

REPORT ON MACHINERY.

No. 25993

Received at London Office SAT. JAN. 31. 1914

Date of writing Report 28th Jan 1914 When handed in at Local Office 30th Jan 1914 Port of Sunderland
 No. in Survey held at Sunderland Date, First Survey 2nd August 1911 Last Survey 16th January 1914
 Reg. Book. on the New Steel S.S. Kelsomoor (Number of Visits 37) Gross Tons 3174 Net Tons 1962
 Master W. Waddle Built at Sunderland By whom built J. Blumer & Co. Ltd. When built 1913-14
 Engines made at Sunderland By whom made North Eastern Marine Eng. Co. Ltd. when made 1913-14
 Boilers made at Sunderland By whom made North Eastern Marine Eng. Co. Ltd. when made 1913-14
 Registered Horse Power _____ Owners Moore Line (W. Runciman & Co.) Port belonging to Newcastle London
 Nom. Horse Power as per Section 28 291 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 24" x 39" x 65" Length of Stroke 42" Revs. per minute 40 Dia. of Screw shaft 13 1/2" 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 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'-6"
 Dia. of Tunnel shaft 11 1/2" Dia. of Crank shaft journals 12 1/2" Dia. of Crank pin 12 1/2" Size of Crank webs 19 1/2" x 4 1/2" Dia. of thrust shaft under
 collars 12 1/2" Dia. of screw 16'-6" Pitch of Screw 14'-0" No. of Blades 4 State whether moveable no Total surface 86 sq ft
 No. of Feed pumps Two Diameter of ditto 3" Stroke 24" Can one be overhauled while the other is at work yes
 No. of Bilge pumps Two Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work yes
 No. of Donkey Engines Two Sizes of Pumps Duplex Ballast 4x9x9, Feed 6x4x6 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Two @ 3" diameter, One @ 3 1/2" diameter. In Holds, &c. 2 @ 3" dia in No 1 hold, 2 @ 3" dia
in No 2 hold. 2 @ 3" dia in No 3 hold. One @ 3 1/2" dia in after hold well.
 No. of Bilge Injections One sizes 4 1/2" Connected to condenser, or to circulating pump no 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 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
 Dates of examination of completion of fitting of Sea Connections 9-12-13 of Stern Tube 19-12-13 Screw shaft and Propeller 19-12-13
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record) no Manufacturers of Steel J. Spencer & Sons Ltd. Newburn.
 Total Heating Surface of Boilers 4400 sq ft Is Forced Draft fitted no No. and Description of Boilers Two single ended
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 7-11-13 No. of Certificate 3165
 Can each boiler be worked separately yes Area of fire grate in each boiler 55 1/2 sq ft No. and Description of Safety Valves to
 each boiler Two spring loaded Area of each valve 5.9 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 18" Mean dia. of boilers 15'-9" Length 10'-6" Material of shell plates Steel
 Thickness 1 1/2" Range of tensile strength 28 1/2 x 32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R.
 long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9 5/8" Lap of plates or width of butt straps 19 3/4"
 Per centages of strength of longitudinal joint rivets 86.75 Working pressure of shell by rules 180 lbs Size of manhole in stati end 16" x 12"
 plate 86.26 No. and Description of Furnaces in each boiler Three bar. Material Steel Outside diameter 44 1/4"
 Length of plain part dished Thickness of plates 9 1/16" Description of longitudinal joint weld No. of strengthening rings yes
 Working pressure of furnace by the rules 184.5 Combustion chamber plates: Material Steel Thickness: Sides 3/4" Back 3/2" Top 3/4" Bottom 3/4"
 Pitch of stays to ditto: Sides 8 1/2" x 11 1/2" Back 10 1/2" x 10 1/2" Top 8 1/2" x 11 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180.5 lbs
 Material of stays Steel Area at smallest part 2.1 sq in Area supported by each stay 102.3 sq in Working pressure by rules 184.5 End plates in steam space:
 Material Steel Thickness 1 1/2" Pitch of stays 22 1/2" x 20 1/2" How are stays secured D.N. Wash Working pressure by rules 180.5 lbs Material of stays Steel
 Area at smallest part 8.29 sq in Area supported by each stay 475 sq in Working pressure by rules 182 lbs Material of Front plates at bottom Steel
 Thickness 3/4" Material of Lower back plate Steel Thickness 1 5/16" Greatest pitch of stays 14 1/2" x 10 1/2" Working pressure of plate by rules 182 lbs
 Diameter of tubes 3 1/2" 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 10 5/16"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 192 lbs Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 20 1/2" x 1 1/2" Length as per rule 31 1/2" Distance apart 11 1/2" Number and pitch of stays in each 2 @ 8 1/2"
 Working pressure by rules 180.5 Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked
 separately yes 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	When made	Where fixed
Made at	By whom made	No. of Certificate	Fire grate area
Working pressure	tested by hydraulic pressure to	Date of test	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	Date of adjustment	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
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates
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 & nuts for top and bottom ends and main bearings. One set coupling bolts. One set feed & bilge pump valves. Assorted bolts nuts & iron. Sail shaft & Propeller.

The foregoing is a correct description,
 NORTH EASTERN MARINE ENGINEERING CO LTD
 S. T. Harrison Secy
 Manufacturer.

Dates of Survey while building	During progress of work in shops --	1913 Aug 2 11 14 20 27	Sep 5 16 19 24 25	Oct 1 4 9 10 15 17
	During erection on board vessel ---	22 23 24 30	Nov 4 6 7 12 18 25 27 28	Dec 3 9 16 19 24 31
	Total No. of visits	37		Jan 6 9 16

Is the approved plan of main boiler forwarded herewith Yes

Is the approved plan of main boiler forwarded herewith " " " donkey " " "

Dates of Examination of principal parts—Cylinders 30-10-13 Slides 12-11-13 Covers 30-10-13 Pistons 12-11-13 Rods 4-10-13

Connecting rods 12-11-13 Crank shaft 6-11-13 Thrust shaft 6-11-13 Tunnel shafts 6-11-13 Screw shaft 12-11-13 Propeller 27-11-13

Stern tube 27-11-13 Steam pipes tested 30-10-13, 31-10-13, 9-11-13 Engine and boiler seatings 9-12-13 Engines holding down bolts 31-12-13

Completion of pumping arrangements 6-1-14 Boilers fixed 19-12-13 Engines tried under steam 31-12-13

Main boiler safety valves adjusted 31-12-13 Thickness of adjusting washers 9.0h F 3/32 A 3/32 19.0h F 3/8 A 5/16

Material of Crank shaft Steel Identification Mark on Do. 8383 K.H. Material of Thrust shaft Steel Identification Mark on Do. 16. N.B. 38 W.5 work

Material of Tunnel shafts Steel Identification Marks on Do. 4946 4947 4948 Material of Screw shafts Steel Identification Marks on Do. 37 W.5 Span

Material of Steam Pipes 4 3/4" bore 4 1/2" thick Lap welded wet iron Test pressure 540 lbs

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 boilers proved satisfactory. The whole of the machinery has been securely fixed in place & tried under steam, and is in good & safe working condition and eligible in my opinion to be classed and have record. **L.M.C. 1-14** in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 1. 14.

W.D. 31/1/14 A.R.S.

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

The amount of Entry Fee	£ 2 : 0 0	When applied for	30.1.14
Special	£ 34 . 11 0	When received	5/2/14
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£ :		

TUE. FEB. 3 - 1914
 Committee's Minute
 Assigned + L.M.C. 1. 14



MACHINERY CERTIFICATE WRITTEN