

# REPORT ON MACHINERY.

No. 22119

Port of Sunderland

Received at London Office SAT. 25 MAR 1905

No. in Survey held at Sunderland

Date, first Survey 4th Octr; '04 Last Survey 17 January 1905

Reg. Book. S.S. "Pouvoir"

(Number of Visits 30)

Master Montrose Built at Montrose By whom built Montrose Shipbuilding Co. Tons <sup>Gross</sup> 990 <sub>Net</sub> 555 When built 1905

Engines made at Sunderland By whom made North Eastern Marine Engineering Co. Ltd. when made 1905

Boilers made at Sunderland By whom made North Eastern Marine Engineering Co. Ltd. when made 1905

Registered Horse Power 125.6 Owners J. Power & Co. Port belonging to London

Nom. Horse Power as per Section 28 125.6 Is Refrigerating Machinery fitted no Is Electric Light fitted no

## ENGINES, &c.—Description of Engines Inverted triple expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 16" 25" 42" Length of Stroke 33" Revs. per minute 70 Dia. of Screw shaft <sup>as per rule</sup> 9.98" <sub>as fitted</sub> 10.5" Material of screw shaft Iron

Is the screw shaft fitted with a continuous liner the whole length of the stern tube no 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 no 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 no Length of stern bush 3' 4"

Dia. of Tunnel shaft <sup>as per rule</sup> 8.16" <sub>as fitted</sub> 8.16" Dia. of Crank shaft journals <sup>as per rule</sup> 5.68" <sub>as fitted</sub> 5.68" Dia. of Crank pin 8 3/4" Size of Crank webs 5 1/2" x 13 1/2" Dia. of thrust shaft under collars 8 3/4" Dia. of screw 12' 0" Pitch of screw 12' 9" No. of blades 4 State whether moveable no Total surface 444.5 sq ft

No. of Feed pumps 2 Diameter of ditto 2 3/4" Stroke 15" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3" Stroke 15" Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps 6" x 7" x 9" 5" x 3" x 4 1/2" No. and size of Suctions connected to both Bilge and Donkey pumps 2 of 2"

In Engine Room 2 of 2" In Holds, &c. 2 of 2"

No. of bilge injections one sizes 3 1/2" Connected to condenser, or to circulating pump no Is a separate donkey suction fitted in Engine room & size yes - 2 1/2"

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 yes

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 none How are they protected yes

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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock 22/12/05 Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes worked from engines fitted aft

## BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 2154 sq ft Is forced draft fitted no

No. and Description of Boilers 2 Single ended Cylindrical Mult Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs

Date of test 29/12/04 Can each boiler be worked separately yes Area of fire grate in each boiler 32.5 sq ft No. and Description of safety valves to each boiler 2 spring Area of each valve 3.97 sq in Pressure to which they are adjusted 185 lbs for 180 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 3' 0" Mean dia. of boilers 11' 10" Length 10' 7" Material of shell plates Steel

Thickness 1" Range of tensile strength 29/32 Are they welded or flanged no Descrip. of riveting: cir. seams D. riv. lap long. seams D.R.D. Butteap

Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 6 7/8" ~~Gap of plates~~ or width of butt straps 13 1/2"

Per centages of strength of longitudinal joint rivets 82.6 plate 81.1 Working pressure of shell by rules 180.3 Size of manhole in shell 16" x 12"

Size of compensating ring flanged No. and Description of Furnaces in each boiler 2 plain Material Steel Outside diameter 40 1/2"

Length of plain part <sup>top</sup> 7' 0 1/2" <sub>bottom</sub> 7' 0 1/2" Thickness of plates <sup>or own</sup> 49/64 <sub>bottom</sub> Description of longitudinal joint weld No. of strengthening rings yes

Working pressure of furnace by the rules 180 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 15/16"

Pitch of stays to ditto: Sides 10 7/8" x 5 1/2" Back 9 1/4" x 9" Top 8 1/2" x 9 1/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182.6

Material of stays Steel Diameter at smallest part 1.79" Area supported by each stay 88.16 sq in Working pressure by rules 181.2 lbs End plates in steam space: Material Steel Thickness 1 1/2" Pitch of stays 18" x 18 1/4" How are stays secured nut + wash Working pressure by rules 182.4 lbs Material of stays steel

Diameter at smallest part 6-1" Area supported by each stay 328.5 sq in Working pressure by rules 181.6 lbs Material of Front plates at bottom Steel

Thickness 13/16" Material of Lower back plate steel Thickness 27/32" Greatest pitch of stays 13 3/4" x 9" Working pressure of plate by rules 182.2 lbs

Diameter of tubes 3 1/2" Pitch of tubes 5" x 5 1/2" Material of tube plates Steel Thickness: Front 13/16" Back 13/16" Mean pitch of stays 10" x 10 1/4"

Pitch across wide water spaces 14 1/2" Working pressures by rules 215.2 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7 3/4" x 1 3/4" Length as per rule 29" Distance apart 9 1/4" Number and pitch of Stays in each 2 - 8 1/2"

Working pressure by rules 189 lbs Superheater or Steam chest; how connected to boiler yes Can the superheater be shut off and the boiler worked separately yes

Diameter yes Length yes Thickness of shell plates yes Material yes Description of longitudinal joint yes Diam. of rivet holes yes Pitch of rivets yes Working pressure of shell by rules yes Diameter of flue yes Material of flue plates yes Thickness yes

If stiffened with rings yes Distance between rings yes Working pressure by rules yes End plates: Thickness yes How stayed yes

Working pressure of end plates yes Area of safety valves to superheater yes Are they fitted with easing gear yes

**DONKEY BOILER**— No. \_\_\_\_\_ Description \_\_\_\_\_

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_

No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ 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 \_\_\_\_\_ 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 \_\_\_\_\_

Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— *2 Top end, 2 bottom end, 2 Main bearing & 1 set Coupling bolts, 1 set of feed & bilge pump valves, Bolts & nuts assorted & iron of sizes, 1 propeller, 6 junk ring bolts.*

The foregoing is a correct description,  
**NORTH EASTERN MARINE ENGINEERING CO. LTD.** Manufacturer.  
*Walter Matthews*

Dates of Survey while building { During progress of work in shops - - } 1904:— Oct 4, 11, 19, 24, 27, Nov: 7, 9, 14, 16, 22, 24, 25, 28, 30, Dec: 3, 6, 8, 9, 14  
 { During erection on board vessel - - } 20, 21, 28, 29, 30 — 1905:— Jan: 5, 7, 11, 12, 13, 17,  
 Total No. of visits 30 Is the approved plan of main boiler forwarded herewith *Yes*

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The Machinery for this vessel has been constructed under Special Survey, the workmanship and materials used are both of good quality, the Engines have been tried under steam ahead & astern, and worked well, the Steam pipes have been tested to twice the working pressure and proved satisfactory, the safety Valves were adjusted under steam and worked well*)

*I beg to recommend that this vessel, in <sup>our</sup> opinion, is eligible to have the record **L.M.C. 1.05** in the Register Book*

**It is submitted that this vessel is eligible for THE RECORD L.M.C. 1.05.**

*W.S.*  
 27.3.05  
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 27.3.05

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. . . £ 2 : :  
 Special . . . . . £ 18 : 15 :  
 Donkey Boiler Fee . . . . . £ : :  
 Travelling Expenses (if any) £ : :  
 When applied for, 19/1/05  
 When received, 25/3/05

*Wm. Coombes & Wm. Morrison*  
 Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
 Assigned  
 TUES. 28 MAR 1905  
 + L.M.C. 1.05

