

REPORT ON MACHINERY.

No. 32426

Received at London Office

THU. MAR. 6 - 1913

Date of writing Report 19 When handed in at Local Office 5-3-13 Port of Glasgow
 No. in Survey held at Clydebank Date, First Survey 13-11-11 Last Survey 4-3-1913
 Reg. Book. (Number of Visits 85)
 11 supp on the Steel triple screw S Niagara Tons Gross 13415 Net 7582
 Master Built at Clydebank By whom built John Brown & Co Ltd When built 1913
 Engines made at Clydebank By whom made do when made 1913
 Boilers made at do By whom made do when made 1913
 Registered Horse Power Owners Port belonging to London
 Nom. Horse Power as per Section 28 2175 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

ENGINES, &c.—Description of Engines one L.P. Turbine (2 Reciprocating Ings) No. of Cylinders 1 No. of Cranks —
 Rotor drum Dia. of Cylinders 9'-2" 9'-3 1/4 to 16'-10" Length of Stroke — Revs. per minute — Dia. of Screw shaft as per rule 12" Material of screw shaft 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 yes If two
 liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 4'-0"
 Dia. of Tunnel shaft as per rule 11'-2" Dia. of Rotor Crank shaft journals as per rule 11'-2" Dia. of Crank pin — Size of Crank webs — Dia. of Rotor
 as fitted 11'-2" as fitted 20'-10" hole
 collars 17 1/2 - 10" hole Dia. of screw 10'-0" Pitch of Screw 9'-6" No. of Blades 3 State whether moceable no Total surface 47 ft
 No. of Feed pumps Diameter of ditto Stroke Can one be overhauled while the other is at work
 No. of Bilge pumps 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 n) Manufacturers of Steel McAlvill & Sons Steel Co of Scotland
 Total Heating Surface of Boilers 18939 ft² Is Forced Draft fitted yes No. and Description of Boilers 6 Single ended
 Working Pressure 250 lbs² Tested by hydraulic pressure to 440 lbs² Date of test 8-5-12-21-5-12 No. of Certificate 11542-11601-11622
 Can each boiler be worked separately yes Area of fire grate in each boiler 48-8 ft² No. and Description of Safety Valves to
 each boiler 2 direct spring Area of each valve 9-62" Pressure to which they are adjusted 220 lbs² Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 14'-0" Length 11'-4" Material of shell plates steel
 Thickness 1 3/4" Range of tensile strength 31/35 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams DR+TR Lap
 g. seams DBS-TR Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 10 1/2" Lap of plates or width of butt straps 24 1/2"
 Percentages of strength of longitudinal joint rivets 94-3 Working pressure of shell by rules 220 Size of manhole in shell 14 x 12
 plate 83-3
 No. of compensating ring 37 x 31 x 1 1/2 No. and Description of Furnaces in each boiler 4 Morrison Material steel Outside diameter 46 5/8
 Length of plain part top Thickness of plates crown 11 Description of longitudinal joint welded No. of strengthening rings —
 bottom 16
 Working pressure of furnace by the rules 242 Combustion chamber plates: Material steel Thickness: Sides 5/8 Back 2 1/2 Top 5/8 Bottom 2 1/2
 Distance of stays to ditto: Sides 7 1/2 x 7 1/2 Back 8 x 8 1/4 Top 7 1/2 x 7 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 225
 Material of stays iron 2 1/2 tons min Diameter at smallest part 1-76 Area supported by each stay 56-25 Working pressure by rules 249 End plates in steam space:
 Material steel Thickness 1 5/8 Pitch of stays 16 3/8 x 16 3/8 How are stays secured DN Working pressure by rules 227 Material of stays steel
 Diameter at smallest part 6-49 Area supported by each stay 262 Working pressure by rules 255 Material of Front plates at bottom steel
 Thickness 15/16 Material of Lower back plate steel Thickness 13/16 Greatest pitch of stays 13 1/2 doubled Working pressure of plate by rules 405
 Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 x 3 3/4 Material of tube plates steel Thickness: Front 15/16 Back 15/16 Mean pitch of stays 9 3/8
 Distance across wide water spaces 13 1/2 doubled Working pressures by rules 349 Girders to Chamber tops: Material steel Depth and
 Thickness of girder at centre 2 plates 8 3/8 x 3/4 Length as per rule 30 Distance apart 4 1/2 Number and pitch of stays in each 3 of 4 1/2
 Working pressure by rules 220 Superheater or Steam chest; how connected to boiler none 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
 — Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —
 Riven 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 —

W61-0151

Lloyd's Register
Foundation

VERTICAL DONKEY BOILER— Manufacturers of Steel

No.	Description	When made	Where fixed
Made at	By whom made	No. of Certificate	Fire grate area
Working pressure	tested by hydraulic pressure to	Date of test	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
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:— *See other report.*

John Brown & Company, Limited.

The foregoing is a correct description,

Manufacturer.

J. Henderson
Assistant Secretary.

See accompanying report.

Dates of Survey while building
 During progress of work in shops --
 During erection on board vessel --
 Total No. of visits.

Is the approved plan of main boiler forwarded herewith *yes*

" " " donkey " " " "

Dates of Examination of principal parts—	Turbine casing	Cylinders	20.5.12	Slides	—	Covers	—	Pistons	—	Rods	—
Connecting rods	Rotor	Crank shaft	29.3.12	Thrust shaft	—	Tunnel shafts	4.6.12	Screw shaft	16.4.12	Propeller	21.6.12
Stern tube	7.8.12	Steam pipes tested	10.7.12	29.1.13	Engine and boiler seatings	7.8.12	Engines holding down bolts	8.10.12			
Completion of pumping arrangements	—	Boilers fixed	14.11.12	Engines tried under steam	3.3.13						
Main boiler safety valves adjusted	21.2.13	Thickness of adjusting washers	FPB FV 1/2 AV 1/2	FSB FV 1/2 AV 1/2	CPB FV 1/2 AV 1/2	CSB FV 1/2 AV 1/2	APB FV 1/2 AV 1/2	ASB FV 1/2 AV 1/2			
Material of Rotor Crank shaft	stul	Identification Mark on Do.	415 H.C.	Material of Thrust shaft	—	Identification Mark on Do.	—				
Material of Tunnel shafts	stul	Identification Marks on Do.	415 H.C.	Material of Screw shafts	Iron	Identification Marks on Do.	415 H.C.				
Material of Steam Pipes	Iron	Test pressure	660 lbs.								

General Remarks (State quality of workmanship, opinions as to class, &c. *See report on reciprocating engines*)

Glasgow

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

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

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

Committee's Minute FRI. MAR. 7 1913

Assigned



© 2021

Lloyd's Register Foundation