

REPORT ON MACHINERY.

No. 23713

Received at London Office **23 MAY 1911**

Date of writing Report May 13 1911 When handed in at Local Office 17.5.1911 Port of Hull
 No. in Survey held at Hull Date, First Survey Aug 27 Last Survey May 4th 1911
 Reg. Book. 36 Supp. on the Trawler NORMAN (Number of Visits 74) Tons Gross 345 Net 135
 Master Brownley Built at Brownley By whom built Brook, Welton & Gemmill When built 1911
 Engines made at Hull By whom made Amos Smith Ltd when made 5
 Boilers made at H By whom made H when made 5
 Registered Horse Power 87 Owners Imperial Steam Towing Co Ltd Port belonging to Hull
 Nom. Horse Power as per Section 28 87 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Inverted triple expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 13-22½-37 Length of Stroke 24 Revs. per minute 115 Dia. of Screw shaft as per rule 7.68 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 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 4'0"
 Dia. of Tunnel shaft as per rule 6.8 Dia. of Crank shaft journals as per rule 7.14 Dia. of Crank pin 7½ Size of Crank webs 5x4½ Dia. of thrust shaft under collars 7½ Dia. of screw 9.6 Pitch of Screw 10.10 No. of Blades 4 State whether moveable No Total surface 34 sq ft
 No. of Feed pumps one Diameter of ditto 3 Stroke 13 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps one Diameter of ditto 3 Stroke 13 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines two Sizes of Pumps 6x3x6 - 5x5x5 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2-2 (7/8" dia) 1-2 (Stokehold) In Holds, &c. 4-2 (Fore hold, tallow hold, main hold after fore room) 2-2 (open suction to all bilges with discharge on deck)
 No. of Bilge Injections 1 sizes 3 Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size 1-3
 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 None
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both
 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 Hold suction How are they protected Wood casing
 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 13.2.11 of Stern Tube 13.2.11 Screw shaft and Propeller 13.2.11
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door Yes worked from Yes

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Phoenix & Leeds, Westphalia
 Total Heating Surface of Boilers 1476 sq ft Is Forced Draft fitted No No. and Description of Boilers 1 S.E. 9' x 12' 6"
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 23.3.11 No. of Certificate 1795
 Can each boiler be worked separately Yes Area of fire grate in each boiler 50.8 sq ft No. and Description of Safety Valves to each boiler 2 Spring loaded Area of each valve 4.9 sq in Pressure to which they are adjusted 205 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 6½ Mean dia. of boilers 13.0 Length 10.6 Material of shell plates Steel
 Thickness 1/8 Range of tensile strength 29.33 ton Are the shell plates welded or flanged No Descrip. of riveting: cir. seams 5/8 Lap long. seams 5/8 S. rivets Diameter of rivet holes in long. seams 1/16 Pitch of rivets 8 7/8 Lap of plates or width of butt straps 17 1/2
 Per centages of strength of longitudinal joint rivets 87 plate 85.9 Working pressure of shell by rules 200 lbs Size of manhole in shell 16x12
 Size of compensating ring 40x30x1/8 No. and Description of Furnaces in each boiler 3 plain Material Steel Outside diameter 3' 2 9/16"
 Length of plain part top 6.73 bottom 5.29 Thickness of plates crown 1.25 bottom 1.32 Description of longitudinal joint Welded No. of strengthening rings Yes
 Working pressure of furnace by the rules 209 Combustion chamber plates: Material Steel Thickness: Sides 7/16 Back 7/16 Top 7/16 Bottom 3/4
 Pitch of stays to ditto: Sides 9 1/2 x 8 Back 8 1/2 x 8 1/2 Top 8 1/2 x 9 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 212
 Material of stays Steel Diameter at smallest part 1 1/2 Area supported by each stay 76 Working pressure by rules 242 End plates in steam space: Material Steel Thickness 1/8 Pitch of stays 17 1/2 x 17 How are stays secured Welded Working pressure by rules 201 Material of stays Steel
 Diameter at smallest part 1 1/2 Area supported by each stay 298 Working pressure by rules 250 Material of Front plates at bottom Steel
 Thickness 1/4 Material of Lower back plate Steel Thickness 1/16 Greatest pitch of stays 14 x 8 1/2 Working pressure of plate by rules 225
 Diameter of tubes 3 1/2 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates Steel Thickness: Front 1/16 Back 3/8 Mean pitch of stays 9 1/2
 Pitch across wide water spaces 14 Working pressures by rules 201 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 1/2 x 2 1/4 Length as per rule 2-10 Distance apart 9 1/2 Number and pitch of stays in each 30 8 1/2
 Working pressure by rules 238 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 Yes

W383 - 0225

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:— *Two top's two bottom end connecting rods bolts nuts two main bearing bolts nuts, one set of coupling bolts nuts, one set of feed & bilge pump valves, one set of air & circulating pump valves, one main & one donkey feed check valve, assorted bolts nuts etc.*

The foregoing is a correct description,

FOR AMOS & SMITH LTD.

Manufacturer.

W. B. Hill

Dates of Survey while building: During progress of work in shops -- 1910: Aug 27 Sep 8, 10, 14, 17, 21, 26. Oct 3, 6, 8, 13, 14, 17, 18, 21, 27, 31. Managing Director per *W. B. Hill* Nov 2, 5, 9, 10, 15, 17, 19, 22. During erection on board vessel -- Nov 24, 26, 29 Dec 2, 8, 13, 16, 20, 22, 30, 1911: Jan 5, 10, 12, 17, 20, 21, 23, 25, 27. Feb 4, 6, 7, 8, 9, 13, 15, 17, 20, 24. Mar 2, 8, 11, 13, 21, 23, 24, 27, 29. Apr 4, 6, 7, 10, 13, 18, 20, 26. May 1, 3, 4.

Total No. of visits *74* Is the approved plan of main boiler forwarded herewith *R/L 23614*

Dates of Examination of principal parts—Cylinders *13.1.11* Slides *27.3.11* Covers *20.2.11* Pistons *20.2.11* Rods *13.3.11*

Connecting rods *13.3.11* Crank shaft *15.2.11* Thrust shaft *15.2.11* Tunnel shafts *15.2.11* Screw shaft *24.11.10* Propeller *24.11.10*

Stern tube *24.11.10* Steam pipes tested *16.4.11* Engine and boiler seatings *13.2.11* Engines holding down bolts *10.4.11*

Completion of pumping arrangements *4.5.11* Boilers fixed *20.4.11* Engines tried under steam *26.4.11*

Main boiler safety valves adjusted *26.4.11* Thickness of adjusting washers *F 7/16 A 1/2*

Material of Crank shaft *Steel* Identification Mark on Do. *15.2.11* Material of Thrust shaft *Steel* Identification Mark on Do. *15.2.11*

Material of Tunnel shafts *Steel* Identification Marks on Do. *15.2.11* Material of Screw shafts *Iron* Identification Marks on Do. *15.2.11*

Material of Steam Pipes *Solid drawn copper* Test pressure *400 lbs*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery & boiler of this vessel have been constructed under Special Survey. All of good material workmanship have been fully secured on board in accordance with the Rules. They are now in good working condition & are respectfully submitted as being eligible in my opinion to have record of T.L.M.C. 5-11 in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD + LMC 5-11.

J.W.D. 13/5/11

The amount of Entry Fee .. £ *1 : 0 : 0* When applied for, _____

Special .. £ *13* When received, *22-5-11*

Donkey Boiler Fee .. £ _____

Travelling Expenses (if any) £ *2* _____

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

Committee's Minute **FRI. 26 MAY 1911**

Assigned *Thurs 5.11* **FRI. FEB. 9 - 1912**



Certificate (if required) to be sent to _____

The Surveyors are requested not to write on or below the space for Committee's Minute.

MACHINERY CERTIFICATE
WRITTEN