

REPORT ON MACHINERY.

No. 26392
FRI. MAR. 19 1915

Received at London Office

Date of writing Report 19 When handed in at Local Office 19 Port of Sunderland
 No. in Survey held at Sunderland Date, First Survey Jul 28th 1914 Last Survey Mar 2nd 1915
 Reg. Book. on the New Steel S.S. Franca (Number of Visits 40)
 Master J. W. Rubb Built at Sunderland By whom built Osbourne Graham & Co. 185 Tons Gross 1166
 Engines made at Sunderland By whom made North Eastern Marine Eng Co Ltd. when made 1915 Net 688
 Boilers made at Sunderland By whom made North Eastern Marine Eng Co Ltd. when made 1915
 Registered Horse Power Owners Constantine Porosa Port belonging to London
 Nom. Horse Power as per Section 28 148 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks Three
 Dia. of Cylinders 14" x 28" x 46" Length of Stroke 33 Revs. per minute 88 Dia. of Screw shaft 9-18 Material of screw shaft 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 ✓ 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 3'-6"
 Dia. of Tunnel shaft 8.66 Dia. of Crank shaft journals 9.09 Dia. of Crank pin 9.5 Size of Crank webs 13" x 5.5" Dia. of thrust shaft under collars 9.5 Dia. of screw 12'-0" Pitch of Screw 13'-0" No. of Blades 4 State whether moveable no Total surface 50 ft
 No. of Feed pumps Two Diameter of ditto 2.5" Stroke 15" Can one be overhauled while the other is at work yes
 No. of Bilge pumps Two Diameter of ditto 3" Stroke 15" Can one be overhauled while the other is at work yes
 No. of Donkey Engines Two Sizes of Pumps Ballast 4" x 9", Feed 6" x 4" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2 @ 2.5" dia @ 1 @ 3" dia in well. In Holds, &c. Two @ 2.5" dia in fore hold.
2 @ 2.5" dia (fore) + 1 @ 3" dia (aft well) in after hold. One @ 3" dia in Tunnel well.
 No. of Bilge Injections One sizes 3.2" Connected to condenser, or to circulating pump Cipp. Is a separate Donkey Suction fitted in Engine room & size Yes. 2.5" dia
 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 ✓
 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 ✓
 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 22-1-15 of Stern Tube 2-2-15 Screw shaft and Propeller 3-2-15
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from top platform.

BOILERS, &c.—(Letter for record ✓) Manufacturers of Steel J. Spence & Sons Ltd Newburn.
 Total Heating Surface of Boilers 2500 ft Is Forced Draft fitted no No. and Description of Boilers One single ended.
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 8-1-15 No. of Certificate 32-73
 Can each boiler be worked separately yes Area of fire grate in each boiler 62 ft No. and Description of Safety Valves to each boiler Two spring loaded Area of each valve 1.06 sq 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" External Mean dia. of boilers 16'-0" Length 11'-0" Material of shell plates Steel
 Thickness 1.5" Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R.
 long. seams T.R.D.P.S. Diameter of rivet holes in long. seams 1.5" Pitch of rivets 9.5" Top of plates width of butt straps 19.5"
 Per centages of strength of longitudinal joint rivets 8.1 Working pressure of shell by rules 180.2 lbs Size of manhole in end. 16" x 12"
 Size of compensating ring dished No. and Description of Furnaces in each boiler 3 Dighton Material Steel Outside diameter 50.5"
 Length of plain part top 3.1" Thickness of plates crown 3.1" Description of longitudinal joint weld No. of strengthening rings 25"
 bottom 6.1" Working pressure of furnace by the rules 181 lbs Combustion chamber plates: Material Steel Thickness: Sides 2.5" Back 1.6" Top 2.5" Bottom 2.5"
 Pitch of stays to ditto: Sides 12" x 8.9" Back 12" x 10.8" Top 12" x 8.9" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 185 lbs
 Material of stays Steel Diameter at smallest part 2.1" Area supported by each stay 105 sq Working pressure by rules 180.5 lbs End plates in steam space:
 Material Steel Thickness 1.5" Pitch of stays 23" x 20.2" How are stays secured D.N. Wash Working pressure by rules 180.5 lbs Material of stays Steel
 Diameter at smallest part 8.29" Area supported by each stay 4.15 sq Working pressure by rules 182.8 lbs Material of Front plates at bottom Steel
 Thickness 3.4" Material of Lower back plate Steel Thickness 3.2" Greatest pitch of stays 14.5" x 10.8" Working pressure of plate by rules 181 lbs
 Diameter of tubes 3.4" Pitch of tubes 4.5" Material of tube plates Steel Thickness: Front 3.4" Back 3.4" Mean pitch of stays 10.5"
 Pitch across wide water spaces 14.5" Working pressures by rules 183 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 2 @ 1" x 8.5" Length as per rule 2.1" Distance apart 12.5" Number and pitch of stays in each 2 @ 8.9"
 Working pressure by rules 182.5 lbs Superheater or Steam chest; how connected to boiler none 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:—

Two each bolts and nuts for top & bottom ends & main bearings. One set of coupling bolts. One set each feed & bilge pump valves. Quantity of assorted bolts nuts & iron. Cast Iron propeller.

The foregoing is a correct description, **NORTH EASTERN MARINE ENGINEERING CO LTD**

Manufacturer.

Geo D Weir Manager

Dates of Survey while building

During progress of work in shops - - -	1914 Jul. 28 Aug. 10. 20. 25. Sep. 9. 16. Oct. 1. 9. 14. 22	Nov. 4. 5. 11. 18. 18. 27. 28. 30	
	During erection on board vessel - - -		Dec. 5. 10. 11. 15. 16. 17. 24. 29. 30. 1915 Jan. 5. 8. 13. 19. 22. 26. Feb. 3. 5. 8. 11. 16. 22. Mar.
	Total No. of visits		40

Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders 19-1-15 Slides 30-12-14 Covers 30-12-14 Pistons 30-12-14 Rods 19-1-15

Connecting rods 19-1-15 Crank shaft 30-12-14 Thrust shaft 10-12-14 Tunnel shafts 10-12-14 Screw shaft 19-1-15 Propeller 5-1-15

Stern tube 13-1-15 Steam pipes tested 22-2-15 5-2-15 Engine and boiler seatings 22-1-15 Engines holding down bolts 8-2-15

Completion of pumping arrangements 22-2-15 Boilers fixed 8-2-15 Engines tried under steam 11-2-15

Main boiler safety valves adjusted 11-2-15 Thickness of adjusting washers Port $\frac{1}{16}$ " Stand $\frac{1}{16}$ "

Material of Crank shaft *Steel* Identification Mark on Do. 6936WC ^{W.P.} Material of Thrust shaft *Steel* Identification Mark on Do. 5910WC.W.P.

Material of Tunnel shafts *Steel* Identification Marks on Do. 59056-4-4 ^{W.P. + W.C.} Material of Screw shafts *Steel* Identification Marks on Do. 5909WC.W.P.

Material of Steam Pipes *Wrought iron lapwelded 5" bore x $\frac{1}{4}$ " thick* Test pressure 540 lbs per sq. in.

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

The machinery of this vessel has been built under special survey, the materials and workmanship are of good quality and the hydraulic tests of the boiler proved satisfactory. The whole of the machinery has been secured in place & tried under steam & is in good & safe working condition & eligible in my opinion to be classed & have record **L.M.C 3-15.** in the Register Book.

It is submitted that this vessel is eligible for **THE RECORD, + L.M.C 3.15.**

J.M.C.

J.W.D.
19/3/15

William Butler
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee .. £ 2 : 0 0: When applied for.

Special £ 22 : 4 0: **1.8. MAR 1915**

Donkey Boiler Fee £ : : When received,

Travelling Expenses (if any) £ : : *3.00* 1915 *6/4/15*

Committee's Minute TUE. MAR 23. 1915

Assigned

+ L.M.C 3.15



Certificate (if required) to be sent to the Registrar of Shipping or below the space for Committee's Minute.

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