

REPORT ON MACHINERY

Received at London Office TUE. 22 NOV. 1921

Date of writing Report 19th November 1921 When handed in at Local Office 19th November 1921 Port of Helsingfors.

No. in Survey held at Helsingfors Date, First Survey 29th October 1920 Last Survey 5th November 1921

Reg. Book Supplement 39244 on the Single Screw Vessel "SUOMEN POIKA" (Number of Visits 59) Tons Gross 1190 Net 747

Master Built at Helsingfors By whom built A. B. Sandvikens Skeppsdocha & M. T. When built 1921

Engines made at Helsingfors By whom made A. B. Sandvikens Skeppsdocha & M. T. when made 1921

Boilers made at Helsingfors By whom made A. B. Sandvikens Skeppsdocha & M. T. when made 1921

Registered Horse Power Owners Suomen Valtamientakainen, R.O.Y. Port belonging to Helsingfors

Nom. Horse Power as per Section 28 198 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Single triple expansion reciprocating No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 15 3/16 x 9 1/4 x 39 3/8 Length of Stroke 99 7/32 Revs. per minute 110 Dia. of Screw shaft as per rule 2 3/8 Material of Steel as fitted 2 6/8 screw shaft

Is the screw shaft fitted with a continuous liner the whole length of the stern tube No Is the after end of the liner made water tight in the propeller boss No

If the liner is in more than one length are the joints burned Yes If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes

If two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 1200 mm

Dia. of Tunnel shaft as per rule 1 9/16 Dia. of Crank shaft journals as per rule 9 0/16 Dia. of Crank pin 2 10/16 Size of Crank webs 240 x 135 Dia. of thrust shaft under collars 2 10/16 Dia. of screw 3 2/16 Pitch of Screw 3 1/8 No. of Blades 4 State whether moveable No Total surface 4.36 square metres

No. of Feed pumps 2 Diameter of ditto 8 5/16 Stroke 27 0/16 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 8 5/16 Stroke 27 0/16 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps Donkey pump 150 x 100 x 150 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Two 2 1/2" and two 2"; One 2 1/2" in tunnel well. In Holds, &c. One 2 1/2" and two 2" in each hold and one 3" in each peak.

No. of Bilge Injections 1 sizes 5" Connected to condenser, or to circulating pump Cic pump Is a separate Donkey Suction fitted in Engine room & size Yes, one 3"

Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible None

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line Above

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes

What pipes are carried through the bunkers None How are they protected Yes

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper deck.

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Mannesmannröhrenwerke Akt. G. H. L. Junke, Düsseldorf

Total Heating Surface of Boilers 2475 sq. ft. Is Forced Draft fitted No No. and Description of Boilers Two cylindrical multitubular

Working Pressure 180 lbs/sq. in Tested by hydraulic pressure to 320 lbs/sq. in Date of test 2/5/21 No. of Certificates 1 and 2.

Can each boiler be worked separately Yes Area of fire grate in each boiler 39 sq. ft. No. and Description of Safety Valves to each boiler Two spring loaded Area of each valve 6 sq. in Pressure to which they are adjusted 180 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 14" Inside Mean dia. of boilers 3200 mm Length 3010 mm Material of shell plates Steel

Thickness 25 mm Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams None

long. seams Double butt straps Diameter of rivet holes in long. seams 30 mm Pitch of rivets 199.6 mm Lap of plates or width of butt straps 426 mm

Per centages of strength of longitudinal joint rivets 109 plate 84.5 Working pressure of shell by rules 203 lbs Size of manhole in shell 300 x 400 mm

Size of compensating plate 1390 x 1390 x 25 mm No. and Description of Furnaces in each boiler Two corrugated Material Steel Outside diameter 1100 mm

Length of plain part top 14.5 Description of longitudinal joint Welded No. of strengthening rings None

Working pressure of furnace by the rules 207 lbs Combustion chamber plates: Material Steel Thickness: Sides 16 mm Back 16 mm Top 17.5 mm Bottom 16 mm

Pitch of stays to ditto: Sides 150 x 180 mm Back 150 x 180 mm Top 150 x 200 mm If stays are fitted with nuts or riveted heads Riveted heads Working pressure by rules 241 lbs

Material of stays Steel Area at smallest part 1.01 sq. in Area supported by each stay 150 x 180 mm Working pressure by rules 200 lbs End plates in steam space: Material Steel Thickness 24 x 19 mm Pitch of stays 360 x 400 mm How are stays secured nuts & washers Working pressure by rules 284 lbs Material of stays Steel

Area at smallest part 4.9 sq. in Area supported by each stay 360 x 400 mm Working pressure by rules 298 lbs Material of Front plates at bottom Steel

Thickness 24 mm Material of Lower back plate Steel Thickness 19 mm Greatest pitch of stays As per plan Working pressure of plate by rules

Diameter of tubes 3" Pitch of tubes 98 mm Material of tube plates Steel Thickness: Front 24 mm Back 21 mm Mean pitch of stays 196 mm

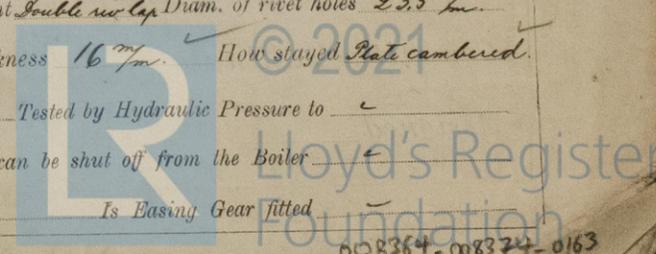
Pitch across wide water spaces 360 mm Working pressures by rules 390 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 2 x (150 x 16 mm) Length as per rule 560 mm Distance apart 900 mm Number and pitch of stays in each Two, 150 mm

Working pressure by rules 180 lbs Steam dome: description of joint to shell Double riveted % of strength of joint 68

Diameter 800 mm Thickness of shell plates 13 mm Material Steel Description of longitudinal joint Double riv lap Diam. of rivet holes 23.5 mm

Pitch of rivets 73 mm Working pressure of shell by rules 284 lbs Crown plates Thickness 16 mm How stayed Plate cambered.

UPPERHEATER. Type Date of Approval of Plan Tested by Hydraulic Pressure to Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Is Easing Gear fitted



IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *2 connecting rod top-end bolts and nuts, 2 connecting rod bottom-end bolts and nuts, 2 main bearing bolts and nuts, 1 set of coupling bolts, 1 set of feed and bilge pump valves, 1 set of L.P. piston springs, 1 set of H.P. & I.P. piston rings, 1 eccentric strap complete, 1 connecting rod bottom-end bearing, 1 set of air pump valves, 15 condenser tubes, A quantity of assorted bolts and nuts, Iron of various sizes.*

The foregoing is a correct description,

Wään K. Sjöström
Aktiebolaget Sandviks och mekaniska verkstad
Manufacturer.

Dates of Survey while building: During progress of work in shops - - *1920: Oct 22, 23, Nov 4, 5, 1921: Jan 2, Feb 1, 2, March 3, 10, 19 April 9, 11, 2, 19, 21, May 3, 10, 22, June 3, 19, July 28, 18, 26 Aug 9, 26 Sept 10, Oct 1, 1921: May 28, June 13, 23, July 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 18 Aug 17, Sept 3, 13, 23 Oct 1, 8, 10, 13, 17, 18, 21, 29 Nov 5.*
Total No. of visits *59* Is the approved plan of main boiler ^{as built} forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *4/2/21, 19/3/21* Slides *10/3/21* Covers *19/3/21* Pistons *11/4/21* Rods *11/4/21*
Connecting rods *11/4/21* Crank shaft *6/7/21* Thrust shaft *7/7/21* Tunnel shafts *7/7/21* Screw shaft *6/7/21* Propeller *3/5/21*
Stern tube *3/4/21* Steam pipes tested *18/4/21, 26/3/21* Engine and boiler seatings *23/6/21* Engines holding down bolts *28/5/21*
Completion of pumping arrangements *23/9/21* Boilers fixed *18/7/21* Engines tried under steam *13/10/21*
Completion of fitting sea connections *9/7/21* Stern tube *7/7/21* Screw shaft and propeller *8/7/21*
Main boiler safety valves adjusted *5/11/21* Thickness of adjusting washers *None*

Material of Crank shaft *Steel* Identification Mark on Do. *LLOYD'S No. 2, 3, 4, 5* Material of Thrust shaft *Steel* Identification Mark on Do. *7.7.21 V.B. No. 26*
Material of Tunnel shafts *Steel* Identification Marks on Do. *7.7.21 V.B.* Material of Screw shafts *Steel* Identification Marks on Do. *6.7.21.0.7*

Material of Steam Pipes *Steel.* Test pressure *540 lbs per square inch*

Is an installation fitted for burning oil fuel *No* Is the flash point of the oil to be used over 150°F.

Have the requirements of Section 49 of the Rules been complied with

Is this machinery duplicate of a previous case *No* If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.)

This machinery has been built under Special Survey and all the requirements of the Rules have been complied with.

The shafting as per forging reports attached.

The boilers as per approved plan.

The workmanship is good.

The engines have been tried under full working power on a nine hours trial trip and found to work satisfactorily.

Please see Secretary's letter initialed E of July 21, 1920, Helsingfors letter of July 13, 1921 and Mr. Lindfors's letters of Aug 5, Sept 3, 1920.

*The machinery of this vessel is worthy in our opinion to be classed in the Register Book of this Society with the notation of **LTC.1121**, being in a good and safe working condition at a working pressure of 180 lbs per square inch.*

	60% GOTHENBURG	40% HELSINGFORS	
The amount of Entry Fee ...	£ 51.30	£ :	When applied for, <i>9th November 21</i>
Special ...	£ 328.32	£ 12.16.0	When received, <i>17th November 21 V.B.</i>
Donkey Boiler Fee ...	£ :	£ :	
Travelling Expenses (if any) £ 340.00	£ :	£ :	

V. Nilow *Olaf Tafel*
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE. DEC. 13 1921*

Assigned *+ L.M.B. 11.21.*

CERTIFICATE WRITTEN TUE. 31 JAN. 1922



Certificate (if required) to be sent to *To the Owners: Suomen Valtamerentutkimus A.O.Y., Helsingfors.*

The Surveyors are requested not to write on or below the space for Committee's Minute.