

Fokker 60 Welsh Models¹ resin kit

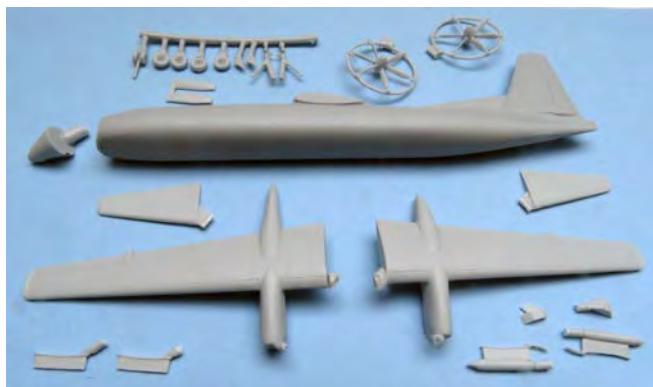
Monoplane utility transport

Scale 1:144

The Fokker 60 UTA (Utility Transport Aircraft, F27-603) is a stretched version of the Fokker 50 and has also been marketed in under the name Enforcer. It has at the right side of the fuselage a large cargo door, which extrudes a bit outward. This door has been designed such that an F-16 engine could be transported in the fuselage. The aircraft are provided with ECM protection equipment. An APU is located in the right engine nacelle. The Fokker 60 made its first flight November 2nd 1995.



Only four aircraft have been built, all going to the Royal Netherlands Air Force and carrying registration numbers U-01 through U-04. Two were reconfigured as Maritime Patrol Aircraft in 2004 with a radar radome under the fuselage. All aircraft were after 2007 sold to Peru.



The Royal Dutch Air Force roundels are silk screen printed, the other ones laser printed on continuous film.

The single A4 page instruction sheet is very simple; the assembly is described in four steps and there is a drawing indicating the place of the small parts. Of the 25 parts only 23 are required to build the model (pylons with or without flare pods). If you want to build the model in flight configuration, only 16 parts are used.

The instruction sheet also includes painting instruc-

The kit comes in a sturdy carton box. The resin parts are packed in separate plastic bags, but the two decal sheets are loose in the box. The parts are of good quality; my kit had no air bubbles at all and only one part was damaged, because it came loose of its sprue.



tions.

The nose is supplied as a separate part; this allows to hollow the forward part of the fuselage and to fill it with lead prevent a tail sitter, as indicated on the instruction sheet. The sheet does not contain a front view, so does not provide help to place wing and tail planes at the correct dihedral².

Ref. 4 and 5 report the dimensions of the Fokker 60.

	<i>Ref.</i>	<i>1:144</i>	<i>model</i>
<i>Span</i>	29.00 m	201.4 mm	mm
<i>Length</i>	26.87 m	174.9 mm	mm
<i>Height</i>	8.32 m	57.8 mm	mm
<i>Engine</i>	Pratt & Whitney Canada PW127B (2 x 2250 hp)		
<i>Crew/passengers</i>	3/45		

The model is

Parts

I have removed the parts from the sprues and have cleaned them. Although the parts are of good quality, the following observations can be made. The masters of the props were probably badly finished; nearly all blades had to be sanded on both sides. As the props are very fragile, a couple of the blades broke in the process and had to be repaired. There is a hole in the wheel boxes under the nacelles, which does not serve any purpose, as the landing gear main leg must be mounted further forward in the nacelle. Also, the main wheel doors do not have the correct shape and length. The engine inlet is very shallow, so must be deepened. The sharp bend at the place of the floor, typical for the Fokker F.27, and the Fokker 50 and 60, is not modelled in the fuselage, and must be simulated by the painting scheme.



Fuselage

The instruction sheet suggests to drill a large hole in the front part of the fuselage to accommodate lead, preventing the model to become a tail sitter (this is also the reason, why the nose cone is a separate part). I have drilled a 6 mm hole, enlarged to 8 mm, have filled it with fishing lead and fixed these with white glue. Next the nose has been glued in place and the joint has been finished.



The aft fuselage of the model shows a weird irregularity, probably the result of an attempt to model a shadow/reflection on a picture. This really is an artefact, as the picture at the left shows. So after some tedious sanding the fuselage contour has been corrected.

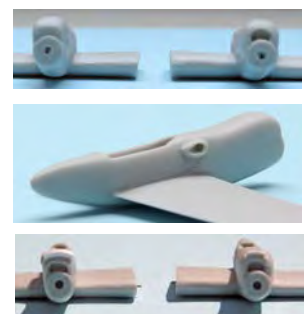


Wing, nacelles and propellers

The intake of the engines is not detailed, it is just a flat surface. There are no decals to simulate them, so you either have to paint them on the model or to make an actual intake. I have chosen to do the last and have modeled the intake by drilling three 1.2 mm holes, connecting them and finishing the inlet with a scalpel. The exhaust is also quite superficial and I have made the hole deeper with a 1.3 mm drill and the beginning wider with a 1.8 mm drill.



Under the air intake there is also a smaller intake, probably for the oil cooler. I have produced these from a piece of strip glued under the nacelle.



The Fokker 60 has an Auxiliary Power Unit built-in in the aft part of the starboard nacelle. On photographs I saw an intake grid on the top of the nacelle and an exhaust at the outboard side. I thought first to model the intake with a number of small holes drilled next to each other. But from a fellow modeller I received a number of drawings from the training manual of the 60 (see appendix), which showed that the intake was more on the inboard side and that the grid were a number of parallel plates in a rectangular cavity (measuring 0.35 m in length and 0.50 m in width) and that the exhaust at the side was pointing upwards.



So I have made a rectangular hole of 2.4 x 3.5 mm in the nacelle, have glued three tiny strips of 0.13 mm thick strip in the cavity (this was the maximum number of strips I could mount), have closed the exhaust hole with putty and drilled an upwards directed exhaust hole at the side. I have also removed the aft point of the nacelle; this was the entrance for the cooling air. I have sanded the top of the strips flush with the nacelle contour.

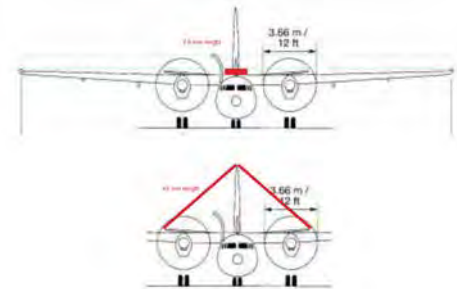


To make the connection between wings and fuselage stronger I have glued 0.5 mm brass pins in the wings, made an imprint of the pin with black paint on the wing mounting surface of the fuselage and drilled there a 0.5 mm hole. This also makes the assembly of wing and fuselage easier.

Assembly of the wings was not easy; the fit between fuselage and wing halves is not very good, there is a difference in chord length and wing thickness.



Also the dihedral is not well defined. From a drawing I have derived the correct dihedral of wings and horizontal tail, but I could not devise a method to ensure a wing assembly with the correct dihedral, so this has been done free hand. A picture of the front view showed about the correct aspect, but also revealed that the wing tips were slightly bent downwards. This has been corrected by dipping the wings in hot water and lifting the wing tips up a bit.



The joints between wing halves and fuselage have been filled with Vallejo putty and the top surface has been sanded to get an acceptable appearance. The joints at the underside of the wing have also been filled with putty, but have not been sanded. They have been left as they were; it was impossible to sand them properly.



The dihedral of the horizontal tail plane was easier to reproduced by means of a strip of plastic of the correct length.

I have measured the location of the flap track fairings from the drawing and have glued them in place. The location of the landing lights has been estimated based on the photographs and I have cut a cavity in the wing leading edge with a razor blade saw and a knife.



When I dry fitted the flare pod pylons under the wing, they appeared to cover the forward part of the flaps, which cannot be the case, so I had to shorten them. I could not deduce from the photographs that I have whether the 60



flew with both pods or with one pod and an empty pylon. On a number of pictures the pylons are absent. I have built the model with both pods under the wings and have glued them in place.



A fellow modeler has drawn new propellers in 3D CAD to prepare them for 3D printing. I have bought a set of four propellers at Shapeways, which was delivered within a week. It was easy to remove them from the sprue and on visual inspection the surface was acceptably smooth. Anyhow, sanding of the 0.6 mm thick blades would have been virtually impossible without damaging them.



Comparing the new props with the original ones showed quite some improvement in appearance; they clearly are a lot better to scale. The second set of propellers I will use to test whether it is possible to cast acceptable resin copies of them. If this works it will be quite a cost saver compared to the printing cost.



Painting and decals

I have followed the painting scheme as indicated in the building instructions: Underside grey (Humbrol 128), top surfaces light grey (Humbrol 127) and the camouflage pattern dark grey (Humbrol 125). I have painted the model with a brush and have first done the underside, after having taped the edges. One layer covered the model quite well.



Next I have taped the bottom part and the de-icing boots of the leading edges of wings and tail surfaces and have painted the upper surfaces. I have "copied" the camouflage pattern as given on the instruction sheet with pencil on the top and have filled it in with the dark grey paint. This went all quite well, and only little



retouching was required.



On the pictures of the 60 the part of the nacelle behind the exhausts is burned bare metal (steel?). I have taped it and have painted it Vallejo Steel. The detailed picture shows that also here some retouching is needed.



I have taped the wing, tail surfaces and engine nacelles to paint the de-icing boots on the leading edges and the engine inlet black (Humbrol xx).



Exhausts

As I did not trust the quality of the decals, I have given them an extra coat of Microscale Liquid Decal Film. I have selected the U-03 variant Jan Borghouts. I have cut out the decal as close as possible along the print. I have first applied the windshield decal, placing it as well as I could on the casted cockpit windows. Positioning the long decals on the fuselage was



contrary end up quite above the floor level. And it was a bit disturbing that the panel lines between the different fuselage sections run straight through the aft doors and the large freight door.



a compromise between the photographs of the actual aircraft, the kit instruction sheet and the model itself. The lower side of the large freight door must be aligned with the separation line of the light grey underside and the camouflaged top side, which is the level of the cabin floor. This determined the location of the squadron symbol behind the cockpit windows, which is then a bit low. The aft fuselage doors on the

Applying the long walk line decals on the wing went quite easy, as well as the application of the roundels. However, the roundels has been crushed a bit in the box and, even with the extra coat of Liquid Decal Film, one of them broke on the cracks caused by this.



Undercarriage

I have drilled a 0.5 mm hole in the top of the main landing gear leg and have glued a piece of 0.5 mm brass rod in it to ensure a sturdy connection with the wing, as the misplaced hole in the wheel bay does not serve any purpose in this respect. I kept the brass rod long for the time being; this makes also the paint job easier.



Another aspect of the undercarriage was not correct either. The width of the main undercarriage wheel bay is 3.5 mm, but the width of the main undercarriage with wheels is 5.8 mm, for the nose wheel these values are 3.2 mm and 4.6 mm. To correct this somewhat I have "thinned" the wheel from 2.1 to 1.7 mm and shortened the wheel axles a bit, which brought the width of the undercarriage to 4.8 mm. Still too wide, but thinning the wheel more would disturb the proportions too much. So it is also the landing gear leg that is too thick. The nose wheel I have left as is.



The pictures of the original aircraft show nose wheel doors that are far shorter than the length of the nose wheel by of the model. The doors of the front part of the wheel bay open only when the nose wheel is extending or retracting, on the ground they are closed. I have closed the forward part of the wheel bay with a piece of styrene.



I have painted the tires again and have glued the wheels to the undercarriage legs. The piece of brass at the top of the main landing gear legs has been shortened to 3 mm and the location of the hole in the wheel bay has been stamped with the brass wire dipped in black paint. I have made the holes with a 0.5 mm drill and have widened the hole for the nose wheel with a 1.3 mm drill.



I have glued the legs in the wheel bays end have put the model on its wheels. Only a minor correction of the wheel underside was necessary to fit it on a flat surface.

Wheel doors

Final assembly

Summary

Below some pictures of the finished model are shown.



References

1. W.C.J. Westerop, *Fokker en de twintigste eeuw: een historische relatie*, p. 56, ISBN 90-9011870-5, 1998
2. H.J. Hazewinkel, L. Kuipers, H-W van Overbeek, R. Soupart & P. Staal, *Een eeuw Fokker, Verhalen en anekdotes uit 100 jaar Fokker geschiedenis*, p. 124, ISBN 978-90-808868-0-3, 2011
3. J. Greuter, M. Schep, L. Boerman, J. Bossong, *Camouflage en Kentekens, Op vliegtuigen van de Nederlandse strijdkrachten*, ISBN 90 73304 57 1, Bonneville, Bergen, 1997
4. <https://www.ipms.nl/artikelen/nedmil-luchtvaart/vliegtuigen-f/vliegtuigen-f-fokker-60>
5. http://www.worldwide-military.com/Military%20Aircraft/Tactical%20Transport/fokker60_algemene_info_Nederlands.htm
6. <http://www.dutch-aviation.nl/index5/Military/index5-1%20F60.html>
7. Training Manual Fokker 60

Appendix Model modifications and corrections; pictures, drawings and other documentation of the Fokker 60

Modifications & corrections

M = modification, C = correction

Change	Location/part	Modification or correction
C01	Fuselage	Ridge on rear fuselage removed
C02	Undercarriage	Connection main landing gear leg to wheel bay
C03	Undercarriage	Width of main wheels
C04	Undercarriage	Nose wheel bay and door length
C05	Wing	Wing chord-fuselage joint correction
C06	Wing	Length of flare pod pylons



[Source: Ref.6]



[Source: Ref. 4]

Paint table

H = Humbrol, R = Revell, V = Valejo

Code	Colour	Where
H	Black	De-icing boots
H 125	Dark grey	Camouflage upper surfaces
H 127	Light grey	Top side wings, tail surfaces and fuselage
H 128	Grey	Underside wings, tail surfaces and fuselage
H	Tank grey	Wheel tires
V	Aluminium	Landing gear legs

Photographs and drawings

If no source is mentioned, the documents have been taken from the Internet.



[Source: Ref. 4]



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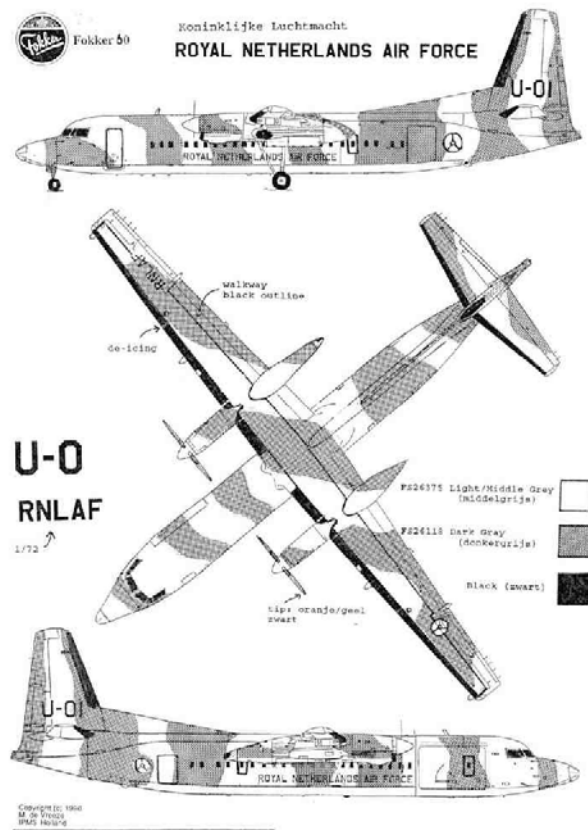
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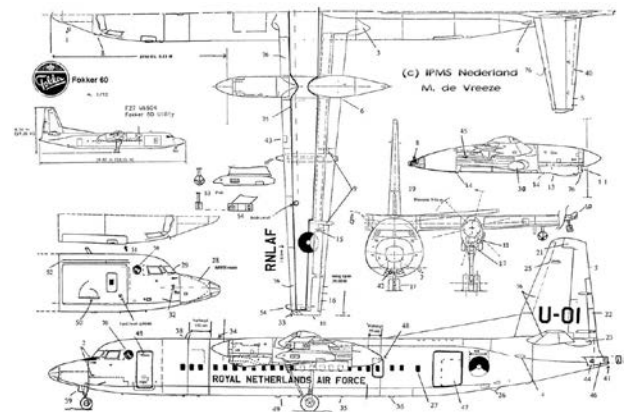
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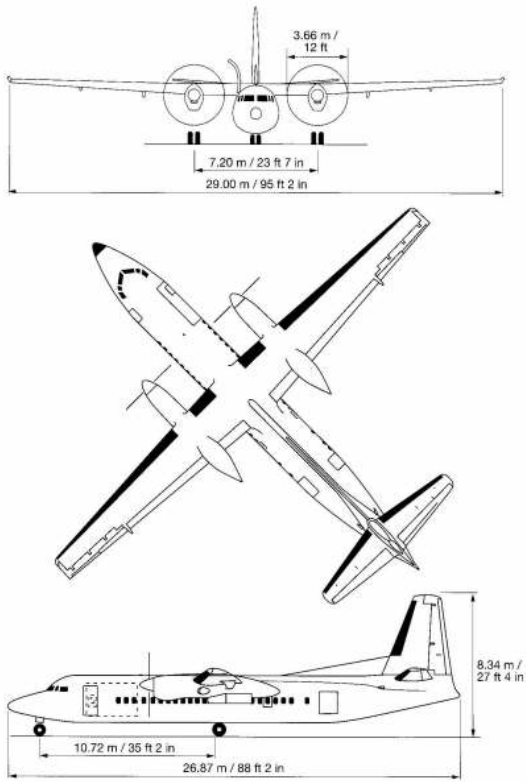
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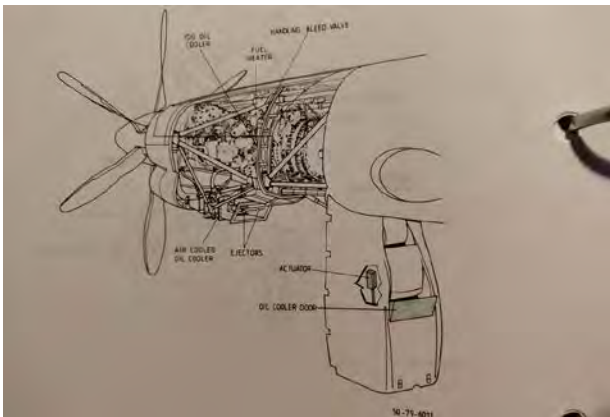
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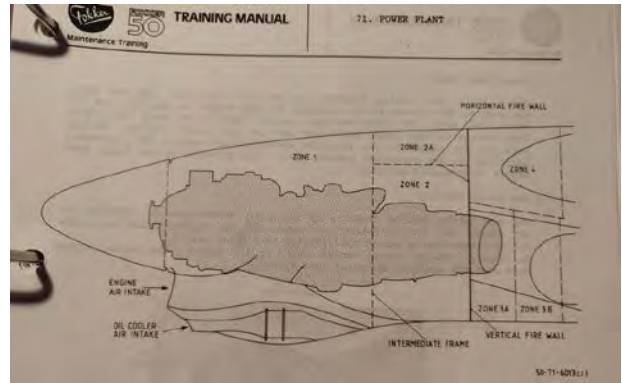
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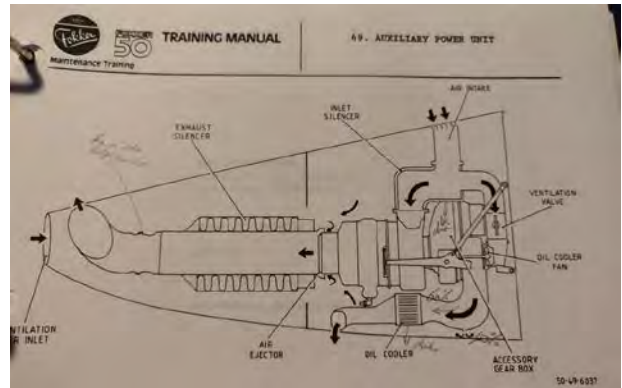
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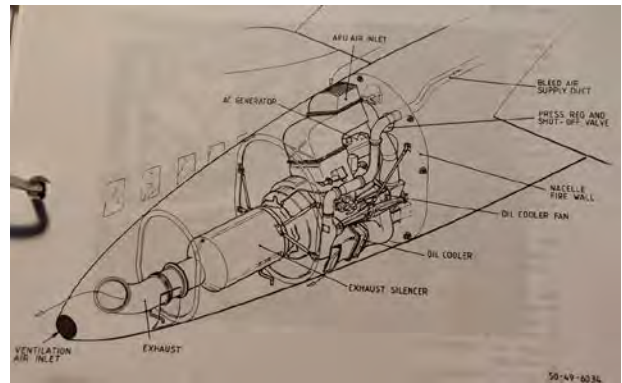
[Source: Ref.7.]



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¹ www.welshmodels.co.uk

² I have derived the dihedral from ref. 5.