

REPORT ON MACHINERY.

MAR 30 MAR 1903

MUN. 30 MAR 1903

Port of Belfast

Received at London Office _____

No. in Survey held at Belfast Date, first Survey 14 April 1902 Last Survey 20 March 1903

Reg. Book. J.P. "Orita" (Number of Visits 94)

on the J.P. "Orita" Tons } Gross 9230

Master Col. Fisher Built at Belfast By whom built Harland & Wolff L^{td} When built 1903

Engines made at Belfast By whom made Harland & Wolff L^{td} when made 1903

Boilers made at Belfast By whom made _____ when made _____

Registered Horse Power 1148 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 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 14 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 14 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 Waters 14 x 10 1/2 x 26 Waters 2 x 6 x 12 Waters 8 x 6 x 8 Waters 6 x 4 x 6 Waters 5 1/2 x 4 x 5 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 Pumps 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 Is the screw shaft tunnel watertight Stated to be

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 Triple 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 60 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 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 Double Butt Suble

Diameter of rivet holes in long. seams 1 1/2 Pitch of rivets 10 Lap of plates or width of butt straps 22 1/4

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

Size of compensating ring McNeil 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 bottom 1/16 Description of longitudinal joint Weld No. of strengthening rings 3

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

Pitch of stays to ditto: Sides 7 1/2 x 7 1/2 Back 7 1/2 x 6 7/8 Top 8 1/4 x 8 If stays are fitted with nuts or riveted heads Nuts used Working pressure by rules 218 lbs

Material of stays Steel Diameter at smallest part 3/8 Area supported by each stay 54 sq in Working pressure by rules 216 lbs End plates in steam space: Material Steel Thickness 1/16 Pitch of stay 18 1/2 x 15 1/2 How are stays secured Nuts & washers Working pressure by rules 218 lbs Material of stays Steel

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

Thickness 1/16 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 1/4 Pitch of tubes 4 x 4 Material of tube plates Steel Thickness: Front 1/16 Back 3/16 Mean pitch of stays 8 x 8

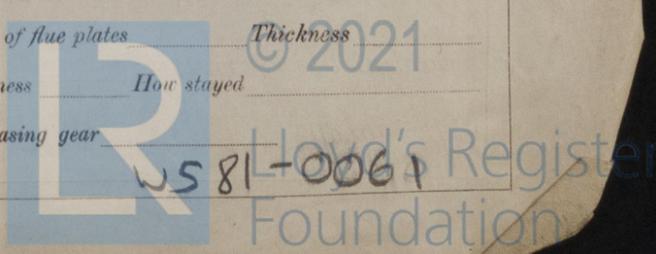
Pitch across wide water spaces 14 Working pressures by rules 227 lbs with Double Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 6 1/2 x 8 x 2 Length as per rule 29 1/2 Distance apart 8 1/2 Number and pitch of Stays in each 2 - 7 1/2

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 _____



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 crosses; 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. or L.P. 5/2 Condenser tubes; 1 set of 4 other pumps; 1 set of 4 and 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: *April 14, 16, 23, 28 May 1, 9, 13, 16, 21, 28, 30 June 2, 5, 9, 11, 18, 20, 23, 24*
 During erection on board vessel: *July 1, 4, 9, 11, 13, 19, 21, 27, 28, Sept 2, 4, 16, 19, 25, 30, Oct 1, 2, 6, 9, 14, 18, 20*
 Total No. of visits *94* and up to *26 March 1903* Is the approved plan of main boiler forwarded herewith *Yes*

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

Material of screw shaft *Hy. Press. iron steel* 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*

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. ELEC LIGHT.

R. J. Beveridge
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 31.3.03

The amount of Entry Fee... £ 3 :
 Special ... £ 74 8 :
 Donkey Boiler Fee ... £ :
 Travelling Expenses (if any) £ :
 When applied for, 27-3-03
 When received, 1-4-03

Committee's Minute
 Assigned
 TUES. 31 MAR 1903
 + L.M.C 303
 MACHINERY CERTIFICATE WRITTEN.



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