

REPORT ON MACHINERY.

Port of *Belfast*

Received at London Office MON. 21 OCT 1895

No. in Survey held at *Belfast*
Reg. Book.Date, first Survey *3rd June 1895* Last Survey *11th Oct 1895*(Number of Visits *8*)80 on the *New Boilers for S. S. Maharaja*Gross *1666*
Tons Net *1046*Master *Built at Belfast* By whom built *Harland & Wolff Ltd* When built *1899*Engines made at *Glasgow* By whom made *D. Rowan* when made *1899*Boilers made at *Belfast* By whom made *Harland & Wolff Ltd* when made *1895*Registered Horse Power *207* Owners *Asiatic Steam Nav. Co (Lim)* Port belonging to *Liverpool*Nom. Horse Power as per Section 28 *959 Cal* *Class +100AS* *LMC 3,92*
55 H3-4.92 *Red 5,95*

ENGINES, &c.— Description of Engines No. of Cylinders

Diameter of Cylinders Length of Stroke Revolutions per minute Diameter of Screw shaft as per rule as fitted

Diameter of Tunnel shaft as per rule as fitted Diameter of Crank shaft journals Diameter of Crank pin Size of Crank webs

Diameter of screw Pitch of screw No. of blades State whether moveable Total surface

No. of Feed pumps Diameter of ditto Stroke Can one be overhauled while the other is at work

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

No. of Donkey Engines Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room In Holds, &c.

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

Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible

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

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the discharge pipes above or below the deep water line

Are they each fitted with a discharge valve always accessible on the plating of the vessel Are the blow off cocks fitted with a spigot and brass covering plate

What pipes are carried through the bunkers How are they protected

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges

When were stern tube, propeller, screw shaft, and all connections examined in dry dock Is the screw shaft tunnel watertight

Is it fitted with a watertight door worked from

BOILERS, &c.— (Letter for record *3*) Total Heating Surface of Boilers *4406*

No. and Description of Boilers *Two double ended* Working Pressure *80 lb* Tested by hydraulic pressure to *160 lb*

Date of test *18.9.95* Can each boiler be worked separately Area of fire grate in each boiler *60* No. and Description of safety valves to each boiler *Two Cockburn's* Area of each valve *15.9* Pressure to which they are adjusted Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork Mean diameter of boilers *12.0*

Length *15' 4"* Material of shell plates *steel* Thickness *5/8"* Description of riveting: circum. seams *Double riveted, long. seams Double straps double*

Diameter of rivet holes in long. seams *7/8"* Pitch of rivets *3.41* Lap of plates or width of butt straps *9 1/2"*

Per centages of strength of longitudinal joint plate *47.0* Working pressure of shell by rules *85 lb* Size of manhole in shell *16" x 12"*

Size of compensating ring *2' 6" x 2' 2" x 5/8"* No. and Description of Furnaces in each boiler *4 Morrison's* Material *steel* Outside diameter *3' 8"*

Length of plain part top *15.7* Thickness of plates crown *15.7* Description of longitudinal joint *welded* No. of strengthening rings

Working pressure of furnace by the rules *15.7* Combustion chamber plates: Material *steel* Thickness: Sides *1/2* Back *9/16* Top *9/16* Bottom *5/8"*

Pitch of stays to ditto: Sides *9"* Back *9"* Top *9" x 9 1/2"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *95*

Material of stays *steel* Diameter at smallest part *1 1/8"* Area supported by each stay *85 1/2* Working pressure by rules *93.6* End plates in steam space:

Material *steel* Thickness *11/16* Pitch of stays *18"* How are stays secured *double nut* Working pressure by rules *82* Material of stays *steel*

Diameter at smallest part *1 1/16* Area supported by each stay *280* Working pressure by rules *95* Material of Front plates at bottom *steel*

Thickness *11/16* Material of Lower back plate Thickness Greatest pitch of stays *as appr* Working pressure of plate by rules *80*

Diameter of tubes *3"* Pitch of tubes *4 1/4"* Material of tube plates *steel* Thickness: Front *11/16* Back *5/8* Mean pitch of stays *10 3/8*

Pitch across wide water spaces *1' 3"* Working pressures by rules *80 lb* Girders to Chamber tops: Material *wrought iron* Depth and thickness of girder at centre *8 1/4" x 1 3/4"* Length as per rule *3' 7 3/4"* Distance apart *9 1/2* Number and pitch of Stays in each *four at 9"*

Working pressure by rules *82* 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— 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 _____
 Diameter of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____
 Description of riveting long. seams _____ Diameter 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:—

The foregoing is a correct description,

Harland & Wolff Ltd. Manufacturer.

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

The two main boilers described above have been made under special survey & in accordance with the approved photoprint. They have been tested as required by the Rules, & furnace fronts, uptakes, & boiler mountings have been fitted.

New main steam pipes are being made in Glasgow, & the Surveyors at port have been advised.

The boilers have been sent from here to Liverpool where they are to be shipped for Calcutta to be there fitted on board. A letter has been written to the Calcutta Surveyor advising him of this.

The approved tracing & the invoice note for the boiler plates are enclosed herewith.

The vessel will in my opinion be eligible for the record + *11.10.95* when these boilers shall have been satisfactorily fitted on board, & the safety valves adjusted to the working pressure.

Certificate (if required) to be sent to

The amount of Entry Fee.. £ 5 : 5 :
 Special £ 8 : 8 :
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 18th Oct 1895
 When received, 5. 11. 95

E. J. R.

A. L. Jones

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUES. APR 28 1896

Assigned

Not for Comm

FRI. MAY 1 1896



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To Mr Hill to note & advise Cal. 24/10/95