

Rpt. 4.

REPORT ON MACHINERY.

No. 1382a.

MON. JUL. 20. 1914

Date of writing Report 14/4 1914 When handed in at Local Office 14/4 1914 Received at London Office 14/4 1914 Port of Christiania
No. in Survey held at Christiania Date, First Survey 4.10.1913 Last Survey 2.4.1914
Reg. Book. ✓ on the 1/2 "Othem" (Number of Visits 25)
Master G. Myrsten Built at Sandefjord By whom built 1/2 Thøgers mek Verkested Tons { Gross 564.0
Engines made at Christiania By whom made 1/2 Thøgers mek Verkested Net 376.22
Boilers made at Christiania By whom made 1/2 Thøgers mek Verkested When built 6-1914
Registered Horse Power 558.4 Owners Rederikabselskabet "Polo" A/S when made 1914
Nom. Horse Power as per Section 28 115 95 ✓ Is Refrigerating Machinery fitted for cargo purposes no ✓ Is Electric Light fitted no ✓
Port belonging to A/S

ENGINES, &c.—Description of Engines Triple expansion ✓ No. of Cylinders 3 ✓ No. of Cranks 3 ✓
Dia. of Cylinders 13 1/2 x 22 x 34 1/2 ✓ Length of Stroke 28" ✓ Revs. per minute 102 ✓ Dia. of Screw shaft as per rule 8 5/16 ✓ Material of screw shaft steel ✓
Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes ✓ 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 ✓ If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 7'-8" ✓

Dia. of Tunnel shaft as per rule 7 1/16 ✓ Dia. of Crank shaft journals as per rule 7 1/32 ✓ Dia. of Crank pin 7 1/32 ✓ Size of Crank webs 5 x 15 ✓ Dia. of thrust shaft under collars 7 1/32 ✓ Dia. of screw 10'-9" ✓ Pitch of Screw 11'-9" ✓ No. of Blades 4 ✓ State whether moveable no ✓ Total surface 38 sq. feet ✓
No. of Feed pumps 2 ✓ Diameter of ditto 2 7/8" ✓ Stroke 10 1/4" ✓ Can one be overhauled while the other is at work yes ✓
No. of Bilge pumps 2 ✓ Diameter of ditto 2 3/4" ✓ Stroke 10 1/4" ✓ Can one be overhauled while the other is at work yes ✓
No. of Donkey Engines 2 ✓ Sizes of Pumps 5 1/4 x 5 x 5 and 4 1/2 x 2 3/4 x 4" ✓ No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Four 2 inches ✓ In Holds, &c. Four 2 inches ✓

No. of Bilge Injections 1 ✓ sizes 5 1/2" ✓ Connected to condenser, or to circulating pump condenser Is a separate Donkey Suction fitted in Engine room & size 2 of 2 1/4" ✓
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 no ✓
Are all connections with the sea direct on the skin of the ship yes ✓ Are they Valves or Cocks valves and cocks ✓
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 in line ✓
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 ✓
Dates of examination of completion of fitting of Sea Connections 24/6-14 ✓ of Stern Tube 24/4-14 ✓ Screw shaft and Propeller 29/4-14 ✓
Is the Screw Shaft Tunnel watertight yes ✓ Is it fitted with a watertight door yes ✓ worked from engine top ✓

BOILERS, &c.—(Letter for record 15) Manufacturers of Steel Messrs The Glasgow Iron and Steel Co Ltd The Lancashire Steel Co Ltd and Messrs Wm. Beardmore & Co Ltd

Total Heating Surface of Boilers 1666.294 ✓ Is Forced Draft fitted no ✓ No. and Description of Boilers Two single ended with 2 plain furnace
Working Pressure 180 lbs ✓ Tested by hydraulic pressure to 360 lbs ✓ Date of test 18-12-13 ✓ No. of Certificate 66 & 67

Can each boiler be worked separately yes ✓ Area of fire grate in each boiler 26.45 sq. feet ✓ No. and Description of Safety Valves to each boiler Two 2 1/4" spring loaded (safety valves) ✓ Area of each valve 3.976 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 11" ✓ Mean dia. of boilers 9'-6" ✓ Length 9'-6" ✓ Material of shell plates steel ✓

Thickness 27/32 ✓ Range of tensile strength 28 5/8 to 31 1/2 ✓ Are the shell plates welded or flanged flanged ✓ Descrip. of riveting: cir. seams single ✓
long. seams double ✓ Diameter of rivet holes in long. seams 15/32" ✓ Pitch of rivets 6 1/2" ✓ Lap of plates or width of butt straps 11 1/8" ✓

Per centages of strength of longitudinal joint rivets 85.44 ✓ plate 82.21 ✓ Working pressure of shell by rules 182 lbs ✓ Size of manhole in shell 12" x 16" ✓
Size of compensating ring 6 1/4" x 1" ✓ No. and Description of Furnaces in each boiler Two plain ✓ Material Steel ✓ Outside diameter 3'-0" ✓

Length of plain part top 7'-0" ✓ bottom 7'-5" ✓ Thickness of plates crown 29/32" ✓ Description of longitudinal joint welded ✓ No. of strengthening rings ✓
Working pressure of furnace by the rules 182 lbs ✓ Combustion chamber plates: Material steel ✓ Thickness: Sides 5/8" ✓ Back 5/8" ✓ Top 1/8" ✓ Bottom 5/8" ✓

Pitch of stays to ditto: Sides 7" x 7 1/2" ✓ Back 7" x 7 1/2" ✓ Top 6" x 7 1/2" ✓ If stays are fitted with nuts or riveted heads riv. heads ✓ Working pressure by rules 190 lbs ✓
Material of stays steel ✓ Diameter at smallest part 1 1/2" ✓ Area supported by each stay 52.6 ✓ Working pressure by rules 181.4 lbs ✓ End plates in steam space: Material steel ✓ Thickness 29/32" ✓ Pitch of stays 14 1/2" ✓ How are stays secured double nuts and 5 x 2 washers ✓ Working pressure by rules 185 lbs ✓ Material of stays steel ✓

Diameter at smallest part 2.16" ✓ Area supported by each stay 210.45 sq. in. ✓ Working pressure by rules 181 lbs ✓ Material of Front plates at bottom steel ✓
Thickness 29/32" ✓ Material of Lower back plate steel ✓ Thickness 29/32" ✓ Greatest pitch of stays 10 1/2" x 9 1/2" ✓ Working pressure of plate by rules ✓

Diameter of tubes 3 1/2" ✓ Pitch of tubes 4 1/2" x 4 1/2" ✓ Material of tube plates steel ✓ Thickness: Front 29/32" ✓ Back 13/16" ✓ Mean pitch of stays 13 1/2" x 9" ✓
Pitch across wide water spaces 13 1/2" ✓ Working pressures by rules 323 ✓ Girders to Chamber tops: Material none ✓ 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 ✓

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002269-002278-0075

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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
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment
If fitted with casing 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
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:— As per rule and one cast iron propeller, one set of fire bars each boiler and one set of safety valve springs.

for $\frac{1}{2}$ AKERS MEK. VERKSTED
The foregoing is a correct description,

H. Stüb

Manufacturer.

Dates of Survey while building	During progress of work in shops	4/10 - 10/10 - 29/10 - 5/11 - 12/11 - 18/11 - 26/11 - 28/11 - 10/12 - 18/12 - 1913.	45/1 - 22/1 - 19/2 - 27/2 - 20/3 - 29/4 1914.
	During erection on board vessel	9/6 - 10/6 - 19/6 - 20/6 - 26/6 - 27/6 - 30/6 - 1/7 - 2/7. 1914.	
	Total No. of visits	25	

Is the approved plan of main boiler forwarded herewith

yes ✓

Dates of Examination of principal parts—Cylinders	15 & 22/14	Slides	22 & 30/14	Covers	30/1	Pistons	3/2	Rods	23/2
Connecting rods	23/2	Crank shaft	6/3	Thrust shaft	18/3	Tunnel shafts	24/3 - 18/4	Screw shaft	29/4
Stern tube	24.4.14	Steam pipes tested	19-6-14	Engine and boiler seatings	19-6-14	Engines holding down bolts	19-6-14		
Completion of pumping arrangements	27-6-14	Boilers fixed	27-6-14	Engines tried under steam	27-6-14				
Main boiler safety valves adjusted	27-6-14	Thickness of adjusting washers	✓						
Material of Crank shaft	steel	Identification Mark on Do.	3410 10-12 A.T.P.	Material of Thrust shaft	steel	Identification Mark on Do.	3436 11-12 A.T.P.		
Material of Tunnel shafts	steel	Identification Marks on Do.	3436 11-12 A.T.P.	Material of Screw shafts	steel	Identification Marks on Do.	3446 11-12 C.A.B.		
Material of Steam Pipes	copper	Test pressure	360 lbs.						

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel has been built and tested in accordance with the Rules.

The boilers have been constructed in accordance with the approved plan. The steel material used in the construction of these boilers have been manufactured at approved works and tested by the Society's Surveyors as per Rule.

The boilers have been tested by hydraulic pressure to 360 lbs and found tight. Boilers examined under steam pressure and the safety valves set to 180 lbs per square inch. The machinery have been tried under steam and found to work satisfactory. The workmanship throughout are of the best and to our entire satisfaction. Quickacting stop valves have been fitted one to each boiler examined under steam and found to work satisfactory.

Recommend ✱ LMC 7.14 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + LMC 7.14.

JPRL

The amount of Entry Fee	£ 2 : 0/6	When applied for,	19/14
Special	£ 14 : 5/6	When received,	23.7.14
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£ :		

Committee's Minute TUE JUL 21 1914
Assigned + LMC 7.14

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



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