

REPORT ON MACHINERY.

No. 32426.

Date of writing Report

19

When handed in at Local Office

5-3-13 Port of Glasgow

Received at London Office

THU. MAR. 6-1913

No. in Survey held at Clydebank

Date, First Survey 13-11-11 Last Survey 4-3-1913

Reg. Book.

11 supp on the Stul triple screw Ss Niagara

(Number of Visits 85)

Gross 13415

Tons 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 5'-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 thrust shaft under

collars 17 1/2 - 10" Dia. of screw 10'-0" Pitch of Screw 9'-6" No. of Blades 3 State whether moveable 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

the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record n) Manufacturers of Steel McAlister & Sons Stul Co of Scotland

Total Heating Surface of Boilers 18939 ft Is Forced Draft fitted yes No. and Description of Boilers 6 Single ended

Working Pressure 250 lbs Tested by hydraulic pressure to 440 lbs Date of test 8-5-12-21-5-12 No. of Certificate 11542-11601-11622

In each boiler be worked separately yes Area of fire grate in each boiler 48-8 ft 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 lbs 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

e of compensating ring 34 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 —

Working pressure of furnace by the rules 242 Combustion chamber plates: Material steel Thickness: Sides 5/8 Back 3/2 Top 5/8 Bottom 27/32

Pitch 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 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

Area 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

h 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 2021 the boiler worked

ately — 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 —

fitted 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

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 _____ Rivets _____
 Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ 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:— *See other report.*

John Brown & Company, Limited.

The foregoing is a correct description,

Manufacturer.

Assistant Secretary.

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

See accompanying report.

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

Turbine casing
 Dates of Examination of principal parts—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* 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*
 Material of Rotor Crank shaft *steel* Identification Mark on Do. *415 H C* Material of Thrust shaft — Identification Mark on Do. —
 Material of Tunnel shafts *steel* 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*)

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

Committee's Minute

FRI. MAR. 7 1913

Assigned

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



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