

REPORT ON MACHINERY.

No. 14214

Received at London Office

THU. OCT. 23. 1913

Date of writing Report 22.10.13 When handed in at Local Office 22.10.13 Port of Leith
 No. in Survey held at Leith Date, First Survey 17th June, 1913 Last Survey 16th October, 1913
 Reg. Book. 515 "Lindores" (Yard No. 98) (Number of Visits 15)
 ✓ on the Leith Tons { Gross 93.6
 Master ✓ Built at Leith By whom built J. C. G. Bolinder & Co Net 59.6
 Engines made at Stockholm By whom made J. C. G. Bolinder & Co Ltd When built 1913
 Boilers made at ✓ By whom made ✓ when made ✓
 Registered Horse Power 80 Owners Companhia de Fabricacao de Pernambuco Port belonging to Pernambuco
 Nom. Horse Power as per Section 28 ✓ Is Refrigerating Machinery fitted for cargo purposes ✓ Is Electric Light fitted ✓

ENGINES, &c.—Description of Engines Bolinders 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 4.52 Material of Scrap Iron
 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 ✓ 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 21"
 Dia. of Tunnel shaft as per rule 4.15 Dia. of Crank shaft journals as per rule 4.4 Dia. of Crank pin ✓ Size of Crank webs ✓ Dia. of thrust shaft under
 collars ✓ Dia. of screw 5 1/16 Pitch of Screw 36.58 No. of Blades 3 State whether moveable NO Total surface 7.58 sq ft
 No. of Feed pumps ✓ Diameter of ditto ✓ Stroke ✓ Can one be overhauled while the other is at work ✓
 No. of Bilge pumps 1 Diameter of ditto 4 Stroke 4 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 1-2" bore In Holds, &c. 2-2" bore
 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 Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible ✓
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Locks
 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 ✓ 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 11/9/13 of Stern Tube 11/9/13 Screw shaft and Propeller 11/9/13
 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 ✓ 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 ✓ Thickness of plates ✓ 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 ✓

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:— 2 Bottom end & Top end bolts & nuts, 2 Main bearing bolts, 1 set of coupling bolt, 1 set lilge pump valves, assorted nuts & bolts & wcl. use. 1 Propeller & Propeller shaft complete, 1 set circulating pump valves, 2 Bottom end brasses, 2 Hot bulbs. 8. Piston rings etc.

The foregoing is a correct description,

John Crane & Co. Manufacturer.

Dates of Survey while building { During progress of work in shops - - - 1913 June 17, 28.
During erection on board vessel - - - 1913 Sept 11, 16, 18, 19, 22, 23, 27. Oct 2, 6, 10, 13, 15, 16.
Total No. of visits 15

Is the approved plan of main boiler forwarded herewith ☒

" " " donkey " " " ☒

Dates of Examination of principal parts—Cylinders ☒ Slides ☒ Covers ☒ Pistons ☒ Rods ☒

Connecting rods ☒ Crank shaft ☒ Thrust shaft ☒ Tunnel shafts 17/6 28/6/13 Screw shaft 17/6 28/6/13 Propeller 11/9/13

Stern tube 11/9/13 Exhaust Steam pipes tested 6/10/13 Engine and boiler seatings 16/9/13 Engines holding down bolts 23/9 2/10/13

Completion of pumping arrangements 10/10/13 Boilers fixed ☒ Engines tried under steam 10/10/13

Main boiler safety valves adjusted ☒ Thickness of adjusting washers ☒

Material of Crank shaft ☒ Identification Mark on Do. ☒ Material of Thrust shaft ☒ Identification Mark on Do. ☒

Material of Tunnel shafts ☒ Identification Marks on Do. ☒ Material of Screw shafts ☒ Identification Marks on Do. ☒

Material of Steam Pipes ☒ Test pressure 250 lbs (spare shaft) No 3535

General Remarks (State quality of workmanship, opinions as to class, &c. (Please see Stockholm No 1194)

These engines have now been fitted on board in accordance with the rules. The fuel tanks have been tested & found satisfactory, & fitted with drip trap & drains. The exhaust pipes have been tested to 250 lbs (Please see Secretary's letter 14h 6/10/13 re temporary fuel tanks).

The compressed air reservoirs are stated to have been tested by the maker, & a certificate received through the Stockholm Surveyors is now forwarded.

The engines have been tried & found to work well ahead & astern. The maximum revolutions at full power were 323 ahead & 315 astern, and the lowest revolutions which could be maintained for manoeuvring purposes, 222 per minute.

The speed of the vessel at full power, on 6'-3" draught was 7.54 knots

The machinery of this vessel is eligible in my opinion to be classed + LMC 10.13

It is submitted that this vessel is eligible for

THE RECORD + LMC.10.13.

oil engines 2 Cy. 13 - 13 3/8
J & C G Bolinders & Co. Ltd.

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

The amount of Entry Fee .. £ 1 : - : When applied for, Special Charged at Stockholm 22/10/13
Donkey Boiler Fee .. £ : : When received, 7-11-13
Travelling Expenses (if any) £ : : 1913

Committee's Minute FRI. OCT. 24. 1913

Assigned

+ Lmb 10.13

oil engines

MACHINERY CERTIFICATE WRITTEN.



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Certificate (if required) to be sent to the Surveyors

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

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