

REPORT ON MACHINERY.

No. 31195

Received at London Office WED. MAR. 13. 1912

of writing Report 16. 2. 1912 When handed in at Local Office 9/3/12 Port of Glasgow
 in Survey held at Glasgow Date, First Survey 7th April 1910 Last Survey 6th March 1912
 Book. on the S/S "Rindal" (Number of Vists 86)

ter A. McEwan Built at Glasgow By whom built G. Bonnell & Co. Tons { Gross 4918.80
 Net 3091.90
 When built 1912
 ines made at Glasgow By whom made Dunsen & Jackson & Co. (2nd 366) when made 1912
 ers made at ditto By whom made ditto when made 1912
 istered Horse Power Owners Messrs Turner & Co. Port belonging to Liverpool

Horse Power as per Section 28 455 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

INES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3
 of Cylinders 25.42.40 Length of Stroke 48 Revs. per minute 65 Dia. of Screw shaft as per rule 14.8 Material of Iron
 as fitted 16 screw shaft

he 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
 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
 rs are fitted, is the shaft lapped or protected between the liners Length of stern bush 64

of Tunnel shaft as per rule 13.32 13.2 Dia. of Crank shaft journals as per rule 3.9 3.9 Dia. of Crank pin 14 Size of Crank webs 27x9 1/2 Dia. of thrust shaft under
 as fitted 13 1/2 14
 ars 14 Dia. of screw 18.0 Pitch of Screw 19.0 No. of Blades 4 State whether moveable Yes Total surface 99 1/2

of Feed pumps 2 Diameter of ditto Stroke Can one be overhauled while the other is at work Yes
 of Bilge pumps 2 Diameter of ditto Stroke 24 Can one be overhauled while the other is at work Yes

of Donkey Engines 3 Sizes of Pumps 4.0 9.6 10.0 5.7 12 No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room 4.0 3 1/2 Tunnel Well. 2 1/2 In Holds, &c. 2 at 3 1/2 in each hold

of Bilge Injections 1 sizes 8 Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 3 1/2
 e 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

e all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both
 e 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 Both

e 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
 hat pipes are carried through the bunkers How are they protected

e all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes
 e the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes

ates of examination of completion of fitting of Sea Connections 31. 1. 12 of Stern Tube 31. 4. 12 Screw shaft and Propeller 31. 1. 12

the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from UER Platform
 ILERS, &c.—(Letter for record 217) Manufacturers of Steel Colville & Co.

otal Heating Surface of Boilers 6324 Is Forced Draft fitted Yes No. and Description of Boilers 3 Single ended
 orking Pressure 200 Tested by hydraulic pressure to 400 Date of test 19. 12. 11 No. of Certificate 11336

an each boiler be worked separately Yes Area of fire grate in each boiler 54.5 No. and Description of Safety Valves to
 ch boiler 2 Direct Spring Area of each valve 8.29 Pressure to which they are adjusted 205 Are they fitted with easing gear Yes

allest distance between boilers or uptakes and bunkers or woodwork 2 Mean dia. of boilers 16. 9 1/2 Length 2.9 Material of shell plates S
 thickness 19 1/2 Range of tensile strength 29/32 Are the shell plates welded or flanged Descrip. of riveting: cir. seams CR

ng. seams TRDBS Diameter of rivet holes in long. seams 19 1/2 Pitch of rivets 10 1/2 Lap of plates or width of butt straps 1-11
 Per centages of strength of longitudinal joint rivets 83.95 plate 85.12 Working pressure of shell by rules 225 Size of manhole in shell 16 1/2

ize of compensating ring 10 1/2 No. and Description of Furnaces in each boiler 3 Corrugated Material S Outside diameter 4.2
 length of plain part top Thickness of plates crown 2.33 bottom 2.33 Description of longitudinal joint welded No. of strengthening rings

Working pressure of furnace by the rules 219 Combustion chamber plates: Material S Thickness: Sides 11 1/2 Back 11 1/2 Top 11 1/2 Bottom 11 1/2
 Pitch of stays to ditto: Sides 8 1/2 x 9 3/8 Back 8 7/8 x 8 7/8 Top 4 1/2 x 8 3/4 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 215

Material of stays Iron Diameter at smallest part 3 7/8 3 4/3 Area supported by each stay 45 Working pressure by rules 210 Material of stays S steel
 Material S Thickness 1 5/32 Pitch of stays 18 1/2 3 1/4 How are stays secured DN Working pressure by rules 210 Material of Front plates at bottom S

Diameter at smallest part 5 3/2 Area supported by each stay 283.5 Working pressure by rules 215 Material of Front plates at bottom S
 Thickness 3 1/2 Material of Lower back plate S Thickness 2 1/2 Greatest pitch of stays 14 1/4 Working pressure of plate by rules 230

Diameter of tubes 2 1/2 Pitch of tubes 3 1/2 x 3 1/2 Material of tube plates S Thickness: Front 3 1/2 1 1/2 Back 2 1/2 1 1/2 Mean pitch of stays 8 5/8
 Pitch across wide water spaces 13 1/2 Working pressures by rules 215 Girders to Chamber tops: Material S Depth and

thickness of girder at centre 11 1/2 Length as per rule 3-6 Distance apart 8 3/4 Number and pitch of stays in each 4 at 4 1/2
 Working pressure by rules 210 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

1500-915M

VERTICAL DONKEY BOILER—

Manufacturers of Steel

| | | | |
|--------------------------------------|--|---------------------------|-------------------------------------|
| No. | Description | When made | Where fixed |
| Made at | By whom made | No. of Certificate | Fire grate area |
| Working pressure | tested by hydraulic pressure to | Date of test | Description of Sp. |
| Valves | No. of Safety Valves | Area of each | Pressure to which they are adjusted |
| 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 |
| Working pressure of shell by rules | Thickness of shell crown plates | Radius of do. | No. of stays to do. |
| Diameter of furnace Top | Bottom | Length of furnace | Thickness of furnace plates |
| 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 connecting Rod bolts, Nuts for top end. ditto for bottom end. 2 main bearing bolts. 1 set of coupling bolts. 1 set of End Bolts. 1 set of Piston Rings. A quantity of assorted iron & bolt work. 1 Propeller shaft. a number of Propeller Blades.

For DUNSMUIR & JACKSON, Limited

The foregoing is a correct description,

Manufacturer

James Fletcher Manager

| Dates of Survey while building | During progress of work in shops -- | During erection on board vessel -- | Total No. of visits |
|---|-------------------------------------|---|---------------------|
| 1910. Apr. 7. 11. 14. 22. 25. May 2. 4. 13. 17. 26. June 7. 15. 22. July 4. 6. 11. 26. 30. Aug 3. 18. 19. 25. 30. Sep 7. 15. 20. 23. Oct 1. 5. 10. 17. 21. 26. 28. 31. Nov 8. 15. 22. 28. Dec 2. 7. 20. 28. 1911. Jan 11. 18. 25. Feb 9. 15. 25. Apr 28. May 31. Aug 27. 31. Sep 11. 26. Oct 10. 17. 24. 31. 1912. Jan 8. 11. 17. 29. 31. Feb 9. 14. 16. 20. 27. Mar 6. | 86. | Is the approved plan of main boiler forwarded herewith. | Yes |

| | | | | | | | | | |
|---|----------|--------------------------------|---|----------------------------|---------|-----------------------------|---------|----------------------------|---------|
| Dates of Examination of principal parts—Cylinders | 7-11-11 | Slides | 19-12-11 | Covers | 7-11-11 | Pistons | 17-1-12 | Rods | 17-1-12 |
| Connecting rods | 29-11-11 | Crank shaft | 19-12-11 | Thrust shaft | 15-9-12 | Tunnel shafts | 7-11-11 | Screw shaft | 11-1-12 |
| Stern tube | 11-1-12 | Steam pipes tested | 12-2-12 | Engine and boiler seatings | 31-1-12 | Engines holding down bolts | 23-2-12 | Engines tried under steam | 6/3/12 |
| Completion of pumping arrangements | 23-2-12 | Boilers fixed | 14-2-12 | Engines tried under steam | 6/3/12 | Donkey boiler | | | |
| Main boiler safety valves adjusted | 23-2-12 | Thickness of adjusting washers | SV 3/8 PV 3/8 SV 3/8 PV 7/16 FV 3/8 AV 5/16 | Identification Mark on Do. | 366 | Material of Thrust shaft | S | Identification Mark on Do. | 366 |
| Material of Crank shaft | S | Identification Mark on Do. | 366 | Material of Thrust shaft | S | Identification Mark on Do. | 366 | Material of Screw shafts | S |
| Material of Tunnel shafts | S | Identification Marks on Do. | ditto | Material of Screw shafts | S | Identification Marks on Do. | ditto | Material of Steam Pipes | Iron |
| Material of Steam Pipes | 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 approved plan & the workmanship & material are of good quality. The Machinery is eligible in my opinion for the record of L.M.C. 3-12. This vessel is a duplicate of the 3/8 "Havelock" sub Repl. No. 30020.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 3.12.

F.D.

| | | | |
|------------------------------|---------|-------------------|--------|
| The amount of Entry Fee | £ 3 | When applied for, | 7/3/12 |
| Special | £ 12.15 | When received, | 8/3/12 |
| Donkey Boiler Fee | £ | | |
| Travelling Expenses (if any) | £ | | |

Committee's Minute GLASGOW 12 MAR 1912

Assigned + L.M.C. 3.12.

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



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