

# REPORT ON MACHINERY.

No. 10491

Received at London Office  
 Date of writing Report 19 When handed in at Local Office 2/10/19 10 Port of MIDDLESBRO'  
 No. in Survey held at Stockton-on-Tees Date, First Survey 30<sup>th</sup> Dec. 1918 Last Survey 25<sup>th</sup> Sept. 1919  
 Reg. Book. on the Steel Screw Steamer "Clearton" (S.S. N<sup>o</sup> 677) (Number of Visits 81)  
 Master Built at Stockton By whom built Messrs Richardson Duck & Co When built  
 Engines made at Stockton By whom made Messrs Blair & Co Jim. (N<sup>o</sup> 1905) when made 1919  
 Boilers made at Stockton By whom made Messrs Blair & Co Jim. when made 1919  
 Registered Horse Power Owners Port belonging to  
 Nom. Horse Power as per Section 28 397 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no.

ENGINES, &c.—Description of Engines Tri-compound No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 26-44-73 Length of Stroke 48 Revs. per minute 77 Dia. of Screw shaft as per rule 14-7 as fitted 15-2 Material of screw shaft as fitted 14-59  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes 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 in one 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 tight fit If two  
 liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 5'-14"  
 Dia. of Tunnel shaft as per rule 19-32 as fitted 13-2 Dia. of Crank shaft journals as per rule 14-0 as fitted 14-2 Dia. of Crank pin 14-2 Size of Crank webs 28x9 Dia. of thrust shaft under  
 collars 14-3/4 Dia. of screw 17'-6" Pitch of Screw 17'-6" No. of Blades 4 State whether moveable no Total surface 100 sq  
 No. of Feed pumps 2 Diameter of ditto 4" Stroke 24 Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 3 Sizes of Pumps 10 1/2 x 14 x 24 20 9 1/2 x 7 x 18 No. and size of Suctions connected to both Bilge and Donkey pumps  
 in Engine Room 4 @ 3 1/2 In Holds, &c. 2 @ 3 1/2 in each hold except aftermost  
 where one at 3 1/2: Tunnel will one @ 3"  
 No. of Bilge Injections 1 sizes 13" 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, main & donkey 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 suction to forward holds How are they protected wood ceiling  
 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 28.7.19 of Stern Tube 14.7.19 Screw shaft and Propeller 8.8.19  
 Is the Screw Shaft Tunnel watertight see hull Rpt. Is it fitted with a watertight door yes worked from top platform

MILERS, &c.—(Letter for record (S)) Manufacturers of Steel Messrs John Spencer & Sons Jim.  
 Total Heating Surface of Boilers 6066 Is Forced Draft fitted no No. and Description of Boilers 2 single ended  
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 25.7.19 No. of Certificate 6017  
 Can each boiler be worked separately yes Area of fire grate in each boiler 68.5 No. and Description of Safety Valves to  
 each boiler 2 direct spring Area of each valve 9.62 sq Pressure to which they are adjusted 185 lb Are they fitted with easing gear yes  
 Smallest distance between boilers and bunkers on woodwork 3'-6" External dia. of boilers 16'-9" Length 11'-6" Material of shell plates steel  
 thickness 1 1/32 Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2-R-lap  
 long. seams 2B-3 Riv Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 9 1/4 Lap of plates or width of butt straps 20 1/8 x 1 1/4  
 Percentages of strength of longitudinal joint rivets 89.0 Working pressure of shell by rules 185 Size of manhole in shell 16" x 12"  
 Size of compensating ring 7 1/2 x 1 1/2 No. and Description of Furnaces in each boiler 3 Dighton Material steel Outside diameter 49 7/8  
 Length of plain part top 19" bottom 32" Thickness of plates crown 19" Description of longitudinal joint Weld No. of strengthening rings  
 Working pressure of furnace by the rules 190 Combustion chamber plates: Material steel Thickness: Sides 1/2" Back 1/16" Top 1/16" Bottom 22/32  
 Pitch of stays to ditto: Sides 8 1/4 x 10 1/2 Back 9 3/8 x 9 3/8 Top 9 1/2 x 9 1/4 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 185  
 Material of stays steel Area at smallest part 1.99 Area supported by each stay 87.87 Working pressure by rules 204 End plates in steam space:  
 Material steel Thickness 1 1/16 Pitch of stays 20 1/4 x 18 How are stays secured nuts & washers Working pressure by rules 184 Material of stays steel  
 Area at smallest part 7.85 Area supported by each stay 4.85 Working pressure by rules 180 Material of Front plates at bottom steel  
 thickness 1" Material of Lower back plate steel Thickness 1 1/2 Greatest pitch of stays 10 1/2 x 9 3/8 Working pressure of plate by rules 271  
 Diameter of tubes 3 1/2 Pitch of tubes 4 3/4 x 4 7/8 Material of tube plates steel Thickness: Front 1 1/16 Back 13/16 Mean pitch of stays 9 5/8  
 Pitch across wide water spaces 14 1/2 Working pressures by rules 181 Girders to Chamber tops: Material steel Depth and  
 thickness of girder at centre 8" x 2" Length as per rule 32 Distance apart 9 1/2 Number and pitch of stays in each 20 @ 9 1/4  
 Working pressure by rules 197 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

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THE MARGIN.

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