

REPORT ON MACHINERY.

Port of

Date, first Survey 14 April 1902 Last Survey 20 March 1903

No. in Survey held at
Reg. Book.

(Number of Visits 94)

on the

Tons { Gross 9230
Net 5786

Master Col. F. P. Orita Built at Belfast By whom built Harland & Wolff Ltd When built 1903

Engines made at Belfast By whom made Harland & Wolff Ltd when made 1903

Boilers made at By whom made when made

Registered Horse Power Owners Pacific Steam Navigation Co. Port belonging to Liverpool

Nom. Horse Power as per Section 28 1148 Is Refrigerating Machinery fitted No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Screw Quadruple Expansion Engines 8 No. of Cranks 8

Dia. of Cylinders 24 1/2 - 35 - 51 - 72 Length of Stroke 54 Revs. per minute 76 Dia. of Screw shaft as per rule 15 1/4 as fitted 15 1/4 Lgth. of stern bush 62

Dia. of Tunnel shaft as per rule 14 1/2 as fitted 14 1/2 Dia. of Crank shaft journals as per rule 15 1/2 as fitted 15 1/2 Dia. of Crank pin 15 1/2 Size of Crank webs 27 1/2 x 10 1/2 Dia. of thrust shaft under

collars 15 Dia. of screw 16 - 10 Pitch of screw 21 - 9 No. of blades 3 on each State whether moveable Yes Total surface 70 1/2 sq ft.

No. of Feed pumps 1 on each Diameter of ditto 5 1/2 Stroke 30 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 1 Diameter of ditto 5 Stroke 30 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 6 Sizes of Pumps 14 x 10 1/2 x 26 Gable No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 5 - 3 1/2 x 4 - 2 1/2 In Holds, &c. 10 - 3 1/2 x 7 - 2 1/2

No. of bilge injections 2 sizes 10 Connected to condenser, or to circulating pump Pump Is a separate donkey suction fitted in Engine room & size 1 - 4 - 1 - 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 No

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 Both

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 Fore Hold suction How are they protected Wood 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 Before launching the screw shaft tunnel watertight Plated & checked

Is it fitted with a watertight door? Yes worked from Top platform & Room

BOILERS, &c.— (Letter for record) Total Heating Surface of Boilers 20880 sq ft Is forced draft fitted No

No. and Description of Boilers 3 Single End Cylinders Working Pressure 210 lbs Tested by hydraulic pressure to 420 lbs

Date of test 23-11-02 Can each boiler be worked separately Yes Area of fire grate in each boiler 120 sq ft No. and Description of safety valves to

each boiler Two Direct Spring Area of each valve 15 - 9 sq in Pressure to which they are adjusted 210 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers on woodwork 11 Mean dia. of boilers 15 - 3 Length 18 - 6 Material of shell plates Steel

Thickness 1 1/2 Range of tensile strength 29 - 32 Are they welded or flanged No Descrip. of riveting: cir. seams Lap Riveting, seams Both Double

Diameter of rivet holes in long. seams 1 1/2 Pitch of rivets 10 Lap of plates or width of butt straps 22 1/2

Per centages of strength of longitudinal joint rivets 92.8 Working pressure of shell by rules 225 lbs Size of manhole in shell 16 - 12

Size of compensating ring McVeils No. and Description of Furnaces in each boiler 3 - Morrison Material Steel Outside diameter 48 1/2

Length of plain part top 6 bottom 10 Thickness of plates crown 1/16 Description of longitudinal joint Weld No. of strengthening rings 3 on each

Working pressure of furnace by the rules 285 lbs Combustion chamber plates: Material Steel Thickness: Sides 3/16 Back 9/16 Top 3/8 Bottom 3/4

Pitch of stays to ditto: Sides 7/8 x 7/16 Back 7/16 x 6/16 Top 8/16 x 8/16 If stays are fitted with nuts or riveted heads Nuts welded Working pressure by rules 218 lbs

Material of stays Steel Diameter at smallest part 3/8, 1/2, 5/8 Area supported by each stay 54 1/2 sq in Working pressure by rules 216 lbs End plates in steam space: 221

Materials Steel Thickness 1/16 Pitch of stay 18 1/2 x 15 1/2 How are stays secured Nuts raw Working pressure by rules 218 lbs Material of stays Steel

Diameter at smallest part 2 1/2 Area supported by each stay 286 1/2 sq in Working pressure by rules 242 lbs Material of Front plates at bottom Steel

Thickness 1 1/2 Material of Lower back plate Steel Thickness 1/16 Greatest pitch of stays 13 Working pressure of plate by rules 404 lbs

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

Pitch across wide water spaces 14 Working pressures by rules 227 lbs with Double Girders to Chamber tops: Material Iron Depth and

thickness of girder at centre 6 1/2 x 12 x 2 Length as per rule 29 1/2 Distance apart 8 1/2 Number and pitch of Stays in each 2 - 7 1/2

Working pressure by rules 236 lbs 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

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DONKEY BOILER—

No. *10* Description

Made at

By whom made

When made

Where fixed

Working pressure

tested by hydraulic pressure to

No. of Certificate

Fire grate area

Description of safety 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

Per centage of strength of joint

Rivets

Thickness of shell crown plates

Radius of do.

No. of Stays to do.

Dia. of stays.

Diameter of furnace Top

Bottom

Length of furnace

Thickness of furnace plates

Description of

joint

Thickness of furnace crown plates

Stayed by

Working pressure of shell by rules

Working pressure of furnace by rules

Diameter of uptake

Thickness of uptake plates

Thickness of water tubes

SPARE GEAR. State the articles supplied:—

*Propeller Shaft; 2 Mang Bronze Propeller Blades;
1 Piston rod; 1 Cross head with guide shoes; 1 set bottom end trusses;
2 sets top end brasses; 1 air pump bucket & rod; 1 spindle & impeller for
circulating pump; 1 valve spindle H.P.; 1 valve spindle P.P.; 52 Condenser
tubes; 1 pump & other pump gear; 1 set of all gear to Lloyd's Rules additional.*

The foregoing is a correct description,

Harland & Wolff Manufacturer.

Dates
of Survey
while
building

During progress of
work in shops—
During erection on
board vessel—
Total No. of visits

*1892—April 14, 16, 23, 28 May 1, 9, 13, 16, 21, 28, 30 June 2, 5, 9, 11, 18, 20, 22, 24,
July 1, 4, 9, 11, 13, 19, 21, 24, 28, Sept 2, 4, 16, 19, 25, 30, Oct 1, 2, 6, 9, 14, 18, 20,
21, 23, 29, 31, 30, Nov 4, 5, 7, 14, 18, 19, 21, 23, 26, Dec 1, 4, 5, 8, 10, 12, 16,
and up to 26 March 1903*

Is the approved plan of main boiler forwarded herewith

General Remarks

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

Material of screw shaft

Hyd. Press. iron & steel

Is the after end of the liner made water tight in the propeller boss

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 liners are fitted, is the shaft lapped or protected between the liners

*The machinery of this vessel has been constructed under
Special Survey, and in accordance with the Rules. The
materials and workmanship is of good description throughout,
and on trial under steam in Belfast Lough, the
machinery worked satisfactorily.
In my opinion it is eligible to have record + L.M.C. 303
in the Register Book, also Electric Light.*

It is submitted that
this vessel is eligible for

THE RECORD. — L.M.C. 303. ELECTRIC LIGHT.

Rel.

31.3.03

Rel.
31.3.03

The amount of Entry Fee..

£ 3 :

Special ..

£ 77. 8 :

Donkey Boiler Fee ..

£ :

Travelling Expenses (if any) £ :

When applied for,

27-3-03

When received,

1-4-03

Committee's Minute

TUES. 31 MAR 1903

Assigned

+ L.M.C. 303

MACHINERY CERTIFICATE
WRITTEN.

R. J. B. Beveridge
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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Foundation

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