

Pander S.4 Postjager Execuform¹ vacuum/resin kit

Monoplane mail plane prototype

Scale 1:72

The Pander S.4 was a specific development for a fast mail plane to serve on the Holland – Dutch East Indies line in competition with the mail services traditionally performed by the KLM Royal Dutch Airlines with their normal airliners. The aircraft had its maiden flight in October 1933 and made a first trial run to the later Indonesia in December of that year, in which it covered a distance of 28000 km in less than 100 hours flying time with an average ground speed of 291 km/hr. Its performance was exceptional for the time, even such that for a while a derivative was considered to function as a fast bomber and reconnaissance aircraft. The intention was to start a trial period with the Dutch Army Air Department (LVA) after the Melbourne air race of ... The life of the prototype ended tragically in an accident during the that race, where it was complete destroyed. The project was not revived afterwards.



The kit of Execuform (Mike Herrill, USA) comes in a plastic zipper bag and contains the vacuum formed plastic parts, resin parts separately packed, a small sheet of transparent plastic for the windows and a copy of a French magazine article², which is apparently the basis of the kit, and serves as instruction sheet.



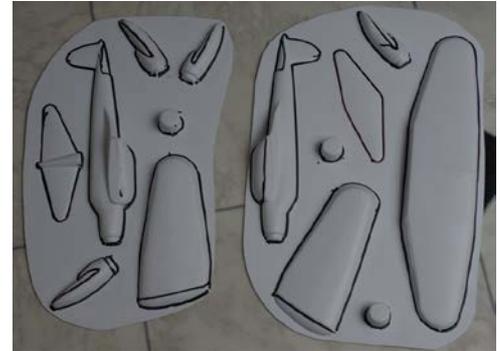
The contents of the kit is very limited: Fuselage, wing, tail planes, engine nacelles in vacuum technique, the main undercarriage wheels in resin and a small clear plastic sheet for the windows. So quite some parts still have to be found or scratch-made to complete the model (undercarriage, engines with the strangely formed exhausts, propellers and various other small parts).

Wesselink (ref. 1), Hazewinkel (ref 2) and Hooftman (ref. 3) give the dimensions of the Pander Postjager, while Hazewinkel and Hooftman also show a three-view drawing of the aircraft. The NVM (Dutch Association of Model Builders) has published a 1:25 scale drawing for a flying aircraft, which contains many useful details. Relevant parts of these drawings have been collected at the end of this report. As shown in the table below, the model is rather well to scale; only the height is deviating, but that probably is caused by the scratch-built undercarriage.

	<i>Ref.</i>	<i>1:72</i>	<i>model</i>
<i>Span</i>	16.60 m	230.6 mm	231.0 mm
<i>Length</i>	12.50 m	173.6 mm	176.0 mm
<i>Height</i>	2.90 m	40.3 mm	45.8 mm
<i>Engine</i>	3 Wright Whirlwind R-975-E-2 of 420 hp		
<i>Crew</i>	3		

General

I have lined the vacuum formed plastic sheet with a black marker. The shapes are rather complex, not as simple as those of other vac form kits I have built (see for example [www.hollandaircraft.nl/F42b Fokker FVIIa1m.pdf](http://www.hollandaircraft.nl/F42b_Fokker_FVIIa1m.pdf)). This is mainly caused by the many curved bonding interfaces. It will require a lot of sanding. Unfortunately not all shapes may be finished by sanding on a flat sanding plank; it will require a lot of “free form” work. This also implies that all parts have to be removed from the sheet, cleaned and dry fitted, before real construction can start.

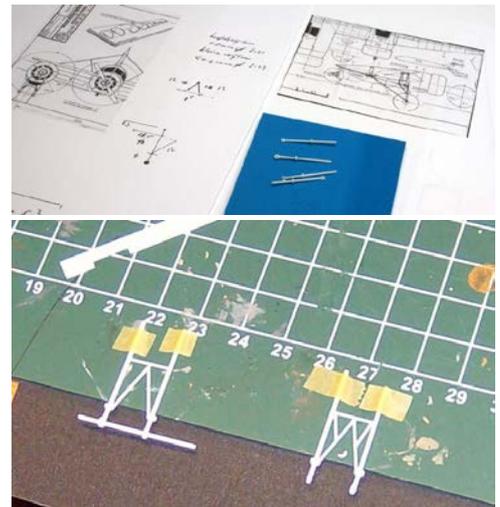


Main undercarriage

The dimensions for the undercarriage have been taken from the NVM drawing and the main undercarriage has been built up from Evergreen profile (diameter 0.6 en 1.0 mm, tube of 2.4 x 1.0 mm). The photograph shows there are no landing gear doors, which simplifies matters quite a bit.



There is still a small horizontal piece between the “Y-struts” missing. Next I have made the main wheels. The resin wheels in the kit are far too big, both in diameter and in thickness. The thickness has been corrected by sanding the four halves down to 3.5 mm. I have glued the halves carefully together and drilled 0.7 mm hole for the axle.



The diameter of the wheels must be 13.5 mm according to the drawing, but those in the kit are 16 mm. To solve this I have enlarged the hole for the axle to 1.5 mm in order to fit half a quick link in it and used that to clamp it in my Praxon drill. Putting the drill horizontally in stand, it can be used as an improvised lathe and it was rather easy to decrease the diameter and shape the wheels correctly by means of a small plank cov-

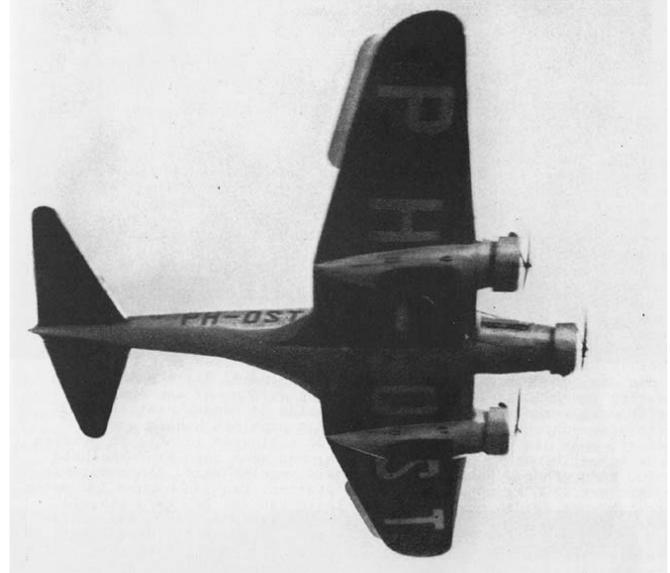


ered with sandpaper.

I have reduced the enlarged hole for the axle with a thin slice of tube and quite an acceptable main landing gear results. Finally I have provided the tyres with a bulging effect at one side, and have sanded then flat at that location to obtain the characteristic balloon tyre outlook.

Tail wheel

The references do not agree whether the tail wheel is retractable or not and photographs of the airplane in flight are scarce. I have managed to find two pictures in Hooftman (ref. 3), the first one showing the Postjager with a fixed tail wheel, as the author also states in the text, and the second one with a retracted tail wheel, that even seems covered by a door. Two pictures in Hazewinkel (ref. 2) show the aircraft on the ground. The first one, taken at the arrival of the airplane in the Netherlands after its record flight to the Dutch East Indies, clearly shows a tail wheel that is braced by two struts, and must be fixed. The second one, showing the Postjager before the Melbourne race, seems to indicate a retractable version.



I have used the tail wheel of a Fokker G.I A from my scrap box.

Engines

As engines for the Postjager I have used the Khee-Kha Wright J-6-9 Trimotor Shipset, which includes the required characteristic ex-



hausts. The set is about as expensive as the aircraft kit. The engine cowlings in the kit have too small a diameter. The inner diameter is 13.9 mm and the outer diameter 15.8 mm, while the 1:72 scaled drawing of the NVM (obtained thanks to Rob de Bie) shows an outer diameter of 16.8 mm and the 1:72 scaled drawing from Hazewinkel's book (source "Het Vliegveld") 15.8 mm; the Khee Kha engines have a diameter of 16.5 mm. The real diameter of the engines was 45 inch, which corresponds to 15.8 mm. Taking a "fit" of the cowling of 1 inch around the engine leads to a scaled outer diameter of 16.6 mm. So the cowlings in the kit are quite a bit too small, and the Khee Kha engines are too big, and their diameter will have to be adjusted in any case. This is no problem, be-



cause the cylinders are hardly visible on the original, as can be seen on the picture at the left.

I have tried two solutions for the cowling: enlarging the inner diameter of the cowling in the kit with several sanding and milling devices in the Praxon machine, and building a new cowling from scrap. I have built up the cowling from two overlapping layers of 0.28 x 5.0 mm Evergreen strip, and reinforced the front side with a strip of 0.75 x 1.0 mm.

The outer diameter has been sanded down to 16.7 mm and the front side rounded. I have reinforced the rather weak structure prior to sanding with a layer of thick cyano glue. The pictures show the raw materials, the final result and the enlarged cowling from the kit (left



the cowling as it sits in the plastic sheet of the kit, in the centre the enlarged version and at the right the new cowling. Cutting the original cowling was rather difficult; I finally managed to do that with the small circular saw. I have drilled the hole for the engine exhaust with a 2 mm drill bit. The cylinder heads of the Khee-Kha engine have been sanded down to a diameter of 15.3 mm, which just passes in the new cowling. Even then it does not pass at all in the “enlarged” original cowling, so I have definitely rejected using that option.



The new cowling with the engine fitted gives an acceptable result, but comparing it to the picture of the real thing shows that the frontal opening is still too large (in fact, the engine itself hardly show, only the characteristic exhaust is visible), and that the rounding is not large enough. I have solved that by gluing a second 0.75 x 1.0 mm strip in the cowling on top of the first one. The pictures below show the result, dry-fitted to the fuselage nose.

When finally mounting the engines, one must pay attention to the position of the exhaust (it should not point straight down) and place the engine really straight in the cowling.



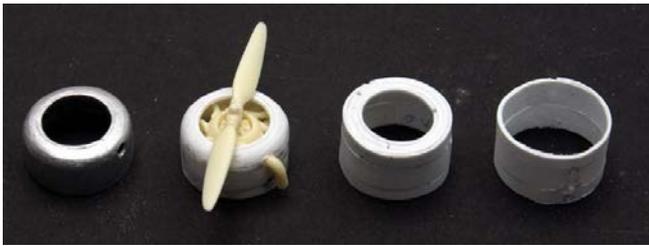
For the “series production” of the other cowlings I will use a simple jig

	length	outer diameter	inner diameter	rounding
Drawing ref. 2	9.0	15.8	10.0	2.0
Drawing ref. 6	8.4	16.7	11.5	2.6
Picture ref. 3		(102)	(71)	
	--	(16.25)	11.3	--
average	8.7	16.25	10.93	2.3
prototype	8.2	16.6	11.9	2.0
series	10.0	16.6	11.8	

made of a piece of MDF with a 17 mm hole drilled in it. The picture shows a dry fit of the cowling strips in the jig. The gap between the ends of the outer strip is very well comparable to the one, which was present on the free-form prototype. I have pre-formed the strips in a hot water bath, which curves them sufficiently to make a good joint between the ends of each strip. The strips have been glued with plastic glue in the jig to prevent sticking to it, and the strip ends have been fixed more firmly with a tiny drop of cyano.

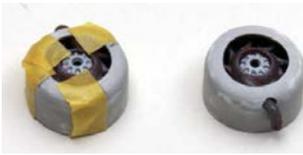


However, measurements from the two accurate drawings and from a frontal picture show that the inner diameter of the cowling should be smaller than the one of the prototype cowling, and that the rounding should be a bit larger. I have repaired that by gluing an addi-



tional strip of 0.5 x 0.75 mm on top of the other two.

The pictures show from left to right the prototype cowling, the new cowling with engine, exhaust and propeller fitted, the cowling with the three strips inserted and the cowling cylinder, as it comes out of the jig. It is a rather long way to arrive at a satisfactory result.

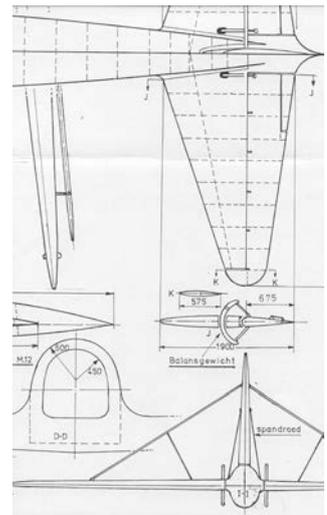


As can be seen on the photograph, the cowlings are built up from four parts. I have marked the panel lines relatively to the position of the exhaust pipe with pencil, and attached bits of tape as a guide for the free hand engraving, as it is all too small to use rulers or other tools. I have placed the engine and exhaust during the engraving in the cowling to provide some stiffness. The cowlings have been painted aluminium to judge the effect of the engraving.

Tail surfaces



I have copied from the NVM drawing the elevator and trim surfaces and the 2 mm holes for the rather particular static balancing construction. The horizontal tail has a span slightly larger than on the drawing, but that is



easily corrected by sanding.

Wing, fuselage and tail fitting

The two fuselage halves have been removed from the flat sheet by sanding. The bits indicated by the black lines still have to be removed; this will not be possible on a flat plate, so it promises to be an interesting job. It also means that any further work must wait until all pieces have been removed and dry fitted to ensure that the curved interfaces fit well.



I have sanded the two upper wing surfaces and the one lower wing surface mainly by hand, as the wing halves are not in one plane, so it cannot be done on a flat sanding plank. It takes some trial and error, but the result is acceptable.

The horizontal tail plane needs to be fitted in the fuselage. In fact this looks more like wood carving, except it is done in plastic. First the excess plastic has been cut away as close as possible to the black lines, than the fuselage is worked with sand paper and files until the tail fits well.



In the mean time I have engraved the elevator in the tail lane. With the tail attached with tape the model starts to look like an airplane. The plastic still must be removed from the underside of the fuselage to fit the wing in it. I have done that the same way as I have done to fit the tail.



In fitting wing and fuselage together it appears that quite some material still has to be removed from wing as well as from the fuselage to obtain a decent fit. The whole construction is rather flexible,



so I think I will construct wing spars to provide some rigidity.

That is anyhow not a bad idea, as they are, together with the main fuselage truss, an integral part of the (very narrow) interior of the Postjager, as can be seen in the drawing from Hooftman (ref. 3) at the right.

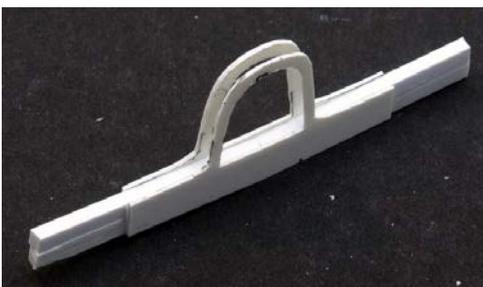
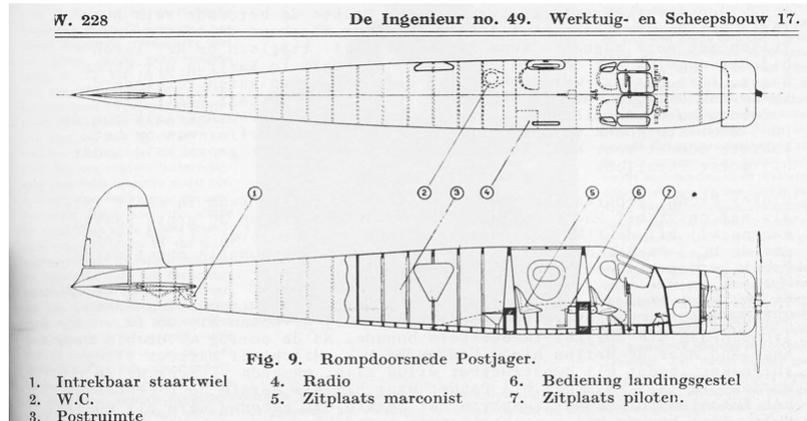
I will leave the doors open so part of the interior will be visible.

I have marked the limit of the mid wing with a fine-liner (the "joints" were faintly visible on the moulding) to join the wing halves together.

The wing leading and trailing edge have been sanded carefully, and the trailing edge has been thinned out a bit. I have also indicated the location of the front and rear wing spar, as well in the fuselage as in the wing, as measured from the NVM drawing, and I have also measured the height between the upper and lower surface of the wing on the location of the front spar (6 mm). That is 1 mm less than the scaled height of the spar on the drawing, so that fit reasonably.

Next I have made the lower part of the spar from 2.0 x 3.2 mm profile in the correct V-shape. The main fuselage trusses I have made from 0.5 mm plastic sheet material, shaped after the scaled copy from the NVM drawing, even if it is slightly larger than the fuselage cross section (18.0 mm width and 15.8 mm respectively), after which the truss can be cut out. The height of the spar has been increased with a piece of scrap 2.0 x 3.2 mm profile. The series of pictures shows the assembly process.

Trial and error fitting in the wing until the correct size has been achieved without introducing undue stresses in the wing. Then dou-



bling the truss, gluing the top together, and lining the inside with 0.25 mm plastic. After cleaning is up a last fit in wing and fuselage.





The markings on the wing indicate also the place where the engine nacelles will be located. In the mean time I have also glued some narrow strips of 0.25 mm plastic on one of the fuselage halves to make is easier to join the two fuselage halves together. I have produced the rear spar and fuselage truss in the same way.



The interior of the original aircraft is smoothly finished up till the second main truss, so I have only to produce simulated stringers and trusses for the rear part where mail and luggage were stored.

Windows and doors

Now the two doors can be made in the fuselage. I have again used a copy of the scaled drawing, glued in the correct location on the fuselage. The light curvature of the surface will not make a big difference for the size. Doors is may be too big a word, as the cabin height of the Postjager did not allow a person to stand up right.

I have marked the circumference of the doors with small holes drilled with a 0.4 mm drill bit, and have cut out the openings with a scalpel. The doors themselves I will produce from 0.5 mm plastic sheet. The technique worked well, and I will apply it also to cut out the cockpit windows. As can be seen on the picture, I have engraved also the rudder and the flaps in the wing (not the elevators; these are of the “park-bench” type).

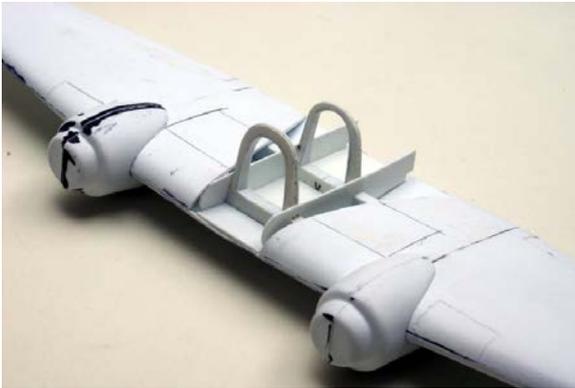


I have also cut out the four halves for the two nacelles. This is a tedious manual job, which requires continuous fitting on the wings. I had to position the nacelles a bit more inboard to prevent that they would overlap the flaps.



The nacelles do not join the wing trailing edge, and they are also rather more rounded, contrary to the picture of the underside of the Postjager in ref. 3 (reproduced in this report on page 3). This will be corrected with putty.

Next I have tackled the cockpit windows. The shape I have again copied from the NVM drawing scaled to 1:72. As the come from the top view, the length of the windows is too short, and the side windows are also too narrow. I will correct this while carefully comparing the model with drawings and photographs. Main challenge will be to leave the window styles undamaged, so I need to produce only flat windows.



As one can look from the fuselage directly in the wing (almost unavoidable with a vac form kit), I have made small walls along the lower side of the main trusses from 0.5 mm plastic. The top side of the walls has been tapered to better fit the fuselage sides. I noticed also now, that the outer width of the



fuselage is 1.5 mm narrower than on the NVM drawing, which will probably make it difficult to fit "standard" size seats in the fuselage. I have also mounted floors in the space for the radio technician and the freight compartment.

A dry fit of fuselage with the wing shows already the characteristic appearance of the Pander Postjager. The outline of the fuel tanks in the outer wing leading edge has already been engraved, and the tank in the inner wing between the spars has been drawn in pencil. These tanks were made of electron, a magnesium alloy and their upper side was part of the wing profile. A difference in colour is clearly visible on photographs.

As I am going to mount the two doors in open position, I must provide the openings with a recess, on which the door rests in closed position.

I have glued a number of 0.25 mm thick strips over the openings at the inside of the fuselage, as I had no sheet material of that thickness.

When the glue had dried well, I have carefully cut and filed the excess material away, until half a millimeter of recess was left.



Now and then a piece of plastic was not well glued, but that can be repaired fast with a small drop of cyano glue. The excess pieces of strips at the inside of the fuselage I have cut away as much as possible, and the remainder has been sanded flush with the wall. As such no problem, because this side of the fuselage inside will not be visible anymore, when the fuselage has been closed.

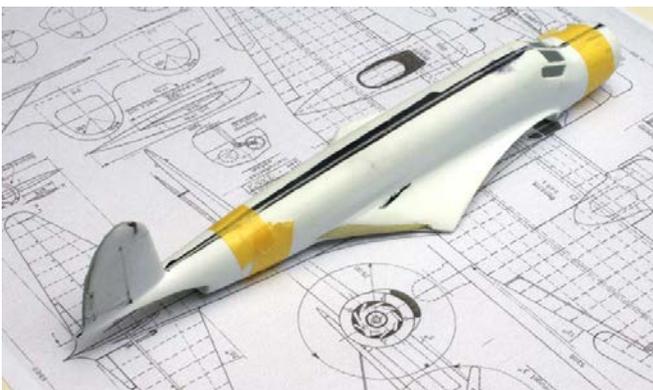


Fuselage to wing fairings

There is an essential problem with the shape of the fairings between fuselage and wings. They are curved upwards at the trailing edge and the trailing edge is straight, while the original's trailing edge is curved and follows rather the curvature of the top of the fuselage or is at most horizontal. This is illustrated quite well in the pictures at the right. Also, the fairing was about 5 mm longer than indicated in the drawings. So this will have to be corrected. I have filled first the fairings from the inside with Miliput putty.



When that was dry I have applied file and coarse sand paper until the correct shaped was achieved, removing first the upward curvature and then creating the curved trailing edge as shown on the NVM drawing. During the sanding the putty detached from the plastic, but that was easily repaired with some drops of thin cyano glue. The surface was polished with fine grade waterproof sand paper. I have checked the correct curvature by placing the fuselage on top of the 1:72 scaled NVM drawing. The result is quite acceptable.



Main wheel bays



on the nacelle, drilling 0.4 mm holes on the circumference and opening it up with a knife. To relieve the pressure on the two wheel bay halves while cutting the plastic I have drilled some 2 mm holes in the nacelle. Fitting the landing gear showed that the NVM drawing is not correct; the opening needs to be quite a lot wider to accommo-

Also for the main wheel bays I have used the technique of gluing a copy of the bottom view in scaled NVM drawing



date it (11.5 mm in the front view against 8 mm in the bottom view). To attach the landing gear in the nacelle I have drilled 1.2 holes on the corners of the wheel bay to accommodate the 1.1 mm landing gear legs.

Cockpit and cabin interior

In the right fuselage half a small window has to be made. I have used the same technique as for the door and the other windows, and have made the window frame by means of a scribing jig. The window itself will be made with Humbrol Clearfix after the paint job.

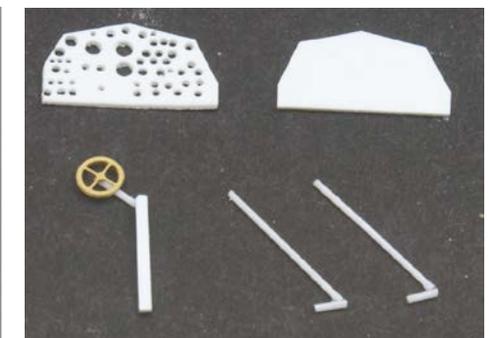
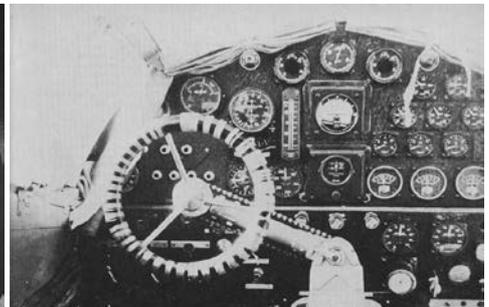
I have made some frames in the rear (mail) cabin from 0.3 x 0.5 mm strip, as far as they may be visible when the fuselage is closed. From a piece of 0.5 mm plastic I have cut the piece of cockpit floor situated before the wing.

The cockpit is far too narrow to fit the two chairs that I had found in my scrap box side by side in it; so two pilot chairs will have to be scratch-made. The two doors are made from 0.5 mm plastic sheet, bent in shape to fit the fuselage. Best help for the interior is the drawing in ref. 3, copied from *De Ingenieur* (reproduced on page 6 of this report), but also sheet 2 of the NVM drawing (reproduced at the end of the report) helps here.



The crank and drive rods for the main undercarriage retraction mechanism have been made from left over bits of plastic and I found in the scrap box an oil cooler of roughly the correct size and appearance. The picture also shows the cockpit windows, fitted very much trial-and-error in the openings cut in the fuselage. From the chairs I can only use the large one for the radio operator. I had to shorten the main undercarriage legs until just above the first horizontal strut, because the top length of the landing gear legs interfered with the forward wing spar, so I could not give the undercarriage the required forward position indicated on the drawings. This is confirmed by the drawing because the landing gear rotates about an axis at the bottom of the front spar.

I have found two only pictures of the instrument panel, both in Hooftman's book. The left one must be of a mock-up or taken early in the building phase of the aircraft, because it apparently is a "section" of the front fuselage and has less instruments on it. The right one shows a layout that corresponds well to that given in the NVM drawing. I had to scale this drawing down from 17 mm width to 15 mm, as the fuselage of the model is really too narrow. I have glued a copy of the drawing on a piece of 0.5 mm plastic sheet, and used almost the full assortment of drills from 0.4 to 1.2 mm to create the dials. The control column has been made from scrap plastic and an unused aileron steering wheel of my Fokker Spin model. Also I have made two main landing gear brake mechanism rods that were still missing from 0.4 mm plastic rod. The instrument panel will be painted dark grey, the control column aluminium and the steering wheel wood colour. I will not bother to reproduce the white (leather?) windings on it.





Another item to be produced is the radio rack. The NVM drawing gives some details, but is not very clear. On Internet I have found a photograph of the same type radio (NSF VR5), but then mounted in the Fokker F.XVII Pelikaan, against which the Postjager was competing for the mail service race to the Dutch East Indies. The rack in the Pander was mounted much lower, however, almost on the cabin floor.



The last items for the interior are the rudder pedals, the custom made pilot seats and the toilet located in the mail cabin. Also the two doors still need to be detailed with handles.

Clockwise on the picture starting at 12 o'clock: the chair for the radio operator, the two pilot seats produced from 0.5 mm plastic, the two doors with handles, the rudder panels and the radio rack in the middle. The toilet is missing on the picture, but I have produced that from a piece of wood with a cover from thin plasticard. The picture below shows the small parts after painting.



I have finished the instrument panel, which is only 15 mm wide, by painting the base part black and "scratch-ing" the dials in it and gluing both parts together with Clearfix. Then the lower two rows of instruments has been cut off and glued to the upper part under a



small angle. When fitting it in the fuselage it appeared still to be 1 mm too wide; the fuselage would not close around it. When floor and instrument panel fit well, they can be glued in place.



Next thing is to place everything in the mid-wing compartment. There certainly is not much room. I had to remove the third



leg from the pilot seats, as their position prevented to join fuselage and wing together. Also, the seat of the radio operator sits too much in the middle, but it cannot be moved more to the radio rack, which stand flush to the cabin wall. The two millimeter extra fuselage width are dearly missed. As usual the seat belts are made from painted Tamyia tape, cut to less than a millimeter width.



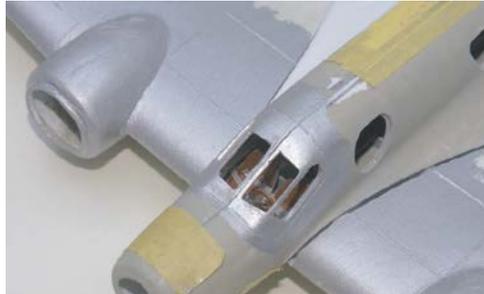
The pictures also illustrate that it is difficult to construct identical items from scratch; the two pilot seats have equal height and equal depth, but they still are different owing to a small difference in the angle between backrest and seat. I have mounted



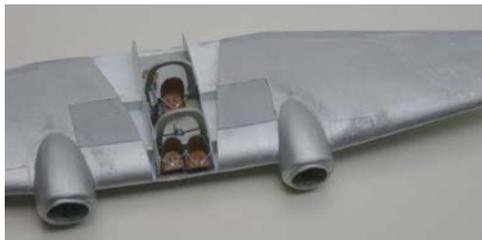
them such that the backs of the seats are on equal height, because they will be visible when the fuselage is closed.

The toilet is a bit crude; it could have been proportioned a better.

Fitting the other fuselage half shows also how little will of the interior will be visible after the fuselage has been closed, even with the doors open. So it serves well to have some pictures to witness the work done.



I have closed the fuselage and glued the cockpit windows in place with white glue, after adjusting their size for the last tenth of millimeters. White glue, however, appeared to be too brittle when dry, so I have replaced it with Clearfix because the windows fell out a couple of times, when they came under tension.



I have given the wing a first coat of silver paint (Humbrol 11) and have painted the Electron covers of the wing tanks aluminium (Humbrol 51), which is a bit more grey, approaching the colour of the material on pictures on Internet³. The silver paint shows any irregularity so it is a good guide where some sanding or putty is still required. The nacelles for example needed another pass of sanding and putty.



Then the job of fitting and adjusting fuselage and wing started. In fact, it did not take long to get it all right. The main problem was that the forward main fuselage frame was a bit too large, and that the gluing strips at the location of the wing trailing edge hampered a good fitting. Some sanding and cutting away the strip solved the problem.



The gaps between fuselage and wing were not large, in fact not larger than I have met sometimes in resin kits. Wing, fuselage and tail have been glued with plastic cement, reinforced at critical locations with a drop of thick cyano glue. The lower side of the fuselage will need quite some correction; the surface is not flat at all. Although I did spend quite some effort in adjusting the fitting of the tail, it was not purely horizontal, so the resulting gap needs to be cor-



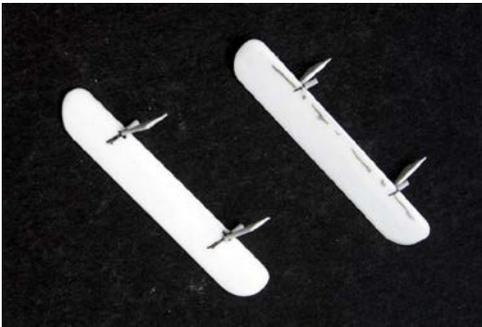
rected with putty also.

The small parts

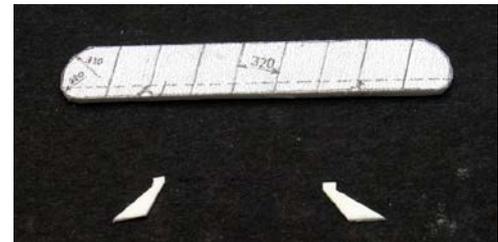
I have painted the engine cylinders black with a dry brush of dark grey and the carter dark grey with an aluminium dry brush. The exhausts are rust brown with a gun meal dry brush. The picture also shows the main gear with the “compressed” balloon tyres, made by sanding a bit off the tyre and beefing it up at that location with putty (that explains why they stand nicely up right), the cowlings with panel engravings and the prop, painted aluminium. The tail wheel has been taken from the scrap box (comes from a Fokker G.I kit I think). These parts can be set aside until the final assembly, although I will use them to determine the correct outlook of the cowlings on nose and nacelles and to construct the undercarriage brackets in the nacelles.



I have made the “park bench” ailerons from 1 mm thick plastic sheet, gluing a copy of the drawing on it, cutting it out and sanded in a streamlined shape. The pylons I have made from 0.5 mm (for the outboard ones) and 1.0 mm (for the inboard ones) plastic sheet. The balance weights at the leading edge of the ailerons have



been made of small lengths of 0.7 mm diameter rod. There is no actuation rod required; the ailerons were actuated internally inside the inboard pylon. When dry, the ailerons have been painted silver. They needed however still some putty and polishing to remove the sanding traces.



Painting; first attempt

As it is always difficult to obtain a metallic coat without stripes when painting with a brush, I have decided to spray the metallic coat on. On advice of my local hobby shop I have selected a can of Humbrol Acrylic Chrome Silver 191, as that paint would be best compatible with the “primer” layer of Humbrol enamel that I had applied earlier. Also, it was according to them the best (polished) surface to apply decals on. The result was a very smooth, but also very shiny surface, that brought out again some irregularities. So I have sanded the model again after the first coat (which I ruined anyhow on some places), and applied a second coat, also to repair some badly covered spots, especially next to the nacelles.



After the second coat there was still a bad spot at the underside of the mid wing. Probably I have sprayed too much paint on that spot. I will leave that spot, and only try to repair it locally, as it will be covered with the large orange decal on the underside of the wing; that decal is the only way to get silver lettering on an orange back ground with home produced, inkjet decals. I have also sprayed the cabin doors and the ailerons.



The paint needed quite a while to dry; even after 12 hours it still was a bit sticky, when pressure was exerted on it. This may also be caused by too thick a layer of paint.

The final result is acceptable, no leakage to other places occurred. I do not really appreciate spraying from a can; I feel I do not have sufficient control on the job. And I would have preferred a less “glossy” surface. The picture clearly shows the difference between the brush painted silver (Humbrol 11) around the cockpit windows, the aluminium painted (Humbrol 51) tank covers and the body paint. I probably will give all “Electron” surfaces a coat of Humbrol 191 enamel paint (with a brush), to start with the frame of the cockpit windows and the wing fuel tank covers. If the result is acceptable, that is less contrast between the sprayed and the brush-painted surface, I may also give the cowlings a layer of 191.



As an illustration of the colour of Electron a picture of the Convair B-36 I found on the Internet (Wikipedia), of which the fuselage consists mainly of that very light magnesium alloy (specific mass 1800 kg/m³ compared to 2700 kg/m³ for aluminium).



When painting the electron tank tops a second time, the Tamyia tape left traces on the sprayed surface that could not be removed. Gently rubbing them with a cotton stick wetted with gasoline even removed the complete acrylic silver coat. So I have cleaned the whole model, and repainted it with a brush and Humbrol 199.

Painting; second attempt

I have repainted the top of the tanks with Humbrol 11 and have engraved prior to painting panel lines for the wing leading and trailing edge, the nacelles and under the nose. I think



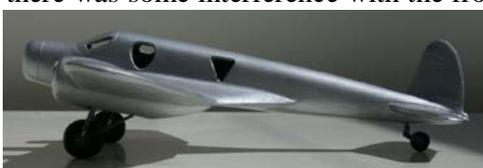
the colour and brilliance of the model correspond now better with the silver doped linen, with



which the wooden construction of the original had been finished. Also, some small hatches have been created by cutting a mask from tape.

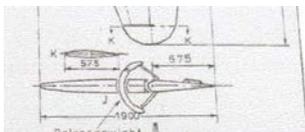
Final assembly

When the paint had dried I have assembled the undercarriage. This is a bit difficult, as the undercarriage is angled slightly forward, and there was some interference with the front wing spar I had mounted. It also must be mounted purely vertical, while the wing has a small dihedral. The brake mecha-



nism is well visible.

The side view shows that the tail wheel is oversized; I will replace it by a smaller one from the scrap box. The front view shows that the right nacelle is more flattened than the left one. This is something difficult to prevent with vac form kits, even after many checks beforehand, as the parts get only stiffness when glued together (in this case nacelle and wing), and then it is too late to change it. But this defect will be hardly visible once the perfectly round cowlings on engines have been mounted.



I have made the balance weights of the elevator from 0.8 mm soft metal wire (I could not finish the ones I had cut from 0.5 mm plasticard nicely). I have bent

the wire around the handle of a paintbrush in the required 4 mm radius. The balance weights have been connected to the elevator with small ends of 0.6 mm Evergreen profile. Also the bracing wires for the vertical tail plane have been put in place (0.06 mm black painted fishing line).



The oil cooler has been glued under the nose. I have aligned the engines in their cowlings and attached them with a small drop of cyano glue and fitted them on nose and

nacelles. After a small correction of the mounting plane of the nose cowling, I have glued them with thick cyano glue. I have tried to get the gap at the rear of the engines as much as possible constant. The propellers have been loosely fitted on the engines.



Decals

No decals for the Pander Postjager (for the Dutch East Indies record mail flight) or Panderjager (for the Melbourne race) exist, so they have to be custom made. Basis are the decals, which Rob de Bie (ref. 9) is constructing from original photographs of the Melbourne Panderjager, of which he provided me with a CorelDraw file. I have made a print on paper, cut the decals out and fitted them on the model. As could be expected the model's dimensions are not correct, so I have enlarged the red-white and blue decal and made the "6" a bit smaller. The bog orange decals for the underside of the wing I had to produce myself. Basis for that is a scan on scale of the underside paint scheme from the NVM drawing (ref. 8). Fitting them on the model showed that the shape of the nacelles of model and drawing is very different. Probably both are wrong: on the drawing they are too narrow and too much pointed (the wheel would not have passed in it), on the model the nacelles are too wide and too round at the rear side. The result would be that the decal is too big, but that can easily be corrected by cutting the excess off.

I have changed the grey values of the scan in a B&W bit map, converted the black in orange and have cleaned up the bit map for pixels that were on places where they should not be, or where they are not relevant (e.g. the ailerons). Next with a lot of export and import between CorelDraw, CorelPaint and Photoshop I have filled the shape with orange (not the letters of the registration; the idea is to use clear decal sheets such that the letters appear in silver). The edge of the bitmap letters was very irregular, so I have filled up the whole shape and instead glued a white version of the orange letters for the topside of the wing on the orange surface. I have again fitted a print on the wing and draw a line on the place where the decals have to be cut off prior to applying them. The overflow over the nacelles will be cut off after application. I have printed the decals that contain white on white decal sheet, the others on clear decal sheet. Two layers of clear varnish spray or brush, it does not make much difference), and they are done. In the meantime I have painted the model with gloss varnish to ensure good adherence of the decals and to prevent silvering.

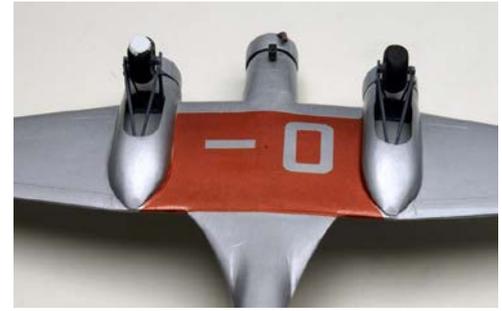


The picture at the right shows the most difficult decal. I have cut it on size as well as possible (without cutting too much) and applied it with ample Set on the model. Removing the air bubbles is essential, as well as correcting all the time its location. The homemade decals are extremely thin, even when painted with a brush.

The orange colour does not cover the silver completely, it gives a metallic shade. I don't find it disturbing anyhow. When the decal had dried well, I have cut away the edges over the nacelles with a sharp, new knife. With a dose of Sol, which I applied also on the



wing tips to follow the surface curvature better, it flows well in the joint. The picture shows a repair with a slice of 0.5 mm plastic sheet at the right tire. One of the landing gear legs apparently still was half a millimeter longer than the other, resulting in one wing tip sitting 2 mm higher than the other.



I have also accentuated the panel lines and other engravings with a soft pencil. After having glued the navigation lights in place (made of painted half sesame seeds) I have covered the complete model with a layer of gloss varnish to fix and protect the decals and finished it off with a coat of satin varnish. The windows in the door and cabin have been made with Humbrol Clearfix. The last things to be added are the tail bracing, the doors, the propellers, the park bench ailerons and the antenna for the long distance radio under the fuselage. A warning: Keep the ailerons to the last; they fall off at the slightest touch. Then the model is ready.







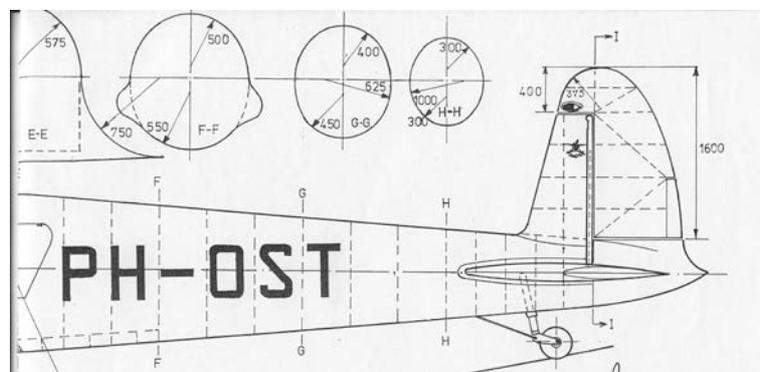
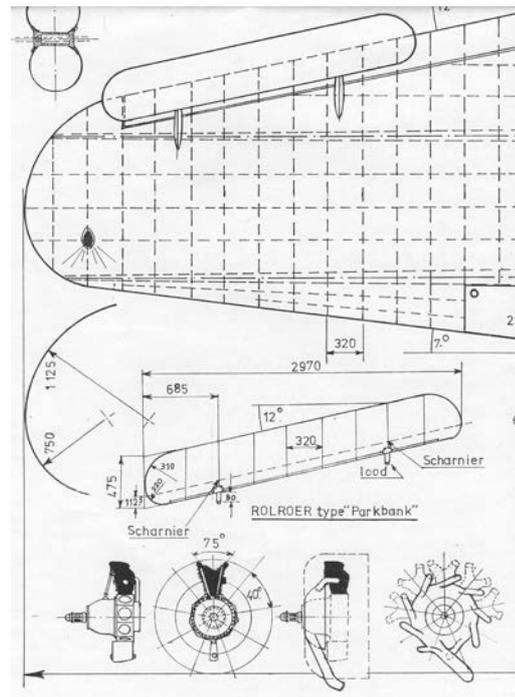
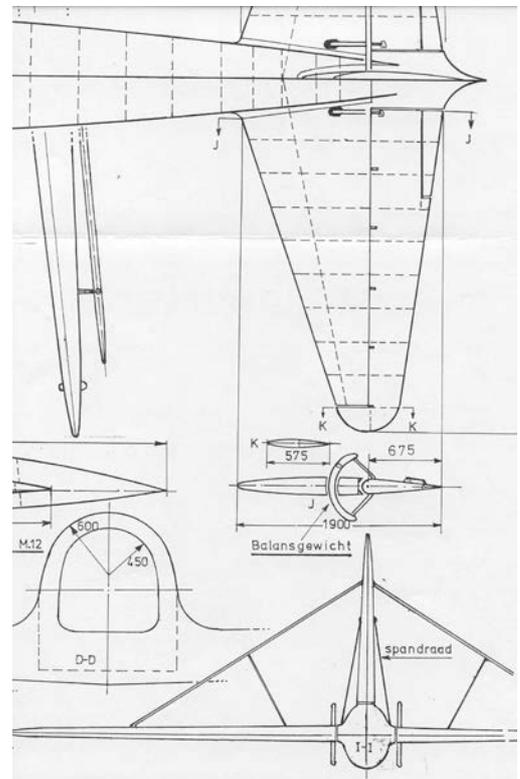
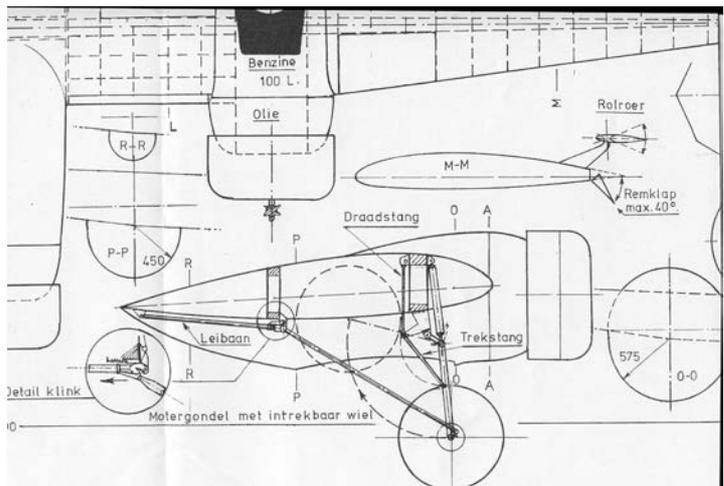
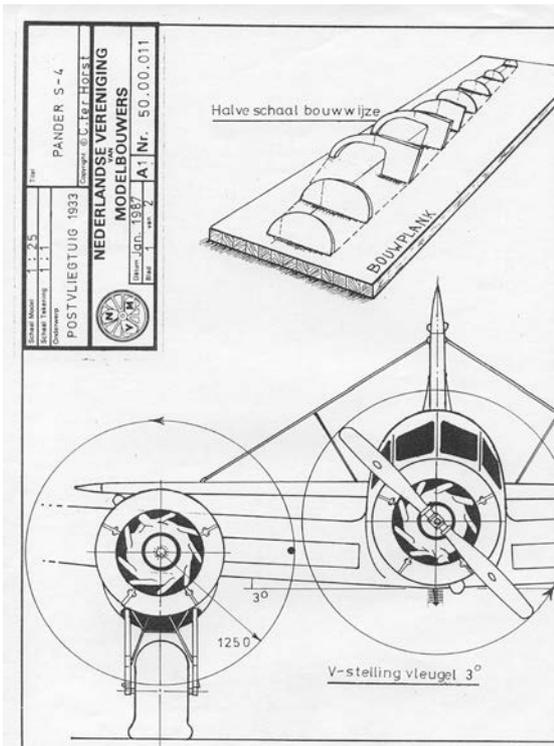


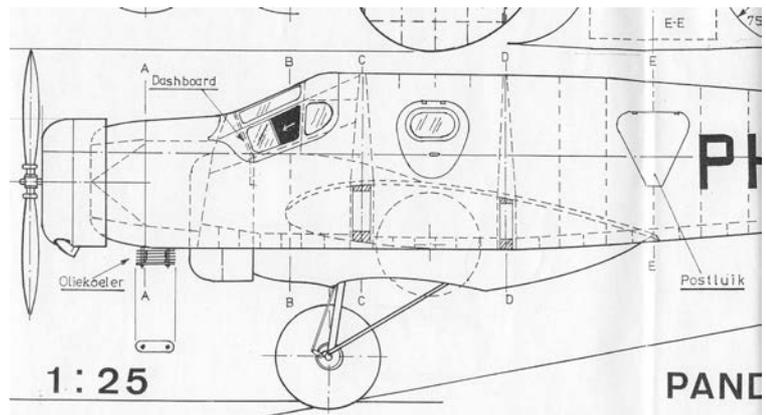
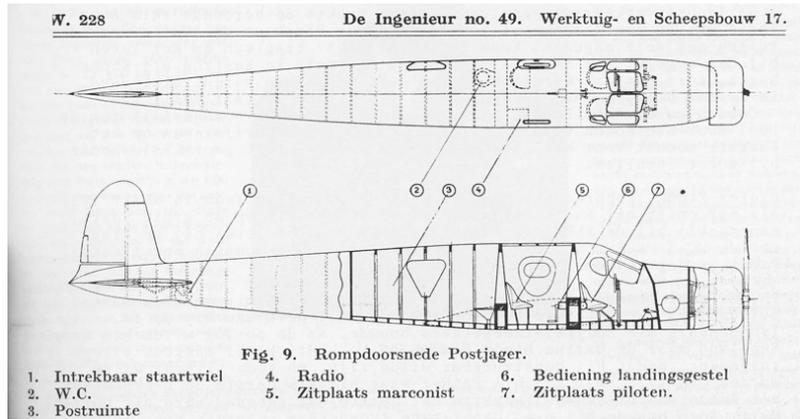
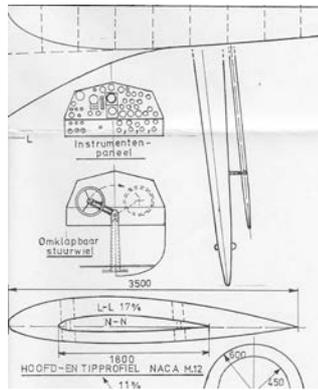
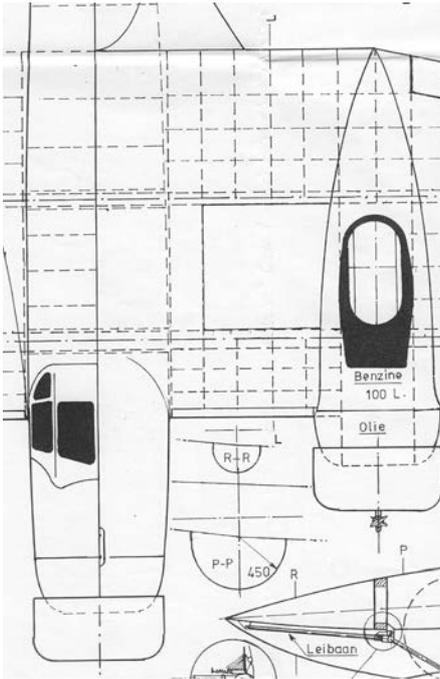
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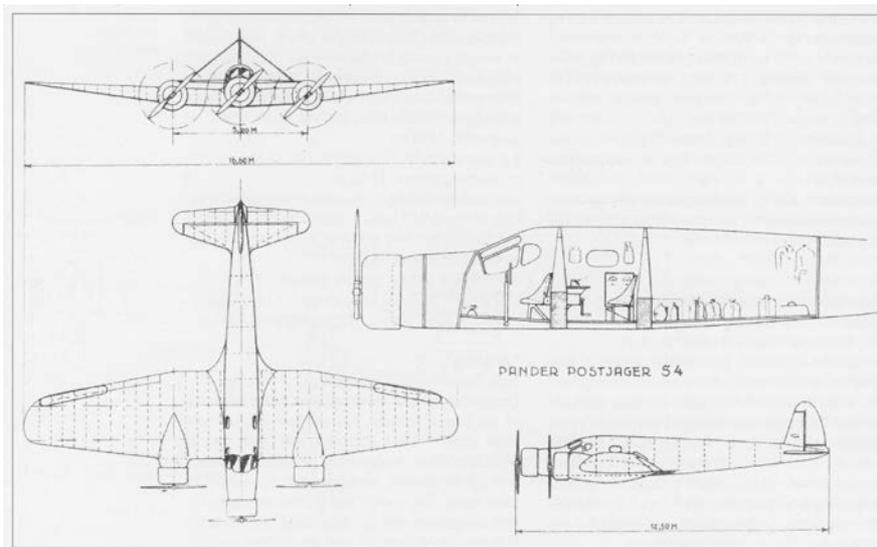
Drawings

Relevant details taken from the NVM drawing (scale 1:72)





Drawing from Hazewinkel, source *Het Vliegveld* (ref. 2; not to scale)



¹ MandMHerrill@

² H.J. Hazewinkel, Pander Postjager : le bolide ambitieux, *Le Fana de l'Aviation*, 06/2002, n° 391, pp. 16-29, June 2002

³ I have revised the painting scheme later.