

REPORT ON MACHINERY.

Received at London Office

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Date of writing Report 25th Jan. 1915 When Kanded in at Local Office 25-1-1915 Port of Hull

No. in Survey held at Hull Date, First Survey 10-6-14 Last Survey 21. 1. 1913

Reg. Book 30 Sep on the steel screw steamer Ray (Number of Vents 4)

Master Built at Dundee By whom built Dundee L.B. Co Tons Gross 666
Net 335
 When built 1915-1

Engines made at Hull By whom made Earle's & Co (Ld) (No 1187) when made 1915-1

Boilers made at Hull By whom made Earle's & Co when made 1915-1

Registered Horse Power Owners M. A. Ray Sons Port belonging to London

Nom. Horse Power as per Section 28 110 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders Three No. of Cranks 3

Dia. of Cylinders 15" - 25" - 41" Length of Stroke 27" Revs. per minute Dia. of Screw shaft as per rule 8.91 Material of steel
as fitted 9" screw shaft

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 ✓ If the liner is in more than one length are the joints burned ✓ 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 ✓ If two
 liners are fitted, is the shaft lapped or protected between the liners no liner fitted Length of stern bush 3'-0"

Dia. of Tunnel shaft as per rule 7.47 Dia. of Crank shaft journals as per rule 7.84 Dia. of Crank pin 7 7/8" Size of Crank webs 15 1/2" x 5 1/2" Dia. of thrust shaft under
as fitted 7 7/8" collars 7 7/8" Dia. of screw 10'-6" Pitch of Screw 12'-0" No. of Blades 4 State whether moceable no Total surface 384

No. of Feed pumps Two Diameter of ditto 2 1/4" Stroke 18" Can one be overhauled while the other is at work yes

No. of Bilge pumps Two Diameter of ditto 2 1/4" Stroke 18" Can one be overhauled while the other is at work yes

No. of Donkey Engines Two Sizes of Pumps 6" - 7 1/2" - 6" - 5 1/2" - 3 1/2" - 1 1/2" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2 - 2" Bilge suction In Holds, &c. 2 - 2" Bilge suction in main hold

No. of Bilge Injections one sizes 3 1/2" Connected to condenser or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 2 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

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 4-1-14 of Stern Tube 4-1-14 Screw shaft and Propeller 4-1-14

Is the Screw Shaft Tunnel watertight ✓ Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Steel Co of Scotland

Total Heating Surface of Boilers 1915 ft² Is Forced Draft fitted no No. and Description of Boilers one single ended

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 20-10-14 No. of Certificate 3031

Can each boiler be worked separately ✓ Area of fire grate in each boiler 57 3/4 sq ft No. and Description of Safety Valves to
 each boiler two spring loaded Area of each valve 5.99 sq in 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 9" Mean dia. of boilers 17 1/4" Length 10'-6" Material of shell plates steel

Thickness 1 3/16" Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double
 long. seams R.D.B. Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 7/8" Lap of plates or width of butt straps 18 3/8"

Per centages of strength of longitudinal joint rivets 86.8 Working pressure of shell by rules 184 Size of manhole in end 16" x 12"
 plate 86.9

Size of compensating ring plate flanged No. and Description of Furnaces in each boiler 3 Plain Material S Outside diameter 43 5/8"

Length of plain part top 8 1/2" Thickness of plates bottom 7 13/16" Description of longitudinal joint welded No. of strengthening rings

Working pressure of furnace by the rules 186 Combustion chamber plates: Material S Thickness: Sides 1 1/16" Back 2 1/32" Top 1 1/16" Bottom 1 1/16"

Pitch of stays to ditto: Sides 9 1/2" x 9 1/2" Back 9 1/2" x 8" Top 9 1/2" x 9 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181

Material of stays S Diameter at smallest part 1 7/16" Area supported by each stay 70 sq in Working pressure by rules 180 End plates in steam space:
 Material S Thickness 1 7/32" Pitch of stays 19 1/2" x 18 1/2" How are stays secured R. N. Working pressure by rules 187 Material of stays S
 Area Diameter at smallest part 6.23 Area supported by each stay 356 sq in Working pressure by rules 182 Material of Front plates at bottom S
 Thickness 1 1/16" Material of Lower back plate S Thickness 1 3/16" Greatest pitch of stays 13 1/2" x 12 1/2" Working pressure of plate by rules 182

Diameter of tubes 3 1/2" Pitch of tubes 4 7/8" x 4 3/8" Material of tube plates S Thickness: Front 1 5/16" Back 1 3/16" Mean pitch of stays 9 9/16"

Pitch across wide water spaces 13 1/2" Working pressures by rules 185 lbs Girders to Chamber tops: Material S Depth and
 thickness of girder at centre 9" x 1 1/2" Length as per rule 32 26/32 Distance apart 9 1/4" Number and pitch of stays in each two 9 1/2"

Working pressure by rules 183 Superheater or Steam chest; how connected to boiler 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

