

REPORT ON MACHINERY.

Port of WEST HARTLEPOOL

WED. 8 JUN 1904

Received at London Office

No. in Survey held at West Hartlepool Date, first Survey 29th Jan'y Last Survey 30th May 1904
 Reg. Book. Supp. 10. on the S.S. "Uppland" (Number of Visits 69)
 Master Lieutenant Built at W. Hartlepool By whom built W. Gray & Co. Ltd. Tons { Gross 2399.29
 Engines made at W. Hartlepool By whom made Central Marine Eng. Wks. when made 1904 Net 1549.94
 Boilers made at W. Hartlepool By whom made Central Marine Eng. Wks. when made 1904
 Registered Horse Power 240 Owners Kederiaktiebolaget Uppland Port belonging to Helsingborg
 Nom. Horse Power as per Section 28 250 Is Refrigerating Machinery fitted No Is Electric Light fitted no

ENGINES, &c.—Description of Engines Inverted triple expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 22 $\frac{1}{2}$ " 36 $\frac{1}{2}$ " 62" Length of Stroke 39 Revs. per minute 65 Dia. of Screw shaft as per rule 12.33 Material of screw shaft Iron
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube 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 no 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 no If two
 liners are fitted, is the shaft lapped or protected between the liners no Length of stern bush 4.5"
 Dia. of Tunnel shaft as per rule 11.01 Dia. of Crank shaft journals as per rule 11.1 $\frac{1}{2}$ " Dia. of Crank pin 11 $\frac{1}{4}$ " Size of Crank webs 17x7" Dia. of thrust shaft under
 collars 11 $\frac{3}{4}$ " Dia. of screw 15.3" Pitch of screw 14.6" No. of blades 4 State whether moveable no Total surface 72 $\frac{1}{2}$ ft²
 No. of Feed pumps 2 Diameter of ditto 3" Stroke 30" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 3 $\frac{1}{2}$ " Stroke 30" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 2 Sizes of Pumps 5 $\frac{1}{2}$ x3 $\frac{1}{2}$ x5" 10x9x9" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2 of 3 $\frac{1}{2}$ " 2 of 3" 1 of 2 $\frac{1}{2}$ " In Holds, &c. 6 of 3" + 1 of 3" in after well

No. of bilge injections one sizes 5" Connected to condenser, or to circulating pump pump Is a separate donkey suction fitted in Engine room & size Yes - 3 $\frac{1}{2}$ "
 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
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock new 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 3710 $\frac{1}{2}$ ft² Is forced draft fitted no
 No. and Description of Boilers 2 Cylindrical Mult^l simple ended Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs
 Date of test 13/4/04 Can each boiler be worked separately Yes Area of fire grate in each boiler 47 $\frac{1}{2}$ ft² No. and Description of safety valves to
 each boiler 2 spring patent Area of each valve 7.07 $\frac{1}{2}$ ft² Pressure to which they are adjusted 185 for 180 Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 10" Mean dia. of boilers 180" Length 10'0" Material of shell plates steel
 Thickness 1 $\frac{1}{2}$ " Range of tensile strength 27/32 Are they welded or flanged both Descrip. of riveting: cir. seams lap treble long. seams D.B.S. treble cir^d
 Diameter of rivet holes in long. seams 15 $\frac{1}{16}$ " Pitch of rivets 8 $\frac{7}{8}$ " Lap of plates or width of butt straps 19 $\frac{1}{4}$ "
 Per centages of strength of longitudinal joint rivets 88.5 Working pressure of shell by rules 183.8 lbs Size of manhole in shell 16x12"
 Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Brown's Improved Material steel Outside diameter 42 $\frac{3}{4}$ "
 Length of plain part top — bottom — Thickness of plates crown 9 $\frac{1}{16}$ " bottom 9 $\frac{1}{16}$ " Description of longitudinal joint weld No. of strengthening rings —
 Working pressure of furnace by the rules 189.3 lbs Combustion chamber plates: Material steel Thickness: Sides 5 $\frac{1}{8}$ " Back 5 $\frac{1}{8}$ " Top 5 $\frac{1}{8}$ " Bottom 7 $\frac{1}{8}$ "
 Pitch of stays to ditto: Sides 8 $\frac{7}{8}$ x5 $\frac{1}{8}$ " Back 8 $\frac{1}{2}$ x5 $\frac{1}{8}$ " Top 7 $\frac{1}{2}$ x9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 189.4 lbs
 Material of stays steel Diameter at smallest part 1.5" Area supported by each stay 74.375 $\frac{1}{2}$ ft² Working pressure by rules 192 lbs End plates in steam space:
 Material steel Thickness 1 $\frac{3}{8}$ " Pitch of stays 22x21" How are stays secured double nuts Working pressure by rules 183 Material of stays steel
 Diameter at smallest part 3.25" Area supported by each stay 462 $\frac{1}{2}$ ft² Working pressure by rules 183.5 lbs Material of Front plates at bottom steel
 Thickness 1" Material of Lower back plate Steel Thickness 15 $\frac{1}{16}$ " Greatest pitch of stays 15" Working pressure of plate by rules 201.4 lbs
 Diameter of tubes 3 $\frac{1}{4}$ " Pitch of tubes 4 $\frac{1}{2}$ x4 $\frac{1}{2}$ " Material of tube plates steel Thickness: Front 1" Back 1 $\frac{1}{16}$ " Mean pitch of stays 9"
 Pitch across wide water spaces 14 $\frac{1}{4}$ " Working pressures by rules 189 lbs Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 8x1 $\frac{1}{2}$ " Length as per rule 27 $\frac{1}{2}$ " Distance apart 7 $\frac{3}{4}$ " Number and pitch of Stays in each 2-9"
 Working pressure by rules 197.6 lbs Superheater or Steam chest; how connected to boiler nil 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 —



DONKEY BOILER— No. 1 Description Blakes Improved
 Made at Middlebri By whom made Richardson, Matgarth & Co When made 1904 Where fixed In stockhold
 Working pressure 100 lb tested by hydraulic pressure to 200 lb No. of Certificate 3194 Fire grate area 28.27 Description of safety valves spring patent
 No. of safety valves 2 Area of each 7.07 Pressure to which they are adjusted 105 for 100 If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler No
 Dia. of donkey boiler 7.6 Length 16.0 Material of shell plates steel Thickness 9/16 Range of tensile strength 27 1/2 Descrip. of riveting long seams S.R. lap Dia. of rivet holes 15/16 Whether punched or drilled drilled Pitch of rivets 3
 Lap of plating 4 5/8 Per centage of strength of joint Rivets 169.6 Thickness of shell crown plates 9/16 Radius of do. hemispherical No. of Stays to do. ✓
 Dia. of stays ✓ Diameter of furnace Top 3.9 Bottom 6.1 Length of furnace 4.6 Thickness of furnace plates 3/4 Description of joint S.R. lap Thickness of furnace crown plates 1.2 1/32 Stayed by C.P. F. 11/16 drilled 4.6 rad Working pressure of shell by rules 103 lb
 Working pressure of furnace by rules 100 lb Diameter of uptake 2 1/2 Thickness of uptake plates 7-1 1/16 Thickness of water tubes 3 7/8

SPARE GEAR. State the articles supplied:— 2 top end bolts, 2 bottom end bolts, 2 main bearing bolts, 1 coupling bolt, 1 set of feed & bilge pump valves, 2 additional feed pump valves, 1 set of HP piston springs, 2 main check valves, 1 propeller shaft, 1 propeller, 1/2" crank shaft, 1 soukey feed check valve, Bolts & nuts assorted & Iron of sizes

The foregoing is a correct description,
H.W. Borrowman Manufacturer.

Dates of Survey while building
 During progress of work in shops— 1904. Jan. 29. Feb. 1, 2, 3, 4, 5, 8, 10, 11, 12, 15, 16, 17, 18, 19, 22, 23, 24, 25, 26, 29. March 2, 3, 4, 7, 9, 11, 14, 15, 16, 17, 18, 19, 21, 22, 23, 24, 25.
 During erection on board vessel— 28, 29, 30, 31. April, 6, 7, 8, 9, 12, 13, 14, 16, 17, 20, 21, 22, 25, 28, 29, 30. May 2, 3, 4, 5, 6, 9, 10, 11, 18, 30.
 Total No. of visits 61 Is the approved plan of main boiler forwarded herewith Yes
 " " " donkey " " " Yes

General Remarks (State quality of workmanship, opinions as to class, &c. The Machinery for this vessel has been constructed under Special Survey, the workmanship and materials used are both of good quality, and renders the vessel eligible in my opinion to have the record L.M.C. 5.04 in the Register Book)

It is submitted that this vessel is eligible for THE RECORD L.M.C. 5.04.
 S.M.S. 8-6-04
 L.M.

Certificate required to be sent to Committee's Minute.

The amount of Entry Fee... £ 2 :
 Special .. £ 3 2 : 10 :
 Donkey Boiler Fee .. £ :
 Travelling Expenses (if any) £ :
 When applied for, 4.6.04
 When received, 5.6.04

R. W. Coomber
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute FRI, 10 JUN 1904
 Assigned + L.M.C. 5.04

MACHINERY CERTIFICATE WRITTEN.

