

REPORT ON MACHINERY.

No. 5941

Port of Belfast

Received at London Office 1905 **1905**

No. in Survey held at Belfast
g. Book.

Date, first Survey Nov. 22nd. 1904 Last Survey Aug. 3rd. 1905

(Number of Visits 51)

on the

S.S. Mahronda

Gross 7630

Net 4921

When built 1905

Master

Built at Belfast

By whom built Harland & Wolff L.

When made 1905

Engines made at Belfast

By whom made Harland & Wolff L.

when made 1905

Registers made at

By whom made

when made

Registered Horse Power

owners J. J. Brockbank Port belonging to Liverpool

nom. Horse Power as per Section 28 658

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Quadruple Expansion

No. of Cylinders 4

No. of Cranks 4

Dia. of Cylinders 26 1/2 - 39 1/2 - 56 - 78 1/2

Length of Stroke 54

Revs. per minute 71

Dia. of Screw shaft 15.83

as per rule 15.83

Material of S. Steel

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

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

Length of stern bush 64"

Dia. of Tunnel shaft 14.57

as per rule 14.57

Dia. of Crank shaft journals 15.75

as per rule 15.75

Dia. of Crank pin 16

Size of Crank webs 2 1/2 x 1 1/4

Dia. of thrust shaft under

rollers 15 1/4

as fitted 15.0

Dia. of screw 18'-6"

Pitch of screw 20'-0"

No. of blades 4

State whether moceable Yes

Total surface 95 1/2 sq. ft.

No. of Feed pumps 1

and Meters do.

Diameter of ditto 5 1/2

Stroke 20"

Can one be overhauled while the other is at work Yes

Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2

Diameter of ditto 5"

Stroke 30"

Can one be overhauled while the other is at work Yes

Can one be overhauled while the other is at work Yes

No. of Donkey Engines See other sheet

See other sheet

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 5-3 1/2 + 2-2 1/2

In Holds, &c. 9-3 1/2 + 6-2 1/2

No. of bilge injections 1

sizes 9 1/2"

Connected to condenser, or to circulating pump Pump

Is a separate donkey suction fitted in Engine room & size Yes - 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 they Valves or Cocks Both

Are all connections with the sea direct on the skin of the ship Yes

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 the blow off cocks fitted with a spigot and brass covering plate Yes

How are they protected Wood casings

What pipes are carried through the bunkers Fore hold suction

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 it fitted with a watertight door Yes

worked from Upper platform Engine Room

BOILERS, &c.—

(Letter for record S)

Total Heating Surface of Boilers 11604 sq. ft.

Is forced draft fitted No

No. and Description of Boilers 2 S.S.

Working Pressure 215 lbs

tested by hydraulic pressure to 430 lbs

Date of test 31-5-05

Can each boiler be worked separately Yes

Area of fire grate in each boiler 111 sq. ft.

No. and Description of safety valves to

each boiler 2 - Direct Spring

Area of each valve 9.62 sq. ft.

Pressure to which they are adjusted 220 lbs

Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork About 40"

Mean dia. of boilers 14'-0"

Length 16'-9"

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 Top Double

long. seams Butt Double

Diameter of rivet holes in long. seams 1 1/2"

Pitch of rivets 10"

Top of plates or width of butt straps 22 1/4"

Per centages of strength of longitudinal joint

rivets 93.7

plate 84.6

Working pressure of shell by rules 249 lbs

Size of manhole in shell 16" x 12"

Material Steel

Size of compensating ring 16" x 16"

No. and Description of Furnaces in each boiler 3

Material Steel

Outside diameter 44 1/2"

Length of plain part 4'-0"

Thickness of plates 3 1/2"

Description of longitudinal joint Weld

No. of strengthening rings 4

Working pressure by rules 217 lbs

Pitch of stays to ditto: Sides 7 1/2" x 7"

Back 8 1/2" x 7 1/2"

Top 7 1/2" x 7 1/2"

If stays are fitted with nuts or riveted heads Nuts used

Working pressure by rules 218 lbs

Material of stays Steel

Thickness 1 1/2"

Pitch of stays 16 1/2" x 14 1/2"

Are stays secured Nuts & Washers

Diameter at smallest part 2 1/2" x 2 1/4"

Area supported by each stay 54 sq. ft.

Working pressure by rules 218 lbs

Material of Front plates at bottom Steel

Thickness 1 1/2"

Greatest pitch of stays 12 1/2"

Working pressure of plate by rules 615 lbs

Material of Lower back plate Steel

Thickness 1 1/2"

Diameter of tubes 2 1/2"

Pitch of tubes 4" x 4"

Material of tube plate Steel

Thickness: Front 7/8"

Back 3/4"

Top 1/2"

Bottom 1/2"

Mean pitch of stays 8" x 8"

Pitch across wide water spaces 14"

Working pressures by rules 337 lbs

Material Iron

Depth and thickness of girder at centre 8" x (8" x 3)

Length as per rule 49 1/2"

Distance apart 7 1/2"

Number and pitch of Stays in each 3

Can the superheater be shut off and the boiler worked

separately Yes

Diam. of rivet

Working pressure by rules 235 lbs

Superheater or Steam chest; how connected to boiler

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

Working pressure by rules 227 lbs

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

How stayed

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

Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates

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Area of safety valves to superheater

DONKEY BOILER— No. _____ 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:— *See other sheets*

The foregoing is a correct description,
for Harland & Wolff Manufacturer.

1904
 Dates of Survey { During progress of work in shops - } *Nov. 22, 30, Dec. 2, 6, 9, 13, 15, 19, 21*
 { During erection on board vessel - } *Jan. 3, 6, 10, 13, 14, 23, 25 Feb. 1, 3, 8, 10, 13, 20, 22, 24 Mar. 2, 7, 14, 14, 23, 21*
 { while building } *May 4, 9, 12, 26, 31, June 2, 5, 5, 15, 19, 22, 24, July 4, 4 August 1, 3,*
 Total No. of visits *51*

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

General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery of this vessel has been constructed under Special Survey, and in accordance with the Rules. The materials used, and the workmanship, are of good description, and on trial in Belfast Lough, the machinery worked satisfactorily. In my opinion, it is eligible for record. H.M.C. 8-05.

It is submitted that
 this vessel is eligible for
 THE RECORD H.M.C. 8.05 ELEC. LIGHT.

Publ.
10.8.05.
10.8.05

The amount of Entry Fee... £ 3- 0-0
 Special ... £ 52- 18-0
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 When applied for, *8-8-05*
 When received, *15-8-05*

1578705
R. J. Beveridge
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
 Assigned *+ L.M.C. 8.05*
Electric Light

MACHINERY CERTIFICATE
 WRITTEN



FLAT (If I GAR Stat this way B) DOUB Leng and thickn POOP BRIDGE FORE- N manuf Plates Lou W.L. J.G. Has FRAM REVE an LOWER Bowspl Topma Rigger Sails. EQUI Number Certificate 5398 5398 5400 5376 5666 Number Certificate 3680 3683 Iron Steam or Steel Boats Pumps Windla Engine What ar Coal B Number Ceiling Cargo 1 State siz Number Bulwar The abor Builder's

Certificate (if required) to be sent to this office

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

Belfast

B. Mahonda

Drum Pumps

- Weiss 12 1/2" x 9 1/2" x 26 Feed
- Woodsons 7" x 5" x 12 Auxiliary Feed, S.
- Nations 12" x 10" x 14 Ballast
- Flax's Muffs 9" x 6" x 10" General
- Evaporator Pump set²
- Spare Gear

- 1 Main Bronze Propeller Blade
- Pawl Crank Pin Brasses
- " Cross head

Air pump bucket & rod complete

Set piston rings H.P. & I.P.

H.P. valve spindle & neck bush

L.P.

Impeller & spindle for Main Cent. Cond. Pump.

Eccentric Strap complete.

4 Cylinder escape valve & springs

50 Condenser tubes

Set studs & nuts for Cylinder flange.

Feed pump escape valve & spring

Set piston rings for Reversing Engine.

Spare gear for Auxiliary pumps.

Boiler tubes set? and all gear to Lloyd's

Rules additional.

A. M. Bennett