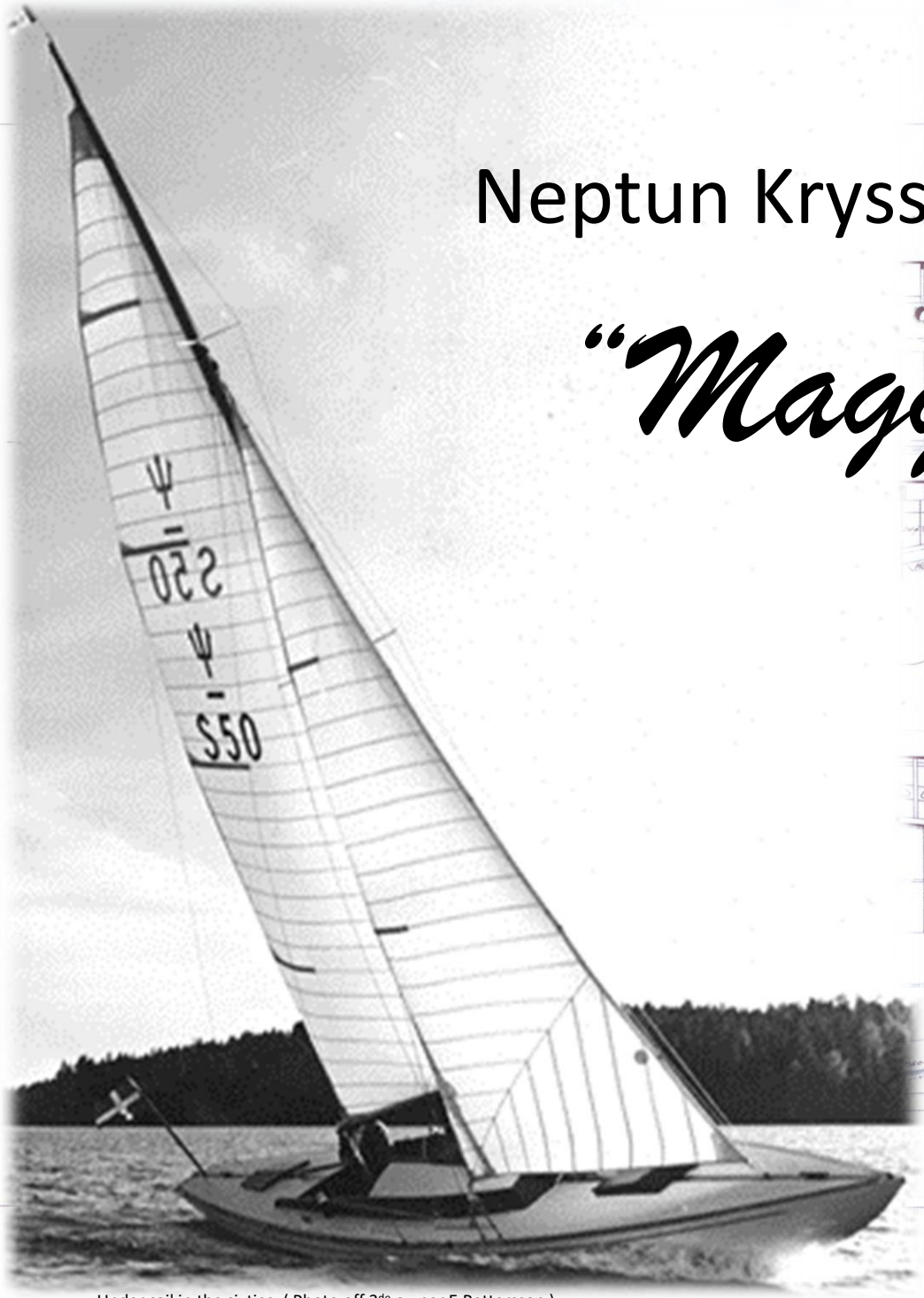
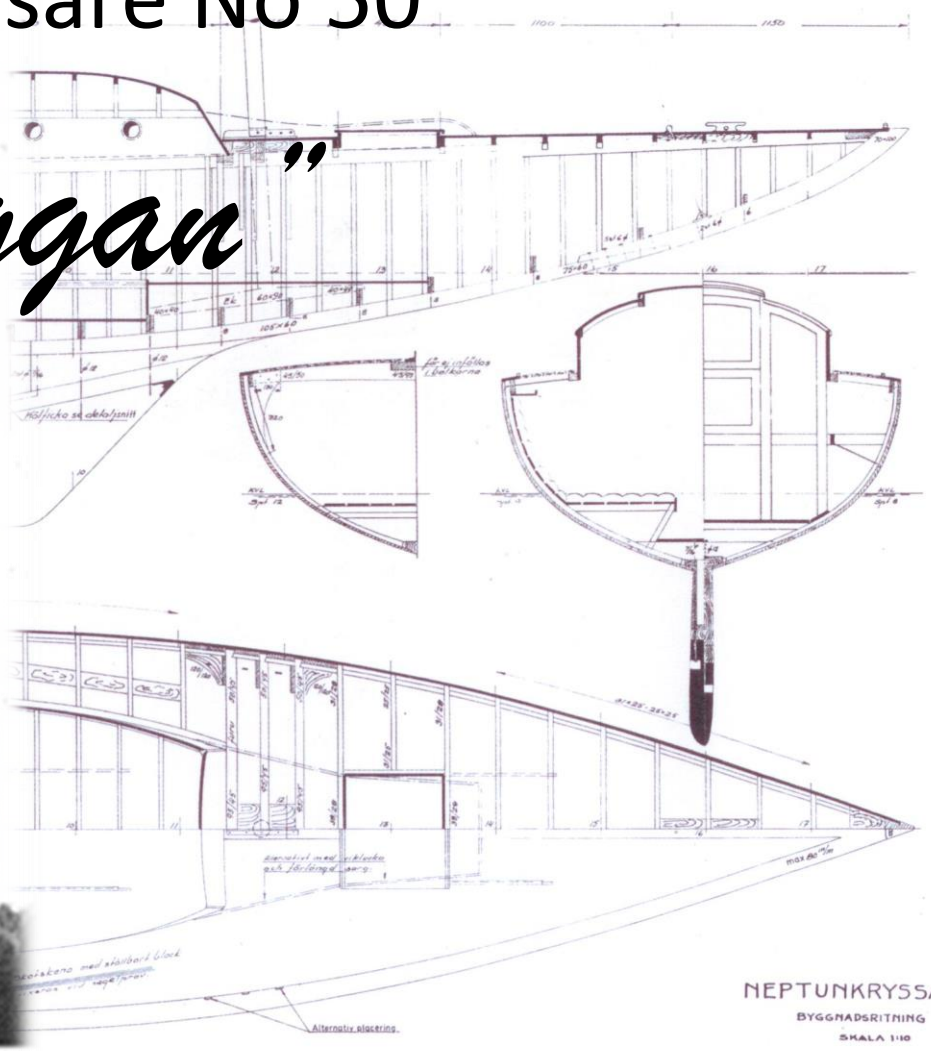
Neptun Kryssare No 50

"Maggan"



Under sail in the sixties. (Photo off 3de owner E.Pettersson)



Renovation 2016-20xx

print date: 3-Dec-17

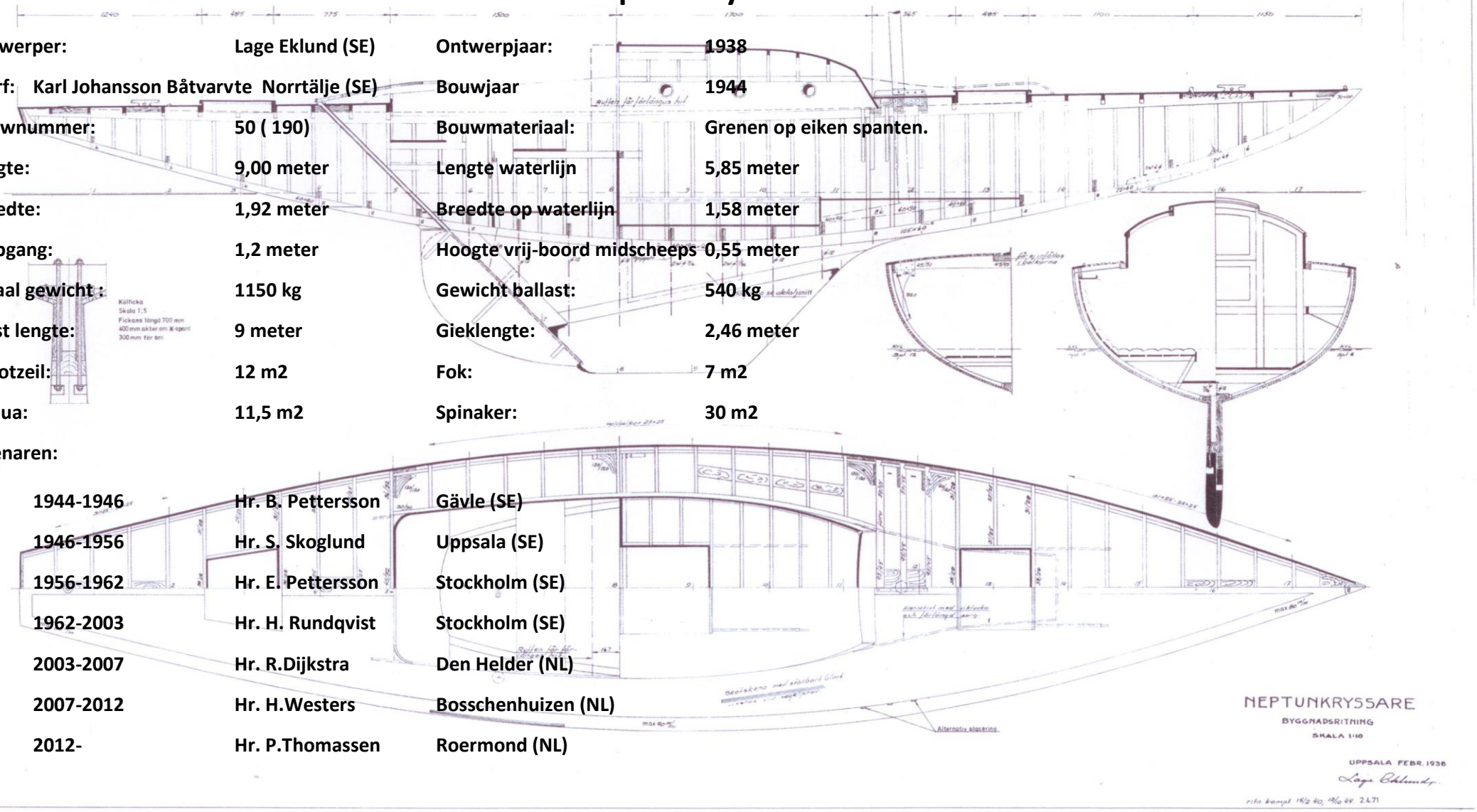
General data

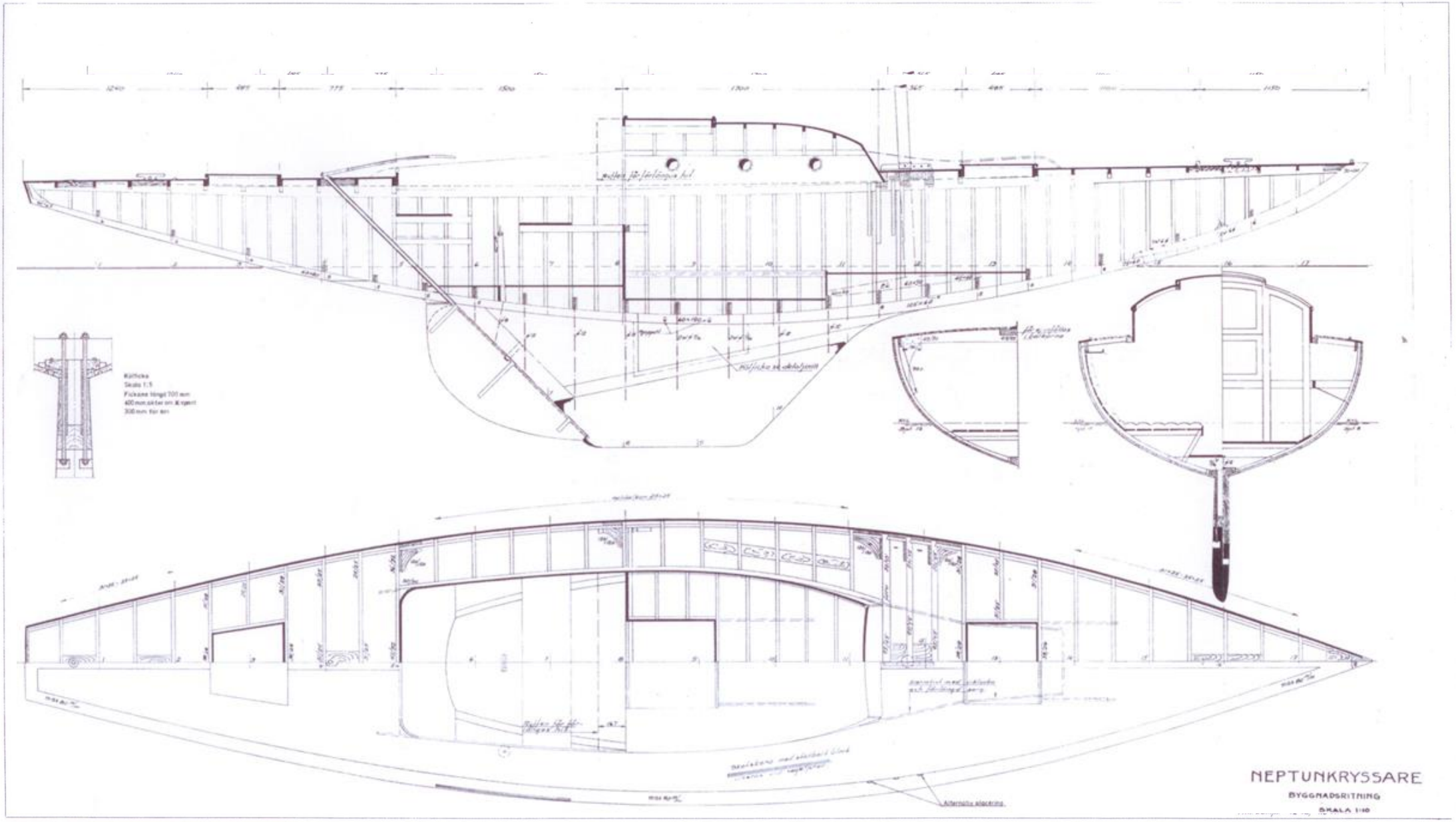
Neptun Kryssare

Ontwerper:	**Lage Eklund (SE)**	**Ontwerpjaar:**	**1938**
Werf:	**Karl Johansson Båtvarvte Norrtälje (SE)**	**Bouwjaar**	**1944**
Bouwnummer:	**50 (190)**	**Bouwmateriaal:**	**Grenen op eiken spanten.**
Lengte:	**9,00 meter**	**Lengte waterlijn**	**5,85 meter**
Breedte:	**1,92 meter**	**Breedte op waterlijn**	**1,58 meter**
Diepgang:	**1,2 meter**	**Hoogte vrij-boord midscheeps**	**0,55 meter**
Totaal gewicht :	**1150 kg**	**Gewicht ballast:**	**540 kg**
Mast lengte:	**9 meter**	**Gieklengte:**	**2,46 meter**
Grootzeil:	**12 m2**	**Fok:**	**7 m2**
Genua:	**11,5 m2**	**Spinaker:**	**30 m2**

Eigenaren:

1.	**1944-1946**	**Hr. B. Pettersson**	**Gävle (SE)**
2.	**1946-1956**	**Hr. S. Skoglund**	**Uppsala (SE)**
3.	**1956-1962**	**Hr. E. Pettersson**	**Stockholm (SE)**
4.	**1962-2003**	**Hr. H. Rundqvist**	**Stockholm (SE)**
5.	**2003-2007**	**Hr. R.Dijkstra**	**Den Helder (NL)**
6.	**2007-2012**	**Hr. H.Westers**	**Bosschenhuizen (NL)**
7.	**2012-**	**Hr. P.Thomassen**	**Roermond (NL)**





NEPTUNKRYSSARE

BYGGNADSRITNING

SKALA 1:10

Neptun-Kryssarklubben

MÄTNINGSBREV

för Neptunkryssaren n:r 50.

Båtens namn .....

Ägare Köpm. Birger Pettersson

Inregistrerad i .....

Hemort Gävle

Byggd av Karl Johanssons Båtvarv, Norrtälje år 1944

Skrov mätt den 9 Juli 1944

Längd över allt (9,00±0,05) =	8.980	Fribordshöjd (0,55±0,01) =	0.545
Längd i L. v. l. (5,85±0,02) =	5.860	Stävhöjd över L. v. l. (0,68±0,01) =	0.690
Största bredd (1.92±0,015) =	1.920	Akterhöjd över L. v. l. (0,567±0,01) =	0.568
Bredd i B. v. l. (1,535±0,01) =	1.577	Djup under L. v. l., m. trimfickor (1,20±0,015) =	1.195
Kölvikt enl. gjuteriets attest (max. 540 kg) =	506	Spinackerbommens längd	~~2,30~~ 2.700

Mätningsmän.

Ovannämnda "Neptunkryssare" är byggd enligt för klassen nu gällande ritningar, då den enligt ovanstående attest av mätningsmän befunnits uppfylla för denna klass nu gällande bestämmelser, vilket härmed intygas.

Gävle den 18/7 1944.

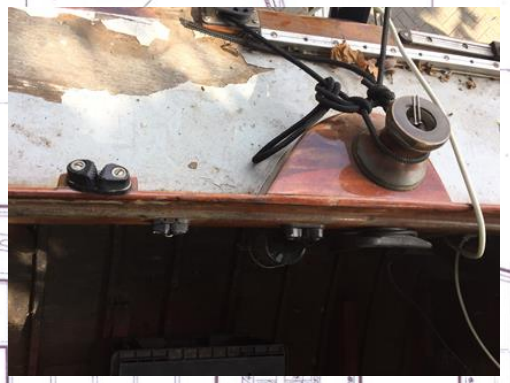
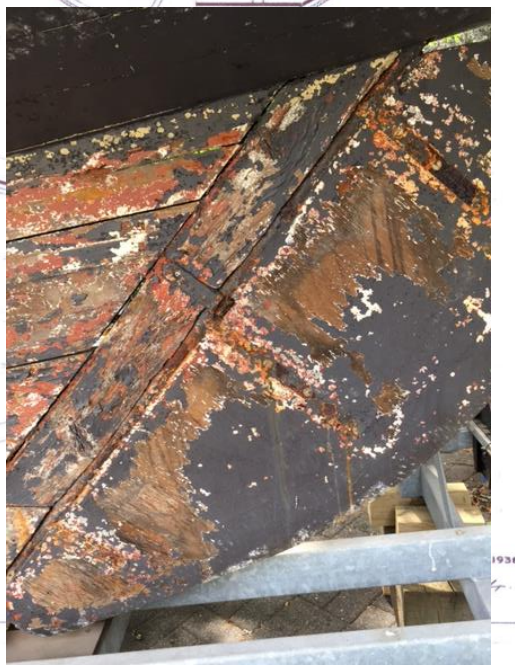
Neptunkryssarklubbens Tekniska Kommitté.

Maintenance report

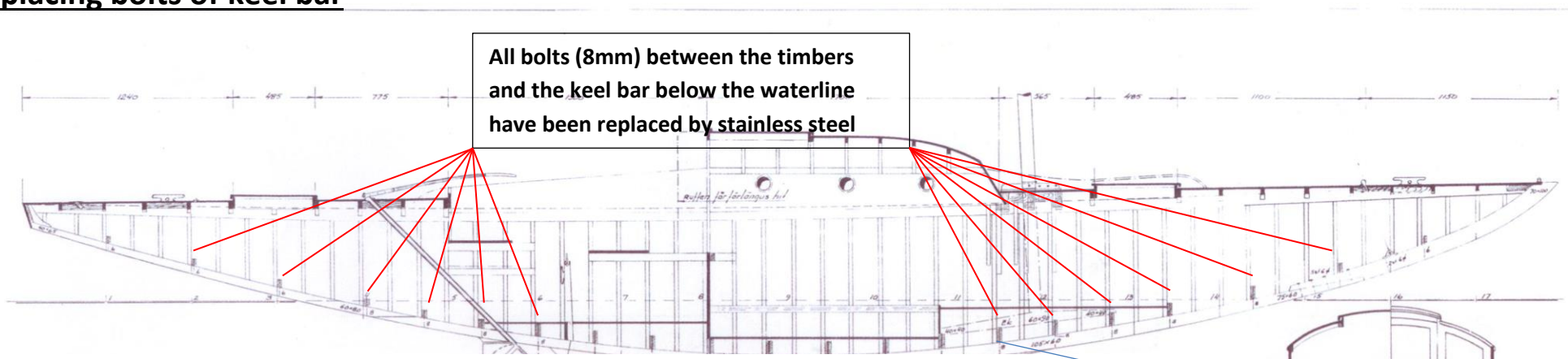
General information

I discovered by The boat by chance. I was so enthusiastic about the beautiful lines of the boat that I immediately bought her. She was in very bad condition and was stored outside with a heavy 5 hp. outboard on the mirror. Because it had been un used for such a long time, the mirror of the boat had been damaged. To bend the mirror back, I wetted the boat completely and stored her in a garage for drying. A construction strut was placed under the mirror and the mirror bent excessively. There she stood for 3 years so that the entire boat could dry properly. In 2016 I started refitting the boat. An attempt to remove the keel from her, so that she fitted in the garage and was easier to work on, failed.

In a search for information about the boat I came in contact with a very active Swedish club. The boat is still being built, but entirely of polyester. Thanks to the good contacts with this very active Swedish club, which every year organizes several competitions, I got a lot of information which was not on drawing, especially information about the mast, I special thank Nils Virving the chairman of the Neptukryssare club.

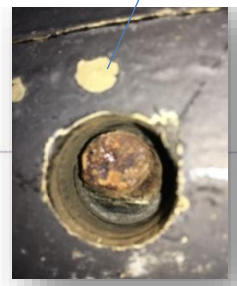



Replacing bolts of keel bar

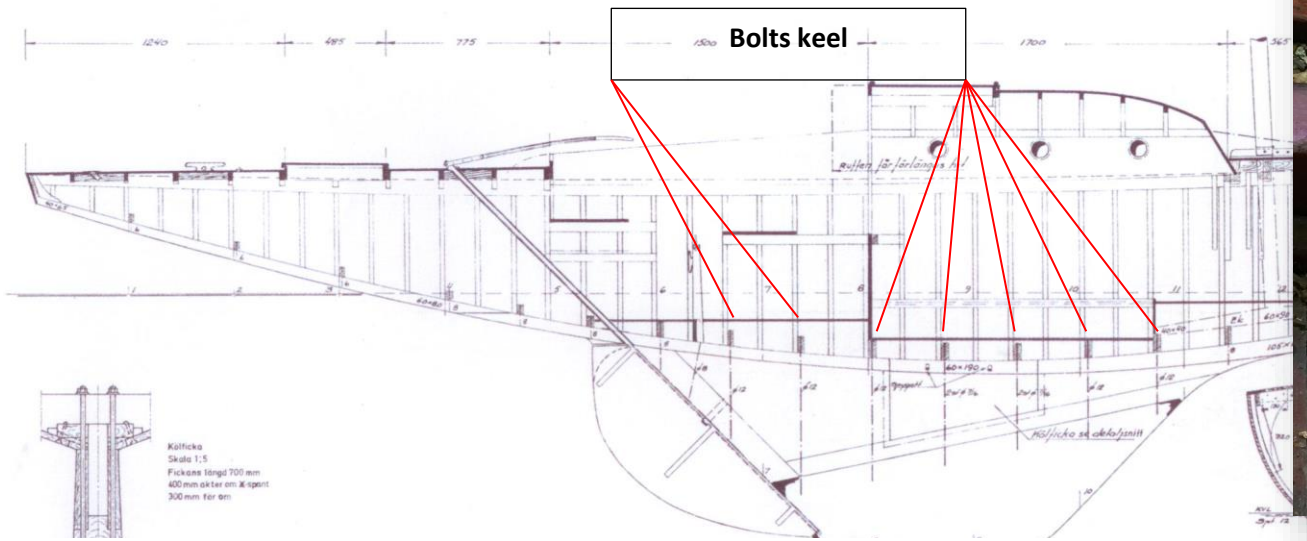


Working plan:

- Searching the bolts on the outer hull and drill them with a 25 mm hole saw to release the bolt head. (Finish all bolts one by one, not to loosen the entire structure at once)
- Remove the nut at the top.
- Drill out keel bolts from the top with an approx. 200 mm extended hole saw of 16 mm over the bolt length to approx. 20 mm before the end of the bolt head.
- Punch out keel bolt.
- Drill the last 20 mm from the bottom with 10 mm drill bit.
- Cut out the top edge 20 mm of the timber so that later the nut and the support ring can be fitted (approx. 20 mm)
- Fit stainless steel threaded end for the installation position. Approx. 15 mm shorter than the removed bolt.
- Secure the bottom nut with locktite and thicken the tread behind the nut with tape as a seal.
- Insert the new bolt from the bottom until the nut touches.
- Seal the bottom of the timber temporarily to flow down the epoxy.
- Mount the top of the bolt with a large support plate and a nut. (notch under support plate due to flow on filling rod)
- Tighten lateral clamping with 2 greased aluminum profiles and filled formed cup and refill with epoxy until the cup remain at the same level.
- Areas around the threaded rod and keel bar are closed and filled with epoxy. (The nuts on the outside of the hull capped with epoxy glue filler EP 2000 from Romar Voss)



Refit bolts keel

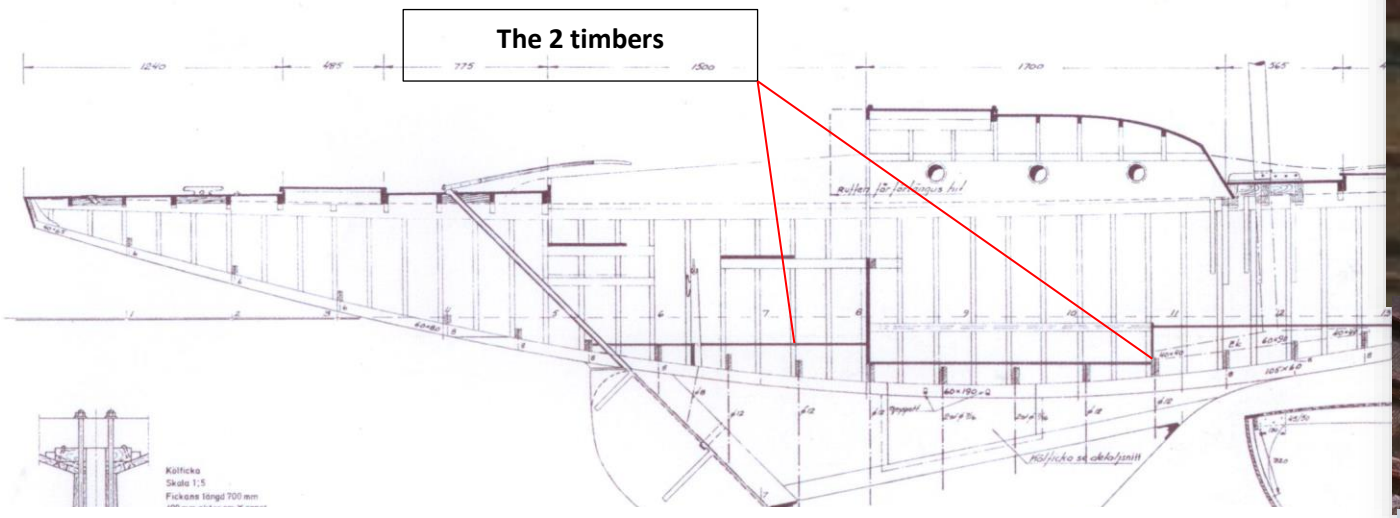


Working plan

The keel bolts are still in reasonably good condition of the original 12 mm thickness still around 10-11 mm is left. This has been checked when replacing a few rafters. Hardly weakened compared to thread core. (½ "thread core is 10.5 mm).

- Loosen or cut nuts.
- Cut out the top side so that the nut and the support ring can be infused into healthy wood later. (20 mm)
- Shorten bolts and possibly cut new thread. (where possible new metric thread M12)
- Keel bolts drilled with the extended hole saw to a depth of approx. 150 mm to clean the wood around the keel bolts to create a filling space.
- Bottomside rafter temporarily sealed to flow down the epoxy by filling.
- Place enlarged support discs with new nuts. (make a notch under the support plate to allow epoxy to flow)
- Tighten lateral clamping with 2 greased aluminum profiles and filled formed cup and refill with epoxy until the cup keeps on the same level.
- Areas around the threaded rod and keel bar are closed and filled with epoxy. (in some cases, more than 0.5 liters of epoxy are added to fill spaces in the keel bars.

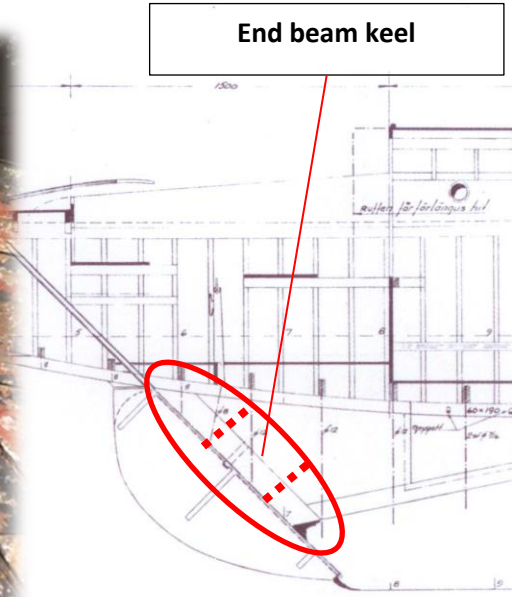
Replacing timbers



Working plan

- Searching the screws on the outside of the hull where the planks are bolted to the timbers.
- Tapping with Ø 6 mm drill bit to remove the head of the screws.
- Cut the timber into 3 pieces and take out carefully.
- shaping new timber from the timber residues. Sawing out timber on biggest position of thin plywood to check shape.
- Cut timber from 45 mm European oak.
- Applying chamfers cutouts and boreholes.
- Cut new thread (reduced due to recessing rafters) on the threaded rods (M12 instead of ½ ")
- Assemble with filling epoxy filler adhesive (EP 2000) and temporarily tighten the bolt.
- Secure from the outside with oversized stainless steel screws.
- Harden.
- Enlarged support discs with new nuts. (provided with notch under support plate allow the epoxy to flow)
- Tighten lateral clamping with 2 greased aluminum profiles and filled cup filling and refilling with epoxy until the shaped cup keeps on the same level.

Replace end beam keel



Working plan

- Disassemble rudder. (cutting stirring shaft)
- Remove the rotten rear end beam of the keel.
- Note dawn the form of rear keel bar using the old model.
- Create a new profile beam of the end bar approx. 10 mm wider than the original one (European oak).
- Tailor-made rear end bar and provided with necessary drillings and slots.
- Inject head gaps between the existing beams of the keel with PUR Kit.
- Abrade approx. 10 mm of the rear keel to fit the keel beam, up to healthy wood.
- Bonding the keel with epoxy glue (EP 2000)
- Drilling 2 holes Ø 12 mm 300 mm deep to place anchors. (also extra securing of existing beams)
- Inject anchor holes with PUR kit by means of extended nozzle (300 mm).
- Immediately place new rods (stainless steel rod Ø 10 mm) into the filled space.
- Seal the bolt heads with epoxy-glue EP 2000.
- Sanding keel bar to fit to rudder and rudder shaft.

Refit Keel

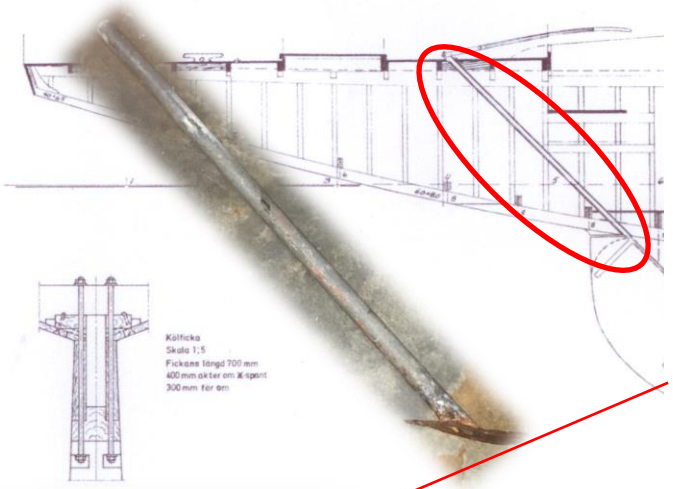
Working plan

- Sandpaper the keel with grit 24 to make the keel smooth.
- Inject intensly with PUR Kit from the seams (approx. 4 cm deep).
- Drill every 15 cm injection holes on places where the seam is too small to inject.
- Inject holes with PUR kit and temporarily seal them with wood plugs.
- After curing, cut out all seams (small and large) per side approx. 2 cm deep. Cut out connection to steel keel weight more than 3 cm.
- Seal all open milled seams with epoxy adhesive filler EP2000
- Seam keel-hull filling filler with a radius of 15 mm (EP 2000)
- Sandpaper the keel and keel transition to the hull (grit 80).
- Treat clear wood with injecting resin (De IJssel).
- Smooth filler with epoxy filler and fine sanding (grit 120).
- Treat keel with 2 layers of Primer (Primocon International)
- After installing the rudder, seal the underwater ship with antifouling

NEPTUNKRYSSARE
BYGGNADSRITNING
SKALA 1:10
UPPSALA FEBR. 1936

New Rudder tube.

The new stainless steel rudder tube is, compared with old one, a completely pierced rudder stock both under the hull (20 mm) and above through the deck (60 mm).



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Working plan

- Disassemble old rudder tube
- Sanding out the through-holes hull and cover up to healthy wood.
- Align new (extended) rudder-tube to the new stainless steel rudder shaft.
- Foot plate of the rudder-tube with 2 extra filling holes.
- Tighten rudder tube on the keel bar.
- Fit the separate support plate under the deck and temporarily kit it.
- Seal the underside of the space between the keel bar and rudder stock with a radius of 15 mm, adjoining the radius of the keel / hull.(EP 2000)
- Fill the keel bar space and the deck transit area with epoxy.
- Finish the rudder tube above the deck with wooden block

New rudder.

New rudder made of waterproof plywood and stainless steel fittings and shaft

Working plan

- Disassembly of old rudder
- Copy its form.
- Saw 2 layers of multiplex of 12 mm each
- Waterproof bonding of the 2 blades
- Form and rejuvenate coarse sanding with flex (grit 40).
- Milling the rounding to the rudder rod.
- Milling the grooves for the new stainless steel flange plates
- Treat with 2 layers of Varipox epoxy injection resin.
- Treat the rudder blade with Primocon primer (2x).
- Welding rudder blade to the rudder rod in built-in position.
- Top of rudder rod with teflon collar bearing.
- Cut off excess bolt lengths.
- Fill the flange plates invisibly after installation.
- Treat again with a layer of Pimocon.
- Equipped with antifouling together with keel and underwater hull.

Renovation inside boat.

General info:

Hull planks are made of untapped pine and almost impossible to sand with vibratory sanders because of the heat build-up in the greasy wood. The hull on the inside was also preserved with very tough material such as red lead, iron lead and linseed oil with turpentine. Blasting was also not an option either. Experiments have shown that the layers to be blasted were too tough compared to the soft wood. The only option that remained was very coarse paper sanding (grit 40) with sanding discs on the flex. (in case of coarse sanding, the heat goes into the sanding.) The narrower strips are sanded with a turned-down backing pad (80 mm) and cut-to-size slices.

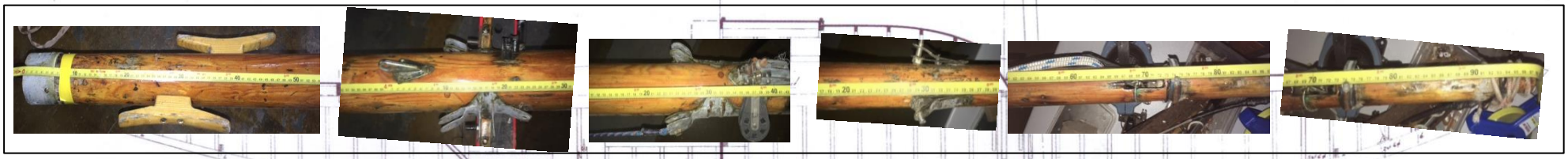
Working plan

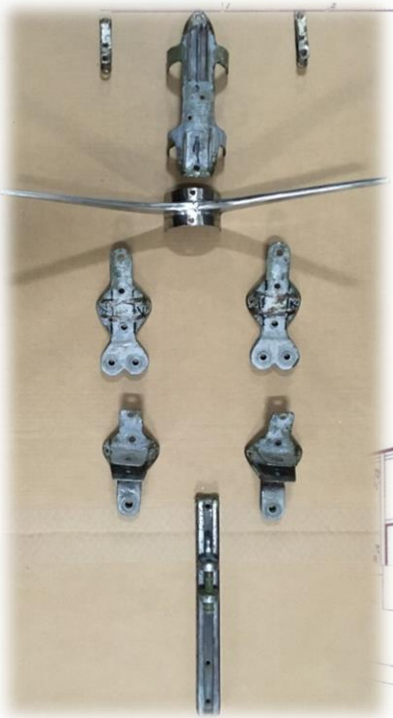
- Sand papering down side of the deck and pine top slats and the boat tip up to and including 4th wry with a moisturizing ground lacquer (Sikkens Rubbol Primer Express color matt white)
- Coarse sanding (grit 40) of the keel beam and rafters to remove epoxy residues and old paint layers.
- Chamfer ends of the wry on the keel side to create more space.
- Sanding hull planks with flex grit 40.
- Brushing wrinkles with copper brushes on flex. (sanding not possible due to copper nails)
- Fill up inside filling openings between the planks with colored epoxy filler/glue EP 2000
- Sanding hull planks with flex grit 120.
- Sand narrow spaces with power file grit 100.
- Treat with 1 layer Varipox epoxy injection resin.
- Hand sanding grit 120 and applying a 2nd layer of Varipox injection resin.

Continued working plan

- Sand Bilge coarse.
- Treat Bilge 4 times with Primocon.
- Drill down drains to the bilge 12 mm and drill with a large countersink.
- 4 copper tubes approx. 20 mm longer than the wall thickness of the bilge.
- Trumpet tubes on one side to a diameter of approx. 16 mm.
- Assemble tubes with sealant under the trumpet. Mount so far that no uprising occurs, so that good drainage to the bilge occurs.

Renovate mast and gig.





Working plan

- Dismantle mast and gig fittings
- Stripping and coarse sanding mast and gig (gritt 60)
- Tread with oxalic acid (3 times) and wash off.
- Drill open all screw holes and seal with wooden plugs (Ø8 mm).
- Sanding mast (120 grit)
- Impregnate with Variopox inject resin to refine wood. (2 x and in between sand with 120 grit)
- 6 times topcoat with Epifanes clearlak. (sanding in between with grit 180)
- Design and make new mast fittings from 2 mm stainless steel sheet material. With a minimum difference of the original, only gripping point for a furling (not provided in original design) new gig connection (existing is not original)
- Polishing new fittings.
- Assemble mast fitting with original measurement certificate. (has been moved several times over the years)
- First fill all pre-drilled screw holes with epoxy
- New stays.

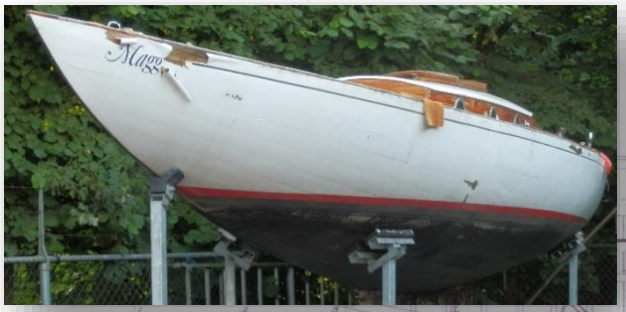
Renovate small parts.

Refit forged stay connections:
Top deck and deck-through section cut off and replace by stainless steel

Working plan

- Remove all shutters and disassemble as far as possible.
- Sanding and 2 x tread with oxalic acid
- First glue bad, loose areas with epoxy
- Coarse sanding (grit 80) and treat twice with Varipox inject epoxy.
- Varnish 6 times topcoat with Epifanes clearlak.
- Assembly new lock and hinges
- Install new mainsheet block support from european oak according to old drawings. (was equipped with overflow rail that was not originally equipped, and limits the movement space in the cockpit for solo sailing.)

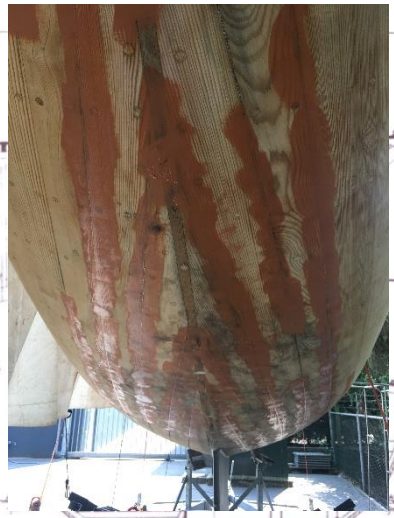
Renovate hull outside (above the waterline).



Working plan

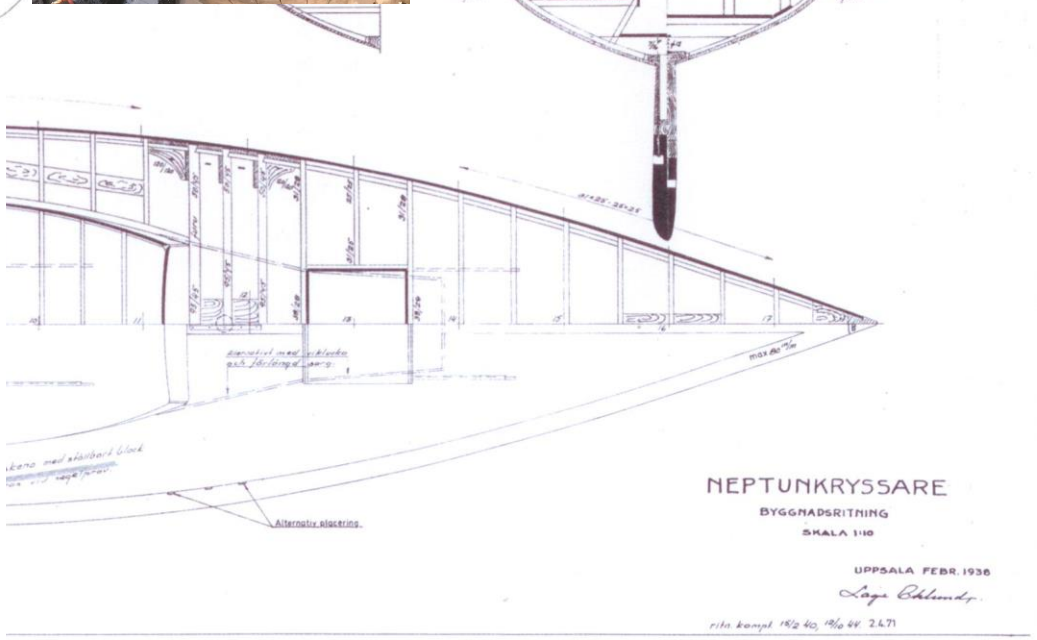
- Burn off paint.
- Coarse sanding with belt sander grit 40. (best do this when it's cold.)
- 2 x tread with oxalic acid. (treating bad spots 3x extra strength)
- Milling bad and open seams 8 mm and gluing 8 mm slats of untapped pine and surface sanding.
- Sanding small joints between the hull panels with multitool 1 mm diamond plates, clean brushing and filling with colored EP 2000.
- Place on several places extra screws between the top plank of the hull and the plank of the deck.
- Sand papering hull again with sanding grit 80.
- Treat the hull with injection epoxy and sanding with grit 120.
- NOT FINISHED WORK, STILL IN PROGRESS.

Renovate hull outside (under the waterline).



Working plan

- Abrasive sanding with FLEX grit 24. (best do this when its cold.)
- Use grit 40 after sanding with belt sander
- Sanding the seams between the hull panels with multitool with diamond plates 2 mm and brush cleaning.
- Fill seams with colored adhesive filler EP 2000 (Romar Voss)
- After that grinding hull with belt sander grit 80
- Treat with inject epoxy 2x (de IJssel) (between sanding grit 120)
- Treat the hull from keel 1 x with Interprotect (International) both above and under water.
- NOT FINISHED WORK, STILL IN PROGRESS.



Renovate deck.

Plan

- Dismantle all fittings.
- Plugs all holes.
- Coarse and flat sanding (grit 40) complete deck.
- Treat with Inject resin.

NOT FINISHED WORK, STILL IN PROGRESS.

Renovate cabin.

Working plan

- Disassemble all fittings including the windows.
- Coarse and flat paper sanding (grit 40).
- Rebate the porthole of the portholes (for 4mm hard glass instead of plexiglass)
- Laminate portholes for polishing.
- Treat the cabin structure once with Injection resin and 1x with impregnating resin.
- NOT FINISHED WORK, IN PROGRESS.

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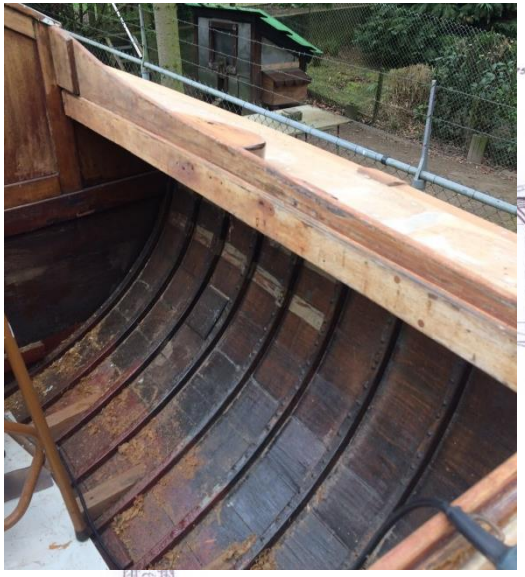
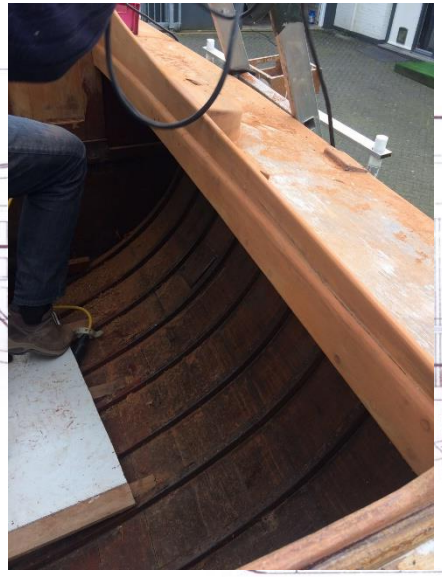
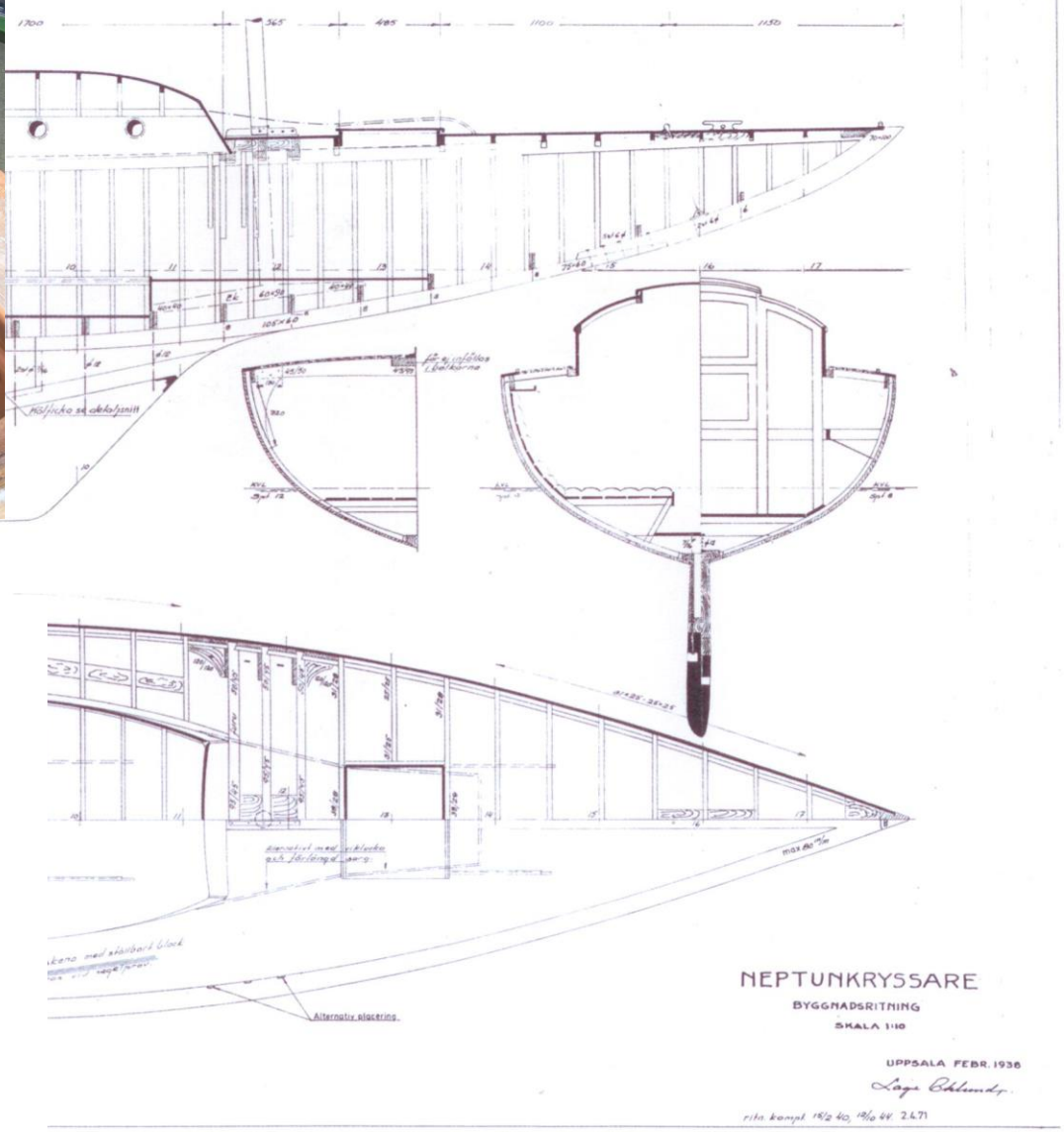
Renovate cockpit.



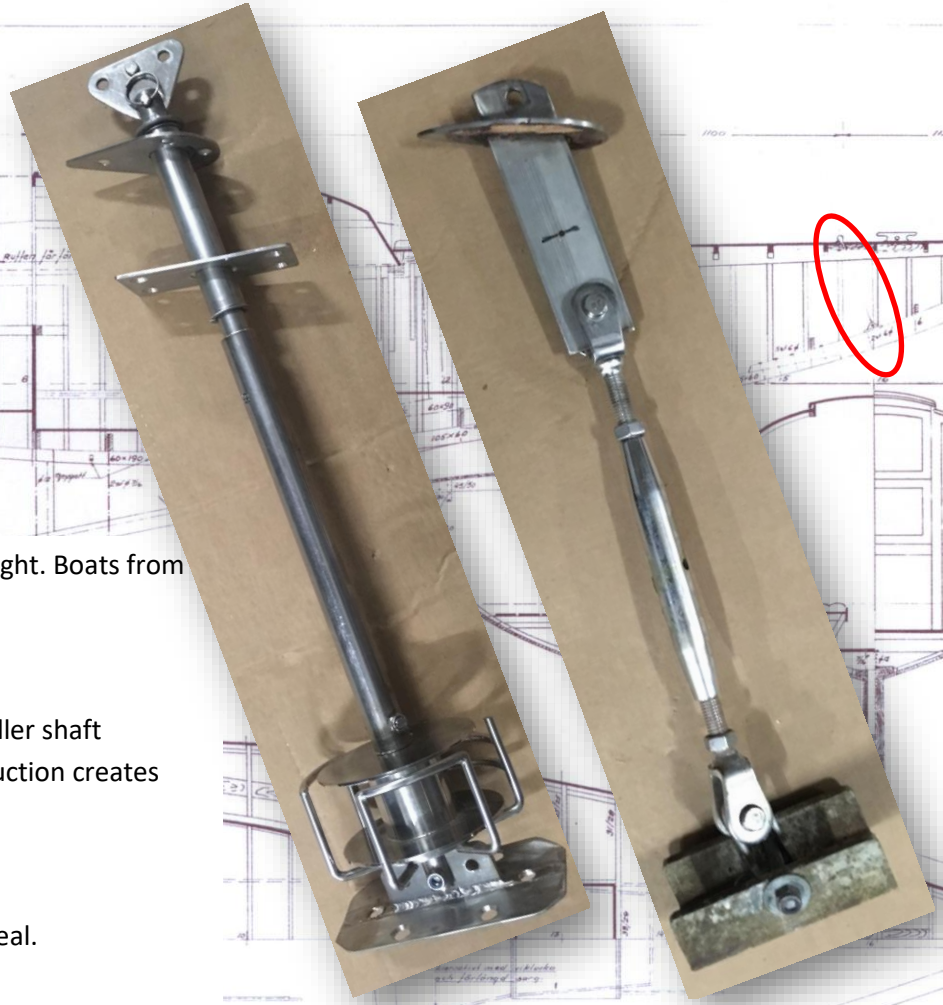




Working plan

- Dismantle all body components.
- Burn off old paint layers
- Drilling all screw holes and plugging (8 mm)
- Coarse sanding grit 60 cockpit front.
- Re-glue panels in shell plate with epoxy.
- NOT FINISHED WORK, STILL IN PROGRESS

Replace furling jib mechanism under deck.

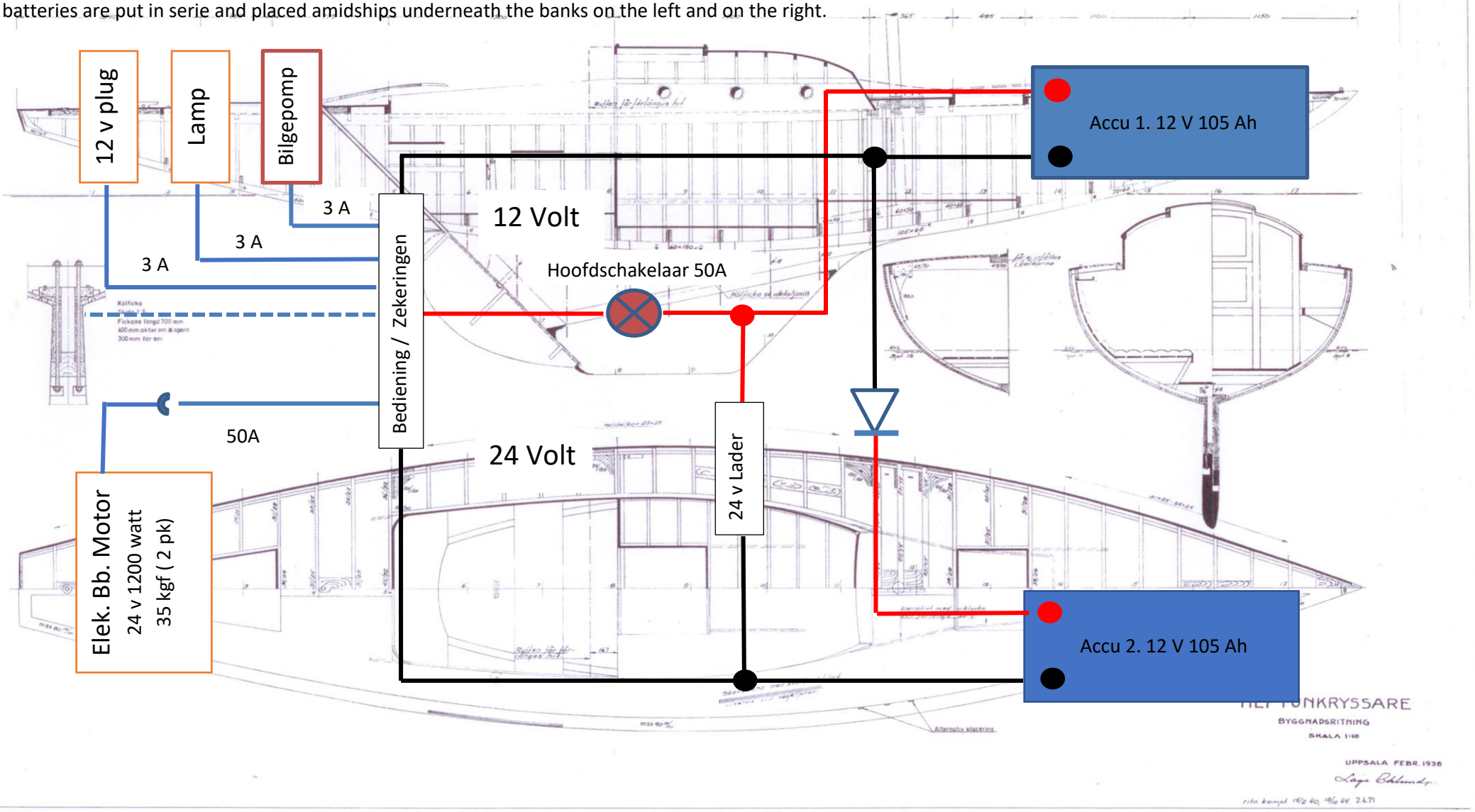


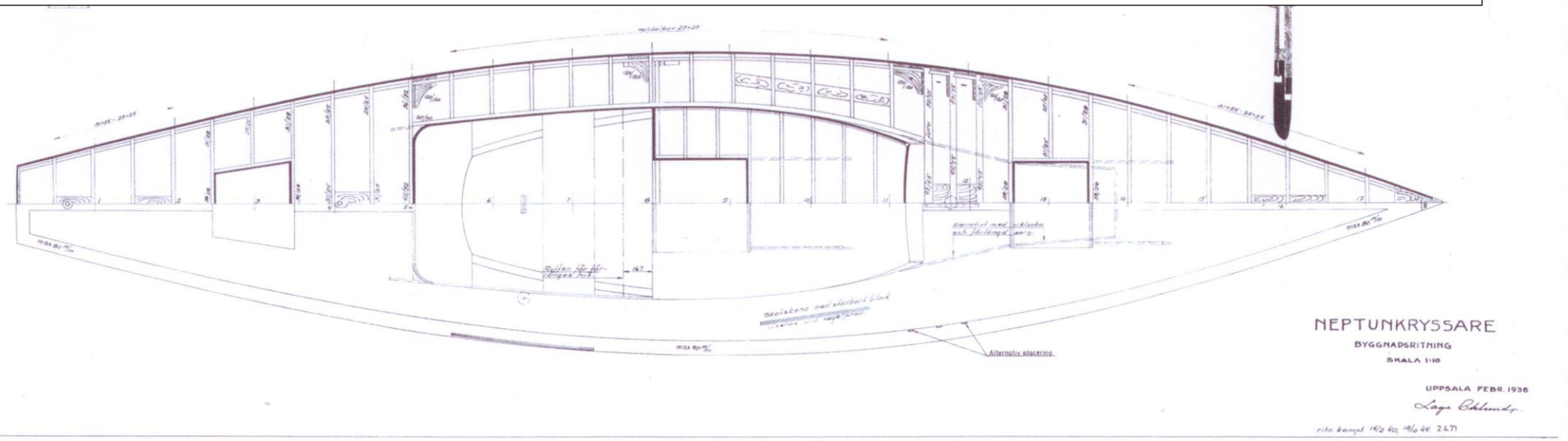
Adjust furling jib to install this under deck so that this is it out of sight. Boats from that generation did not have a furling jib.

- Make padded deck feedthrough. (Teflon collar bearing 16/21)
- Cut-out deck at the location of the installation position of the roller shaft
- Increase role of the furling jib, because the extra bearing construction creates more resistance. (torque increase due to larger roll diameter).
- Installe a new foot construction.
- Temporarily assemble new roller-shed construction.
- Align bearing pipe in deck and underside with flange plate and seal.
- Pour the upper side of the deck with epoxy.
- Finish the top of the bearing tube with stainless steel flange plate.
- After installation, tighten the telescopic tube to the roller shaft.
-

Electrical scheme

The boat is equipped with an electric outboard engine with a thrust of 35 Kgf. (about 2 hp) Haswing Protruar (24v) with a total sailing time of approx. 1 hour. The two 12 volt batteries are put in serie and placed amidships underneath the banks on the left and on the right.



Used products

• EP 2000 Romar Voss. (www.romar-voss.nl) A filling constructive glue / filler on an epoxy basis. Similar to the West system Epoxy with micro balloons. The EP 2000 is easier to process because it is ready so only component A and B.
• Varipox injection resin from the IJssel. (www.de-ijssel-coatings.nl) This injection resin is based on epoxy and gives a very deep penetration in wood, this goes so deep that in bad places a total suction takes place and therefore has to be done twice. To be used both below and above the waterline. Strongly strengthens bad wood.
• Varipox impregnate resin from the IJssel. (www.de-ijssel-coatings.nl) As a filling intermediate layer between the injection resin and the topcoat layers. We only use these on the wood parts on the outside of the boat.
• Primocon underwater primer from International. (www.yachtpaint.com). A component primer for underwater and easy to use over old paint layers.
• Interprotect 2-component primer from International. (www.yachtpaint.com). Easy to process and used for the entire underwater ship.
• Rubbol Primer Express. Moisture regulating primer. (www.sikkens.nl) Used inside white part.