

REPORT ON MACHINERY.

No. 412.

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 h/s "Pan" Tons Gross 1313 Net 956
Master ✓ 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 ✓ Owners A/S S/S Pan (Aug. Karlund, 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. M. 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 ✓ If the liner is in more than one length are the joints burned ✓ 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 ✓
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 8.87" as fitted 226 mm Dia. of Crank shaft journals 240 mm as per rule 9.31" as fitted 240 mm Dia. of Crank pin 240 mm 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" 3 3/8" x 5 1/4" x 5 1/4" No. and size of Suctions connected to both Bilge and Donkey pumps
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 sizes 5" Connected 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 ✓
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 205 lbs No. of Certificate 205 lbs
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 12"
Thickness 12" Range of tensile strength 12" Are the shell plates welded or flanged 12" Descrip. of riveting: cir. seams 12"
long. seams 12" Diameter of rivet holes in long. seams 12" Pitch of rivets 12" Lap of plates or width of butt straps 12"
Per centages of strength of longitudinal joint 12" Working pressure of shell by rules 12" Size of manhole in shell 12"
Size of compensating ring 12" No. and Description of Furnaces in each boiler 12" Material 12" Outside diameter 12"
Length of plain part 12" Thickness of plates 12" Description of longitudinal joint 12" No. of strengthening rings 12"
Working pressure of furnace by the rules 12" Combustion chamber plates: Material 12" Thickness: Sides 12" Back 12" Top 12" Bottom 12"
Pitch of stays to ditto: Sides 12" Back 12" Top 12" If stays are fitted with nuts or riveted heads 12" Working pressure by rules 12"
Material of stays 12" Area at smallest part 12" Area supported by each stay 12" Working pressure by rules 12" End plates in steam space: 12"
Material 12" Thickness 12" Pitch of stays 12" How are stays secured 12" Working pressure by rules 12" Material of stays 12"
Area at smallest part 12" Area supported by each stay 12" Working pressure by rules 12" Material of Front plates at bottom 12"
Thickness 12" Material of Lower back plate 12" Thickness 12" Greatest pitch of stays 12" Working pressure of plate by rules 12"
Diameter of tubes 12" Pitch of tubes 12" Material of tube plates 12" Thickness: Front 12" Back 12" Mean pitch of stays 12"
Pitch across wide water spaces 12" Working pressures by rules 12" Girders to Chamber tops: Material 12" 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 12" Steam dome: description of joint to shell 12" % of strength of joint 12"
Diameter 12" Thickness of shell plates 12" Material 12" Description of longitudinal joint 12" Diam. of rivet holes 12"
Pitch of rivets 12" Working pressure of shell by rules 12" Crown plates 12" Thickness 12" How stayed 12"

SUPERHEATER. Type 12" Date of Approval of Plan 12" Tested by Hydraulic Pressure to 12"
Date of Test 12" Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler 12"
Diameter of Safety Valve 12" Pressure to which each is adjusted 12" Is Easing Gear fitted 12"

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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

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 *not ref. No. 473*

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 Screw shaft 28/1, 18/2 1921 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. *no. 226, 207, 208* Material of Thrust shaft *S.M. Steel* Identification Mark on Do. *no. 18, 2, 21 4, 4, 5*
Material of Tunnel shafts *S.M. Steel* Identification Marks on Do. *no. 210, 211, 212* Material of Screw shafts *S.M. Steel* Identification Marks on Do. *no. 294*
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 Jönköping as per Gothenburg 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 Gothenburg 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*
Special Exam. of forgings ... *£ 431.34*
Donkey Boiler Fee ... *£ 140.00*
Travelling Expenses (if any) £ : :
When applied for, 20/9 1922
When received, 12/10/22

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

FRI. 20 OCT. 1922

+ LMC 9.22

O.C.

CERTIFICATE WRITTEN



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