

Rpt. 4.

REPORT ON MACHINERY.

No. 1205
FRI, AUG. 29, 1913

Date of writing Report 26 Aug. 1913 When handed in at Local Office

Received at London Office

Port of Stockholm

No. in Survey held at Stockholm

Date, First Survey 15 Nov. 1912 Last Survey 21 Aug. 1913

Reg. Book.

Number of Visits 14

on the machinery of the motor vessel No. 98

Master

Built at Leith

By whom built Messrs. John Brown & Co.

Tons Gross 2
Net 2
When built 1913

Engines made at Stockholm

By whom made Messrs. J. & C. G. Bolinder's Co.

When made 1913

Boilers made at Brake

By whom made (Bolinder's order no. 212 80)

when made

Registered Horse Power 80

Owners

Port belonging to

Nom. Horse Power as per Section 28

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

ENGINES, &c.—Description of Engines

Bolinder's two stroke cycle reversible

No. of Cylinders 2

No. of Cranks 2

Dia. of Cylinders 330 mm

Length of Stroke 340 mm

Revs. per minute 325

Dia. of Screw shaft as per rule

Material of (none screw shaft) (contracted)

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

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

If two

liners are fitted, is the shaft lapped or protected between the liners

Length of stern bush

Dia. of Tunnel shaft as per rule

Dia. of Crank shaft journals as per rule 120 mm

Dia. of Crank pin 125 mm

Size of Crank webs 164 69.5 Dia. of thrust shaft under

collars 115 mm

Pitch of Screw

No. of Blades

State whether moveable

Total surface

No. of Feed pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

No. of Bilge pumps (none contracted)

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

No. of Donkey Engines

Sizes of Pumps

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room

In Holds, &c.

No. of Bilge Injections

sizes

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room & size

Are all the bilge suction pipes fitted with roses

Are the roses in Engine room always accessible

Are the sluices on Engine room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship

Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Are the Discharge Pipes above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel

Are the Blow Off Cocks fitted with a spigot and brass covering plate

What pipes are carried through the bunkers

How are they protected

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

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

Dates of examination of completion of fitting of Sea Connections

of Stern Tube

Screw shaft and Propeller

Is the Screw Shaft Tunnel watertight

Is it fitted with a watertight door

worked from

BOILERS, &c.—(Letter for record)

Manufacturers of Steel

Total Heating Surface of Boilers

Is Forced Draft fitted

No. and Description of Boilers

Working Pressure

Tested by hydraulic pressure to

Date of test

No. of Certificate

Can each boiler be worked separately

Area of fire grate in each boiler

No. and Description of Safety Valves to

each boiler

Area of each valve

Pressure to which they are adjusted

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

Mean dia. of boilers

Length

Material of shell plates

Thickness

Range of tensile strength

Are the shell plates welded or flanged

Descrip. of riveting: cir. seams

long. seams

Diameter of rivet holes in long. seams

Pitch of rivets

Lap of plates or width of butt straps

Per centages of strength of longitudinal joint

rivets plate

Working pressure of shell by rules

Size of manhole in shell

Size of compensating ring

No. and Description of Furnaces in each boiler

Material

Outside diameter

Length of plain part

top bottom

Thickness of plates

crown bottom

Description of longitudinal joint

No. of strengthening rings

Working pressure of furnace by the rules

Combustion chamber plates: Material

Thickness: Sides

Back

Top

Bottom

Pitch of stays to ditto: Sides

Back

Top

If stays are fitted with nuts or riveted heads

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

End plates in steam space

Material

Thickness

Pitch of stays

How are stays secured

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

Material of Front plates at bottom

Thickness

Material of Lower back plate

Thickness

Greatest pitch of stays

Working pressure of plate by rules

Diameter of tubes

Pitch of tubes

Material of tube plates

Thickness: Front

Back

Mean pitch of stays

Pitch across wide water spaces

Working pressures by rules

Girders to Chamber tops: Material

Depth and

thickness of girder at centre

Length as per rule

Distance apart

Number and pitch of stays in each

Working pressure by rules

Superheater or Steam chest; how connected to boiler

Can the superheater be shut off and the boiler worked

separately

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

holes

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

If stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

If not, state whether, and when, one will be sent

Is a Report also sent on the Hull of the Ship?

Im. 2.12. T.

W1516-0061

VERTICAL DONKEY BOILER—Manufacturers of Steel

No.	Description				
Made at	By whom made	When made	Where fixed		
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area	Description of Safety
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment	
If fitted with easing gear	If steam from main boilers can enter the donkey boiler	Dia. of donkey boiler	Length		
Material of shell plates	Thickness	Range of tensile strength	Descrip. of riveting	long. seams	
Dia. of rivet holes	Whether punched or drilled	Pitch of rivets	Lap of plating	Per centage of strength of joint	Rivets Plates
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.	Dia. of stays	
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates	Description of joint	
Working pressure of furnace by rules	Thickness of furnace crown plates	Radius of do.	Stayed by		
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied :—

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building	During progress of work in shops --	15 x 29 / 11	13 / 12	1912.	26 / 4	7 x 9 / 5	1 x 2 / 7	1.7.8.13.18 x 21 / 8	1913.
	During erection on board vessel --								
	Total No. of visits	14.							

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts	Cylinders	1 x 2 / 7	18 / 8	1913	Slides	1 x 2 / 7	18 / 8	1913	Pistons	1 x 2 / 7	18 / 8	1913	Rods	
Connecting rods	26 / 4	7 / 5	18 x 21 / 8	1913	Crank shaft	9 / 5	1 x 18 / 8	1913	Thrust shaft	15 x 29 / 11	13 / 12	1913	Tunnel shafts	
Stern tube					Steam pipes tested				Engine and boiler seatings	1 x 2 / 7	18 / 8	1913	Engines holding down bolts	21 / 8
Completion of pumping arrangements					Boilers fixed				Engines tried under steam	13 / 8	1913			
Main boiler safety valves adjusted					Thickness of adjusting washers									
Material of Crank shaft S.M.S.	Identification Mark on Do.	1.8.13			Material of Thrust shaft S.M.S.	Identification Mark on Do.	13.12.12							
Material of Tunnel shafts	Identification Marks on Do.				Material of Screw shafts	Identification Marks on Do.								
Material of Steam Pipes					Test pressure									

General Remarks (State quality of workmanship, opinions as to class, &c. The designs of the crank & thrust shafts of this type and size of Bolinder Motor have been submitted and approved (See Sec. 3 letter E 27.12.1911). The crank & thrust shafts have been manufactured at the Sandviken Steelworks, and the Connecting rods at the Bjorneborg Steelworks, all in accordance with the Rules. They have been inspected while being rough turned and finished and found good and sound. Their materials have been tested by the undersigned and found to fill the Rule requirements. The cylinders, of cast iron, have been examined and found sound. Thickness of cylinder walls stated to be 2 1/2 in. and of water jackets 1 3/8 in. Both cylinders tested with hydraulic pressure to 529 lbs. per sq. inch, or double the working pressure of 18 atin. and found tight. They have been marked on upper flange of cylinders Lloyd's Test 529 lbs. 1.7.13 and 2.7.13 resp. Their water jackets have been tested to 50 lbs. and found tight. The Silencer and its water jacket have been tested to 50 lbs. and found tight. The motor has been tried in shop under full power in my presence and found to give an effect at Normal Load and 325 Revolutions of 80 BHP. The motor has also been tried with a continuous overload of 90 BHP. and with a temporary overload of 101 BHP. and found to work well. The Society's Rules with regard to the details of construction, fitting of valves, lubrication, accessibility, etc., have been adhered to, so far as concerns the motor itself. The remaining requirements of the Rules will have to be attended to at the fitting of the motor in the ship.

I am of opinion, that this motor is of superior material and workmanship, and, as it has been designed and constructed under my special survey, I have respectfully to submit, that it will be eligible to be classed **LMC**, as soon as it has been fitted in ship to the satisfaction of the Society's local Surveyor. It is respectfully submitted, that the First Entry Fee be charged on completion of the fitting in ship.

The amount of Entry Fee	£	:	:	When applied for,
Special	£	8.0	:	26 Aug. 1913
Donkey Boiler Fee	£	:	:	When received,
Travelling Expenses (if any)	£	:	:	19--

Committee's Minute

FRI. OCT. 24. 1913

Assigned

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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