

## REPORT ON MACHINERY.

Port of WEST HARTLEPOOL

Received at London Office MON. 13 JUL 1903

No. in Survey held at Hartlepool Date, first Survey 13<sup>th</sup> Aug. 1902 Last Survey 2<sup>nd</sup> July 1903  
 g. Book. 157 on the Steel S.S. "Clan Macintyre" (Number of Visits 149)  
 Master H. Fisher Built at N. Hartlepool By whom built Furness Withy & Co. When built 1903  
 Engines made at Hartlepool By whom made Richardsons, Westgarth & Co. When made 1903  
 Milers made at do. By whom made do. when made 1903  
 Registered Horse Power 452 Owners Bayne, Irvine & Co. Port belonging to Marine  
 m. Horse Power as per Section 28 452 Is Refrigerating Machinery fitted No Is Electric Light fitted Yes

GINES, &c.—Description of Engines Triple expansion No. of Cylinders Three No. of Cranks Three  
 No. of Cylinders 26" 43" 71" Length of Stroke 48" Revs. per minute 69 Dia. of Screw shaft as per rule 14.9" Lgth. of stern bush 4'-6"  
 a. of Tunnel shaft as per rule 13.5" Dia. of Crank shaft journals as per rule 14.5" Dia. of Crank pin 15" Size of Crank webs 9 1/2" x 23 1/2" Dia. of thrust shaft under  
 lars 16" Dia. of screw 17'-9" Pitch of screw 17'-9" No. of blades 4 State whether moveable Yes Total surface 91 sq. ft.  
 No. of Feed pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 1 Sizes of Pumps Feed Main 4" x 21" 13" x 11" duplex No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room Four 3 1/2" dia. In Holds, &c. Two - One 2 1/2" dia. in fore peak, Two  
3 1/2" dia. in each hold and one 2 1/2" dia. in tunnel well.  
 No. of bilge injections one sizes 6 1/2" Connected to condenser, or to circulating pump Yes 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 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.

ILERS, &c.— (Letter for record S.) Total Heating Surface of Boilers 6107 sq. ft. Is forced draft fitted Yes (How described)  
 No. and Description of Boilers 2 single ended byl. Mult. Working Pressure 200 lb. Tested by hydraulic pressure to 400 lb.  
 Date of test 13.2.03. Can each boiler be worked separately Yes Area of fire grate in each boiler 62.9 sq. ft. No. and Description of safety valves to  
 each boiler 1 no spring direct Area of each valve 11.04 sq. in. Pressure to which they are adjusted 205 lbs. Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 4'-0" Mean dia. of boilers 16'-2" Length 11'-9" Material of shell plates steel  
 Thickness 1 1/8" 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 1/8" Pitch of rivets 9 3/4" Lap of plates or width of butt straps 21"  
 Percentages of strength of longitudinal joint rivets 85.9 Working pressure of shell by rules 200 lb. Size of manhole in shell 13" x 16 1/2"  
 Size of compensating ring 29 x 30 x 1 1/8" No. and Description of Furnaces in each boiler 3 Monson Material steel Outside diameter 50 1/2"  
 Length of furnace top 4'-11" bottom 4'-11" Thickness of plates top 3/4" bottom 3/4" Description of longitudinal joint weld No. of strengthening rings 1  
 Working pressure of furnace by the rules 210 lb. Combustion chamber plates: Material steel Thickness: Sides 2 1/2" 3/32" Back 4 1/2" 3/32" Top 2 1/2" 3/32" Bottom 1"  
 Pitch of stays to ditto: Sides 9" x 7 1/2" Back 8 1/4" x 8 1/2" Top 8 1/2" x 8 1/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 207 lb.  
 Material of stays steel Diameter at smallest part 1 1/2" 3/8" Area supported by each stay 69.4 sq. in. Working pressure by rules 202 lb. End plates in steam space:  
 Material steel Thickness 1 1/8" Pitch of stays 14" x 14" How are stays secured W. N. & N. Working pressure by rules 203 lb. Material of stays steel  
 Diameter at smallest part 2 1/4" Area supported by each stay 289 sq. in. Working pressure by rules 208 lb. Material of Front plates at bottom steel  
 Thickness 3/8" Material of Lower back plate steel Thickness 3/8" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 207 lb.  
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" Material of tube plates steel Thickness: Front 1" Back 3/4" Mean pitch of stays 7 1/2"  
 Pitch across wide water spaces 13 1/2" Working pressures by rules 210 lb. Girders to Chamber tops: Material steel Depth and  
 Thickness of girder at centre 8" x 1 1/2" Length as per rule 30 1/2" Distance apart 8 1/2" Number and pitch of Stays in each 1 no 8 1/2"  
 Working pressure by rules 200 lb. 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  
✓ 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 ✓

W578-0100



SPARE GEAR. State the articles supplied:— 2 bon. rod top + 2 bon. rod bottom end bolts + nuts, 2 main bearing + one set of coupling bolts, one set of piston rings for H.P. + I.P. piston, one set of feed, bilge air, circu. and ballast pump valves, bolts, nuts, & iron various sizes, 2 propeller blades, propeller shaft, 6 boiler + 6 condenser tubes, 24 condenser ferrules, one spiral spring for safety valve.

Wm Morris

Manning Director	
Dates of Survey while building	<p>During progress of work in shops - 1902. Aug. 13, 15, 19, 20, 21, 25, 26, 27, 29, 30, Sept. 1, 2, 3, 4, 6, 8, 10, 15, 16, 17, 18, 24, 25, 29, 30, Oct. 2, 3, 8, 9, 10, 12, 14, 15, 16, 17, 20, 21, 22, 23, 24, 27, 28, 29, 31.</p> <p>During erection on board vessel - Mar. 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 17, 19, 19, 20, 21, 22, 24, 25, 26, 27, 28, Apr. 1, 2, 3, 4, 5, 6, 9, 10, 12, 15, 16, 17, 18, 19, 20, 22, 23, 24, 1903. Jan. 5, 6, 7, 8, 10, 11, 14, 15, 16.</p> <p>Total No. of visits 1902. 11, 13, 15, 17, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30, 31, Feb. 2, 6, 9, 10, 14, 16, 17, 19, 20, 25, 26, 29, Is the approved plan of main boiler forwarded herewith <b>no</b></p> <p>Mar. 2, 4, 5, 6, 7, 10, 11, 12, 14, 16, 17, 19, 20, 22, 24, 25, 26, 27, 28, Apr. 1, 8, 9, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, May 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, June 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, July 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Aug. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Sept. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Oct. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Nov. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Dec. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 1903. Jan. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Feb. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Mar. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Apr. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, May 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, June 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, July 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Aug. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Sept. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Oct. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Nov. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Dec. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 1904. Jan. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Feb. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Mar. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Apr. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, May 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, June 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, July 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Aug. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Sept. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22</p>

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

The main steam pipes have been tested by hydraulic pressure to 400 lbs. per sq. in. and found tight.  
The engines and boilers of this vessel have been built under Special Survey in accordance with the Rule requirements, the materials and workmanship are good and efficient, when completed and fitted on board were tried under steam at moorings with satisfactory results, and are now in good working order and in our opinion eligible to have **■ L.M.C. 7.03.** marked in the Register Book.

It is submitted that  
this vessel is eligible for  
THE RECORD + Am

The amount of Entry Fee..	£	3	:	:	When applied for,	
Special .. .. .	£	42	:	12		8.7.1908
Donkey Boiler Fee .. .	£		:			
Travelling Expenses (if any)	£		:		When received,	
						10.9.1908

## Committee's Minute

TUES. 14 JUL 1903

*Assigned*

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Foundation