

REPORT ON MACHINERY.

No. 22001

WED. NOV. - 6. 1912

Received at London Office

Date of writing Report 18. 10. 1912 When handed in at Local Office 2. 11. 1912 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 19. 4. 12 Last Survey 31. 10. 1912
 Reg. Book. S/S "Dunachton" (Number of Visits 37.)
 Master Built at Glasgow By whom built G. Bonnell & Co. Ld. Tons { Gross 5201
 Engines made at Glasgow By whom made Dunsour & Jackson Ld (Hog) when made 1912 { Net 3309
 Boilers made at ditto By whom made ditto (Hog) when made 1912 When built 1912
 Registered Horse Power Owners Henderson & McIntosh Port belonging to Leith
 Nom. Horse Power as per Section 28 536 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 26" 2"-44"-43" Length of Stroke 51" Revs. per minute 40 Dia. of Screw shaft as per rule 15.29 Material of screw shaft Iron
 as fitted 15.5/8 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 turned 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 If two
 liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 5.3"
 Dia. of Tunnel shaft as per rule 13.9 Dia. of Crank shaft journals as per rule 14.64 Dia. of Crank pin 15" Size of Crank webs 9 1/4" x 2 1/2" Dia. of thrust shaft under
 collars 15" Dia. of screw 18.0" Pitch of Screw 18.6" No. of Blades 4 State whether moveable No Total surface 105 ft²
 No. of Feed pumps 2 Diameter of ditto 4 1/4" Stroke 26" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 4 1/4" Stroke 26" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 4 Sizes of Pumps Ball 11" x 12" 2 1/2" DF 5" x 3 1/2" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 4 - 3 1/2" 1. 3 1/2" Tunnel Drill. In Holds, &c. 2. 3 1/2" in each hold
 No. of Bilge Injections 1 sizes 6" Connected to condenser, or to circulating pump Pump 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 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 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 Yes
 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 23. 9. 12 of Stern Tube 23. 9. 12 Screw shaft and Propeller 23. 9. 12
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from UER Platform

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Steel Co. Braidwood, Glasgow & Steel Co. Spencers
 Total Heating Surface of Boilers 7680 Is Forced Draft fitted Yes No. and Description of Boilers 3 Single Ended
 Working Pressure 200 Tested by hydraulic pressure to 400 Date of test 20. 8. 12 No. of Certificate 11428
 Can each boiler be worked separately Yes Area of fire grate in each boiler 52.5 ft² No. and Description of Safety Valves to
 each boiler Double Spring Area of each valve 8.29" Pressure to which they are adjusted 205" Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 6 feet Mean dia. of boilers 15.1" Length 12.5" Material of shell plates S
 Thickness 1 1/2" Range of tensile strength 28 1/2/32 Are the shell plates welded or flanged Yes Descrip. of riveting: cir. seams DR
 long. seams TR O D B S Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10 3/8" Lap of plates or width of butt straps 1-10 1/4"
 Per centages of strength of longitudinal joint rivets 83.4 plate 85.6 Working pressure of shell by rules 219 Size of manhole in shell 16 1/2"
 Size of compensating ring M. G. H. No. and Description of Furnaces in each boiler 3 Corrugated Material S Outside diameter 3.10
 Length of plain part top bottom Thickness of plates crown bottom 5/8" Description of longitudinal joint weld. No. of strengthening rings Yes
 Working pressure of furnace by the rules 213 Combustion chamber plates: Material S Thickness: Sides 11/16" Back 23/32" Top 11/16" Bottom 1"
 Pitch of stays to ditto: Sides 9 1/8" x 1 1/8" Back 8 1/8" x 9 1/2" Top 9 1/8" x 1 1/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 203
 Material of stays S Diameter at smallest part 1 1/8" Area supported by each stay 47.625" Working pressure by rules 231 End plates in steam space:
 Material S Thickness 1 1/8" Pitch of stays 15 1/4" x 1 1/8" How are stays secured DN Working pressure by rules 207 Material of stays S
 Diameter at smallest part 6 3/32 Area supported by each stay 27.5" Working pressure by rules 221 Material of Front plates at bottom S
 Thickness 1 1/32 Material of Lower back plate S Thickness 3/32 Greatest pitch of stays 14 3/4 x 8 13/16 Working pressure of plate by rules 245
 Diameter of tubes 2 1/2" Pitch of tubes 3 7/8" x 3 3/4" Material of tube plates S Thickness: Front 1 1/32" Back 7/8" Mean pitch of stays 9.4"
 Pitch across wide water spaces 13 1/2" Working pressures by rules 231 Girders to Chamber tops: Material Iron Depth and
 thickness of girder at centre 11 1/4" (2) Length as per rule 3.3 Distance apart 8 5/8" Number and pitch of stays in each 3 at 9"
 Working pressure by rules 219 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

If not, state whether, and when, one will be sent? In a Report also sent on the Hull of the Ship?

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. Description
 Made at By whom made When made Where fixed
 Working pressure tested by hydraulic pressure to Date of test No. of Certificate Fire grate area Description of Safety
 Valves No. of Safety Valves Area of each Pressure to which they are adjusted Date of adjustment
 If fitted with easing gear If steam from main boilers can enter the donkey boiler Dia. of donkey boiler Length
 Material of shell plates Thickness Range of tensile strength Descrip. of riveting long. seams
 Dia. of rivet holes Whether punched or drilled Pitch of rivets Lap of plating Per centage of strength of joint Rivets
 Working pressure of shell by rules Thickness of shell crown plates Radius of do. No. of stays to do. Dia. of stays Plates
 Diameter of furnace Top Bottom Length of furnace Thickness of furnace plates Description of joint
 Working pressure of furnace by rules Thickness of furnace crown plates Radius of do. Stayed by
 Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied:— 2 Coupling Rod bolts 1 inch for Top end, ditto for bottom
 2 Main Bearing bolts 1 Set of Coupling Bolts 1 Set of Feed & Pump Valve 1 Set of
 Piston Ring a quantity of America bolts 1 inch Dia. of various sizes
 one Propeller shaft 4 Propeller blades

For DUNSMUIR & JACKSON, Limited

The foregoing is a correct description,

Manufacturer.

James Fisher Manager

Dates of Survey while building
 During progress of work in shops -- 1912. April 19-24-26 May 6-9-14-21-22-28 June 10-17-19 July 1-8-25 Aug. 1-16-20-21
 During erection on board vessel --- Sept. 2-9-11-16-23-24-26 Oct. 1-3-4-8-10-16-18-22-24-31
 Total No. of visits 37

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " " Yes

Dates of Examination of principal parts—Cylinders 21. 8. 12 Slides 16. 9. 12 Covers 25. 7. 12 Pistons 25. 4. 12 Rods 25. 7. 12
 Connecting rods 9. 9. 12 Crank shaft 29. 8. 12 Thrust shaft 1. 8. 12 Tunnel shafts 1. 8. 12 Screw shaft 16. 9. 12 Propeller 9. 9. 12
 Stern tube 9. 9. 12 Steam pipes tested H. 10. 12 Engine and boiler seatings 23. 9. 12 Engines holding down bolts 22. 10. 12
 Completion of pumping arrangements 22. 10. 10 Boilers fixed 16. 10. 12 Engines tried under steam 31. 10. 12
 Main boiler safety valves adjusted 22. 10. 10 Thickness of adjusting washers SV 3/8 PY 3/8 B PV 3/8 SV 3/8 PV 3/8 S V 3/8 F AV 3/8 FF V
 Material of Crank shaft S Identification Mark on Do. LLOYDS WGM H09 Material of Thrust shaft S Identification Mark on Do. LLOYDS WGM H09
 Material of Tunnel shafts S Identification Marks on Do. ditto Material of Screw shafts Iron Identification Marks on Do. ditto
 Material of Steam Pipes S Iron Test pressure 600 lb

General Remarks (State quality of workmanship, opinions as to class, &c. These engines & boiler have been built under special survey in accordance with the approved plans. The workmanship & material are of good quality. The Machinery is eligible in my opinion for the record of. **L.M.C. 10-12**

It is submitted that this vessel is eligible for THE RECORD. **L.M.C. 10.12**

F.D.

[Signature]

7. 11. 12

The amount of Entry Fee .. £ 3 :-
 Special £ 46. 16
 Donkey Boiler Fee £
 Travelling Expenses (if any) £

When applied for, 14. 11. 12
 When received, 6. 11. 12

Wm. Gordon Muir
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute GLASGOW 5 - NOV. 1912

Assigned **L.M.C. 10, 12**



Certificate (if required) to be sent to Glasgow

The Surveyors are requested not to write on or below the space for Committee's Minute.