

REPORT ON MACHINERY

THUR. 23 AUG 1900

Port of WEST HARTLEPOOL

Received at London Office

No. in Survey held at West Hartlepool Date, first Survey 14th Jan. Last Survey 16th Aug. 1900
 Reg. Book. W.P. on the S.S. "Yarborough" (Number of Visits 45)
 Master J. Roman Built at West Hartlepool By whom built D. Gray & Co. Ltd. Tons { Gross 3077 Net 1988
 Engines made at West Hartlepool By whom made Central Marine Engine Works Ltd. when made 1900
 Boilers made at Do By whom made Do when made 1900
 Registered Horse Power 300 Owners Hull & Co. Shipping & Com. Managers Port belonging to Hull
 Nom. Horse Power as per Section 28 267 Is Electric Light fitted No

ENGINES, &c. — Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3
 Diameter of Cylinders 24, 38, 64 Length of Stroke 42 Revolutions per minute 65 Diameter of Screw shaft as per rule 11.82
 Diameter of Tunnel shaft as fitted 11 Diameter of Crank shaft journals 11 1/2 Diameter of Crank pin 11 1/2 Size of Crank webs 7 1/2 x 16
 Diameter of screw 15.6 Pitch of screw 15.3 No. of blades 4 State whether moveable No Total surface 80 sq
 No. of Feed pumps 2 Diameter of ditto 3 1/2 Stroke 26 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 4 Stroke 26 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 2 Sizes of Pumps 4, 6, 10, 9 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Seven, 1 1/2" 3", 1 1/2" 3" In Holds, &c. Seven, 1 1/2" 3", 1 1/2" 3", 1 1/2" 3", 1 1/2" 3", 1 1/2" 3"
 No. of bilge injections 1 sizes 5 Connected to condenser, or to circulating pump Pump 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 None
 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 stowhold 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
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock 26.7.00 Is the screw shaft tunnel watertight Yes
 Is it fitted with a watertight door Yes worked from Upper platforms

OILERS, &c. — (Letter for record 80) Total Heating Surface of Boilers 4046 Is forced draft fitted No
 No. and Description of Boilers Two Single ended Steel Working Pressure 160 Tested by hydraulic pressure to 320
 Date of test 17.6.00 Can each boiler be worked separately Yes Area of fire grate in each boiler 52.5 No. and Description of safety valves to
 each boiler Two Spring Area of each valve 8.29 Pressure to which they are adjusted 165 lbs Are they fitted
 with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 2' 2" Mean diameter of boilers 15.0
 Length 10.0 Material of shell plates Steel Thickness 1 1/2 Description of riveting: circum. seams Lap 1 1/2" long. seams 8.75" 1 1/2"
 Diameter of rivet holes in long. seams 1 3/16 Pitch of rivets 8 1/2 Lap of plates or width of butt straps 18"
 Percentages of strength of longitudinal joint rivets 86.1 Working pressure of shell by rules 160.5 Size of manhole in ends 16 x 12
 Size of compensating ring Stamped No. and Description of Furnaces in each boiler 3 fitted Material Steel Outside diameter 3.7 1/2"
 Length of plain part top 6.1 bottom 6.9 Thickness of plates crown 1 1/2 bottom 1 1/2 Description of longitudinal joint Butt No. of strengthening rings -
 Working pressure of furnace by the rules 160 Combustion chamber plates: Material Steel Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 7/8
 Pitch of stays to ditto: Sides 8 3/4 Back 9 1/2 Top 9 If stays are fitted with nuts or riveted heads None Working pressure by rules 161
 Material of stays Steel Diameter at smallest part 1.5 Area supported by each stay 81 Working pressure by rules 171 End plates in steam space:
 Material Steel Thickness 1 3/32 Pitch of stays 21 3/4, 20 1/2 How are stays secured By nuts Working pressure by rules 164.9 Material of stays Steel
 Diameter at smallest part 3.00 Area supported by each stay 44.5 Working pressure by rules 161.9 Material of Front plates at bottom Steel
 Thickness 29/32 Material of Lower back plate Steel Thickness 7/16 Greatest pitch of stays 14" Working pressure of plate by rules 185
 Diameter of tubes 3" Pitch of tubes 4 1/4 Material of tube plates Steel Thickness: Front 29/32 Back 5/8 Mean pitch of stays 8 1/2
 Pitch across wide water spaces 14 Working pressures by rules 160.9 Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 8 x 1 1/4 Length as per rule 2.4 Distance apart 7 1/2 Number and pitch of Stays in each Two 9" pitch
 Working pressure by rules 182 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 -
 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— Description *Cylindrical two furnaces*
 Made at *Switzerland* By whom made *Ludwiger & Co. Ltd.* When made *12.7.00* Where fixed *Stoke Newington*
 Working pressure *80* tested by hydraulic pressure to *100* No. of Certificate *2248* Fire grate area *229* Description of safety valves *Spring*
 No. of safety valves *2* Area of each *7.07* Pressure to which they are adjusted *82 1/2* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *8.3* Length *9.8* Material of shell plates *Steel* Thickness *10 1/2*
 Description of riveting long seams *Lap rivets* Diameter of rivet holes *1 1/16* Whether punched or drilled *Drilled* Pitch rivets *4 1/4*
 Lap of plating *6 1/2* Per centage of strength of joint *88.6* Rivets *end* Thickness of shell *10 1/2* plates *9/16* Radius of do. *Pitch* No. of Stays to do. *16 x 10 1/2*
 Dia. of stays *1 1/2* Diameter of furnace Top *2.4 1/2* Bottom *-* Length of furnace *5.9* Thickness of furnace plates *1/2* Description of joint *Butted* Thickness of furnace crown plates *1 1/4* Stayed by *1 1/2 Lap 8 1/2 pitch* Working pressure of shell by rules *87.6*
 Working pressure of furnace by rules *102* Diameter of uptake *3"* Thickness of uptake plates *5/8* Thickness of water tubes *7/16*

SPARE GEAR. State the articles supplied:— *2 main bearing bolts, 2 top end bolts, 2 bottom end bolts, 1 set of shaft coupling bolts all fitted with nuts, 1 set of feed valves, 1 set of pipe valves, Springs for J.P. piston, propeller and propeller shaft nuts, bolts & giron.*

The foregoing is a correct description,

Manufacturer. *J. & B. Pommerehne*

Main Engines & Boilers only

Dates of Survey while building	During progress of work in shops—	1900. Jan. 24. Feb. 7. 9. 16. 20. 21. 22. 23. 27. Mar. 1. 2. 5. 7. 10. 13. 15. 16. 21. 27. 29. 31. Apr. 3. 4. 10.
	During erection on board vessel—	11. 23. 26. May 1. 2. 3. 7. 8. 9. 17. 24. 30. June 18. 27. 29. July 11. 21. 26. Aug. 1. 15. 16.
	Total No. of visits	<i>45</i>

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

ENGINES—Length of stern bush *4.9* Diameter of crank shaft journals *11.26* as per rule *11.5* Diameter of thrust shaft under collars *11.75*
BOILERS—Range of tensile strength *27-30* Are they welded or flanged *Both* **DONKEY BOILERS**—No. *1* Range of tensile strength *27-32*
 Is the approved plan of main boiler forwarded herewith *yes* Is the approved plan of donkey boiler forwarded herewith *no*

The machinery has been specially surveyed during construction the material and workmanship good and renders the vessel eligible in my opinion to have the Record + £ 6 8. 00 in the Register Book of the Society.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 8.00.

23.8.00

The amount of Entry Fee. . . £ *2*
 Special £ *33*
 Donkey Boiler Fee £ *7*
 Travelling Expenses (if any) £ *1*

Richard Hunt
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *FRI 24 AUG 1900*

Assigned *+ £ 6 8. 00*

Certificate (if required) to be sent to W. Hattlepool.

The Surveyors are requested not to write on or below the space for Committee's Minute.

