Tamiya’ Cockpit Green (XF71) mixed with 20% J.A. Green (XF13) or similar.

Using thin CA adhesive, secure the larger photo-etch panel in position on the forward, underside of the fuselage.

Using thin CA adhesive, secure the smaller insert panel in position in the larger panel.

Cement the plastic card panel in position on the underside of the fuselage and against the rear edge of the photo-etch panel.

Engine cowl:

NOTE: *The kit supplied engine cowl will be replaced by the ‘Aviattic’ resin engine cowl (ATTRES 004).*

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

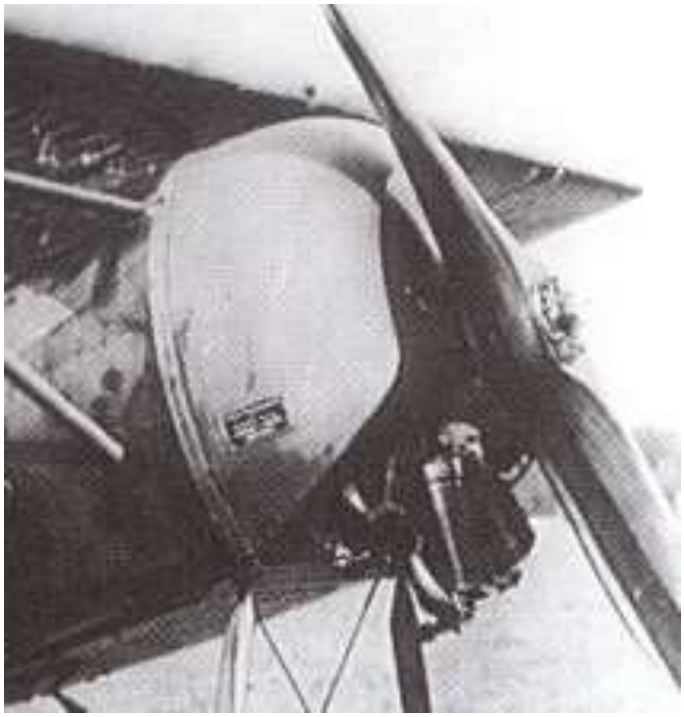
Airbrush the engine cowl with ‘Alclad’ Duraluminium (ALC102) or similar.

Lightly spray the outer surface of the cowl with a cheap hairspray (base for subsequent chipping).

NOTE: *The following photographs show how the orthochromatic film commonly used in WW1 could alter the actual colours. As can be seen the engine cowl on the Fokker E.V fighter (known to be yellow) is of a similar shade to that of the Fokker D.VI, which is a different shade to the fuselage marking and rudder (known to be white).*

Airbrush the outer surface of the cowl with 'Tamiya' Yellow Green (XF4) or similar.

Fokker D.VI



Fokker E.V

Chipping:

NOTE: *Chipping using the hairspray technique works by the layer of hairspray under the top coat of paint will soften when water is applied to the paint. This allows the top paint layer to be scratched or chipped away, giving a worn metal effect.*

Wet in turn, the surface of the three panels and engine cowl with water.

Using either (or both) a shorter stiff brush or a wood tooth pick, stipple or pick at the wetted surface. The applied water should penetrate through the paint to the hairspray layer, which should dissolve and allow the paint to be scratched through or chipped.

Continue until the desired worn effect is achieved. Take care to not 'overdo' the effect as it can look unrealistic on completion.

Allow the surface to dry naturally or blow over with air only from and airbrush.

Once fully dry, seal the painted surfaces with a semi-gloss clear coat, such as 'Alclad' Light Sheen (ALC311) or similar.

Engine and cowl - fit:

NOTE: *Some of the engine cylinder heads may have been filed or sanded to allow the engine to fit into the cowl. During the following steps make sure the 'good' cylinder heads are those visible at the bottom of the engine cowl.*

Locate the engine into the cowl with the propeller shaft through the larger, lower hole.

Check fit the engine into its locating hole in the front of the fuselage with the cowl fully located onto its locating ridge around the engine bulkhead. Make sure the bottom edges of the cowl are aligned equally on the bulkhead.

Separate the engine from the cowl.

NOTE: *Secure the engine cowl immediately after fitting the engine. This will make sure the two are correctly aligned.*

Secure the engine, with the cylinders correctly positioned, into its hole in the bulkhead.

Apply thin CA adhesive to the rear edge of the engine cowl and secure it over the engine and onto the bulkhead. Check that the engine propeller shaft is central in its cowl hole and is aligned with the fuselage when viewed from the side and from above.

Weathering:

To provide a good base for weathering, airbrush a light coat of clear semi-matte, such as 'Alclad' Light Sheen (ALC311) or similar.

NOTE: *During the following step, avoid applying the filter over areas of white decal and non-decal surfaces. Remove any using a damp cotton bud.*

Using a brush that is wide and soft, brush Ammo' acrylic filter Ochre (AMIG0822) evenly over the decal surfaces, making sure to brush in the direction of airflow. Where the filter 'pools', dab the brush onto absorbent paper then brush to remove the excess. Is desired, the filter can be thinned using water.

Allow the filter to fully dry, preferably over night.

'Flory Models' Dark Dirt clay wash - refer to Part 3 (Weathering) of this build log. Apply the clay wash over the fuselage then remove to achieve your desired effect.

Seal the applied weathering by airbrushing a light coat of clear semi-matte, such as 'Alclad' Light Sheen (ALC311) or similar.

Carburettor intakes:

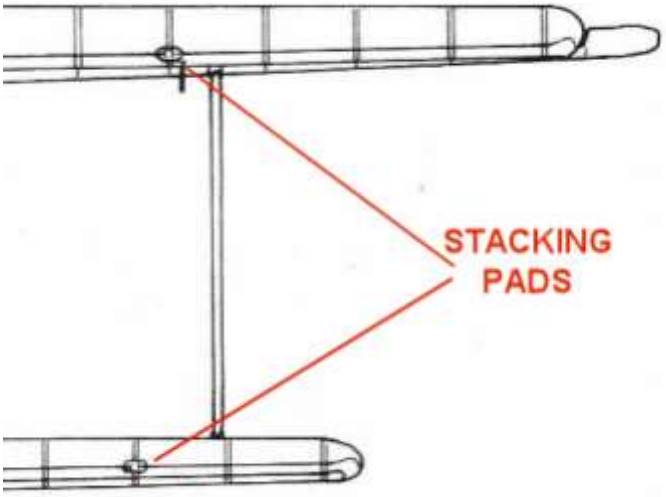
Cut two short lengths of 1.6 mm diameter tube, such as ‘Albion Alloy’s’ MBT06 or similar.

Locate the tubes into the pre-drilled holes in the fuselage, forward sides, leaving 1.5 mm protruding.

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

Wing stacking pads:

NOTE: *‘Stacking pads’ were fitted to the leading edge of the upper and lower wings. These were used to protect the wings when stacked on their leading edges for transport by road or rail.*



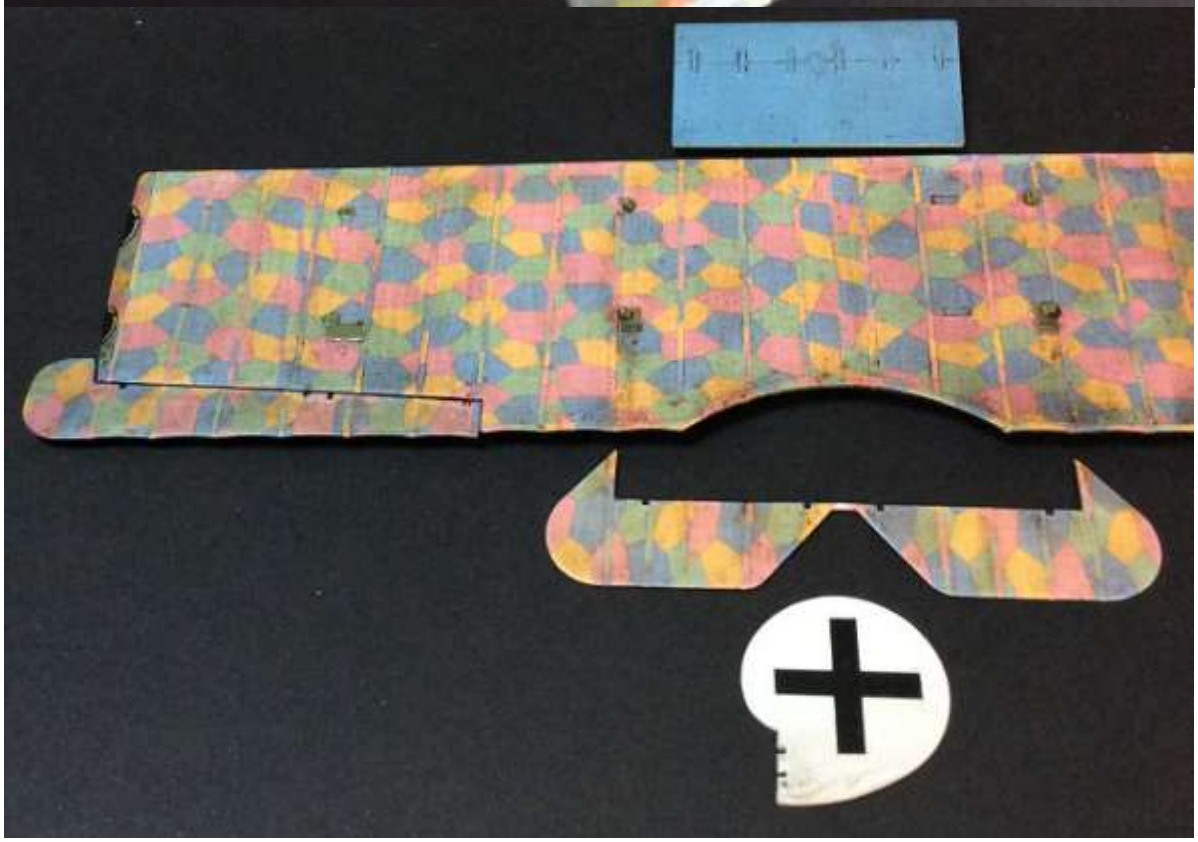
Remove four stacking pads (18) from the ‘Aviattic’ Fokker DR.I/D.VI set (ATTPE011) set.

Anneal (soften) the pads over a naked flame, such as a cigarette lighter.

Bow the pads over a wood tooth pick to form a curve that will conform over the wing leading edges.

Secure the pads in position on the wing leading edges, using thin CA adhesive (refer to the above illustration).

Brush paint the four pads with Black, such as ‘Tamiya’ Rubber Black (XF85) or similar.



Wheels:

NOTE: *The wheel covers will be from the 'Aviattic' Fokker DR.1 clear streaked (ATT32062) set. The decals need to cut out from the sheet as they are not 'cookie cut' decals.*

Airbrush the wheels and front covers with a grey primer, such as 'AK Interactive' Grey (AK758) or similar.

Airbrush a clear gloss coat, such as 'Alclad' Aqua Gloss 600 or similar, over the wheels and front covers.

Cut out the four wheel covers from the left column on the sheet (DR.1).

Cute around the outer edge of each decal and as close as possible to the edge.

Cut out the joint of the two front wheel covers (small centre dot).

Point mark the centre of each decal and drill out such that the decals will fit over the centre hubs on the wheels.

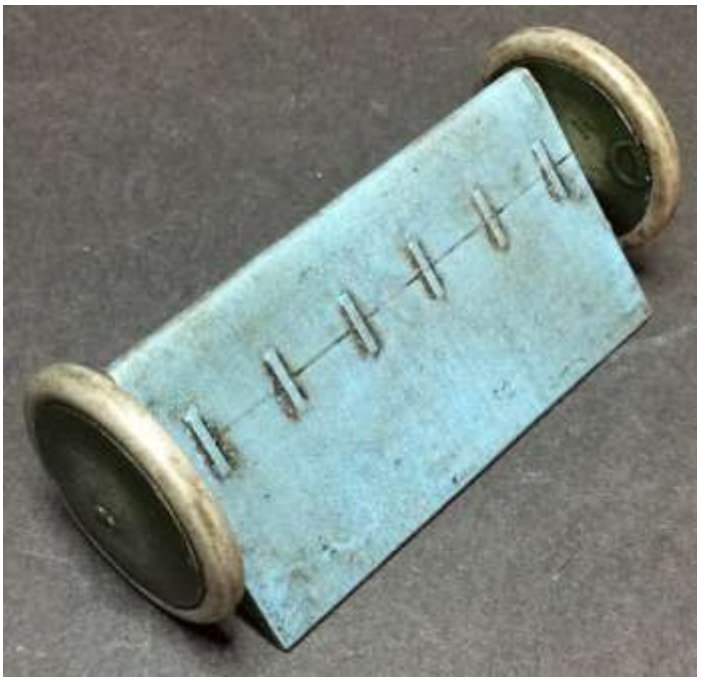
Apply the decals onto the wheels - slide the rear wheel covers over the fitted axle shafts.

Cement the wheel half axles into the axle fairing with the wheels close to the ends of the fairing.

Airbrush a semi-matte clear coat, such as 'Alclad' Light Sheen (ALC311) or similar, over the wheels and fairing assembly.

'Flory Models' Dark Dirt clay wash - refer to Part 3 (Weathering) of this build log. Apply the clay wash over the wheels and fairing then remove to achieve your desired effect.

Seal the applied weathering by airbrushing a light coat of clear semi-matte, such as 'Alclad' Light Sheen (ALC311) or similar over the wheels and fairing.



Wing foot boards:

NOTE: *The foot board at the lower wing roots will be represented by cuttings from the 'RB Productions' radiator mesh (RB-T027).*

Cut four strips from the 'RB Productions' radiator mesh (RB-T027). Each strip being 4 bars wide and the length matching the pre-moulded foot boards on the lower wing roots.

Secure each foot board in position over the pre-moulded foot boards on the lower wing roots, using thin CA adhesive.

Brush earth coloured pigment powder, such as 'Flory Models' Dark Earth or similar, over the applied foot boards.

Seal the applied pigment by airbrushing a light coat of clear semi-matte, such as 'Alclad' Light Sheen (ALC311) or similar over the foot boards.

Struts:

NOTE: *Take care handling the various struts as they are weak and easily broken.*

Remove from their kit sprues the interplane Z struts (D17), cabane V struts (B10 and B11), support struts (D14 and D15), landing gear V struts (B12 and B13) and the tailplane support struts D5).

Carefully remove and sprue gates and mould seam lines from the struts.

Cut away the rigging wire lugs on the bottom, inboard side of the landing gear struts (B12 and B13).

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

Airbrush the panel with 'Tamiya' Cockpit Green (XF71) mixed with 20% J.A. Green (XF13) or similar.

Seal the painted struts by airbrushing a light coat of clear semi-matte, such as ‘Alclad’ Light Sheen (ALC311) or similar over the foot boards.

Control horns:

NOTE: *The kit supplied control horns for the ailerons (D18), rudder (C4) and elevator (D13) are designed to fit in their pre-moulded recesses in the flight surfaces. However, the control horns are too thick and unrealistic. Therefore, I decided to replace them with the photo-etch versions from the ‘Aviattic’ Fokker DR.I/D.VI set (ATTPE011) set. As these are much thinner and packing is necessary to ensure they fit correctly.*

Remove the photo-etch control horns rudder/ailerons (11) and elevator (12) from the sheet and remove and photo-etch tags from their edges.

Bend each control horn together along the join seam.

Use a 0.3 mm diameter drill to ensure the rigging holes in the ends are clear.

Cut small pieces of plastic card (I used 0.2 or 0.5 mm thick) as packing pieces on either one or both sides of each control horn.

Secure the packing pieces at the centre of each control horn, using thin CA adhesive.

Check fit each control horn into its recess and add or remove plastic card as necessary to achieve a good fit.

Cement each control horn into it flight surface recess.

If desired, reinforce the cemented joints by applying thin CA adhesive.

Brush paint the control horns with ‘Tamiya’ Cockpit Green (XF71) mixed with 20% J.A. Green (XF13) or similar.

Panel fasteners:

NOTE: *The various metal panels on the fuselage were restrained using specific Fokker style fasteners. These will be represented using the ‘Taurus Models’ Fokker cowl fasteners (3224) set. Only the fasteners will be used as it’s virtually impossible to drill the fasteners and mount them on the bases provided.*

Brush paint the fasteners only with ‘Tamiya’ Cockpit Green (XF71) mixed with 20% J.A. Green (XF13) or similar.

Cut away 24 fasteners from their casting block.

Refer to the following photograph for fastener positioning - using thin CA adhesive, secure the fasteners in position on the two fuselage underside panels.

Seal the painted fasteners by airbrushing a light coat of clear semi-matte, such as ‘Alclad’ Light Sheen (ALC311) or similar.

To represent the screw type fasteners on the fuselage upper panels, I used a 0.1 mm tip ink pen to ‘dot’ on the fasteners (see the following photograph).

Pre-rigging:

Use a drill of 0.4 mm diameter to clear any paint or decal from the pre-drilled holes the upper wing for the ailerons control wires.

Use a drill of 0.4 mm diameter to clear any paint or decal from the pre-drilled slots in the rear sides of the fuselage for the rudder and elevator control wires.

Cut eighteen short lengths of blackened 0.4 mm diameter Brass tube, such as that from 'Albion Alloy's' MBT04 or similar.

Cut twelve long lengths of 'Stroft GTM' 0.08 mm diameter mono-filament or similar.

Rudder:

Use a 0.2 mm diameter drill to clear any paint from the rigging holes in the ends of the rudder control horn.

Slide a blackened tube onto a line then pass one end on the line through a hole in the control horn.

Pass that end of the line back and through the tube.

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

Secure the lines in the tube by applying thin CA adhesive to the tube end farthest from the control horn.

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

Repeat the procedure to add a line to the other end of the control horn.

Ailerons and elevator:

Repeat the procedure to add a line to each end of the two aileron and elevator control horns.

Landing gear:

Struts:

Check fit the two landing gear struts into there recesses in the axle fairing. The base of the struts should be flush with the surface of the fairing.

Check locate the landing gear assembly onto the strut locations on the underside of the fuselage and holes in the added photo-etch underside panel. Make sure the struts are not bowed.

Cement the struts into the axle fairing.

Drill holes of 0.7 mm diameter into the underside of the fuselage at the four strut locations, making sure the holes are drilled at the corresponding angles to match the gear struts.

Pre-rigging:

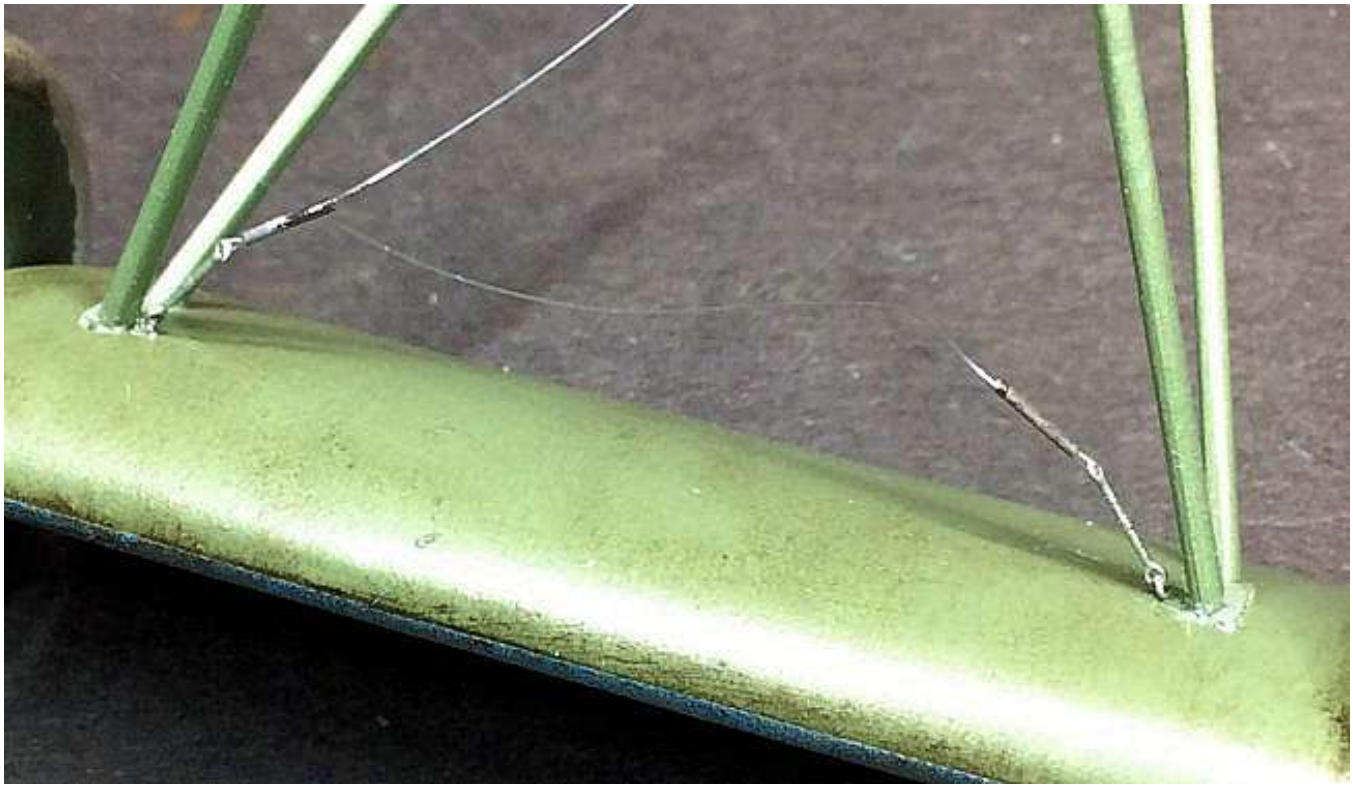
Use a drill of 0.3 mm diameter to drill through the forward underside panel of the fuselage, just inboard from the forward landing gear locating holes.

Secure a 'GasPatch' 1:48th scale Anchor Point into the drilled holes, using thin CA adhesive, making sure the 'eye' of the Anchor Points are clear of adhesive.

Use a drill of 0.3 mm diameter to drill into the top of the axle fairing, just inboard from the bottom of the forward landing gear struts. The holes should be drilled at an angle aligned to the top of the opposite forward strut.

Secure a 'GasPatch' 1:48th scale turnbuckle (Type A) into the two drilled holes, using thin CA Adhesive.

Repeat the above rudder procedure to add a line to each of the Type A turnbuckles.



Struts - preparation:

NOTE: *The cabane V struts (B10 and B11) have weak ends for locating into the fuselage. Therefore I added brass locating rods.*

At the interplane strut locating recesses in the underside of the upper wing and top surface of the lower wings, drill through the wings into the internal cavity using a 0.7 mm diameter drill.

At the front and rear cabane V strut locating lugs on the underside of the upper wing, drill into the lugs using a 0.7 mm diameter drill.

Remove the locating pegs from the ends of the two struts on the cabane V struts.

Drill a hole of 0.4 mm diameter into the centre of the strut ends, keeping the drill central and parallel to the struts.

Cut four short lengths of 0.4 mm diameter Brass rod, such as 'Albion Alloy's' MBR04 or similar.

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

NOTE: *During the following step the added rods may need to be bent to achieve the correct angle of fit.*

Drill holes of 0.5 mm diameter into the fuselage locations for the cabane V struts. The holes should be at the approximate angle for the struts when fitted between the fuselage and upper wing location lugs.

Check fit the cabane struts.

Cement the two interplane struts into their locating holes on the top surface of the lower wing.

Dry fit the two cane V struts into their pre-drilled holes in the fuselage.

Lay the upper wing (top side down) on the worksurface.

NOTE: *During the following step, do not apply pressure to locate the struts or they may bend or break.*

Invert the fuselage/lower wing assembly and carefully test fit the interplane and cabane struts to their upper wing location holes and cabane strut locating lugs. The interplane struts should locate fully into their holes and the ends of the cabane V struts should locate fully into their lugs on the upper wing.

NOTE: *During the previous step, I found that the top end of the cabane V struts did not reach their contact lugs on the underside of the upper wing. Therefore I had to modify the installation. I drilled out the interplane locating holes in the underside of the upper wing until when test fitting, the struts fully located into the wing and the ends of the cabane V struts contacted their lugs.*

Make sure the interplane and cabane V struts are fully located and that the upper wing is correctly aligned to the lower wing when viewed from above and from the side.

Cement the interplane and cabane V struts into their location holes and lugs on the underside of the upper wing.

Chaffer the curved end of the two forward support struts (D14) such that when positioned between the mating surface on the cabane V struts and the side of the fuselage, the strut lays flat on the fuselage side.

Drill a hole of 0.6 mm diameter through the centre of the chamfered end of the struts (for locating onto a support tube).

Hold the struts in position and using the drill, point mark the fuselage through the drilled holes.

Using the point mark as a guide, drill through the fuselage side until the drill contacts the photo-etch panel previously fitted to the inside of the fuselage. Do not try to drill through the photo-etch panel as doing so may dislodge the panel.

Cut two short lengths of 0.5 mm diameter Brass tube, such as ’Albion Alloy’s’ MBT05 or similar. The length should be such that when inserted into the pre-drilled holes, just enough protrudes to locate the strut.

With the tubes inserted in the fuselage, locate he struts onto the tubes and against the cabane V struts.

Secure the struts in position using cement at the cabane struts and thin CA adhesive at the fuselage.

Chaffer the bottom inboard edge (when fitted) of the two rear support struts (D15) such that when positioned onto the lower wing roots, the chamfered edge lays flat on the fuselage side.

Test fit the struts between their locating lugs on the rear, underside of the upper wing and against the side of the fuselage at the lower wing root (see the following photograph for strut positioning).

Secure the struts in position using cement at the lug on the upper wing and thin CA adhesive at the fuselage.

Where necessary, brush ‘Tamiya’ Cockpit Green (XF71) mixed with 20% J.A. Green (XF13) or similar to restore the painted finish.

Landing gear - fit:

Test fit the landing gear struts into their pre-drilled locating holes in the forward, underside of the fuselage. Make sure the axle fairing of the landing gear is parallel to the wings and aligned to the wing leading edges when viewed from above.

Cement the landing into the fuselage.

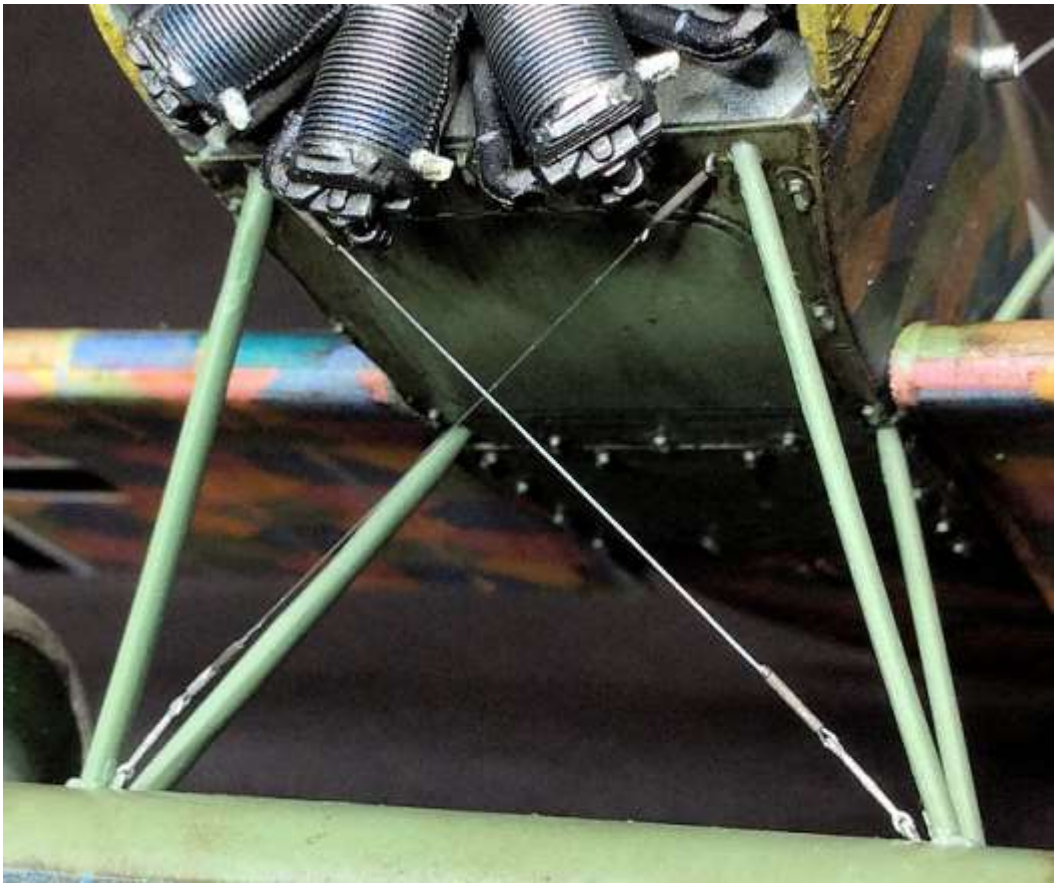
Final rigging:

Landing gear - bracing:

Pass a landing gear bracing line diagonally up and across to the Anchor Point fitted into the forward, underside of the fuselage, inboard from the front landing gear strut.

Using the previous pre-rigging procedure, final rig the line with blackened tube to the Anchor point.

Repeat to fit the other bracing line to its fuselage Anchor Point.



Aileron control cables:

Carefully pull out of one side of the fuselage the two aileron control lines, making sure they do not get tangled with the cockpit components and control column.

Cut away the taped end of the two line.

Pass the end of one line through the pre-drilled aileron control line hole in the underside of the upper wing.

Push the line into the internal cavity of the wing and keeping it under slight tension, secure it in position in the hole, using thin CA adhesive.

Repeat to fit the other aileron control line into its pre-drilled hole.

Repeat to fit the two aileron control lines to the other side of the upper wing.

Ailerons and control cables:

Cement the two ailerons on their hinges on the upper wing.

Make sure the pre-drilled holes in the top surface and underside of the upper wing are free from decal and paint. If necessary run a 0.2 mm drill through the holes.

Cut back the length of the pre-rigged aileron control lines such that their ends can be fully inserted into their holes in the upper wing.

Insert the lines into their holes and holding the taut, secure in position using thin CA adhesive.

Elevator and control cables:

Repeat the above procedure to fit the four elevator control lines into their respective pre-drilled slots on the rear, sides of the fuselage.

Rudder and control cables:

Repeat the previous procedure to fit the two rudder control lines into their respective pre-drilled slots on the rear, sides of the fuselage.

Rigging - final tensioning:

Invariably after rigging has been completed, some lines may be too slack. This can be remedied by careful application of heat along the line, but should only be carried out once all rigging has been completed. Only then will you be able to see which lines require additional tensioning.

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.*

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

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.

Tail skid:

Airbrush the tail skid (C4) with a grey primer, such as 'AK Interactive' Grey (AK758) or similar.

If necessary, use a drill of 1.0 mm diameter to clear any paint or decal from the tail skid mounting hole at the underside rear of the fuselage.

Insert the tail skid into its aperture with the locating peg fully into its locating hole.

Cement the tail skid in position at the fuselage and locating peg.

Brush paint the tail skid with 'Tamiya' NATO Brown (XF68) or similar.

Brush paint the metal fittings with 'Mr. Colour' Stainless Steel (213) or similar.

Tailplane support struts:

Airbrush the tailplane support struts (D5) with a grey primer, such as 'AK Interactive' Grey (AK758) or similar.

Airbrush the struts with 'Tamiya' Cockpit Green (XF71) mixed with 20% J.A. Green (XF13) or similar.

If necessary, use a drill of 0.8 mm diameter to clear any paint or decal from the strut locating holes either side of the rear of the fuselage, above the tail skid.

Insert one end of the struts into their locating holes with the other ends resting on the underside of the tailplane at the elevator hinge.

Cement the struts in position at the fuselage and onto the tailplane using thin CA adhesive.

Lift handles:

NOTE: *The two lift handles (D3) supplied in the kit are over scale. There I replaced them with wire.*

Cut two lengths of 0.5 mm diameter copper wire or similar.

Bend the wires around a round former to the same diameter of the kit parts.

At the lift handle location indents at the bottom edge of the fuselage rear, drill holes of 0.6 mm diameter through the fuselage.

Insert the wire lift handles into their pre-drilled holes and secure in position with thin CA adhesive.

Brush the two lift handles (D3) with a grey primer, such as 'AK Interactive' Grey (AK758) or similar.

Brush the lift handles with 'Tamiya' Cockpit Green (XF71) mixed with 20% J.A. Green (XF13) or similar.

Pilot step:

Airbrush the pilot step (C7) with a grey primer, such as ‘AK Interactive’ Grey (AK758) or similar.

Airbrush the pilot step with ‘Tamiya’ Cockpit Green (XF71) mixed with 20% J.A. Green (XF13) or similar.

At the pilot step location indents at the bottom left edge of the fuselage (at the lower wing trailing edge), drill holes of 0.6 mm diameter through the fuselage.

Insert the pilot step into its pre-drilled holes and cement in position.

Anemometer - left wing:

NOTE: *This aircraft had a wind driven ‘Anemometer’ (airspeed indicator) fitted to the bottom of the left interplane strut. To represent this I used an anemometer from a spare ’Wingnut Wings’ Roland C.II kit.*

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

Airbrush the wind driven vanes with ‘Alclad’ Exhaust Manifold (ALC123) or similar.

Brush the instrument body with ‘Tamiya’ Cockpit Green (XF71) mixed with 20% J.A. Green (XF13) or similar.

Brush a gloss clear coat of ‘Tamiya’ Gloss (X22) or similar over the dial face.

Apply the dial decal to the instrument face.

Brush a gloss clear coat of ‘Tamiya’ Gloss (X22) or similar over the applied decal.

Attach the instrument to the left interplane using CA adhesive.

Windscreen:

NOTE: *The kit does not supply a windscreen, which the aircraft had. Therefore I used the wind-screen base frame from the ‘Aviattic’ Fokker DR.I/D.VI set (ATTPE011) and a cut-out windscreen from an acetate sheet.*

Remove the windscreen base frame parts (8) and windscreen template (23) from the ‘Aviattic’ sheet and remove any residual photo-etch tags.

Using the windscreen template as a guide, cut the shape from thin acetate sheet.

Using PVA adhesive. Secure each frame base, in turn, onto the bottom edge of the acetate windscreen.

Final finish:

Airbrush a light coat of ‘Alclad’ Light Sheen (ALC311) or similar, to dull down the rigging lines and blend any worked areas to the surrounding model surfaces.

Propeller - fit:

Cement the propeller onto the engine propeller shaft and in the desired position.

PART 11
FIGURE

PART 11 - FIGURE

The figure I chose to use is the resin **'Elan13' German pilot WW1 (EL25).**

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

1. When resin kits are cast in their moulds, a release agent is applied to enable the cast resin parts to be more easily removed. This release agent can leave a film on the surface of the kit parts, which, if not removed, can prevent paint or adhesives from adhering to the surfaces. The easiest way to remove this film is to carefully and fully wash all of the model parts in warm soapy water, using an old, soft tooth brush, then rinse all of the parts thoroughly and leave to dry. Alternatively wipe the parts with isopropyl alcohol (e.g. 'Tamiya' X20A thinners).
2. Resin, by its nature, is very brittle and can be damaged or broken easily, especially when handling small parts. This is particularly evident when separating the individual items from the resin cast. The best way to remove item is to cut them away with a razor saw, then clean them up afterwards.
3. Once removed from the resin cast, parts will normally have 'resin flash' around or amongst parts, especially small items. This is easily removed with a sharp scalpel blade. Heavier residue can be scraped, filed or sanded away.
4. Styrene kits are assembled using solvent adhesives, which melt the surface where it is applied and 'weld' the joint together. Resin however will not react to this type of adhesive and can really only be glued using CA adhesive. This adhesive reacts to moisture in the air and on the surface to be joined. As most people know, it will also bond skin to whatever it touches, if the skin has CA adhesive on it. Obviously extreme care needs to be exercised when assembling resin kits using CA adhesive.
5. Cutting, sanding and drilling resin will create swarf and more importantly, resin dust. The dust in particular is dangerous, especially if inhaled. Therefore always vacuum the working area, and yourself, regularly. If you have a face mask or filtered respirator and find you can wear it whilst working, then do so. Resin can easily be drilled or scraped, but remember how brittle resin is when it is being handled.
6. It is not unusual to find imperfections in resin cast parts, such as surface blemishes, small 'blow' holes or ragged edges. This can be common on some resin kits. These imperfections can be rectified by sanding/polishing and/or filling with modelling putty, then sanding/polishing.
7. Generally CA adhesive is supplied as 'instant bond' adhesive, but there are some manufacturers, such as 'VMS Fleky', that supply CA adhesive as standard, thin, slow and specific resin adhesive. Whichever adhesive is used you must ensure parts are correctly positioned and aligned before applying the adhesive. Trying to separate mis-aligned parts once the adhesive sets will prove very difficult and may result in irreparable damage to the parts.

Preparation:

Remove any obvious mould seam lines or flash from the boy, right hand and head.

Drill a hole of 0.9 mm diameter up into the neck of the head and into one leg of the body.

Drill a hole of 0.6 mm diameter up into the right arm and into the right hand.

Cut two lengths of 0.8 mm diameter Brass rod, such as 'Albion Alloy's' MBR08 or similar.

Cut a length of 0.5 mm diameter Brass rod, such as 'Albion Alloy's' MBR05 or similar.

Using thin CA adhesive, secure a 0.8 mm rod into the pre-drilled hole in the neck of the head and the leg of the body. These will be used to hold the parts for painting or mounting to the display base.

Using thin CA adhesive, secure the 0.6 mm rod into the pre-drilled hole in the right hand. This will be used to hold the part for painting and fitting to the figure.

Painting:

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

Brush paint the figure parts as follows:

Trousers/jacket and gaiters - 'AK Interactive' German Uniform Base (AK3091), shadows (AK3093), highlights Light (AK3092).

Flying jacket - 'AK Interactive' Brown Leather (AK3031), shadows British Uniform (AK3081), highlights British Uniform Light (AK3082). Buttons 'Mr. Colour' Brass (219). Piping 'Tamiya' Red (XF7). Collar 'Tamiya white (XF2) with Deck Tan (XF55) highlights.

Shoes - 'Tamiya' Semi-gloss Black (XF18).

Flying helmet and glove - 'AK Interactive' Brown Leather (AK3031), shadows British Uniform (AK3081), highlights British Uniform Light (AK3082).

Glove (in helmet) - 'AK Interactive' Brown Leather (AK3031), shadows British Uniform (AK3081), highlights British Uniform Light (AK3082). Inner 'Tamiya white (XF2) with Deck Tan (XF55) highlights

Cap - 'AK Interactive' German Uniform Base (AK3091), shadows (AK3093), highlights Light (AK3092). Peak and band 'Tamiya' semi-gloss Black (XF18). Piping 'Tamiya' Red (XF7).

Lightly sponge 'Tamiya' Weathering Master Set A (Mud) on the shoes and Set D (Oil Stain), as desired, on the figure, such as around the trousers, elbows and pockets.

Head/hand

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

Hair - 'AK Interactive' British Uniform (AK3081),

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

Base coat - 'Bugmans Glow', Shading - 'Reikland Flesh Shade'.

Flesh tone - 'Cadian Flesh Tone', Flesh highlights - 'Kislev Flesh'.

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

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

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

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

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

Assembly:

Remove the rod from the neck of the head.

Secure the head into the body using thin CA adhesive.

Cut the rod in the right hand such that it can locate fully into the pre-drilled hole in the right arm.

Secure the right hand/helmet into the right arm using thin CA adhesive.

PART 12
DISPLAY BASE

PART 12 - DISPLAY BASE

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

The grass mat was cut to shape from a sheet of 'Polak' grass mat (Wild Meadow variation G 4707). The cut mat was then positioned on the base and the model and figure test placed to achieve the best effect and to make sure the transparent cover of the case would be able to be located without touching the model. The model and figure were then removed with the grass mat left in position on the display base. The edges of the grass mat was then carefully lifted and a soft marker pen was used to mark the outline of the grass mat, but approximately 5 mm inside the mat edge. The grass mat was then removed and the area of the display base inside the marks was scuffed using a coarse grit sand paper, in order to give a key for the adhesive.

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

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

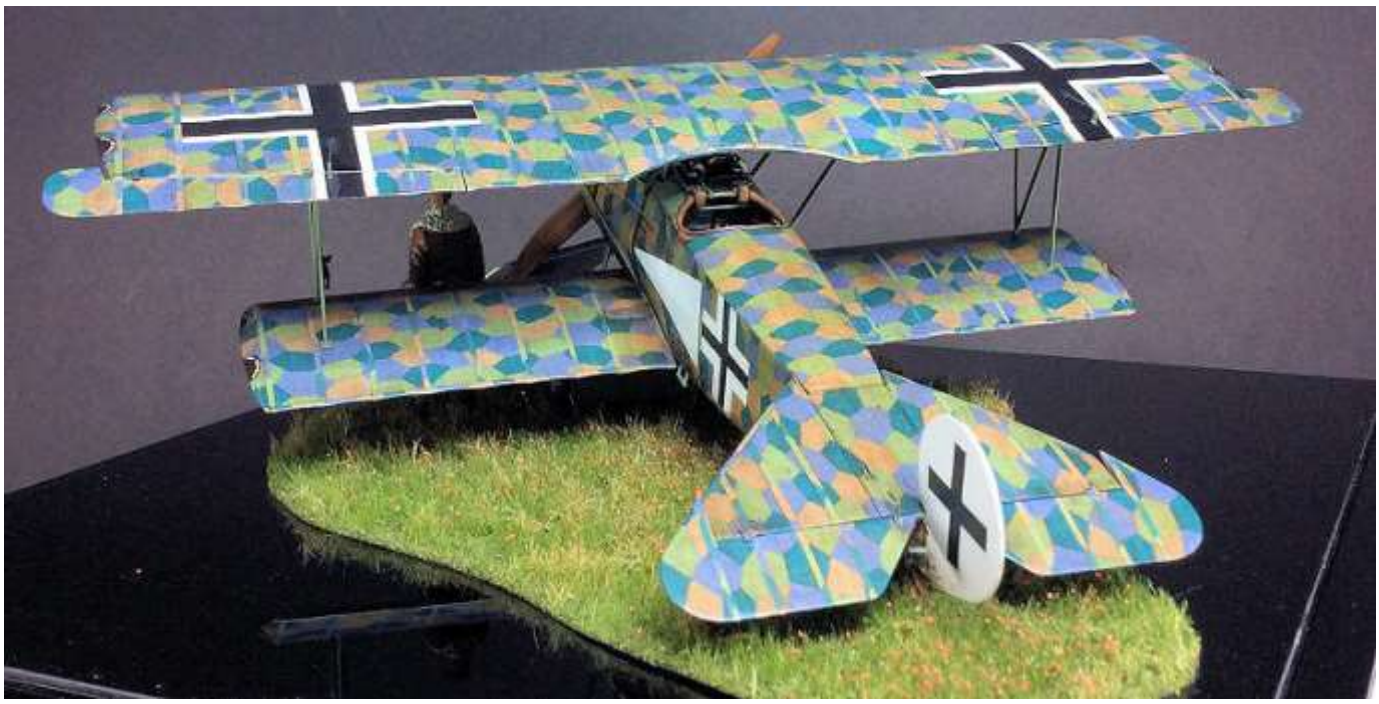
Finally an acrylic plaque stand was positioned to the left, front corner of the display base (just in from the edges of the shoulder for locating the transparent acrylic cover. The area on the underside of the stand and its contact are on the display base were scuffed using a coarse grit sand paper, in order to give a key for the adhesive. A thin coat of contact adhesive was then applied to both scuffed areas and once the adhesive started to set, the stand was carefully position onto the display bae and pressed down to make full contact. The self-adhesive backed information plaque was the positioned onto the stand and pressed to make full contact.

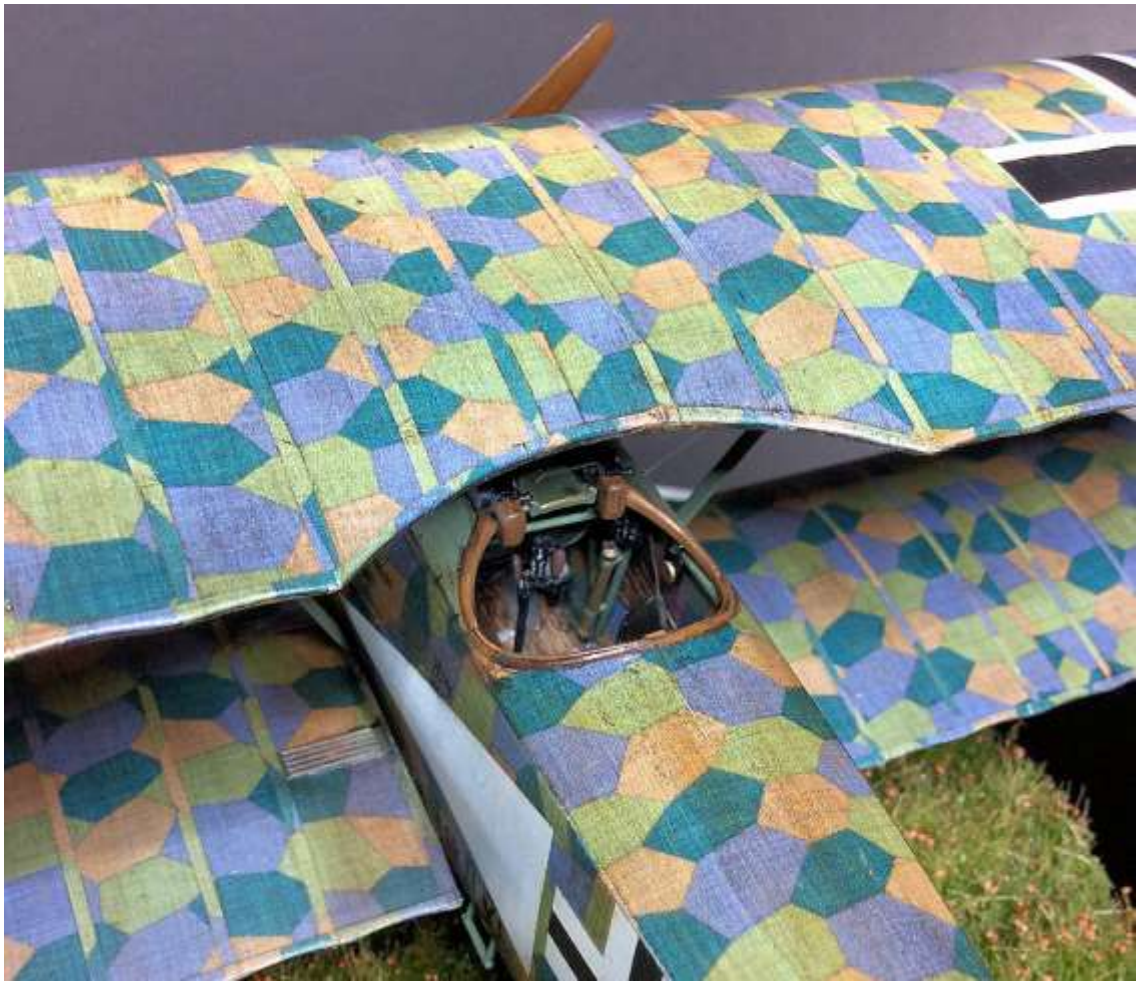
The model and figure were then positioned on the base in their final positions and the support pins in the figures leg marked into the grass mat. A hole of 1.0 mm diameter was then drilled through the grass mat and into, but not through, the base. The hole was cleared of residual acrylic to ensure the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

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

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

PART 13
COMPLETED MODEL PHOTOGRAPHS





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