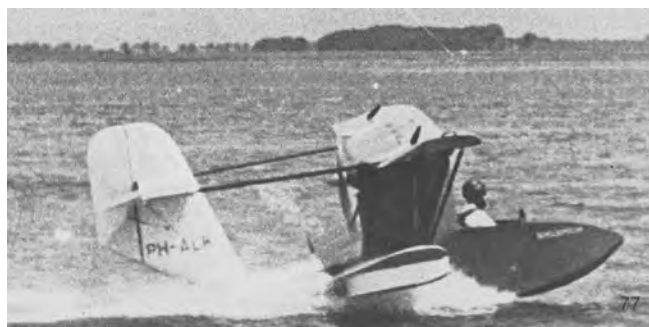


## De Schelde Scheldemeeuw scratchbuild

Sportsplane flying boat

Scale 1:72

The Scheldemeeuw (Scheldt Gull) was a small, single seat biplane flying boat designed by Theo Slot, who was also the designer of the Pander Postjager. The ships wharf De Schelde, which had taken over Pander end 1934, employed Slot. The Scheldemeeuw was a derivative of the Scheldemus and had its first flight in June 1936. As the Scheldemus the Scheldemeeuw was intended as a relatively cheap aircraft (its price was 2500 Dutch guilders) for amateurs, easy to fly (and to land). The Scheldemeeuw was the third design of Slot at De Schelde. During the first flights the aircraft had an open cockpit, which was replaced by a closed one, as the small aircraft was enveloped in a cloud of water during take-off and landing.



The wings were similar to those of the Scheldemus; they of wooden construction connected by two N struts with a span increased by six centimetres. They were almost identical; the upper wing had ailerons and a slightly larger dihedral. The wing had plywood covering from the underside of the forward spar, over the nose and until the aft spar; the whole surface was covered by cloth, doped aluminium. As the tips of the lower wing two small floats were attached. The fin was connected to the rear fuselage and the horizontal tail plane was connected to the fuselage and wings by four steel tubes. They were

made of wood and cloth covered. The boat fuselage was a conventional wooden construction and had one step, covered with cloth. The Scheldemeeuw had an empty weight of 200 kg and was powered by a 40 hp Praga B motor with pusher propeller. The aircraft had a maximum speed of 125 km per hour.

Only one aircraft has been built. The fuselage was painted red and it carried the registration PH-ALK. In 1937 the aircraft has been scrapped and the wing was used to build a second copy with an aluminium fuselage. This aircraft made its maiden flight in September 1938, when it made 23 test flights with a total duration of 2.5 hours. It appeared to have the same flight characteristics as the wooden prototype.

I have built the prototype version of the Scheldemeeuw with the closed cockpit. Ref. 5 contains a dimensioned drawing of the aircraft, which has not the correct proportions. I have corrected that, and have used it as a basis for the model. As wings and horizontal tail plane are the same as those of the Scheldemus, I have used the very detailed drawing by the Nederlandse Vereniging van Modelbouwers (NVM) for these.

Hooftman (ref. 3), Postma (ref. 5), van Steenberg (ref. 6), Wesselink (ref. 7) en van Wijngaarden (ref. 8), give the dimensions of the Scheldemus, and Hooftman and van Wijnbergen contain also dimensioned drawings of the aircraft. Especially ref. 3 contains many useful pictures of the aircraft.

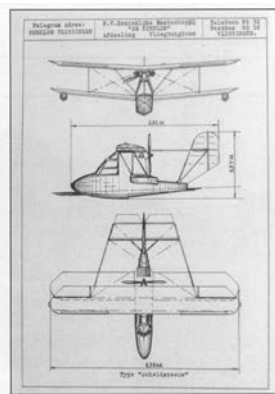
	<i>Scheldemeeuw</i>	<i>1:72</i>	<i>model</i>
<i>Span</i>	6.78 m	94.2 mm	90.8 mm (97.8 %)
<i>Length</i>	5.32 m	73.9 mm	70.6 mm (98.5 %)
<i>Height</i>	2.32 m	32.2 mm	37.7 mm (106.5 %)
<i>Engine</i>	Praga B of 40 hp		
<i>Crew</i>	1		

Span and length are

## Materials and parts

I have compared the overall configuration of the wings of Scheldemusich and Scheldemeeuw by gluing a transparent copy of the scale drawing of the former of that of the latter. The front view shows a slightly larger separation of upper and lower wing, but the side view shows the contrary. Span is a bit larger, but that is correct. The stagger is the same. The wing of the Scheldemeeuw seems to have a slightly smaller angle of incidence than that of the Musich. Dihedral is the same. The elevator surfaces of the Scheldemeeuw are slightly smaller.

In view of this I will use the same N-struts for both models, those of the Scheldemusich, as the drawings are more clear. The top wing rests on the top of the fuselage, the N-struts will determine the location of the lower wing.



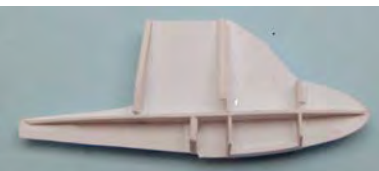
As for the Scheldemusich, also the material for the Scheldemeeuw model is quite fundamental and only small quantities of it are needed: sheet material of 0.25, 0.5 and 1 mm thick and several sizes styrene strip and rod. To produce the parts I have used my usual method: reduce or enlarge the drawings to scale 1/72, select parts of the drawings, which must be reproduced to be integrated to parts, cut these pieces out and glue them on sheet material with the required thickness with diluted Microscale Kristal Klear. When dry, cut out the parts

and start the assembly of the relevant component.

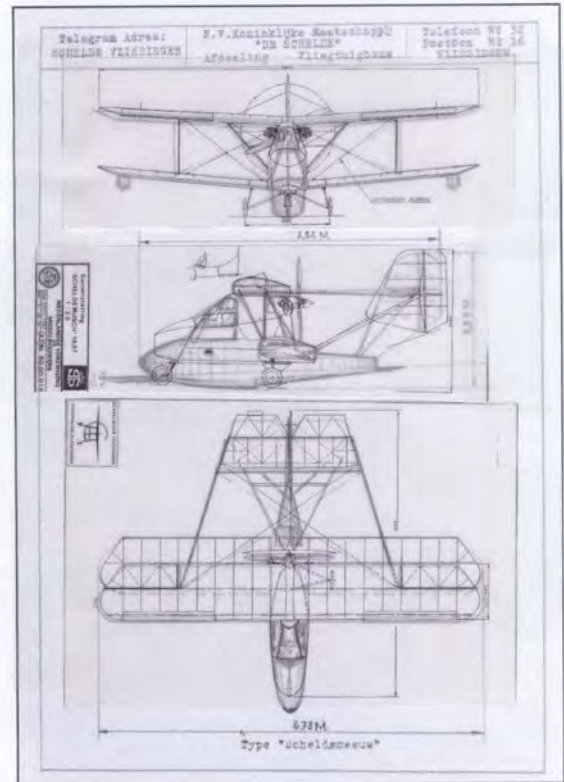
For the wing I have used the drawings of the Scheldemusich, but enlarged the span by a bit more than 1 millimetre. Although the horizontal tail planes are identical, I still have used the drawing of the Scheldemeeuw, as reproduced in ref. 5. The tail of the aircraft is very different, as is the fuselage. The drawing did not have the right proportions; the vertical scale is too small. So I have corrected the drawing before using it.

## Fuselage

The parts of the fuselage have been made from 0.5 mm styrene sheet, and built up around a side view centre section and the top view cut over length. I have cut a straight and a mirrored side view following the lines at the outer surface of the fuselage. The front view has been used to produce fuselage cross sections. I have made a sharp bent in the sides matching the base of the triangular top section and have curved them length wise to follow the top view shape.



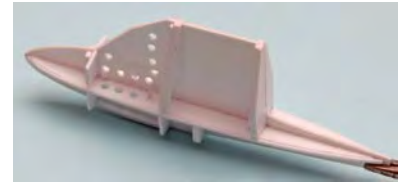
The assembly was quite simple, except that the bending caused a mismatch at the rear side of the cockpit. I have corrected that by gluing two pieces of 1 x 1 mm strip behind the cockpit aft wall. I have also cut a front view from 1 mm sheet and split that in four pieces. The two top quarts have served as the rear wall of the fuselage, the two bottom quarts as the bulkhead at the step of the boat hull.



I have drilled quite a number of 1.2 mm holes in the vertical and horizontal parts where the cockpit must come. This way it will be easier to remove the excess styrene after mounting the outside fuselage panels, which are needed to give the necessary stiffness to the hull.



After sanding the bulkheads in the correct shape I have pre-formed the left and right side walls and have glued them to the fuselage. Next I have cut to pieces of 0.25 mm styrene to the approximate oversized shape and dimensions of the top nose panels and have glued them in place, using glue sparingly not to damage the thin plastic sheet. Matching them in the middle was difficult (the joint is not straight), but the result was acceptable. Excess plastic has been removed with a knife and the joints have been sanded smooth. Also the top side of the aft hull has been covered with 0.25 mm sheet.



Next I have covered the bottom of the rear of the fuselage, in fact the float. I have done that with one piece of plastic, slightly carved and bent in the middle. When that had dried and cut to approximate size, I have covered the front part of the float, this time with two pieces of sheet and in steps; first the rear part, then the front. The picture shows the amount of tape violence needed to keep the plastic in shape until the glue caught.



The excess plastic has been cut away, after which I have removed as much as possible the sheet material in the cockpit space with a small knife. I managed to do this in the limited space of nine by eleven millimetres with only minor damage to the rest of the structure.



I have thoroughly sanded all outside surfaces and have treated all gaps and irregularities with Revell Plasto putty. I have modelled the anti-slip strips on the rear fuselage with 0.4 x 0.25 mm styrene strip.

I have painted the fuselage before assembly, the cockpit interior light grey and the outside red.



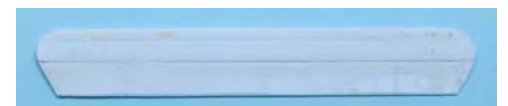
## Wing

The wing has been built up as I had done before for the Scheldemusich. The nose section (light blue) is strip of 2.5 x 1.5 mm and the flat, ply covered underside (green) is made of two 5 mm wide strips of 0.25 mm sheet, the top one shifted backwards 1 mm, giving a gluing area of 1 mm wide for the lower skin. The forward "spar" has been built up from two strips of 0.75 x 1.0 mm cross-section (yellow), providing a 1 mm wide gluing surface for the upper skin. The rear "spar" was formed from a strip of 0.5 x 1.0 mm strip (dark blue). At the wing roots and tips pieces of that strip have also been inserted.



I have glued the lower wing skins to the spar assembly using sparingly Ultra Thin Tamiya glue, carefully matching the rib pattern with the centreline. I have reinforced wing strut attachment points, the upper wing aileron hinge lines and the upper mid-wing separation plane with 0.5 x 1.0 mm strip. I have thinned the trailing edge as much as possible by sanding the inner side of upper and lower wing skins.

Next I have aligned the rib pattern of the upper skin with the lower skin of both wings and have glued bit by bit the upper skin to the



wing. I have drawn the wing tip pattern on the top surface and have shaped the wing tips with saw, knife and sanding stick. Finally side of the wing tips have been sanded in their upward slope.

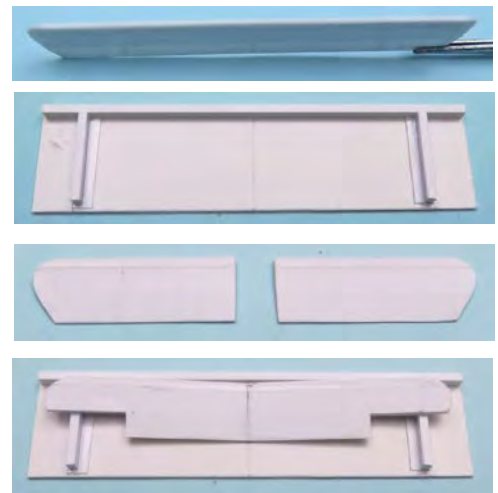
I have first made a jig with plastic sheet and strip material to achieve the correct dihedral, 3.5 mm at 84 mm span, the outboard rib. I have cut the upper wing exactly in half, have sanded the cutting surface a bit such that it could be glued under an angle and have removed the ailerons from the wing.

I have fitted the wing halves in the jig and glued them together.



When the wing had well dried, I have removed it from the jig.

I have removed the middle part of 9.5 mm, the width of the fuselage from the lower wing, and have mounted small 0.4 mm pins in holes drilled in the forward solid part of the wing.



### Struts

I have first constructed a N-strut from 0.5 mm styrene rod, but that appeared to be too flexible. So I have resorted again to brass rod and soldering. I have made them a bit oversized to be sure that they fitted well. Before mounting they have been painted black. However, when fitting them to the (more spaced) wings, the vertical struts were just a bit short. I have corrected that by mounting small pieces of 0.8 x 0.6 brass tube to the ends of the strut.



### Tail planes

I have cut out the tail plane skin panels from the 0.25 mm sheet and have glued 0.5 x 1.0 mm strip at the leading edge and two of those strips at the hinge line of rudder and elevator. At the top of the fin I have glued a piece of 0.5 mm sheet and at the bottom also a 0.5 x 1.0 mm strip. I have indicated the place of the hinge line with a small cut in the skin. As the stabilizer is interrupted by the fin, I have also glued a double strip at its centre line.



Next I have glued the other skin on the assembly after having sanded the trailing edge of the skins to a sharp edge. I have separated rudder and elevator halves and sanded leading and trailing edges in the correct shape.

The open edges of rudder and stabilizer halves have been closed with Revell Plasto putty.



I have glued the stabilizer halves to the fin, taking care that they were well aligned with each other and normal to the fin surface. While the elevator and rudder control cables of the Scheldemusich were routed outside the structure, they are routed through fuselage and fin for the Scheldemeeuw. This is possible because the fin is structurally attached to the rear part of the boat. I have drilled six 0.3 mm slanted holes on the locations where the cables exit the fin and two additional ones at the corners of the stabilizer halves, where the rigging lines to the fuselage rear are attached.



I have made the tail boom, connecting the horizontal stabilizer with the upper wing, from 0.75 mm brass rod. Pictures show that the forward end of the booms is faired to the underside of the upper wing. I have made the fairing from a piece of 1.2 mm plastic rod, in which I had drilled a 0.8 mm hole. One side of the pieces of rod has been sanded away until the brass metal appeared, and their shape has been streamlined.

## Engine and propeller

The engine of the Scheldemeeuw was identical to the one of the Scheldemusich, so obviously I have constructed it the same way. Fortunately I had not thrown away the left overs of that project, so I still found the basic material for the components: a piece of 1.2 mm styrene rod with 0.1 mm coil wire wound around it and a composition of styrene rod and tubes for the engine crank case.

I have mounted the styrene rod construction in the drilling machine and have sanded the front end of the crank case in a conical shape. I have completed it with a 3 mm long piece of 2.0 x 3.0 mm strip. I have cut two pieces of 3 mm from the rod wound with wire and have glued these cylinders to the crank case. The edges of this piece have been rounded and the shape adapted to the shape of the real engine.

On the top of each cylinder I have glued two pieces of 0.4 mm diameter brass wire modelling the valve rocker housing. The housing of the valve rods have been made from 0.2 mm metal wire. The exhausts have been constructed from 0.5 mm styrene rod bent in a right angle. The picture at the left illustrates well how small the engine is.



I have made a dry fit on the fuselage to check the overall appearance. Next the engine has been painted with primer and the cylinders, valve rocker housings and exhaust have been painted black, the former two dry brushed with Vallejo Model Air gun metal, the latter with rust. The crank case has been painted light grey, the valve rod housings aluminium. To fit the engine in the modified,

narrower aft fuselage, I have removed part of the crank case.

## Cockpit

The pilot seat has been constructed from 0.5 mm styrene sheet. I have curved the back and have fitted the seat bottom to it. The surface of both parts of the seat have been treated with a scribe to imitate the leather surface. The seat has been painted leather. A seat backrest cushion has also been formed from 0.5 mm sheet.

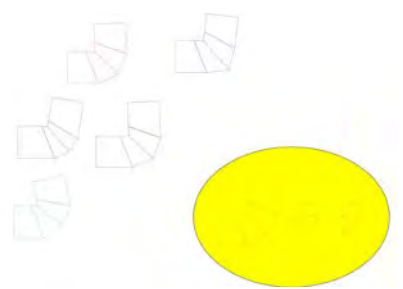
I have cut the instrument panel from 0.5 mm sheet and have drilled holes of different diameters in it to simulate the instrument dials. The panel has been painted dark grey and has been glued on a piece of black painted 0.25 mm sheet. The top of the panel has been finished with a 2 mm wide strip of 0.25 mm sheet, which has also been painted dark grey.



Other cockpit furniture is the stick, the throttle handle assembly and the head rest that has to be mounted against the cockpit rear wall. I have not modelled the rudder bar; there is not enough place

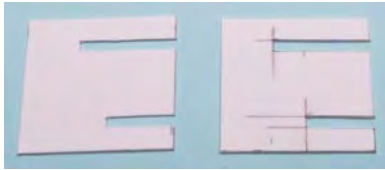
in the cockpit and anyhow it will hardly be visible one the cockpit is closed. I have used PE seatbelts from my stock and have glued them to the seat. I have completed the cockpit arrangement by gluing all components in place.

The main windows of the cockpit are flat except for the small top piece, so it is possible to construct them from a flat piece of transparent plastic. I have measured and calculated their dimensions from the three-view drawing and have drawn them with CorelDraw. I have printed the drawing on paper and have cut out the windows, bent them in shape and fitted them on the fuselage. I had to repeat the process five times before a satisfactory fit was obtained. This was caused by measurement errors, generously helped by fat lines in the three-view drawing.

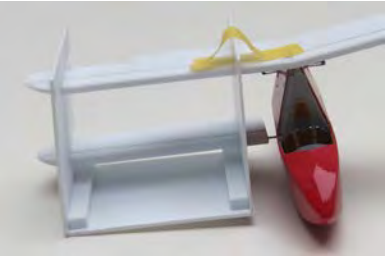


## Wing assembly

I have first mounted the engine in the fuselage, as this could not be done any more once the upper wing was in place. I have cleaned the gluing surface very well and have glued the upper wing to the fuselage, making sure that the tips were at equal distance to the bottom of the fuselage and to the rear of the boat.



To mount the lower wings I have made two jig parts from 0.5 mm sheet, which had the correct stagger and distance between the wings, taken from the Scheldemusich drawing and the measured wing thickness. These have been mounted on a base with xx width to form the mounting rig for the lower wings.



I have dry fitted the starboard lower wing to make an imprint of the brass pin in the fuselage and have drilled a 0.4 mm hole on that place. Next the wing has been glued with thin and thick cyanoacrylate glue and left to dry. The port lower wing has been mounted the same way. Unfortunately some glue spilled over on the red painted fuselage surface; removing is damaged the paint, so some retouching will be required.



The lower wing is faired to the fuselage. I have made a piece of 0.25 mm styrene sheet fit between wing and fuselage to resemble more or less the photograph of this interface. The lower side I have filled in with Vallejo putty, the excess of which has been removed with a humidified cotton stick.



However, this picture shows also something else, as some of my fellow modellers remarked: The rear side of the fuselage under the engine is not flat, but converges into a sharp edge. Also the wing sits more on the same level as the top of the aft part of the boat. Both aspects led to the decision to disassemble wings and engine, an operation that did not cause major damage to the parts, but required local repairs with putty and a new paint job.



I have removed the aft part of the fuselage and made new mounting holes for the wings 1.5 mm lower than the original ones. As a consequence the wing mounting jig and the N-struts had to be modified too; for the longer N-struts I have drawn a new template.

I have removed the aft part of the fuselage and made new mounting holes for the wings 1.5 mm lower than the original ones. As a consequence the wing mounting jig and the N-struts had to be modified too; for the longer N-struts I have drawn a new template.



The new aft fuselage has been constructed from curved pieces of 0.25 mm styrene sheet, cut to fit on the model and glued carefully in place with sparingly applied glue. I have cut and formed a new aft deck for the boat from 0.13 mm sheet, the red piece in the picture. When fitting the piece later to the reassembled wing and fuselage it appeared too small, so I have produced a new, larger piece.



The crank case of the engine did not fit any more in the aft fuselage, so I have slimmed it down and cut it off until it fitted again. In the process the two exhausts broke off, but were not damaged.

The crank case of the engine did not fit any more in the aft fuselage, so I have slimmed it down and cut it off until it fitted again. In the process the two exhausts broke off, but were not damaged.



Next I have repeated the upper and lower wing assembly. I have also mounted the N-struts, adjusting their length bit by bit until they fitted well.

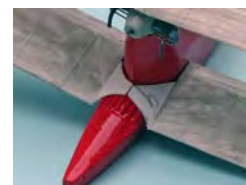
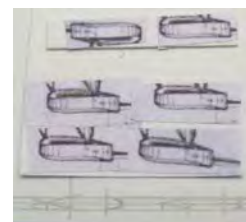


Also by trial and error I have made the fairing between boat and lower wing fitting. In applying force to give the piece the correct curvature, the fairing broke in the middle. This made the fitting much easier; the only price was a joint in the middle of the piece, which was difficult to disguise with putty.

I have filled the cavities at the underside of the fairing with white glue, and have painted it white.

### ***Floats***

The floats are 3 mm high and wide and have a length of the wing chord, which is 14.4 mm. I have made six copies of the side view in the drawing and have glued two on 0.5 mm thick sheet and six on 0.25 mm sheet with diluted Kristal Klear. The thick ones served as the central piece of floats, the thin ones, slightly longer and less high as skins for the outside. I have drawn on 0.4 mm sheet the top view, made 1 mm narrower than the float width and cut them over length in two. They formed the boat shape of the floats.



### ***Handley Page slats***



The Scheldemeeuw was also equipped with Handley Page slats on the outer parts of the upper wing, which extend automatically at low speed. I have produced these the same way as those for the Scheldemus from the bottom of an aluminium expendable



ash tray, flattened out with a rounded piece of wood, cut to size with scissors and formed around the wing leading edge.

### ***Decals***

I have modified the decal sheet of the Scheldemus for the Scheldemeeuw. The characters P and K needed to be adapted, and the name "SCHELDEMEEUW" needed even a modified S, C, D M, U and W. On some of the photographs the text "SCHELDEMEEUW" is set over three horizontal stripes, which I find a more attractive sew, so I have adopted that. I have also put the De Schelde logo in black and white on the decal sheet, although I could not identify that in the photographs.



### ***Painting***

### ***Rigging***

### ***Assembly***

### ***Tail unit***

### ***Undercarriage***

### ***Summary***

Below some pictures of the completed model are shown.



## References

1. H. Hooftman, *Nederlandse Vliegtuig Encyclopedie, Scheldemusich en Scheldemeeuw*, pp. 3-11, 14-15, 28, 31, 33-35, 37, 39, 41, 67, 180-189, Cockpit-Uitgeverij, Bennekom, 1978
2. P. van Wijngaarden, *N.V. Koninklijke Maatschappij De Schelde, Afdeling Vliegtuigbouw*, pp. cover, 22-24, 26, 35, ISBN 978-90-821390-1-3, Uitgeverij Wiel Eijdem, Eigelshoven, 2014
3. *Vliegwereld, Jaargang 2, No. 33*, pp.533-534, 1936
4. NVM drawing 50.00.018, 1997

On the Internet an interesting movie can be found, showing the prototype of the Scheldemeeuw.

5. [https://www.google.nl/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&cad=rja&uact=8&ved=0ahUKEwj6\\_LDsoNzMAhXCiiwKHcMIBv4QtwIINTAE&url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DDHY15g2FYImc&usg=AFQjCNGGYjNw1BlrV4L1PkdyfzVDY6oNVg](https://www.google.nl/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&cad=rja&uact=8&ved=0ahUKEwj6_LDsoNzMAhXCiiwKHcMIBv4QtwIINTAE&url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DDHY15g2FYImc&usg=AFQjCNGGYjNw1BlrV4L1PkdyfzVDY6oNVg)

## Appendix De Schelde Scheldemusich documentation

### Paint table

H = Humbrol, R = Revell Aqua, V = Vallejo, M = Marabu paint stick

Code	Colour	Where
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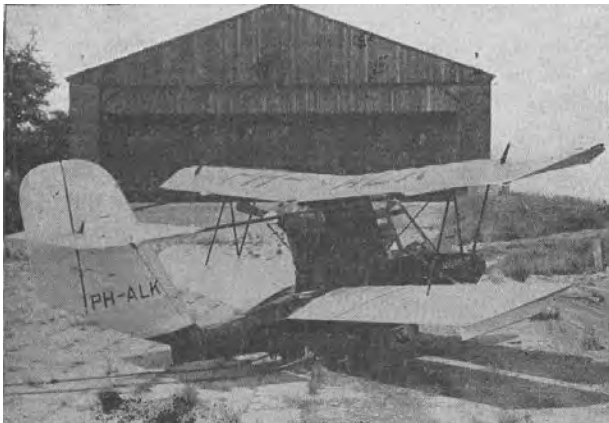
Code	Colour	Where
H19	Red	Fuselage, propeller spinner
H21	Black	Wing & tail struts; engine cylinders; valve rocker arm housings; engine controls, ex-



Code	Colour	Where
		hausts
H53	Gunmetal	Engine cylinders (dry brushed)
H62	Leather	Seat bottom & back rest cushions, head rest
H113	Rust	Exhausts (dry brushed)
H125	Dark grey	Engine controls, control stick, seat back & bottom, control horns
H165	Light grey	Engine crankcase; cockpit walls; pitot tube
V70.510	Gloss varnish	Propeller
V71.062	Aluminium	Wings, tail planes, wing tip floats
V71.065	Steel	Engine inlet ducts and exhausts
M0121 32	Black	Rigging lines, control & brake cables

**Photographs & drawings**

I have only included pictures of the Scheldemeeuw with closed cockpit and a wooden hull.



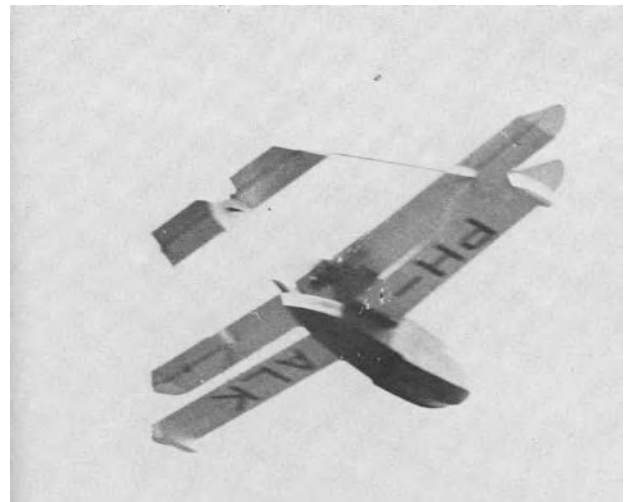
[Source: ref. 3]



[Source: ref. 3]



[Source: ref. 3]



[Source: ref. 1]



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[Source: ref. 2]



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