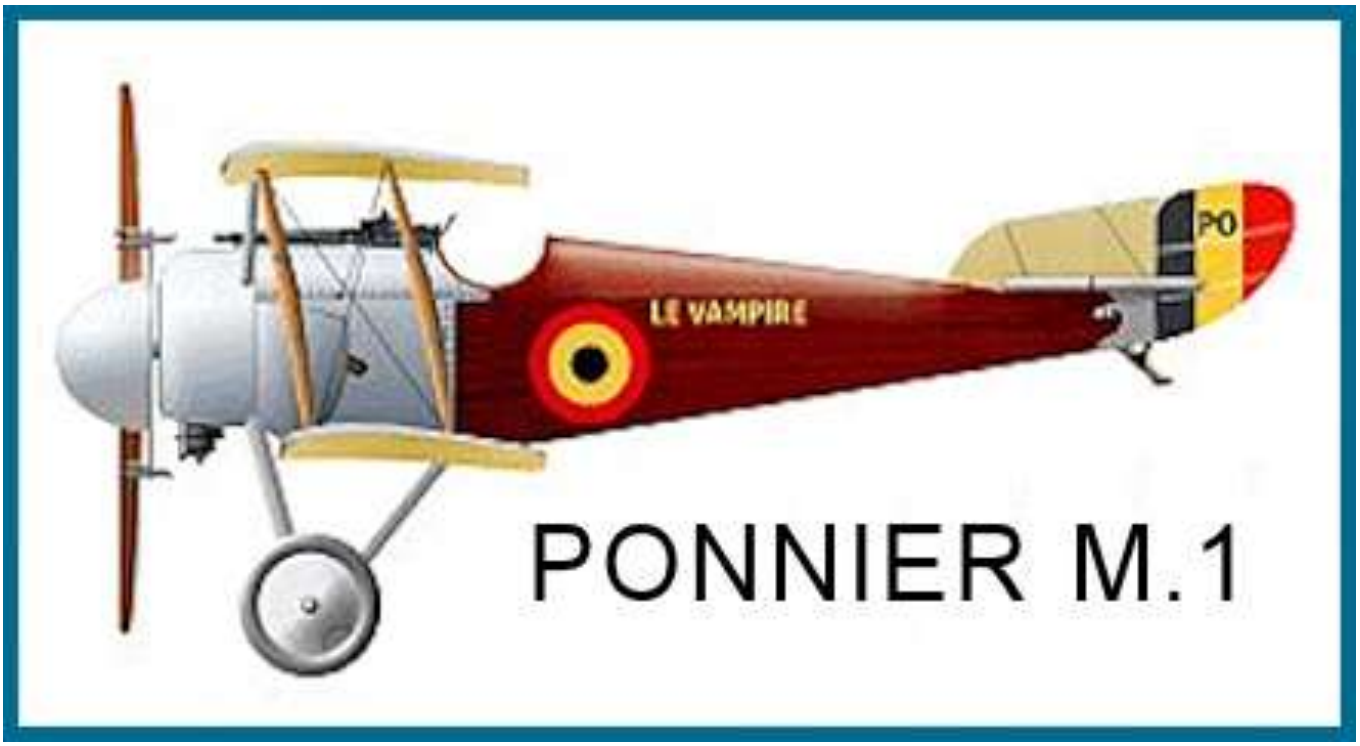


World War One Aircraft Models

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

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

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

Mike 'Sandbagger' Norris

sandbaggeruk@sky.com

Completed: June 2021

CONTENTS

INTRODUCTION

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

Sorted

AFTER MARKET

AFTER MARKET

Figures and accessories

'Wings Cockpit Figures' Pilot adjusting goggles - (LSK02).

Decals

'Xtradecal' parallel black stripes (XPS1),
'Aviattic' CDL aged varnish (ATT32094),
'Lukgraph' Dark Plywood (DEC004) - from their Friedrichshafen FF.33L kit (32-30).

Rigging accessories (as required)

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

Weapon

'GasPatch' 1:32nd scale Lewis MK.1 Stripped Half Heatsinks.

Sundries (as required)

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

Weathering mediums (as required)

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

Display Base

Etched Plaque (name plate),
'Inperspective' custom made Acrylic base and cover,
'Model Scene' Wetland Middle (F011).

THE PILOT

THE PILOT

Abel de Neef was born on the 15th of December 184 in Louvain, Belgium. Before the outbreak of hostilities he worked as a coach builder in a Paris garage. When the war started he enlisted in the Belgium Army and served as a truck driver. He was able to transfer to the Aviation Militaire in January 1915 and qualified with a pilot's license in the April. He joined the 1ére (1st) Squadron in January 1916, where he served as Adjutant, after which he was posted to operational duties flying a Nieuport 10.
He claimed his one and only aerial victory on the 1st of July 1916, but in the same month he was injured in a crash landing, due to an engine failure.
He spent two months in hospital then returned to flying. Following a transfer to the Military Academy in Cazeau, he was promoted to Lieutenant in the December of 1916.
He returned to the 1st Squadron during the Summer of 1917, but was eventually transferred to the flight school, where he remained until the end of the war.
Abel de Neef died on the 20th of March 1970.

THE AIRCRAFT

THE AIRCRAFT

Reference:

Various online sources, such as Wikipedia.
'Planet Models' kit instructions data.

This model represents a Ponnier M.1, Serial No:18 'Le Vampire' of the Aviation Militaire Belge as flown by Abel de Neef from the Ten Bogaerde (Koksijde) airfield in 1915.

Before WW1, Louis Alfréd Ponnier was a Director of one of the companies of René Hanriot. In 1913 Hanriot decide to temporarily quit his interest in aviation and Ponnier took over the factory under his 'Avions Ponnier' trade mark. The Avions Ponnier company attempted to win a pre-WW1 contract from the French military with their 1913 Ponnier L.1 scout, designed by Alfred Pagny, but they were unsuccessful. In 1915 Pierre Dupont was hired as an aircraft designer and in 1916 the Ponnier M.1 was tested by the French 'Aviation Militaire' pilots, including Jean Navarre and Charles Nungesser. During flight testing, Charles Nungesser was severely injured when the aircraft entered a flat spin. In the ensuing crash, Nungesser had both legs broken as well as his jaw. The crash was thought to have been caused by an incorrect centre of gravity combined with a rudder which was too small. The French lost all interest in the aircraft after this incident. However, the Belgian Air Force were desperate for fighter aircraft and so ordered the type. At least twenty Ponnier M.1s were produced by S.A. Française de Constructions Aéronautiques, Ponnier's successor company to Avions Ponnier. Most of these, probably more than eighteen, were bought by the Aviation Militaire Belge. However, the Belgian ace Willy Coppens found the aircraft to be ineffective, despite modifications which included a larger empennage and removal of the propeller spinner. The aircraft, like those remaining with the French, were rapidly discarded. Those that were left had their lower wings stripped and were sent to the pilot training school in Etampes, where students used them to learn how to taxi. As an aside, René Hanriot returned to the aviation business and his designer, Emile Dupont was instrumental in bringing about the much better Hanriot HD.1 fighter.

The Ponnier M.1 was a single bay biplane with a pair of parallel interplane struts on each side, braced with pairs of flying and landing wires. There was mild stagger but no sweep or dihedral. The shape of the wings were almost rectangular; the lower wings being smaller both in span and chord. Low aspect ratio ailerons were mounted on the upper wings only. The M.1 was powered by an 80 hp (60 kW) le Rhône 9C nine cylinder rotary engine, fitted with a two blade propeller and an unusually large domed spinner, nearly identical in appearance to the type fitted to the French Morane-Saulnier Type N. This spinner left only a small gap for cooling air to flow between it and the almost complete cylindrical engine cowl. Behind the engine the fuselage was flat sided, with a curved upper decking and covered with plywood. The open single cockpit was at the wing trailing edges and there were cut-outs in the trailing edges of both wings to improve the pilot's view up and down. The fuselage tapered to the rear where the horizontal tail was mounted on top of the fuselage. The original tail surfaces were very small and without a fixed fin, but later versions had an enlarged straight edged tailplane and split pair of angle tipped elevators, a wide chord fin and enlarged rudder. The M.1 had a fixed conventional undercarriage with the wheels fitted to a single axle, which was mounted between a pair of V-struts fitted to the lower fuselage longerons. These struts were wire cross braced. The only armament was a single Lewis gun, mounted above the upper wing.

General specifications:

Length – 18ft 10 in (5.75m) / Wingspan - 20ft 3 in (6.18 m) / Height - 7ft 7 in (2.3 m) / Empty weight - 670lb (304kg) / Gross weight - 1,023lb (464kg) / Engine - Le Rhone 9C nine cylinder rotary (80hp (60kW) / Propeller - 2 bladed fixed / Armament - 1x .303 in (7.7 mm) Lewis m/gun / Maximum speed - 104 mph (167 km/hour) sea level / Climb rate - 3,280ft (1000m) in 4 min 40 sec

As an efficient weapon interrupter gear mechanism was not yet available, this particular aircraft had, at different times, two different weapons fit to avoid the fired bullets from damaging the propeller
As can be seen on the following photographs, at one time the Lewis machine gun was mounted above the upper wing to fire forwards and outside the arc of the propeller.

However, the version of this aircraft modelled had the Lewis machine gun mounted on the fuselage, forward from the cockpit and firing through the arc of the propeller. The propeller was protected from bullet strikes by the fitting of deflector plates, similar to those fitted to the Morane-Saulnier Type N 'Bullet'.

PART 1
MODEL
DESCRIPTION

PART 1 - MODEL DESCRIPTION

('Planet Models' - Kit No: PL253)

This 1:32nd scale model is manufactured by the Czech Republic Company 'Planet Models', who make models of the more obscure designs. The kit is manufactured from resin and not the more traditional plastic styrene' kits, which are the more common.

The basic kit comprises the resin parts, separately bagged and with a photo-etch sheet of details. The supplied decal sheet provides for three different schemes, two Belgium and the one French. A small acetate sheet contains the windscreens. The instruction sheets give the background history of the aircraft, the parts break out, two assembly sheets, two colour schematics and a basic rigging diagram.

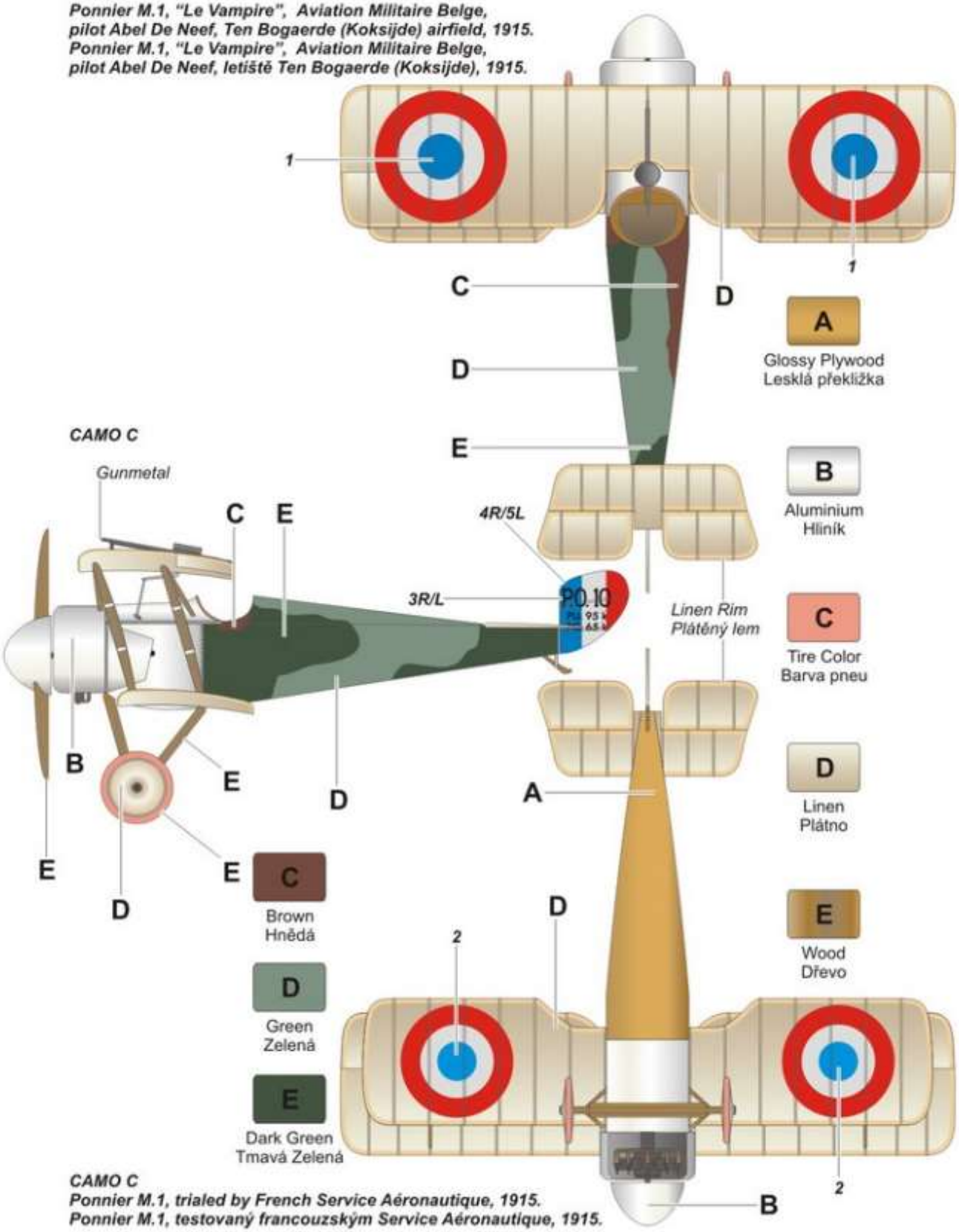
The quality of the cast resin parts is of good quality and made in a darker than usual resin with no noticeable surface imperfections sometimes found on these types of model kit. However, I found some parts, such as the cockpit floor and the upper wing were warped to some degree, which is not unusual with resin kits. Warping can normally be straightened out using warm to hot water. The kits parts should also be washed (carefully with small fragile parts) in warm soapy water, to remove any release agent used in the moulding process.

The various struts and landing gear components are cast in white metal, which although not particularly strong and easily bent, are better than resin cast components, especially when cast without internal strengthening rods.

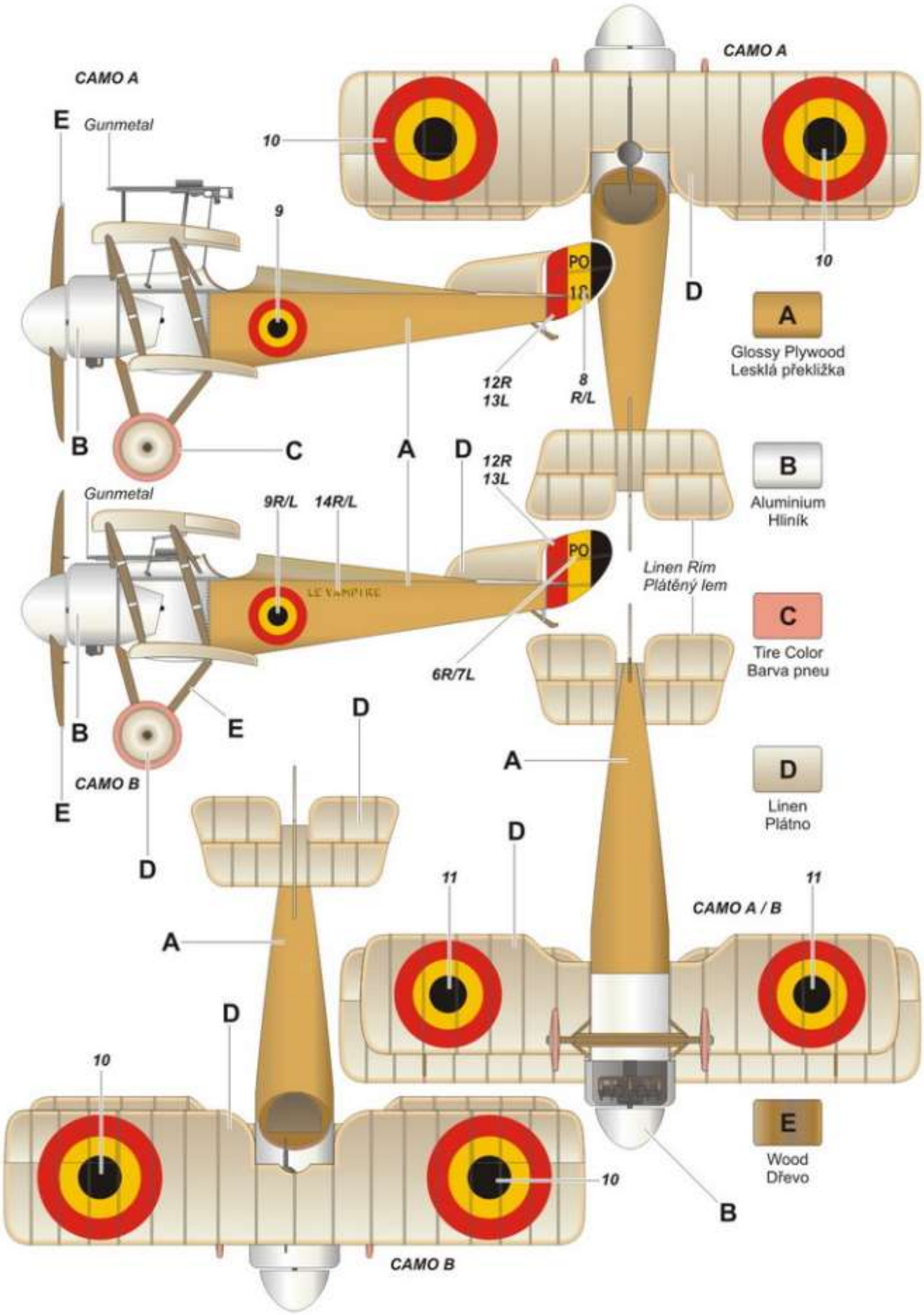
As is usual for these types of model kit, not all details of the actual aircraft are represented, so some research and possible modification or enhancements may need to be made to better represent the actual aircraft. For example, photographs taken at the time would suggest of the plywood covering of the fuselage of the Belgium aircraft of Abel de Neef was much darker than that depicted in the kit colour scheme.

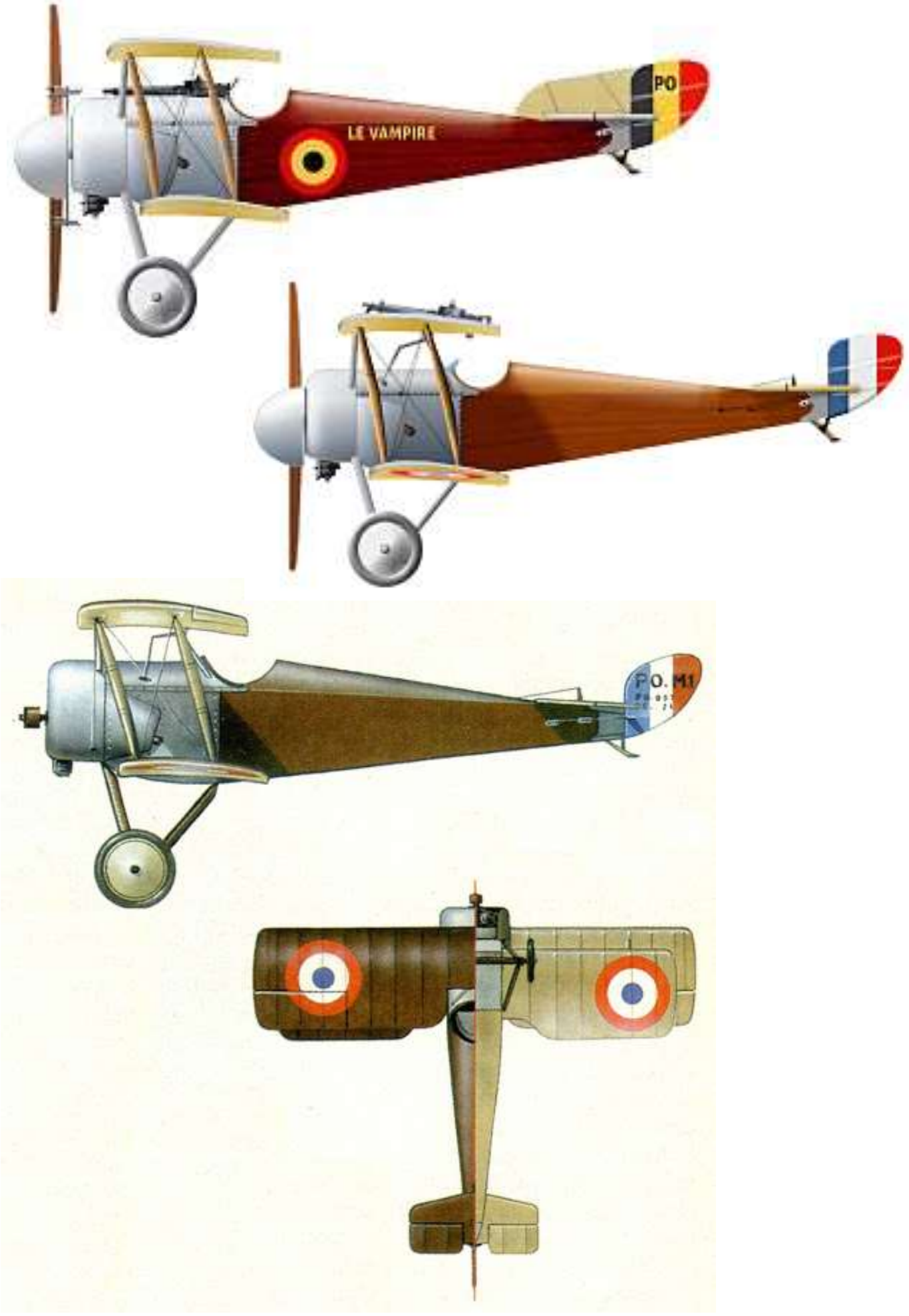
CAMO A
Ponnier M.1, Aviation Militaire Belge, letiště Ten Bogaerde (Koksijde), 1915.
Ponnier M.1, Aviation Militaire Belge, Ten Bogaerde (Koksijde) airfield, 1915.

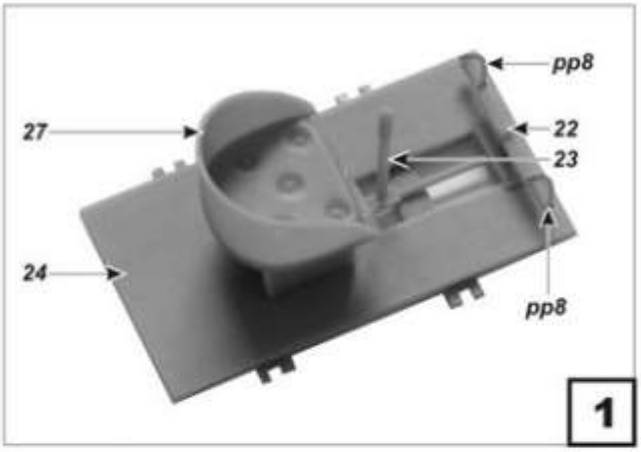
CAMO B
Ponnier M.1, "Le Vampire", Aviation Militaire Belge,
pilot Abel De Neef, Ten Bogaerde (Koksijde) airfield, 1915.
Ponnier M.1, "Le Vampire", Aviation Militaire Belge,
pilot Abel De Neef, letiště Ten Bogaerde (Koksijde), 1915.



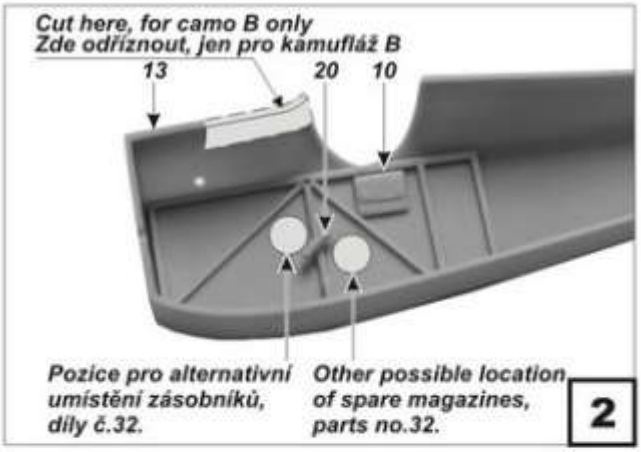
CAMO C
Ponnier M.1, trialed by French Service Aéronautique, 1915.
Ponnier M.1, testovaný francouzským Service Aéronautique, 1915.


CAMO A
CAMO A
E
Gunmetal
10
9
PO
10
D
A
Glossy Plywood
Lesklá překližka
12R
13L
8
R/L
B
C
A
D
12R
13L
B
Aluminium
Hliník
Gunmetal
9R/L
14R/L
PO
Linen Rim
Plátěný lem
C
Tire Color
Barva pneu
6R/7L
B
E
D
CAMO B
E
D
A
D
Linen
Plátno
D
11
11
CAMO A / B
A
D
10
10
E
Wood
Dřevo
B
CAMO B

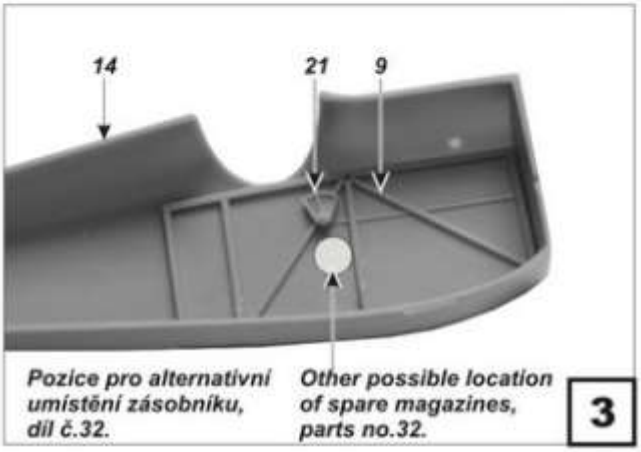

LE VAMPIRE
PO
O. M1


pp8
27
22
23
24
pp8

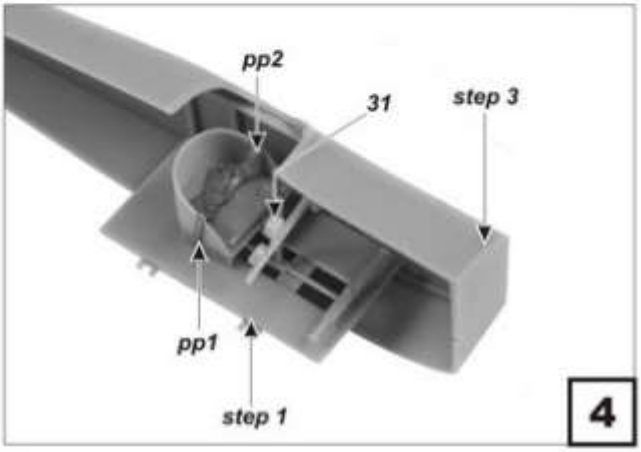
1


Cut here, for camo B only
Zde odříznout, jen pro kamufláž B
13
20
10
Pozice pro alternativní umístění zásobníků, díly č.32.
Other possible location of spare magazines, parts no.32.

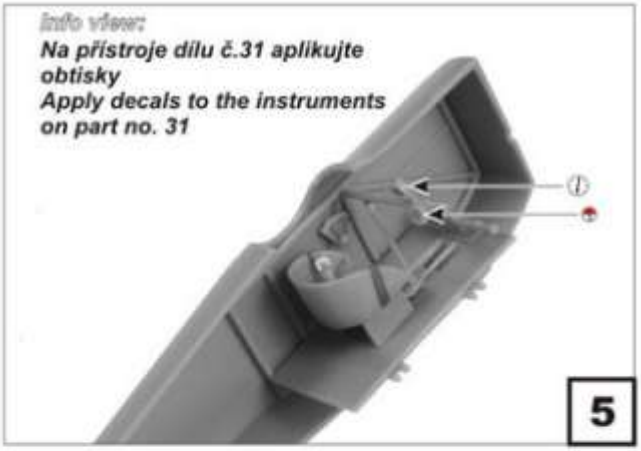
2


14
21
9
Pozice pro alternativní umístění zásobníku, díl č.32.
Other possible location of spare magazines, parts no.32.

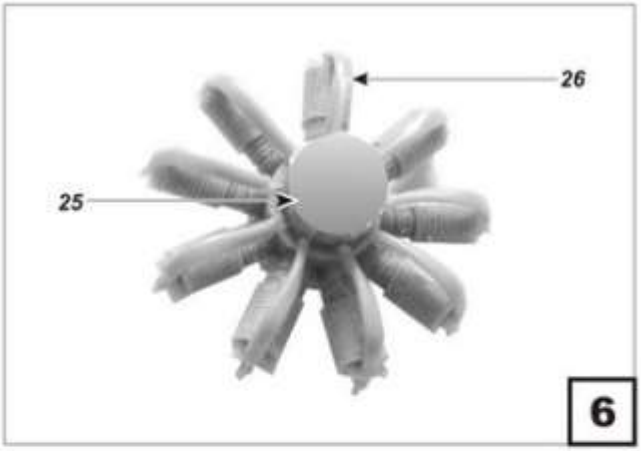
3


pp2
31
step 3
pp1
step 1

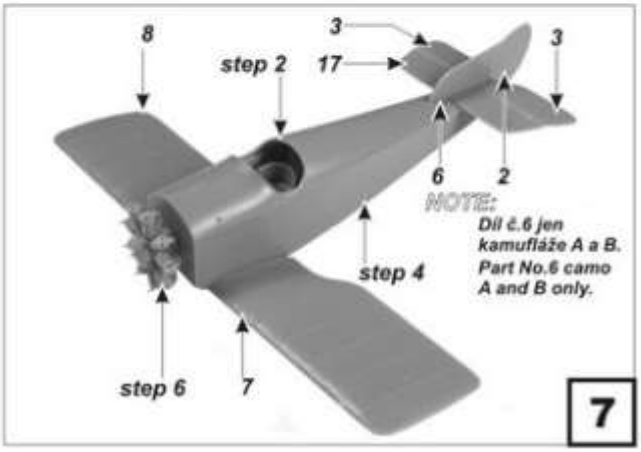
4


Info view:
Na přístroje dílu č.31 aplikujte obtisky
Apply decals to the instruments on part no. 31

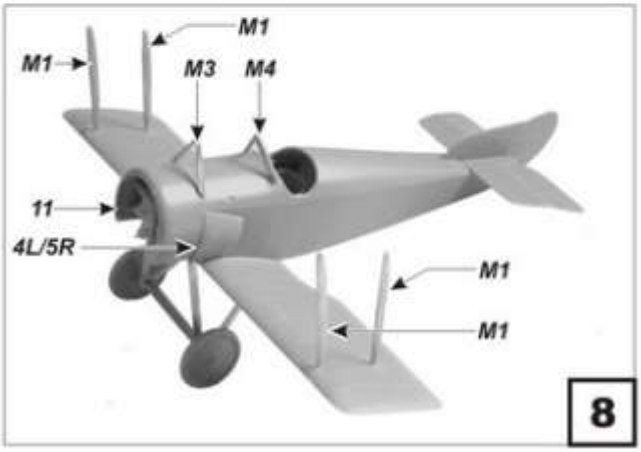
5


26
25

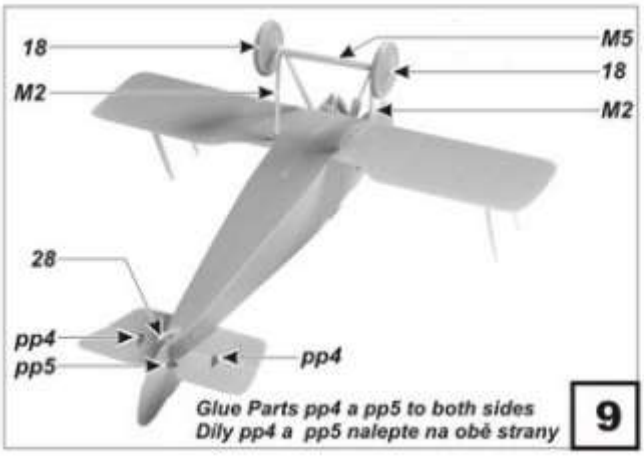
6

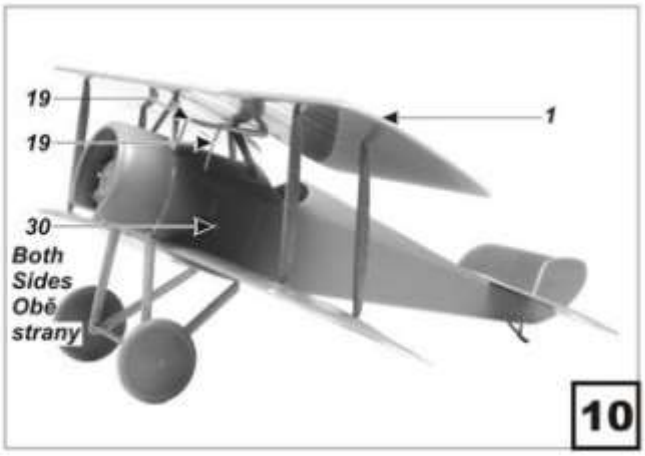

8
3
step 2
17
3
6
2
NOTE:
Díl č.6 jen kamufláže A a B.
Part No.6 camo A and B only.
step 4
step 6
7

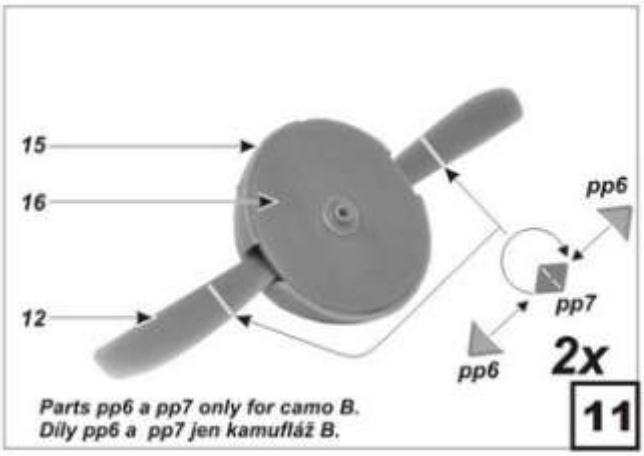
7


M1
M1
M3
M4
11
4L/5R
M1
M1

8

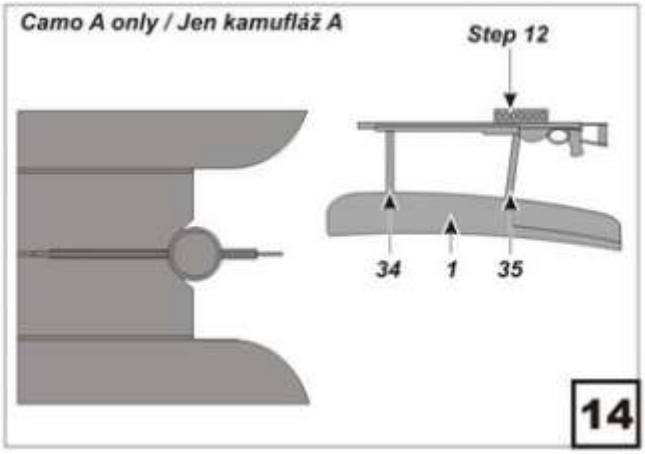

18
M2
M5
18
M2
28
pp4
pp5
pp4
Glue Parts pp4 a pp5 to both sides
Díly pp4 a pp5 nalepte na obě strany
9

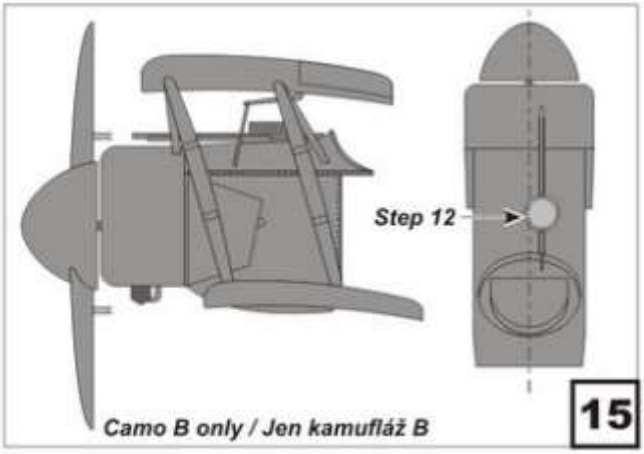

19
19
1
30
Both
Sides
Obě
strany
10

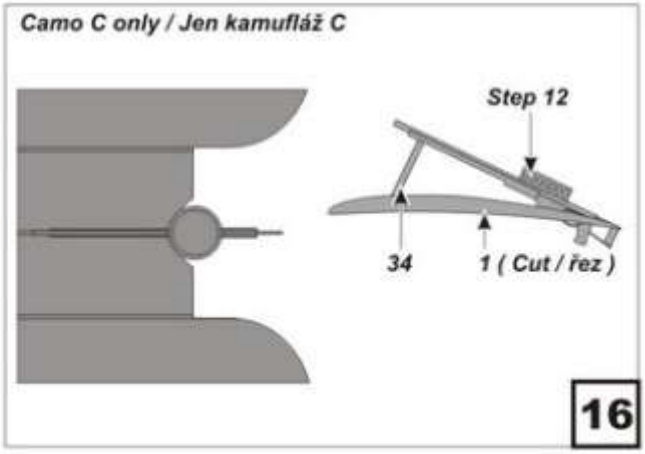

15
16
12
pp6
pp7
pp6
2x
Parts pp6 a pp7 only for camo B.
Díly pp6 a pp7 jen kamufláž B.
11


32
33
12

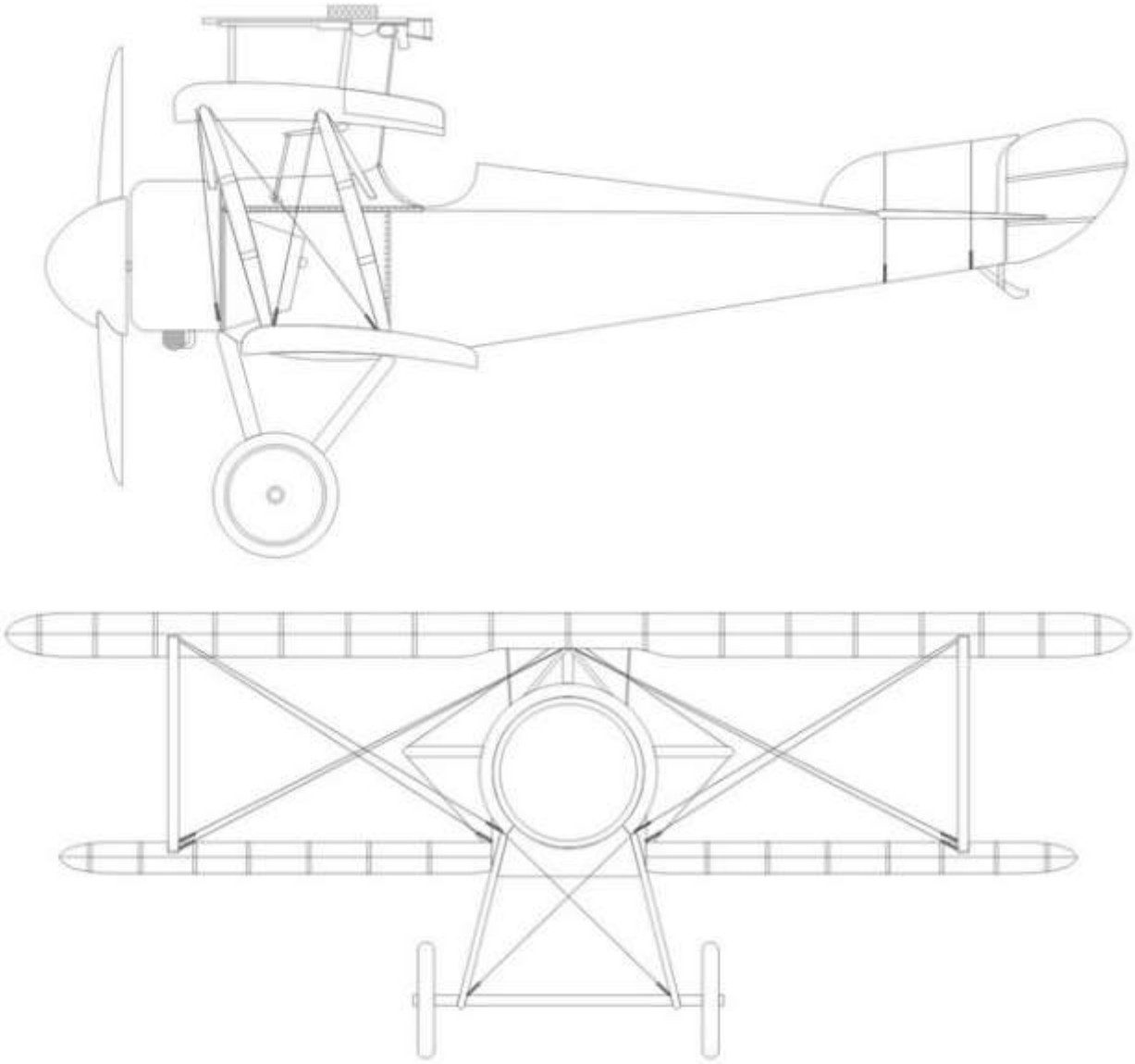

Step
11
13


Camo A only / Jen kamufláž A
Step 12
34
1
35
14


Step 12
Camo B only / Jen kamufláž B
15


Camo C only / Jen kamufláž C
Step 12
34
1 (Cut / řez)
16

Rigging and wire stretchers diagram / Schéma výpletů a napínáků



Other Planet Models 1/32 scale kits WWI fighters

to www.cmkkits.com

PART 2
WOOD EFFECTS
(General)

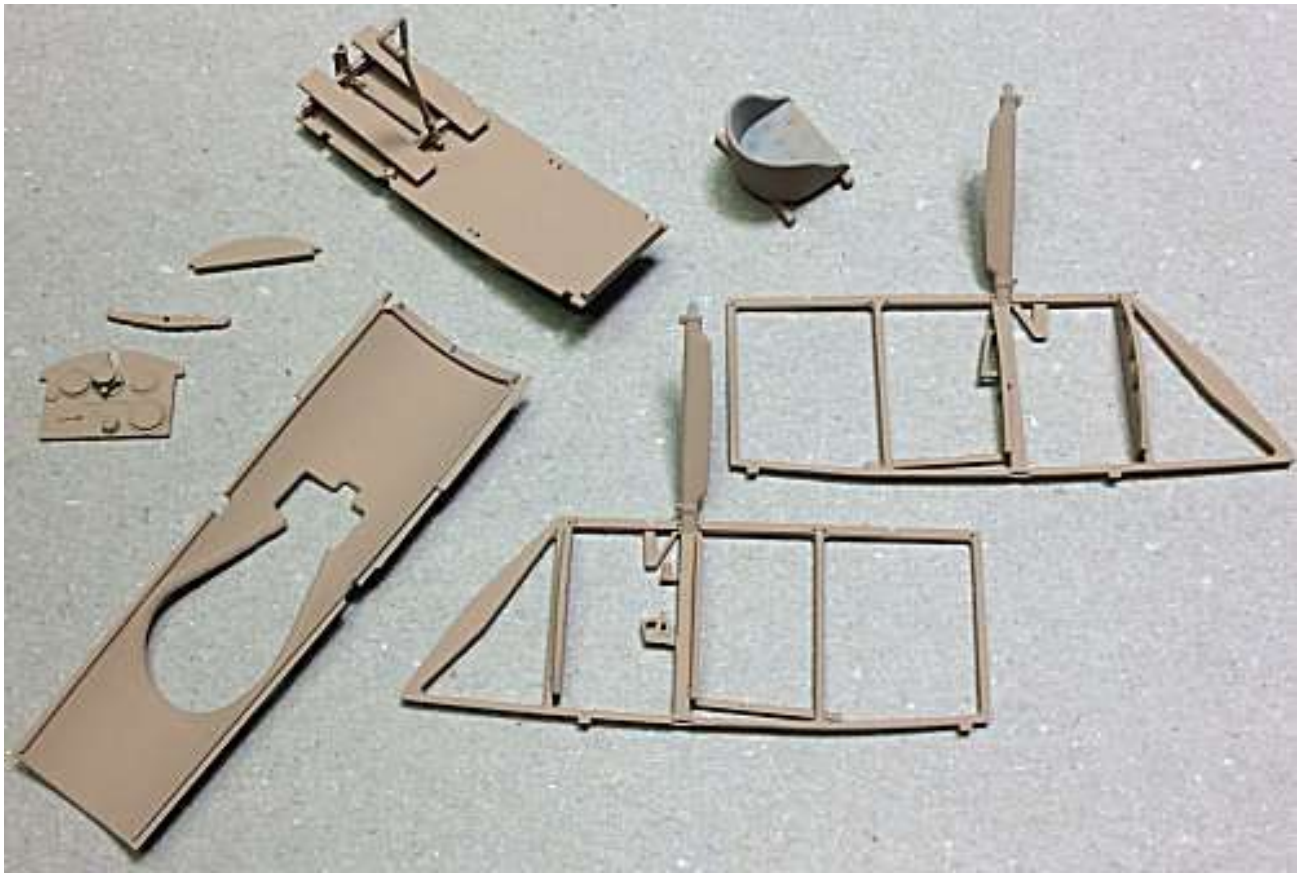
PART 2 - WOOD EFFECTS (General)

A basic technique:

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

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

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



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

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

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

Once painting is complete, clean the brush in water.

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

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

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

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

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

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

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

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

PART 3
WEATHERING
(General)

PART 3 - WEATHERING (General)

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

Flory Model clay washes:

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

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

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

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

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

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

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

Chipping effects:

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

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

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

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

Water colour pencils:

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

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

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

PART 4
DECALS
(General)

PART 4 - DECALS (General)

Standard decals:

NOTE: *The following is **applicable only** for decals on a **painted surface**. If decals are to be placed on top of **previously applied decals**, the decal setting solutions may 'eat' into the previous decals. In this case a sealing coat of either 'Alclad' Gloss (ALC-310), 'Alclad' Aqua Gloss (ALC-600), Tamiya' Clear (X22) or 'Johnson' Pledge Floor Care finish should be airbrushed over the first decals, to provide a barrier against the setting solutions.*

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

Airbrush a sealing coat of 'Alclad' Gloss (ALC-310), 'Alclad' Aqua Gloss (ALC-600), 'Tamiya' Clear (X22) or 'Johnson' Pledge Floor Care finish, to provide a smooth surface.

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

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

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

Carefully move the decal into the correct position.

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

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

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

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

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

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

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

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

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

‘Aviattic’ linen effect decals:

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

However, ‘Aviattic’ decals are laser printed onto a very fine carrier film and although this film is thin, the decals are remarkably resilient and somewhat ‘stretchy’ when being applied. This allows them to be more easily moved and positioned before being finally applied. Also with most other decals, I’ve used softeners to help the decals conform to surface irregularities and contours, which is something I’ve found is not really required for ’Aviattic’ decals, due to the nature of the carrier film. In addition, ***the decals are not ‘cookie cut’*** and therefore they need to be cut out from the sheet, so care is required to cut the decals accurately to avoid leaving gaps, especially at the edges. That said, minor gaps may be able to be covered with weathering. For more information, refer to the ‘Aviattic’ instruction sheet supplied with the decals. Aviattic’ decals are laser printed onto either ‘clear’ or ‘white’ backing, the ‘clear’ being dependent on the base coat you apply and the finished effect you desire. The decals are supplied with very clear instructions on their application, including when to add pre-shading to the base coat, where desired, before you apply the decals. For this model I chose to use the ‘clear’ decals, in order to show the linen effect more visibly.

Application:

First airbrush a primer coat of ’AK Interactive’ primer and micro-filler (White - AK759) on all of the surfaces to have the decals applied.

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

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

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

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

Soak each decal in warm water for approximately 20 seconds.

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

Carefully slide the decal onto the wetted surface. Make sure the decal does not fold over on it-self.

Align the decal to the shape of the model part.

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

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

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

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

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

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

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

PART 5
RESIN (General)

PART 5- RESIN (General)

This model contains aftermarket resin parts, as opposed to the normal plastic used. The reason for creating resin kits is that in years gone by, resin kits were able to produce much finer detail on kit parts than the plastic kit equivalents. Even today, there are many producers of resin kits and particularly after market replacement parts. However, plastic kit manufacturers have come a long way now and kits, such as those from 'Wingnut Wings' and 'Copper State' are equal to, if not better than resin kits. Manufacturers of resin kits these days tend to make kits to order or have 'limited' runs, although aftermarket parts are usually readily available. Working with resin does present different challenges to the modeller, especially if it's the first time of building a resin kit. The properties of resin differ radically to those of plastic kits.

Below I have listed what I have found to be the primary differences for resin kits from plastic kits:

1. When resin kits are cast in their moulds, a release agent is applied to enable the cast resin parts to be more easily removed, which is similar to plastic kit moulding. This release agent can leave a film on the surface of the kit parts, which, if not removed, can prevent paint or adhesives from adhering to the surfaces. The easiest way to remove this film is to carefully and fully wash all of the model parts in warm soapy water, using an old, soft tooth brush, then rinse all of the parts thoroughly and leave to dry. Alternatively wipe the parts with isopropyl alcohol (e.g. 'Tamiya' X20A thinners).

2. Resin, by its nature, is very brittle and can be damaged or broken easily, especially when handling small parts. This is particularly evident when separating the individual items from the resin cast. The best way to remove item is to cut them away with a razor saw, then clean them up afterwards.

3. Once removed from the resin cast, parts will normally have 'resin flash' around or amongst parts, especially small items. This is easily removed with a sharp scalpel blade. Heavier residue can be scraped, filed or sanded away.

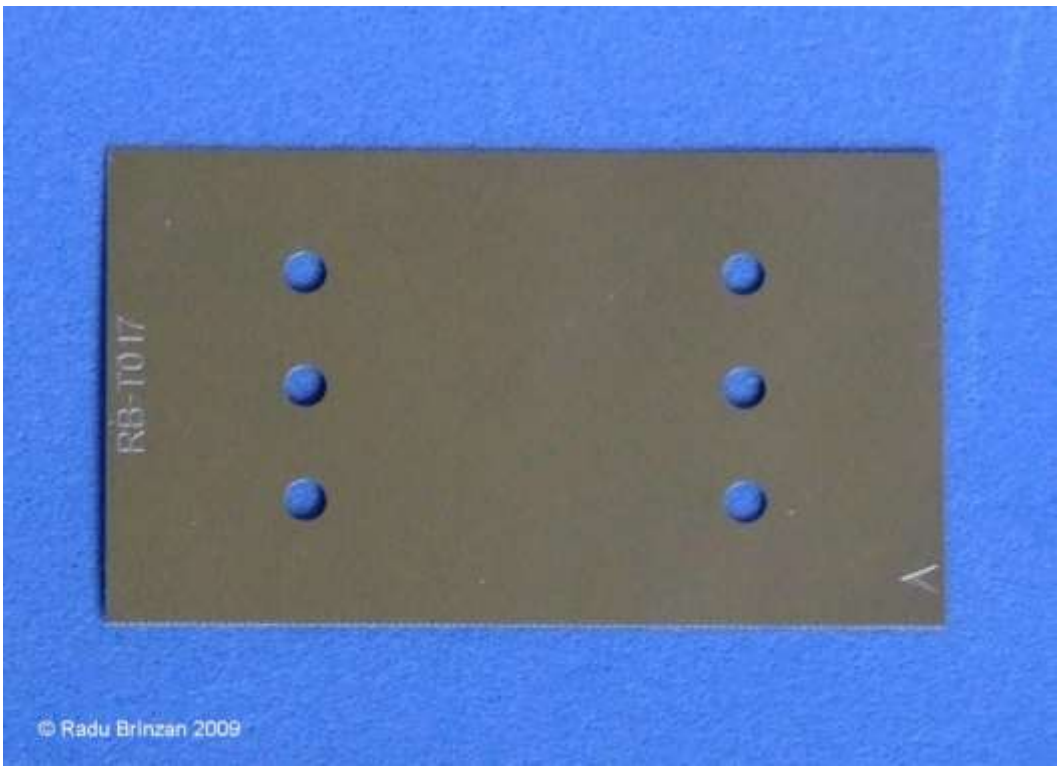
4. Plastic kits are assembled using solvent adhesives, which melt the surface where it is applied and 'weld' the joint together. Resin however will not react to this type of adhesive and can really only be glued using CA adhesive. This adhesive reacts to moisture in the air and on the surface to be joined. As most people know, it will also bond skin to whatever it touches, if the skin has CA adhesive on it. Obviously extreme care needs to be exercised when assembling resin kits using CA adhesive.

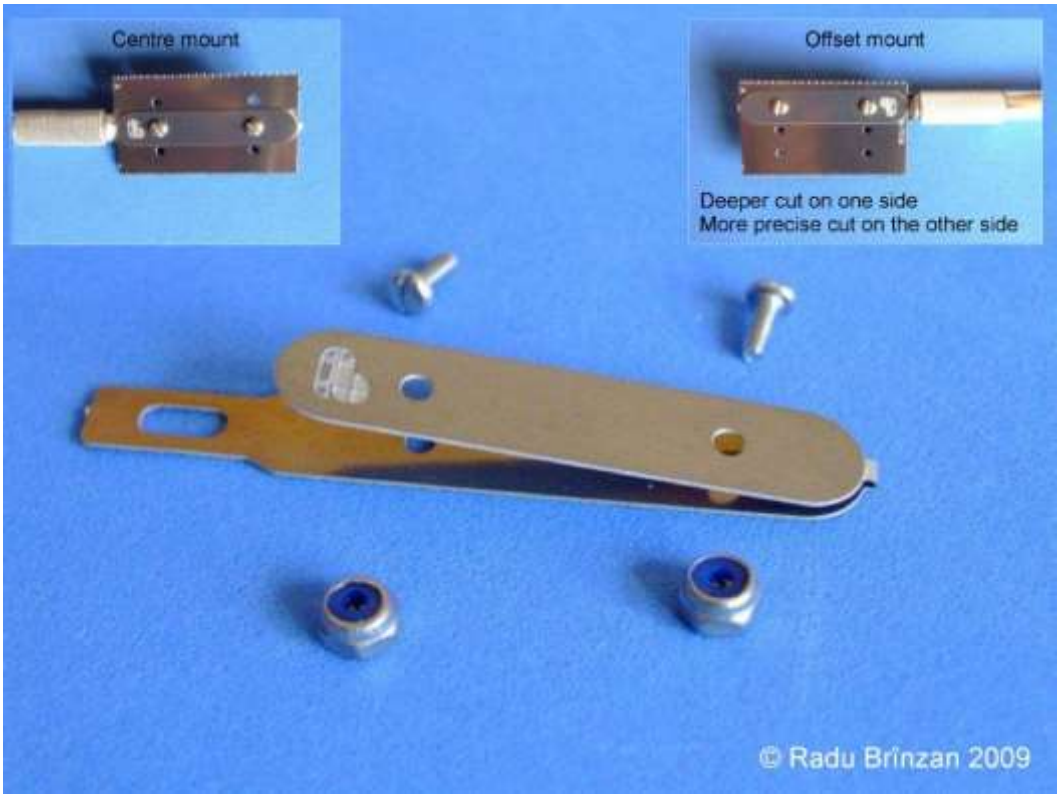
5. Cutting, sanding and drilling resin will create swarf and more importantly, resin dust. The dust in particular is dangerous, especially if inhaled. Therefore always vacuum the working area, and yourself, regularly. If you have a face mask or filtered respirator and find you can wear it whilst working,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

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

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

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





PART 6
RIGGING
(General)

PART 6 - RIGGING (General)

General:

The general rigging of this aircraft follows that used on most aircraft of the period. The rigging was the traditional round, wire wound type, which was tensioned with turnbuckles.

Landing wires:

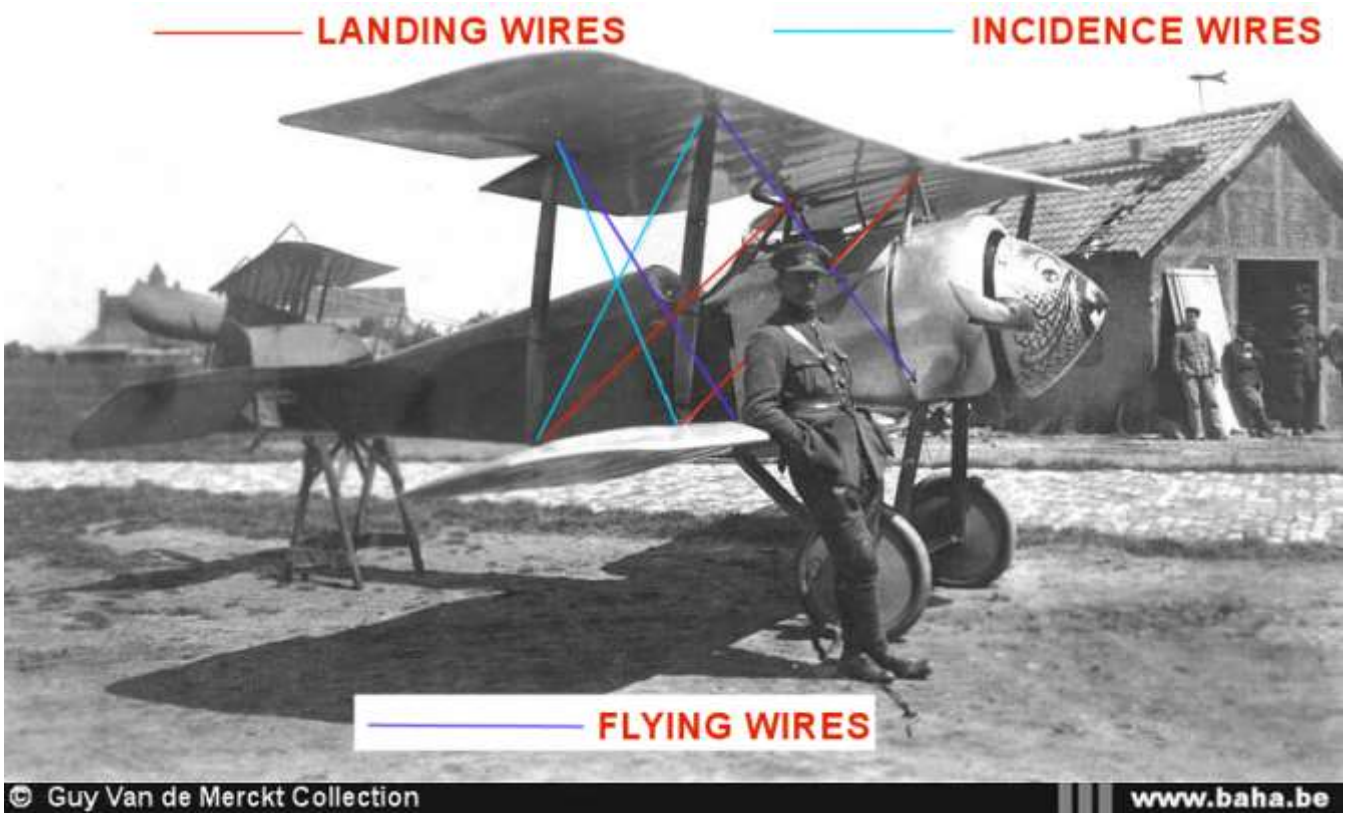
Two landing wires were fitted to each side of the aircraft. The rear wire was attached between the bottom of the rear interplane strut and the top of the rear inverted 'V' cabane strut. The forward wire was attached between the bottom of the forward interplane strut and the top of the forward inverted 'V' cabane strut. A turnbuckle was probably fitted at the fuselage ends of the wires.

Flying wires:

Two flying wires were fitted to each side of the aircraft. The rear wire was attached between the bottom of the fuselage at the lower wing root and the top of the rear interplane strut. The forward wire was attached between the bottom, rear of the engine cowl and the top of the forward of the forward interplane strut. A turnbuckle was fitted at the fuselage/cowl ends of the wires.

Incidence wires:

Two incidence wires were fitted to each side of the aircraft and between the interplane struts. One wire was attached between the bottom of the rear interplane strut and the top of the forward interplane strut. The second wire was attached between the bottom of the forward interplane strut and the top of the rear interplane strut. Turnbuckles were fitted at the bottom of each wire.

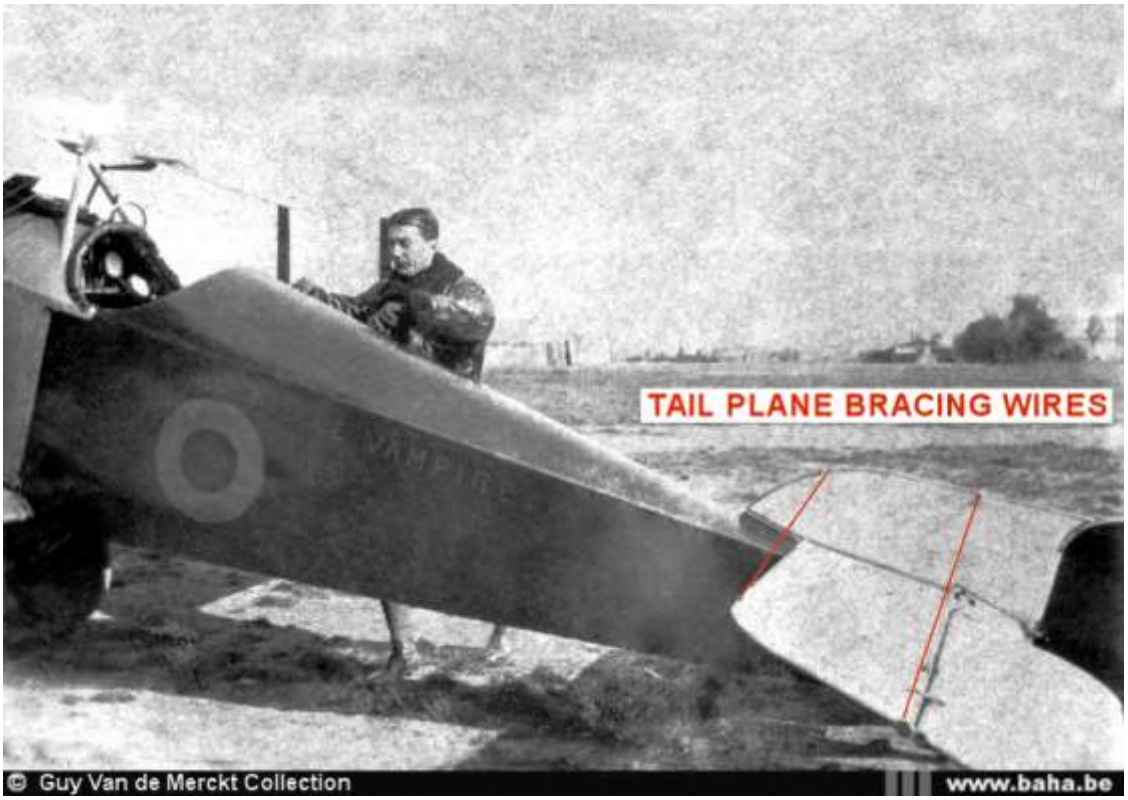


Landing gear bracing wires:

Two bracing wires were attached between the bottom, inner sides of the landing gear struts (above the axle) and the top, inner sides of the forward landing gear struts. Turnbuckles were fitted at the axle ends of the wires.

Fin bracing wires:

The fin was braced with two sets of wires that were attached above and below the tail plane. The Forward wire was attached from the bottom, rear edge of the fuselage and up to the forward outer edge of the tailplane, then up to the top of the fin. The same configuration was applied to the other side of the aircraft. The rear bracing wire was similarly attached, but farther rearwards and at the trailing edge of the tail plane. Turnbuckles were probably fitted at the fuselage ends of the wires.

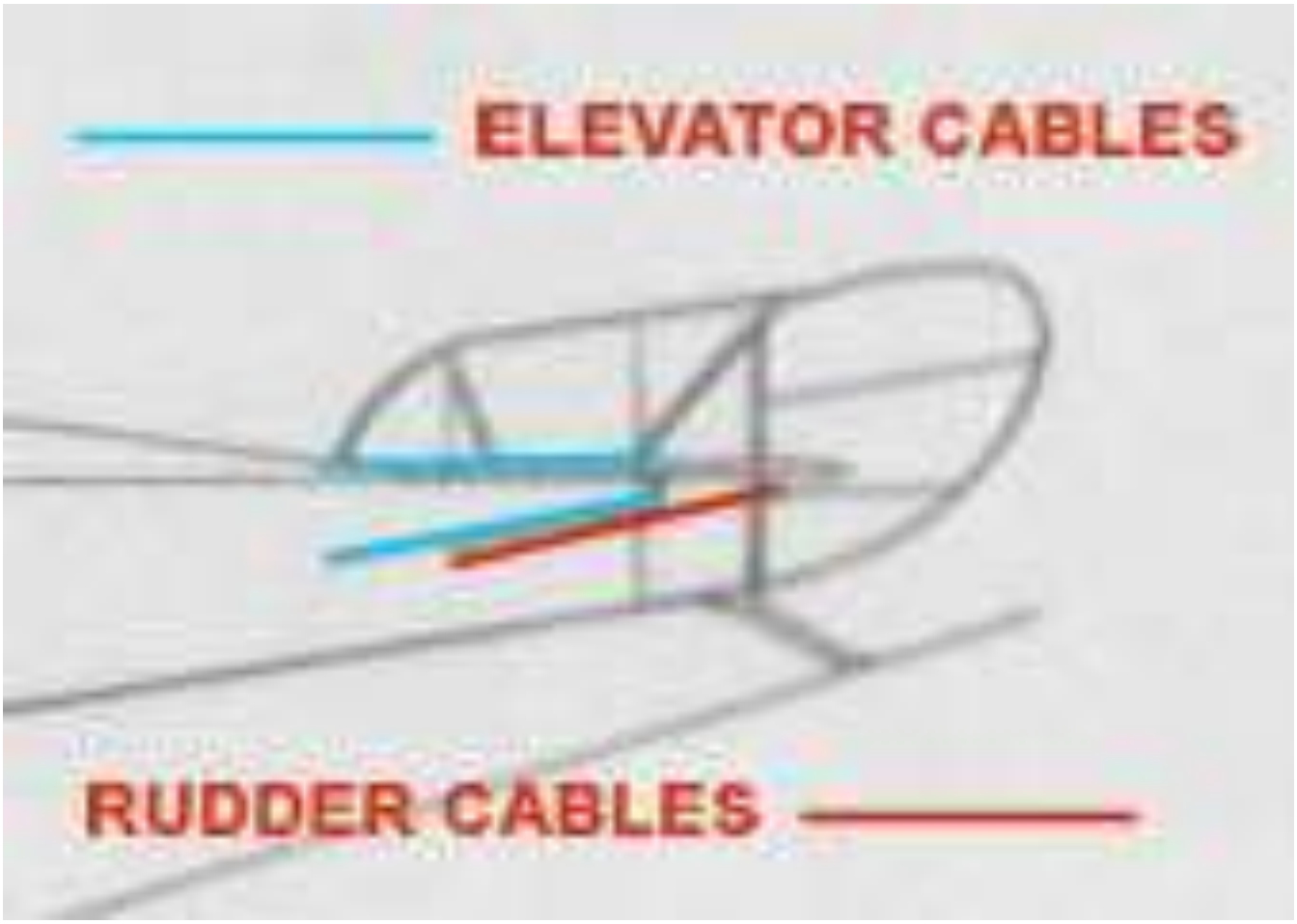


Rudder control cables:

Rudder control cables were fitted to each side of the aircraft. The cables exited the fuselage sides and were routed rearwards to be attached to their respective rudder control horn. It's probable that turnbuckles were fitted to the cables inside the cockpit.

Elevator control cables:

Elevator control cables was fitted to each side of the aircraft. The cables exited the fuselage sides and were routed rearwards to be attached to their respective elevator underside control horn. A second elevator control cable exited to top, rear of the fuselage to their respective elevator underside control horn. It's probable that turnbuckles were fitted to the cables inside the cockpit.



Ailerons:

The ailerons on this aircraft were operated by push rods and bell cranks from the cockpit up and into the upper wing. From the bell cranks, torsion bars were routed outboard to the ailerons. As such there were no aileron control horns or external control cables fitted to the ailerons.

PART 7
PREPARATION

PART 7 - PREPARATION

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

As with most resin kits, there are some things that can be done to either repair or enhance the model or to make it easier to assemble.

Parts not required:

As this model is made to the **Belgium scheme B**, and some after market parts were used, the following parts will not be required and can be discarded - gun mounting struts 34 and 35, photo-etch turnbuckles 3, Lewis machine gun 33, and decals 1, 2, 3, 5 and 8.

Distortion:

Distortion of resin moulded parts is a fairly common problem. The type of resin used to create the model parts varies, dependant on the kit manufacturer. Some resin parts are created from an off-white and softer resin, which I have found to suffer from distortion and has surface imperfections and surfaces pitted with air 'blow' holes. Other manufacturers use a higher grade resin, which looks similar to the standard styrene used in plastic kits. This type of resin is less prone to the surface imperfections and distortion.
Some higher end kit manufacturers, such as 'Aviattic' and 'Lukgraph' package their model parts carefully and tape parts either together or on backing boards, so as to reduce the chance of the parts distorting. However, other less main stream kit manufacturers don't and it's their parts than can warp.
In this particular kit I found that the upper wing (kit part 1) was bowed when it should be flat and more importantly, the cockpit floor (kit part 24) was badly twisted.

Removing distortion:

There are basically two methods that can be used to remove distortion from resin model parts, which are using hot water or hot air. For this model I used hot air.

Hot water:

The parts should be immersed in hot water and left to heat soak. Thinner or smaller parts will take less time than larger, thicker parts. The parts should be regularly checked to test how flexible the resin has become. Once the part can be carefully manipulated to remove the distortion, it should either be immersed in cold water or held on a flat surface until the resin cools and can retain its shape.

Hot air:

Using hot air is basically the same procedure as for using hot water, but the heat source is from a hair dryer. Blow hot air across the distortion on the part. The heat setting required will depend on the type and size of the resin part. **To heat the resin wing and cockpit floor for this model**, I need to select the heat to a high setting.

Location of parts:

It's common with styrene (plastic) model kits to have locating pegs and associated holes so as to accurately position model parts during assembly. However, this is not the case with many resin model kits. The two fuselage halves (kit parts 13 and 14) of this model need to be aligned correctly but they have no locating pegs or holes.

Cut eight strips of 1.0 mm thick plastic card and using thin CA adhesive, secure them in position around the mating edge of one of the fuselage halves. Make sure to leave only 1 to1.5 mm of plastic card overhanging the edge of the fuselage. Too much overhang can stop the fuselage halves from joining fully.

Ailerons:

NOTE: *The ailerons in the upper wing are moulded integral with the wing. Therefore to animate the ailerons, the upper wing needs to be modified.*

Using a sharp scraper, score along the pre-moulded outline of both ailerons, to separate them from the upper wing.

Sand smooth the edges of the aileron cut-outs in the upper wing.

Sand the cut edges of both ailerons to form a rounded edge.

Drill two holes of 0.6 mm diameter into the leading edge of both ailerons. Drill the holes at the outer two rib taps as the resin in slightly thicker at those locations.

Cut four short lengths of 0.5 mm diameter tube, such as ‘Albion Alloy’s’ MBT05 or similar.

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

Lay the ailerons against the upper wing cut-outs and mark the location of the tubes onto the wing.

Drill two holes of 0.6 mm diameter into the centre of the trailing edge of both ailerons cut-outs, using the marks as guides.

Locate the ailerons into their wing holes and bend one slightly up and the other the same amount, but down.

Tail unit:

Remove the fin, rudder, tail plane and elevators from their moulding blocks and sand away any residual resin flash.

Test position the tail plane onto its location on the rear of the fuselage and if necessary, sand the fuselage location to achieve a flat contact.

Drill two holes of 0.5 mm diameter through the centre line of the tail plane, 5 mm from each end.

Position the tail plane onto its fuselage location and drill through the holes and through the top only of the fuselage location.

Cut two lengths of 0.5 mm diameter tube, such as ‘Albion Alloy’s’ MBT05 or similar.

Secure the tubes into the pre-drilled holes in the fuselage with their bottom ends in contact with the internal bottom of the fuselage.

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

Locate the tail plane fully onto the tubes then file or sand the top of the tubes flush with the top of the tail plane.

Fin:

Drill two holes of 0.4 mm diameter centrally into the bottom edge of the fin. The holes should be 5 mm from the front and 10 mm from the rear edges.

Cut two lengths of 0.3 mm diameter tube, such as ‘Albion Alloy’s’ MBT03 or similar.

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

Lay the fin along the tail plane with the rear edge of the fin aligned with the rear of the fuselage.

Mark the centre line of the tail plane with the position of the two fin tubes.

Drill holes of 0.4 mm diameter through the tail plane and top of the fuselage.

Test fit the fin into the tail plane and fuselage, making sure the bottom edge of the fin aligns with the tail plane and fuselage. If necessary, sand the fin to achieve a good fit.

Rudder:

Drill two holes of 0.4 mm diameter centrally into the leading edge of the rudder. The holes should be drilled at the rib tapes as those locations are slightly thicker resin.

Cut two lengths of 0.3 mm diameter tube, such as ‘Albion Alloy’s’ MBT03 or similar.

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

Lay the rudder in position at the rear of the fin with the top of the rudder touching the rear over-hang of the fin.

Mark the centre line of the fin and fuselage rear edges with the position of the two rudder tubes.

Drill a hole of 0.4 mm diameter into the fin for the top tube in the rudder and into the rear of the fuselage for the bottom tube in the rudder.

Test fit the rudder into the fin and fuselage, making sure there is a gap between the fin and the rudder.

Elevators:

Drill two holes of 0.4 mm diameter centrally into the leading edge of the two elevators. The holes should be drilled at the rib tapes as those locations are slightly thicker resin.

Cut four lengths of 0.3 mm diameter tube, such as ‘Albion Alloy’s’ MBT03 or similar.

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

Lay the elevators in position at the rear of the tail plane.

Mark the centre line of the tail plane trailing edge with the position of the elevator tubes.

Drill a holes of 0.4 mm diameter into the trailing edge of the tail plane.

Test fit the elevators into the tail plane.

Bend both elevators slightly down.

Lower wings:

NOTE: *The lower wings are moulded with a single locating peg for inserting into the wing locating holes in the fuselage sides. However, the peg is small and probably not enough to fully support the wings, relying instead on the adhesive between the wing root and fuselage to support the wings.*

Sand the edges of the two lower wings to remove any residual resin.

Sand the end face of each lower wing to remove the pre-moulded locating stub, but leave a witness mark.

Point mark the centre of the witness mark.

Drill a hole of 1.0 mm diameter into the lower wings approximately 10 mm deep.

If necessary, open up the two fuselage locating holes to 1.0 mm diameter.

Cut a length of 1.0 mm diameter Brass rod, such as that from ‘Albion Alloy’s’ or similar, long enough to be inserted fully in a hole in one of the wings and then across the fuselage, leaving enough rod protruding to be inserted fully into the hole in the other wing.

Secure the rod fully into the wing hole, using CA adhesive.

Pass the rod through the holes in the fuselage then trim the rod to allow the other wing to be fully located.

Drill a second hole into each wing, approximately 13 mm back from the first holes.

Cut two lengths of 1.0 mm diameter Brass rod, such as that from ‘Albion Alloy’s’ or similar, such that when inserted into the second drilled holes, 5 mm is left protruding.

Secure the rods fully into the second drilled holes, using CA adhesive.

Locate the lower wing with both rods fitted into the fuselage and point mark the location of the second rod on the side of the fuselage. The wing should be angled such that the bottom of the leading edge is just below the fuselage bottom.

Using the point mark as a guide, drill a hole of 1.0 mm diameter through the fuselage side.

Fully fit the wing into and against the fuselage.

Locate the other lower wing onto the protruding front rod and point mark the location of the second rod on the side of the fuselage. The wing should be angled such that it aligns with the other wing.

Using the point mark as a guide, drill a hole of 1.0 mm diameter through the fuselage side.

Fully fit the wings into and against the fuselage. Make sure the wing roots are fully against the sides of the fuselage and the wings are aligned to each other. Also check that the wings are at 90 degrees to the fuselage and horizontal.

Control horns:

NOTE: *The rudder and elevator control horns (pp4 and pp5) supplied in the kit are photo-etch and are intended to be just glued to the surfaces of the flight surfaces. Doing this will leave the control horns weak and liable to break off when rigging the control lines to the horns. A stronger bond is needed to prevent break away.*

Using a sharp modelers chisel, make a slot in both sides of the rudder below the bottom rib tape.

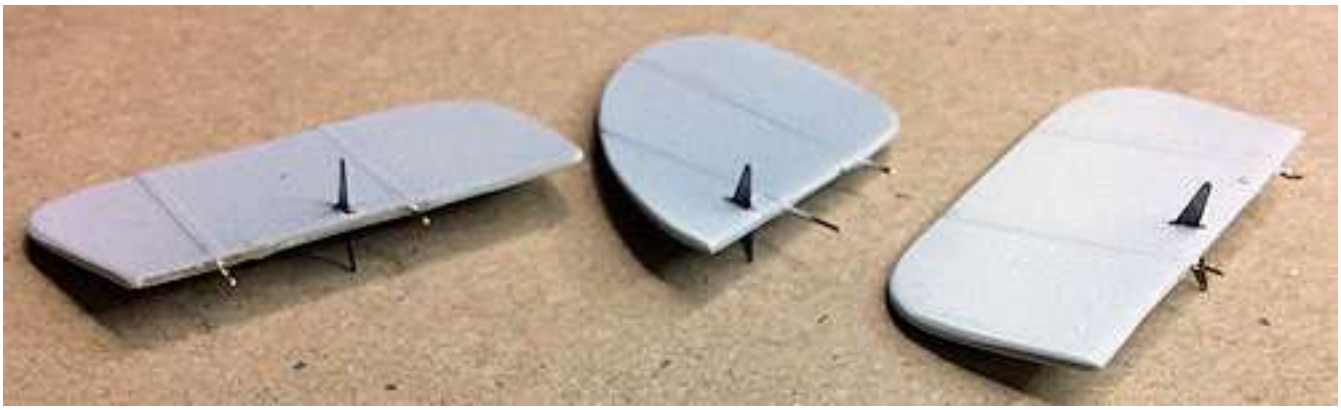
Check that the photo-etch control horns (pp5) fully locate into the slots.

Secure the control horns into the slots, using thin CA adhesive.

Using a sharp modelers chisel, make a slot in both sides of both elevators, 3 mm outboard from the inner rib tapes.

Check that the photo-etch control horns (pp4) fully locate into the slots.

Secure the control horns into the slots, using thin CA adhesive.



Landing gear:

Struts:

NOTE: *The landing gear struts and axle supplied in the kit are moulded in white metal, which is very weak and very easily bent out of shape and could possibly be distorted just by the weight of the model. Therefore I created a replacement landing gear from Brass tube, rod and styrene sheet. The kit white metal parts were used as templates for shape and size.*

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

Bend the rod around a suitable round former to recreate the basic shape of a landing gear ‘V’ strut.

Cut two lengths of 2.0 mm diameter Brass tube, such as that from ‘Albion Alloy’s’ (MBT20) or similar. The length of the tubes should match the length of the struts, less the locating stubs at the top.

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

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

Using the ’Strutter’ tool create the two struts around their supporting rod.

Soft solder the rods into the tubes, making sure that solder runs into the tubes as well as at the rod joints and in-fills the bottom of the struts where they touch.

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

File the tops of the tubes to the same shape as on the kit strut, then sand the edges to blend with the surrounding strut.

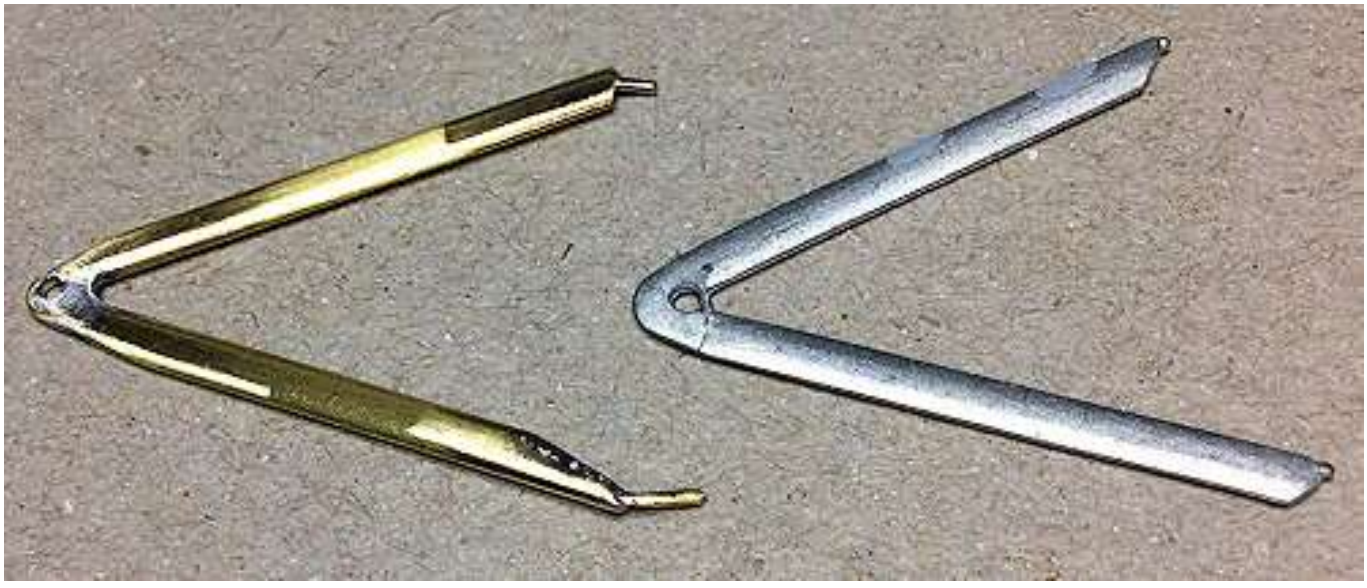
NOTE: *If the tube internal bore is exposed, fill the opening with soft solder and sand to shape.*

Drill a hole of 1.0 mm diameter through the solder at the bottom of the strut for the axle.

Repeat the procedure to create the second landing gear strut.

Test fit the two struts into their pre-drilled holes in the bottom of the fuselage.

Bend the exposed ends of the rods such that when the struts are located, the spread between the bottom of the struts matches that of the kit supplied axle.



Axle:

Cut a length 2.0 mm diameter Brass tube, such as that from ‘Albion Alloy’s’ (MBT20) or similar. The length of the tube should match the length of the axle fairing.

Cut a long length of 0.8 mm diameter brass rod, the length of which should be longer than the kit supplied axle.

Insert a length of 0.8 mm diameter brass rod, such as that from ’Albion Alloy’s’ or similar, into the tube.

Using flat nose pliers, pinch the tube flat on one side of the axle rod, which should grip the rod.

Cut two 4 mm wide strips of 0.5 mm thick styrene sheet.

Using thin CA adhesive, secure the two strips on each side of the flattened tube, making sure the edge of the strips is against the outline of the axle rod. This will represent the rear of the axle fairing.

Cut a 4 mm wide strip of 0.5 mm thick styrene sheet.

Slightly score along the centre line of the strip, then fold the strip to nearly flat. Don’t flatten the strip totally as it may split along the folded edge.

Using thin CA adhesive, secure one edge of the folded strip against the forward outline of the axle rod.

Using thin CA adhesive, secure the other edge of the folded strip against the forward outline of the axle rod on the other side of the axle. This will represent the front of the axle fairing.

Apply styrene liquid cement along the joints of the styrene strips.

File or sand the styrene strips to form an aerofoils profile across the fairing.

Remove the two landing gear wheel from their mould blocks and sand away any residual resin.

Drill though the centre of both landing gear wheels, using a 1.0 mm diameter drill.

Locate the two landing gear struts into their location holes, the locate the acle through the holes in the struts.

Locate the two wheels onto the ends of the axle.

Check that the landing gear is aligned horizontally to the fuselage and 90 degrees to the fuselage when viewed from above or below.

Drill a hole of 0.3 mm diameter into, **but not through**, the bottom of the inside face of the forward struts and above the hole for the axle.

Using thin CA adhesive, secure a ‘GasPatch’ 1:48th scale Anchor Point into each hole.

Interplane struts:

NOTE: *The four interplane struts supplied in the kit are moulded in white metal, which is very weak and very easily bent out of shape and could possibly be distorted just by the weight of the model. Therefore I created a replacement struts from Brass tube and rod. The kit white metal parts were used as templates for shape and size.*

Cut four lengths of 2.0 mm diameter Brass tube, such as ‘Albion Alloy’s’ MBT20 or similar. The length of the tubes should match a kit supplied interplane strut, which are all the same length.

Cut four lengths of 0.5 mm diameter Brass rod, such as ‘Albion Alloy’s’ MBT20 or similar. The length should be 6 mm longer than the cut tube.

Using the ’Strutter’ tool, form the four tubes into an aerofoil shape.

Insert the cut rods into the tubes, leaving 3 mm protruding from each end of the tubes.

Soft solder the rods in the tubes.

Refer to a kit supplied strut and file then sand the created tubes to the same profile.

Where the tube ’opens up’, fill the gap with soft solder then re-profile the strut.

PART 8
WEAPON

PART 8 - WEAPON

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

The Lewis machine gun supplied in the kit is replaced with the 'GasPatch' 1:32nd scale Lewis MK.1 Stripped Half Heatsinks.

Preparation:

NOTE: *The bag for collecting the spent rounds is not needed for this model.*

Remove any resin flash from the Lewis machine gun and one ammunition drum.

Cut away the small extended stub on the right side of the breach block. Otherwise it will prevent the machine gun from fitting in the prepared slot in the fuselage (Part 11 - Construction).

Painting:

Prime the Lewis machine gun and an ammunition drum with a gloss black, such as 'Tamiya' Black (X1) or similar.

Lightly airbrush the machine gun with steel, such as 'Alclad' Steel (ALC-112) or similar.

Brush paint the strap on the ammunition drum with 'AK Interactive' Leather (AK3031) or similar.

Brush paint handles with 'Tamiya' Hull red (XF9) or similar.

Sponge 'Tamiya' Weather Master Set B (Soot) around the muzzle and front of the barrel.

PART 9
ENGINE
AND
PROPELLER

PART 9 - ENGINE AND PROPELLER

NOTE: ***As this model is resin, CA adhesive must be used to secure parts together.***
Normally I would replace the resin engine and propeller supplied in this model kit, but as so little will be seen, due to the engine cowl and especially the large propeller spinner, I decided to use the engine and propeller as supplied.

Engine:

Cut the engine from its moulding block. Make sure you cut the block away at the back end of the cylinder or the rear of the engine, as the cylinder is used to both mount the engine onto the fuselage and for locating the nine inlet manifolds.

Cut the nine inlet manifolds from their moulding blocks.

Remove any residual resin flash or seam lines from the engine and inlet manifolds.

Drill a hole of 1.4 mm diameter into the centre of the rear face of the engine mounting cylinder.

Secure a length of 1.4 mm diameter tube, such as ‘Albion Alloy’s’ (MBT14) or similar.

Airbrush the engine and inlet manifolds with a black primer, such as ‘AK Interactive’ Black (AK-757) or similar.

Airbrush the engine with ‘Alclad’ Steel (ALC-112) or similar.

Airbrush the nine inlet manifolds with ‘Alclad’ Engine Exhaust (ALC-123) or similar.

Secure the nine inlet manifolds in position on the rear od the engine.

Using the slight ‘divots’ on the outer edge of the from rim of the engine as guides, drill holes of 0.5 mm diameter down into the front engine case.

Cut lengths of 0.4 mm Nickel-Silver tube, such as ‘Albion Alloy’s’ NST04 or similar, to represent the valve push rods.

Secure each tube into the drilled holes and up under the valve levers on the tops of the engine.

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

Secure the tube into the engine, using CA adhesive.

Drill a hole of 0.6 mm diameter into the top, left side of each cylinder.

Cut nine lengths of 0.5 mm Brass tube, such as ’Albion Alloy’s’ MBT05 or similar.

Locate a cut tube into each pre-drilled holes in the cylinders.

Cut nine lengths of 0.2 mm diameter copper wire.

Insert one end of a wire into the end of each pre-fitted tube.

Secure the wire and the tube in position using thin CA adhesive.

Bend each wire down to the base of its inlet manifold and trim the wire to length.

Secure the end of each wire in position, using thin CA adhesive.

Propeller:

NOTE: *The propeller shaft on the supplied engine is too short and weak. Therefore it is replaced with brass tube.*

Sand away any residual resin flash from the propeller.

Drill out the hole in the propeller hub using a 1.2 mm diameter drill.

Drill out the hole in the back plate for the propeller spinner, using a 1.2 mm diameter drill.

Cut away the propeller shaft on the front of the engine.

Using the cut mark as a guide, drill a hole of 1.2 mm diameter into the engine.

Cut a length of 1.2 mm diameter tube, such as ‘Albion Alloy’s’ MBT12 or similar. The tube should be long enough that when located into the pre-drilled hole in the front of the engine, the spinner back plate and propeller can be located onto the tube with approximately 3 mm protruding from the front of the propeller.

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

Airbrush the propeller with ’Tamiya’ Buff (XF57) or similar.

Refer to Part 2 (Wood Effects) of this build log and apply the desired wood effect to the parts. I used the ‘DecoArt’ Crafters Burnt Umber acrylic paint.

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

PART 10
BASIC FUSELAGE

PART 10 - BASIC FUSELAGE

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

Cockpit:

Remove kit parts from their mould blocks and remove any residual resin flash:

> Fuselage halves 13 and 14, Cockpit floor 24, control column 23, rudder bar 22, seat 27, ammunition drums 32, instrument bar 31, throttle quadrant 21, hand pump 20, cockpit side frames 9 and 10 and photo-etch foot straps pp8 and seat straps pp1 and pp2.

Check the parts for any surface imperfections or air 'blow' holes. If found, fill with a modelling putty and once set, sand the filler to blend it with the surrounding surfaces of the part.

Secure the throttle quadrant into it location hole in the cockpit left side frame.

Secure the hand pump into it location hole in the cockpit right side frame.

Secure the rudder bar and control column into their location holes on the cockpit floor.

Secure the pilot's seat onto its mounting on the cockpit floor.

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

Airbrush the inside of the fuselage halves, cockpit side frames and the cockpit floor assembly with 'Tamiya' Wooden Deck Tan (XF78) or similar.

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

Brush paint the base of the rudder bar, control column and torsion bar, throttle quadrant/ control rod and the instrument bar with 'Mr. Colour' Stainless Steel (213) or similar.

Brush paint the map case (on right side frame) with 'Humbrol' Leather (62) or similar.

Brush paint the ammunition drums with 'Mr. Colour' Iron (212) or similar.

Cut strips 0.5 mm wide strips of 0.2 mm thick plastic card and secure them across the top of the ammunition drums.

Paint the strips with 'AK Interactive' British Uniform (AK-3081) or similar.

Brush paint the body of the hand pump with 'Mr. Colour' Brass (219) or similar.

Brush paint the control column hand grip and hand pump handle with 'Tamiya' Hull Red (XF9) or similar.

Brush paint the seat cushion 'Humbrol' Leather (62) with 'Tamiya' Hull Red (XF9) highlights.

Brush paint the instrument faces with a clear gloss coat, such as 'Tamiya' (X22) or similar.

Apply the kit supplied instrument decals 15 and 16 to the instrument faces.

Seal the applied decals by brush using a clear gloss coat, such as 'Tamiya' (X22) or similar.

Remove the photo-etch seat belts and rudder bar foot straps from the kit supplied sheet.

Anneal (soften) the two seat belts over a flame, such as a cigarette lighter. Don't overheat the photo-etch as it will melt.

Bend the two seat belts over the pilot's seat to the desired positions.

Bend the two rudder bar foot straps over a suitable round former to fit onto the outer ends of the rudder bar.

Drill a hole of 0.6 mm diameter into the bottom end of the hand pump.

Secure a length of 0.5 mm diameter lead wire, such as ‘PlusModel’ or similar into the hole.

Secure the lead wire down along the face of the cockpit side frame.

Secure the rudder foot straps onto the rudder bar.

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

Airbrush the two seat belts ’Tamiya’ Dark Yellow (XF60) or similar.

Brush paint the large end straps with ‘AK Interactive’ British Uniform (AK-3081) or similar.

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

Secure the two seat belts onto the pilot’s seat.

Use a pencil to highlight the metal fittings on the two seat belts.

Secure two lengths of Black ‘EZ’ line between the outer ends of the rudder bar and the rear of the cockpit floor behind the pilot’s seat.

Dry fit the cockpit floor assembly onto each cockpit side frame to make sure all four mountings locate fully.

Dry fit the instrument bar into its locating holes in the cockpit side frames to make sure it fully locates.

Secure one ammunition drum on each cockpit side frame as shown in the instructions.

Secure the instrument bar into its location hole in the cockpit right side frame.

Secure the cockpit floor assembly onto its mounting points on the cockpit right side frame.

Secure the cockpit left side frame onto the cockpit floor assembly and instrument bar.

Fuselage:

Test fit the dry assembled cockpit into the fuselage and check for any gaps in the join seam between the fuselage halves. If gaps are evident, scrape away resin from the outer sides of the cockpit side frames and if necessary to inside faces of the fuselage halves.

NOTE: *Before securing the fuselage together you must ensure the cockpit assembly will fit inside the fuselage halves and that the fuselage halves can be joined together with no gaps around the seam joint.*

Secure one cockpit side frame in position in its fuselage half.

Locate the other fuselage half.

Apply CA adhesive in one point of the fuselage join seam and close the fuselage halves together.

Continue along the fuselage join seam, applying adhesive at several point above and below the fuselage.

Once the adhesive has set, apply more around the entire seam to fully secure the fuselage halves together.

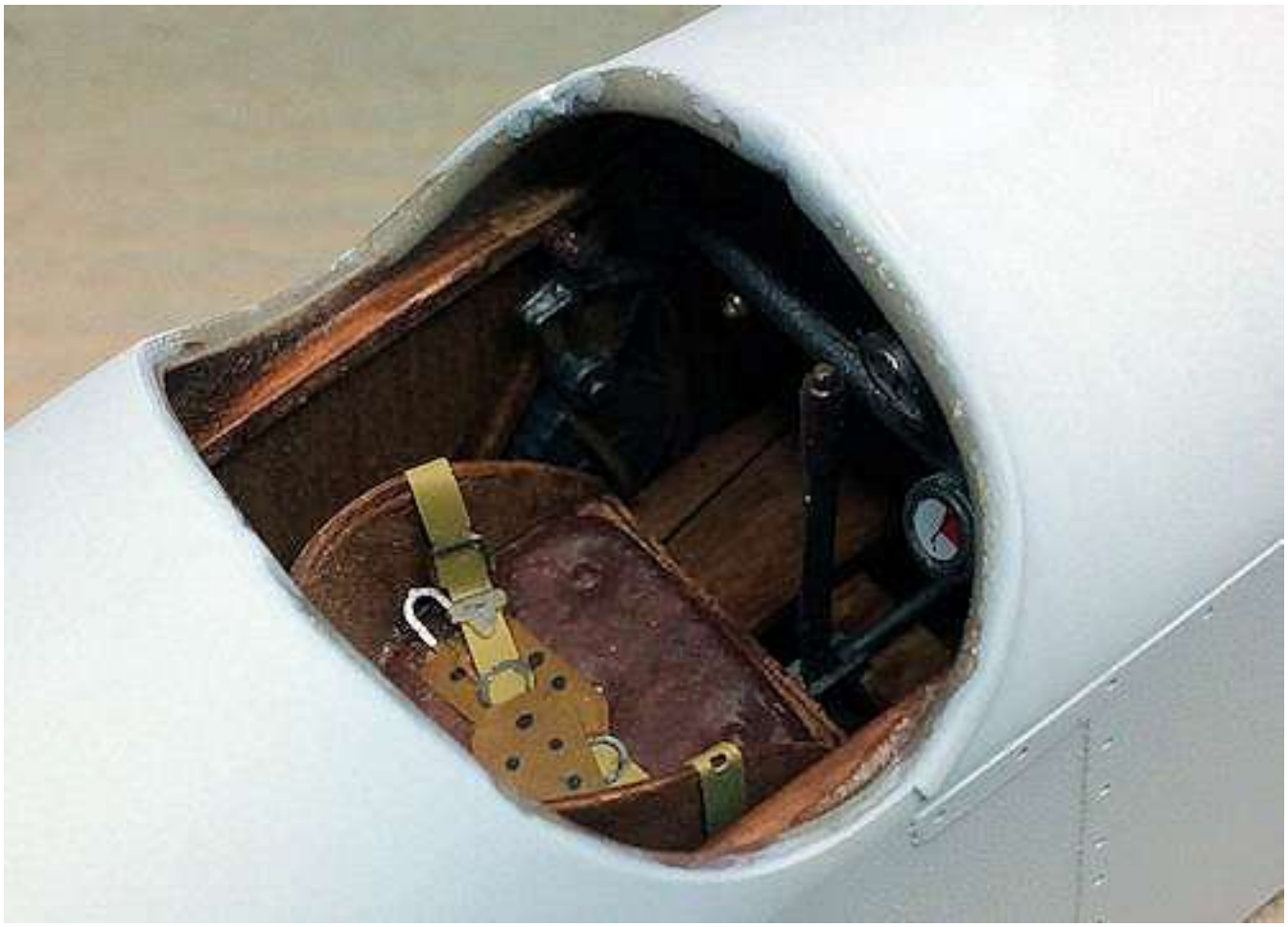
Leave the adhesive to fully cure and set, then sand the seam joint to blend it with the surrounding surfaces.

Airbrush a light coat of semi-matte clear, such as ‘Alclad’ Light Sheen (ALC-311) or similar, into the cockpit the seal all of the cockpit parts.

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

Blank off the cockpit opening and airbrush a priming coat of white, such as ‘AK Interactive’ White (AK-759) or similar.

Check the fuselage surfaces for and imperfections, such as that from previous filling and sanding etc. If found, re-sand the area then re-prime and check until a good finish overall is achieved.



Engine cowl and side panels:

Sand the edges of the engine cowl and the two side panels to remove any residual resin.

Scrape the inside edges of the engine cowl to reduce the thickness to represent the cowl more authentically.

Hold the engine cowl in position on the front of the fuselage and align the top of the cowl to the top of the fuselage with the two bottom edges aligned to the fuselage bottom.

Secure the top part of the cowl to the fuselage using CA adhesive. **Do not apply adhesive to the sides and bottom of the cowl.**

Once the adhesive has set, ease the bottom edges of the cowl out such that the inner edges align with the sides of the fuselage then secure the edges with CA adhesive.

Once the adhesive has set apply adhesive around the inside joint of the cowl.

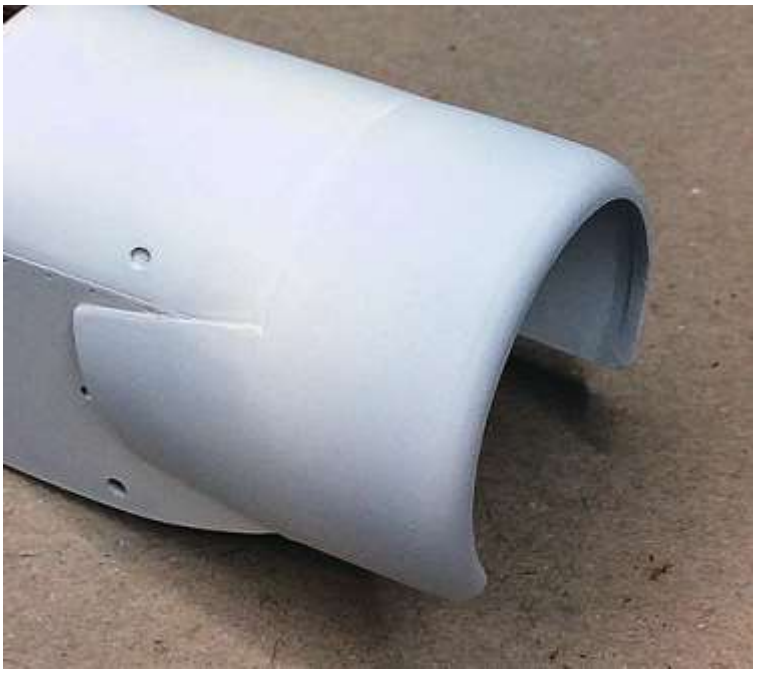
Apply adhesive to the **side edges only** of the two side panels and position them on the fuselage sides with their front edges against the rear edge of the engine cowl. **Do not apply adhesive to the joint between the front of the side panels and rear edge of the engine cowl.**

Once the adhesive has set, apply more adhesive along the joint between the front edges of the side panels and rear edge of the engine cowl.

Sand the joint between the side panels and engine cowl to blend them together.

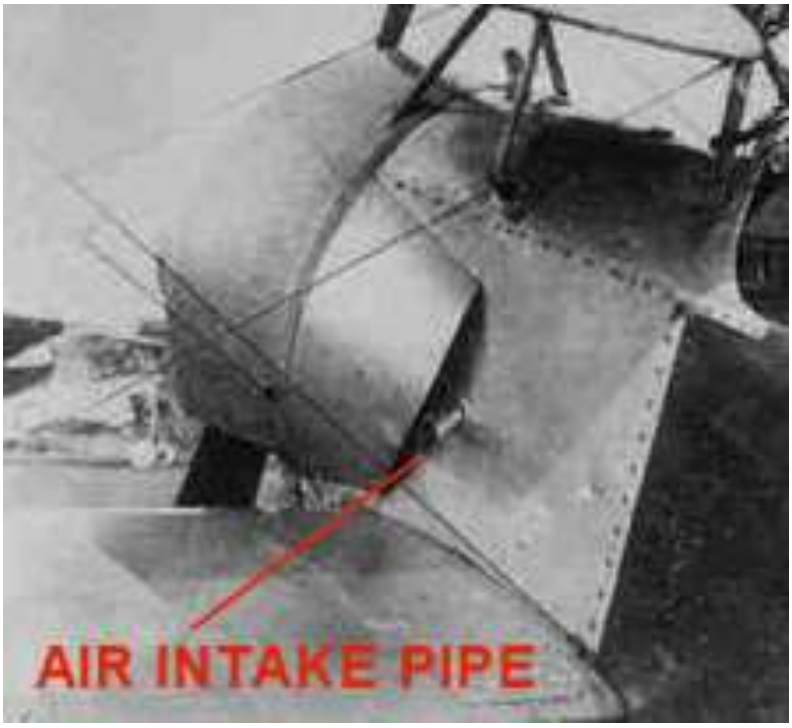
Airbrush a priming coat of white, such as 'AK Interactive' White (AK-759) or similar, over the engine cowl and side panels.

Check the joints for imperfections and if found, re-sand the area then re-prime and check until a good finish overall is achieved.



Carburettor air intakes:

NOTE: *On the fuselage sides, at the rear of the engine side panels, are holes intended for adding the carburettor air intake pipes. The kit supplied resin pipes, if fitted, would be at 90 degrees to the fuselage. As can be seen on the following photograph, the carburettor air intake pipes were in fact angled down. Therefore the kit parts were not used.*



Using the pre-moulded location holes as guides, drill a hole of 1.8 mm diameter, at a 45 degree upward angle, through the fuselage.

Chamfer the end of a 1.8 mm diameter Brass tube, such as ‘Albion Alloy’s’ MBT18 or similar, to 45 degrees. Remove any metal burrs in the chamfered bore of the tube and around the outer edge.

Cut the tube such that when the cut end is inserted into one of the drilled holes, the outer chamfered end of the tube is just proud of the engine side panel.

Repeat the procedure to create an air intake pipe for the other side of the fuselage.

Filler cap:

NOTE: *If the pre-moulded filler cap on the forward, top of the fuselage has been sanded away it will need to be added. To cut discs from plastic card, I use a 'ThinnerLine' circle cutter. There is also a similar tool available from 'DSPIAE'.*

'Thinnerline' circle cutter

From 0.2 mm thick plastic card, cut a disc of 2.5 mm diameter.

Using thin CA adhesive, secure the disc onto the top, centre line of the fuselage, 5 mm to the rear of the rear edge of the engine cowl.

To represent the filler cap handle, use thin CA adhesive to secure a short length of 0.4 mm diameter Brass tube, such as 'Albion Alloy's' MBT04 or similar, across the disc.

Aileron control ports:

Using a 1.2 mm diameter drill, drill out the two pre-moulded exit ports for the aileron control rods, on either side of the forward, top of the fuselage.

Gun mounting recess:

NOTE: *The Ponnier M.1 was produced in the period during WW1 when synchronisation of a machine gun to the rotating propeller had not been perfected. Therefore the machine gun was mounted on Ponnier M.1 aircraft in three different ways:*

> *Fixed on a mounting on the upper wing, over the cockpit and angled upwards so as to fire over the arc of the propeller.*
>
> *Fixed on a mounting on the upper wing, over the cockpit and parallel to the fuselage so as to fire over the arc of the propeller.*
>
> *Fixed within a recess in the top of the fuselage in front of the cockpit so as to fire through the arc of the propeller. To protect the propeller from bullet strikes, metal plates were fitted on the rear of the propeller blades and were align to the barrel of the machine gun. These plates deflected bullet strikes from the propeller.*

As this model represents a Ponnier M.1 with the fuselage mounted machine gun, the fuselage forward from the cockpit requires modification.

Using the 'GasPatch' replacement Lewis machine gun as a guide, mark a line 13 mm long on the top of the fuselage, forward and the right of the fuselage centre line.

NOTE: *During the following steps, take care not to cut or damage the cockpit parts, especially the upper instrument.*

Using a modelling saw, carefully cut along the marked line and through the top of the fuselage.

Cut a second line 1.5 mm outboard from the first cut line.

Using appropriate tweezers, bent the cut segment up and out of the fuselage.

Using a flat blade or scraper, widen the cut slot until the machine gun will locate as shown in the following photograph.

PART 11
CONSTRUCTION

PART 11 - CONSTRUCTION

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

Pre-rigging points:

NOTE: *In order to fully rig the aircraft, pre-rigging points need to be added to their required locations on the model parts. It's best to add these pre-rigging points before construction of the model, when access to these points may be restricted. For more information refer to Part 6 (Rigging) of this build log.*

Fuselage:

Flying wires:

Drill a hole of 0.3 mm diameter into the fuselage above the hole for the rear support rod of lower wing.

Drill a hole of 0.3 mm diameter into the lower, rear edge of the engine cowl.

Rudder control wires:

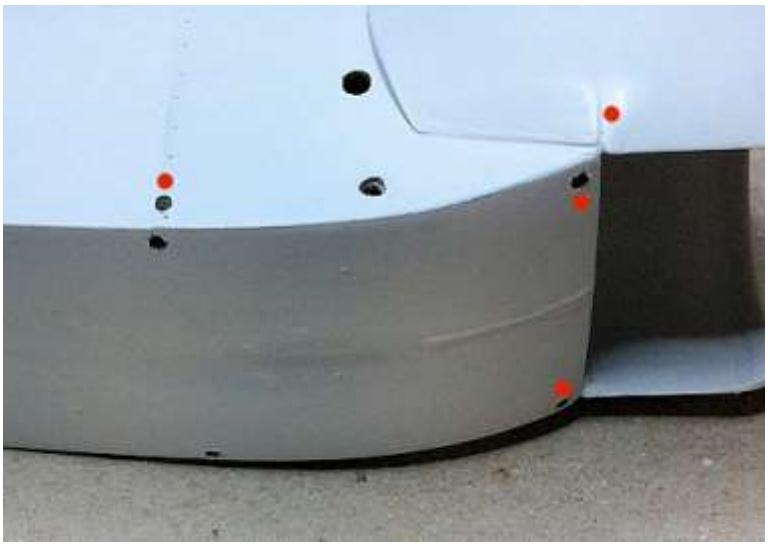
Drill a hole of 0.3 mm diameter into the lower rear side of the fuselage.

Elevator control wires:

Drill a hole of 0.3 mm diameter into the upper rear side of the fuselage and on the top of the fuselage aligned with the front of the installed fin.

Landing gear:

Drill a hole of 0.3 mm diameter into the underside of the fuselage, inboard from the location holes for the forward landing gear struts.



Fin bracing:

Drill two holes of 0.3 mm diameter on the bottom edge of the rear of the fuselage, aligned with the holes drilled in the tailplane when fitted

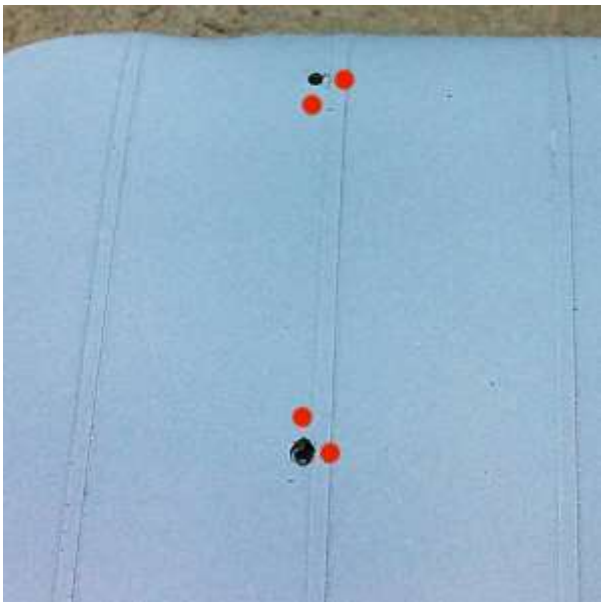
Upper wing:

Flying wires:

Drill holes of 0.3 mm diameter into, but not through, the underside of the upper wing, inboard from the location holes for the two interplane struts

Incidence wires:

Drill holes of 0.3 mm diameter into, but not through, the underside of the upper wing, between the location holes for the two interplane struts



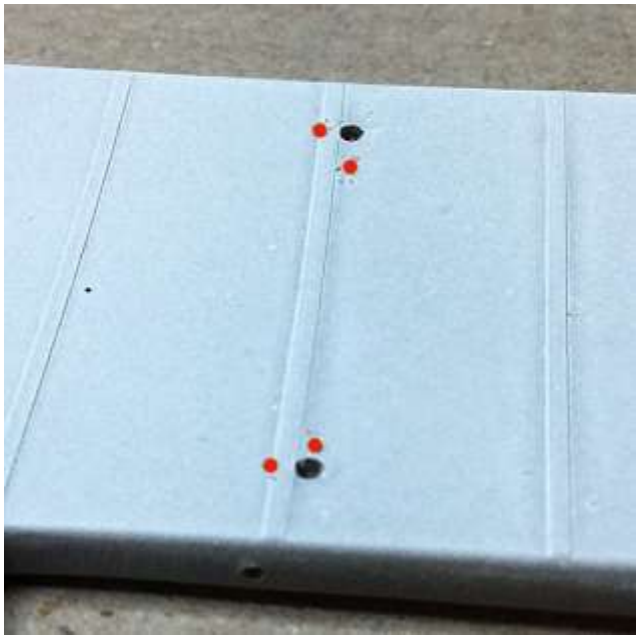
Lower wings:

Landing wires:

Drill holes of 0.3 mm diameter into, but not through, the top surface of the lower wings, inboard from the location holes for the two interplane struts

Incidence wires:

Drill holes of 0.3 mm diameter into, but not through, the top surface of the lower wings, between the location holes for the two interplane struts

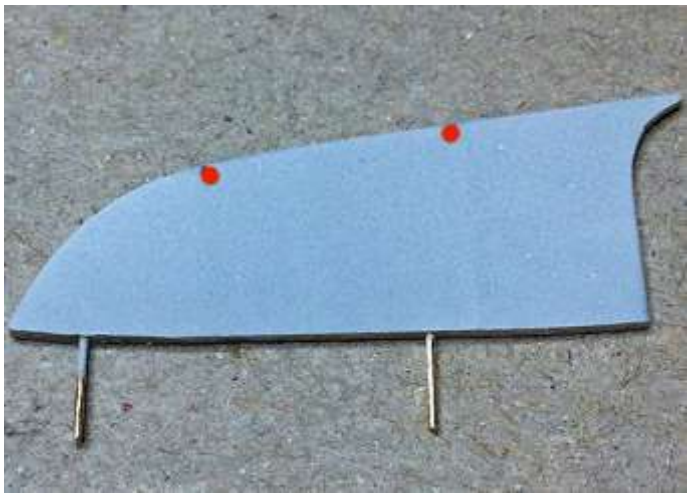


Landing gear:

NOTE: *The bracing line attachments to the landing gear struts is detailed in Part 7 (Preparation) of this build.*

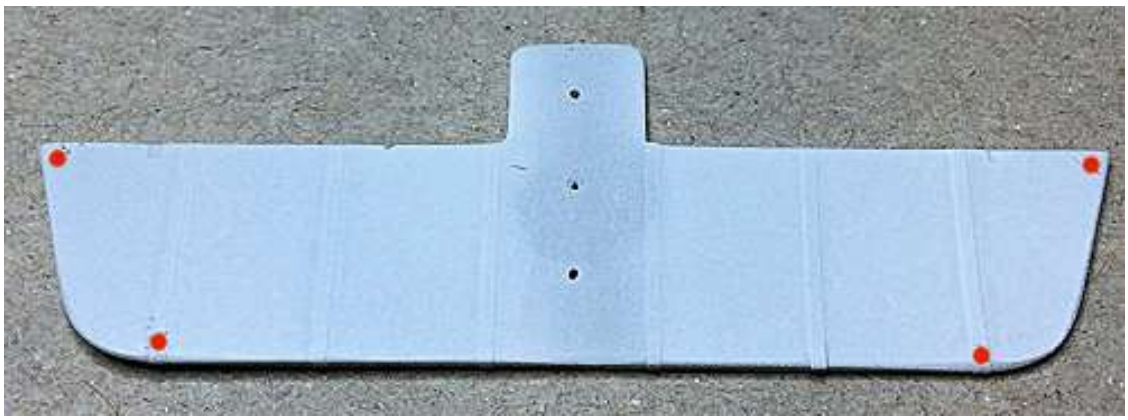
Fin:

Drill two holes of 0.3 mm diameter through the top edge of the fin, aligned with the leading and trailing edges of located tail plane.



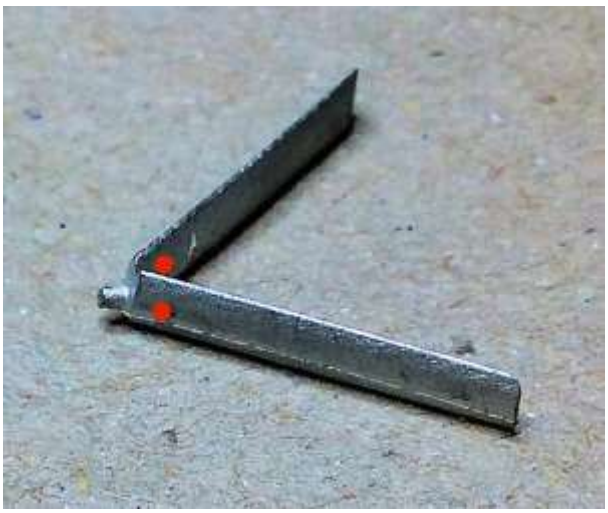
Tail plane:

Drill two holes of 0.3 mm diameter through each side of the tail plane.



Cabane ‘V’ struts:

Drill a hole of 0.3 mm diameter through the top of both stuts for each of the white metal cabane ‘V’ struts.



Wing and struts alignment:

NOTE: *At this stage of the build, it's best to correctly align the wings with the interplane struts.*

Interplane struts:

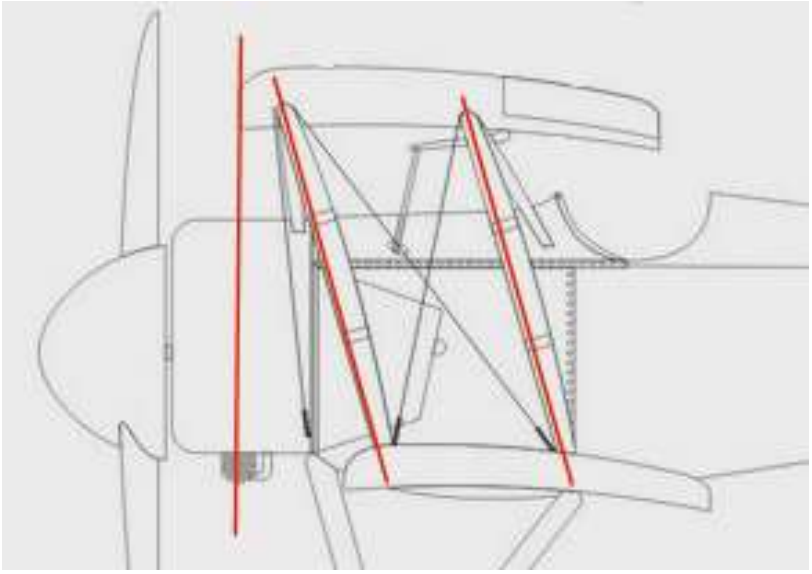
Drill holes of 0.5 mm diameter into, **but not through**, the upper and lower wings. The holes need to be drilled at a forward angle into the four location holes for the interplane struts on the top surface of the lower wings and at a rearwards angle in the four locating holes on the underside of the upper wing. This ensures the interplane struts, when located, lean forwards on the lower wings.

Locate the rods in the two lower wings into the fuselage.

Dry fit the four created interplane struts into their locating holes in the lower wings.

Locate the upper wing onto the locating rods at the tops of the four interplane struts. Make sure the struts are fully located in both wings.

Check the position of the upper wing in relation to the lower wings and fuselage. The wings should be parallel to each other and at 90 degrees to the fuselage. The leading edge of the upper wing should be positioned over the fuselage as shown below.



If necessary and keeping the interplane struts fully located in both wings, carefully flex the upper wing until it is correctly position. This should bend the locating rods in the struts accordingly.

To ensure the struts are finally fitted in their correct locations, lay the four struts on a piece of paper marked with the strut positions on the wings and which end of the struts fit into the lower or upper wings.

Cabane struts:

NOTE: *The cabane strut with angled bottoms on the struts is the rear (leaning forwards) strut.*

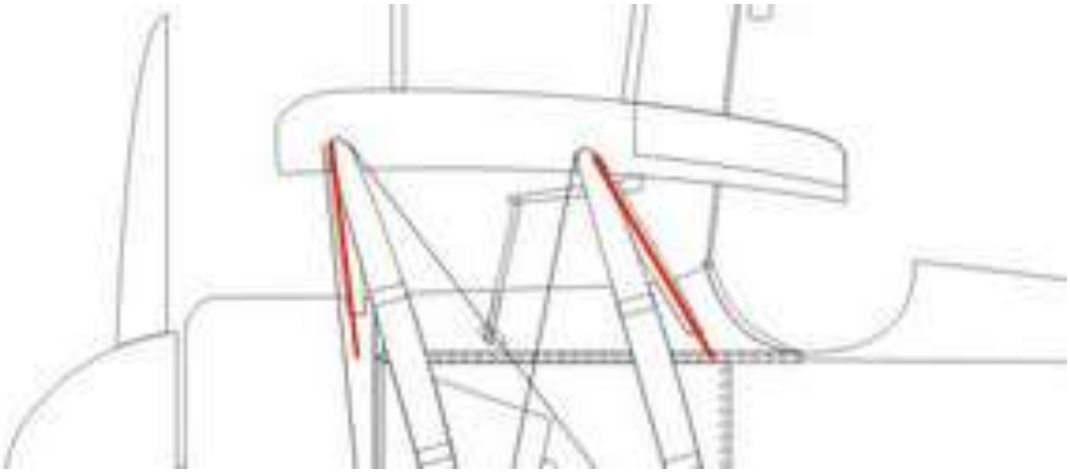
File away the locating stub on the top of the cabane struts, as this will make fitting the struts between the fitted upper wing and the fuselage easier.

With the upper wing held in position, insert each inverted 'V' cabane struts between the top of the fuselage and the underside of the upper wing. Make sure the location stub at the top of the struts is on the centre line of the upper wing.

If necessary, carefully bend either in or out the legs of the struts to ensure the struts contact both the fuselage and the upper wing.

Move the top of the struts from side to side against the underside of the upper wing, to mark the centre line of the wing.

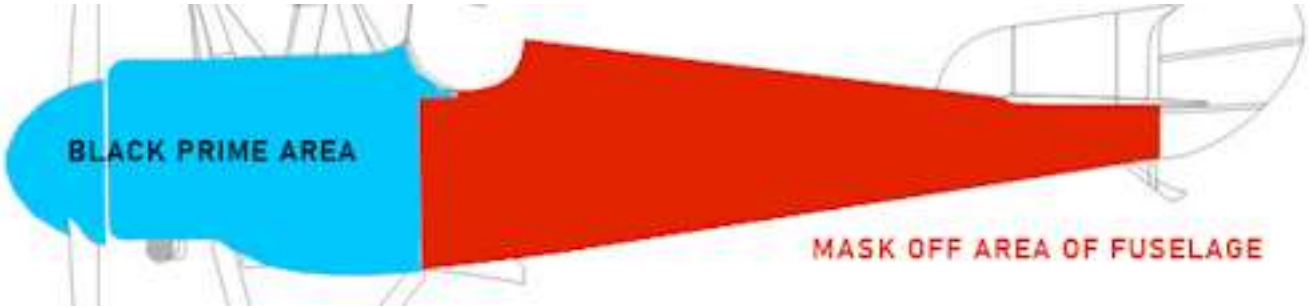
When finally fitted, both cabane struts lean forwards at their tops, the rear strut more than the front strut.



Metal areas:

Make sure all surfaces to be painted are smooth and free from surfaces imperfections.

Mask off the cockpit opening and rear of the fuselage as shown on the following illustration. Prime propeller spinner, forward fuselage and engine cowl with a black primer, such as ‘Tamia’ Gloss Black (X18) or similar.



Airbrush the propeller spinner, forward fuselage and engine cowl with a Duraluminium, such as ‘Alclad’ Duraluminium (ALC-102) or similar.

Struts and tail skid:

Make sure the following parts are smooth and free from surfaces imperfections.

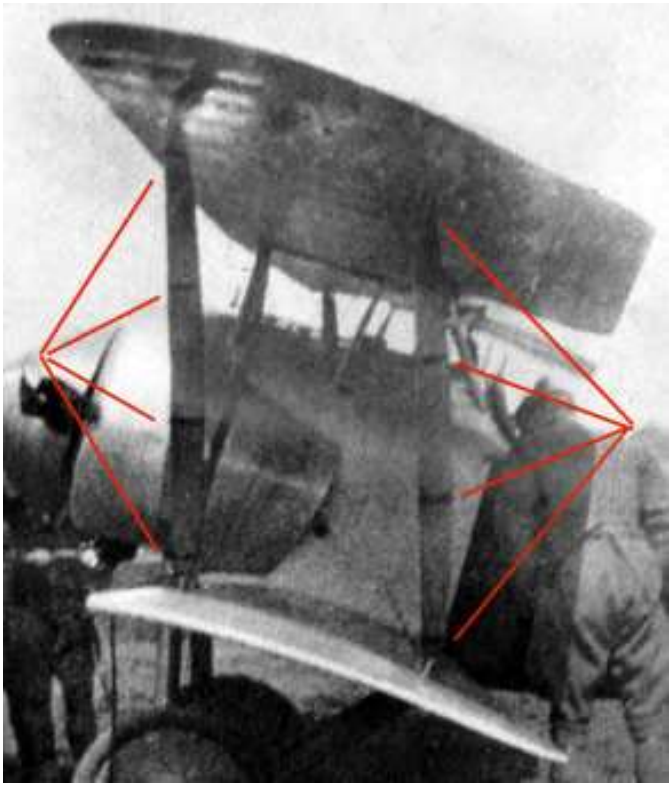
Landing gear struts.
Landing gear axle and fairing.
Four interplane struts.
Two inverted ‘V’ cabane struts.

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

Airbrush the parts with ’Tamiya’ Buff (XF57) or similar.

Refer to Part 2 (Wood Effects) of this build log and apply the desired wood effect to the parts. I used the ‘DecoArt’ Crafters Burnt Umber acrylic paint.

NOTE: *Each of the four interplane struts had four equally spaced linen tapes wrapped around the struts, to help prevent the wood struts from splintering. Although many colour profiles if this aircraft show these tapes to be light in colour, most actual photographs appear to show dark coloured tapes. These tapes will be represented using decal strips.*



Airbrush a gloss clear coat, such as ‘Alclad’ Aqua Gloss (600) or similar over the four interplane struts.

Cut lengths of the 1.0 mm wide black stripes from the ‘Xtradecal’ parallel black stripes (XPS1), long enough to wrap around the top, bottom and middle sections of each interplane strut.

If necessary, refer to Part 4 (Decals) of this build log - Apply the decal strips around the four interplane struts.

Brush the top and bottom of the landing gear ‘V’ struts with ‘Mr. Colour’ Stainless Steel (213) or similar.

Surface finish:

Airbrush a sealing coat of clear semi-matte, such as ‘Alclad’ Light Sheen (ALC-311) or similar over all of the struts.

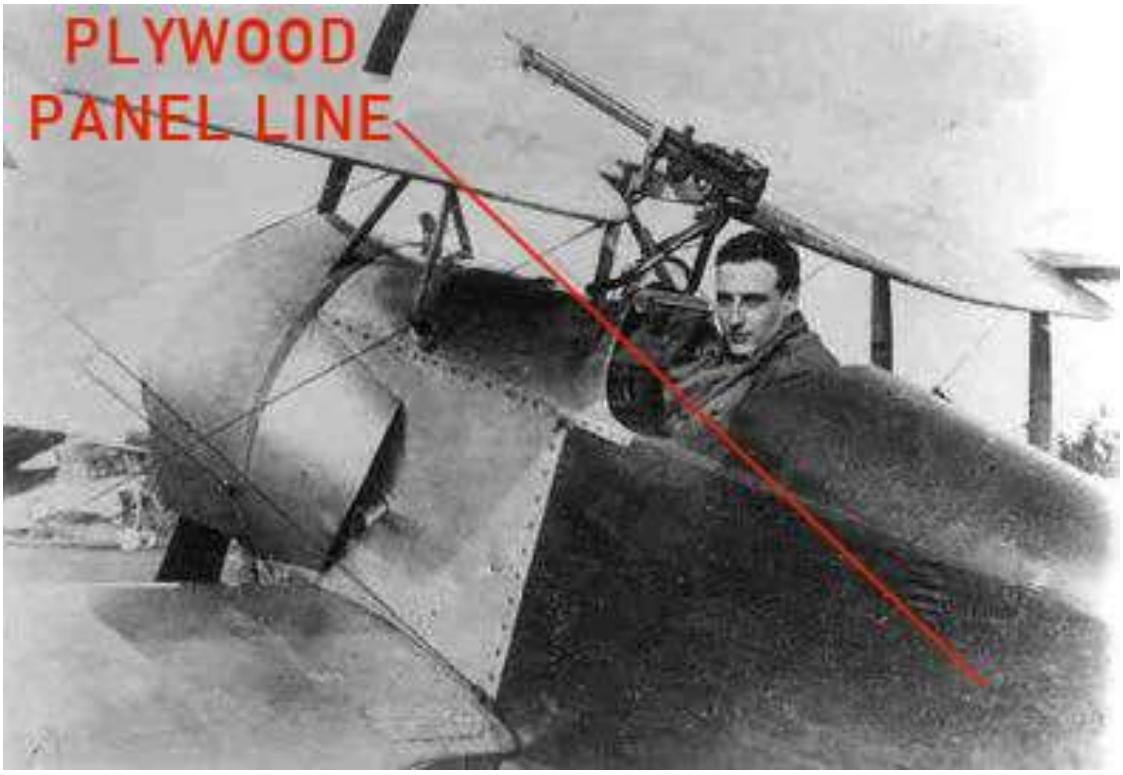
Preparation - plywood decals:

NOTE: *A light coloured primer, such as white, is required for applying the 'Lukgraph' plywood effect decals as these decals are translucent and need a light base coat to better show the effects. Pre-shading under the wood effect decals is intended to show the 'ghost' outline of the panel lines through the decals.*

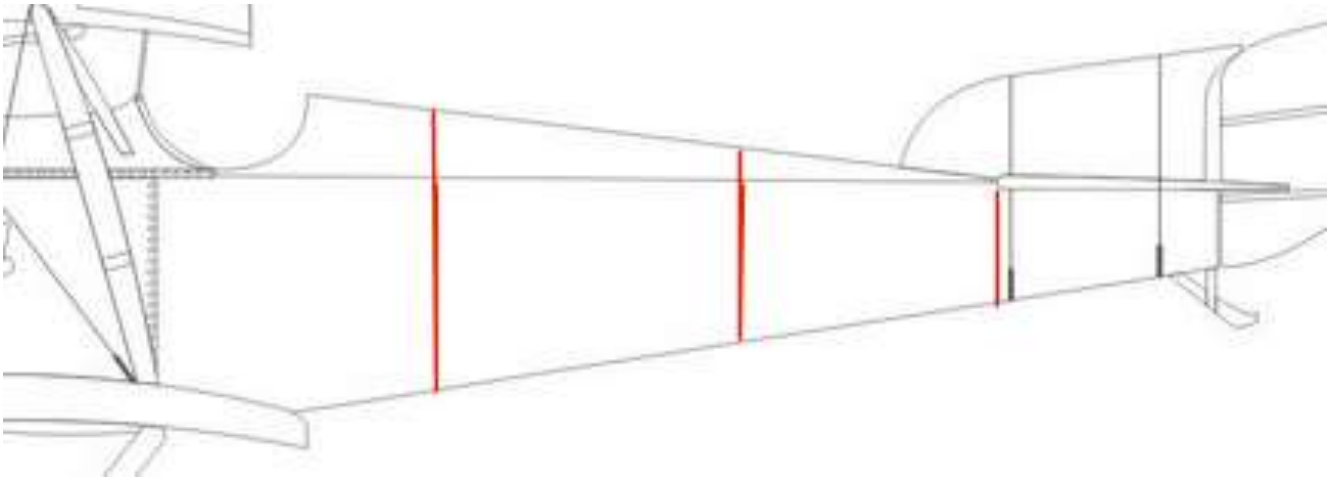
Make sure the already white primed fuselage to the rear of the cockpit is smooth and free from surfaces imperfections.

Pre-shading:

NOTE: *The kit colour profiles show what would appear to be a linen covered rear section of the fuselage. However, the rear of the fuselage was covered with plywood, which appears to have been stained with a dark varnish. It's difficult to ascertain if the covering was single sheets of plywood or separate panels. The photograph below shows what appears to be a panel line joint. Therefore I chose to represent separate plywood panels for this model.*



The thickness of the fuselage surfaces is very thin. Carefully scribe three panel lines around the fuselage as shown in the following illustration. The position of the panel lines is approximate.



Using a ‘Rosie the Riveter’ 1.0 mm tool, create a row of ‘nail heads’ around both sides of each panel line.

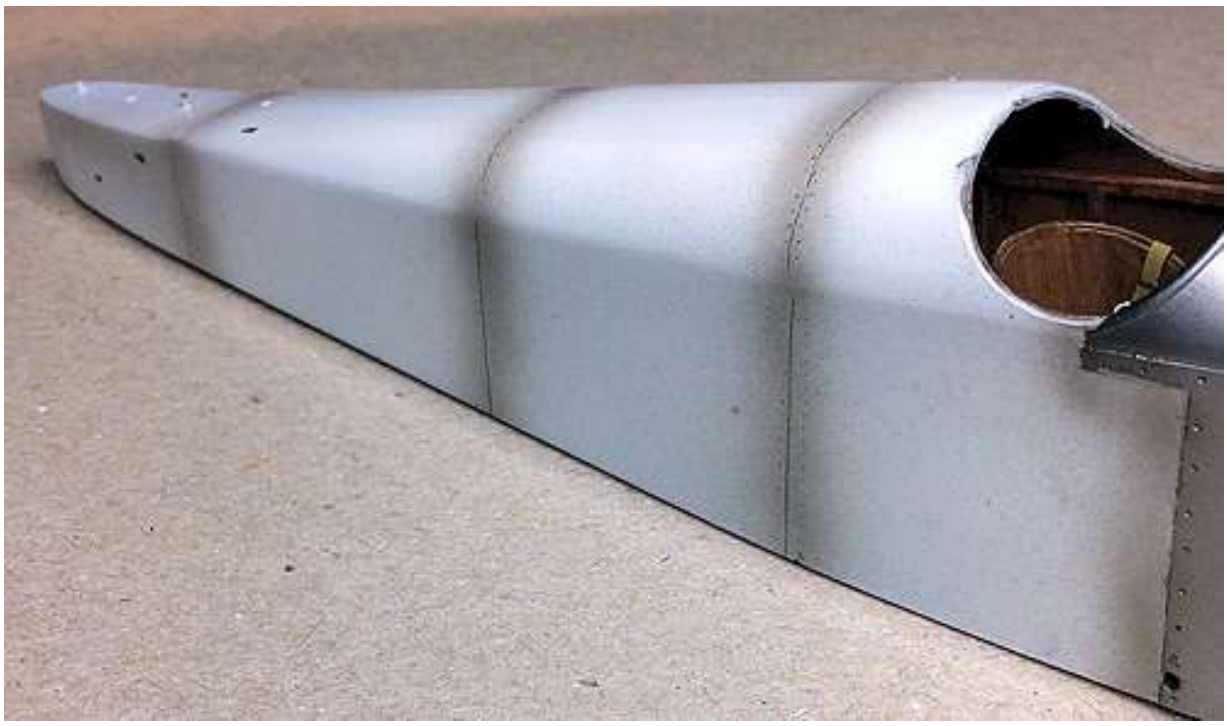
Airbrush ‘Tamiya’ Smoke (X19) along each panel line. The paint should be applied thinly, otherwise it will shown too dark through the applied decals, as the intention is to create a ’ghost’ shadow, not a solid line.

Cut a small piece of the plywood effect decal and apply it over a fuselage pre-shaded area.

Check how much the pre-shading shows through the decal then remove the test decal.

> If too prominent (dark), lightly over spray the pre-shading with the white primer used to ‘knock back’ the pre-shading to a more acceptable appearance. Alternatively the pre-shading can be sanded back to lessen its intensity.
>
> If too light (faded), lightly over spray the pre-shading with the ‘Tamiya’ Smoke (X19) to increase the pre-shading to a more acceptable appearance.

Airbrush a clear gloss coat, such as ‘Alclad’ Aqua Gloss (600) or similar, over the white primed surfaces. This will provide a good surface for the applied decals.



Preparation - linen decals:

NOTE: *A light coloured primer, such as white, is required for applying 'Aviattic' linen effect decals. These decals are translucent and need a light base coat to better show the effects. The flight surfaces requiring linen effect decals are both sides of the upper wing, lower wings, fin, tail-plane and elevators.*

Prime the flight surfaces with a white primer, such as 'AK Interactive' White (AK-759) or similar.

Make sure all surfaces are smooth and free from surfaces imperfections.

Pre-shading:

NOTE: *Pre-shading under the linen effect decals is intended to show the 'ghost' outline of the internal structure through the decals.*

Airbrush 'Tamiya' Smoke (X19) along each rib tape and along the mating edges of the ailerons on the upper wing and the elevators on the tailplane. The paint should be applied thinly, otherwise it will shown too dark through the applied CDL decals, as the intention is to create a 'ghost' shadow of the internal structure, not a solid line.

Mask off the front and rear spars on both sides of the upper and lower wings.

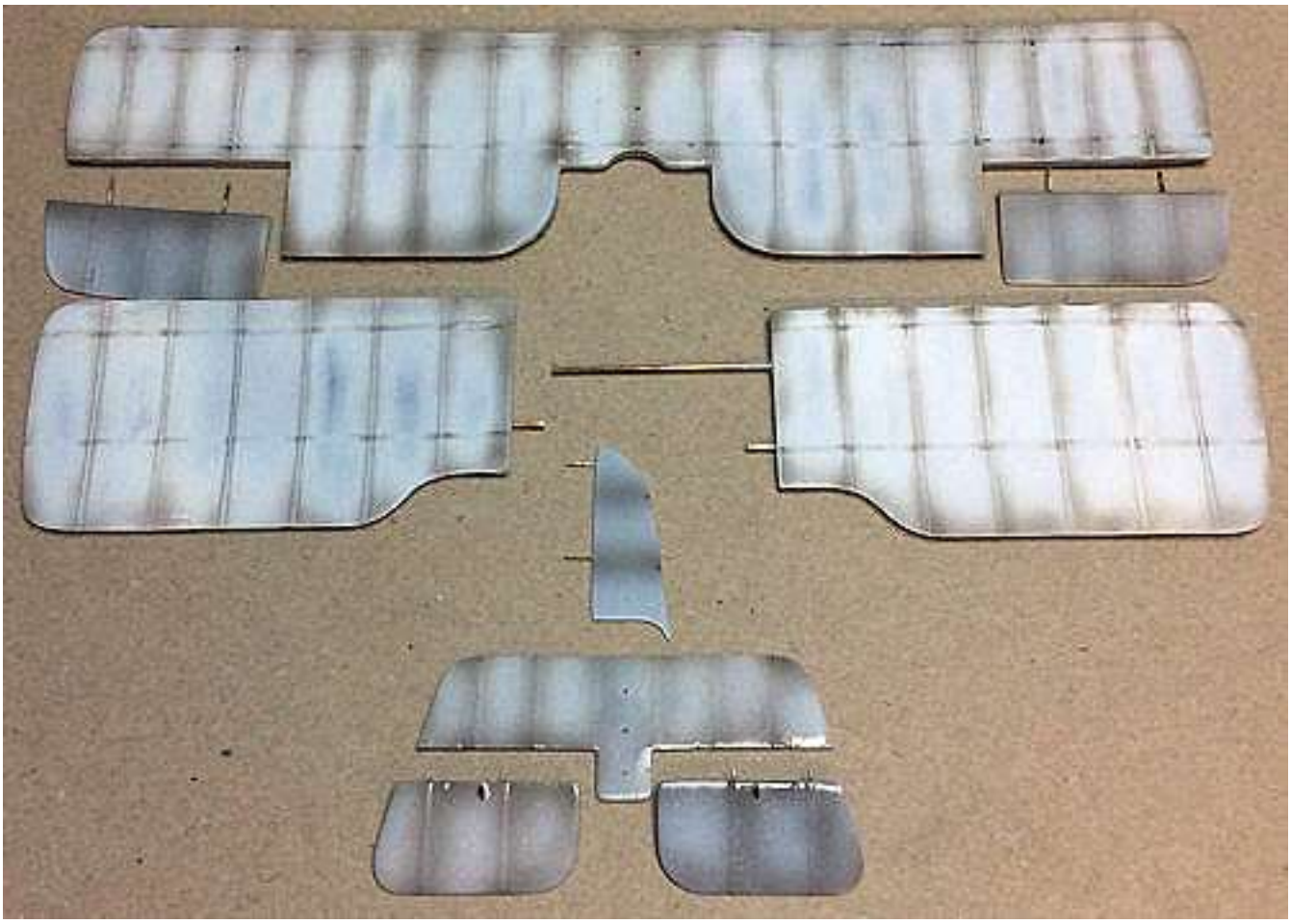
Airbrush 'Tamiya' Smoke (X19) between the spar masking strips to create 'ghost' front and rear spars, then remove the making tape.

Cut a small piece of the linen effect decal and apply it over a flight surface pre-shaded area.

Check how much the pre-shading shows through the decal then remove the test decal.

> If too prominent (dark), lightly over spray the pre-shading with the white primer used to 'knock back' the pre-shading to a more acceptable appearance. Alternatively the pre-shading can be sanded back to lessen its intensity.
>
> If too light (faded), lightly over spray the pre-shading with the 'Tamiya' Smoke (X19) to increase the pre-shading to a more acceptable appearance.

Airbrush a clear gloss coat, such as 'Alclad' Aqua Gloss (600) or similar, over the white primed surfaces. This will provide a good surface for the applied decals.



Application of plywood effect decals:

NOTE: *The fuselage plywood covering is represented by using the 'Lukgraph' Dark Plywood (DEC004) from their Friedrichshafen FF.33L kit (32-30). It's probable that in the future, 'Lukgraph' will make these types of decal sheet available separately. The decal sheet is not 'cookie' cut for any particular model. Therefore the decals need to be cut to the correct shape.*

Cut a paper template for the shape of each panel along the sides of the panel.

Check that each cut template aligns correctly with the edges of the intended fuselage panel.

Trace the outline of each paper template onto the back of the 'Lukgraph' wood effect decal sheet. Make sure the decal is **cut with the grain of the wood** running from the front to the rear edges of each panel decal.

NOTE: *To improve decal adhesion, you can add PVA adhesive (white glue) to the decal water.*

Refer to Part 4 (Decals) for information - apply each wood effect decal onto its panel.

If decal can't be conformed around bends etc, apply 'MicroScale' Micro Sol onto the affected area of the decal. Do not touch or try to move the decal until the area has fully dried, otherwise the softened decal with distort or lift.

Where decal covers pre-drilled holes, point puncture through the decal and if necessary, apply 'MicroScale' Micro Sol around the hole.

Application of linen effect decals:

NOTE: *The linen effect decal used to cover the flight surfaces is the 'Aviattic' Clear Doped Linen (CDL) aged varnish (ATT32094).The decal sheet is not 'cookie' cut for any particular model. Therefore the decals need to be cut to the correct shape.*

Cut a paper template for the shape of each of the flight surfaces.

Check that each cut template aligns correctly with the edges of the intended surface.

Trace the outline of each paper template onto the back of the ‘Aviattic’ linen effect decal sheet.

NOTE: *To improve decal adhesion, you can add PVA adhesive (white glue) to the decal water.*

Refer to Part 4 (Decals) for information - apply each linen effect decal onto one side of each flight surface.

Once fully dry and set, carefully trim away any overhang of decal at the edges of the flight surfaces.

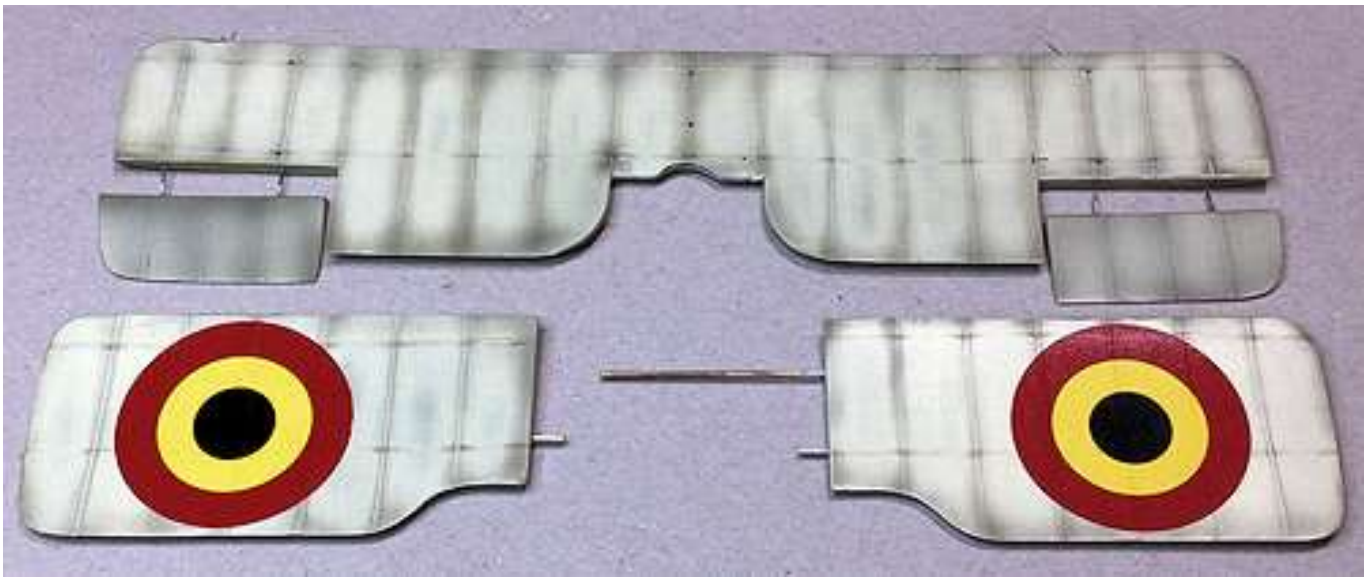
Apply each linen effect decal onto the side of each flight surface.

If decal can’t be conformed around bends etc, apply ‘MicroScale’ Micro Sol. If necessary, apply **sparingly** ’Tamiya’ X20A thinners onto the affected area of the decal. Do not touch or try to move the decal until the area has fully dried, otherwise the softened decal with distort or lift.

Where decal covers pre-drilled holes, point puncture through the decal and apply ‘MicroScale’ Micro Sol or if necessary apply **sparingly** ’Tamiya’ X20A thinners around the hole.

Application of kit decals:

Refer to Part 4 (Decals) for information - following the kit illustrations, apply the kit decals to their locations on the model parts. The upper wing roundels **need to be cut** so as to fit separately on the upper wing a the ailerons.



Brush paint the edges of the rudder, ailerons and the upper wing aileron trailing edges to with red, yellow and black to blend with the kit decals. 'Tamiya' Flat Red (XF7), Flat Yellow (XF3) and Black (X18).

Details:

Cockpit padding:

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

Rear fuselage:

Brush paint the filler cap on the forward fuselage with 'Mr. Colour' Brass (219).

Brush the rear panel of the fuselage and the two carburettor air intake pipes with 'Mr. Colour' Stainless Steel (213).

Secure the two carburettor air intake pipes into their pre-drilled holes in the fuselage forward sides at the rear of the engine cowl side panels, using thin CA adhesive.

Brush paint the control horns on the rudder and elevators with 'Tamiya' Black (X18).

Weathering:

Prepare the following surfaces for weathering by airbrushing a semi-matte clear coat, such as 'Alclad' Light Sheen (ALC-311) or similar.

Fuselage, upper wing, lower wings, ailerons, fin rudder, tailplane and the elevators.

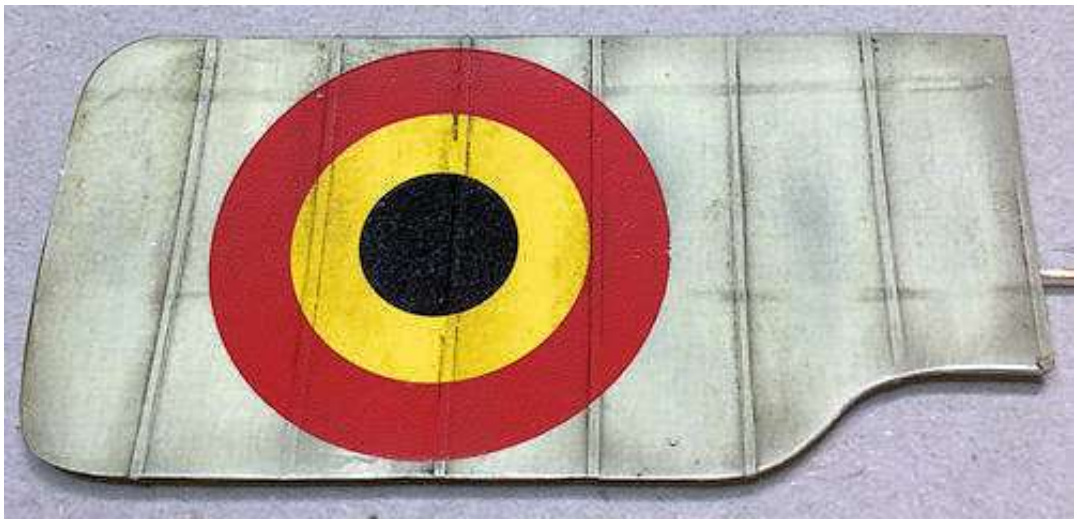
Refer to Part 3 (Weathering) of this build log for information - I applied 'Flory Models' Dark Dirt fine clay wash.

Once the desired weathering effect has been achieved, seal the surfaces with a semi-matte clear coat, such as 'Alclad' Light Sheen (ALC-311) or similar.

Apply oil staining under the fuselage at the engine and behind the fuselage filler cap, by sponging 'Tamiya' Weathering Master Set D (Oil stain).

Apply mud along the bottom edges of the fuselage, by sponging 'Tamiya' Weathering Master Set A (Mud).


LE VAMPIRE

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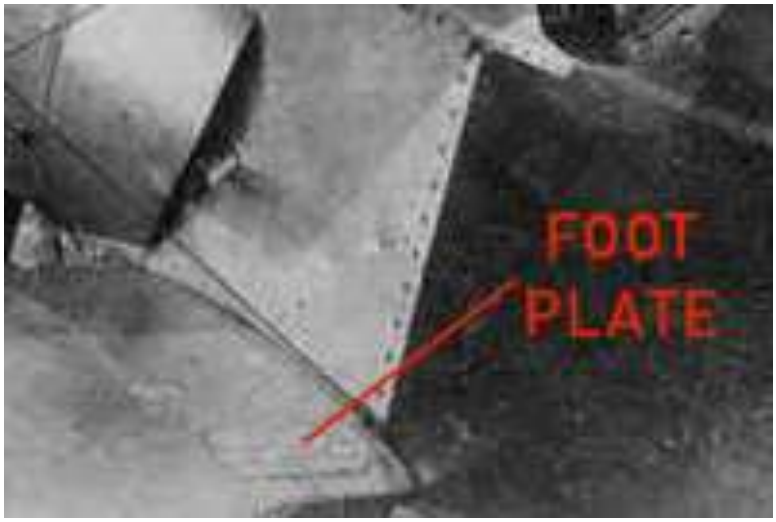
Wing foot plate:

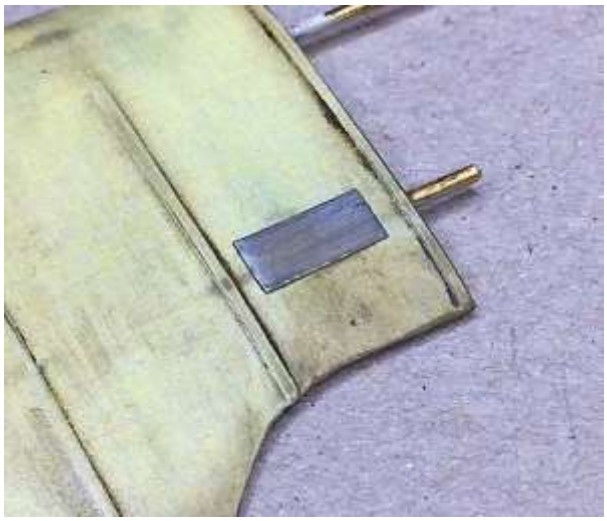
NOTE: *Photographs show that at least the left lower wing had a foot plate fitted, which is not supplied in the kit.*



Cut a rectangle of spare photo-etch or 0.2 mm thick plastic card 3mm wide and 7 mm long.

Brush the plate with 'Mr. Colour' Stainless Steel (213) or similar

Secure the plate above the rear spar outline on the lower left wing, using thin CA adhesive.



Machine gun - fit:

Secure the Lewis machine gun into its created slot in the top of the fuselage, using thin CA adhesive. Make sure it is located parallel to the fuselage centre line when viewed from above and also horizontal when viewed from the side.

Rigging anchor points:

NOTE: *The rigging anchor points used are the 1:48th scale 'GasPatch' Anchor Points.* ***Refer to the earlier pages of this Part of the build log for the location of the pre-drilled anchor point holes.***

Make sure all of the pre-drilled anchor point holes and strut location holes are clear of decal and paint.

NOTE: *During the next step, d****o not*** *fit anchor points into the pre-drilled holes in the* ***bottom, rear of the engine cowl*** *as these will have 'one ended' type turnbuckles fitted later in this build.*

Secure a 1:48th scale 'Gaspatch' anchor point into each of the pre-drilled anchor point holes in the underside of the upper wing (8 total), top surface of the lower wing (8 total) and fuselage (8 total). The anchor points should be aligned horizontal along the sides of the fuselage and for the wings, aligned from the wing leading edges to their trailing edges.

Pre-rigging:

NOTE: *Refer to Part 6 (Rigging) of this build log for details of the rigging and the locations of the turnbuckles.*

Pre-rigging a line - example:

Pass one end of 'Stroft' 0.12 mm diameter mono-filament or similar through a blackened 0.5 mm diameter Brass tube, such as 'Albion Alloy's' MBT05 or similar.

Pass the line through an 'eye' end of a 'GasPatch' 1:48th scale turnbuckle (Type C).

Pass the line back through the tube.

Move the tube up to, **but not touching**, the 'eye' end of the turnbuckle.

Secure the tube to the line using thin CA adhesive. The loop of the line should be free to move in the 'eye' of the turnbuckle.

Cut away the residual tags of line.

Landing wires:

NOTE: *Landing wire lines will be passed through the pre-drilled holes in the inverted 'V' cabane struts to the opposite lower wing.*

Cut a length of 'Stroft' 0.12 mm diameter mono-filament or similar. The length of each line should be longer than that needed to span from the bottom of the interplane stuts, up and through the inverted 'V' cabane struts an down to the bottom of the opposite interplane struts, with extra length added.

Attach a ‘GasPatch’ turnbuckle (Type C) to the line, as described in the previous ‘Pre-rigging a line - example’ paragraph.

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

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

Pass one end of the line through the free ’eye’ end of the turnbuckle.

Pass the other end of the line through the fitted anchor point on a lower wing, inboard from an interplane strut.

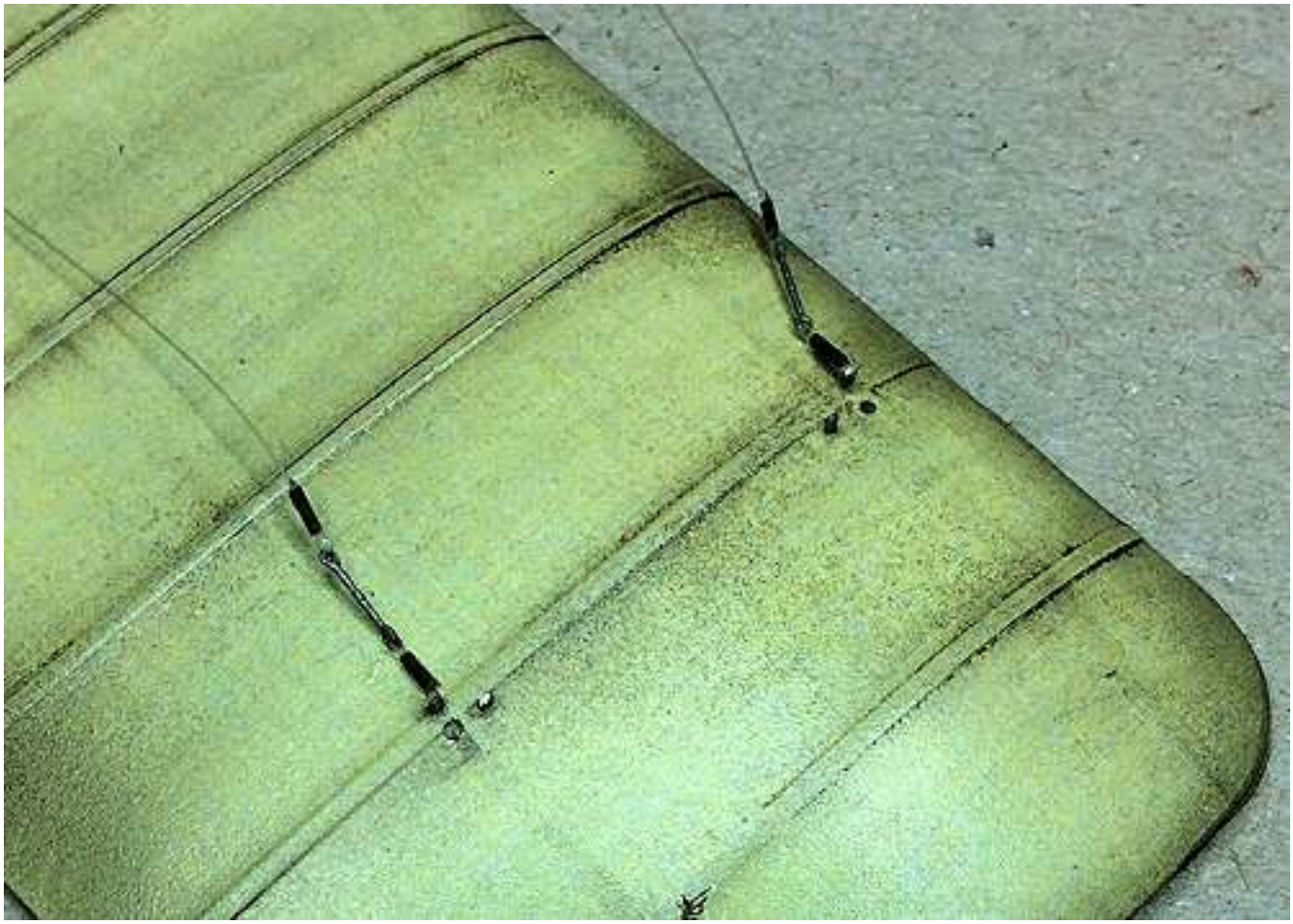
Pass the two ends of the line back through the tube.

Holding each end of the line, pull gently to move the tube up to, **but not touching** the ’eye’ end of the turnbuckle and anchor point. Make sure the loops of line from the tube are slightly away from the ‘eye’ ends.

Secure the tube to the line at the turnbuckle end, using thin CA adhesive.

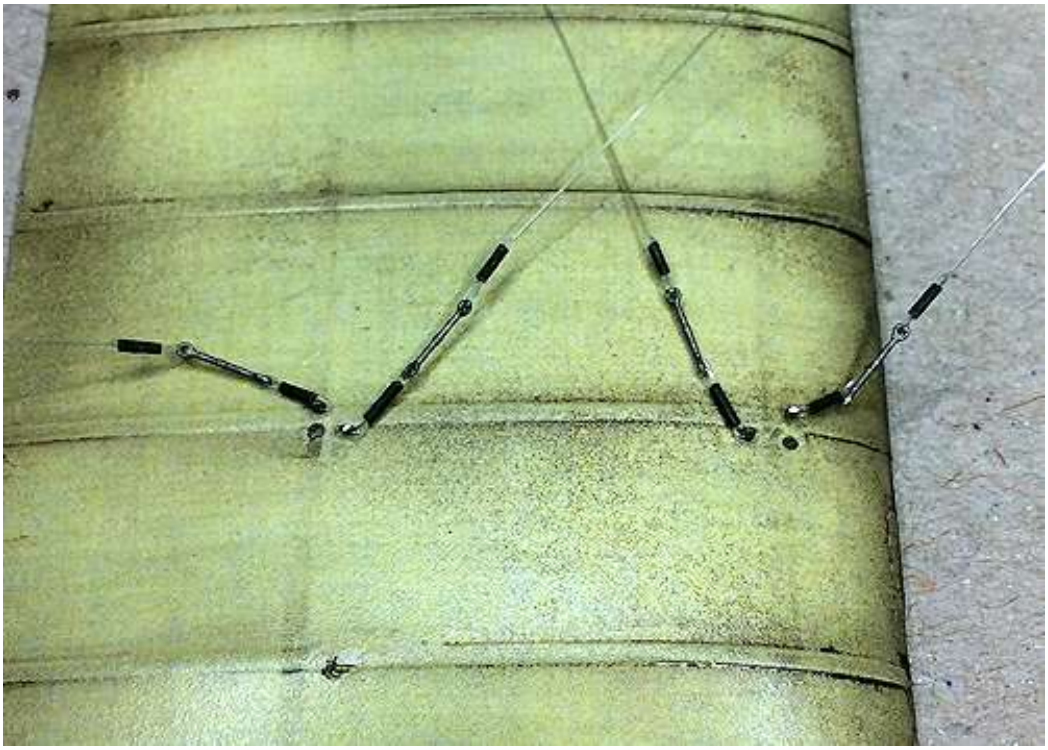
Carefully cut away the residual line at the tube ends.

Repeat the procedure to add a landing wire at the other interplane strut on that wing and both wires to the other lower wing.



<u>Incidence wires:</u>

Using the previous procedure, add an incidence wire to the two anchor points fitted between the incident strut location holes on both lower wings. The lines should be long enough to diagonally span and cross between the bottom and top of the two incidence struts, with extra length added.



Forward flying wires:

Based on the previous procedure, create two long lines, but with a ‘GasPatch’ One Ended type turnbuckle fitted to each line.

Rear flying wires:

Using the previous procedure, add the rear flying wire to the fitted anchor point on the side of the fuselage above the lower wing roots. The lines should be long enough to diagonally span up to the top of the rear incidence struts on the lower wings, with extra length added.

Landing gear bracing wires:

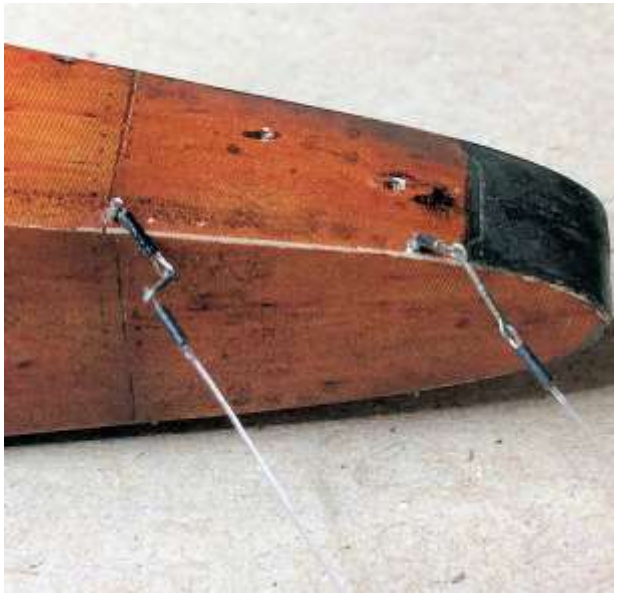
Using the previous procedure, add the two landing gear bracing wires to the fitted anchor points on the forward, underside of the fuselage, to the rear of the engine bay. The lines should be long enough to diagonally cross down to the anchor points previously fitted to the bottom of the landing gear struts, with extra length added..

Fin bracing wires:

NOTE: *The fin bracing wires only need to be pre-rigged to one side of the fuselage, as the lines will be passed through the tailplane and fin to be attached to the other side of the fuselage later in this build.*

Using the previous procedure, add two fin bracing wires to the fitted anchor points on one side of the fuselage. The lines should be long enough to pass diagonally up and through the pre-drilled holes in the tailplane and fin and then pass through the opposite tailplane to the other side of the fuselage, with extra length added.

Using the previous procedure, add two fin bracing wire turnbuckles (Type C) to the two fin bracing anchor points on the other side of the fuselage. **Do not add bracing wires** to these turnbuckles. The previously pre-rigged lines will be attached to the turnbuckles later in this build.



Rudder control cables:

Cut a long length of 0.08 mm diameter mono-filament, such as that from ‘Stroft’.

Pass the line through a blackened 0.4 mm diameter Brass tube, such as ’Albion Alloy’s’ MBT04 or similar.

Pass one end of the line through the hole in the end of a rudder control horn then back through the tube.

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

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

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

Repeat the procedure to add a pre-rigged control line to the other rudder control horn.

Elevator control cables:

Repeat the above procedure to add pre-rigged control lines to the two upper and two lower control horns on the elevators.

Lower wings - fit:

Make sure the lower wing locating rods are free of paint and clear coat.

Test fit the wings into the fuselage, making sure they both easily locate into the fuselage and that they locate fully against the sides of the fuselage.

NOTE: *When fitting the wings, do not apply too much force to the sides of the fuselage. The sides are resin and thin and could be damaged or the fuselage seam joint could separate. Also make sure all pre-rigged lines are kept clear of the wing to fuselage joints.*

Locate the lower wing that has the two fitted rods into/through the fuselage, but leave a gap between the wing and the fuselage.

Apply thin CA adhesive to the rods at the wing root.

Fully locate the wing into and against the side of the fuselage.

Repeat the procedure to fit the opposite lower wing.

Upper wing - fit:

NOTE: *Make sure the four interplane struts are fitted in their correct locations between the wings, as noted previously when test aligning the struts. If the struts are not correctly positioned they may not fully locate into the wings or the wings may not correctly align to each other.*

Make sure the locating holes for the four interplane struts, in the top surface of the lower wings and underside of the upper wing are free of paint, decal and clear coat.

Test fit the interplane struts into the lower and upper wings, making sure they easily locate into their locating holes.

NOTE: *Make sure all pre-rigged lines are kept clear on the location holes for the interplane struts.*

On each interplane strut in turn, apply thin CA adhesive onto the locating rod for the lower wings.

Fully locate the struts into their locating holes in the lower wings, making sure the struts are parallel and leaning forward at the top.

Carefully locate the upper wing onto the top rods in the four interplane struts.

Check that the struts are fully located into the upper wing and the wings are correctly aligned when viewed from the sides and above.

NOTE: *Make sure the CA adhesive is kept away from the rigging anchor points fitted in the underside of the upper wing. Adhesive allow to block the 'eye' of an anchor point is difficult to remove once the upper wing has been fitted.*

Carefully apply thin CA adhesive to secure the locating rods in the top of the interplane struts into the upper wing.

Cabane struts - fit:

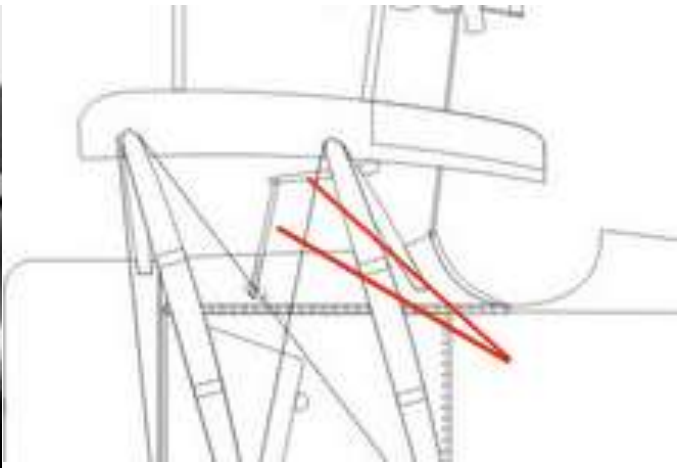
Hold the forward stut in tweezers and test fit the strut between the top of the fuselage and the underside of the upper wing. The strut should be in direct contact with both surfaces, be aligned to the wings and with the top of the strut aligned to the top of the forward interplane struts. If Necessary, carefully bend the legs of the strut either towards each other or further apart, to achieve good contact.

Use the same procedure for the rear cabane strut, the only difference being that the top of the strut should align with the tops of the rear incidence struts.

Using CA adhesive, secure the two cabane struts in their positions between the underside of the upper wing and top of the forward fuselage.

Aileron control rods - fit:

NOTE: *The ailerons on the upper wing were operated from the cockpit by means of rods and Levers, as can be seen on the following photograph. However, the kit supplied parts 19 have control rods that are too short. Therefore I modified the parts.*



Remove the two aileron controls from their mounting block and remove and residual resin flash or seam lines.

Cut away the control rods from the levers.

Using the witness mark of the rods, drill a hole of 0.4 mm diameter up through the end of both levers.

Cut two lengths of 0.6 mm diameter Nickel-Silver tube, such as ’Albion Alloy’s’ NST06 or similar.

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

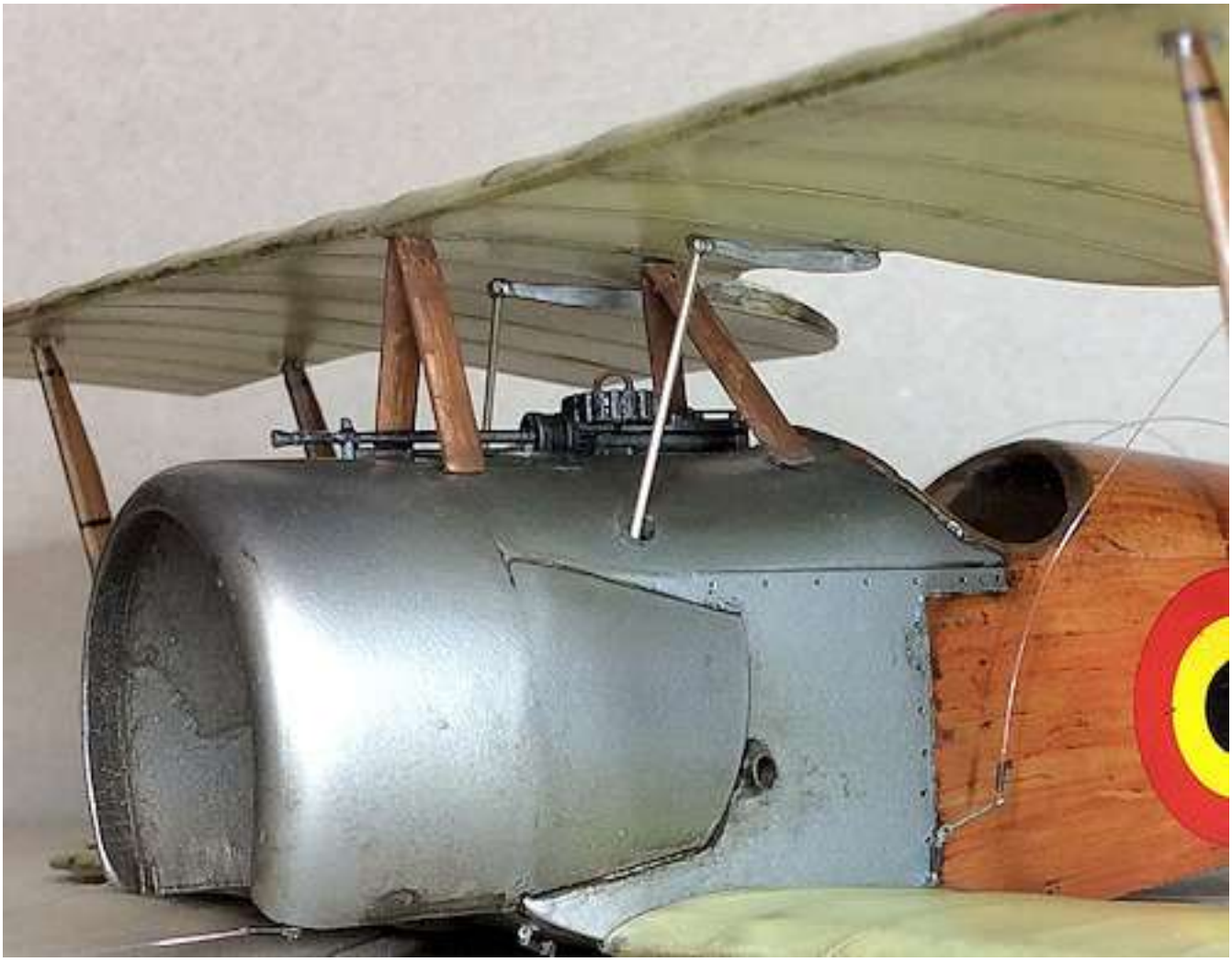
Using thin CA adhesive, secure the 0.4 mm tubes into the 0.6 mm tubes, leaving enough protruding to fit through the pre-drilled hole in the lever.

Test fit the two aileron controls and make sure that:

- The rods enter the pre-drilled holes in the forward fuselage.
- The rear of the levers are in contact with the underside of the upper wing, just inboard from the edges of the centre cut out in the wing.
- The levers are angled slightly down at the rod end.
- The levers should also be inline with the fuselage.

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

Using CA adhesive, secure the aileron controls in position in the fuselage and at the underside of the upper wing.



Landing gear - fit:

Struts and axle:

Make sure the locating holes for the landing gear struts in the underside of the fuselage are free of paint, decal and clear coat.

Test fit the landing gear struts, with the axle end rods through the openings in the struts, making sure they easily locate into their locating holes and are aligned correctly when viewed from the underside and sides of the aircraft. Also that the axle is parallel to the lower wings.

Using CA adhesive, secure the lading gear stuts into the fuselage with the axle dry fitted only.

Rotate the axle fairing such that it aligns to the underside of the lower wings.

Using CA adhesive, secure the axle in the landing gear struts, making sure to leave a gap between the ends of the axle fairing and the struts. This will allow fitting of the ‘bungee’ type suspension cord.

Brush paint the top and bottom of the landing gear struts with ‘Mr. Colour’ Stainless Steel (213) or similar.

‘Bungee’ cord suspension:

Cut a long length of white ‘EZ’ heavy stretch line.

Using thin CA adhesive, secure one end of the line to the exposed axle between the bottom of the strut and the end of the axle fairing.

Wrap the line over and around the strut and axle in a criss-cross fashion, until five wraps have been achieved.

Using thin CA adhesive, secure the end of the line in position.

Cut away the residual end of the line.

Brush paint the line with ’Tamiya’ Desert Yellow (XF59) or similar.

Brush ‘AK Interactive’ Kerosene wash (AK2039) over the painted ‘bungee’ cords.

Tightening of rigged lines:

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

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

If a rigging line requires tightening after it has been finally rigged, a suitable heat source will be required. I use a small electrical soldering iron.

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

Final rigging - wings:

Landing wires:

Pass the free end of a rear landing wire through a blackened Brass 0.4 mm diameter tube, such as ‘Albion Alloy’s’ MBT04) or similar.

Pass the free end through the pre-drilled hole in the top of the rear ‘inverted ‘V’ cabane strut.

NOTE: *During the next step, do not apply too much tension to the line as this may cause the CA adhesive joints of the strut to fail.*

Make sure the 0.4 mm tube is slid down the line and away from the cabane strut.

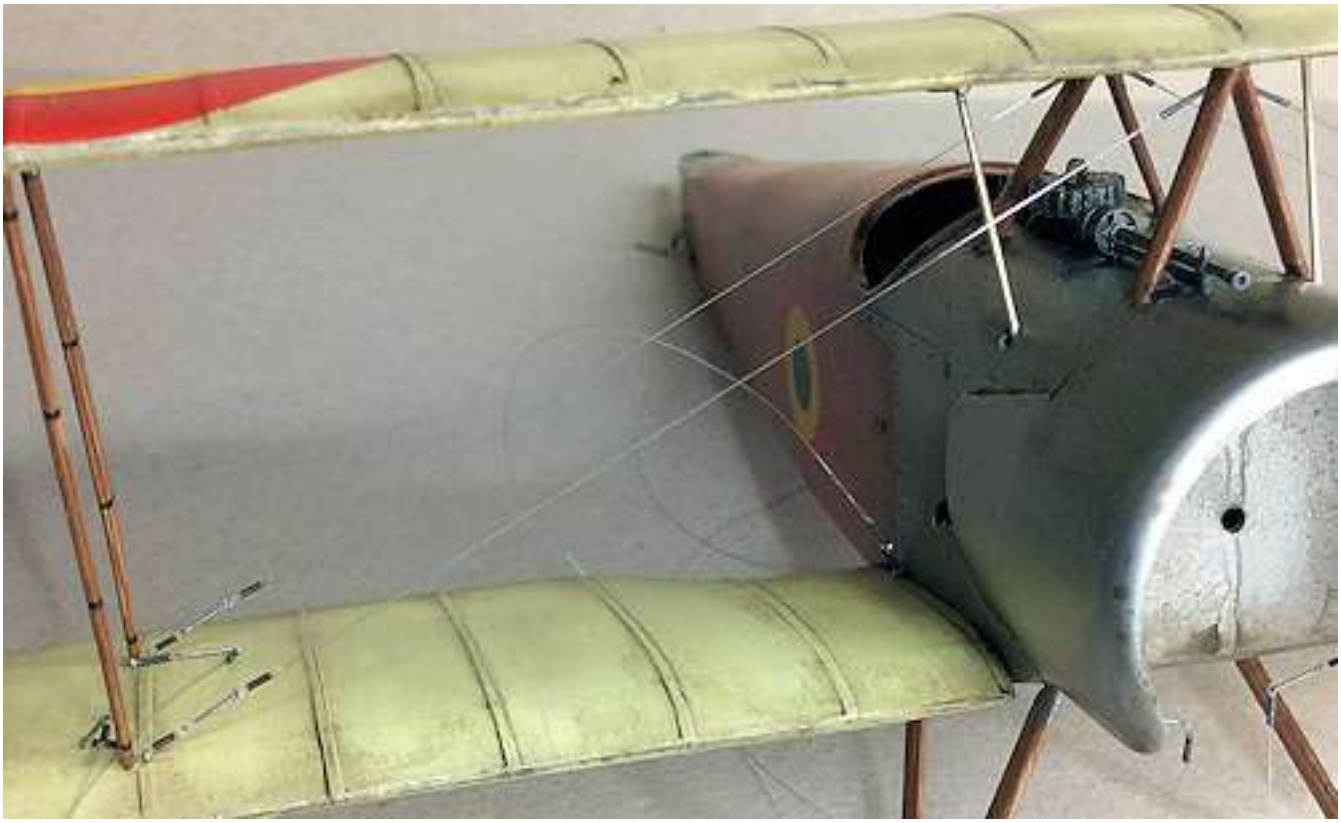
Pull the line taut from the inside of the cabane strut.

Apply thin CA adhesive to secure the line into the cabane strut.

Slide the 0.4 mm tube up to the cabane strut and secure in position using thin CA adhesive.

Carefully cut away the residual line from inside the cabane strut.

Repeat the procedure to add the opposite rear landing wire and the two forward landing wires into the forward cabane strut.



Rear flying wires:

Cut a short length of blackened Brass 0.5 mm diameter tube, such as ‘Albion Alloy’s’ MBT05 or similar.

Pass the free end of a rear flying wire through the tube, then through the fitted anchor point in-board from the top of the rear interplane strut.

Pass the line back the tube.

Keep int line taut, slide the tube up to, **but not touching**, the ‘eye’ of the anchor point.

Using thin CA adhesive, secure the tube to the line.

Cut away the residual tag of line.

Repeat the procedure to attach the opposite rear flying wire.

Forward flying wires:

Dry fit the tang of the one ended turnbuckle on a prepared forward flying wire into the pre-drilled hole in the bottom, rear edge of the engine cowl.

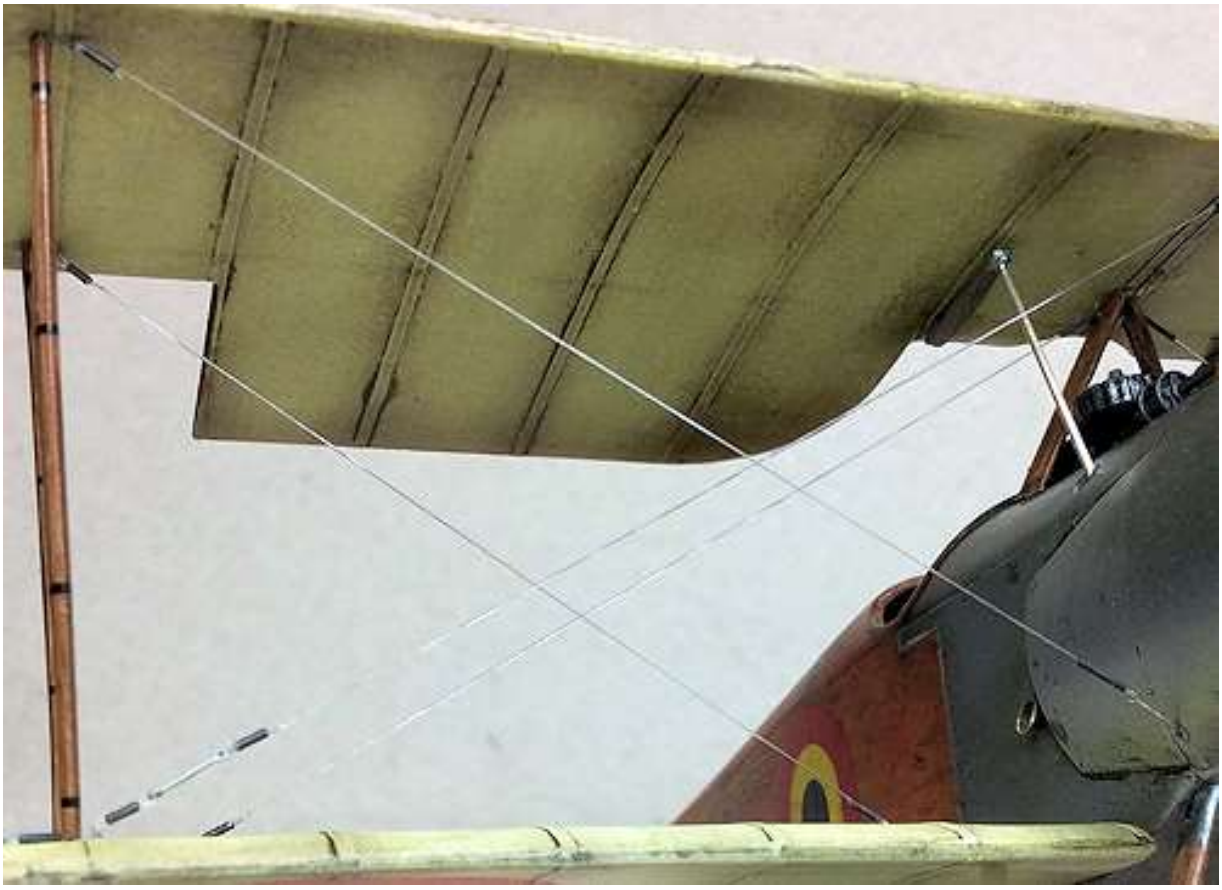
Check that the line and the turnbuckle can be aligned to the fitted anchor point, inboard from the top of the forward interplane strut.

If necessary, carefully bend the tang of the turnbuckle to achieve alignment.

Using thin CA adhesive, secure the turnbuckle is the correct position into the hole in the engine cowl.

Attach the line to the anchor point following the same procedure used for the rear flying wire.

Repeat the procedure to attach the opposite forward flying wire.



Incidence wires:

Use the same procedure as used for attaching the rear flying wires, attaching the lines to the pre-fitted anchor points at the on the underside of the upper wing, between the tops of the two interplane struts.

Final rigging - landing gear:

Use the same procedure as used for attaching the rear flying wires, attaching the lines to the pre-fitted anchor points at the bottom, inboard edge of the landing gear struts.

Tail unit - assembly:

Make sure the fitted locating rods and associated pre-drilled holes for the tailplane, fin and the elevators are free from decal and paint.

Using thin CA adhesive, secure the two pre-rigged elevators into their positions on the trailing edge of the tailplane.

Using CA adhesive, secure the tailplane onto its fitted locating rods on the top, rear of the fuselage, making sure the tailplane assembly is fully located and is horizontal to the fuselage.

Using CA adhesive, secure the rudder locating rods into their pre-drilled holes in the rear of the fuselage and the fin.

Final rigging - tail unit:

Fin bracing wires:

Make sure the pre-drilled rigging holes in the tailplane and fin are clear of decal and paint.

Pass the free end of the forward fin bracing wire through a blackened Brass 0.4 mm diameter tube.

Pass the line through the pre-drilled hole on that same side at the leading edge of the tailplane.

Pass the free end of the line through two blackened Brass 0.4 mm diameter tubes.

Pass the line through the pre-drilled hole in the forward, top of the fin.

Pass the free end of the line through two blackened Brass 0.4 mm diameter tubes.

Pass the line through the pre-drilled hole in the opposite leading edge of the tailplane.

Pass the line through a blackened Brass 0.4 mm diameter tube then a cut and blackened 0.5 mm diameter tube.

Pass the line through the free ‘eye’ end of the forward pre-rigged turnbuckle on that side of the fuselage.

Keeping the line taut, slide the 0.5mm diameter tube up to, but not touching, the ‘eye’ end of the turnbuckle.

Secure the 0.5 mm diameter tube to the line using thin CA adhesive.

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

Slide each 0.4 mm tube along the lines to contact the fin and tailplane and secure in position on the lines using thin CA adhesive.

Repeat the procedure to rig the rear fin bracing wire.

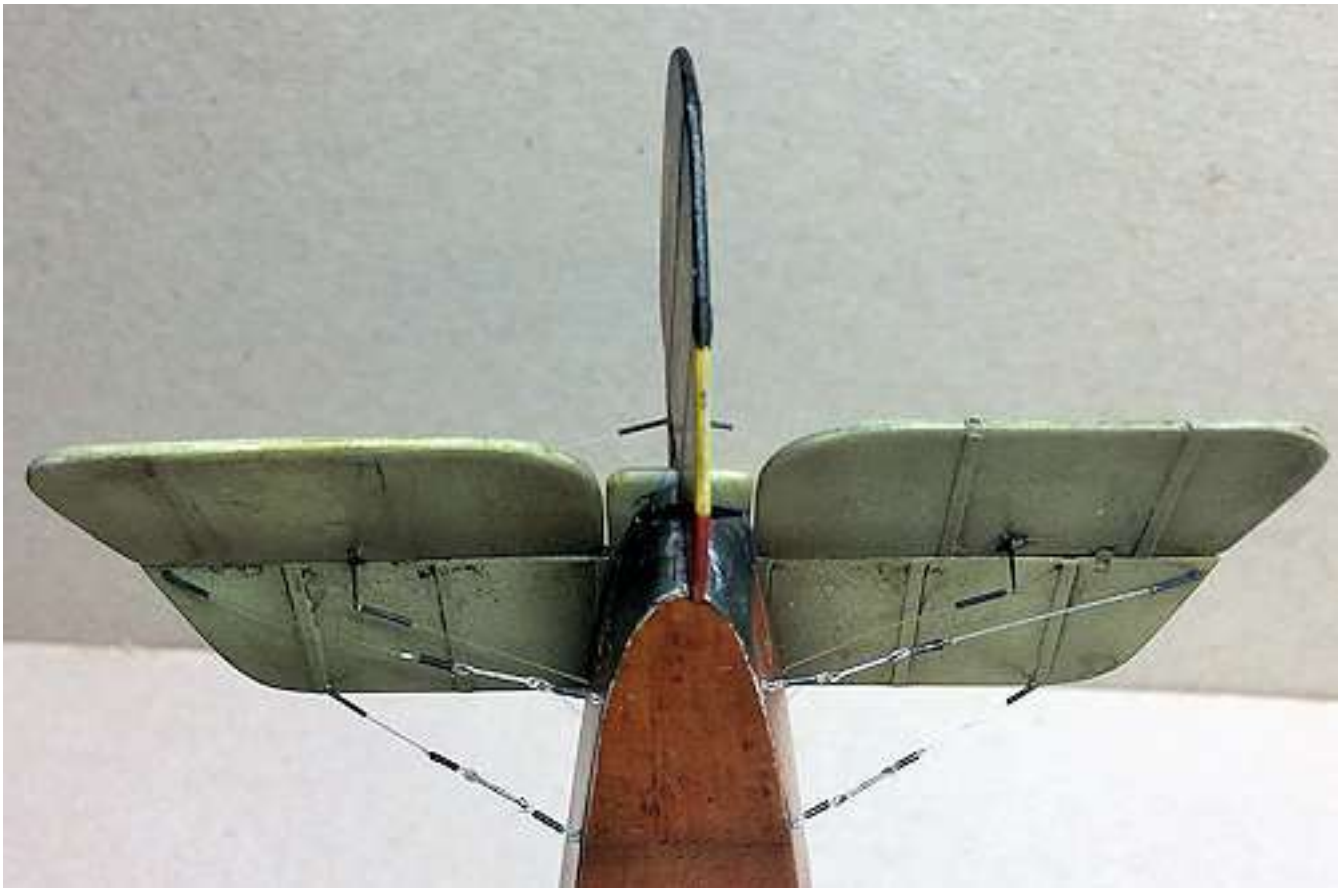
Rudder control cables:

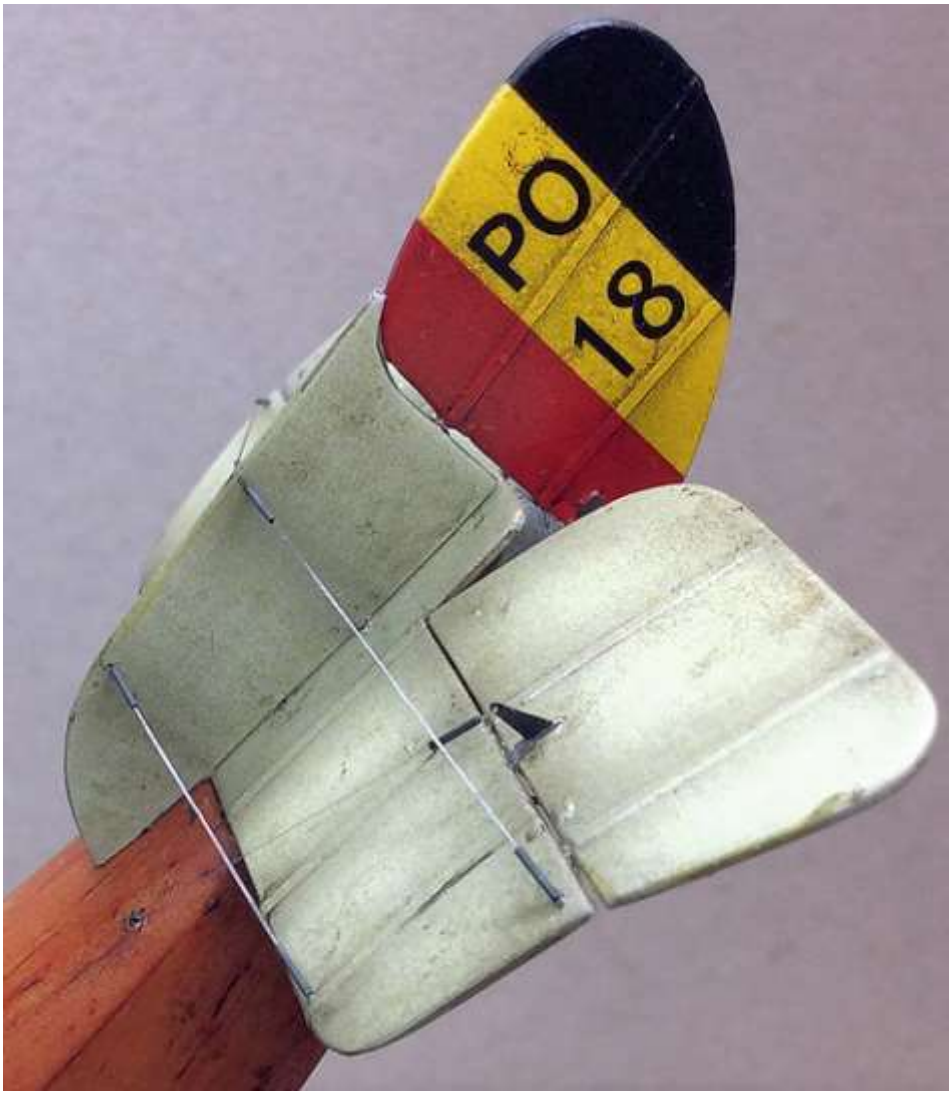
Trim the length of the lines on the pre-rigged rudder such that they can be fully inserted into their pre-drilled location holes in the sides of the fuselage rear.

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

Elevator control cables:

Use the rudder procedure to rig the two upper and lower elevator control lines into their locating holes in the top and sides of the fuselage rear.




PO
18

Turnbuckles - paint:

Brush paint the centre barrels of each turnbuckle with a mix of ‘Mr. Colour’ Copper (215) and Brass (219) at a ratio of 70/30.

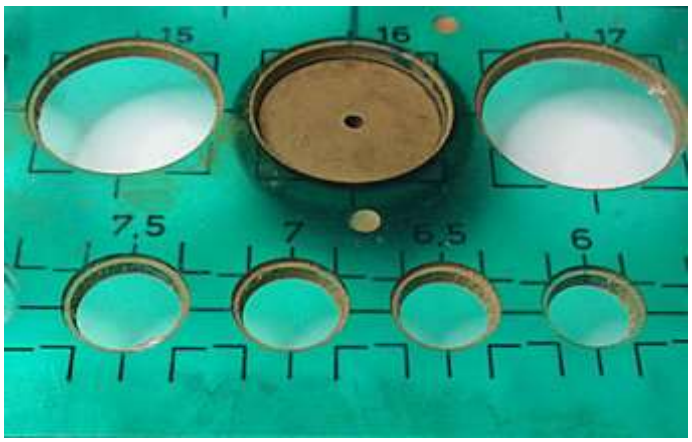
Ailerons - fit:

Apply thin CA adhesive to the pre-fitted location rods of the ailerons and secure the two ailerons into position on the trailing edge of the upper wing.

Wheels:

Airbrush the two wheels with ‘Tamiya’ Ocean Grey (XF82) or similar.

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



Airbrush the wheel covers on both sides of the wheels with a white primer, such as ‘AK Interactive’ White (AK-759) or similar.

Make sure all surfaces are smooth and free from surfaces imperfections.

Airbrush a gloss clear coat, such as ‘Alclad’ Aqua Gloss (600) or similar.

Wheel covers:

NOTE: *To cut discs from decal sheets I use a ‘ThinnerLine’ circle cutter. There is also a similar tool available from ‘DSPIAE’.*

‘Thinnerline’ circle cutter

Using the ‘Aviattic’ CDL aged varnish (ATT32094) decal, cut four discs of the same diameter as the wheel covers.

Drill a hole of 2.2 mm diameter through the centre of two of the discs, such that they can fit over the hubs in the centre of the outboard face of the wheels.

Drill a hole of 1.2 mm diameter through the centre of remaining two discs, such that they can fit over the axle rods.

Cut a thin ‘wedge’ from the centre of each disc, widening slightly towards the outer edge. This allows the decal to conform to the slight curvature of the wheel covers.

Refer to Part 4 (Decals) - Apply the decal discs to the front and rear wheel covers.

NOTE: *A small linen patch was sown on the outboard face of each wheel. This was used to gain access to the tyre inflation valve in the wheel rim.*

Using the ‘Aviattic’ CDL aged varnish (ATT32094) decal, cut two small squares and apply them to the outer wheel covers. The patches will appear darker as they are applied onto the existing decal.

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

Refer to Part 3 (weathering) - Apply ‘Flory Models’ Dark Dirt fine clay wash over the two wheels and once dry, remove as required to achieve the desired weathering. I used the ‘Grime’ wash.

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

Brush paint the outer centre hubs of bot wheels with ’Tamiya’ Rubber Black (XF85) or similar

Check fit the wheels to the axle, making sure the centre hubs are towards the axle and the ends of the axle rods are flush to the outer wheel covers.

Secure the wheels to the axle using CA adhesive.

Tail skid:

NOTE: *The resin tail skid supplied in the kit may break. Therefore I modified the tail skid to give it more strength.*

Cut a short length od 1.2 mm diameter Brass tube, such as 'Albion Alloy's' MBT12 or similar.

Push fit the tube over the longer, rear support rod.

Drill a hole of 1.2 mm diameter through the rear, underside of the fuselage, on the centre line and 3 mm from the rear end of the fuselage.

Locate the tail skid into the hole and mark the underside of the fuselage with the position of the locating stub at the front of the tail skid.

Drill a hole of 1.0 mm diameter through the underside of the fuselage at the marked location.

Test fit the tail skid and make sure the front stub of the tail skid locates fully into its hole in the fuselage. If necessary, adjust the length of the added Brass tube until full location is achieved.

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

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

Refer to Part 2 (Wood Effects) of this build log and apply the desired wood effect to the tail skid. I used the 'DecoArt' Crafters Burnt Umber acrylic paint.

Brush paint the 'shoe' of the tail skid with 'Mr. Colour' Stainless Steel (213) or similar.

Secure the tail skid into the fuselage, using thin CA adhesive.

Windscreen:

NOTE: *The windscreen supplied in the kit is only thin acetate sheet and not very practicable. Therefore I replaced it with a suitable spare windscreen from a previous kit.*

I enlarged the cut out in the windscreen such that it would fit over the rear handle of the Lewis machine gun (when fitted into its fuselage slot) and still be centrally positioned in front of the cockpit.

The outer support frame of the windscreen was brush painted with 'Tamiya' Semi-Black (X18). An alternative is to use the Black 'Posca' acrylic pen (PC-1MR).

Using 'Microscale' Krystal Clear or similar PVA adhesive, secure the windscreen in position on the top of the fuselage, just forward from the cockpit, making sure to locate the slot in the windscreen over the rear of the Lewis machine gun.

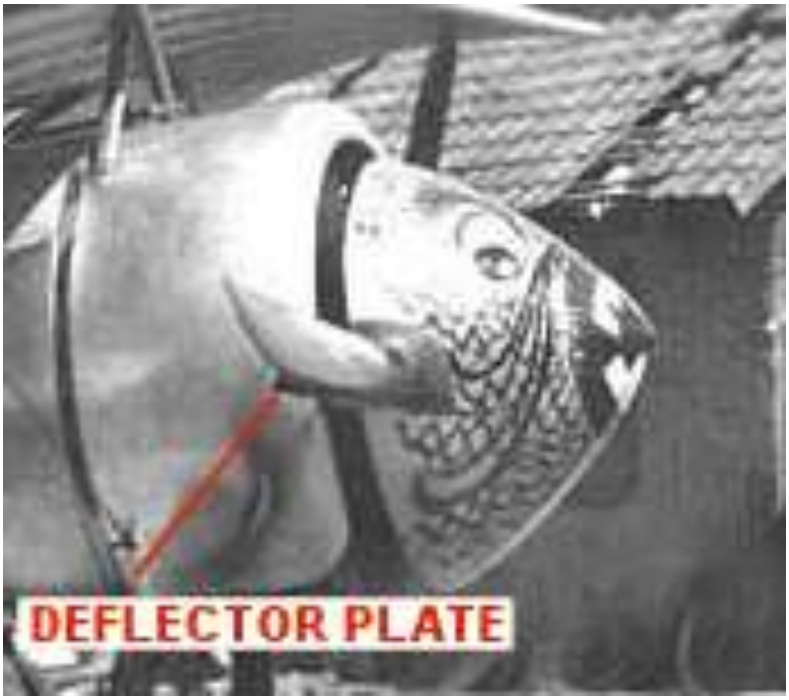
At this stage of the build, the model looks like this

Engine and propeller:

Propeller deflector plates:

NOTE: *The deflector plates fitted to the propeller were designed to prevent fired bullets from damaging the propeller. These are represented in the kit as photo-etch parts, but will need to be securely fitted to the propeller, rather than just glued to its surface. In order to align the propeller deflector plates, which are photo-etch kit parts, the engine with the propeller and spinner all need to be aligned to the barrel of the Lewis machine gun.*

Details of how the deflector plates were fitted to the propeller are virtually non-existent. The colour profile below shows what appear to be retaining straps holding the deflector plates onto the propeller blades, similar to the method used on early Morane-Saulnier fighters. However, photograph of this aircraft don't clearly show how and retained to the rear of the propeller blades. A support rod assembly is probable, as shown in the colour profile.



Aligning the propeller and spinner:

Using a 1.2 mm diameter drill, drill through the hole in the centre of the spinner back plate and through the centre of the propeller hub.

Fully locate the spinner backplate onto the 1.2 mm diameter tube in the front of the engine, with the raised shoulder facing the engine.

Fully locate the propeller onto the propeller shaft and against the backplate.

Fully locate the spinner over the propeller on onto the backplate.

Secure the spinner to the backplate, using thin CA adhesive around the seam between the two.

Apply a small amount of thin CA adhesive to the rear of the propeller blades to hold the propeller in position in the spinner.

Once the adhesive has set, carefully rotate the propeller and spinner assembly and remove the assembly from the engine propeller shaft. *This is to make sure the propeller is secured in the spinner and that the assembly can be easily removed.*

Engine - fit:

Refit the propeller and spinner assembly onto the engine propeller shaft.

Apply CA adhesive to the rear face of the engine mounting.

Locate the engine/propeller assembly into the engine cowl, making sure the assembly is central within the cowl. Check around the edge of the spinner to make sure there is an equal gap between the spinner and engine cowl.

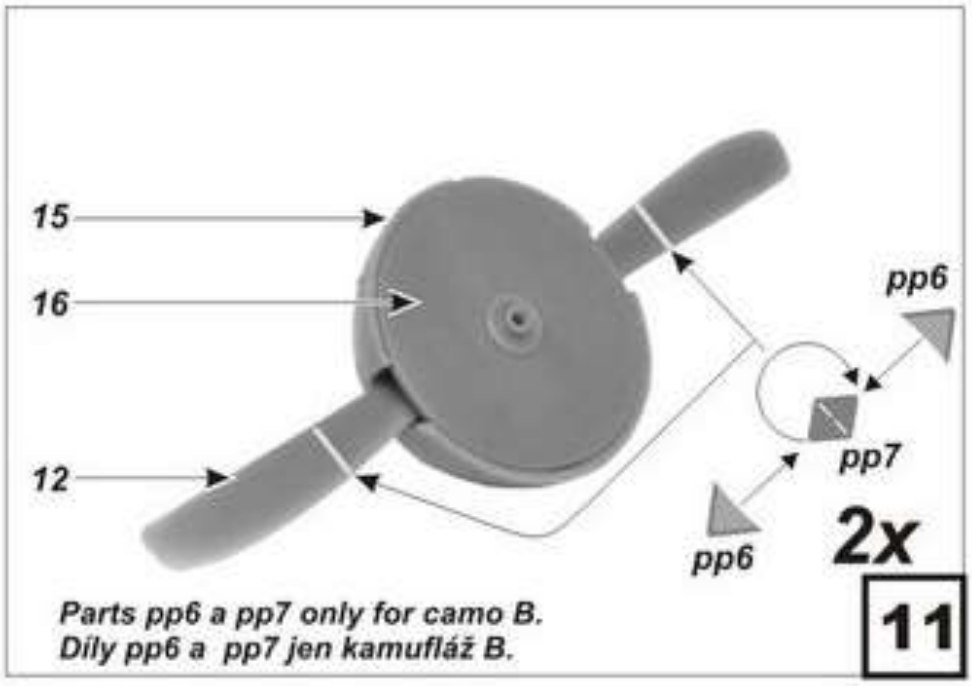
Make sure the engine is in full contact with the fuselage bulkhead and leave in position to allow the adhesive to set.

Once the adhesive has set rotate the propeller assembly and remove it from the engine shaft.

If necessary, apply thin adhesive around the engine/fuselage joint to re-enforce the joint

Deflector plates:

Kit instructions for the deflector plates



Refit the propeller and spinner assembly onto the engine propeller shaft.

Position each propeller blade in turn, to align with the muzzle of the fitted Lewis machine gun.

Mark across the rear face of the propeller blades where they align with the muzzle of the installed Lewis machine gun.

Remove the propeller assembly from the engine.

Remove the photo-etch parts PP7 (x 2) and PP6 (x 4) from the kit suppled sheet.

Fold parts PP7 to form a double thick triangle.

Using thin CA adhesive, secure PP7 onto a part PP6, aligning it with the embossed marks.

Using thin CA adhesive, secure the assembly onto the other part PP6, making sure the parts are correctly aligned.

Using thin CA adhesive, secure the deflector plates horizontally on the rear of the propeller blades and 5 mm from the edge of the spinner.

Support rods:

Cut two lengths of blackened 0.6 mm diameter Nickel-Silver tube, such as ‘Albion Alloy’s’ NST06. The length should be from the outer edge of the centre boss on the rear of the spinner backplate and the bottom of the deflector plates.

Using thin CA adhesive, secure the support rods in position on the spinner back plate and deflector plates.

Brush paint the deflector plates with ‘Tamiya’ Rubber Black (XF85).

Propeller assembly - fit:

Locate the propeller fully onto the engine shaft and at the desired position. If secured on the shaft, use PVA adhesive as that will allow for locating and positioning. CA adhesive may set before the propeller is fully fitted.

PART 12
FIGURE

PART 12 - FIGURE

The figure I chose to use is the ‘Wings Cockpit Figures’ Pilot adjusting goggles - (LSK02).

NOTE: *This figure was made a few years ago and for another model, but was never actually used. Unfortunately I can’t remember any assembly of painting details used at that time.*

Therefore all I can show in the art of the build log is the finished figure.

PART 13
DISPLAY BASE

PART 13 - 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 'Model Scene' Wetland Middle (F011). The cut mat was then positioned on the base and the model and figure test placed to achieve the best effect and to make sure the transparent cover of the case would be able to be located without touching the model. The model and figure were then removed with the grass mat left in position on the display base. The edges of the grass mat were then carefully lifted and a soft marker pen was used to mark the outline of the grass mat, but approximately 5 mm inside the mat edge. The grass mat was then removed and the area of the display base inside the marks was scuffed using a coarse grit sand paper, in order to give a key for the adhesive.

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

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

Finally an acrylic plaque stand was positioned to the left, front corner of the display base (just in from the edges of the shoulder for locating the transparent acrylic cover. The area on the underside of the stand and its contact are on the display base were scuffed using a coarse grit sand paper, in order to give a key for the adhesive. A thin coat of contact adhesive was then applied to both scuffed areas and once the adhesive started to set, the stand was carefully position onto the display base 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 figure would fully locate. The figure was then test fitted and where necessary, the support pin was snipped to the required length to fully locate into the display base.

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

Thin CA adhesive or PVA adhesive was then applied to the support pin of the figure, which was then located, in the desired position, into its 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 14
COMPLETED MODEL PHOTOGRAPHS