

REPORT ON MACHINERY.

No. 7668

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Date of writing Report 27 May 1916. When handed in at Local Office 10 Port of Belfast

No. in Survey held at Belfast Date, First Survey Aug 13, 1915 Last Survey May 19, 1916

Reg. Book. on the H.M.S. "Petunia" (Number of Visits 17) Gross Tonnage 1916

Master Built at Belfast By whom built Harkman Clark & Co. when made 1916

Engines made at Belfast By whom made - when made -

Boilers made at - By whom made - when made -

Registered Horse Power Owners The Admiralty Port belonging to ✓

Nom. Horse Power as per Section 28 347 ✓ Is Refrigerating Machinery fitted for cargo purposes No ✓ Is Electric Light fitted Yes ✓

ENGINES, &c.—Description of Engine Single Screw 4 Cyl. Triple Expansion Cylinders 4 No. of Cranks 4

Dia. of Cylinders 21 $\frac{1}{2}$ - 35 - 40 - 40 Length of Stroke 30 Revs. per minute 165 Dia. of Screw shaft as per rule 10.5 Material of screw shafts as fitted 10.75 ✓ Steel

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 ✓ 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 ✓ Length of stern bush 50

Dia. of Tunnel shaft as per rule 9.88" Dia. of Crank shaft journals as per rule 10.37" Dia. of Crank pin 10.5" Size of Crank web 18 $\frac{1}{2}$ x 7 Dia. of thrust shaft under collars as fitted 10.75" Dia. of screw 9 - 6 Pitch of Screw 12' - 10 $\frac{1}{2}$ " No. of Blades 4 State whether moveable No Total surface 36 sq ft.

No. of Feed pumps 1 Main Engine overhauled while the other is at work ✓

No. of Bilge pumps 1 Main Engine overhauled while the other is at work ✓

No. of Donkey Engines 1 See separate sheet No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4 - 3 $\frac{1}{2}$ x 4 - 3 $\frac{1}{2}$ in stokehold In Holds, &c. 9 - 2 $\frac{1}{2}$

No. of Bilge Injections 1 sizes 8" Connected to condenser, or to circulating pump Pump a separate Donkey Suction fitted in Engine room & size 2 - 3 $\frac{1}{2}$

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 ✓

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 Below ✓

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 Fore hold suction How are they protected Wood Casings ✓

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 28-3-16 of Stern Tube 27-3-16 Screw shaft and Propeller 28-3-16

Is the Screw Shaft Tunnel watertight Yes ✓ Is it fitted with a watertight door Yes ✓ worked from Below & Aft ✓

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel Glasgow J. & J. Bay of John Spencer & Son

Total Heating Surface of Boilers 6016 sq ft Forced Draft fitted Yes ✓ No. and Description of Boilers 2 Single End Cylindrical

Working Pressure 180 lbs Tested by hydraulic pressure to 860 lbs Date of test 25-3-16 No. of Certificate 491

Can each boiler be worked separately Yes ✓ Area of fire grate in each boiler 74 $\frac{1}{2}$ sq ft No. and Description of Safety Valves to each boiler 2 Direct Spring Area of each valve 12.56 sq 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 Aft 14 Mean dia. of boilers 15' - 6 Length 11' - 6 Material of shell plates Steel

Thickness $\frac{1}{4}$ Range of tensile strength 31 $\frac{3}{4}$ - 35 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap & J. ✓

long. seams Butt Lubbock Diameter of rivet holes in long. seams 1 $\frac{1}{32}$ Pitch of rivets 9" Lap of plates or width of butt straps 19 $\frac{3}{8}$

Per centages of strength of longitudinal joint rivets 93.7 plate 85.0 Working pressure of shell by rules 205 lbs Size of manhole in shell 16" x 12"

Size of compensating rim McKelvie No. and Description of Furnaces in each boiler 4 - Doughton Material Steel Outside diameter 43 $\frac{1}{2}$

Length of plain part top 9 - Thickness of plates crown 3 $\frac{3}{4}$ bottom 3 $\frac{1}{4}$ Description of longitudinal joint Welded No. of strengthening rings ✓

Working pressure of furnace by the rules 81 lbs Combustion chamber plates: Material Steel Thickness: Sides 3 $\frac{1}{2}$ Back C 64 W 3 $\frac{1}{2}$ Bottom 3

Pitch of stays to ditto: Sides 8 $\frac{1}{2}$ x 8 $\frac{1}{2}$ Back 8 $\frac{1}{2}$ x 8 $\frac{1}{2}$ Top 8 $\frac{1}{2}$ x 8 $\frac{1}{2}$ Bottom 8 $\frac{1}{2}$ x 8 $\frac{1}{2}$ Are stays fitted with nuts or riveted heads Nuts ✓ Working pressure by rules 192 lbs

Material of stay Steel Diameter at smallest part 1 $\frac{1}{4}$ x 2.0 supported by each stay 77 $\frac{1}{2}$ Working pressure by rules 198 lbs and plates in steam space

Material Steel Thickness 1 $\frac{1}{4}$ Pitch of stays 19 $\frac{1}{2}$ x 15 How are stays secured Nuts & Washers Working pressure by rules 183 lbs Material of stays Steel

Diameter at smallest part 5 $\frac{1}{4}$ x 5.9 supported by each stay 285 sq Working pressure by rules 215 lbs Material of Front plates at bottom Steel

Thickness $\frac{1}{4}$ Material of Lower back plate Steel Thickness 7 Greatest pitch of stays 15 $\frac{1}{2}$ x 8 Working pressure of plate by rules 183 lbs

Diameter of tubes 2 $\frac{1}{2}$ Pitch of tubes 3 $\frac{1}{2}$ x 3 $\frac{1}{2}$ Material of tube plate Steel Thickness: Front 4 $\frac{1}{2}$ Back 3 Mean pitch of stays 10 $\frac{1}{2}$ x 7

Pitch across wide water spaces 13 $\frac{1}{2}$ Working pressures by rules 186 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7 $\frac{1}{2}$ x (4 + 2) Length as per rule 28 $\frac{1}{2}$ Distance apart 8 $\frac{1}{2}$ Number and pitch of stays in each 2 - 8 $\frac{1}{2}$

Working pressure by rules 185 lbs 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

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