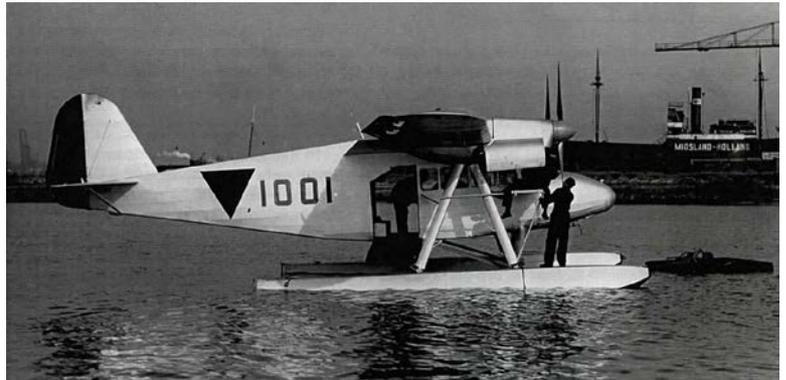




Aircraft history

The Koolhoven F.K.49 has been further developed in three versions with more powerful engines, which were assigned the designation F.K.49A, which were also of mixed construction (wooden wing and steel tube fuselage covered with plywood and linen). The first F.K.49A was an aircraft for cartography and aerial photography for the Turkish Air Force with two Ranger V-770 B-4 engines of 305 hp, which could double as a transport. The second one was an ambulance aircraft for the Finnish Coast Guard with two inverted V-12 air cooled Hirth 508C engines of 285 hp. This aircraft could be equipped with a wheel or (EDO) float landing gear. This version is the subject of this kit. The third F.K.49A version had Argus AS-10-C engines of 200 hp. Two aircraft had been ordered by Rumania.



The first two F.K.49A's have been delivered to the customers, the last two, built according to the specification for the Turkish aircraft, were under construction, when the Koolhoven factory was destroyed during the German bombing in 1940 of the Waalhaven airport in Rotterdam. The Finnish aircraft made its first flight on November 3, 1939 and has flown for some time in the Netherlands with floats and orange triangles under the military registration 1001 before it has been delivered to Finland in January 1940, where it was operated on floats and with a wheel undercarriage.

The first two F.K.49A's have been delivered to the customers, the last two, built according to the specification for the Turkish aircraft, were under construction, when the Koolhoven factory was destroyed during the German bombing in 1940 of the Waalhaven airport in Rotterdam. The Finnish aircraft made its first flight on November 3, 1939 and has flown for some time in the Netherlands with floats and orange triangles under the military registration 1001 before it has been delivered to Finland in January 1940, where it was operated on floats and with a wheel undercarriage.

The forward fuselage of the F.K.49A was better streamlined than that of the prototype F.K.49. They had the same wing and (almost) the same aft fuselage. The aileron configuration was slightly different; the balance weight had disappeared, the hinge line had been moved backward. The Finnish aircraft had external aileron hinges under the wing. The actuation was either internal or by a push-pull rod on the upper wing surface. Photographs of the aircraft in Dutch LVA and in Finnish coast guard livery show a different configuration and number of tail struts (two and four respectively).

The Finnish aircraft had also an antenna on the top of the fuselage above the doors. It had a crew of pilot, radio operator/navigator and medical attendant and could accommodate two stretchers. Contrary to the other F.K.49 versions it had two doors opposite each other and, according to some sources, an access hatch in the aft fuselage bottom.

Aircraft characteristics

Span:	16.00 m
Length:	11.80 m
Height:	3.18 m
Empty weight:	2217 kg
Take-off weight:	3019 kg
Engines:	Two Hirth HM 508 inverted V8, 285 hp
Accommodation:	Pilot, navigator/radio operator, medical attendant, two patients on stretchers.

References

Anon., *Koolhoven Vliegtuigen, 1910-1940*, Facsimile uitgave, 1940

H. Hooftman, *Van Brik tot Starfighter, Deel I: Met stofbril en leren vliegkap*, La Rivière & Voorhoeve, Zwolle, 1962

Koolhoven, *Drawing no. 1103 S, Type F.K.49, No. 4903, Ausstattung der Kabine*, N.V. Koolhoven-Vliegtuigen, 1939

Koolhoven, *FK-49*, N.V. Koolhoven-Vliegtuigen

H. Van der Meer, *F.K.49*, Stichting Koolhoven Vliegtuigen, 1999

T. Wesselink & T. Postma, *Koolhoven, Nederlands vliegtuigbouwer in de schaduw van Fokker*, ISBN 90 228 3890 0, 1981

H. van der Meer/Aviodrome, *Personal communication*, Drawings of F.K.49A, 2018



D. Top, *Frits Koolhoven en zijn Vliegtuigproductie*, 1996

T. Wesselink, *Koolhoven Vliegtuigen*, ISBN 978-90-818510-2-2, 2012

T. Wesselink & T. Postma, *De Nederlandse Vliegtuigen, Alle vliegtuigen ooit in Nederland ontworpen en gebouwd*, Unieboek B.V., Bussum, 1982

Movie: https://www.youtube.com/watch?v=m1x0oKCn_0M

Additional material and information has been received from Harry van der Meer.

Kit contents

- 63 resin parts.
- Vacform part for the cockpit/cabin roof.
- 2 x 80 mm of 0.64 mm styrene rod for the stabilizer struts
- 30 mm of 0.5 styrene rod for the horizontal float struts.
- 2 x 80 mm of 1.0 mm brass rod for main undercarriage and float struts.
- 60 mm of 0.4 mm brass rod for pins in stabilizer and fin and the aileron hinges.
- 20 mm of 0.5 mm brass rod for the shaft of the tail wheel and the antenna mast.
- 20 mm of 0.25 x 0.5 mm styrene strip to serve as support for the Venturi tubes.
- 30 mm of 0.4 x 0.5 mm styrene strip to produce the support for the air driven generator/pump.
- 20 x 5 mm of 0.4 mm thick styrene sheet for elevator, rudder and ailerons control horns and to close the gap under the cabin aft bulkhead.
- 10 mm of 5.5 mm styrene tube to serve as a jig for the aileron hinges.
- 31 x 17 mm of 0.25 mm transparent plastic sheet for windows.
- Decal sheet for two versions. Orange triangles and rudder as used from the fall of 1939 with LVA registration 1001 and the Finnish civil registration OH-MVE with (optionally) red crosses for the fin; Dunlop logos for the tires; VMH decals for the propellers.
- Three-view drawing, two view cabin drawing and a side view 1/72 scale; templates for windows, float struts and air driven pump/generator frame, paint mask for cockpit windows and roof; carton jig for float strut placement.

Building instructions

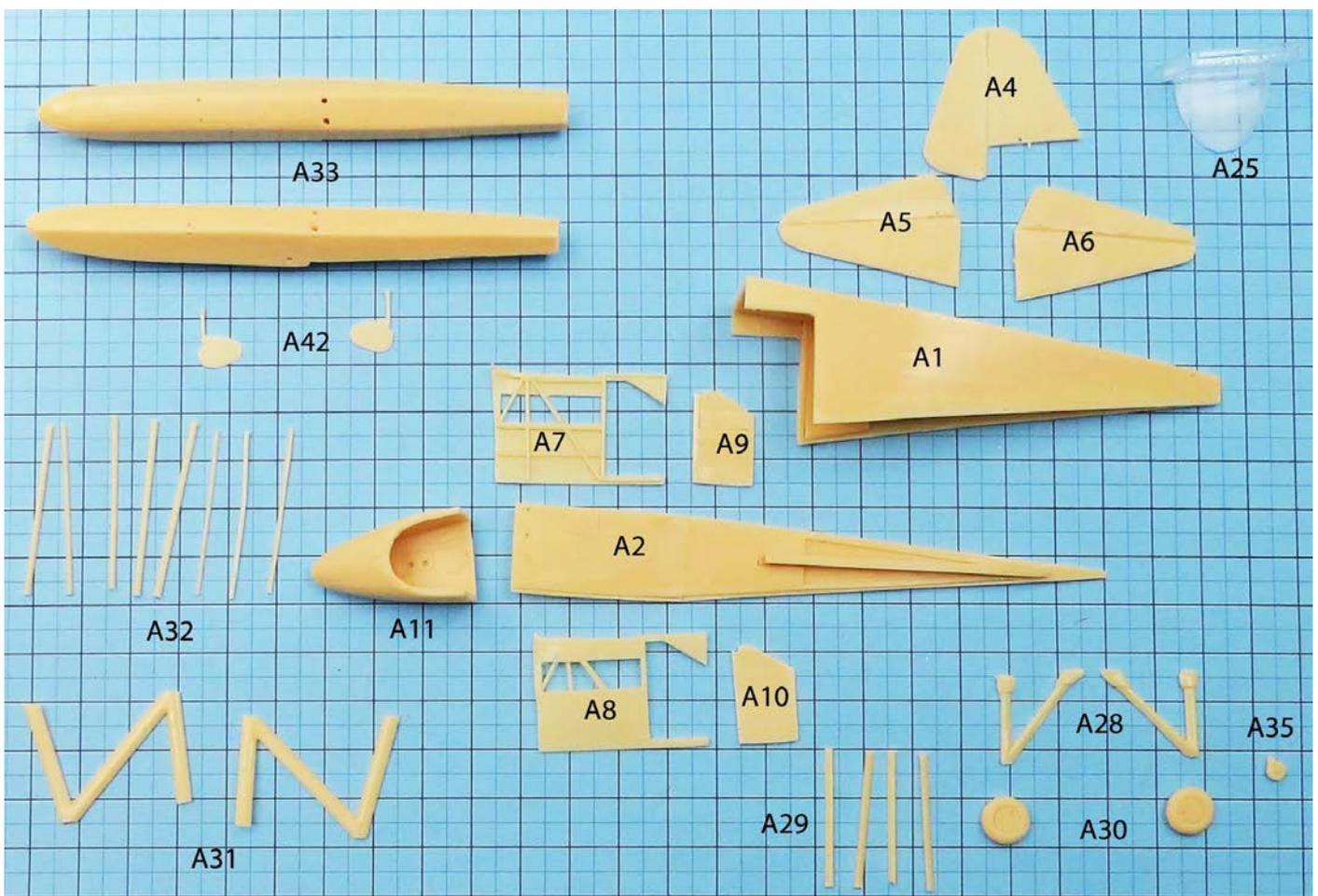
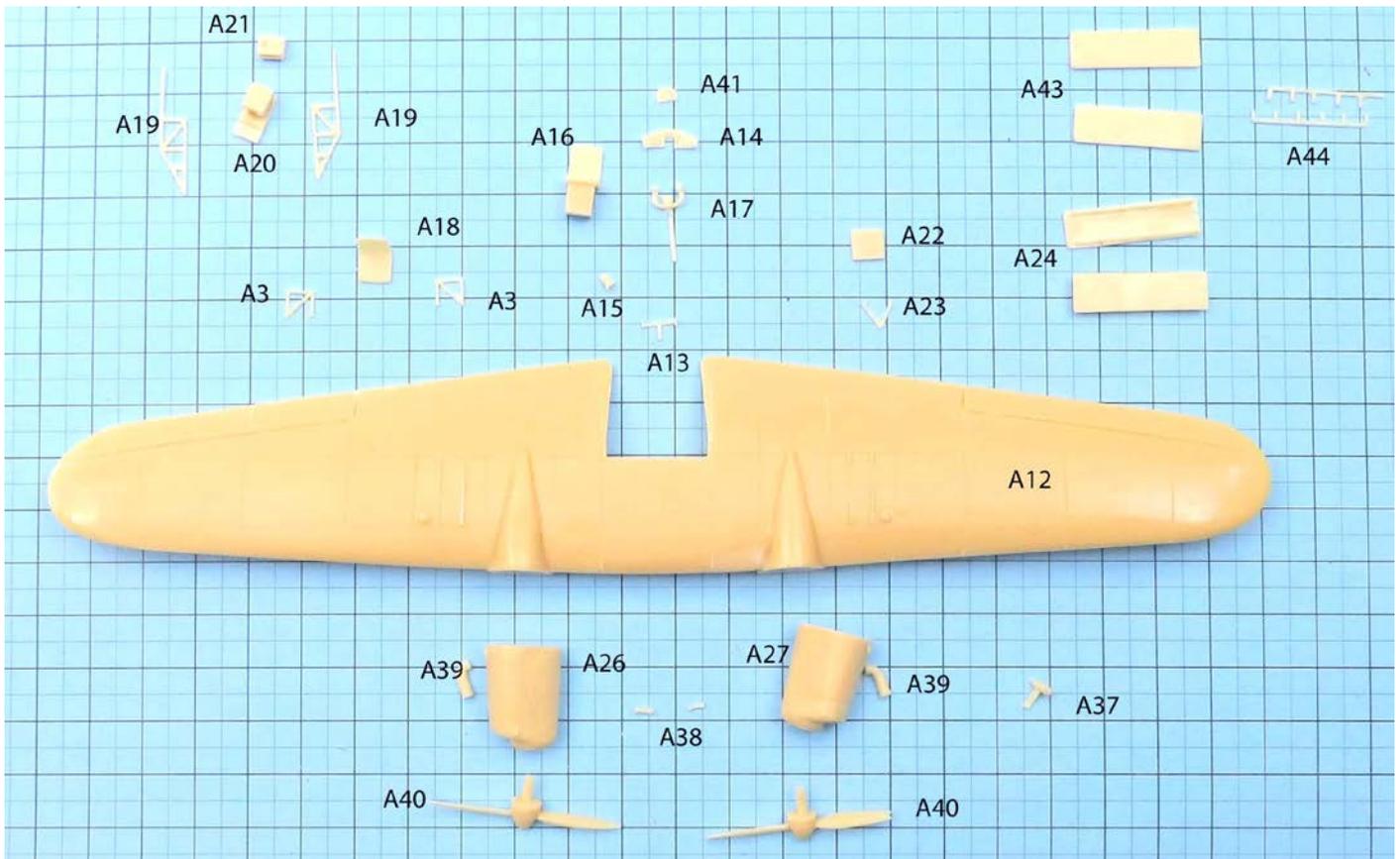
Painting of parts and (sub) assemblies should be done at convenient points in the building process.

Note that most pictures with the instructions below have been made during the assembly of the prototype for the kit, so small differences in assembly order and configuration may be present. The pictures reproduced represent the float version; for the wheel version relevant pictures from the building instructions of the Koolhoven F.K.49, having the same wheel undercarriage, have been included. The assembly order may be different, pending the choice being made for airbrush or brush painting. And of course these guidelines reflect our building routine.

The parts of the first kit, used to produce these building instructions, show more air bubbles than later production kits; the moulds have been corrected to avoid them. Some parts are still included in the kit, but have been replaced by new ones.



A copy of these building instructions can be downloaded from www.hollandaircraft.nl/resin_kits.html





1. Remove the resin parts from the sprues; this can best be done with a razor saw. Clean the flash and check whether the parts are bent. If this is the case, put them in warm water and correct. Cool down the flat parts on a flat surface.

Pay attention to the cabin side walls (A7 and A8); remove first the support bar at the rear of the walls. Note that the forward top corners of the walls are curved inwards intentionally to obtain a better fit with the cockpit roof. The fine edges of the walls and aft fuselage should fit snugly into the ridges on the bottom of the fuselage and the underside of the wing. Check whether the forward side of side walls and floor line



up well. If not, adjust. Dry fit all parts of the fuselage and the wing, fixing them with tape to each other. In my case I had to remove the lengthwise strips at the underside of the wing.



2. Decide whether you want to mount the control surfaces in deflected position. If you decide to do so, separate elevator halves and rudder from parts (A4), (A5) and (A6) with a saw with a thin blade and a sharp knife. Remember that the elevator half with the trim surface has to be mounted at the port (left in flight direction) side; mark it with a piece of tape with a P. Separate also the ailerons from the wing (A12), if you want to mount these in a deflected position. This is done best by deepening the separation cut on upper and lower side with a scribe tool and finishing the cut with a knife. Remember that the aileron with the trim surface must be mounted at starboard; mark the starboard aileron with a piece of tape with an S.



3. Decide whether you want to mount the cabin doors (A9 and A10) in open or closed position. If you select a closed position, glue the door in the sidewall opening. Dry fit in any case the doors, and adjust if required.



4. Decide whether you want to mount the stretchers (A24) in the cabin. If you intend to do so, remove at each side 0.5 mm from the width of the stretchers in order to be able to mount the folding seat (A22 and A23) in extended position.

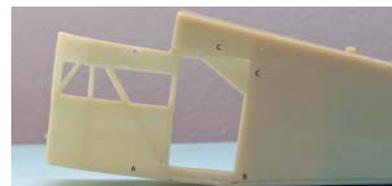


5. Glue a piece of 2.5 x 13 mm styrene sheet of 0.4 mm thick to the stiffening beam on the fuselage bottom (A2). This closes the gap beneath the rear cabin bulkhead.

6. Glue the fuselage bottom (A2) to the rear fuselage top (A1). Align the end well.



7. Attach the two cabin sidewalls (A7 and A8) provisionally with tape to the aft fuselage (A1) and fuselage bottom (A2). The top of the walls should fit under the top sides of the aft fuselage; the sides should be flush with the aft fuselage sides; correct if necessary.



8. Glue the left side wall (A8) in place. Glue first the lower edge (A), then fit and glue the rear edge (B), which gives the floor the correct angle, and finally glue the top edge (C), which gives the wall the right position.

9. Dry fit the wing (A12) on the top of the cabin walls. It should fit snugly with the top part of the aft fuselage. Correct if necessary. No gaps should appear between walls and wing lower surface; correct if necessary. The trailing edge should be aligned with the top "stringer" of the aft fuselage.

10. Glue the engines (A26 and A27) to the nacelle fairings moulded with the wing. Pay attention that the axis of symmetry of the engines is parallel to the fuselage length axis.





Now is a good moment to paint the inner side of the left wall, the floor and ceiling of the cabin and the area of the wing lower surface and the wing leading edge, which will be part of the cabin and cockpit ceiling. Also, the parts that go in the cabin (A3, A13 through A24 and A41) can be painted now. The inner side of the nose section (A11) and the inner side of the starboard cabin wall (A7) can be painted also, but the gluing edges should be left free of paint.



- Open up the window under the nose (A11). Dry fit the nose to the side walls and fuselage floor. Check whether the bottom of nose and fuselage align well, that is that the nose is not pointing downwards. If it does, sand away a bit from the top of the nose sides where it joins the cabin wall edges. Check the alignment of the fuselage and nose bottom with the carton template **C**. *This is very essential; if the nose points downwards, you are in for a lot of plastering and sanding to get it right!*



- Mount the navigator/radio operator seat (A18) to its supports (A3). Decide whether you want to mount folding seat for the nurse (A22) in folded or extended position and mount the legs to the folding seat (A23) accordingly. Note that the folding seat has to be hinged at the left side, as the legs of the nurse will interfere with the stretcher, if it hinges at the rear side.
- Attach scratch made or PE seat belts to the navigator/radio operator seat, the pilot seat and the folding seat for the nurse.

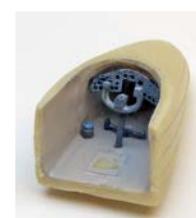
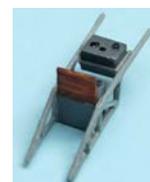


- Glue the equipped folding seat on the notches at the inside of the port aft fuselage wall.
- Glue the starboard side wall (A08) in place. Follow the same procedure as for the port side (step 7).



Paint the edges of the inner side cabin walls, if there is still unpainted surface visible.

- Mount the radio racks sides (A19) to the radio operator desk (A20) and to the upper radio equipment (A21). Dry fit it on the cabin floor in the superficially drilled holes on the fuselage bottom. If the frame is too wide, drill a third 0,5 mm hole next to the left one and close the original one.
- Mount the rudder bar (A13) on the location indicated in the three view drawing and marked with a superficially drilled hole on the fuselage bottom.
- Detail the instrument panel (A14) and mount it in the nose.
- Mount the control stick (A17) on the location indicated in the cabin side view drawing and marked with a superficially drilled hole on the fuselage bottom. Adjust its length in proportion to the height of the pilot seat and the position of the control panel.
- Mount the compass (A15) under the instrument panel. Remove the casting stud before gluing.



- Dry fit the equipped nose (A11) to the floor and the cabin sidewalls again. Use a piece of tape to keep the upper part of the sidewalls on the correct distance to align well with the sides of the nose, and glue the nose in place. Use thick cyanoacrylate glue, so that you can move the nose until it is positioned well. Make sure that the upper edge of the nose is well aligned with the lower edge of the side wall windows and it is fitted well to fuselage wall and bottom.



- Mount the pilot seat (A16) and the navigator/radio operator seat (A18) on the small squares on the fuselage bottom.

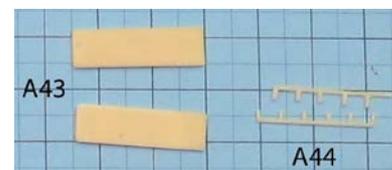




23. Mount the assembled rack (A19, A20 and A21) in the two superficial holes in the cabin floor, and align it well with the vertical frame tube of the starboard cabin wall, as indicated in the detailed cabin drawing, and secure it with a drop of glue between the vertical frame tubes of the wall and of the rack. Cut off the excess length of the two vertical rack frame tubes equal to the top of the side walls.



24. As the stretcher support frames of part (A24) are rather fragile, the kit provides you with a back-up in case the frame is irreparably damaged. You can produce frames by cutting the ladder type part A44 in two lengthwise and glue these under part A43. If you have decided to place the stretchers in the cabin, provide the rear stretcher with two legs made of pieces of strip of 4.5 mm length at the forward side to keep it horizontal when resting on the floor; provide the forward stretcher with four legs of 4.5 mm length to bring it on the same level. Apply fastening straps made of strips of painted tape to the stretchers. Mount the stretchers on their place.



25. Remove the resin pins of elevator halves (A5) and (A6) and fin (A4); they are too weak to make a strong connection. Instead drill 0.4 mm holes in the stabilizer halves and the fin at these locations and mount a piece of 0.4 mm brass rod in them. Drill 0.4 mm holes in the marked locations on top and sides of the aft fuselage (A1). Make sure the positions are aligned with each other; use the pins in the tail planes as stamp if necessary.

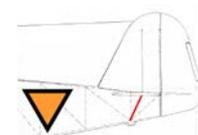


26. Drill six 0.3 mm holes for the fin rigging lines on the marked places in fin and stabilizer halves (1 and 6 mm from the rudder and elevator hinge line, as indicated in the drawing). Glue the fin (A4) to the aft fuselage (A1). Make sure it is normal to the top fuselage surface.

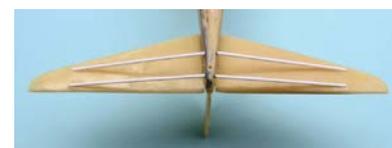
27. Glue the stabilizer halves (A5) and (A6) to the aft fuselage (A1). Make sure they make an angle of 90 degrees with the fin (A4). Pay attention that the trim surface is on the correct (port) side.



28. If you are building the LVA version (1001), produce two stabilizer struts from 0.6 mm plastic rod and dry fit them from the lower edge of the fuselage as indicated in the drawing to the rigging wire holes close to the aft edge of the stabilizer halves. Glue them in place. The other rigging is by means of cables (see step 75).



29. If you are building the Finnish version (OH-MVE), produce four stabilizer struts from 0.6 mm plastic rod. Dry fit them under the stabilizer halves from the lower edge of the fuselage at indicated in the drawing to the rigging line holes in the stabilizer halves. Glue them in place. The other rigging is by means of cables (see step 68).

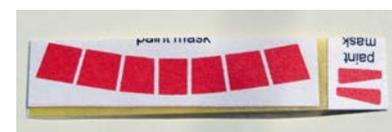


30. Dry fit the wing (A12) on top of the fuselage. It should fit tight, but not too tight; remove, if necessary, a bit at the outer side of the lengthwise frame tubes moulded with the wings with a knife to get a good fitting (see also step 1). No gaps should appear between walls and wing lower surface; probably a gap will appear at the port side of the cabin. Fill it with some styrene and sand to fit well. The trailing edge should be aligned with the top "stringer" of the aft fuselage.



31. Remove the transparent cockpit/cabin roof (A25) from the vacform sheet. It is slightly oversize to compensate for parts accuracy and misalignments. Make it fit trial and error to the forward sidewalls, the front wall and the wing, cutting and sanding it to the correct size and shape.

32. Prepare the fuselage for painting. Fix a piece of writable Scotch tape under the paint masks and glue some pieces of Tamiya tape under the Scotch tape. Cut out the red shapes with a sharp knife. Separate

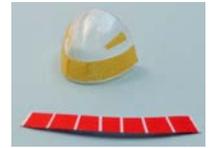




the Tamiya tape from the Scotch tape and the paint mask with knife point and tweezers, place them temporarily on a piece of styrene sheet. Check whether no scotch tape is left on the Tamiya tape. If so, remove it. Apply the Tamiya tape masks to the canopy.



33. Alternatively, as it is rather difficult to align the individual window masks well, you may also apply one single paint mask on the canopy.



34. Glue the overhead instrument panel (A42) inside the cockpit/cabin roof above the mid window. Use again white glue or Microscale Kristal Klear.

35. Glue the canopy to fuselage with white glue, Microscale Kristal Klear or equivalent. Do this in two steps; first glue the bottom edge on the canopy to the nose, then glue the two sides to the sidewalls. Apply the glue in small quantities with a metal wire and clean excess glue immediately afterwards with a humid cotton stick.



36. Prepare the fuselage for painting. Measure the height of the cabin windows openings and the width of the door openings. Make two strips of carton, one for the windows, approximately 6 mm wide and one for the doors, about 13 mm wide. Cut window and door "shutters" trial and error for each of the six openings and mark them clearly. Fit them in place. Preparing the carton "shutters" gives you also a good feel for cutting the cabin windows later on.



37. Prepare a strip of thin carton of 99 mm length. Use this to measure the distance from the end of the fuselage (partition between fuselage and rudder) at the bottom of both fuselage walls. Make a small cut there, first with a razor saw, then enlarge it a bit with a knife. This is the position of the aft member of the landing gear V-strut or the float N-strut.



If you paint your model with the brush, it may be convenient to paint the wing and the fuselage and to apply the decals before mounting the wing on the fuselage.

38. Glue the wing on the top of the fuselage walls. Carefully feed drops of cyanoacrylate glue in the joint between fuselage wall top and wing by means of a thin metal wire.

39. Fill the gap between the aft part of the wing and the fuselage with e.g. Vallejo putty, excess of which can be cleaned with a cotton stick dipped in water.



40. Make a fairing for the aileron push-pull rod from a piece of rod or sprue and glue it at the location indicated in the drawing. Drill a hole in the aft pointing surface. Drill two slanted 0.3 mm holes in the aft fuselage top surface as indicated in the drawing for the rudder control cables. Close the lowest of the three holes in the aft fuselage sides.



41. Cut six control horns about 3 mm high from the piece of 0.4 mm thick styrene for the elevator halves and the rudder. Glue the control horns for the elevator halves at the hinge line and the most inboard full rib; for the rudder on the hinge line on the third rib from the bottom. Cut two control horns of 5 mm high for the ailerons. Glue them on the aileron upper surface, slight after the leading edge and angled forward, opposite the fairings for the push pull rod.



This is a convenient moment to paint the external surfaces and to apply the decals. Pay attention to the orange triangle wing decals, part of them must be located over the ailerons. Accurately determine their position, and if you have separated the ailerons from the wing, cut the decals on the separation line and apply them separately to wing and ailerons. Pay also attention to the aileron push-pull rod fairings; try to locate the decals such that they are located in a transparent part of the decals.



42. Give the canopy first a coat of gloss transparent varnish. When dry, paint the model. Use grey primer, this will also serve to paint the cockpit ceiling. Next apply a couple of layers of aluminium for the Finnish version or grey for the 1001. Remove the paint masks, apply the decals and seal them with gloss or satin varnish.
43. Open up the slanted holes in the exit openings of the control cables in the aft fuselage and in the fairing on the top surface of the wing.
44. A template for the cabin windows is included in the 1/72 scale drawings. It is however recommended to check whether it is consistent with the maximum dimensions of the window openings. Cut the cabin windows from the clear plastic sheet about 0.5 mm larger than the window openings and fit them by trial and error, cutting and sanding the edges to the correct size. Glue them in the window openings with Microscale Kristal Klear or equivalent. Also cut out the window under the nose, make it fit and glue it in place.

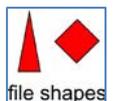


If you decide to build the F.K.49A with floats, jump to 56. Else continue here.

45. Cut a length of 40 mm from the 1.0 mm diameter brass rod, which will function as the core of the main landing gear leg. Bend the last 5 mm in a sharp 90 degrees angle; this will serve as the axle for the wheel. Repeat for the other landing gear leg.
46. Glue on each side of the brass rod half streamline profiles (A29) of 28 mm length in a plane normal to the plane of the brass part. Keep the lower end 1 mm above the wheel axle.
47. When dry, apply putty between the two half streamline profiles and sand the surface flat. Adjust the width of the strut to 3.5 mm.
48. Decide whether you want to mount the landing gear in its maximum extended (flight) position or in its compressed position, which is 4 mm shorter. In the last case remove 3 mm from the top of the streamline profiles and brass rod. Use a razor saw to carefully cut the streamline profile and the putty to avoid damaging the brittle putty and splitting the profiles from the brass core. You can use the one extra millimetre to correct for unequal height of the wing tips.
49. Close the eccentric holes in the underside of the nacelles. These are for the float version, so not relevant for the wheel version.



50. Dry fit the wing to the fuselage and fit the main landing gear legs. Check that the holes in the nacelle are deep enough to accommodate the brass core completely. Make a test set up as shown in the photograph and position the aircraft on it, the landing gear legs resting against the plastic strip and with wing and fuselage well aligned with the square pattern. Measure the height of each wing tip above the surface. Adjust the length of the streamline part of the leg at the highest wing tip bit by bit until the wing tips are on equal height.
51. Prepare the V strut mounting by filing the end that joins with the fuselage first with a V-shaped file, then with a small square file. Dry fit them to the lower edge of the fuselage wall at the mounting spots.



52. Apply the "Dunlop" and "aircraft tyre" decals to the main wheels (A30), seal the decals with flat varnish.
53. Adjust the length of the small axle such that the distance between wheel and landing gear leg is 1 mm and mount the main wheels to the axles. Note that the port leg is still marked.



54. Fit the main landing gear legs in the holes of the engine nacelles. Check the height of the wing tips above the horizontal surface again and note down the difference. Correct if necessary the length at the side where the tip is highest, both the brass rod and the streamlined part. Shortening a leg by 0.5 mm makes the wing tip go down by about 2.5 mm. Note down whether it is the marked port leg or the



other one. A mistake will require you to shorten the other leg twice the size of original correction. Shorten both the brass core and the streamline body.

55. Glue the V-struts (A28) with thick cyanoacrylate glue to the lower edge of the fuselage walls on the indicated places according to the three view drawing and to the bottom of the faired landing gear leg. Secure the top of the landing gear legs with a drop of glue. *This step is the same as for the Koolhoven F.K.49, shown in the picture at the right.*



If you build the F.K.49A with floats, continue here. If you have built it with wheels jump to 75.

56. Prepare the port float by closing the port side 0.5 and 1.0 mm holes in the top surface of one of the (A33) copies. Enlarge the 0.5 mm hole at the starboard side to 1.0 mm. Open up the small holes at the float inboard side with a 0.3 mm drill. Make a vertical cut in the rear surface with a saw to accommodate the float rudder shaft later on.



57. Prepare the starboard float by closing the starboard side 0.5 and 1.0 mm holes in the top surface of the other (A33) copy. Enlarge the 0.5 mm hole at the port side to 1 mm. Open up the small holes at the float inboard side with a 0.3 mm drill. Make a vertical cut in the rear surface with a saw to accommodate the float rudder shaft later on.

58. Close the central holes in the underside of the nacelles. These are for the wheel version, so not relevant for the float version.



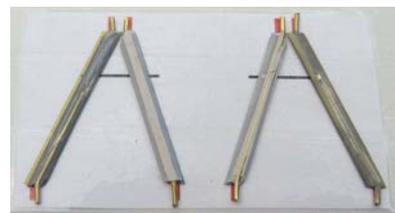
59. Drill the 1 mm diameter holes in each engine nacelle a bit deeper and drill another 1 mm hole 3 mm before the existing one.

60. Cut a piece of 40 mm length from the 1 mm diameter brass rod and bend it in the shape indicated on the template.



61. Glue on each side of the brass rod half streamline profiles (A32) in a plane of the brass part to form the aft main float strut.

62. When dry, apply putty between the two half streamline profiles and sand the surface flat. Adjust the width of the strut to 3.2 mm. Adjust the length according to the paper template.

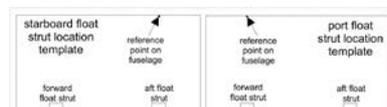


63. Repeat steps 60 through 62 for the other aft strut and for the two forward struts.

64. Drill 0.3 mm holes in the N-struts (A31) at the float side and mount a piece of 0.25 mm metal wire in them. Align the holes in the strut well with those in the floats. Mark again the port strut.



65. Cut out the float strut location templates and attach them with a piece of tape to the fuselage underside. Align the reference point well with the cut you have made in the underside of the fuselage to mark the location of



the aft member of the N-strut. Place the forward and aft float struts in the holes in the port nacelle underside and adjust the brass stubs trial and error until the lower end of the struts fall in the notches at the bottom of the template. Check whether the notches are wide enough. If not, adjust. Mark the ports side struts clearly as P. Dry fit the float on the float struts, and adjust the brass stubs at the float end until both struts are well aligned. Repeat the process for the starboard struts and float. Apply glue to the joints with the nacelle and allow to dry.



66. Measure the distance between the outside of the forward part of the floats (this should be somewhere between 78 and 80 mm). Make a jig





by attaching two pieces of wood or plastic on e.g. a cutting mat.

67. Place the floats of the model between the pieces of wood or plastic and apply glue to the joint of the struts with the float.



68. When dry, remove the model from the jig and remove the carton jig from the model.

69. Fit the N-struts (A31) between the sides of the float and the fuselage. Adjust the length of the metal pins such that the strut fits nicely to the float. Adjust the length of the aft strut at the fuselage side such that it just reaches the fuselage. Give it a slanted end so that it fits nicely to the fuselage. Adjust the forward strut such that it rests against the nose with a slanted end.



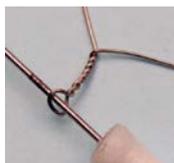
70. Cut the exhausts (A39) to fit in the cavities in the nacelles. Paint them and glue them in place.



71. Cut two pieces of 0.5 mm diameter styrene rod of 14 mm length to form the horizontal float struts and glue them on the two inverted V-struts according to the template 9 mm under the nacelle. Bend small V-shapes from the 0.4 mm brass wire to form the steps along the main float struts. Glue them in place.



72. Produce four eyelets from 0.25 mm metal wire to serve as guidance to the float rudder control cables. Drill two 0.3 mm holes next to the aft strut of the N-strut in the fuselage lower side to attach the float rudder control cables and two 0.5 mm holes next to the aft main float strut in the float top surface to insert the eyelets in. Glue the eyelets in place.



73. Feed control cables through the eyelets and glue them in the 0.3 mm holes in the fuselage.

74. Paint the float rudders and glue them in in the vertical groove you have made in the float rear surface. It is advised to protect them against damage with a small metal rod under the rear of the float. When the glue is dry, dry tension the lines and glue the other end of the line to the stubs at the top of the float rudder shafts.



Continue here for both versions.

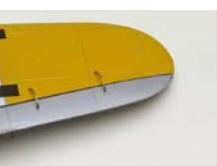
75. Drill 0.3 mm holes through stabilizer halves and fin as indicated in the drawing, feed rigging lines through them, tension the lines and fix them with a tiny drop of glue.



76. Drill a 0.5 mm hole on the indicated place under the aft part of the fuselage. Mount the tail wheel (A35) in it, if required with a deflection corresponding to the deflection of the rudder.



77. Produce six aileron hinges from 0.4 mm brass wire by winding it two turns around the styrene tube template and cutting the windings, such that you have two rings. Cut these two rings in three equal parts to obtain six hinges. Glue them in place as indicated in the top view. If you have mounted the ailerons with different deflections, adapt the size of the hinges to the actual aileron deflection. You probably need an extra ring to produce enough larger hinges for the upwardly deflected aileron.





78. For the OH-MVE: make a frame for the air driven pump/generator from 0.4 x 0.5 mm strip according to the template, mount the pump (A37) on it. Correct the length of the legs, such that the air pump/generator body is parallel to the surface the frame is resting on. Mount the assembly at the starboard side of the fuselage under the windows at the place of the vertical cabin frame tube as indicated on the three view drawing. For the 1001: mount the air pump below the starboard wing as indicated in the three-view drawing.



79. If you have separated the control surfaces from wing and tail, glue them in place with the desired deflection

80. Cut two pieces of thin metal wire of the correct length and glue between the fairings and the control horns on the ailerons.



81. Open up the slanted holes for the control cables in the aft fuselage and in the fairings on top of the wing. Glue pieces of control cable in the slanted holes in the aft fuselage and let it dry. When dry lead the lines over the control horns, tension them and fix them with a tiny drop of glue.

82. Glue a Venturi tube (A38) to a piece of 0.25 x 0.5 mm styrene strip, paint them and mount it on top of the nose, aligned with the air flow.



83. Bend the pitot tube from a piece of 0.25 mm wire and fix it to the port wing as indicated on the drawing.

84. If you are building the model with open doors: Mount the doors (A9) and (A10). Support the doors with a piece of metal wire cut to the correct size.



85. Mount the antenna mast, made of a piece of 0.5 mm brass rod, on top of the fuselage in the middle of the wing at the location of the forward spar for the OH-MVE or in the middle of the wing at the aft door post for the 1001. Positions of the antenna mast are shown in the three-view drawing. Apply the antenna wire between antenna and top of the fin. Model the isolators by a drop of white paint.



Painting instructions

Below the following abbreviations are used: HE = Humbrol enamel, RA = Revell Aqua, VMA = Valejo Model Air. The paints used are the ones I have used; equivalent colours of other brands may be selected.

Cabin interior

Walls, floor, ceiling and frame tubes: Light grey (HE 129). Stretcher covers: Medium grey (HE 128). Seats: Leather (HE 62), dry brushed with mahogany (VMA 71.036). Radio desk: Natural wood (HE 110) dry brushed with mahogany (VMA 71.036). Instrument panels and radio: Dark grey (HE 123), instrument dials black (HE 21). Stretcher straps: Cream (HE 103); Stretcher buckles: Aluminium (VMA 71.062).

Outer finish

Both versions: Tires: Tank grey (RA R36178). Exhausts: Steel (VMA V71.065).

F.K.49A with orange triangles: All external surfaces Grey, RAL 7001. Spinners: Red (HE 19).

In Finnish service (note that photographs show several, different paint schemes): All external surfaces aluminium (VMA 71.062), after 18 June 1941 a 0.5 m (6.9 mm) wide RLM 04 or British/US insignia yellow band (HE69) behind the registration around the aft fuselage and underside wing tips wide 1/6th of the span



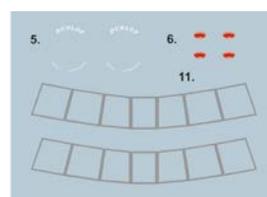
(37 mm) in the same colour. Spinners: Red (HE 19); aluminium (VMA 71.062), if combined with the Red Cross symbol on the fin.

Decal placement

Three decal sheets are included, printed with different printing techniques for cost reasons.

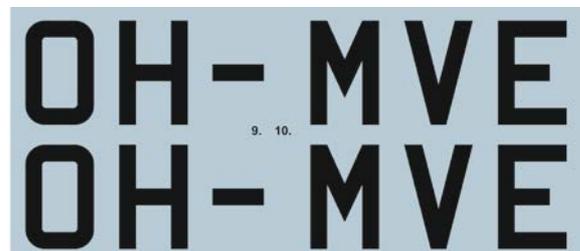
It is advised to give all decal sheets a top layer of Microscale Liquid Decal Film to protect the fragile decals. Do not use solvent-based varnish, this may attack both ALPS and laser printed decals.

The actual layout of the decal sheets may be different from the one shown here.



Both versions: White Dunlop decal (5) on tires; VDM logo's (6) on propellers, silver window frames (11) on wind-screen

1001 with orange triangles: Small triangle (2) and fuselage registration (1) on fuselage (see scale drawing), large triangles (3) half way left and right wing in span direction, the black bordered orange rudder decal (4) it is best applied on a black painted rudder.



OH-MVE in Finnish service: OH- and MVE (9) and (10) decals on wing, just outboard of engine nacelles (see scale drawing), OH-MVE (8) on fuselage directly after wing trailing edge in the middle of fuselage height. Red cross (7) on fin.

Enjoy your model.

Rob Hamann

HA Models

info@hollandaircraft.nl

Model conception, masters and decal drawings by Rob Hamann, with the technical (and moral) support of Maarten Schönfeld, Hans Berfelo and Erwin Stam. Wing master by John Haas, floats and engine nacelles by Hans Berfelo. Documentation from various books and material provided by Harry van der Meer/Aviodrome and Mika Jernsfors/Arctic Decals. Prototypes built by Hans Berfelo and Rob Hamann. The resin kit has been cast by Tilly Models, the decals have been printed by Arctic Decals.

Building reports of the masters for the F.K.49 models can be found at <http://www.hollandaircraft.nl/K15%20FK%2049.pdf> and of the prototype of the F.K.49A at <http://www.hollandaircraft.nl/K15c%20FK%2049A.pdf>. Pictures of your finished model are welcome at info@hollandaircraft.nl