



many other references can be found.

	<i>Ref.</i>	<i>1:144</i>	<i>model</i>
<i>Span</i>	29.00 m	201.4 mm	194.0 mm
<i>Length</i>	23.51-23.56 m	163.2-163.6 mm	168.3 mm
<i>Height</i>	8.50 m	59.0 mm	57.5 mm
<i>Engine</i>	Rolls-Royce Dart Da6 Mk.528-7; 2 x 1670 hp + 2 x 1.7 kN		
<i>Crew/passengers</i>	4/44		

The model is reasonably to scale.

## General

The resin parts are of good quality, but the white metal parts were slightly bent and the main undercarriage is quite simple and rather crude. The antennae and nose doors are not present in the kit; they will have to be built from scratch. I have decided to select the “difficult” option for the fuselage: to model real windows.

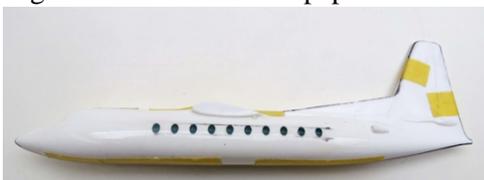
## Fuselage

I have started to remove the excess plastic from the fuselage halves and have drawn a black line with a marker around the outline. I have then sanded the plastic a way on a flat surface covered with sandpaper until the remaining edges fell away.



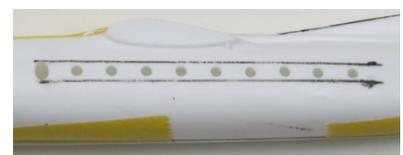
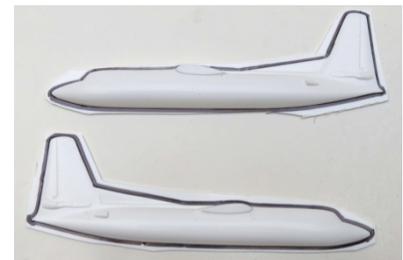
To mark the right position I have glued a copy of the decals with the window openings on both of the fuselage sides, taking care of aligning them well with the nose and the horizontal. I have then marked the position of each window with my dentist tool and drilled a 0.4 mm hole on the marks, which I have widened in steps 0.7, 1.0, 1.5 and 2 mm. The windows on the decal are 2.8 mm wide, but I have not made the holes bigger than 2 mm to keep some margin to correct for the window position, as not all holes were exactly in the center of the windows. I have also drawn a line on the fuselage marking the top and the bottom of the windows.

As can be seen on the picture, the holes are not exactly centered between the two lines, and also their spacing is not regular; a lesson learned here is that one should drill the holes on a drill stand, achieving a far better accuracy that way. To enlarge the holes to their final shape without reference will very likely be unsuccessful. So to guide this process I have applied a copy of the original decals on decal paper to both sides of the fuselage. This did not



work out well, as the decal copies are too flexible and can be starched easily during application, that way loosing their dimensions. So in the end I have used the original decal for the windows themselves as a guide, sealing them with a coat of varnish after application.

With different shapes and sizes of files I have enlarged the windows openings until they were touching the outer edge of the decal image. Final adjustment has been done after the decal had been removed. When all windows had been made, I have removed the layer of



varnish from the fuselage sides, as it would leave traces under the final coat of paint.

I have made a compartment for the lead balance mass, required to keep the nose wheel on the ground, with a 0.5 mm plastic bulkhead just before the first cabin windows and a "ceiling" above the nose wheel bay. I have also glued 0.25 mm strips to the edges of the fuselage halves to enforce the joints between them. I have filled the compartment in both halves with fishing lead, and fixed that with white glue.



I have painted the cabin walls light grey and the floor dark grey. This will be sufficient decoration for the interior. When the paint had dried I have glued both fuselage halves together, which fitted quite well.



After closing the fuselage I decided that it was worthwhile to open up the cockpit windows also. I have used the same procedure for that as for the cabin windows: put the original decal in place and remove the "windows" from the fuselage. When I had done that, I noticed that the decal (or the shape of the forward fuselage) was not correct. As can be seen on the picture at the right the upper and lower edge of the cockpit windows is horizontal and the



lower edge of the rear window is just above the dark blue band a bit above the top of the cabin windows. The decal on the model slopes downward and the lower edge is clearly too low. So even if I had decided not to open up the cockpit windows, correction would have been required.

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I have carefully cut the window opening with a fine toothed saw and adjusted the size with files and knife. Note that the lower edge of the rear window is slightly lower than that of the front windows. In the process I had to remove quite some



lead ballast, the punishment for changing ideas half way. Next I have glued small pieces of 0.25 x 0.45 plastic strip to form the new window frames, cut to fit and glued with plastic cement and secured with a drop of thin cyanoacrylate glue.



I have opened up the nose wheel bay by drilling 0.4 mm holes on the circumference of the opening I had drawn on the nose section and have connected the holes with a sharp knife and finished the opening neatly. The doors I have cut from 0.25 mm plastic.



I have painted the top half of the fuselage white until 3 mm below the lower edge of the cabin windows. The bottom half has been painted light grey, the same colour as the wings. I have also painted the de-icing boot on the fin, although a decal for this is present in the kit. I will paint the black nose radome only after application of the decals.



## Wing

After cleaning the resin parts for wing and tail surfaces, which were of quite good quality, I have started to paint the engine exhausts and the de-icing boots of the wings and tail surfaces black. I have deepened the air intakes on the engine nacelles with 0.3 and 0.4 mm drills.



I have painted the wings light grey (Humbrol 166) in a shade I remembered from the time I still worked at Fokker. The air intakes



of the engines around the propeller spinner have been painted black. I have also reinforced the joint between wings and fuselage with a brass rod of 1 mm diameter, as the connection between the vacuum formed fuselage and the resin wing seemed a bit weak to me.



In front view two defects could be observed: the wing profile in the fuselage was slightly larger than that of the wing and the outer part of the left wing was bent downwards. The latter I have corrected

by dipping the wing in almost boiling water (using 60 C water did not work), the former by carefully sanding down the wing center section. I could not remove all difference in wing profile, as after some sanding the plastic at the edge of the profile on the middle part of the fuselage became too thin, showing some dark spots.



The tail surfaces have been finished the same way as the wings, As they are not very heavy and no loads will be applied to the connection, it was not necessary to make special provisions for the joint to the fuselage.

### Undercarriage

I have considered the white metal undercarriage is too crude to fit the model and the dimensions are not correct in comparison to the side view and also relative to the Airfix 1:72 kit of the F.27. So I have decided to scratch build it. I have started with the wheels. They should be 1.4 mm thick (the white metal ones are 1.7 mm thick) and the overall width of the main landing gear should be 4.5 mm, while the white metal one is 5.5 mm wide. The wheel bays in the resin nacelles are a bit narrower even: 3.8 mm. So with a main landing gear leg of 1 mm diameter this leaves 2.8 mm for two wheels. So constructing the wheels from 1 and 0.25 mm plastic sheet will give them an acceptable proportion relative to the wheel bays. The wheel diameter scaled from the Airfix wheels is somewhere between 5 and 6 mm. The landing gear legs and struts I intend to construct from 0.9 and 0.75 mm plastic rod respectively.



I have started to punch a set of discs of 5 and 6 mm from the sheet material. In the center of a 1 mm disc of 5 and of 6 mm I have drilled a 0.4 mm hole, enlarged carefully to 0.65 mm, such that an axle of 0.6 mm would fit in it. Next I have glued a thin disc against it and, when dry, drilled a superficial hole of 3 mm (4 mm for the larger disc) in it to simulate the rim. I have then sanded the edge of the disc nicely round to form the tire. I have also tried to build the landing gear leg, scaling it from the Airfix model, but I was not satisfied with it.

To improve it I have scaled the side view from the instruction sheet to the length of the fuselage and used that as a template. I have built the landing gear legs over it from 0.9, 0.75 and 0.6 mm plastic rod and glued a small piece of 0.6 mm rod at the bottom, which will serve as axle for the wheels.

As the 6 mm diameter wheel fitted best the template, I have made three more wheels to complete the set. In the mean time I have also shaped the propellers by straightening the blades and filing the casting edges away.



### Final assembly

I have decided to finish the model as the Jan Moll, of which I found a nice picture on the Internet (Wikipedia).



The picture also showed the details of the antennae on top of the forward fuselage and under the belly. On another picture a close-up of the propellers could be seen. It also showed a third antenna under the forward fuselage.



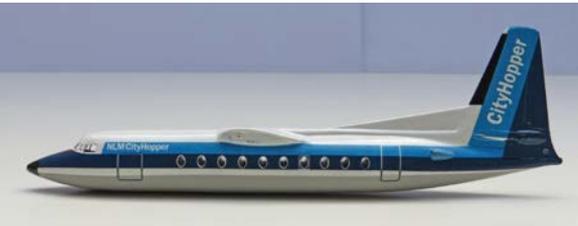
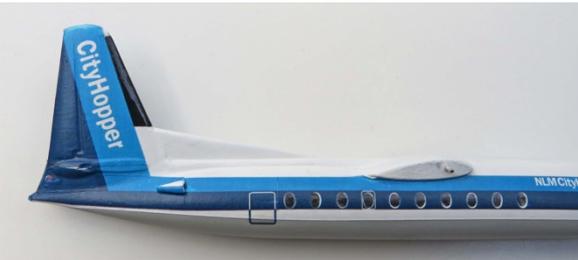
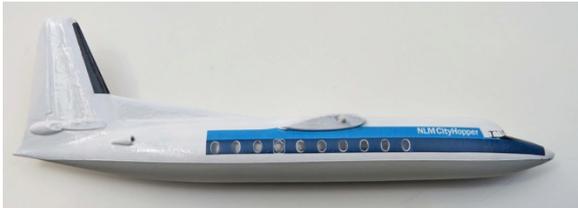
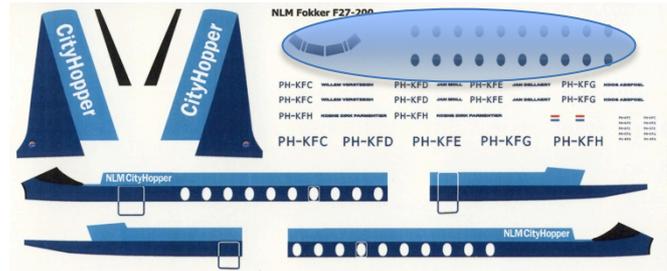
I have painted the propellers dull aluminium (Tamyia XF16) and the de-icing boots black and the square propeller tips yellow (Humbrol 69). I did not bother to tape them for the paint job, as only small surfaces had to be covered.

The antenna on the top I have cut from 0.25 mm plastic sheet, as well as the antenna under the forward fuselage (still missing in the picture). The ADF antennae have been made from 0.25 mm wire and pieces of 0.25 mm plastic strip. All antennae will be painted white. The wheel rims have been painted dull aluminium and when dry joined to the axles of the main landing gear legs, which have been shortened such that they just pop out of the wheel rim. Also the landing gear legs had to be shortened to obtain the correct proportion.



Next it was time to apply the decals to the fuselage. Note that the decals in the blue shaded ellipse have been used to mark the cockpit and cabin windows on the fuselage.

I have first started with the decals for the cabin windows, as they had to be well adjusted with the windows cut out in the fuselage. This went rather well; they left a narrow edge of white open around the



windows, helping to disguise the irregularities quite well. Also, the transparent decal film covers the window openings and provides a transparency at least comparable to that of Kristal Klear filled windows. So using the decal as window saves quite some work and decreases the risk of damaging the model while cutting it away in each window opening. I have cut away the excess decal running over the wing fairing to smooth the application.

However some defects showed up. First the light blue part of the decal does not run up to the cockpit windows. This could not be caused by too small windows, as I have used the cockpit window decal as template, so the decal is really too small. Also, the anti-glare panel is black, while on photographs of the Mk.200 CityHopper it is light blue.

Next I have applied the decal on the rear fuselage. The decal is quite transparent, so I had to be careful not to make them overlap; the joint is very visible then. Also, I had to make a cut in order to shape the decal around the air intake; this discontinuity is too large to accommodate even with generous application of Microscale Sol.

Finally I have applied the decal on the fin. There a lot of overlap was present, but in the light blue and the dark blue part of the decal, and in both instances very visible. I have cut the overlap away as much as possible. I had again to make a cut at the bulge behind the elevator to smooth the decal there. I still have treated this decal with Sol to make it adhere better to the engraving of the model.

So "repair" was needed, and I have mixed some paint in the light blue shade (Humbrol 48 with a drop of white). Humbrol 15 reasonably matches the dark blue. I have also removed the excess black anti-glare decal under the cockpit windows, leaving a white cockpit. Finally I have applied the remaining decals to the fuselage and also the one on the nose wheel

doors and under the left wing. From a piece of the overlapping light blue decal on the tail I have decreased the space between the rear cockpit window and the light blue band.

I have glued the horizontal tail plane with a slight dihedral. Under the tail plane I still had to retouch the light blue of the fuselage, as the decal did not cover the white fuselage finish completely.



The wings have been glued to the fuselage, taking care that they had a slight dihedral. When this had well dried, I have cut the main landing gear legs to the right height and glued them in position. An intermediate check showed that the wing of the model was nicely horizontal, so the nose wheel has been mounted, ensuring the fuselage was horizontal.



Next I have mounted the landing gear doors, gluing them sparingly with cyanoacrylate. When this had been done the ADF antennae could be glued in place. The pictures show that the forward support should be positioned under the third cabin window.



Finally the last parts have been glued in place, all with thick cyanoacrylate glue: the propellers, the antenna on the cockpit roof and the antenna under the fuselage just behind the big door. I have also mounted a pitot tube at each wing tip, made from a length of 0.25 mm metal wire and glued in a 0.3 mm hole. I have made the cockpit windows with Microscale Kristal Klear, cleaning the excess Kristal Klear immediately after applying it with a cotton swap and water. This worked out well. The last thing to do was to accentuate the control surfaces with a soft pencil.



I had first finished the model with a coat of Vallejo satin varnish, but that showed up quite dull, so in the end I gave the whole model still a coat with Humbrol satin varnish.

### Summary

A nice model to build, but the incorrect decals require quite some work to arrive at an acceptable result. It would be better to paint the light and dark blue areas and devise a decal set for the white lettering, the registration numbers, the Dutch flag and the doors and windows. That way the bulge at the tail and the air intakes are covered easier. Also, the main landing gear needs correction; the white metal one is too crude and not accurate at all. Also this could better be provided as separate wheels, a drawing of the landing gear leg on scale and some strip material to construct it. A scale drawing for the nose wheel doors would also be welcome. The experiment with the cut out windows turned out quite well.

Below some pictures of the finished model are shown.









## References

1. H. Hooftman, *Alles over de Fokker Friendship, Fokker Verkeersvliegtuigen van F.1 tot F.28*, p. 91, 102-103, L.J. Veen's Uitgeversmij N.V., Amsterdam, 1963
2. R. de Leeuw, *Fokker Verkeersvliegtuigen, Van de F.1 uit 1918 tot de Fokker 100 van nu*, pp. 146-157, 193-195, ISBN 90 269 4074 2, 1989

## Appendix Documentation of the Fokker F.27 Mk.200 Friendship

### Modifications & corrections

M = modification, C = correction

Change	Location/part	Modification or correction
M01	Cabin	Windows
M02	Cockpit	Windows
C01	Fuselage	Nose wheel bay
C02	Fuselage	Profile wing center section
M03	Undercarriage	New main wheels and main landing gear legs
C03	Undercarriage	Nose wheel landing gear doors
M04	Tail	De-icing boot fin
M05	Wing	Pin-hole connection
M06	Engine na-	Air intakes opened up

Change	Location/part	Modification or correction
	celles	
M07	Fuselage	ADF antennae
M08	Fuselage	Antenna on forward fuselage
M09	Fuselage	Antenna under forward fuselage
C04	Fin	Removal of decal overlap
C05	Fuselage	Repair of decals over air intakes
C06	Fuselage	Matching of decal to cockpit windows
C07	Fuselage	Repair of decals over elevator bulge

### Photographs

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