

REPORT ON MACHINERY.

No. 412
9001-1922

Received at London Office

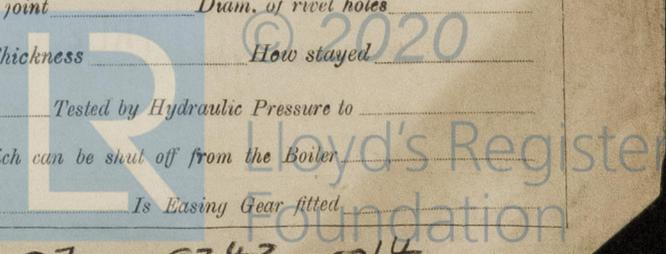
Date of writing Report 4th Oct. 1922 When handed in at Local Office 4th Oct. 1922 Port of Malmö
 No. in Survey held at Sölvesborg Date, First Survey 22nd Jan. 1920 Last Survey 17th September 1922
 Reg. Book. "Pan" (Number of Visits 18)
 on the Steel hull "Pan" Tons Gross 1313 Net 956
 Master Sölvesborg Built at Sölvesborg By whom built Sölvesborgs Varfs- & Rederi AB When built 1922-9 mo.
 Engines made at Sölvesborg By whom made Sölvesborgs Varfs- & Rederi AB when made 1922
 Boilers made at Jönköping By whom made Jönköpings Mekan. Verkst. AB when made 1920
 Registered Horse Power 15.8 Owners A/S S/S Pan (Aug. Kerland, Mgr.) Port belonging to Bergen
 Nom. Horse Power as per Section 28 15.8 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 17 1/2", 29", 48" Length of Stroke 30" Revs. per minute 115 Dia. of Screw shaft 10.39" as per rule, 26.7" as fitted, 26.9" Material of screw shaft S.S. Steel
 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 yes
 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
 liners are fitted, is the shaft protected between the liners Cederwall's patent protecting Length of stern bush 1140 mm
 Dia. of Tunnel shaft 225 mm as per rule, 226 mm as fitted, 8.87" Dia. of Crank shaft journals 240 mm as per rule, 240 mm as fitted, 9.31" Dia. of Crank pin 240 mm as per rule, 240 mm as fitted, 9.44" Size of Crank webs 268x170 mm Dia. of thrust shaft under collars 240 mm Dia. of screw 12' 0" Pitch of Screw 12' 6" No. of Blades 4 State whether moveable no Total surface 52.64 sq ft.
 No. of Feed pumps 2 Diameter of ditto 68 mm Stroke 350 mm Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 68 mm Stroke 350 mm Can one be overhauled while the other is at work yes
 No. of Donkey Engines 2 Sizes of Pumps 6" x 5 3/4" x 6" and 3 3/8" x 5 1/4" x 5 1/4" No. and size of Suctions connected to both Bilge and Donkey pumps Four - 2 1/2"
 In Engine Room Four - 2 1/2" In Holds, &c. Four hold - two - 2 1/2" After hold two - 2 1/2"
 No. of Bilge Injections One size 5" Connected yes to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes, 2 1/2"
 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 engine room grating level with main deck.

BOILERS, &c.—(Letter for record (S) Manufacturers of Steel 2SB.)
 Total Heating Surface of Boilers 2605 sq ft. Is Forced Draft fitted no No. and Description of Boilers two multitubular
 Working Pressure 200 lbs Tested by hydraulic pressure to 205 lbs Date of test 22/9/22 No. of Certificate 286
 Can each boiler be worked separately yes Area of fire grate in each boiler 37.6 sq ft. No. and Description of Safety Valves to each boiler Two spring loaded Area of each valve 707 sq in Pressure to which they are adjusted 205 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork about 12" Mean dia. of boilers 12" Length 12' Material of shell plates steel
 Thickness 1/2" Range of tensile strength 45,000 lbs Are the shell plates welded or flanged no Descrip. of riveting: cir. seams no long. seams yes
 Diameter of rivet holes in long. seams 1/8" Pitch of rivets 2" Lap of plates or width of butt straps 1"
 Per centages of strength of longitudinal joint 85% Working pressure of shell by rules 205 lbs Size of manhole in shell 18"
 Size of compensating ring 18" No. and Description of Furnaces in each boiler one Material steel Outside diameter 18"
 Length of plain part 12' Thickness of plates 1/2" Description of longitudinal joint butt No. of strengthening rings 12
 Working pressure of furnace by the rules 205 lbs Combustion chamber plates: Material steel Thickness: Sides 1/2" Back 1/2" Top 1/2" Bottom 1/2"
 Pitch of stays to ditto: Sides 12" Back 12" Top 12" If stays are fitted with nuts or riveted heads no Working pressure by rules 205 lbs
 Material of stays steel Area at smallest part 12" Area supported by each stay 12" Working pressure by rules 205 lbs End plates in steam space: no
 Material steel Thickness 1/2" Pitch of stays 12" How are stays secured by nuts Working pressure by rules 205 lbs Material of stays steel
 Area at smallest part 12" Area supported by each stay 12" Working pressure by rules 205 lbs Material of Front plates at bottom steel
 Thickness 1/2" Material of Lower back plate steel Thickness 1/2" Greatest pitch of stays 12" Working pressure of plate by rules 205 lbs
 Diameter of tubes 1 1/2" Pitch of tubes 12" Material of tube plates steel Thickness: Front 1/2" Back 1/2" Mean pitch of stays 12"
 Pitch across wide water spaces 12" Working pressures by rules 205 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 12" Length as per rule 12' Distance apart 12" Number and pitch of stays in each 12"
 Working pressure by rules 205 lbs Steam dome: description of joint to shell butt % of strength of joint 85%
 Diameter 18" Thickness of shell plates 1/2" Material steel Description of longitudinal joint butt Diam. of rivet holes 1/8"
 Pitch of rivets 2" Working pressure of shell by rules 205 lbs Crown plates no Thickness 1/2" How stayed by nuts

SUPERHEATER. Type dry Date of Approval of Plan 22/9/22 Tested by Hydraulic Pressure to 205 lbs
 Date of Test 22/9/22 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler yes
 Diameter of Safety Valve 1 1/2" Pressure to which each is adjusted 205 lbs Is Easing Gear fitted yes

205337-205343-0014



IS A DONKEY BOILER FITTED? *no*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 2 connecting rod or piston rod top end bolts and nuts, 2 connecting rod bottom end bolts and nuts, 2 main bearing bolts with nuts, 1 set of coupling bolts, 1 set of feed and bilge pump valves, a quantity of assorted bolts and nuts, iron of various sizes (about 200 lbs.), 1 pair of connecting rod brasses, 6 cylinder cover bolts, 4 valve chest cover bolts, 10 ordinary boiler tubes and 6 stay tubes, 10 condenser tubes, 1 set of safety valve springs, 1 dozen water gauge glasses, fire bars with supports for 2 furnaces.

The foregoing is a correct description,

SÖLVESBORGS VARVS- & REDERI A.-B.

N. Fremberg

M. Nygård

Manufacturer.

Dates of Survey while building: During progress of work in shops -- 22/1, 19/2, 25/3 1920, 28/1, 18/2, 19/2, 5/4, 8/4, 5/10, 16/12 1921, 31/5, 16/8 1922. During erection on board vessel --- 16/12 1921, 8/7, 20/7, 27/7, 17/8, 17/9 1922. Total No. of visits 18. Is the approved plan of main boiler forwarded herewith? Please see report No. 4730.

Dates of Examination of principal parts: Cylinders 22/1, 19/2 1920, 28/1, 18/2 1921. Slides 8/4/21. Covers 8/4/21. Pistons 16/12/21. Rods 16/12/21. Connecting rods 16/12/21. Crank shaft 28/1, 8/4 1921. Thrust shaft 28/1, 18/2, 19/2 1921. Tunnel shafts 28/1, 18/2 1921, 17/8/22. Screw shaft 28/1/21 + 16/12/21. Propeller 16/12/21. Stern tube 5/10/21. Steam pipes tested 16/8/22. Engine and boiler seatings 17/8/22. Engines holding down bolts 17/8/22. Completion of pumping arrangements 17/9/22. Boilers fixed 17/8/22. Engines tried under steam 17/9/22. Completion of fitting sea connections 8/7/22. Stern tube 8/7/22. Screw shaft and propeller 8/7/22. Main boiler safety valves adjusted 17/9/22. Thickness of adjusting washers Double nuts fitted. Material of Crank shaft S.M. Steel Identification Mark on Do. 206, 207, 208. Material of Thrust shaft S.M. Steel Identification Mark on Do. 18.2.21 G.W.T. Material of Tunnel shafts S.M. Steel Identification Marks on Do. 210, 211, 212. Material of Screw shafts S.M. Steel Identification Marks on Do. 18.2.21 G.W.T. Material of Steam Pipes Copper. Test pressure 400 lbs per sq. in. 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? *yes, except boilers.* so, state name of vessel *S.S. Haga of Helsingborg.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been constructed under the usual conditions of Special Survey. Forgings and castings examined and tested as per rule. Workmanship good.*

The engines, also the boilers made in Göteborg as per Cöthenburg report No. 4730, have been fitted on board as per rule. Engines tried under steam and found working satisfactorily.

The machinery of this vessel is eligible in my opinion to have the notation of LMC 9.22 in the Register Book. Boiler pressure 200 lbs per sq. in.

Correspondence:— Secretary's letters M 12/3/19 + E 29/1/21, 21/1/21.

The Cöthenburg report No. 4730 forwarded us for guidance is returned herewith.

It is submitted that this vessel is eligible for THE RECORD. + LMC 9.22. OG.

The amount of Entry Fee ... £ 32.76. When applied for, 20/9 1922. Special Exam. of forgings ... £ 431.34. Donkey Boiler Exam. ... £ 140.00. Travelling Expenses (if any) £ : : When received, 12/10/22.

W.D. [Signature]
11/10/22
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 20 OCT. 1922. Assigned + LMC 9.22. O.C.



Surveyors' Office, Malindi.

Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.