

REPORT ON MACHINERY.

No. 29857
WED. 15 MAR 1911

Received at London Office

Date of writing Report 19 When handed in at Local Office 13/3/11 Port of Glasgow
No. in Survey held at Clydebank Date, First Survey 2nd Nov. 1910 Last Survey 24th Feb. 1911
Reg. Book. on the 1/5/92 418 J.S.B. Demotthenes (Number of Visits 13)

Master Built at Belfast By whom built Harland & Wolff (no. 418) When built 1911
Tons { Gross
Net
Engines made at Clydebank By whom made J. Brown & Co. Ltd. (numbered H1W125) when made 1911
Boilers made at Belfast By whom made Harland & Wolff L^{td} when made 1911
Estimated Turbine Registered Horse Power 2100 Owners G. Chapman & Co. L^{td} Port belonging to Newcastle
Nom. Horse Power as per Section 28 1240 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines One low pressure Turbine

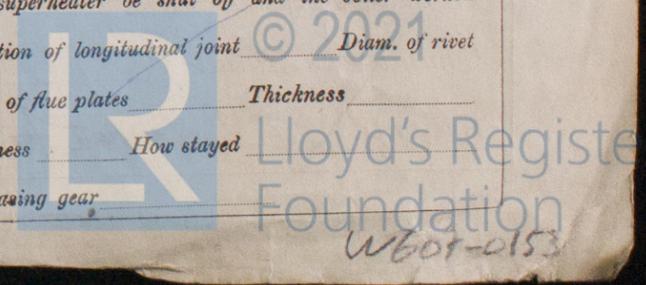
No. of Cylinders 1 No. of Cranks 1
Dia. of Cylinders Rotor drum 104" Length of Stroke — Revs. per minute 200 Dia. of Screw shaft as per rule 10.375 Material of S. Steel
Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes Is the after end of the liner made water tight 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 Yes If two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 78"

Dia. of Tunnel shaft as per rule Rotor as fitted Dia. of Crank shaft journals as per rule 9.21 as fitted 10.7 Dia. of Crank pin — Size of Crank webs — Dia. of thrust shaft under collars 17" with hole Dia. of screw 9'-0" Pitch of Screw 7'-11" No. of Blades 3 State whether moveable No Total surface 36 sq 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) 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 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 Thickness of plates crown Description of longitudinal joint No. of strengthening rings
bottom Thickness of plates bottom
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 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 _____ 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:—

John Brown & Company, Limited

The foregoing is a correct description,

Manufacturers

J. Henderson

Assistant Secretary

Dates of Survey while building { During progress of work in shops - - 1910 Nov 2. 21. 29. Dec 1. 16. 1911. Jan 6. 12. 16. 20. Feb 1. 15. 16. }
 { During erection on board vessel - - 24 }
 Total No. of visits 13.

Is the approved plan of main boiler forwarded herewith

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

Connecting rods _____ Crank shaft _____ Thrust shaft _____ Tunnel shafts _____ Screw shaft _____ Propeller _____

Stern tube _____ Steam pipes tested _____ Engine and boiler seatings _____ Engines holding down bolts _____

Completion of pumping arrangements _____ Boilers fixed _____ Engines tried under steam _____

Main boiler safety valves adjusted _____ Thickness of adjusting washers _____

Material of ^{Rotor} Crank shaft *steel* Identification Mark on Do. *HC 159* 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 _____

General Remarks (State quality of workmanship, opinions as to class, &c.)

This Turbine (Parsons Type) has been constructed by Messrs J. Brown & Co. Ltd under special survey; and has been shipped to Belfast to be fitted on board by Messrs Harland & Wolff, the builders of the reciprocating machinery for this vessel. Materials and workmanship are good. Turbine casing is stamped HC

Certificate (if required) to be sent to

The amount of Entry Fee .. £ _____ When applied for, _____

Special .. £ *8.10* _____

Donkey Boiler Fee .. £ _____ When received, _____

Travelling Expenses (if any) £ _____

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

Committee's Minute *Glasgow* 14 MAR 1911

TUE. AUG. 15. 1911

Assigned *Deferred for completion*



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J.H.H. 13-3-11