

REPORT ON MACHINERY.

No. 25360.

Date of writing Report 22. 7. 1912 When handed in at Local Office 22nd July 1912 Port of Sunderland Received at London Office TUE AUG. - 6. 1912

No. in Survey held at Sunderland Date, First Survey January Last Survey 19th July 1912
Reg. Book. on the "Horsleyside" (Number of Visits 31)

Master L. Johnson Built at Sunderland By whom built Shart Bros Ltd 3 1/4 1/2 Tons Gross 3993.59
Engines made at Sunderland By whom made North Eastern Marine Eng Co Ltd 2031 When built 1912 Net 2518.33
Boilers made at Sunderland By whom made North Eastern Marine Eng Co Ltd when made 1912
Registered Horse Power 305 Owners Charlton Ltd & Co. Ltd when made 1912
Nom. Horse Power as per Section 28 305 Is Refrigerating Machinery fitted for cargo purposes no Port belonging to Newcastle Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple expansion. No. of Cylinders Three No. of Cranks Three
Dia. of Cylinders 25" x 41" x 68" Length of Stroke 48" Revs. per minute 65 Dia. of Screw shaft as per rule 14 1/2" Material of Raw 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'-10 1/2"
Dia. of Tunnel shaft as per rule 12.68" Dia. of Crank shaft journals as per rule 13.21" Dia. of Crank pin 13 1/2" Size of Crank webs 20 1/2" x 8 1/4" Dia. of thrust shaft under collars 13 1/2" Dia. of screw 1 1/2" Pitch of Screw 18'-0" No. of Blades 4 State whether moveable no Total surface 93 1/2'
No. of Feed pumps Two Diameter of ditto 3 1/2" Stroke 26" Can one be overhauled while the other is at work yes
No. of Bilge pumps Two Diameter of ditto 3 1/4" Stroke 26" Can one be overhauled while the other is at work yes
No. of Donkey Engines Two Sizes of Pumps 1 1/2" x 9 1/2" x 10 1/2"; 1 1/2" x 4 1/2" x 4" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Four @ 3 1/2" diameter
In Engine Room Four @ 3 1/2" diameter In Holds, &c. Two @ 3 1/2" diameter in each hold
No. of Bilge Injections 1 sizes 5 1/2" 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 no
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 23-5-12 of Stern Tube 4-6-12 Screw shaft and Propeller 4-6-12
Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Top Platform

BOILERS, &c.—(Letter for record (18) Manufacturers of Steel J. Spence & Sons Ltd.)

Total Heating Surface of Boilers 5844 Is Forced Draft fitted no No. and Description of Boilers Three single ended.
Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 21-3-12 No. of Certificate 3006
Can each boiler be worked separately yes Area of fire grate in each boiler 50.2 No. and Description of Safety Valves to each boiler Two spring loaded. Area of each valve 4.91 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 3'-6" Mean dia. of boilers 14'-0" Length 11'-3" Material of shell plates Steel
Thickness 1 3/8" Range of tensile strength 28 1/2 to 32 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 3/8" Pitch of rivets 9 1/8" Lap of plates or width of butt straps 18 5/8"
Per centages of strength of longitudinal joint rivets 86.5 Working pressure of shell by rules 180 lbs Size of manhole in shell 16" x 12"
Size of compensating ring dished No. and Description of Furnaces in each boiler Three corrugated Material Steel Outside diameter 41 1/2"
Length of plain part top Thickness of plates crown 1 1/2" Description of longitudinal joint weld No. of strengthening rings yes
Working pressure of furnace by the rules 182 lbs Combustion chamber plates: Material Steel Thickness: Sides 3 1/4" Back 1 1/2" Top 3 1/4" Bottom 1 1/2"
Pitch of stays to ditto: Sides 10 1/2" x 10 1/2" Back 12 1/2" x 9 1/2" Top 10 1/2" x 10 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 183 lbs
Material of stays Steel Area at smallest part 2.1 Area supported by each stay 105 Working pressure by rules 180 lbs End plates in steam space: Material Steel Thickness 1 3/8" Pitch of stays 22 1/2" x 21" How are stays secured D.N. Wash Working pressure by rules 181 lbs Material of stays Steel
Area at smallest part 8.24 Area supported by each stay 44 2 1/2" Working pressure by rules 183 lbs Material of Front plates at bottom Steel
Thickness 3 1/4" Material of Lower back plate Steel Thickness 2 1/2" Greatest pitch of stays 14 1/2" x 10 1/2" Working pressure of plate by rules 180 lbs
Diameter of tubes 3 1/2" Pitch of tubes 14 1/2" x 14 1/2" Material of tube plates Steel Thickness: Front 3 1/4" Back 3 1/4" Mean pitch of stays 10 15/32"
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 2 @ 8" x 1 1/2" Length as per rule 34 1/2" Distance apart 10" Number and pitch of stays in each 2 @ 10 1/4"
Working pressure by rules 183 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

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
 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:— One Propeller shaft, 6 Boiler tubes, 6 Condenser tubes, Two of each bolts & nuts for top & bottom ends & main bearings. One set coupling bolts, 1 set feed valve pump valves, assorted bolts, nuts & rivs. One Propeller.

per pro NORTH EASTERN MACHINE ENGINEERING CO., LTD.

The foregoing is a correct description,

Manufacturer.

S. J. Thompson
 Secretary.

Dates of Survey while building During progress of work in shops — 1912 Jan, 2, 10, 22 Feb, 2, 6, 9, 13, 14, 20, 21, 27, 28, 29 Mar, 1, 8, 12, 18, 19, 21, 25 Apr, 1, 11, 16 May, 7, 15, 21, 23, 24, 31
 During erection on board vessel — June, 4, 6, 10, 18 July, 1, 10, 19
 Total No. of visits 37

Is the approved plan of main boiler forwarded herewith yes.

" " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders 1-3-17 Slides 17-3-17 Covers 2-2-17 Pistons 2-2-17 Rods 17-3-17
 Connecting rods 20-2-17 Crank shaft 1-3-17 Thrust shaft 1-3-17 Tunnel shafts 25-3-17 Screw shaft 21-5-17 Propeller 25-3-17
 Stern tube 15-5-17 Steam pipes tested 4-5-17, 1-6-12 Engine and boiler seatings 23-5-17 Engines holding down bolts 6-6-17
 Completion of pumping arrangements 19-4-12 Boilers fixed 4-6-17 Engines tried under steam 18-6-12
 Main boiler safety valves adjusted 18-6-12 Thickness of adjusting washers A Bl 5 5/32; C Bl 5 3/16; D Bl 5 3/16
 Material of Crank shaft Steel Identification Mark on Do. 10991100-1-2. M.B. 3445 H.K. 356 H.K.
 Material of Tunnel shafts Steel Identification Marks on Do. 1248 M.B. 1253 M.B. 1254 M.B.
 Material of Screw shafts Bar iron Identification Marks on Do. 8597 H.K.
 Material of Steam Pipes Solid drawn steel. 1/2" thick x 4 1/2" bore 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 test of the boiler proved satisfactory. The whole of the machinery has been securely fitted on board & satisfactorily tried under steam & is in good safe working condition & eligible in my opinion to be classed and have record **L.M.C. 7-12** in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + LMC 7.12

S. J. Thompson
 8.8.12.
J. M.

The amount of Entry Fee £ 3 : 0 : 0 When applied for, 2-8-1912
 Special £ 38 : 5 : 0
 Donkey Boiler Fee £ : : : When received, 8.8.1912
 Travelling Expenses (if any) £ : : :
 Committee's Minute
 Assigned

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

FRI. AUG. - 9. 1912

ldmc 7.12



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