

REPORT ON MACHINERY.

No. 21717

Port of Glasgow

No. in Survey held at Glasgow

Date, first Survey 18th Sept 03 Last Survey 14th April 1904

Received at London Office

Reg. Book.

on the Steel Ser. Strm. "Dublin"

(Number of Visits 42)

Master Harrison Built at Paisley By whom built Messrs John Buller & Co Tons Gross 126.75
Net 271.63

Engines made at Glasgow By whom made Messrs Ross & Duncan When built 1904

Boilers made at " By whom made Messrs Ross & Duncan when made 1904

Registered Horse Power 156 Owners Tedcastle, McCornick & Co. Port belonging to Dublin

Nom. Horse Power as per Section 28 156 Is Refrigerating Machinery fitted No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders Three No. of Cranks 3

Dia. of Cylinders 18 : 29 : 48 Length of Stroke 36 Revs. per minute 90 Dia. of Screw shaft as per rule 10.02 Material of screw shaft Iron
as fitted 10.34

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 the liner does not fit tightly at the part liners are fitted, is the shaft lapped or protected between the liners Continuous liner Length of stern bush 3' 10 1/2"

Dia. of Tunnel shaft as per rule 9.15 Dia. of Crank shaft journals as per rule 9.5 Dia. of Crank pin 10 1/4 Size of Crank webs 6 3/8 x 15 Dia. of thrust shaft under collars 10 1/4 Dia. of screw 12' 0" Pitch of screw 15' 0" No. of blades 4 State whether moveable No Total surface 49'

No. of Feed pumps 2 Diameter of ditto 3 1/4 Stroke 18" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 18" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Two Sizes of Pumps 7 x 4 1/2 x 8 Duplex No. and size of Suctions connected to both Bilge and Donkey pumps 4 1/2 x 2 1/2 x 5

In Engine Room On 2 1/2" & on 2 3/4" In Holds, &c. Two 2 1/2" in each hold (Nos 1 & 2)

front of engines. (Engines aft.)

No. of bilge injections 1 sizes 4 1/2 Connected to condenser, or to circulating pump As per Is a separate donkey suction fitted in Engine room & size Yes 2 1/4"

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 None

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 Inward bilge suction How are they protected Strong wooden casing

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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock New vessel Is the screw shaft tunnel watertight No tunnel
Engines aft.

Is it fitted with a watertight door Yes worked from Engines aft.

BOILERS, &c.—

(Letter for record S.) Total Heating Surface of Boilers 2540 sq ft Is forced draft fitted No

No. and Description of Boilers One Single Ended Working Pressure 170 lbs Tested by hydraulic pressure to 340 lbs

Date of test 17.2.04 Can each boiler be worked separately Yes Area of fire grate in each boiler 75' No. and Description of safety valves to each boiler Two Direct Spring Area of each valve 7.67' Pressure to which they are adjusted 175 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 4' 0" Mean dia. of boilers 16' 0" Length 11' 0" Material of shell plates Steel

Thickness 1 9/32 Range of tensile strength 27 to 32 Are they welded or flanged No Descrip. of riveting: cir. seams Ends double r. long. seams Double Straps
lap Plate Riveted

Diameter of rivet holes in long. seams 1 5/16 Pitch of rivets 9" & 4 1/2" Lap of plates or width of butt straps 1' 7"

Per centages of strength of longitudinal joint 87.2 Working pressure of shell by rules 170 lbs Size of manhole in shell 16" x 12"

Size of compensating ring M. Neil's rule No. and Description of Furnaces in each boiler Two Motion Material Steel Outside diameter 42 1/4"

Length of plain part top Thickness of plates crown 1/2 Description of longitudinal joint Welded No. of strengthening rings Yes
bottom bottom

Working pressure of furnace by the rules 178 lbs Combustion chamber plates: Material Steel Thickness: Sides 19/32 Back 19/32 Top 19/32 Bottom 19/32

Pitch of stays to ditto: Sides 8 x 8 3/4 Back 8 x 8 3/4 Top 8 x 8 3/4 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 168

Material of stays Steel Diameter at smallest part 1 3/8" Area supported by each stay 40' Working pressure by rules 169 lbs End plates in steam space:

Material Steel Thickness 1 1/32 Pitch of stays 18" x 16" How are stays secured Double nuts Working pressure by rules 174 lbs Material of stays Steel

Diameter at smallest part 2 1/2" Area supported by each stay 288' Working pressure by rules 180 lbs Material of Front plates at bottom Steel

Thickness 13/16 Material of Lower back plate Steel Thickness 1 1/16 Greatest pitch of stays 13 3/4 Working pressure of plate by rules 232 lbs

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4 x 4 7/8 Material of tube plates Steel Thickness: Front 1 1/2 Back 2 3/4 Mean pitch of stays 10' 8"

Pitch across wide water spaces 14" Working pressures by rules 187 Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 4" x 2" Length as per rule 28.6 Distance apart 8" Number and pitch of Stays in each Yes at 8 3/4"

Working pressure by rules 195 lbs Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked separately Yes Diameter Yes Length Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet holes Yes Pitch of rivets Yes Working pressure of shell by rules Yes Diameter of flue Yes Material of flue plates Yes Thickness Yes

If stiffened with rings Yes Distance between rings Yes Working pressure by rules Yes End plates: Thickness Yes How stayed Yes

Working pressure of end plates Yes Area of safety valves to superheater Yes Are they fitted with easing gear Yes

W1092-0160



DONKEY BOILER— No. *One* Description *Vertical. Cross tubes in firebox*
 Made at *Gateshead on Tyne* By whom made *Clark Chapman & Co. Ltd.* When made *1904* Where fixed *In Store hold*
 Working pressure *90 lb* tested by hydraulic pressure to *180 lb* No. of Certificate *6734* Fire grate area *14 sq ft* Description of safety valves *Direct Spring*
 No. of safety valves *2* Area of each *3 1/4* Pressure to which they are adjusted *95 lb* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *5' 6"* Length *12' 0"* Material of shell plates *Steel* Thickness *13/32* Range of tensile strength *27-32* Descrip. of riveting long. seams *Double riveted lap* Dia. of rivet holes *13/16* Whether punched or drilled *Drilled* Pitch of rivets *3"*
 Lap of plating *4 1/8"* Per centage of strength of joint Rivets *42.2* Thickness of shell crown plates *9/16* Radius of do. *5' 0"* No. of Stays to do. *6*
 Dia. of stays *2"* Diameter of furnace Top *4' 3 1/2"* Bottom *4' 9 1/8"* Length of furnace *5' 6"* Thickness of furnace plates *9/16* Description of joint *S.R. lap* Thickness of furnace crown plates *1/2* Stayed by *Vertical stays & uptake* Working pressure of shell by rules *95.9*
 Working pressure of furnace by rules *98 lb* Diameter of uptake *14" inside* Thickness of uptake plates *7/16* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *Two main bearing bolts. Two piston rod bolts & nuts. Two con. rod bolts & nuts. Set coupling bolts. Set feed & bilge pump valves. Set piston springs for each piston. Bolts & nuts firebox. Assorted iron.*

The foregoing is a correct description,

Clark Chapman Manufacturer.

Dates of Survey while building
 During progress of work in shops— 1903: Sept 18. Oct 2, 21, 24, 28. Nov 6, 10, 15, 16, 20, 23, 26, 30. Dec 2, 8, 10, 15, 16, 18, 21, 24, 29, 1904
 During erection on board vessel— Jan 11, 13, 18, 20, 25, 29. Feb 1, 9, 11, 16, 22. Mar 14, 15, 17, 24, 29. April 5, 7, 12, 14.
 Total No. of visits *42*

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

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery & boilers of this vessel have been constructed under special survey & in accordance with the requirements of the Rules.

The Electric Lighting report will be forwarded shortly.

Note. The dynamo removed & not replaced. h.w.c. 5.251. 99474.

It is submitted that the vessel is eligible for the notation + LMC 4.04 in the Register.

The forging certificates of shafting are enclosed.

It is submitted that this vessel is eligible for THE RECORD I.L.M.C. 4.04. ELEC LIGHT.

Ed. 26.4.04

Certificate (if required) to be sent to

The amount of Entry Fee.	£ 2 : 0 :	When applied for,	
Special	£ 23 : 8 :	25 APR 1904	<i>James Hollison</i>
Donkey Boiler Fee	£ : :	When received,	<i>Arthur L. Jones</i>
Travelling Expenses (if any) £	: :	28/4/04 29/4/04	Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *Glasgow 25 APR 1904*

Assigned *+ L.M.C. 4.04*

When fee is paid
 MACHINERY CERTIFICATE
 WRITTEN 27-4-04

