

REPORT ON MACHINERY

No. 16396
WED. AUG. 18. 1915

Received at London Office

Date of writing Report 10/8/15 When handed in at Local Office 10/8/15 Port of Greenock
No. in Survey held at Port Glasgow Date, First Survey 17/2/15 Last Survey 9/8/1915
Reg. Book. H. M. S. "Teronica" (Number of Visits 54) Tons ^{Gross} 1915

Master Port Glasgow Built at Port Glasgow By whom built Dunlop, Bremner & Co. Ltd When built 1915

Engines made at Port Glasgow By whom made Do when made 1915

Boilers made at Glasgow By whom made Lindsay Burnet & Co when made 1915

Registered Horse Power The British Admiralty Port belonging to Do

Nom. Horse Power as per Section 28 256 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 21 1/2 - 35 - 54 Length of Stroke 27 Revs. per minute 160 Dia. of Screw shaft 10 5/8 Material of screw shaft 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 No 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 No If two liners are fitted, is the shaft lapped or protected between the liners No Length of stern bush 4-6

Dia. of Tunnel shaft 9 1/2 Dia. of Crank shaft journals 10 5/8 Dia. of Crank pin 10 5/8 Size of Crank webs solid Dia. of thrust shaft under collars 10 5/8 Dia. of screw 9-6 Pitch of Screw 12-6 No. of Blades 4 State whether moceable No Total surface 34 sq

No. of Feed pumps 2 WEIRS Diameter of ditto 4 Stroke 21 Can one be overhauled while the other is at work Yes
No. of Bilge pumps 2 WEIRS Diameter of ditto 8 Stroke 18 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 1 WEIR 5 x 7 1/2 FEED Sizes of Pumps 6 x 4 x 6 DUNLOP 5 x 7 1/2 SINGLE No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room 2 @ 2 1/2 AUX ENG ROOM 1 @ 2 1/2 BOILER ROOMS 2 @ 2 1/2 EACH In Holds, &c. TUNNEL, 1 @ 2 1/2, HELDS, 1 @ 2 1/2 IN EACH COMPARTMENT

No. of Bilge Injections ONE sizes 9 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 Yes
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 Steam & water How are they protected Boxed in

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 13/5/15 of Stern Tube 12/5/15 Screw shaft and Propeller 25/5/15
Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper deck & Eng Room Platform

BOILERS, &c.—(Letter for record See separate report) Manufacturers of Steel See separate report

Total Heating Surface of Boilers Is Forced Draft fitted Yes No. and Description of Boilers 2 S.E. Cyl Multi
Working Pressure Tested by hydraulic pressure to Date of test No. of Certificate

Can each boiler be worked separately Yes Area of fire grate in each boiler No. and Description of Safety Valves to
each boiler 2 SPRING LOADED Area of each valve 12.56 Pressure to which they are adjusted 135 lbs sq in Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 1-3 Mean dia. of boilers Length Material of shell plates Thicknes
Thicknes Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams

long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps
Per centages of strength of longitudinal joint riets Working pressure of shell by rules plate Size of manhole in shell

Size of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter
Length of plain part top Thickness of plates bottom Description of longitudinal joint No. of strengthening rings

Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom
Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules End plates in steam space:

Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules Material of stays How are stays secured

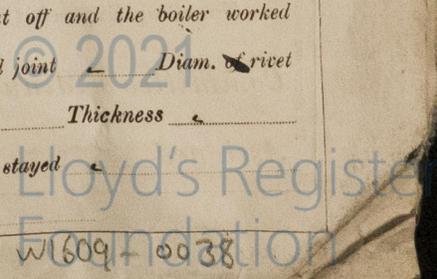
Material Thickness Pitch of stays Working pressure by rules Material of Front plates at bottom Diameter at smallest part
Area supported by each stay Working pressure by rules Material of Front plates at bottom Working pressure of plate by rules

Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules Diameter of tubes
Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays

Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and
thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each

Working pressure by rules 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



IS A DONKEY BOILER FITTED? *NONE.*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied: - 2 top end, 2 bottom end, 2 main bearing, & 6 coupling bolts & nuts, 1 set piston springs & rings for each cylinder, a quantity of bolts & nuts iron of various sizes, 1 set of piston springs, 1 set of bucket rings, 1 piston rod, 1 pump rod with crosshead, 1 set of & guards, for each of the following pumps, Main feed pumps, Fire & bidge pumps, Main air pumps, & Port use pump, 1 set v.s. packing for each cyl, 1 propeller, 1 con rod top end bush, 1 bolt end bush, 1 ecc strap with 4 bolts & nuts, 1 L.P. valve spindle, 12 cyl cover studs & nuts, 12 junk ring bolts, 2 cyl escape valves & springs, 30 condenser tubes & ferrules, 8 thrust shoes, 1 piston rod with x head & slipper, 24 plain tubes, 2 stay tubes. Set

The foregoing is a correct description,

DUNLOP, BREMNER & COY. LIMITED

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Manufacturer.

Dates of Survey while building: During progress of work in shops - 1915 Feb 17 Mar 1, 4, 8, 10, 11, 12, 16, 17, 18, 31, Apr 5, 8, 9, 13, 16, 19, 21, 22, May 1, 3, 6, 12, 13, 17, 18, 20, 25, 27, 28, June 1, 3, 8, 10, 15, 18, 21, 22, 24, 26, 28, July 7, 14, 16, 23, 26, 28, 29, 30, Aug 2, 3, 6, 9. Total No. of visits 54. Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts - Cylinders 3/3/15 Slides 12/5/15 Covers 5/4/15 Pistons 5/4/15 Rods 2/3/15 Connecting rods 5/4/15 Crank shaft 12/5/15 Thrust shaft 12/5/15 Tunnel shafts 17/5/15 Screw shaft 18/5/15 Propeller 17/5/15 Stern tube 12/5/15 Steam pipes tested 5/6/15 Engine and boiler seatings 3/5/15 Engines holding down bolts 10/6/15 Completion of pumping arrangements 26/7/15 Boilers fixed 23/7/15 Engines tried under steam 6/8/15 Main boiler safety valves adjusted 23/7/15 Thickness of adjusting washers Ford Boiler 24" 32" After Boiler 1" 15" Material of Crank shaft W. STEEL Identification Mark on Do. 2008. II Material of Thrust shaft W. STEEL Identification Mark on Do. 157 Material of Tunnel shafts W. STEEL Identification Marks on Do. 157 Material of Screw shafts W. STEEL Identification Marks on Do. 157 Material of Steam Pipes L. W. VYROT. IRON. Test pressure 540 lbs. sq. in.

Is an installation fitted for burning oil fuel No Is the flash point of the oil to be used over 150°F. Have the requirements of Section 49 of the Rules been complied with Is this machinery duplicate of a previous case Yes If so, state name of vessel H. M. S. Magnolia (Scotts 470)

General Remarks (State quality of workmanship, opinions as to class, &c.) The engines & boilers of this vessel have been built under special survey, and the materials, and workmanship, are good. On completion they were examined while running full power for 6 hours in the Firth and found satisfactory.

Mean for 6 hours Revs per min 169, I.H.P. 2203. 4 Runs were taken on the mile with the following results.

| Run | Time | Speed | Mean Speed | Revs | Mean Revs | I.H.P. | Mean I.H.P. |
|-----|----------------------------------|---------|------------|--------|-----------|--------|-------------|
| 1, | 3-27 ³ / ₄ | 17.341. | 17.506. | 140.0 | 170.125 | 2228. | 2248.3. |
| 2, | 3-23 ³ / ₄ | 17.699. | | 140.25 | | 2251 | |
| 3, | 3-28 ³ / ₄ | 17.258. | | 170.25 | | 2254 | |
| 4, | 3-21 ³ / ₄ | 17.848. | | 170 | | 2260 | |

The machinery throughout is now in good & efficient condition & eligible in my opinion to have the Record, L.M.C. 8.15.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 8.15. F.D.

Certificate (if required) to be sent to The Surveyors are requested not to write on or below the space for Committee's Minute.

| | When applied for, | When received, |
|--------------------------------|--|----------------|
| The amount of Entry Fee ... £ | 10 ⁰⁰ / ₁₀₀ Aug 1915 | |
| Special ... £ | 80-0-0 | |
| Donkey Boiler Fee ... £ | | 31/8/1915 |
| Travelling Expenses (if any) £ | | 19/15 |

Committee's Minute GLASGOW Assigned + L.M.C. 8, 15 7D

Harbottle 18/8/15 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping



MACHINERY CERTIFICATE 18/8/15