

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 my build of the Wingnut Wings 1:32 scale model of the Sopwith Triplane.

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INTRODUCTION

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

Sorted



AFTER MARKET

Pilot Figure - 'RNAS Pilot (No. RFC 03) figure by Wings Cockpit Figures.

Weapons - Vickers Hyland (Type E Loading Handle) by GasPatch Elite Accessories.

Photo-Etch (PE) only some items used - HGW (Set No. 132099).

Rigging accessories - GasPatch Elite Accessories Turnbuckles

- Albion Alloy Micro-tube (Brass or Nickel Silver) - 'Steelon' Mono-Filament 0.12 mm diameter.

Sundries - Paints (Tamiya Acrylic, Humbrol Acrylic, Mr Metal) - Microscale's 'MicroSet' -

DecoArt Crafters Acrylic [water based]] - Alclad II Lacquers - PVA Adhesive -

Tamiya Weathering MASTER sets - Cyanoacrylate (CA) glue (thin) -

AK Interactive Chipping Fluid,

Weathering mediums - Flory Clay washes, AK Interactive engine washes.



PREFACE

This model represents the Sopwith Triplane, Serial No: N6301 "DUSTY II" of No.8 N (Naval) Squadron during May of 1917.

The pilot :

Flt Lt (RNAS) Roderick McDonald (8 victories). He was born in St. Joseph's, Nova Scotia, Canada on the 31st October 1893, the son of Angus R. McDonald and Catherine McDonald (of James River Station, Antigonish, Nova Scotia, Canada).

Roderick McDonald joined the RNAS in August 1916 and was posted to No.8 (N) Squadron in early 1917. He scored 2 shared victories whilst flying Sopwith Triplane Serial No: N5472 and a single victory flying N6301 "DUSTY II". Later he scored a further 5 victories when flying the Sopwith Camel. At the age of 24 and as a Flt. Lt in the newly formed No.208 Squadron, RAF, he was shot down and killed by Vfw Julius Trotsky of Jasta 43 on the 8th May 1918 (Trotsky himself was shot down and killed nine days later).

The aircraft:

This aircraft was one of 20 manufactured from an order placed in January 1917 (Serial No's: N6290 to N6309). It arrived in France on the 24th May 1917 and was with No.8 (N) Squadron by the 28th of May. On the 7th of June it was operating with No.10 (N) Squadron. It moved back to No.8 (N) Squadron on the 12th of June, but by the 13th of July had been moved to No.1 (N) Squadron. It was while it was with No.1 (N) Squadron that this aircraft scored 2 more victories. when piloted by Act Flt Cdr FHM Maynard and Acting Flt. Lt. HV Rowley. This aircraft was eventually destroyed by fire in October 1917.



Roderick McDonald seated in Sopwith Triplane N6301 "DUSTY II".

THE MODEL

(WingNut Wings Kit No. 32008)

As expected, any model from WingNut Wings (WNW) is at the top of quality and accuracy. The kit components are not a numerous as many of their kits, which is good if you are building a WNW kit for the first time. The parts are manufactured from traditional 'plastic' and are not resin. There is minimal mould flash that needs to be removed and also virtually no ejection pin marks to worry about. All of the main sprues, including the transparencies and photo-etch (PE) parts, are sealed in separate plastic bags, which prevents and sprue damaging another.

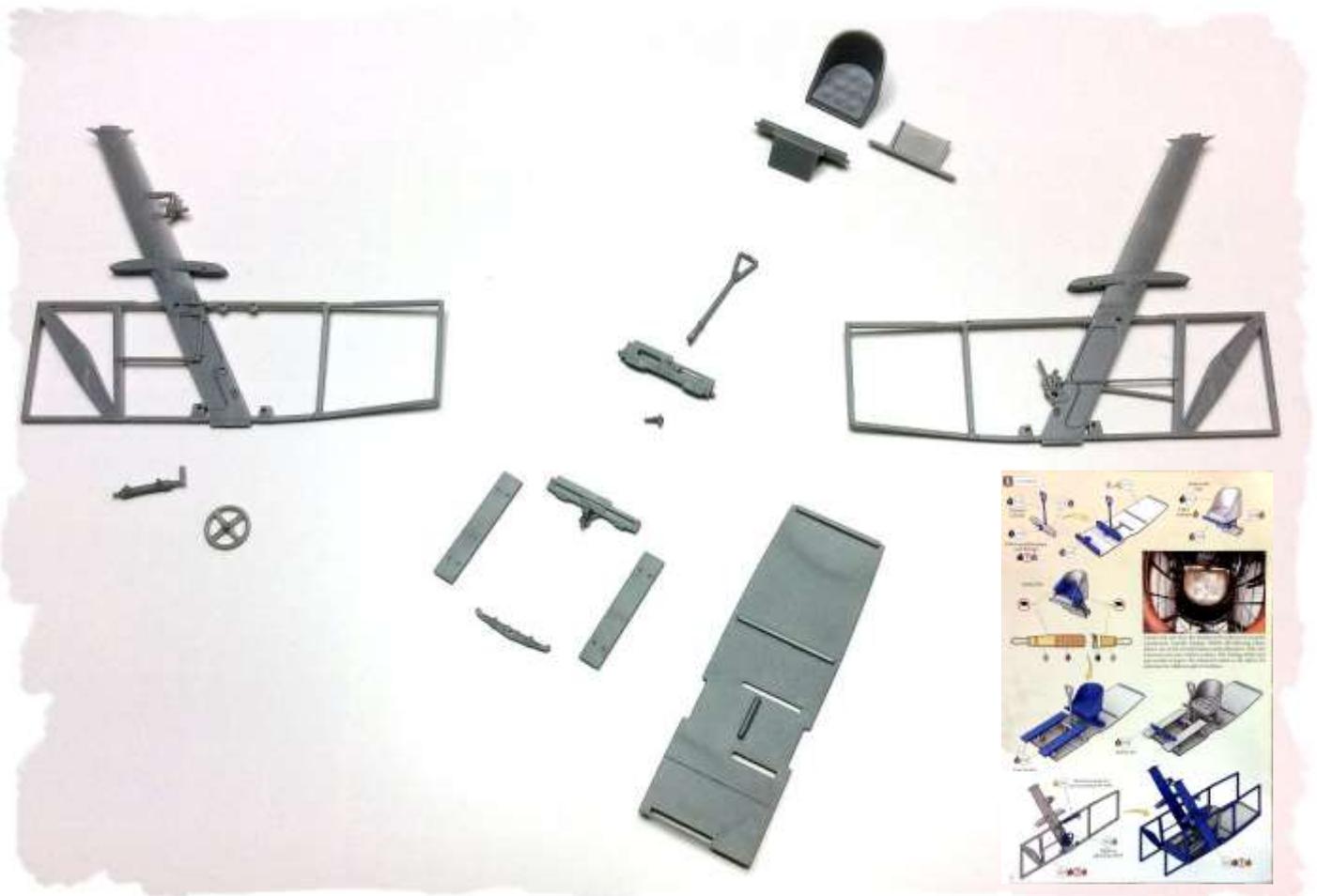
The instruction manual is in the well known format that WNW produce and has clear and concise instructions, including coloured illustrations and photos for reference. There is even an original rigging diagram included. The manual also has a lot of information on the aircraft and areas where, due to a lack of accurate historical data, the reader is given options to choose from. Colour profiles of the aircraft are provided as are their associated decals.



PART 1 - THE COCKPIT

Some modellers work the various pieces whilst they are still attached to the main sprue, but I prefer to remove the pieces first so that I can clean them up more easily. However pieces like the cockpit frames are delicate and can easily be damaged when being removed. If you cut them off with snips, scissors or a blade etc, they can either break or get stressed at the cut point, which causes 'white' stress and/or deforming. I prefer to cut them away using a fine modeller saw, which I find has a more gentle cutting action.

Despite being a WNW kit, there are still fine moulding lines around items like the cockpit frames, but they are only slight and are easily removed using a sharp blade or sanding stick. I use a straight edged scalpel blade to gently scrape off the mould lines. Some of the model items, particularly in the cockpit, are very small and can easily 'fly off' when being handled, so take care. Below are the prepared cockpit items detailed on page 3 of the instruction manual. Remember to drill any holes needed for rigging or control lines (study the kit rigging diagram).



Once the items have been removed from the sprue and prepared, they should be gently washed in warm, soapy water, to remove any mould release agent remaining on the items. I use an old toothbrush to do this. Once dry they can be primed ready for painting. Primer can be applied by brush, airbrush or from aerosol cans. Although not the cheapest method to prime items, I prefer to use Tamiya's fine surface primer aerosol (light grey). It has good coverage as the base primer for acrylic painting. Take care when spraying the primer as applying too much will result in 'pooling' or 'runs', which would then need to be removed once the primer has dried. Make sure you spray in a well ventilated area or, if you have one, use an extractor booth.

To hold items for priming I use self locking tweezers or carefully insert a toothpick into the item. To hold small items I use a small piece of sticky putty, such as 'Blu Tack', on the end of a toothpick. Once applied the primer dries quickly, one of the main advantages of using acrylic paints.



Wood Effect:

NOTE: Tamiya Acrylic paints used, unless stated otherwise

Once the primer is dry, you can start applying the wood effect to the applicable cockpit items, such the framework, seat supports, rudder bar, instrument panel and of course, the wing struts.

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.

For most wood effect, I use Wooden Deck Tan (XF78), suitable thinned with Thinners (X20A). Allow this base coat to fully dry (if you can't smell the paint, then it's dry).

For the next step I use DecoArt Crafters Acrylic (water based), Burnt Umber, which is similar to Acrylic oil paint, but instead of being oil based, is instead water 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. Also it dries as quickly as normal Acrylic paint, instead of taking days, which I've found to be one of the disadvantages of using true Oil Paints.

Tamiya Wooden Deck Tan (XF78) applied to the cockpit items.

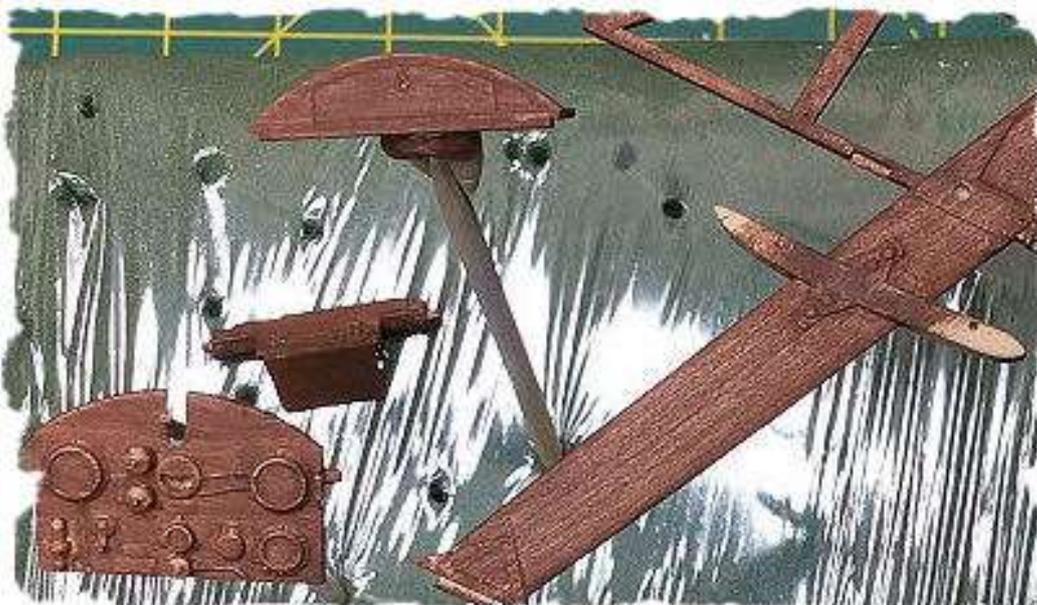


Brushes and Acrylic paint used.



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. Apply the paint to the applicable item, using light strokes and in the required direct (e.g. along a wing strut, not across the strut). Only apply a light coat as a second coat, if required, can be applied once the first coat has dried (I applied a second light coat for these items).

I 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 it off before it dries. Don't try to thin any applied paint with water as although it will lift the paint, it will build it up into clumps. Clean the brush in water.



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. However, I don't use the Tamiya Clear, but instead use Alclad 2 Lacquers. In this case the Klear Kote Semi-Matte (ALC 312).

Although it's a lacquer, I've found that it will accept Tamiya 'Clear' coloured Acrylics without separation, which can happen with other mixed –in paints. The Alclad dries fast and provides 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 Alclad Semi-Matte 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 and then airbrushed the sealing coat over the various cockpit items. The first coat 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 coat has dried, I airbrushed a coat of just Alclad Semi-Matte, which added a second sealing coat, but more importantly gave the desired semi-gloss 'varnished' finish I was after.



Once the last layer of airbrushed Alclad Semi-Matte has dried, you can start to paint the smaller items in the cockpit. These items are brush painted using Tamiya acrylics and Mr. Metal paint. White Spirit is needed to clean brushes used with Mr. Metal paint, as Tamiya's X-20A doesn't touch it. This leads me to believe Mr. Metal paint is enamel based, rather than acrylic.

For small items I brush Mr. Metal paint, rather than airbrush. It can be airbrushed for larger areas, but care is needed to thin the paint correctly, otherwise I've found it can clog the airbrush. Once you have brush painted an item and once it has fully dried, the painted surface can be 'burnished' by gently rubbing the surface with a cotton bud, piece of cloth or even your finger. Doing this merges the pigments of the paint to create a realistic metallic sheen.

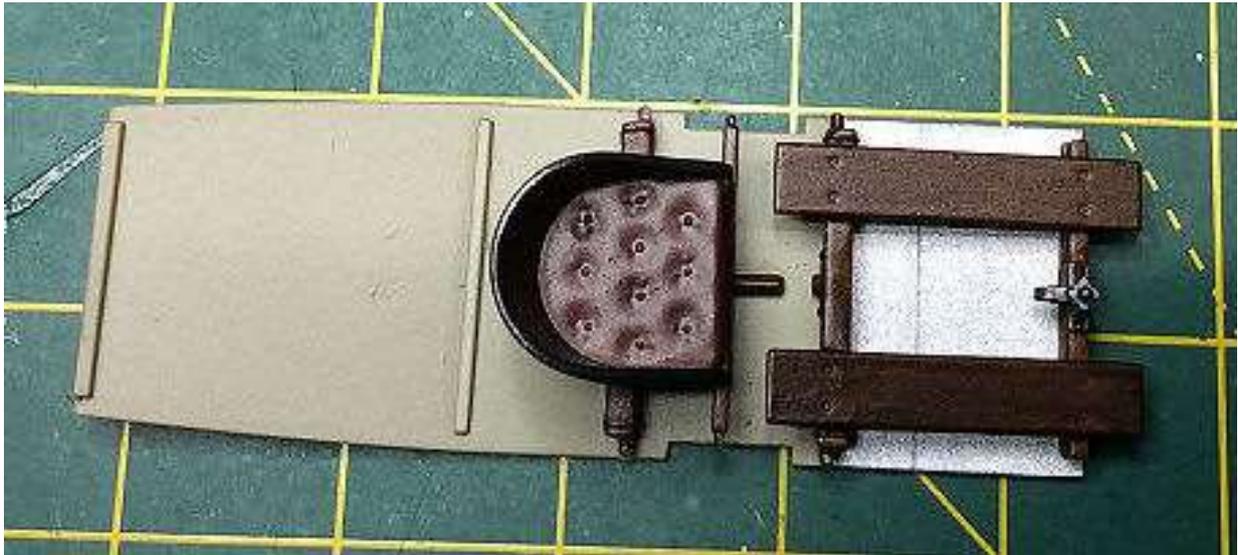
To paint the various cockpit items, I used Tamiya X18 (Semi-Gloss Black), XF16 (Aluminium) and Mr. Metal (Stainless Steel, Brass and Copper).

To simulate the fuel in the instrument panel bulb and the right hand cockpit sight glass tube, I used Tamiya a mixture of Tamiya X24 (Clear Yellow), X26 (Clear Orange) and X22 (Clear).

The moulded tubes/pipes on the cockpit's left and right framework looked to be slightly over scale. Therefore I decided to replace the left side engine control rods and the right side pipe that supplies the fuel indicator tube. I carefully cut away the moulded pipes and replaced them with cut lengths of Albion Alloy's Nickel/Silver tube (0.4 mm diameter), as they looked to be more in-scale. They were secured in place using CA glue.



For the armoured seat I used Tamiya XF85 (Rubber Black), with very light dry brushing of XF16 (Aluminium). The seat cushion was Tamiya XF9 (Hull Red) mixed with Humbrol 62 (Leather).



Once dry, all of the cockpit pieces were given a sealing coat of airbrushed Klear Kote Semi-Matte (ALC 312).

Use the normal method of applying the decals to the instrument panel. When a decal is in position press out any surplus water, using tissue paper or a cotton bud. Once this is done, brush a small amount of MicroSet over the decal surfaces, as this will soften the decals and cause them to 'weld' to the painted surface. Don't be alarmed if the decals wrinkle at first, as this is the MicroSet taking effect and the wrinkles will disappear once dry.

To simulate the fuel in the instrument panel bulb (and the right hand cockpit sight glass tube), I used Tamiya a mixture of Tamiya X24 (Clear Yellow), X26 (Clear Orange) and X22 (Clear).

To replicate instrument glass, I brushed a small amount of Alclad 2 Aqua Gloss onto each of the instrument decals. In the bottle, Alclad 2 Aqua Gloss is opaque, but it dries to a clear gloss.

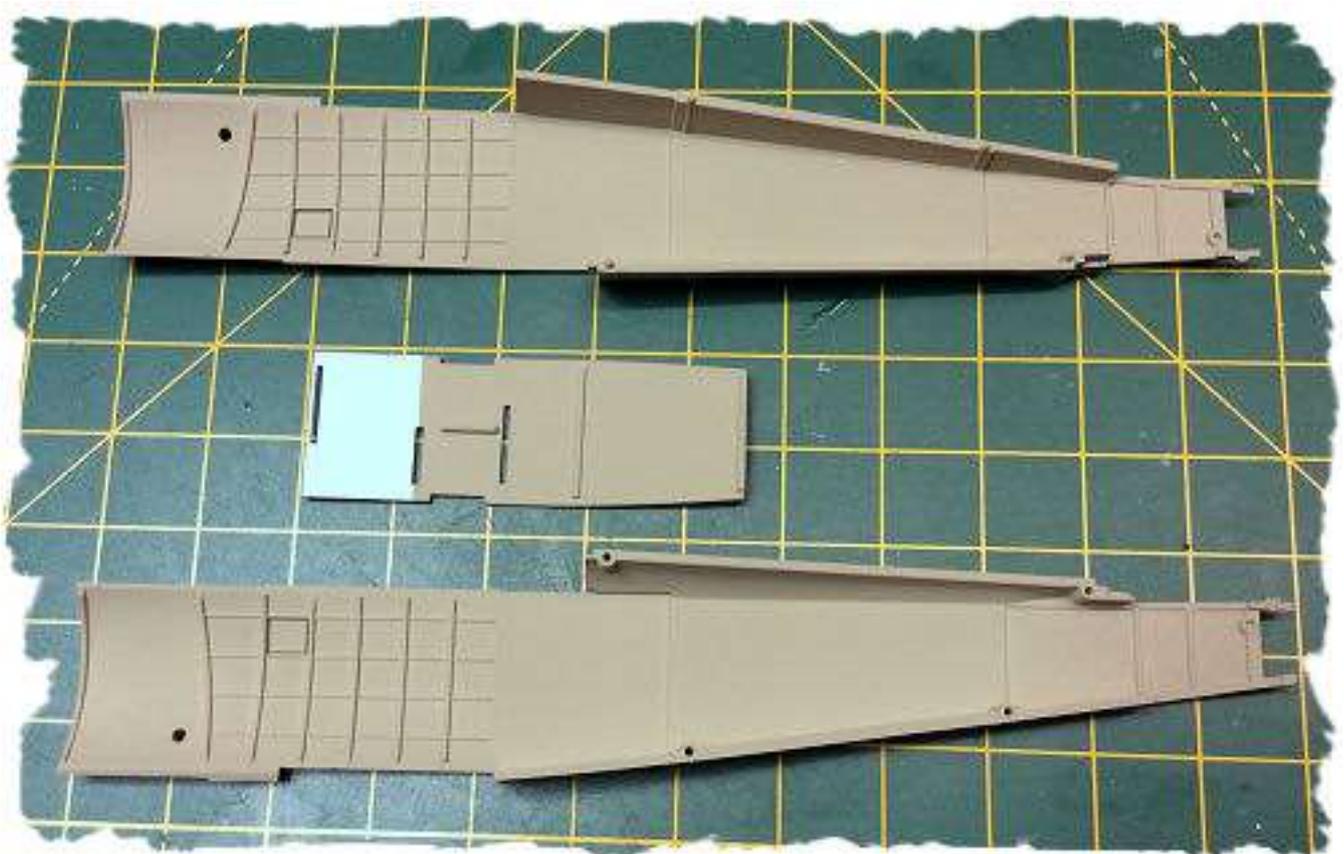


PART 2 - THE FUSELAGE INTERNALS

After being primed, I airbrushed the front of the cockpit floor with thinned Aluminium (XF16).

Once dried, I then airbrushed Wooden Deck Tan (XF78), mixed with a few drops of the Clear Yellow (X24), to create the colour for Clear Doped Linen (CDL), which makes up the fuselage covering and rear portion of the cockpit floor.

As with most colouring for World War One aircraft, it's debatable as to the exact colours and tints. New aircraft colours would differ from those that have 'seen service' and age and the ambient conditions would have altered these colours. In addition, the chemical mixture of the various dopes changed throughout the war, due to short supplies of some of the ingredients and the particular aircraft manufacturers take on a particular colour specification. Most colour photographs are of museum aircraft and modern replicas, which may or may not be accurate depictions of the actual colour at the time.



I brush painted the wooden cockpit framing and tail structure with Tamiya XF68 (NATO Brown). Once dry I airbrushed a sealing coat over the painted surfaces using Alclad. I tend to use Alclad Semi-Matte, which not only seals in the paint, but also gives a good enough surface for applying the Flory Models fine clay wash in order to weather and 'knock back' the CDL colour. 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 very difficult to remove or even to wash it off completely.

Flory Model clay washes come in various shades and consist of a 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 brush used for oil paint (as the bristles are harder than normal painting brushes) to remove as much of the clay wash as you need to achieve the desired effect. The damp re-activates the clay wash and allows it to be removed or worked as required.

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. The wash I used was a mix of Flory Clay Wash 'Light' and 'Dark Dirt'



Whatever you use to remove the clay wash, make sure it is only very slightly damp. I dab the brush or absorbent paper onto my tongue, but even then I dab it onto a dry piece of the paper. That's how 'damp' it needs to be. 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 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. Then you can dry the surface and re-apply the clay wash and try again until you are satisfied.

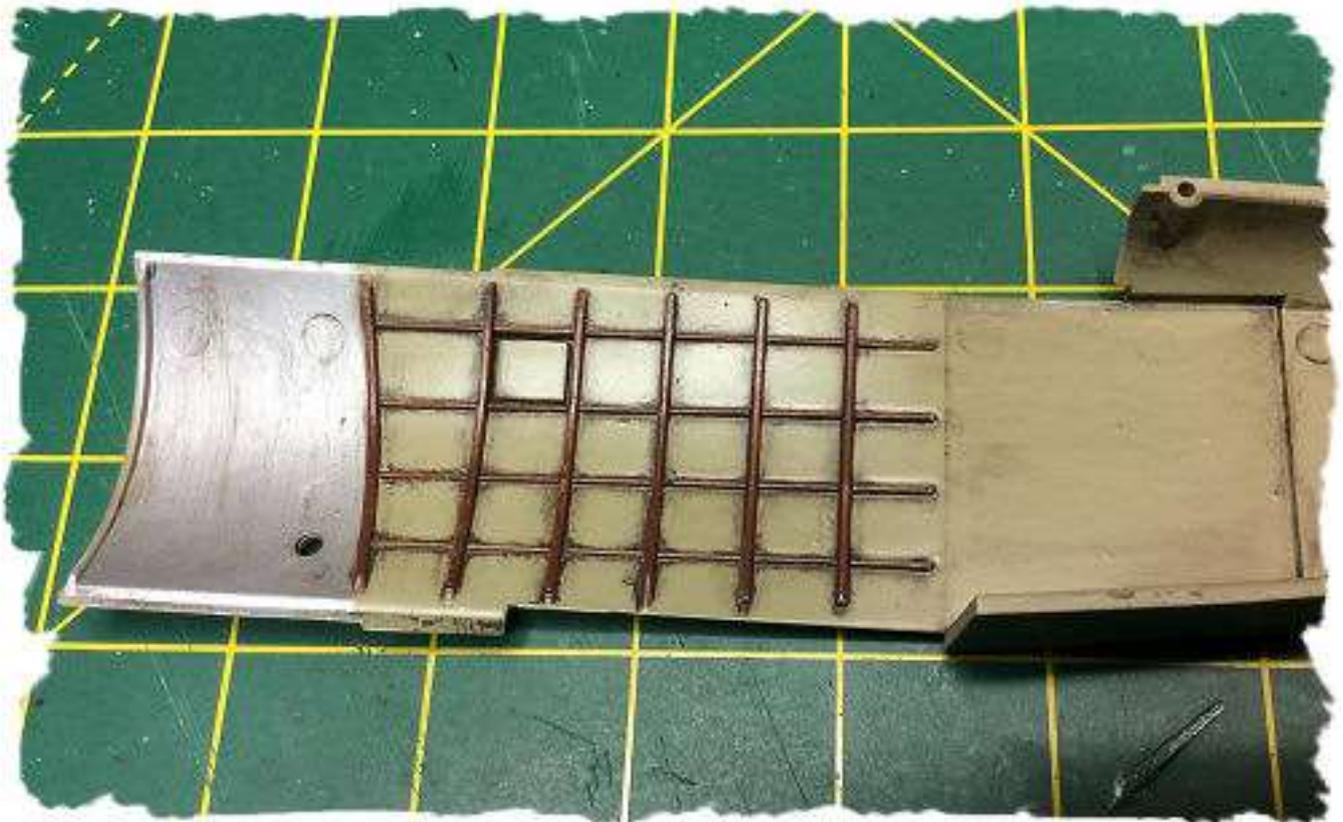
The technique is to brush over the surface to re-activate the clay wash and at the same time, to smear it over areas that had no clay wash. It'll dry more or less straight away.



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.

If you've not used Flory Clay Washes before, the best thing to do is to experiment first on a test piece. You'll soon get the hang of it.



Above is a fuselage half that has had the clay wash applied, especially in the corners of the framework. The surface was then sealed with airbrushed Alclad Klear Kote Semi-Matte (ALC 312), which dries quickly and does not disturb the clay wash. Below is the cockpit frame positioned to show the overall effect.



PART 3 - THE COCKPIT SEAT STRAPS, CONTROLS AND RIGGING

For this build I decided not to use the HGW paper seat restraint straps supplied as part of the their detail kit. Instead I used the WNW supplied brass PE straps.

Once you've separated them from the fret and cleaned up any edges, you'll need to soften the brass PE straps in order to be able to bend them into the desired shape on the seat. This is 'annealing' the metal by applying flame heat (e.g. a candle or lighter) gently over the PE and as soon as it visibly changes to a greyish colour, remove the heat and let it cool naturally.

Now the brass can be more easily shaped. Be careful not to apply too much heat or linger over small, delicate parts, or you may actually melt the piece!!

Once cool, test fit the straps and bend them to the required shape. Once you're happy with the shape and fit, carefully remove the straps and apply primer. When the primer has dried, paint the straps (be careful you don't apply too much paint to the cross strap or you'll 'fill in' the holes used for the strap clamp !!

Again I used Flory clay wash to weather the straps and after, secured them in position on the seat, using thin CA glue.

The remaining items were fixed in position (Control column, rudder bar and aileron link). If you intend to show the finished aircraft model with ailerons and/or elevator in anything but the neutral position, the controls will need to be positioned correctly.



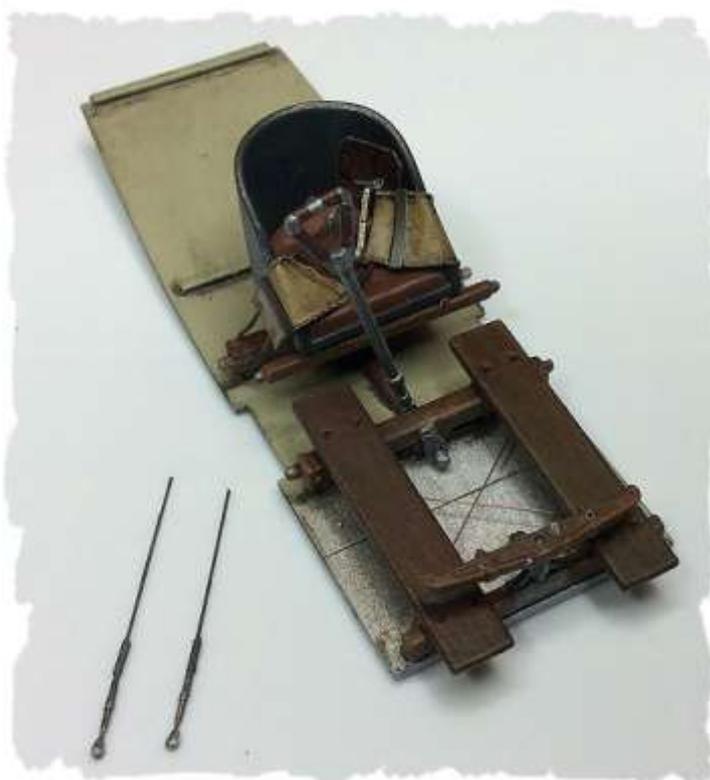
NOTE: Before you continue with the model build, it is advisable to drill out all of the internal and external rigging attachment points. This will avoid having to try drilling a hole in an inaccessible area once the model is being built (see Part 13 for the external rigging).

Now it's time to fit the various rigging/control lines to the cockpit floor. There are various methods for replicating rigging, either by using stretchable threads, such as EZ or Prym, using Monofilament (fishing line), stretched plastic sprue or photo-etched rigging.

My personal preference is monofilament, as it adds strength and rigidity to the finished model, it is easily threaded through micro-tubing, turnbuckles and the small holes drilled into the model. The only real downside is being nylon, it doesn't accept painting easily. Ink paint pens can be used, but if you can obtain a dark and/or silver coloured line, painting shouldn't be necessary.

The first rigging to install is the cross bracing between the rudder foot boards. This is achieved by passing line through your pre-drilled holes in the rudder bar support beam and the rear foot board support beam. Hold one end of each line and secure with CA glue. Once set, pull the lines taught and secure the other ends. Trim off the surplus ends of the lines with a sharp scalpel or razor blade (use safety razor blade with one of the cutting sides shielded). Next comes the Aileron control lines, which are attached the aileron link on the front of the rear foot board support beam (it's a continuation of the control column torque tube). These two lines are attached directly to the aileron link by turnbuckles. To replicate this I used Gaspach turnbuckles and nickel-silver tube (0.4 and 0.2 mm diameters). The turnbuckles are the Gaspach single ended type. The nickel-silver tubes were cut by rolling a sharp scalpel blade across the tubes. This easily cuts the tube without crushing it or leaving 'burrs', which would stop the rigging line from passing through the holes in the tube.

The cut length of 0.2 mm tube was positioned into the 0.4 mm tube, which was located over the tail of the Gaspach turnbuckle. All three were then secured with CA glue. Both Aileron controls were given a coat of Mr. Metal paint (Iron) then secured in position on the aileron link and underside of the two footboards.



The control lines were made using monofilament, Gaspatch turnbuckles and Albion Alloy nickel-silver tube (0.4 mm diameter). I had already pre-drilled 0.3 mm holes (before the cockpit was assembled) through the rudder bar to pass the control lines through.

Each line was made by passing the line through a tube, then the end of the turnbuckle and back through the tube. Once you've tensioned the line by pulling gently on the end of the line, secure it with CA glue. Make sure the turnbuckles are positioned correctly before applying the CA glue. The turnbuckles were then painted with acrylics to 'knock back' the different coloured metal finishes.

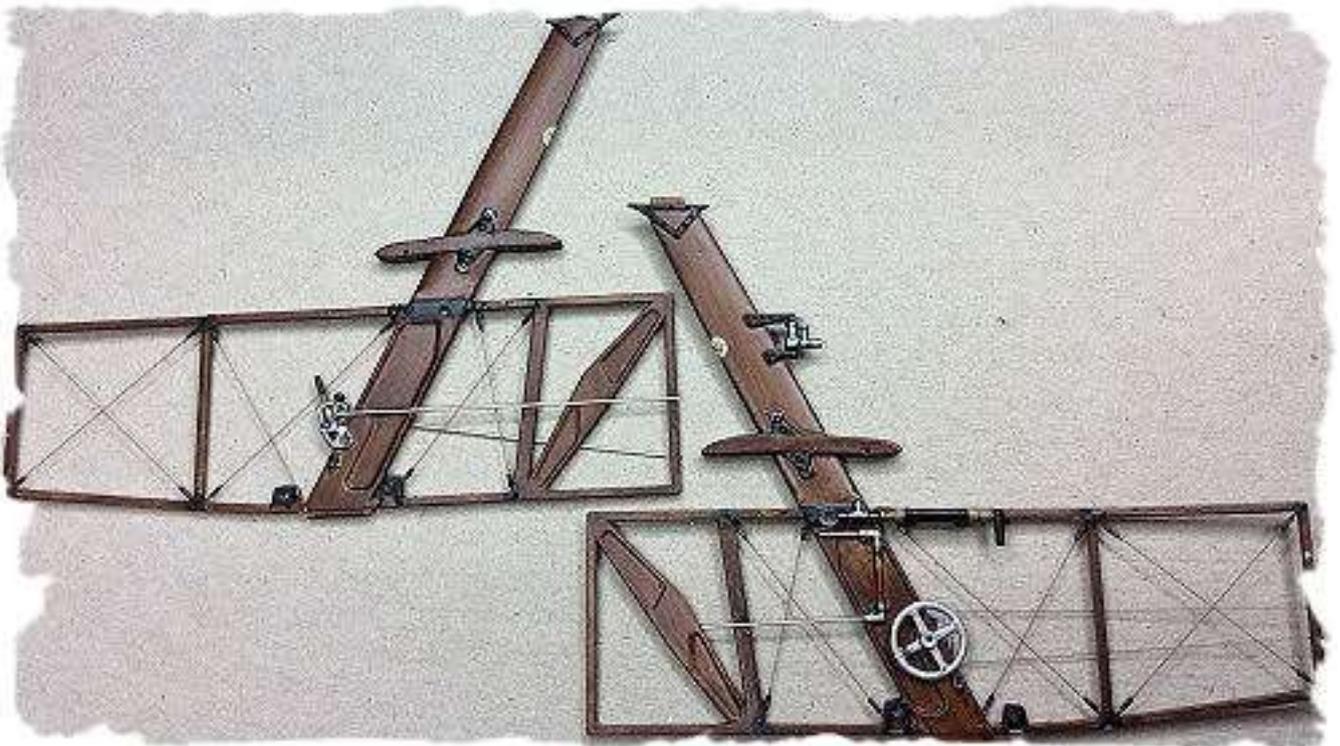
A light coat of Alclad Klear Kote Semi-Matte (ALC 312) was airbrushed over the complete assembly to give a uniformed finish. This level of detail is up to the individual modeller, as most of it will not be visible once the rest of the cockpit details are added and the two fuselage halves are joined.

Even so, I personally like to add the detail—at least I know it's there.

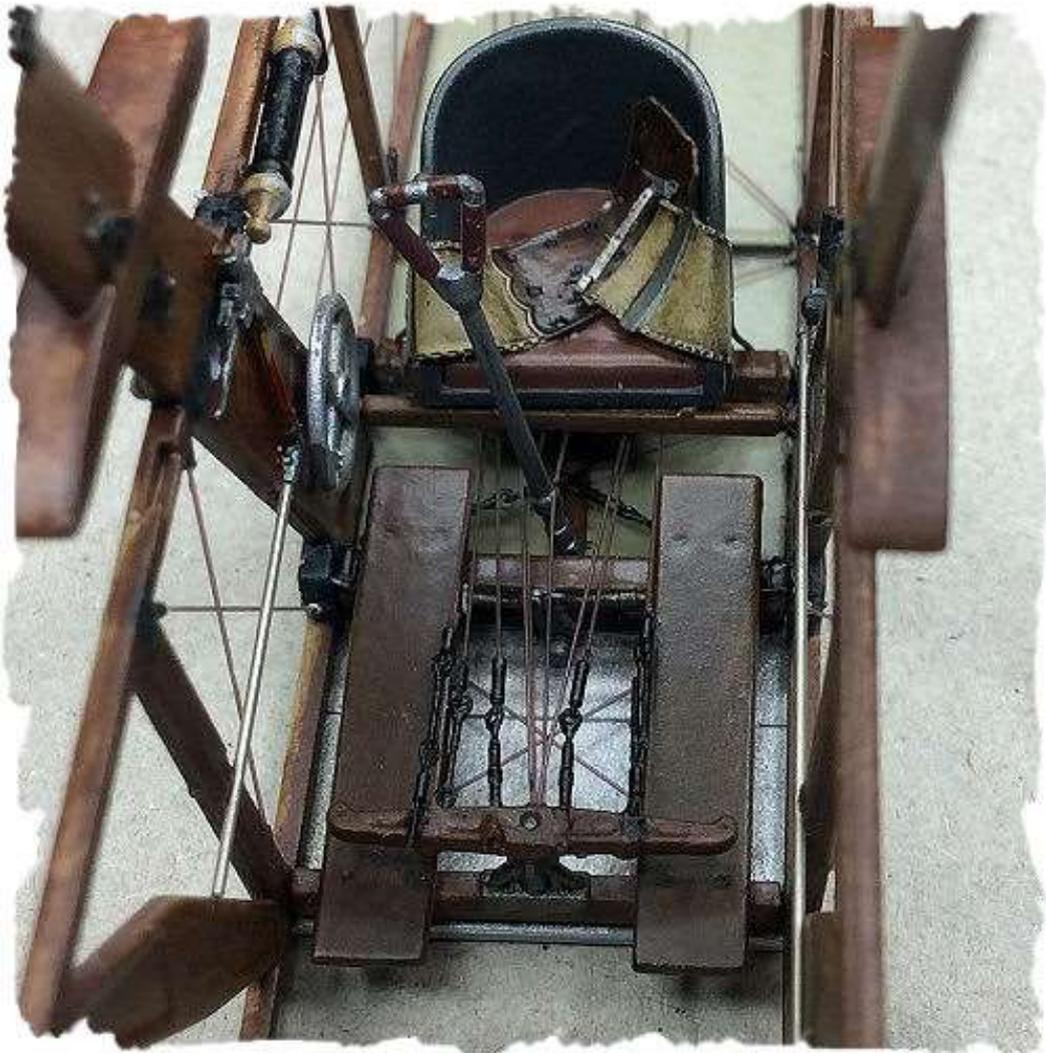




The cockpit side frames were then rigged using the same technique, using monofilament and Albion Alloy nickel-silver tube (0.4 mm diameter).



An idea of what the cockpit assembly looks like is shown on the following pictures.



The cockpit assembly had all surfaces that required gluing scrapped to remove any primer/paint/sealing coats—this reverts the assembly to the correct fit to the fuselage. Some scrapping was also required inside the fuselages halves. The assembly was then 'dry' fitted to check for correct fit. Then I fitted the cross member behind the pilots seat and also the machine gun support rail to the cockpit assembly. The whole cockpit assembly was then glued inside the fuselage halves. At this time I also fitted the lower wing and the engine mounting bulkhead, which also helped to align the whole assembly.

Once dry I scrapped and sanded any misaligned items, primarily the top cockpit decking, which I found was not quite as wide as the cockpit opening. This done I filled any gaps with plastic filler and once that had fully dried, sanded those areas.

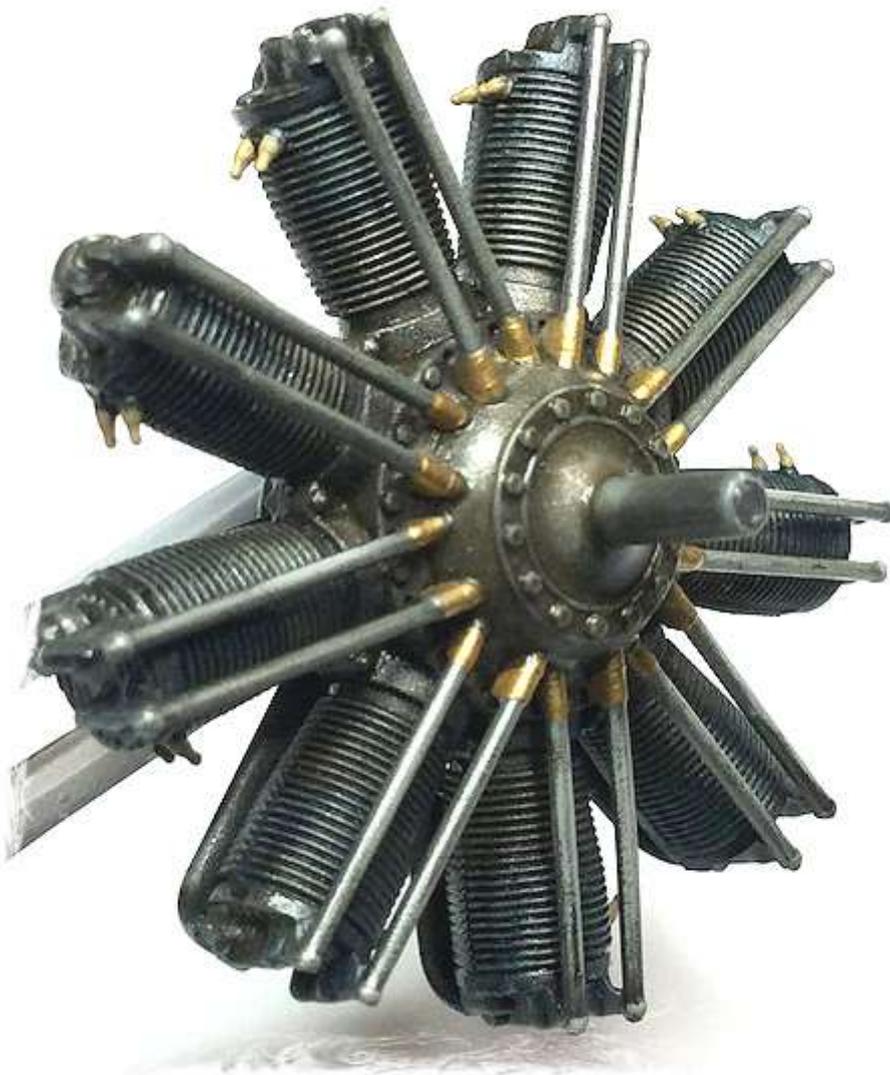
I then filled all openings with either foam or 'Blutack' adhesive putty, to prevent ingress of the acrylic primer. The two wing struts were covered with 'Clingfilm' kitchen wrap. I then sprayed the Tamiya Fine grey primer over the assembly and once it had dried, removed all of the coverings.

As can be seen from the photo below, not much of the completed cockpit detail can be seen, but as I said before, at least I know it's there.



PART 4 - THE ENGINE

As the engine was a rotary, it was relatively straight forward to assemble by following the kit instructions. Once assembled I primed the engine with Tamiya 'Fine' Grey primer (aerosol) and when dry, airbrushed the entire engine with a mix of Mr. Metal Stainless Steel (MC 213) and Iron (MC 212). When dry I applied Tamiya Weathering Set D (Burnt Blue), using a sponge and short, stiff brush. This was applied to the tops of the cylinders, to give the effect of heat. The whole engine was then given a wash of AK Interactive 'Leaks and Stains'. The cylinder valve push rods and rear manifold were then buffed to give a realistic sheen. The last job to do was to paint the bases of the push rods with Mr. Metal brass (MC219) and the spark plugs with Tamiya Dark Yellow (XF60).



The next task is to add the ignition wires from the rear of the engine to each spark plug.

To add the ignition leads I cut 18 lengths of 0.125 mm copper wire. Using a 0.5 mm diameter drill, held in a pin vice, I twisted one end around the drill to form a loop. Each one was then located over a spark plug and secured using thin CA glue. Then each one was gently pulled down against the engine back plate and again secured with CA glue. The excess was cut away using a shielded razor blade.

Again, once the engine is fixed to the forward fuselage bulkhead and the engine cowl is installed, very little of these ignition wires will be seen. Hey Ho — that's modelling.



PART 5 - CHIPPING EFFECTS

I wanted to give the effect of chipped and weathered paint/varnish to the metal engine cowl and forward fuselage panels. To achieve this effect, I first primed the areas with Tamiya Fine Surface primer (Grey) then airbrushed Tamiya Aluminium (XF16). Once dry I airbrushed AK Interactive Medium Chipping fluid and when dry, top coated with Tamiya NATO Brown (XF68) mixed with a small amount of Tamiya NATO Black (XF69). To achieve the chipping effect I moistened 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. Be careful 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.



PART 6 - EXTERNAL SURFACES

NOTE: The top wing in my kit had a slight bow, which stops the wing seating down fully onto the wing struts. I noticed this only after I had completed the painting of the wing and during final assembly. To allow the wing to sit flat, I resorted to scraping out the plastic about half way through, from the underside of the wing at the left and right joints to the centre section. This allowed these wing joints to be carefully 'stressed' so that the wing flattened out. The grooves were primed and repainted with Flory Grime clay wash applied.

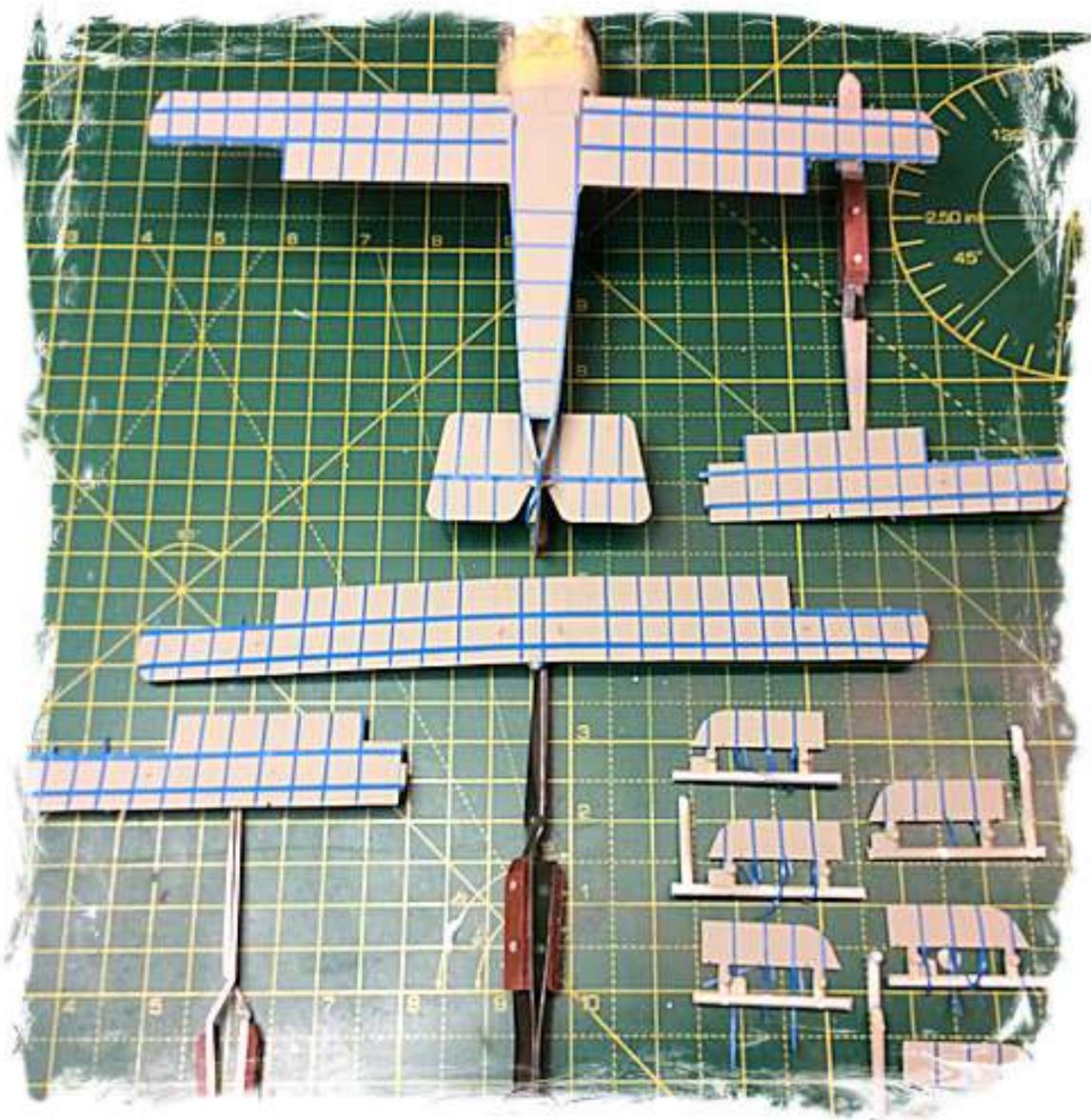
The first job was to mask the cockpit opening, struts, forward engine panels, the tail wheel opening and the small gaps around the forward cockpit. For masking I use a combination of masking tape, 'Blu-tack' and Humbrol 'Maskol'. Although intended to protect transparencies, I have found that 'Maskol' will also protect painted areas difficult to access.

I then primed all surfaces with Tamiya Fine Primer (White), although the grey coloured primer would also be OK.



CDL surfaces:

The underneath surfaces of the wings, fuselage and tail plane are Clear Doped Linen (CDL). I first airbrushed these surfaces with Tamiya Deck Tan (XF55). Once dry I masked off all of the areas that I wanted to 'show through' the final surface finish. These were the wing formers and front and rear spars, the tail plane formers and the fuselage formers and lower longerons. This was achieved using thin masking tape of different widths. The position of the wing spars were masked using tape of 2mm width and the rest using tape of 1mm width.

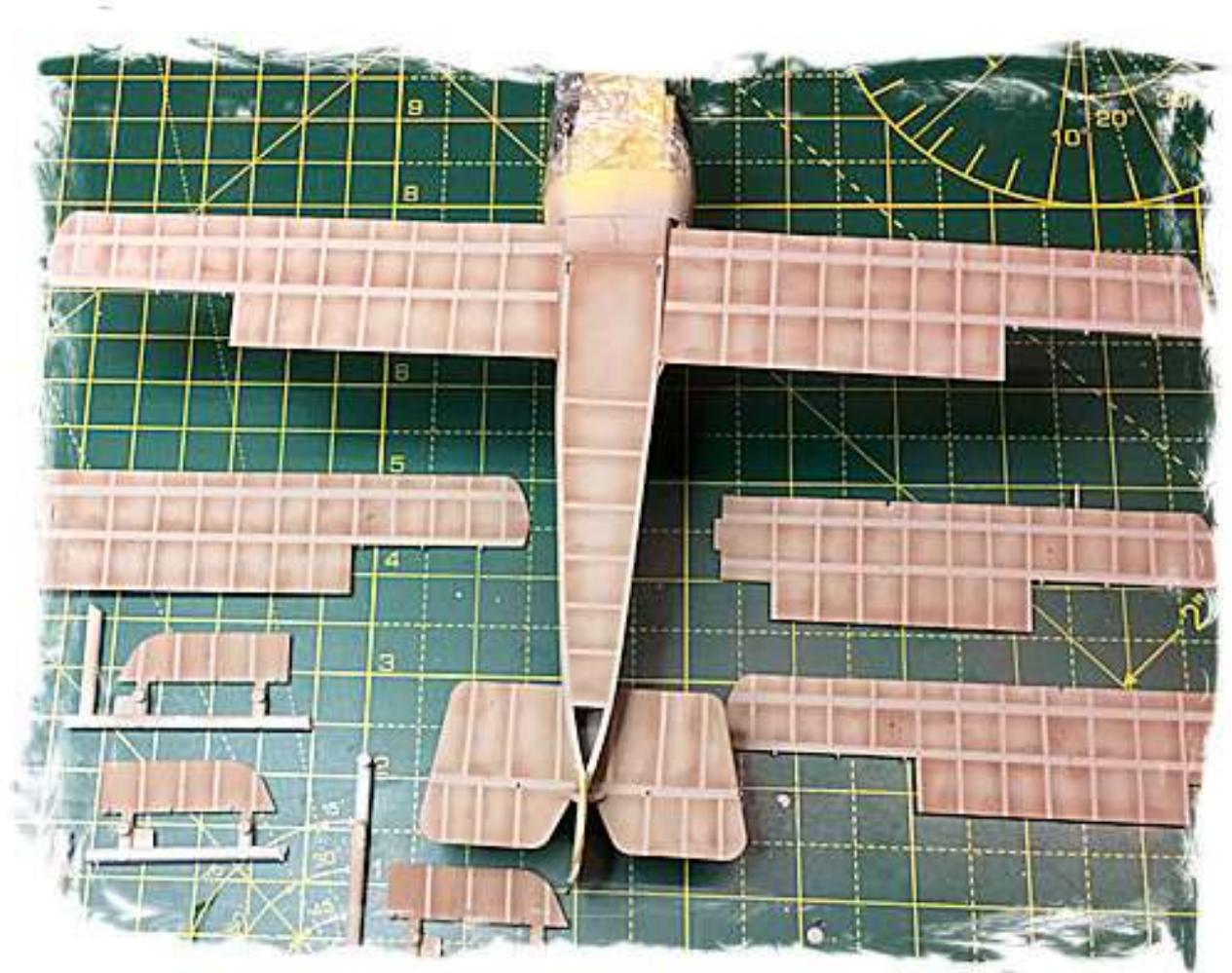


I then airbrushed Tamiya Flat Earth (XF52), which I had thinned with Tamiya X20A thinners, to approximately 70% thinners to 30% paint. I also reduced the airbrush supply pressure to around 12 PSI, so that I could airbrush close to the surfaces without 'paint spread'. Working this way also allows for better control of the airbrush.

I lightly airbrushed along the edges of all of the masking tape and also sparingly between them. This gives an outline to the masking tape and also 'fills in' the areas between, to avoid a drastic contrast against the base CDL colour.

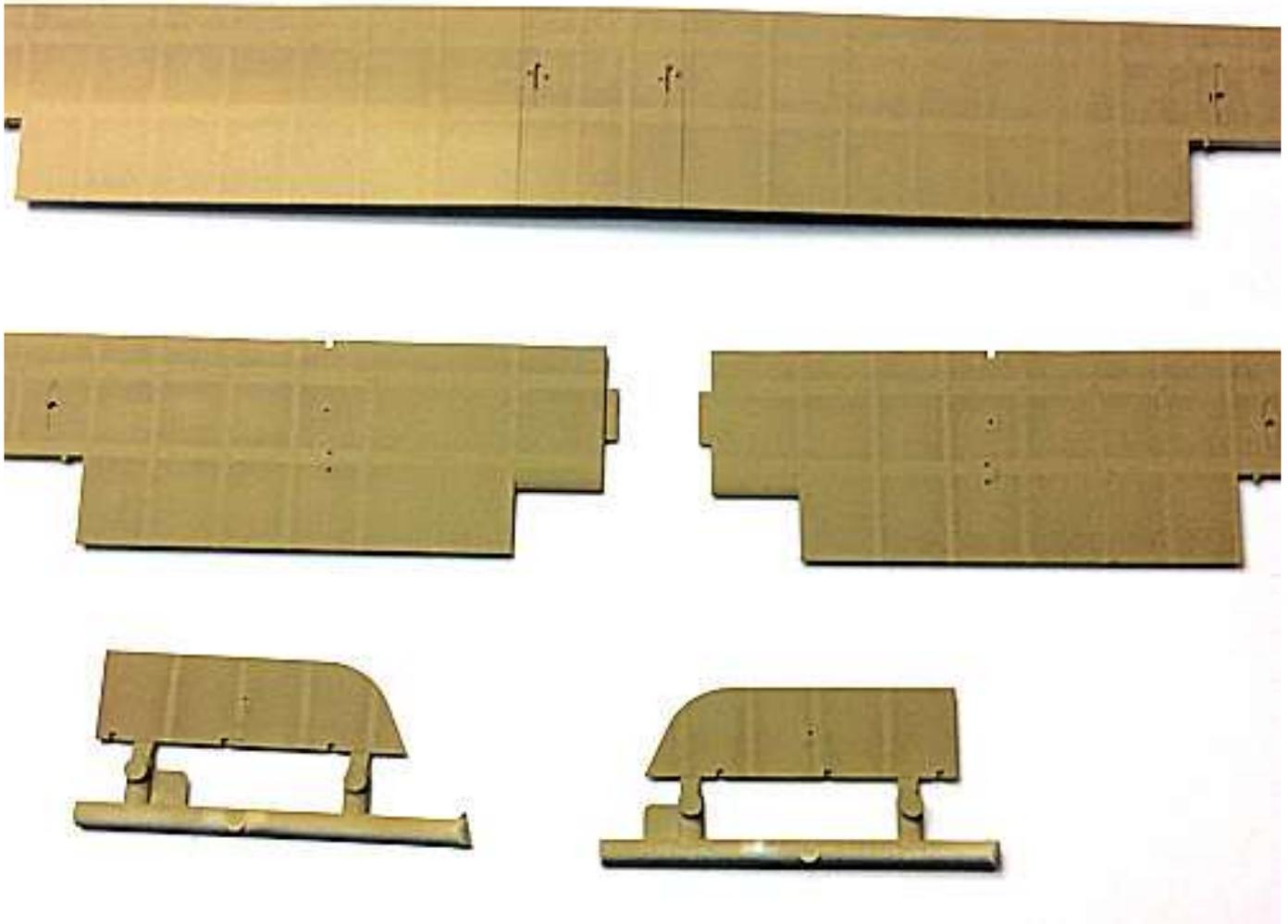
Once dry, I removed all of the masking tape. This is best done as soon as possible, otherwise there is always the chance the tape will lift the paint underneath if left on for too long. Also the materials used by different manufacturers can react differently with paints/thinners etc. You may find that if left on for too long, paint or thinners can creep under some tapes and may even soften it's adhesion, which will give a undesired finish.

The result gives the outlines of the internal structure, which although quite stark and obvious, will be 'knocked back' in the next airbrushing.



For the final overspray I mixed Tamiya Deck Tan (XF55) with Tamiya Dark Yellow (XF60) to a proportion of 60% XF55 to 40% of XF60. This mixture was then thinned by approximately 50%.

I airbrushed light coats and allowed each to semi-dry, in order to check the results. If you apply too much paint on the first pass, it can dry and virtually cover and hide the outlines, which is not the desired effect. As can be seen on the following shot, the structural outlines are still visible, but have been blended with the XF52 overspray, to give subtle, but visible outlines and slight patchiness to the surface.

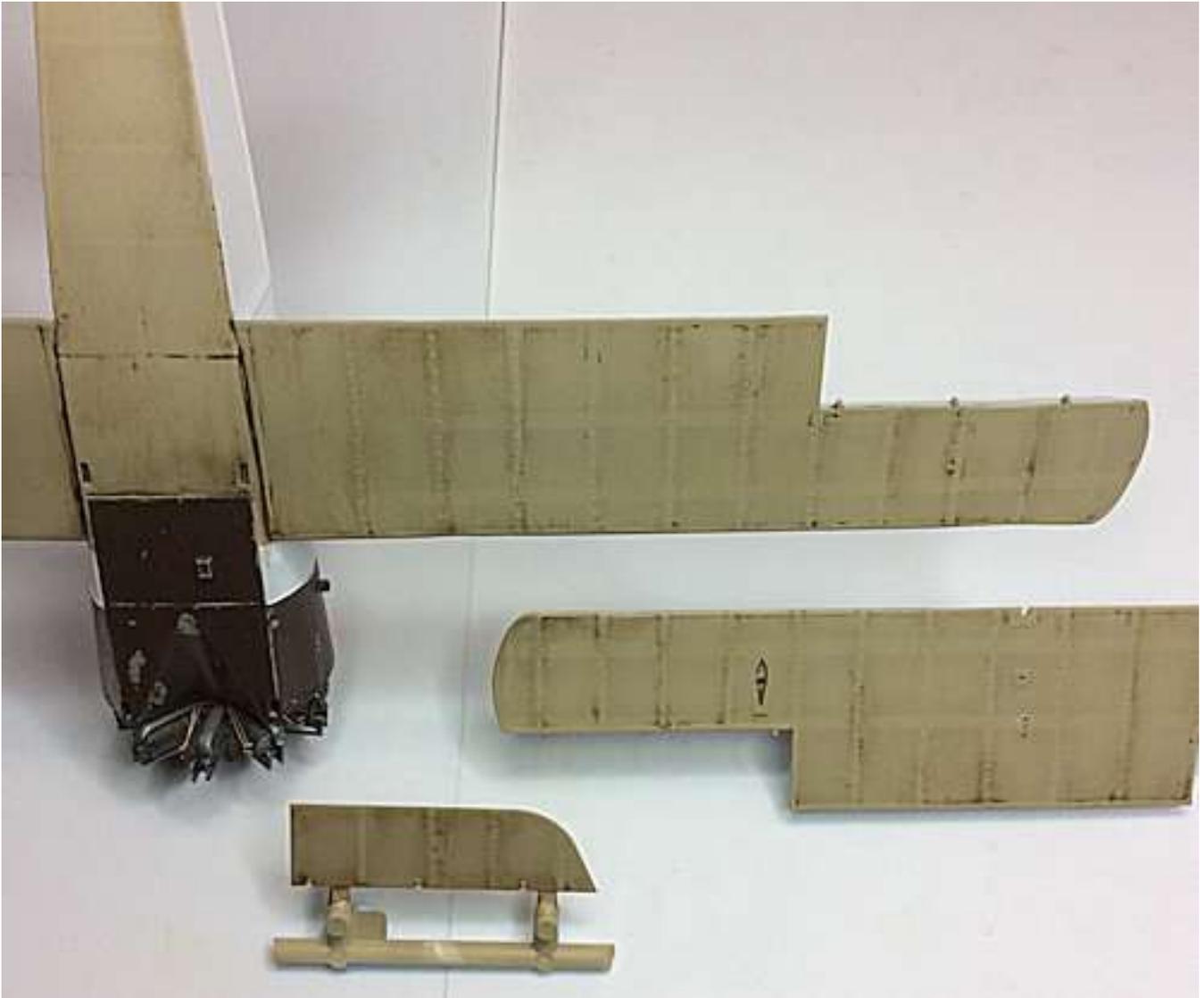


Once dry, I airbrushed two light coats of Klear Kote Semi-Matte (ALC 312) lacquer, which seals in the painted surfaces, in preparation for the application of weathering. It also prevents the underlying paint from being rubbed through when wetting the clay wash during removal.

The weathering used is Flory Model clay washes, which come in various shades and consist of a very fine clay pigment. For more on applying Flory Clay washes, [refer to this build log, Parts 1 and 2, pages 13 to 15](#). There I describe applying these washes to the internal fuselage surfaces and the same technique was used for weathering the CDL external surfaces.

The wash I used this time was the 'Grime' clay wash, which when dry, gives more of a dirt colour. When finished I airbrushed Alclad Semi-Matt lacquer in order to seal in the clay wash.

The finish I tried to create was one of a war weary aircraft, although I applied a little too much of the final airbrushed colour, which when combined with the clay wash, tended to reduce the visibility of the internal structure, which I think should stand out a little more. Hey-Ho, we live and learn.



PC12 surfaces:

The top surfaces of this particular aircraft were PC12. There is much debate on what exactly PC10 or PC12 colours actually were. So much so that I won't go into it here. Suffice to say that in general, PC10 was a drab brown/green and PC12 more of a chocolate brown in colour. Weathering in the field and different mixed dope compounds make these colours impossible to determine accurately.

Basically, if it looks OK to you, then it's OK.

Firstly I added the engine cowl and undercarriage, which were straight forward to build and secure to the aircraft fuselage.

I then masked off all of the CDL areas, cockpit, fin/rudder, engine and undercarriage. Also I used Humbrol 'Maskol' where it was difficult to mask with either tape or 'Blue Tack' or 'Clever Putty'.

Once masked, I airbrushed Tamiya NATO Black (XF69) thinned by approximately 40%. This was applied between the wing/tail rib tapes and around the fuselage sides and top where the formers were (aligned with the formers on the underside that were airbrushed during the CDL surfaces painting). Once dry, light coats of NATO Brown (XF68) mixed with a small amount of XF69. As with applying the CDL top coat, use thin layers and build the paint layers to achieve the desired effect. The final effect is very subtle, but does give a 'feeling' of depth to the surfaces.

Mid-wing leading edge:

The leading edge of both mid-wings has a cut-out to allow the twin rigging wires to pass through from the lower fuselage to outer top wing struts. Instead of using the kit supplied photo-etch 'patches', I added a small strip of 0.2 mm plastic card to each opening control wire opening, covering only the leading edge and leaving the opening clear.



Alternative shading:

One problem that can be encountered when attempting to create pre-shading under a dark top colour, such as PC12, is that no matter how careful you are in applying top paint layers, the pre-shading can end up being masked to the extent it's barely visible. When working with dark colours, it can be difficult to judge when to stop applying the top paint layers at the precise time to give the desired colour depth, yet still retain enough of the pre-shading.

This process is much easier when being applied to lighter colours, such as CDL surfaces, because slight variations of colour are more easily seen.

However, 'lost' pre-shading can be reinstated to your required level by 'post shading'. This method applies shading effects on top of the final surface colour, rather than under it as with pre-shading. Post shading can also be used in preference to pre-shading to obtain various effects. It's really down to the individual as to which method is preferred.

To achieve post shading you can airbrush the shading, if you are proficient in the use of an airbrush. If not, you could use Flory Clay washes in the same way as I did for the internal fuselage weathering on this model. By applying an appropriate clay wash for the surface colour you want to shade. Sealing the finished surface will prevent the clay wash from being rubbed off during subsequent handling.

The next step for this model was to finish the PC12 surface detailing and cockpit surround.

I applied the Dark Dirt Flory Clay wash to the fuselage and when dry, gently wiped it off to produce a dirty weathered effect. On the actual aircraft, the forward fuselage to the rear of the engine panels shows the outlines of the crossed framework and to show this on the model, I carefully wiped away the clay wash in patches, to simulate the frame work highlights.

The external cockpit decking was first masked off then airbrushed with Tamiya Wooden Deck Tan (XF78), suitable thinned with Thinners (X20A). Allow this base coat to fully dry apply Acrylic paint (Burnt Umber colour) to create the wood effect.

The cockpit surround padding was brush painted using Humbrol Leather (62) and lightly brushed over with Tamiya NATO Brown (XF68).

Once all of this was dry, I airbrushed Alclad Klear Kote Semi-Matte (ALC 312) lacquer to seal and protect the surfaces.



PART 7 - CONTROL PULLEYS

Moulded into the leading edges of top and lower wings are control pulleys. There are 4 in the lower wing and 2 in the top wing. Although quite detailed, I decided to replace them with photo-etch pulley from the HGW PE set (No. 132099) for the Triplane. These are very small and difficult to bend and assemble, but do look better than the kit moulded items. The parts were secured using thin CA adhesive.

I carefully removed the kit pulley with a sharp blade and 'Alec' profile scrapper. The pulley housing was then brush painted with Tamiya Deck Tan (XF 55) and when dry, I applied DecoArt Crafters Acrylic (water based) Burnt Umber to the edges to simulate the wood grain.

The assembled pulleys were then located into the wing leading edges using thin CA adhesive. The control cables were simulated by securing short lengths of 0.2 mm diameter 'PlusModel' lead wire, with the top wing centre section cable run held by a GasPatch turnbuckle.

The kit supplies transparent 'windows' for these pulley locations, which are delicate if you press on them during fitting. I carefully filed the edges of each one to ensure an easy fit into the apertures. These were secured in position with 'Formula 560' canopy glue. I then masked off the windows with Humbrol 'Maskol' and when dry, brush painted the edges of each window to match the surround PC 12 colour. Finally, to reduce the glass effect of the windows, I air-brushed a light coat of Alclad Klear Kote Semi-Matte (ALC 312) lacquer, which also sealed the area.



PART 8 - WHEELS

The assembly of the two wheels is straight forward. In the kit are two 'clip over' locking discs, which are used to secure the wheels onto the axle and allow them to rotate. I didn't use these as the intention is to have the model static on a display base. After assembly, the wheels were primed then when dry, airbrushed with Tamiya Royal Light Grey (XF80). The rear of the wheels airbrushed with Tamiya Deck Tan (XF 55) and the front faces with NATO Brown (XF68) mixed with a small amount of XF69.

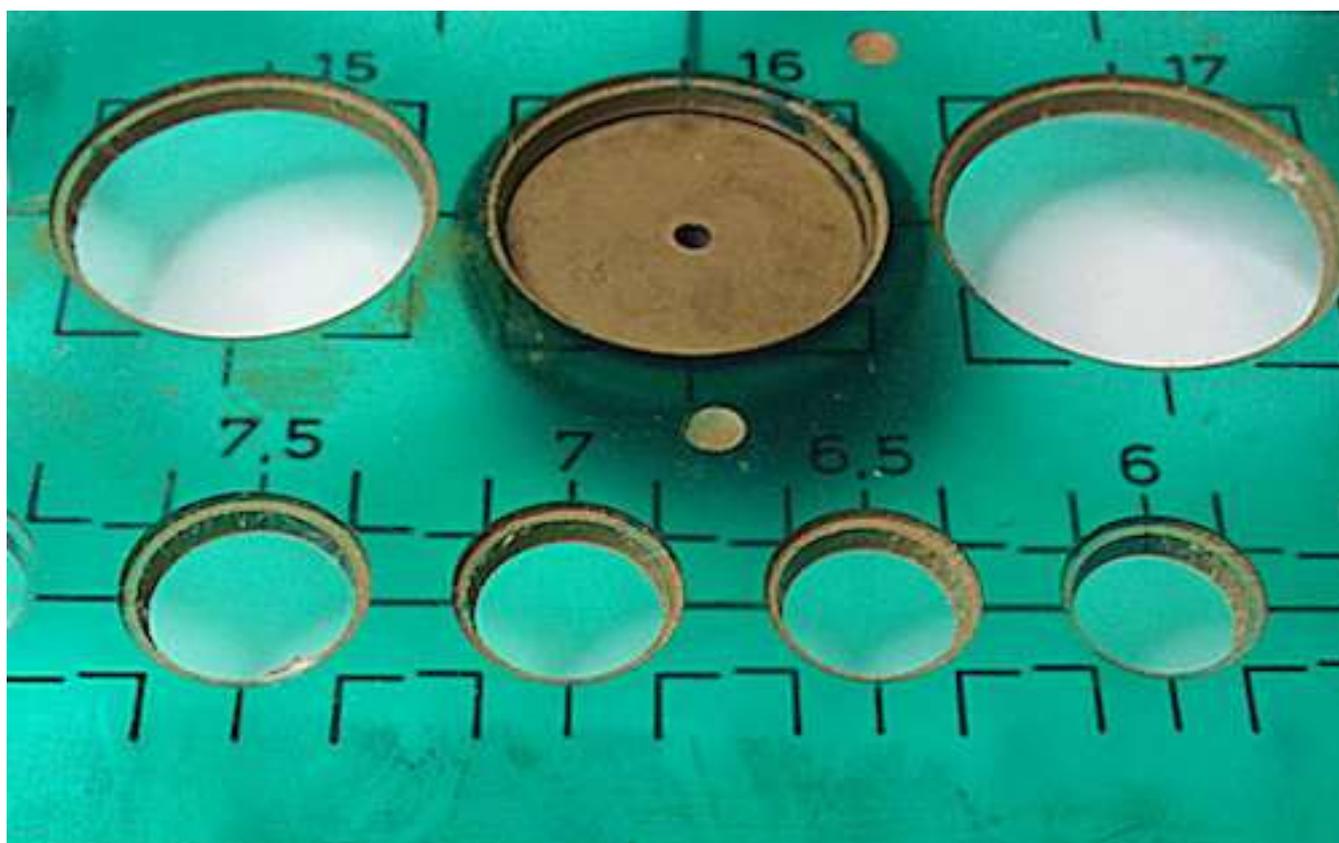
NOTE: To airbrush the face of the wheels without over spraying the surrounding tyres, I use a circle drawing tool (Linex 1217 T). I selected the correct size of hole, which in this case was 16 mm diameter, and positioned the wheel face under the hole. Then I airbrushed through the hole onto the wheel face.

I then applied the decals for the tyre manufacturer around the edge of the tyres and over the raised wording moulded in the tyre itself. Then the tyres were dusted with Humbrol Dark Earth weathering pigment.

The wheels were then sealed with Alclad Klear Kote Semi-Matte (ALC 312) lacquer . Once dry, I brushed a coat of AK Interactive 'Kerosene' around the tyres.

A 0.8 mm diameter hole was drilled through the tyre and towards the centre of the wheel. A short length of paper clip wire was then CA glued into the hole.

NOTE: Don't push the wires too far into the wheels, otherwise they may cross the centre of the wheels, stopping the axle penetrating fully into the wheels. These pins will secure the model onto it's display base.





PART 9 - WEAPON

The only weapon fitted to this aircraft, the standard Triplane, was a Vickers machine gun. Although the kit item is good and can be enhanced with the photo-etched parts, I opted to fit an aftermarket gun. In this instance it was a gun supplied from 'Gaspatch', who have a range of various WW1 weapons, all of which have well defined and accurate detail.

The rear had to have the padded pilot head protector fitted, which was a kit part. After that the gun was primed then airbrushed with Tamiya Aluminium (XF16). Once dry I brushed Mr. Metal Iron (213) then painted the head protector a mixture of Humbrol Leather (62) and Tamiya Flat Brown (XF 10). The Iron surfaces were then rubbed with cotton buds to wear through the colour to show the Aluminium underneath. To paint the entry/exit ports for the ammunition, I mixed Tamiya Titan Gold (X31) and Copper (XF 6) to replicate Bronze. Finally a light dry brushing of Tamiya NATO Black (XF 69) was applied around the muzzle area to give a sooty effect.



The parts for the gun supplied in the kit do not include the ammunition belt as it leaves the gun firing mechanism. The belt fed ammunition is fed from the ammunition tank, into the gun from the right hand side, through and exits from the left hand side.

I made a belt as follows:

I took two small lengths of unused fabric paper seat belts (from a HGW seat belt set) and glued one end of each together, using thin CA adhesive. I then cut 6 short lengths of 0.2 mm Nickel Silver tube (Albion Alloys). I then positioned the first tube across one side of the linen paper and applied thin CA adhesive. Quickly I positioned the other strip of linen paper over the tube and applied pressure to each side, to form the corrugated effect for the belt. The rest of the tubes were treated in the same way. Any visible excess tube can be trimmed off using a sharp blade.

The result is an ammunition belt with spent rounds in each belt grip.

NOTE: If you apply CA adhesive to the paper and apply pressure to it, it will probably soak through the paper and bond it to the surface you are working on. To avoid this, slowly drag the paper across the work surface whilst applying pressure to the paper. In this way the CA adhesive does not have time to bond to the work surface. If the paper side being dragged is marked from the work surface, it can be installed with that face down and will not be visible on the finished model.



PART 10 - DECALS

The decals on this model were difficult to apply in certain areas. These were the roundels on the wings and ailerons, due to the fact that each were separate decals, which had to be aligned not only to the part but also to each other when assembled. The decals have to be applied to the main surface and then over the edge.

First the areas to have decals were airbrushed with Alclad Gloss lacquer, to form a smooth surface and reduce the likelihood of 'silvering' under the applied decals. This is caused by air being trapped in the rough surface of the paint, which after the decal is applied and dries, causes the 'silvering'. Once dry, the decals were loosened in water and slid into position. Soft tissue paper, such as toilet paper, was used to squeeze out surplus water. Then I applied a coating of 'Micro Sol' setting solution all over the decal, including the parts of the decal standing away from the surface they needed to be tucked around. The setting solution softens the decal and allows it to seat down fully on the surface. After a minute or so the decal can be gently pushed around the edges.

NOTE:

1. As the setting solution softens the decal, care must be taken when touching the decal or damage can be caused.
2. The setting solution causes the surface of the decal to wrinkle, but this is normal and the decal, when dry, will be flat. If there are any visible bubbles under a decal, use a sharp pin to prick the bubble then apply more setting solution.

Then a coat of Alclad Klear Kote Semi-Matte (ALC 312) lacquer was airbrushed over them to merge them with the previously applied lacquer and also to seal them.

Once dry, Flory 'Dark Dirt' clay wash was applied over all decal areas and when dry, gently wiped off to create a subtle weathered effect. And a final coat of lacquer was applied to seal the decals.

A final coat of Alclad Semi-Matte lacquer was then applied to seal the clay washes.



PART 11 - PROPELLER

The kit supplied propeller can be primed and either hand or airbrushed, to achieve the laminated wood effect, is desired. To do this effectively can be difficult and a bad propeller can ruin the look of an otherwise good model.

For this build I chose to use an after market propeller that is hand carved laminated wood, stained and with appropriate manufacturer markings. The propeller is the Lang propeller (No. P3210) from the Czech company LF Models.



PART 12 - FIGURE

The figure I chose to use is the 'RNAS Pilot (No. RFC 03) figure by Wings Cockpit Figures. This is a one piece resin figure and only needed a few small seams and flash to be removed. I then washed the figure in warm soapy water using an old toothbrush. This was to get rid of any residual release agent from the figure. Ensure the figure is fully dry before continuing.

NOTE: When brush painting with Acrylics, I always add a small amount of thinner in order to keep the paint fluid, otherwise I find it doesn't brush well onto the primed surface.

Once fully dry the figure was primed using Tamiya Fine Grey primer. The coat was then brush painted with Tamiya Flat Blue (XF8) mixed with Tamiya NATO Black (XF69). Shadows were added using the same mixed paint but adding more Tamiya NATO Black (XF69). Highlights were added using the previous paint mix but adding Tamiya Medium Blue (XF18).

The shadows and highlights were brushed on while the base coat was still wet, which allows you to blend the paint, rather than ending up with stark contrasts.

The remaining colours were brush painted in the same way, using appropriate Tamiya paint colours. An airbrushed coat of Alclad Klear Kote Semi-Matte (ALC 312) lacquer was applied to seal the paints.



PART 13 - RIGGING

The first thing to check is that you have already drilled out the rigging attachment points. The Wingnut Wings models have these located on the model, but it is always best to carry out research in reference books or on-line before drilling.

Some modellers use micro drills manufactured for drilling printed circuit boards etc and these drill bits sometimes have identifying coloured collars fitted to the drill shanks. I have found that these drills are too sharp and instead of easing their way into the plastic of the model, they tend to bite in and effectively 'cork screw' their way in, which causes jamming and lots of broken drills. This is not only expensive but can leave broken drill bits in the model, which are virtually impossible to extract. I prefer to use High Speed Steel (HSS) drill bits, which are cheaper and have less 'bite' when in use.

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

With your research complete and all necessary holes pre-drilled, the rigging can start.

For structural strength I used 'Steelon' mono-filament (fishing line) of 0.12 mm diameter. This is effectively transparent but does give a look of steel, without the need of painting or colouring with a gel pen.

Typically for many British aircraft, the Sopwith Triplane has two types of rigging. Cables were used for some flying controls and internal bracing and RAF flat rigging was used, primarily for wing and undercarriage bracing. Even at 1:32 scale, it is difficult to see with the naked eye, any difference between flat or round rigging, or in fact the different sizes used on the actual aircraft. Therefore as a representation only of the rigging, I used just the mono-filament throughout.

To represent the flat wire attachments to the aircraft I used 0.4 mm Nickel silver tube (Albion Alloys). This was cut to appropriate lengths by rolling a shielded razor blade across the tube whilst applying light pressure. This will easily cut the tube without leaving burrs or blocking the cut end of the tube, which stop the rigging from passing through.

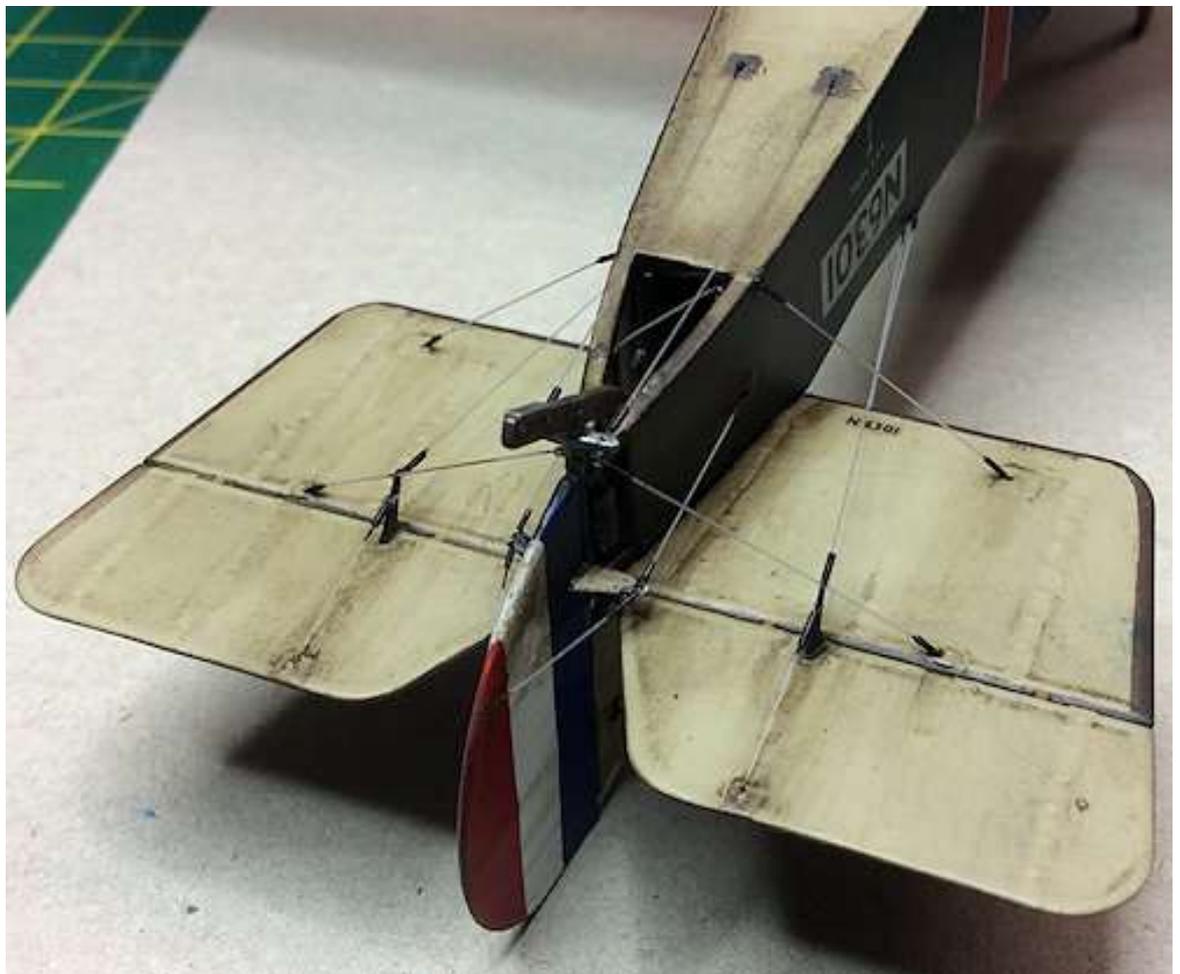
A long length of line was inserted into tube and secured with CA adhesive. The tube was the inserted into a pre-drilled rigging point and again secured with CA adhesive. Another tube was slid onto the line and then the free end of the line was passed through the associated control horn etc and looped back to the free tube. Using two pairs of tweezers, the free end of the line was inserted into the tube and pushed through until the line could be gripped from the other side. Then holding the tube with one pair of tweezers, the free end on the line was gently pulled to tighten the line and cause the free tube to slide up against the control horn etc. Holding the tube in position and secure with CA adhesive. Once dry the exposed free end of the line can be cut close to the control horn etc with a razor blade.

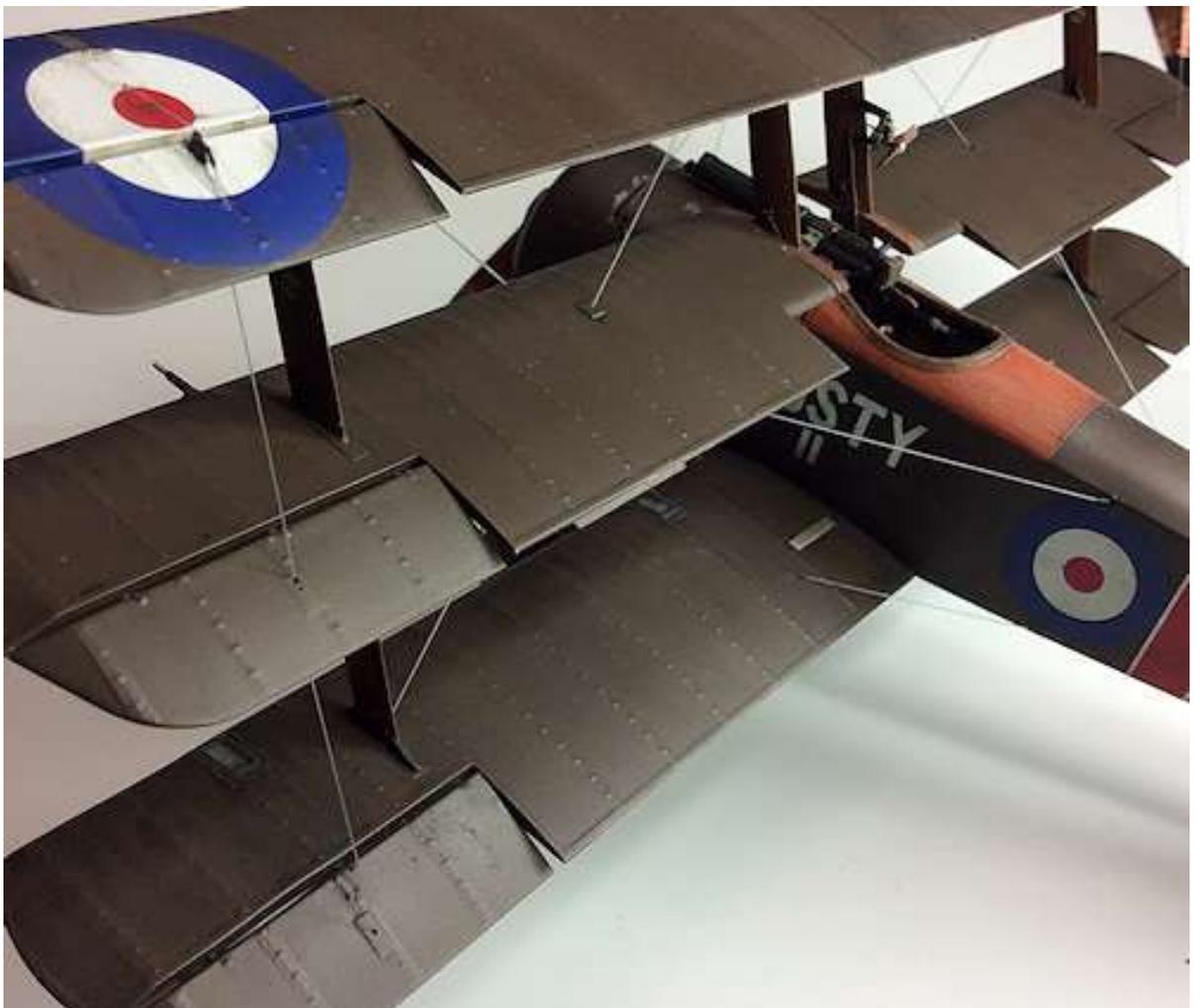
The same method was used where a turnbuckle was required, except in that case, line was attached to both ends of the turnbuckle.

The exposed Nickel Silver tubes were 'toned down' by applying a light coat of Mr. Metal Dark Iron (214).

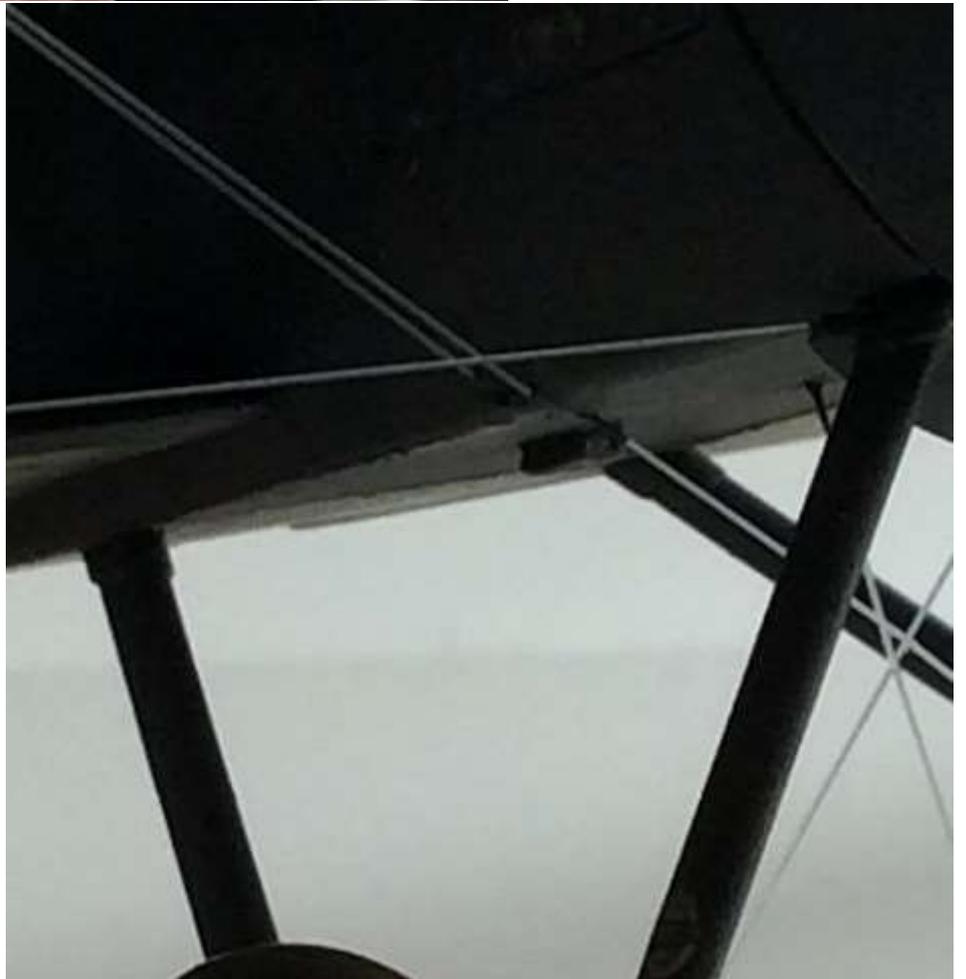
A final light airbrushing of Alclad Semi-Matte (ALC 312) lacquer was applied to knock back the shine of the mono-filament and give it a look of steel.

As you work your way through the rigging it is always good to check the rigging attachment points for any damaged paint. This can be rectified before continuing with the rigging, just in case access will be limited once all of the rigging is completed.









PART 14 - DISPLAY BASE

The display case is made from 6mm thick Piano Black Acrylic sheet and the transparent top is fabricated from 3mm thick Clear Acrylic sheet. This was made for me by an on-line manufacturer. The name plaque was also made by an on-line retailer and was attached to its mount.

The model and pilot figure were positioned on the base in their final positions and the pin locations were marked on the base. Three 1.0 mm holes were drilled into the base to correspond to the paper clip pins in the two wheels and the one in the leg of the pilot figure. Three lengths of paper clip were cut and temporarily located into the three holes.

The grass mat was cut to shape from a sheet of 'Model Scene Grass Mats' (F517). The cut mat was then positioned on the base and with the three pins protruding through the mat. The outline of the grass mat was then lightly scored into the base surface. The grass mat was then removed and the black base was scuffed inside the mat outline with a medium grade glass paper in order to give a key for adhesive. The back of the grass mat was then lightly sprayed with water.

NOTE: If too much water is sprayed onto the grass mat and/or too much adhesive is applied to the base, the result will be that adhesive will show through the grass mat and possibly still be visible once the adhesive has fully dried.

A coat of PVA adhesive (wood glue) was applied to the base over the scuffed area and slightly outside the outline of the grass mat (for applying a sand border). The grass mat was then laid onto the PVA adhesive and positioned correctly, again with the temporary pins protruding through. Light pressure was applied to ensure the mat was in contact with the adhesive. While the PVA adhesive was still wet, dry sharp sand was sprinkled around the edges of the grass mat and lightly pressed into the PVA adhesive.

Once the PVA adhesive was dry, the excess sharp sand was 'knocked' off the base. Don't brush off the excess sharp sand or you may scratch the exposed base surface, which is acrylic sheet and easily marked.

Kitchen 'Cling-Film' was positioned around the grass mat (slightly away to leave the applied sharp sand exposed) and held in position with thin modelling masking tape, following the outline shape of the grass mat (maintain the curved edges of the outline by avoiding straight or sharp edges of the tape). This sand border was then airbrushed with Tamiya Flat Brown (XF10) and once dry was lightly dry-brushed by hand with Tamiya Dark Yellow (XF60) to add colour variation. This border effect can also be achieved by hand brushing, in which case the Cling Film and masking tape would probably not be needed.

To add variation to the grass mat, small clumps of 'Mini-Nature' two colour grass tufts (737-22S) were secured in place with PVA adhesive. Although slightly two tone in colour, these grass tufts can be lightly dry-brushed with Tamiya Dark Yellow (XF60) to enhance the effect of dry grass.

The three temporary paper clip pins were then removed and the three holes 'cleared out' with a 1.0 mm drill to ensure the model pins would fully seat into the holes.

CA adhesive was then applied to the two wheel pins and the model was carefully seated into the two previously drilled holes. Light pressure was applied to the wheels and rear fuselage to ensure the model 'sat' naturally on the grass mat. The same was applied to the pilot figure.



COMPLETED MODEL PHOTOGRAPHS

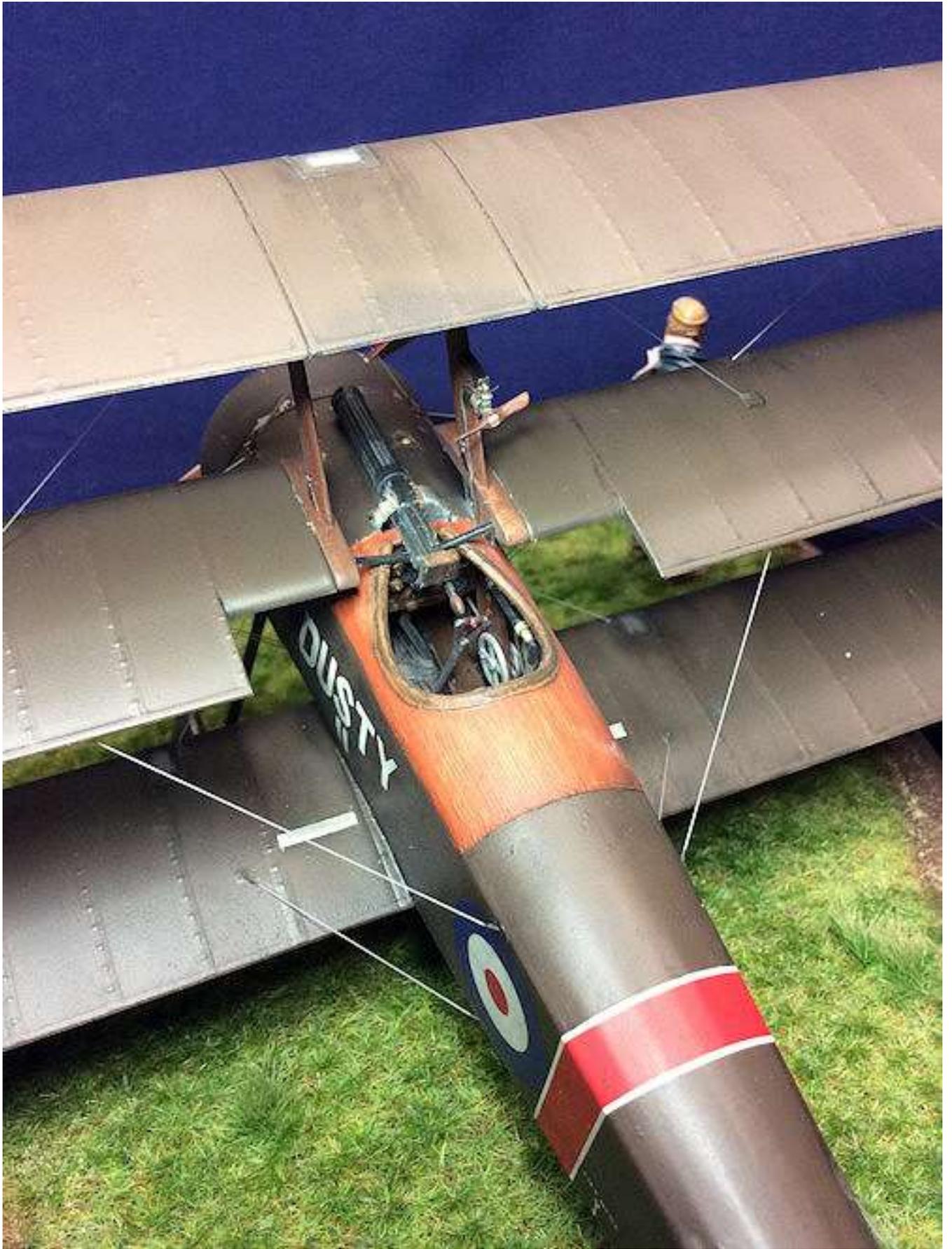
















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