

REPORT ON MACHINERY.

Port of WEST HARTLEPOOL

HUL. 16 JUL 1903

No. in Survey held at Hartlepool Date, first Survey 24th July 1902 Last Survey 10th July 1903
 Reg. Book. 444 on the Steel Trinn. Se. "Overton Grange" Number of Visits 15
 Master Brown Built at W. Hartlepool By whom built Furness, Withy & Co. Ltd. Tons { Gross 7144
 Engines made at Hartlepool By whom made Richardsons, Westgarth & Co. Ltd. Net 4565
 Boilers made at Hartlepool By whom made do do When built 1903
 Registered Horse Power 644 Owners Houlder Bros & Co. Ltd. when made 1903
 Nom. Horse Power as per Section 28 656 Is Refrigerating Machinery fitted Yes Port belonging to Greenock
 Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin screw, triple expansion No. of Cylinders Six No. of Cranks Six
 Dia. of Cylinders 23"-36"-59" Length of Stroke 42 Revs. per minute 80 Dia. of Screw shaft 12.6" Lgth. of stern bush 4'-4"
 Dia. of Tunnel shaft 11.3" Dia. of Crank shaft journals 11.9" Dia. of Crank pin 12.4" Size of Crank webs 8x19" Dia. of thrust shaft under collars 13" Dia. of screw 15'-3" Pitch of screw 15'-6" No. of blades 3 State whether moveable Yes Total surface 62 sq. ft.
 No. of Feed pumps 4 Diameter of ditto 3" Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 4 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 4 Sizes of Pumps Three 8x24" Feed 10x5x7 1/2x3 1/2" Ballast 11x16" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Five 3 1/2" dia. In Holds, &c. Involve. — One 2 1/2" dia. to Fore peak, Two 3 1/2" dia. to No. 1 hold, Two 3 1/2" dia. to No. 2 hold, Two 3 1/2" dia. to No. 3 hold, Two 5" dia. to No. 4 hold, Two 3 1/2" to After hold, One 2 1/2" to No. 5 hold, One 3 1/2" to No. 6 hold.
 No. of bilge injections 2 sizes 6 1/2" Connected to condenser, or to circulating pump Yes Is a separate donkey suction fitted in Engine room Yes size 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 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 ✓
 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 vessel Is the screw shaft tunnel watertight Yes
 Is it fitted with a watertight door Yes worked from Upper platform

BOILERS, &c.— (Letter for record 5) Total Heating Surface of Boilers 12,404 sq. ft. Is forced draft fitted No 360 lbs sea Hpl storage
 No. and Description of Boilers 5 Single ended. byl Mult. Working Pressure 180 lbs. Tested by hydraulic pressure to 185 lbs.
 Date of test Can each boiler be worked separately Yes Area of fire grate in each boiler 56.5 sq. ft. No. and Description of safety valves to each boiler Two spring direct Area of each valve 8.29 sq. ft. 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 20" Mean dia. of boilers 15'-9" Length 11'-6" Material of shell plates steel
 Thickness 1 1/16" Range of tensile strength 28-32 Are they welded or flanged no Descrip. of riveting: cir. seams treble long. seams treble
 Diameter of rivet holes in long. seams 1 1/32" Pitch of rivets 9 3/8" Lap of plates or width of butt straps 2 1/2"
 Per centages of strength of longitudinal joint 84.6 Working pressure of shell by rules 203 lbs. Size of manhole in shell 18" x 16 1/2"
 Size of compensating ring 31 x 31 x 1 1/2" No. and Description of Furnaces in each boiler 3 Monson Material steel Outside diameter 49 3/4"
 Length of plain part 6'-11" Thickness of plates 5" Description of longitudinal joint weld No. of strengthening rings ✓
 Working pressure of furnace by the rules 202 lbs. Combustion chamber plates: Material steel Thickness: Sides 19 1/32" Back 19 1/32" Top 19 1/32" Bottom 1"
 Pitch of stays to ditto: Sides 7 1/4" x 8 1/4" Back 8 1/2" x 7 1/8" Top 8 1/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 184 lbs
 Material of stays steel Diameter at smallest part 1 1/8" off Area supported by each stay 64.9 sq. ft. Working pressure by rules 182 lbs. End plates in steam space:
 Material Steel Thickness 1 1/8" Pitch of stays 16" x 16" How are stays secured by nuts Working pressure by rules 234 lbs Material of stays steel
 Diameter at smallest part 2 3/8" Area supported by each stay 256 sq. ft. Working pressure by rules 232 lbs. Material of Front plates, at bottom steel
 Thickness 7/8" Material of Lower back plate steel Thickness 2 1/4" Greatest pitch of stays 14" Working pressure of plate by rules 180 lbs.
 Diameter of tubes 3 1/2" Pitch of tubes 4 1/4" Material of tube plates steel Thickness: Front 1" Back 3/4" Mean pitch of stays 11 3/8"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 180 lbs. Girders to Chamber tops: Material steel Depth and thickness of girder at centre 9 1/4" x 1 1/4" Length as per rule 31" Distance apart 8" Number and pitch of Stays in each 2 - 8 1/4"
 Working pressure by rules 184 lbs. 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 ✓
 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 ✓

