

REPORT ON MACHINERY

No. 16986
SAT. - 8 APR. 1915

Received at London Office

Date of writing Report 10 March 1916 When handed in at Local Office 1 April 1916 Port of Greenock

No. in Survey held at Greenock Date, First Survey 3rd July 1915 Last Survey 1 April 1916
Reg. Book. on the *Old Steam Tonnage* (Number of Visits) 102Master Built at Greenock By whom built Greenock 15 & yard C Tons { Gross
Net

Engines made at Greenock By whom made Rankin & Blackmore when made 1916

Boilers made at Greenock By whom made Rankin & Blackmore when made 1916

Registered Horse Power Owners Geo Harrison & Co Port belonging to Glasgow.

Nom. Horse Power as per Section 28 481 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

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

Dia. of Cylinders 26-40-72 Length of Stroke 46 Revs. per minute 68 Dia. of Screw shaft as per rule 14.7 Material of screw shaft as fitted 14.7

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 Yes 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 Yes If two

liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 66

Dia. of Tunnel shaft as per rule 13.05 Dia. of Crank shaft journals as per rule 13.7 Dia. of Crank pin 14 Size of Crank webs 8 1/2 x 9 Dia. of thrust shaft under

collars 14 Dia. of screw 18.0 Pitch of Screw 17.5 No. of Blades 4 State whether moveable No Total surface 105 1/2

No. of Feed pumps 2 Diameter of ditto 4 Stroke 26 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 26 Can one be overhauled while the other is at work Yes

No. of Donkey Engines Three Sizes of Pumps 8 x 8 - 5 x 8 - 4 1/2 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 3 1/2 In Holds, &c. 2 in Gun Room 2 1/2

Main Feed Pump 10 1/2 x 21 Independent Circulating Pump 15

No. of Bilge Injections 2 sizes 8 1/4 Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size 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 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 Yes

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 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

Dates of examination of completion of fitting of Sea Connections 22/10/15 of Stern Tube 30/8/15 Screw shaft and Propeller 1/12/15

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door No worked from No

OILERS, &c.—(Letter for record 5(17)) Manufacturers of Steel Oil Co. of Scotland

Total Heating Surface of Boilers 6950 Is Forced Draft fitted Yes No. and Description of Boilers 2 single Endless

Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 26 Jan 15 No. of Certificate 1288

Can each boiler be worked separately Yes Area of fire grate in each boiler 72 1/2 No. and Description of Safety Valves to

each boiler 2 No. opening Area of each valve 14.19 Pressure to which they are adjusted 185 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18 Mean dia. of boilers 17.6 Length 12.6 Material of shell plates Steel

Thickness 1 1/4 Range of tensile strength 28-32 Are the shell plates welded or flanged Yes Descrip. of riveting: cir. seams No

ong. seams Yes Diameter of rivet holes in long. seams 1 1/2 Pitch of rivets 9 1/4 Lap of plates or width of butt straps 20 1/2

Per centages of strength of longitudinal joint rivets 86.8 Working pressure of shell by rules 180 lb Size of manhole in shell 16 x 12

Size of compensating ring Flanged No. and Description of Furnaces in each boiler 4 horizontal Material Steel Outside diameter 47 1/2

Length of plain part top Thickness of plates crown 9 1/4 Description of longitudinal joint welded No. of strengthening rings 4 angled

bottom Working pressure of furnace by the rules 186 lb Combustion chamber plates: Material Steel Thickness: Sides 1 1/4 Back 10/16 Top 1 1/4 Bottom 1 7/16

Pitch of stays to ditto: Sides 9 1/2 x 9 1/4 Back 9 x 8 1/4 Top 10 1/2 x 5 1/2 If stays are fitted with nuts or riveted heads Yes Working pressure by rules 180 lb

Material of stays Steel Diameter at smallest part 2.05 Area supported by each stay 55.5 Working pressure by rules 2200 End plates in steam space:

Material Steel Thickness 1 1/4 Pitch of stays 20 1/4 x 17 How are stays secured All Yes Working pressure by rules 180 lb Material of stays Steel

Diameter at smallest part 8.12 Area supported by each stay 253 Working pressure by rules 2200 Material of Front plates at bottom Steel

Thickness 1 5/16 Material of Lower back plate Steel Thickness 1 1/4 Greatest pitch of stays 12 1/4 Working pressure of plate by rules 182 lb

Diameter of tubes 2 1/2 Pitch of tubes 2 1/2 x 3 7/8 Material of tube plates Steel Thickness: Front 1 5/16 Back 12/16 Mean pitch of stays 8.03

Pitch across wide water spaces 13 1/4 Working pressures by rules 180 lb Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 13 1/4 x 1 1/2 Length as per rule 45 5/8 Distance apart 10 1/2 Number and pitch of stays in each 4-8 1/8

Working pressure by rules 180 lb 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

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

W479-0194

IS A DONKEY BOILER FITTED? *Yes*

If so, is a report now forwarded? *Yes*

SPARE GEAR.

State the articles supplied:— *The top end bolts. The bottom end bolts. The main bearing bolts. One set coupling bolts. One set dead pump valves. One set bridge pump valves. One set of 8 piston springs. One set of 8 piston springs. One set main and one set donkey check valves. Propeller shaft. Propeller. Spare pump for main pump. Slide valve spindle one pair bottom end cranes. One pair top end cranes. Bolts. Nuts &c &c.*

The foregoing is a correct description,

Ranthin & Blackmore Ltd
J. H. Friers

Manufacturer.

(1915) Feb. 3. Mar. 4. 10. 17. 22. 31. Apr. 5. 8. 15. 22. 28. May 4. 6. 14. 20. 25. June 2. 9. 11. 15. 21. 23. 29. July 9. 15. 16. 20. 22. 26. 28. 29. Aug. 2. 6. 10. 13. 17. 18. 20. 23. 26. 30. Sep. 3. 8. 14. 17. 22. 30. Oct. 5. 7. 11. 14. 18. 20. 22. 27. 29. Nov. 1. 2. 5. 9. 12. 16. 18. 24. 26. 30. Dec. 1. 2. 6. 8. 10. 13. 15. 16. 21. 22. 28. 29. (1916) Jan. 7. 10. 18. 20. 26. 27. Feb. 4. 9. 22. 29. Mar. 1. 3. 6. 7. 9. 14. 15. 17. 21. 22. 23. 24. 25. 29. Apr. 1.

Dates of Survey while building { During progress of work in shops - - -
During erection on board vessel - - -
Total No. of visits 102.

Is the approved plan of main boiler forwarded herewith *Yes*

" " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders *7/10/15* Slides *12/11/15* Covers *7/10/15* Pistons *29/10/15* Rods *27/10/15*

Connecting rods *24/11/15* Crank shaft *see report* Thrust shaft *9/11/15* Tunnel shafts *9/11/15* Screw shaft *9/11/15* Propeller *24/11/15*

Stern tube *23/8/15* Steam pipes tested *19/3/16* Engine and boiler seatings *22/10/15* Engines holding down bolts *1/3/16*

Completion of pumping arrangements *24/3/16* Boilers fixed *1/3/16* Engines tried under steam *24/3/16*

Main boiler safety valves adjusted *24/3/16* Thickness of adjusting washers *P 5/16 - 5 1/16. P 1/2 - 5 1/16.*

Material of Crank shaft *Steel* Identification Mark on Do. *4616* Material of Thrust shaft *Steel* Identification Mark on Do. *182*

Material of Tunnel shafts *Steel* Identification Marks on Do. *182* Material of Screw shafts *Steel* Identification Marks on Do. *182*

Material of Steam Pipes *Iron* Test pressure *600 lb.*

Is an installation fitted for burning oil fuel *Yes* 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 *✓* If so, state name of vessel *✓*

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

Machinery fitted aft.

The Machinery and Boiler of this Steamer have been constructed under Special Survey and placed on board in accordance with the Society's Rules. They are now in my opinion in safe working condition and the case is respectfully submitted for the notification + L M C 4 - 16 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + L M C 4. 16. F.D.

The amount of Entry Fee ... £ 3 : 0 :
Special ... £ 44 : 1 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 29th Mar. 1916.
When received, 30th Mar. 1916.

Committee's Minute *GLASGOW - 6 APR. 1916*

Assigned *+ L M C 4. 16*

J.W.D.
11/4/16.
J.P.R.
James James.
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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