

REPORT ON MACHINERY.

No. 25679

Date of writing Report 19 When handed in at Local Office 3. 5. 1913 Port of Sunderland
 No. in Survey held at Sunderland Date, First Survey 8 Aug. Last Survey 1 May 1913
 Reg. Book. on the Steel S.S. "Portwood" (Number of Visits 25)
 Master Martin Built at Sunderland By whom built S.P. Austin & Son Ltd Gross 2141 Tons
 Engines made at Sunderland By whom made North Eastern Marine Eng Co Ltd Net 1215 Tons
 Boilers made at Sunderland By whom made North Eastern Marine Eng Co Ltd When built 1913
 Registered Horse Power 221 Owners W. Grace, Thurnick & Co. Port belonging to London
 Nom. Horse Power as per Section 28 221 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines

Triple Expansion

Dia. of Cylinders 21" x 34" x 56" Length of Stroke 39" Revs. per minute 12 No. of Cylinders Three No. of Cranks Three
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube No liners fitted 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 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'-4"
 Dia. of Tunnel shaft as per rule 10-1/4" Dia. of Crank shaft journals as per rule 11-02" Dia. of Crank pin 11-8" Size of Crank webs 16-1/2" Dia. of thrust shaft under
 collars 11-8" Dia. of screw 14-9" Pitch of Screw 15-6" No. of Blades 4 State whether moveable No Total surface 68 sq. ft.
 No. of Feed pumps Two Diameter of ditto 3" Stroke 1'-9" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps Two Diameter of ditto 3-1/2" Stroke 1'-9" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines Two Sizes of Pumps 1'-2" x 9-2" x 10-2"; 5-2" x 3-2" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Three @ 3" dia In Holds, &c. One @ 3" dia in fore main well.
 after hold well 1 @ 3" dia and fitted with hot & main pipes from sides of hold.
 No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room of 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 8-11-13 of Stern Tube 11-11-13 Screw shaft and Propeller 11-11-13
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from top platform

BOILERS, &c.—(Letter for record)

Manufacturers of Steel

J. Spence & Sons Ltd.

Total Heating Surface of Boilers 3534 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 31-12-12 No. of Certificate 3046
 Can each boiler be worked separately Yes Area of fire grate in each boiler 44-1/2 sq. ft. No. and Description of Safety Valves to
 each boiler Two spring loaded Area of each valve 4-9 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 or woodwork 2'-6" dia. of boilers 13'-9" Length 10'-9" Material of shell plates Steel
 Thickness 1-1/8" Range of tensile strength 28-34 & 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 1-3/32" Pitch of rivets 9-3/8" Lap of plates or width of butt straps 18-1/2"
 Per centages of strength of longitudinal joint rivets 86% Working pressure of shell by rules 180 lbs Size of manhole in end 16" x 12"
 Size of compensating ring dished No. and Description of Furnaces in each boiler Three Plain Material Steel Outside diameter 3'-2-3/4"
 Length of plain part top 45-3/4" Thickness of plates crown 3-3/32" Description of longitudinal joint Weld No. of strengthening rings none
 bottom 69" Working pressure of furnace by the rules 180-5 Combustion chamber plates: Material Steel Thickness: Sides 13/16" Back 3/4" Top 13/16" Bottom 13/16"
 Pitch of stays to ditto: Sides 13" x 9-3/8" Back 9-1/16" x 11-1/4" Top 13" x 9-3/8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 181 lbs
 Material of stays Steel Area at smallest part 2-1 sq. in. Area supported by each stay 105 sq. in. Working pressure by rules 180 lbs End plates in steam space:
 Material Steel Thickness 1-1/4" Pitch of stays 22-1/2" x 14-1/4" How are stays secured D.N. Wash Working pressure by rules 180 lbs Material of stays Steel
 Area at smallest part 4-06 sq. in. Area supported by each stay 400 sq. in. Working pressure by rules 183 lbs Material of Front plates at bottom Steel
 Thickness 3/4" Material of Lower back plate Steel Thickness 15/16" Greatest pitch of stays 11-1/2" x 11-1/4" Working pressure of plate by rules 181 lbs
 Diameter of tubes 3-1/4" Pitch of tubes 4-3/4" x 4-1/2" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 10-1/16"
 Pitch across wide water spaces 11-1/2" Working pressures by rules 183 lbs Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 2 @ 8-3/4" x 1-1/8" Length as per rule 2'-8" Distance apart 13" Number and pitch of stays in each 2 @ 9-3/8"
 Working pressure by rules 181 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

W457-0120

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 & nuts for top & bottom ends and main bearings. One set coupling bolts. One set each valves for all pumps. One cast iron propeller. Assorted bolts nuts & rivs & sundries etc.

The foregoing is a correct description,

HART'S EASTERN MARINE ENGINEERING CO. LTD.

Manufacturer.

Geo. J. Weir
Manager. per Fr.

Dates of Survey while building { During progress of work in shops - - - 1912 Aug. 8, 30 Oct. 14, 16, 29 Nov. 1, 8, 9, 14, 19, 26 Dec. 4, 6, 12, 16, 17, 20, 24, 31
During erection on board vessel - - - Jan. 8, 9, 14, 17, 20, 21, 28, 29 Mar. 14 Apr. 8, 14, 15, 18, 23, 30 May 1
Total No. of visits (35)

Is the approved plan of main boiler forwarded herewith yes ✓

Dates of Examination of principal parts—Cylinders 9-1-13 Slides 9-1-13 Covers 9-1-13 Pistons 16-1-13 Rods 26-11-12
Connecting rods 26-11-12 Crank shaft 20-12-12 Thrust shaft 29-1-13 Tunnel shafts 29-1-13 Screw shaft 14-3-13 Propeller 16-1-13
Stern tube 14-3-13 Steam pipes tested 15-4-13 Engine and boiler seatings 8-4-13 Engines holding down bolts 23-4-13
Completion of pumping arrangements 23-4-13-30-4-13 Boilers fixed 23-4-13 Engines tried under steam 18-4-13
Main boiler safety valves adjusted 18-4-13 Thickness of adjusting washers Port Bl. F 3/8" A 3/8" Stand Bl. F 5/16" A 3/8"
Material of Crank shaft Steel Identification Mark on Do. 8013-4.P.A. Material of Thrust shaft Steel Identification Mark on Do. 8262.K.H.
Material of Tunnel shafts Steel Identification Marks on Do. 8280-1-2.K.H. Material of Screw shafts Steel Identification Marks on Do. 5351.P.A.
Material of Steam Pipes Steel Identification Marks on Do. 8280-1-2.K.H. Test pressure 400 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 on board & tried under steam, and is in good and safe working condition, and eligible, in my opinion, to be classed, and have record **LMC 5-13** in the Register Book.

It is submitted that
this vessel is eligible for
THE RECORD. + LMC 5.13.

J.W.D. 9/5/13. P.M.S.

The amount of Entry Fee .. £ 2 : 0 : 0 When applied for.
Special .. £ 31 : 1 : 0 7 5 19 13
Donkey Boiler Fee .. £ : : :
Travelling Expenses (if any) £ : : : 22/5/13

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

Committee's Minute FRI. MAY 9-1913

Assigned

+ L.M.C. 5.13



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