

Apr 19 581

REPORT ON MACHINERY.

Port of *Newcastle on Tyne*

Received at London Office

WED. 29 JUN 1898

No. in Survey held at *Newcastle*

Date, first Survey *2 July 1897* Last Survey *5 May 1898*

Reg. Book.

(Number of Visits *5*)

Of the *% Rapidan*

Tons Gross *7378.62* Net *4777.49*

Master *J. Buckingham* Built at *Hartlepool* By whom built *Lurness Withy & Co. Ltd.* When built *1898*

Engines made at *Wallsend* By whom made *North Eastern Marine & Co. Ltd.* when made *1898*

Boilers made at *Wallsend* By whom made *North Eastern Marine & Co. Ltd.* when made *1898*

Registered Horse Power *500* Owners *Chesapeake Ohio J. J. Co. Ltd.* Port belonging to *W. Hartlepool*

Nom. Horse Power as per Section 28 *514* Is Electric Light fitted *yes*

ENGINES, &c.—Description of Engines *Triple expansion* No. of Cylinders *3* No. of Cranks *3*

Diameter of Cylinders *28" - 46" - 75"* Length of Stroke *54"* Revolutions per minute _____ Diameter of Screw shaft *as per rule 14.2.3 as fitted 14.3/4"*

Diameter of Tunnel shaft *as per rule 13.5 as fitted 14.1/4"* Diameter of Crank shaft journals *14.3/4"* Diameter of Crank pin *14.3/4"* Size of Crank webs *28.1/4" x 9.3/4"*

Diameter of screw *19'-0"* Pitch of screw *19'-0"* No. of blades *4* State whether moveable *yes* Total surface *116 sq ft*

No. of Feed pumps *2* Diameter of ditto *4.1/2"* Stroke *30"* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2* Diameter of ditto *5"* Stroke *30"* Can one be overhauled while the other is at work *yes*

No. of Donkey Engines *4* Sizes of Pumps *2 Weirs Feed 12-9.1/2 x 18 1 Duplex 9-6 x 10 1 Ballast 7-9 x 9* No. and size of Suctions connected to both Bilge and Donkey pumps _____

In Engine Room *1 centre and 2 wings 3.1/2" dia* In Holds, &c. *No 1 Hold 2 wings 3.1/2" No 2 Hold 2 wings 3.1/2" No 3 Hold 2 wings 3.1/2" No 4 Hold 2 wings 3.1/2" Tunnel 1 of 2.1/2"*

No. of bilge injections *1* sizes *7"* Connected to condenser, or to circulating pump *C.P.* Is a separate donkey suction fitted in Engine room & size *yes 3.1/2"*

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 *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 *bilge* How are they protected *wood casings*

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 *before launch* Is the screw shaft tunnel watertight *yes*

Is it fitted with a watertight door *yes* worked from *Upper platform*

BOILERS, &c.— (Letter for record *S*) Total Heating Surface of Boilers *8840 sq ft* Is forced draft fitted *no*

No. and Description of Boilers *4 single ended* Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs*

Date of test *25.2.98* Can each boiler be worked separately *yes* Area of fire grate in each boiler *64.8 sq ft* No. and Description of safety valves to each boiler *2 spring loaded* Area of each valve *7.07 sq in* Pressure to which they are adjusted *185 lbs* Are they fitted with easing gear *yes* Smallest distance between boilers or uptakes and bunkers or woodwork *18"* Mean diameter of boilers *15.3"*

Length *10.6"* Material of shell plates *steel* Thickness *1.1/2"* Description of riveting: circum. seams *DR lap* long. seams *DBS-TR*

Diameter of rivet holes in long. seams *1.1/2"* Pitch of rivets *10"* Lap of plates or width of butt straps *21.3/4"*

Per centages of strength of longitudinal joint *ribs 87.2 plate 85* Working pressure of shell by rules *204* Size of manhole in shell *16 x 12*

Size of compensating ring *flanged* No. and Description of Furnaces in each boiler *3 suspension* Material *steel* Outside diameter *46"*

Length of plain part *top 9 bottom 7* Thickness of plates *9/16"* Description of longitudinal joint *welded* No. of strengthening rings *1*

Working pressure of furnace by the rules *190* Combustion chamber plates: Material *steel* Thickness: Sides *19/32"* Back *19/32"* Top *19/32"* Bottom *15/16"*

Pitch of stays to ditto: Sides *8 x 8* Back *7.1/2 x 8* Top *8 x 8* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *190 lbs*

Material of stays *steel* Diameter at smallest part *1.38"* Area supported by each stay *64 sq in* Working pressure by rules *187* End plates in steam space: Material *steel* Thickness *1.1/2"* Pitch of stays *16 x 15.1/4"* How are stays secured *DN & W* Working pressure by rules *234 lbs* Material of stays *steel*

Diameter at smallest part *2.53"* Area supported by each stay *252 sq in* Working pressure by rules *180* Material of Front plates at bottom *steel* Thickness *7/8"* Material of Lower back plate *steel* Thickness *3/4"* Greatest pitch of stays *14.1/2"* Working pressure of plate by rules *241 lbs*

Diameter of tubes *3.1/4"* Pitch of tubes *4.1/2" x 4.1/2"* Material of tube plates *steel* Thickness: Front *3/4"* Back *3/4"* Mean pitch of stays *9"*

Pitch across wide water spaces *doubled 14.1/2"* Working pressures by rules *241 lbs* Girders to Chamber tops: Material *steel* Depth and thickness of girder at centre *2 plates 8.1/4" x 3.1/4"* Length as per rule *31.1/2"* Distance apart *8"* Number and pitch of Stays in each *3 of 8"*

Working pressure by rules *190 lbs* Superheater or Steam chest; how connected to boiler *none* 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— Description *none*

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 casing gear _____ If steam from main boilers can enter the donkey boiler _____
 Diameter of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____
 Description of riveting long seams _____ Diameter of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____
 Lap of plating _____ Per centage of strength of joint _____ Rivets _____ 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, set coupling bolts and nuts, set feed and bilge pump valves, Air pump bucket & rod, Circulating pump bucket & rod.*

The foregoing is a correct description,
 FOR AND ON BEHALF OF THE NORTH EASTERN
 MARINE ENGINEERING COMPANY, LIMITED

Manufacturer.

W. H. Marshall

Dates of Survey while building
 During progress of work in shops— *1897- July 2 22 Aug 24 31 Sep 8 15 17 Oct 5 8 13 20 25 28 Nov 1 5 11 17 19 23 26 Dec 8 14*
 During erection on board vessel— *1898- Jan 13 25 28 Feb 1 8 11 17 23 25 Mar 4 7 9 10 15 22 25 29 April 5 14 22 26 28 May 3 5*
 Total No. of visits *46* at *W. H. Marshall 1898 Jan. 28 Feb. 17 21 22 May 11 26 June 23 = 7.*

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

ENGINES—Length of stern bush *5' 6"* Diameter of crank shaft journals *as per rule 14 23* Diameter of thrust shaft under collars *14 3/4*

BOILERS—Range of tensile strength _____ Are they welded or flanged *flanged* **DONKEY BOILERS**—No. *0* Range of tensile strength _____

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

The machinery of this vessel has been constructed under special survey in accordance with the rules and approved plans enclosed and has been seen running under steam satisfactorily. Materials and workmanship are good.

The machinery of this vessel is eligible in our opinion to be classed + L.M.C. 6.98. in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. *+ L.M.C. 6.98 Elect light*

H. H. 29/6/98

The amount of Entry Fee... £ 3 : 0 :
 Special ... £ 45 : 14 :
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 18. 5. 18. 98.
 When received, 23. 6. 18. 98.

Harry Clarke & Richard Hind
 Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
 Assigned

+ L.M.C. 6.98 Elect light.

MACHINERY CERTIFICATE
 FRI 1 JUL 1898



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NEWCASTLE-ON-TYNE

Certificate (if required) to be sent to

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