

# Armstrong Whitworth FK.10 Czech Master Resin<sup>1</sup> resin kit

## Quadruplane fighter

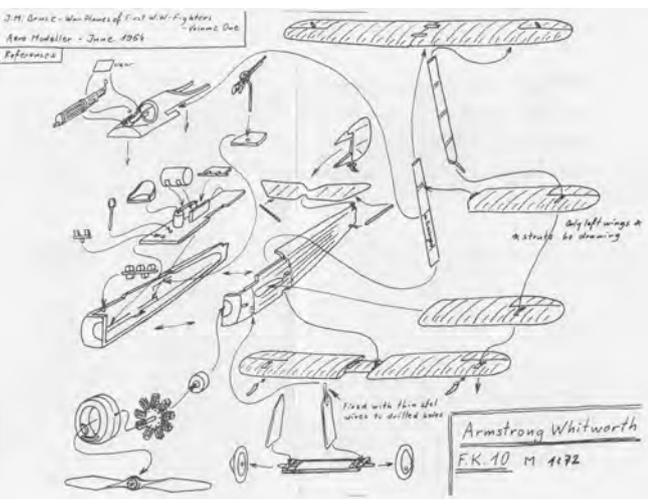
Scale 1:72

The FK 10 was the Koolhoven's answer to the successful designs of the Fokker and Sopwith triplanes. The prototype, designated probably as FK.9, was powered by a 110 hp Clerget rotation engine and had its first flight in March 1917. The FK.10 was a two-seat fighter, powered by a 130 hp Clerget in an attempt to improve the performance (sources report that this attempt was not successful; the FK.10 performance was slightly less than that of the FK.9). One of the aircraft also flew with a 110 hp Le Rhone engine. Handling properties of the aircraft were reported to be good.

Contrary to the prototype, all four wings of the FK.10 had dihedral, and all wings were equipped with ailerons. Undercarriage bracing was by wires only; the wheels were just attached to two struts. Originally fifty FK.10s were ordered, but the order was canceled in view of the bad performance. Some 13 aircraft were supplied to the military services for several purposes.

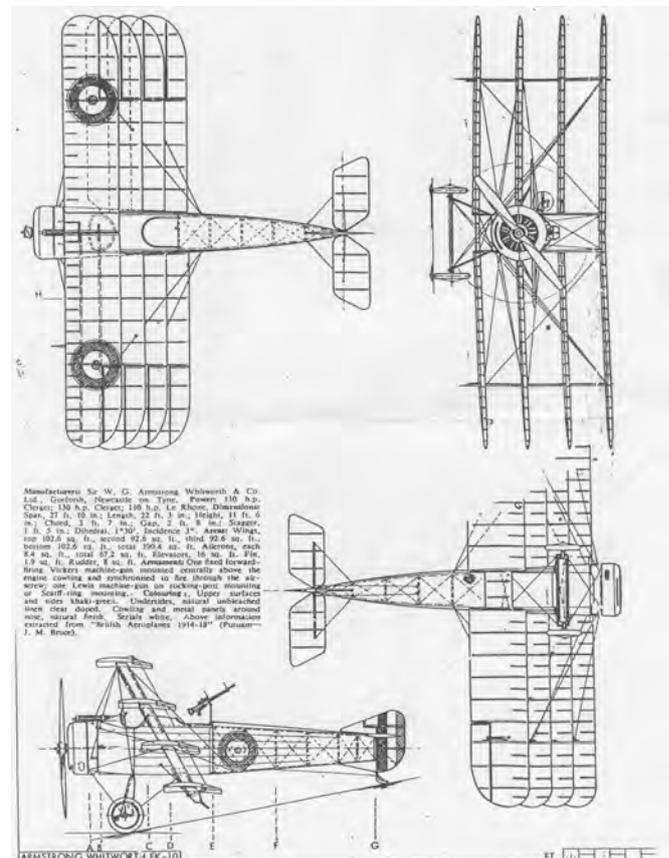


shows a four-view drawing, certainly needed to apply the complex bracing scheme (some bracing wires even pass through the wings), and an exploded view indicating the location of the different parts. Limited painting instructions are given.



The kit comes in a thin carton box and contains the resin parts in plastic blisters and an instruction sheet. No decals or other material to assemble the model are included.

The instruction sheet lists the dimensions of the plane,



Wesselink (ref. 1 and 13), Tapper (ref. 6) and Bruce (ref. 7) give the dimensions of the FK.10 and Wesselink and Tapper show a three-view drawing of the airplane.

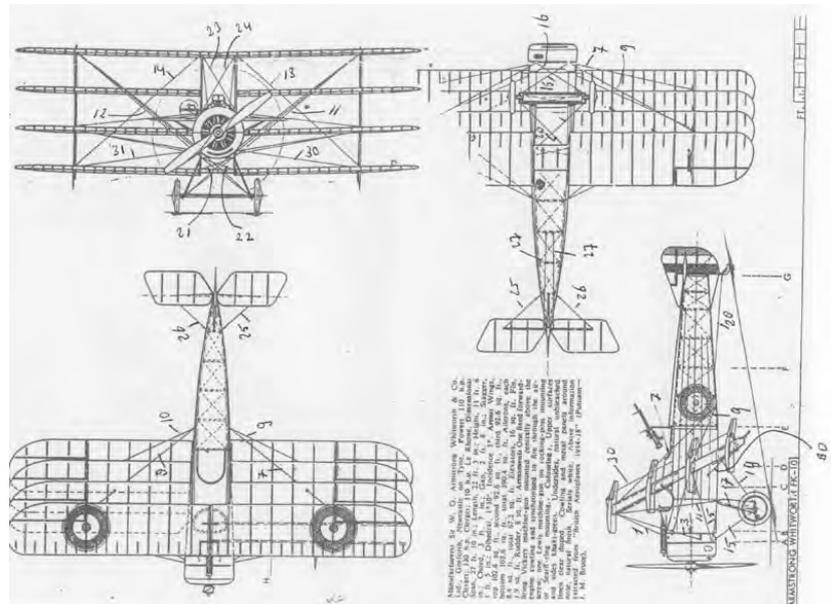
As shown in the table below the completed model is rather too small a scale; especially the length is far too short (almost 15 %). All references quote the same span; only Bruce gives a length of 6.78 m (94.2 mm in 1:72 scale), so it seems likely that that reference has been used by the kit producer.

	<i>Ref.</i>	<i>1:72</i>	<i>model</i>
<i>Span</i>	8.61 m	119.6 mm	115.1 mm (96 %)
<i>Length</i>	7.77 m	107.9 mm	92.3 mm (86 %)
<i>Height</i>	3.51 m	48.8 mm	45.5 mm (93 %)
<i>Engine</i>	Clerget 130 hp		
<i>Crew</i>	2		
<i>Armament</i>	1 Vickers MG, 1 Lewis MG movable		

Other three-view drawings can be found on websites ref. 8 through 11. I have taken the drawing in Tapper as main reference. I have used the drawings mainly to establish a rigging scheme for the FK.10. The four-view drawing in the instruction sheet seems to have been derived from the drawing for the RC plane in ref. 9. This drawing shows more rigging wires than can be identified on pictures.

### Rigging scheme

With the Armstrong-Whitworth FK.8 in mind, which was quite a nightmare from the rigging point of view, I decided to establish a rigging scheme prior to start the building. So this is what I deduced from drawings and photographs [in square brackets the hole or attachment identifier]. The location of the rigging wires is indicated in the four-view drawing.



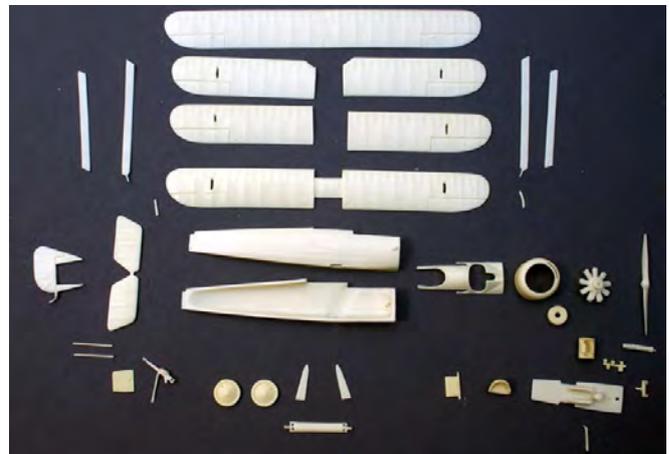
<i>no.</i>	<i>name</i>	<i>from</i>	<i>to</i>
1	Upper drag wire left	Top cowling left [1]	Inboard strut top wing (#4) right [2]
2	Upper drag wire right	Top cowling right [3]	Inboard strut top wing left [4]
3	Mid drag wire left	Mid cowling left [5]	Outboard strut top wing left [6]
4	Mid drag wire right	Mid cowling right [7]	Outboard strut top wing right [18]
5	Lower drag wire left	Lower cowling left [8]	Outboard strut wing #2 left [9]
6	Lower drag wire right	Lower cowling right [10]	Outboard strut wing #2 right [11]
7	Upper anti drag wire left <sup>2</sup>	Mid fuselage bottom left [12]	Outboard strut top wing left [6]
8	Upper anti drag wire right <sup>3</sup>	Mid fuselage bottom right [13]	Outboard strut top wing right [18]
9	Lower anti drag wire left	Mid fuselage bottom left [12]	Outboard strut wing #2 left [9]
10	Lower anti drag wire right	Mid fuselage bottom right [13]	Outboard strut wing #2 right [11]
11	Flying wire left	Top landing gear strut left [14]	Outboard strut top wing left [6]
12	Flying wire right	Top landing gear strut right [15]	Outboard strut top wing right [18]
13	Landing wire left <sup>4</sup>	Outboard strut lower wing (#1) left [16]	Inboard strut top wing left [4]
14	Landing wire right <sup>5</sup>	Outboard strut lower wing (#1) right [62]	Inboard strut top wing right [2]
15	Forward landing gear wire left	Axle forward left [17]	Lower cowling right [10]
16	Forward landing gear wire right	Axle forward right [19]	Lower cowling left [8]
17	Mid landing gear wire left	Axle forward left [17]	Top landing gear strut right [21]
18	Mid landing gear wire right	Axle forward right [19]	Top landing gear strut left [22]
19	Aft landing gear wire left	Axle rear left [23]	Inboard wing strut at fuselage bottom right [24]
20	Aft landing gear wire right	Axle rear right [25]	Inboard wing strut at fuselage bottom left [26]
21	Cross rigging lower wing left	Inboard wing strut at fuselage bottom left [26]	Inboard strut lower wing right [27]
22	Cross rigging lower wing right	Inboard wing strut at fuselage bottom right [24]	Inboard strut lower wing left [28]

no.	name	from	to
23	Cross rigging upper wing left	Inboard wing strut at top fuselage left [29]	Inboard strut top wing right [2]
24	Cross rigging upper wing right	Inboard wing strut at top fuselage right [30]	Inboard strut top wing left [4]
25	Tail drag wire left	Aft bottom fuselage left [31]	Bracing strut elevator left [32]
26	Tail drag wire right	Aft bottom fuselage right [33]	Bracing strut elevator right [34]
27	Rudder control cable	Aft fuselage left [35] – rudder control horn left [36] – rudder [37]	Rudder control horn right [38] – aft fuselage right [39]
28	Tail wheel control cable left	Lower fuselage left [40]	Tail skid control horn left [41]
29	Tail wheel control cable right	Lower fuselage right [42]	Tail skid control horn right [43]
30	Aileron control cable left	Lower fuselage left [44] – lower wing outboard strut left [45] – bottom aileron balance weight lower wing left [46] – aileron lower wing (#1) left [47] - aileron wing #2 left [48]	Aileron wing #3 left [49] – aileron top wing (#4) left [50]– top control horn upper wing left [51] – upper left wing outboard strut [52]
31	Aileron control cable right	Lower fuselage right [53] – lower wing outboard strut right [54]– bottom aileron balance weight lower wing right [55] – aileron lower wing (#1) right [56] - aileron wing #2 right [57]	Aileron wing #3 right [58] – aileron top wing (#4) right [59] – top control horn upper wing right [60] – upper right wing outboard strut [61]

This is quite some difference with the Fokker Dr.I tri-plane, which had only cross rigging between the landing gear struts and the cabane struts.

The parts (except the part representing the control stick, which was damaged beyond repair) are of good quality with only a few small air bubbles. Two parts were slightly bent, but that is easily repaired in a hot bath. The control stick will be scratch built from a piece of wire.

I will build the model again with detached control surfaces. I have found no pictures of the cockpit interior of the FK.10, so the model's interior will be constructed from the few parts in the kit mixed with ample imagination and a bit of Armstrong Whitworth FK.8.



For the exterior I have collected some more pictures. The picture at the right comes from Tapper's book (ref. 6), the left one from Wesselink (ref. 1). They represent the same aircraft, and probably have been taken at the same occasion. There are no decals in the kit, and as the lettering is white on the khaki background, I have drawn the custom decals in CorelDraw and have had the decal printed by Fireball Modelworks in the USA. I have chosen the simple decoration variant for the model, as the other option, the Royal Navy aircraft produced by Phoenix Dynamo Manufacturing Co. of Bradford is slightly different, and would require some modifications of the model<sup>6</sup>.



### Cockpits

The cockpit has been built using the components in the kit. I have "improved" the tank by constructing two attachment bands from 0.25 mm wire. The seats have been worked with a drill bit to simulate the

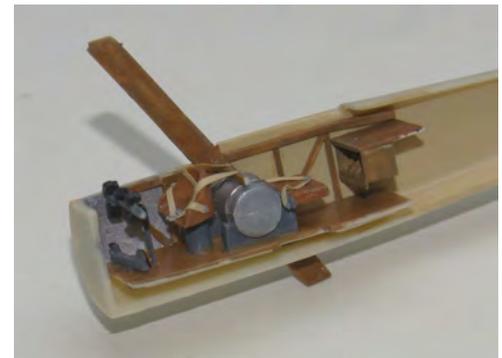
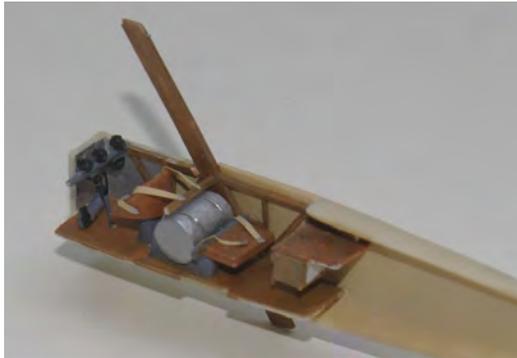


padding. The rudder pedals have been rotated in purpose; they will correspond with the position of the rudder later on. A gas handle has been produced from scrap material and has been mounted to the left side of the fuselage.

Somewhere there must be a place for the ammunition store of the pilot's Vickers gun, but the cockpit is that cramped I couldn't find a place to model a box. The ammunition store for the observer's Lewis gun I have produced from 0.25 mm thick strip and fitted it under the machine gun platform. Last thing to do prior to assembly of the fuselage is to fit the seat belts cut from painted Tamyia tape.

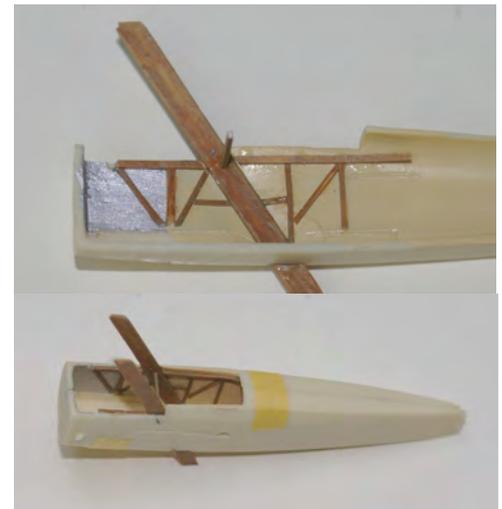


So now the cockpit platforms can be glued to the right half of the fuselage. Here and there some retouching needs to be done.



### Fuselage

As far as I can see the fuselage has the conventional, rectangular framework structure, and the streamlined shape is achieved by formers at the outside and lengthwise stringers. I will only build some frames and the top longerons, because that is all that will be visible from the outside. The inboard wing struts have to be mounted from the beginning. I have made a simple jig to position them in the right angle relative to the fuselage. Care shall also be taken, that two struts are parallel and on equal height. This implies that they should not be glued over their full length to the fuselage side and that the markings on the struts have to be aligned carefully with top and bottom of the fuselage. A fit check with the cockpit top cover is also recommended. The cockpit floor and the platform where the machine gun will be mounted fit into narrow grooves in the fuselage sides, which I have made slightly wider and deeper to arrive at a positive fit.



A dry fit of the fuselage is needed to cut the transverse beams and the rod where the instruments are mounted on to the correct size. The rod appeared to be several millimeters short, which I have repaired with a small piece of plastic rod of the same diameter.

Closing the fuselage was a bit difficult; some of the parts were slightly too large and needed to be corrected. A propeller shaft was not included in the kit; I have produced it from 1.2 mm plastic rod and a small section of tube. It needs to be mounted before gluing the fuselage halves together, later it cannot pass the objects in the crowded front cockpit.



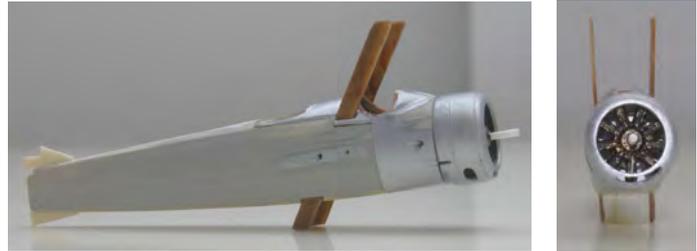
The underside of the fuselage showed some tiny air bubbles and also the joint between both fuselage halves needs quite some putty, as can be expected with a resin model. After two layers of putty the seams had

disappeared, and the underside of the fuselage received its first coat of paint. The wings and fuselage will be painted prior to assembly (top and side surfaces khaki (Humbrol 155), undersurfaces natural doped linen (Humbrol 71 with a drop of white).

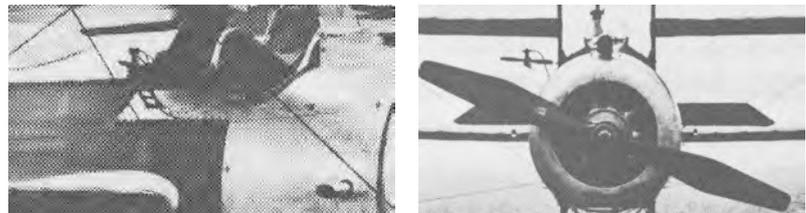
Now the fuselage is ready to receive the top decking over the cockpits. So this is the last time the cockpit interior can be viewed well. Fitting it correctly in place was rather difficult, and required some correction. I have also drilled the holes in the root of the second wing. I find it still difficult to get them in the right location in once.



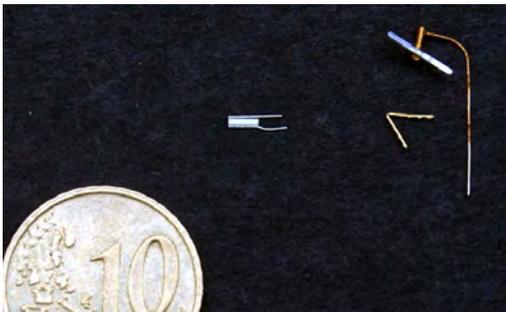
After sanding the top decking flush with the fuselage the engine and the cowling can be mounted. Next step is to give the fuselage its first coat of khaki. When the paint had dried, I have drilled more than 20 holes for the rigging lines and control cables in the fuselage according to the table presented before.



At the right side of the fuselage top just behind the wing style an air pump for fuel tank pressurization is mounted on a bracket, a construction similar to that of the Armstrong Whitworth F.K.8<sup>7</sup>. The two



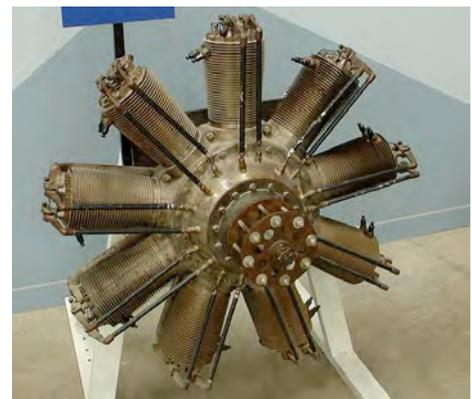
pictures in Tapper (ref. 6) give some information on it. I have used the PE bracket of the F.K.8 for it, and produced the air pump from scratch (0.7 and 1.0 mm plastic tube for the housing, 0.25 mm metal strand for the leads and 0.25 mm thick plastic strip for the propeller). On the pictures there is also the pitot tube visible at the leading edge of the left upper wing (produced from 0.25 mm thick plastic strip and 0.25 mm metal strand).



## Engine

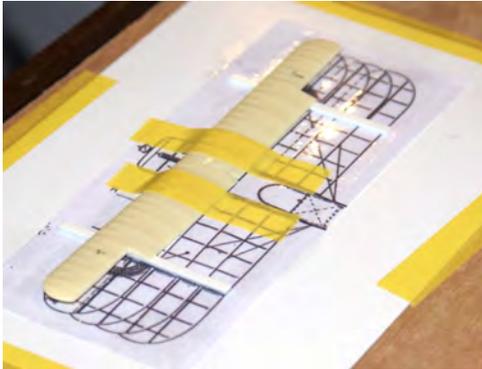
The engine is a 130 hp Clerget rotation engine, of which I found a nice picture on Internet (Wikipedia). I have reproduced the colour by dry brushing gold (Humbrol 18) on the black painted engine, and retouching the push rods afterwards with black (and some silver chipping, some of which I will remove, because it is a bit overdone).

The engine's exhausts have been modelled in the kit as two blobs at the right and left of the aircraft's nose. I have decided to do that a bit more realistic. After a failed attempt of producing exhausts from 1.0 x 0.4 mm aluminium tube, I have produced them conventionally from 1 mm plastic rod, in which I have drilled a 0.6 mm hole. A 1.2 mm hole has been drilled slanted forward<sup>8</sup> to receive the exhaust tubes after painting.



## Wings

I have cut all control surfaces from wings and vertical tail and I have also separated the upper and lower wing halves, as the wings have a slight dihedral. I have also drilled 0.4 mm holes on the location where I expect that the landing wire will pass through the wings. These holes may be enlarged if the location is not accurate; on the photographs the holes, where the rigging lines pass, seem rather large.

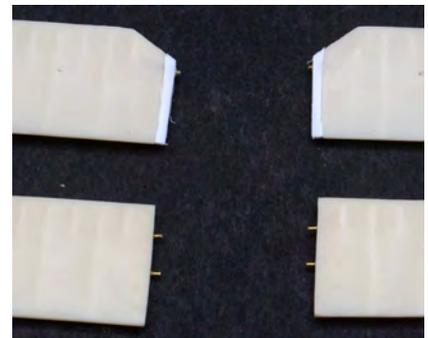


I have also drilled already the 0.3 mm hole for the control cables. On the pictures I cannot find an aileron control cable running under the upper wing, so assume it ran, unlike the FK.8, inside the wing.



I have build a simple jig to assemble the upper and lower wing with the right dihedral over the 1:72 scale reproduction of the instruction sheet drawing. Two strips of 1 mm thick plastic just inside the location of the outboard struts do the trick.

I have measured carefully all wings. The second wing from the top appeared to be 1 mm shorter on each side than the others. The position of the wing styles is however correct, so the discrepancy is easily corrected by adding a slice of 1 mm plastic at each wing root and by sanding that nicely in profile. I have drilled 0.5 mm holes in the halves of the second and third wing and glued 0.4 mm wire in them. This in the second wing from the top may only protrude 0.5 mm, because they have to fit in the inner wing styles, which are only 0.8 mm thick. Next I have drilled the holes in the wing roots, marking their location by dipping the pins in black paint, and fitting the wing to the fuselage.



Prior to the wing assembly all 0.3 mm holes required for rigging wires and control cables have been drilled in the fuselage. The one for the aileron cable has a diameter of 0.45 mm, as it shows up as a distinct large hole in the photographs. After that I have given the fuselage a



coat of gloss varnish as a preparation for the application of the decals. I have started the assembly by mounting the second wing from the bottom with the help of the jig to achieve the correct dihedral. Next step is to fit the outboard wing struts in place. Some adjustment of the slits in the wings was needed to give the struts the right angle (parallel to the inboard struts). Then the two halves of the third wing

followed. It was very difficult to get these wings parallel to the other wing, which appeared to be caused by a wrong position of the hole for the wing pins in the struts. So in the end I have decided to get rid of them, and align and glue the wings on view, accepting the increased risk of a failing joint later.

When the two wings were in place, I could check the correct alignment of the holes where the landing wires have to pass through with a piece of 0.25 mm metal wire. As could be expected, they were not well aligned, but in this phase it was still easy to correct.

The assembly is still very flexible now. I think it will only get some rigidity after mounting the lower and upper wing, but that has to wait until I have applied the decals. Also, a fit check with the lower wing showed that the alignment of the slits in the wing for the outboard struts needs to be corrected probably to allow positioning them in a straight line.



Next I have mounted the last two wings. Before gluing the lower wing in place, I have glued the two lines for the cross rigging between the underside of the fuselage and the lower wing between the inner struts in place. In a later phase the accessibility is much worse. When the glue is dry, the ends can be cut off.



Now comes the upper wing. First the inner struts were not fitting to the wing lower surface, as there is some difference in dihedral between the upper wing and the second wing, but a bit of thick cyano did the trick.



The rigging wires will take up some of the tension, when they have been mounted. The alignment is not perfect, but the result is acceptable; it gives the right impression. Before starting the rigging, I have mounted the air pump pressurizing the fuel tank, the exhausts and the machine gun.

### Rigging and undercarriage

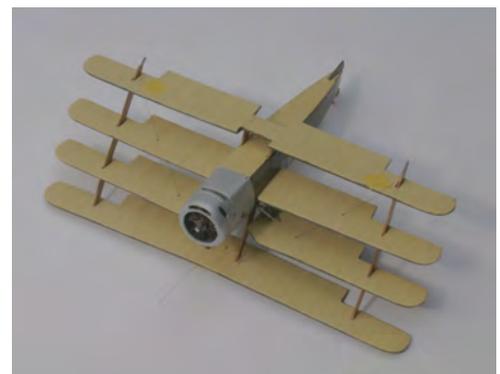
The first rigging line to be mounted is the one that crosses the two middle wings. Because the holes where the lines have to pass through were not exactly aligned, they show a slight knick, but it is not disturbing.

Adding the next lines must be done very carefully, using the rigging list given before, as quite a few lines share mounting points (holes), and they have to be glued at the same time. For this purpose it is essential to give the mounting points unique numbers.

Unexpectedly, also two of the other rigging lines (no. 7 and 8) pass through wing #3 on a location that is difficult to determine beforehand. So the best way is to drill the 0.4 mm hole just before mounting the rigging line (the location can be reached under the right angle in this phase).



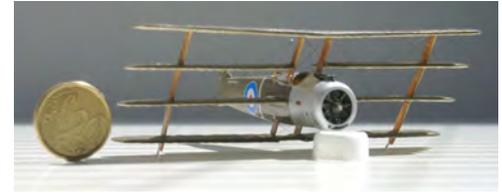
I have mounted first all rigging wires, which end up at a location on one of the wings or wing struts. That means that some wires will hang loose as they have to be attached to the undercarriage.



I have not mounted the aileron cables yet, as that requires that the decals on upper and lower wing have to be applied and the ailerons themselves, and, as they are rather fragile, they will probably drop off in the many assembly steps of the model that still have to be executed. When the glue was well dried, I have cut off the excess fishing line and sanded the locations where the wires pass through the upper and lower wing carefully with fine waterproof sandpaper.



To illustrate the small size of the model I have added a picture of the model next to a 20 cents coin.



Applying the wing rigging for this model was not easy, mainly because some rigging wires run through the wings and



because the single wing struts make the construction very fragile.

To complete the rigging the undercarriage has to be mounted first. The picture shows quite clearly how fragile the attachment of the undercarriage to the fuselage is. Both struts are only 0.7 mm thick, and the connection is reinforced with a small length of 0.25 mm metal wire, as advised in the instruction sheet. So I had to drill a 0.3 mm hole in a piece of 0.7 mm thick, something I just managed to do. The undercarriage connection was also a weak point in the original: it was only braced by rigging wires and there are reports that initially after each landing the rigging wires of the undercarriage and fuselage had to be adjusted, because they were loaded too much even in a normal landing. Even the model will need rigging wires to keep the undercarriage stable.



The wires have been glued to the undercarriage and have been kept under tension by means of small bits of Tamiya tape. The pictures illustrate well the reported flight experience with the FK.10 that after each landing the rigging wires had to be tensioned again. Most sailing boats are more solidly rigged.



When the glue was dry, I have cut off the loose ends of wire. Luckily the model is not heavy, because the undercarriage is really kept together by the rigging wires.

### Tail plane

I have also mounted the semi-all-flying elevator surface and the rudder. The elevator is supported in the middle on the fuselage and by two struts from the fuselage to the elevator hinge line. The hinge connection points are also rigged with two tail drag lines (25 and 26 in the table) to the underside of the fuselage. The tailskid seems to be fixed (both on the original and the model) to the rudder, but it is nevertheless controlled by an extra set of cables. On none of the pictures I have been able to identify control cables or control horns for the elevator; apparently they were located inside the fuselage.



I have put the model on its wheels first and have added also the propeller; it really makes a nice picture already. And yes, the propeller is skewed, but that will be corrected. I have also cut the windscreen for the pilot (the observer apparently did not have one) from thin clear plastic and glued it over the machine gun with white glue.

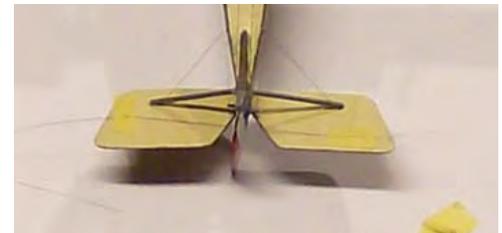
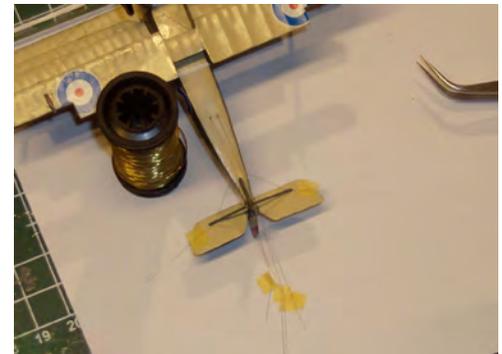
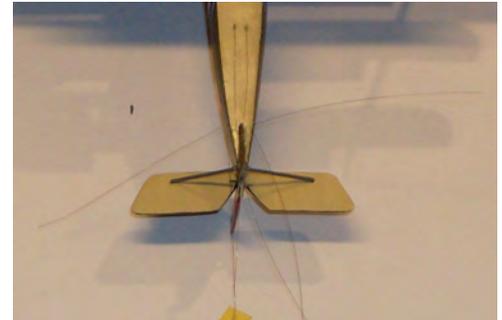


I have decided to put the tail control and rigging wires before the aileron control cables, as the model in that state seems better capable of supporting the handling loads. I have glued two small PE control horns to the rudder and painted them dark grey. When gluing them in a shallow 0.5 mm diameter hole the 1.5 mm high control horns are solidly fixed.

So for the tail first the six lengths of 0.06 mm fishing line have been glued in the respective 0.3 mm holes in the fuselage, two for the tail skid, two for the rudder and two rigging wires to the end of the tail struts.

The four wires for the control cables have been led over the control horns and the rigging lines along the edge of the elevator support struts and glued there.

As with many WW I aircraft of wooden construction the control cables runs via the control horn to one of the control surface ribs, where it is attached. Apparently the joint between the control surface hinge axis and control horn was not strong enough in this construction method. When the control surfaces are constructed as a steel tube frame, as is the case with Fokker airplanes, this is apparently not necessary. This implies for the model that the left hand cable has to pass to the right through the same hole as the right hand cable to the left. Tensioning the lines and gluing them is not a big problem, but cutting the excess line off has to be done very carefully in order not to damage the other line. With the rudder of this model it was successful with the first attempt. A same exercise will have to be repeated with the ailerons.



## Decals

The ALPS printed custom decal set<sup>9</sup> can be used for three versions: the basic one produced by Armstrong Whitworth itself for the Royal Flying Corps (decals 1, 2, 4, 5, 9 and 10), a version produced by Phoenix Dynamo Manufacturing Co. of Bradford for the Royal Navy (decals 4 through 8, 10 and 11) and one again produced by Armstrong Whitworth for the RFC with registration number A 5213 (decals 1 through 5, 9 and 10). Note that the Royal Navy F.K.10 requires some modifications to the kit. See also the appendix at the end of this report. The smallest text is well readable, although the characters are only 0.7 mm high. The blue is a bit different in day light and lamp light; in the sun it seems lighter (see also the picture below), but I don't worry about it, as the blue 1917 paint bleached very fast in sun light.

Sealing the decals gave some problems. They do not support the Humbrol Satin varnish (135), which I normally use; the crack and dissolve in it. The decal printer (Fireball Modelworks in the USA) suggested to use first a



layer of acrylic varnish, and then apply the final H135. A test with Revell Aqua Color gloss clear (Revell has no satin varnish) and Valejo Satin Varnish, both on water basis, gave good results for both. But when I applied the Humbrol 135, Revell was OK, but not the decal treated with Valejo, which cracked again (top left in the picture). As three layers satin Valejo on matt Humbrol paint stayed quite matt to my taste, I have selected the Revell/Humbrol 135 finish for my model. It may be that these problems do not occur when applying H135 with an airbrush.

Before applying the decals to the wing, I have carefully cut out the roundels and fitted one of them on the top wing. I have marked the part that must be applied to the aileron with a pencil on the back of the roundel and have carefully cut out the tiny piece. I have then applied both pieces with ample Set and Sol on their final locations. This process has been repeated for each of the four roundels,



be it that I have cut the small piece from the roundel “on the eye”. When the decals had dried, I have treated them as the decals on the fuselage. To avoid colour differences I have applied the Revel gloss coat over the whole wing surface. After finishing the wings with satin varnish there was no observable difference between surfaces with and without an intermediate coat of Revell acrylic gloss varnish.

I have corrected the slightly skewed elevator with “brute force” afterwards. It protested loudly against this treatment, but I made it shut up with a drop of cyano.

### Final assembly

I have glued the ailerons to the wings by applying two drops of thick cyano glue at the location of two wing ribs, simulating the aileron hinges (although in reality there were probably three hinges or even more) and pushing the aileron in the drops. Keeping the aileron steady for a bit fixes it sufficiently, while allowing for fine adjustment some time longer. I have first assembled the right side, ensuring that all



ailerons have the same deflection, and then the left. The observer’s machine gun has been assembled also, but not glued, so it still can be moved in another position.

It is easiest to guide the 0.06 mm fishing line for the aileron cables from the light underside of the wings in the small 0.3 mm holes. Tensioning them must be done carefully and for one aileron after the other, because I have drilled the holes normal to the surface, while the ailerons have been mounted under a small angle. Even with these precautions I managed to dislocate two ailerons in the process of applying the cables.



In this phase of the assembly I have also glued the two aileron mass balances to the lowest ailerons. On the second picture the aileron cable has been tensioned and temporarily fixed with a piece of tape. The cable above the top aileron is still hanging loose; it must be guided through the same hole as the cable from the bottom, and will then be fixed with a small drop of thin cyano glue. There was only one thing that did not go as planned: I had forgotten to drill two holes in the lower wing next to the outer wing struts for the aileron cable, that runs from the lower fuselage to the top of the lower wing and then crosses it to the bottom surface to join the aileron mass balances.



Last thing to be done is to attach the pitot tube assembly to the leading edge of the upper left wing. I have assumed that it is the same contraption as for the Armstrong-Whitworth FK.8, but mounted horizontally, although I could not find a picture with conclusive evidence of that.

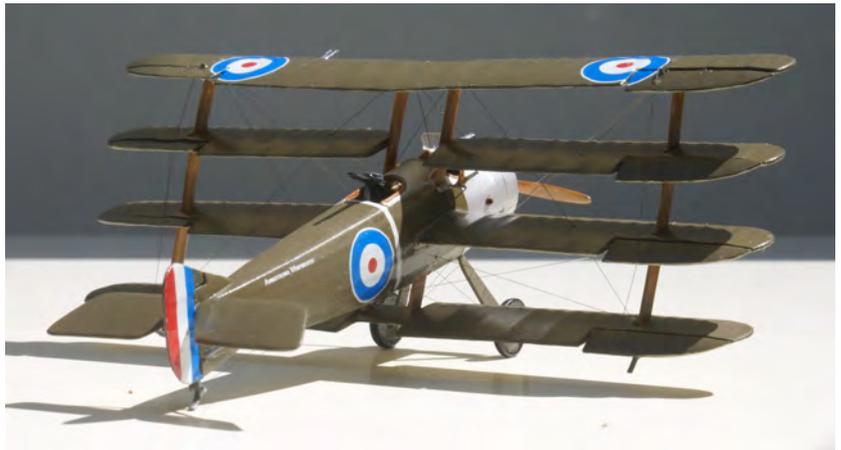
## Conclusions

The Armstrong-Whitworth FK.10 kit of Czech Master Resin is a very nice and exceptional model to build, but not easy. That is mainly caused by the flimsy construction of the wing supports, which means that the model remains rather flexible until all construction is complete; until then it is rather fragile. Also, the determination of the correct stagger is difficult; when you fit the inner wing struts in the recesses in the fuselage, like I did, it results in a slightly exaggerated stagger, which in its turn causes some of the rigging lines to come very close or even touch the wing trailing edge. Mounting the second and third wing requires you to improvise some pin-in-hole attachments.

A complicating factor is also that some of the rigging lines run through the wings. The location of the holes is not marked on the model parts, and it is virtually impossible to determine their exact location before the wings are assembled, and then you cannot drill the holes anymore. Errors in the location of the holes cause kinks in the rigging lines. The same applies from the four holes to be made in the ailerons for the control cables: almost impossible to get them on one line. However, on the finished model these inaccuracies are not very apparent.

It is a pity that no decals are present in the kit, especially because some have small, white characters, which are characteristic for this model. I have drawn the decals for the three documented versions of the aircraft and have had ALPS decals printed<sup>10</sup>.









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**Appendix Armstrong Whitworth F.K.10 versions**

*Decals*



**A. Production Armstrong Whitworth  
Royal Flying Corps**

*Without registration; 110 hp Le Rhone engine or 130 hp Clerget engine*



[Tapper]



[Wesselink]



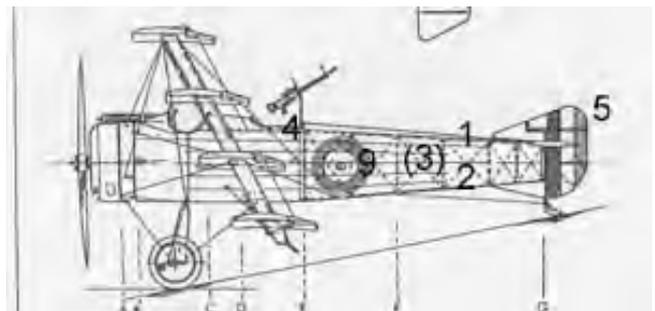
[unknown]



[Wesselink]



[Bruce]



For this version decals 1, 2, 4, 5, 9 and 10 are required. The approximate position of the decals on the fuselage is shown in the side view above. Roundels 10 are applied on top and bottom wing with their center 22 mm from the tip.

*With registration A 5213(probably), 130 hp Clerget engine*



[Wesselink]

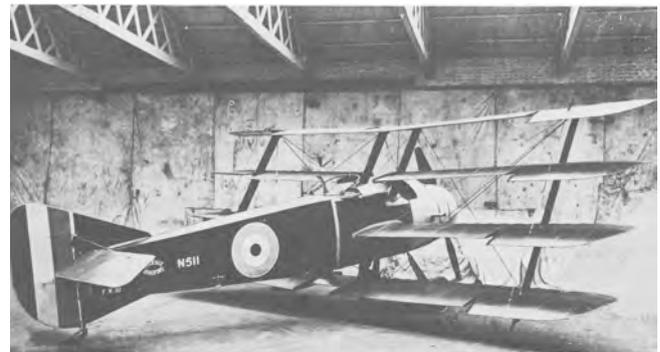
Registration A 5213 (decal 3) is not visible (or applied), but its likely position is shown in the side view above, as there is not enough room on the fin to apply it.

**B. Production Phoenix Dynamo Manufacturing Co. of Bradford**

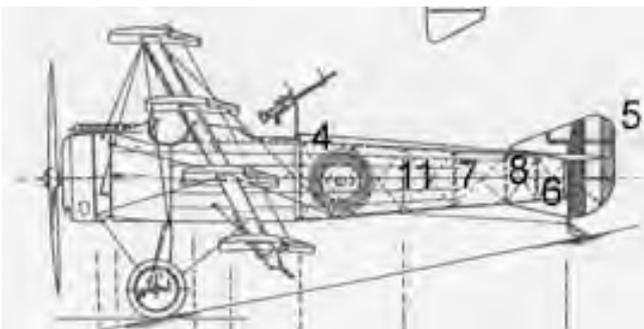
**Royal Navy N 511**



[Wesselink]



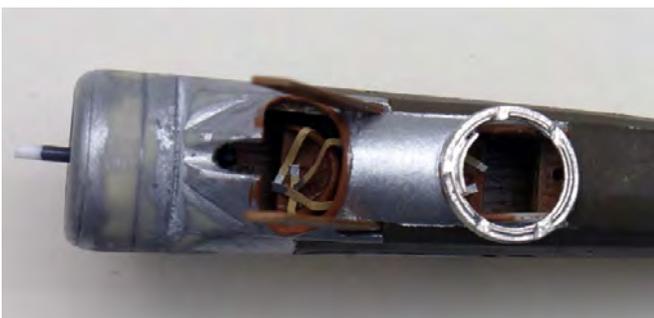
[Tapper]



For this version decals 4 through 10 are required. The approximate position of the decals on the fuselage is shown in the side view at the left. The smaller roundel 11 is positioned quite a bit further backwards than in the Armstrong Whitworth version. Roundels 10 are applied on top and bottom wing with their center 25 mm from the tip.

**Adaptations for the Phoenix Bradford version**

By fitting a Sharff ring of Aeroclub Models (on the fuselage of the F.K.10 one gets an impression what the modification for the Phoenix Bradford version would require.



The opening of the observer's cockpit must then be enlarged quite a bit, and some putty work is required to fair the ring to the fuselage. This fits with the pictures of the original, and seems quite feasible. Also, it seems that the machine gun position is slightly

different.

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<sup>1</sup> [www.cmrmodels.co.uk](http://www.cmrmodels.co.uk)

<sup>2</sup> Wire passes through wing #3

<sup>3</sup> Wire passes through wing #3

<sup>4</sup> Wire passes through wing #2 and wing #3

<sup>5</sup> Wire passes through wing #2 and wing #3

<sup>6</sup> The Royal Navy variant of the F.K.10 has a faired Vickers gun barrel and a Lewis gun mounted on a Sharff ring for the observer. The observer's cockpit has a circular opening. There is no air pump mounted at the right topside of the fuselage. The engine exhausts seem not to be angled towards the cowling surface, but stick out perpendicular.

<sup>7</sup> See the building report on [www.hollandaircraft.nl](http://www.hollandaircraft.nl).

<sup>8</sup> For the Phoenix Bradford version the hole must be drilled perpendicular to the surface.

<sup>9</sup> If you want to obtain the decal set, send an e-mail to [rjhamann @ ipact.nl](mailto:rjhamann@ipact.nl). The price is approximately € 5.00, including postage.

<sup>10</sup> Or if you are interested in the CorelDraw vector drawing of the decals, send an e-mail to the above e-mail address. I will be glad to provide it to you free of charge.