

REPORT ON MACHINERY.

Port of Belfast

Received at London SAT. DEC 21 1895

No. in Survey held at Belfast Date, first Survey Sept 18th Last Survey Dec 18th 1895
Reg. Book. 81 on the New Boilers for S. S. "Maharani" (Number of Vessels 13)

Master Built at Belfast By whom built Harland & Wolff Ltd Tons { Gross 1667
Net 1534
When built 1879-80

Engines made at Glasgow By whom made N. Brown when made 1879
Boilers made at Belfast By whom made Harland & Wolff Ltd when made 1895

Registered Horse Power 212 Owners Asiatic Exp. Nav. Co. Ltd Port belonging to Liverpool
Nom. Horse Power as per Section 28 80977 Calcutta Class ss nos 10041 LMC 10, 91
8.95 RD 6.95

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
That 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 S) Total Heating Surface of Boilers 4406 sq ft
No. and Description of Boilers Two double ended Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs
Date of test 6/12/95 Can each boiler be worked separately Area of fire grate in each boiler 60 No. and Description of safety valves to each boiler Two, Cochrane'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 riveted
Diameter of rivet holes in long. seams 7/8 Pitch of rivets 3' 7 1/2" Top of plates or width of butt straps 9 1/2 x 1 1/2 thick
Per centages of strength of longitudinal joint rivets 44.0 Working pressure of shell by rules 85 lbs 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 Material Steel Outside diameter 3' 8"
Length of plain part top bottom Thickness of plates crown bottom 1 1/2 Description of longitudinal joint welded No. of strengthening rings
Working pressure of furnace by the rules 157 Combustion chamber plates: Material Steel Thickness: Sides 1/2 Back 1/2 Top 9/16 Bottom 5/8
Pitch of stays to ditto: Sides 9" Back 9" Top 9 x 9/2 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 End plates in steam space: Material Steel Thickness 11/16 Pitch of stays 18" How are stays secured double nuts Working pressure by rules 82 Material of stays Steel
Diameter at smallest part 1 1/2 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 upper Working pressure of plate by rules 80 1/2
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 5/8
Pitch across wide water spaces 1' 3" Working pressures by rules 80 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 1/4 x 1 3/4 Length as per rule 3' 7 3/4 Distance apart 9/2 Number and pitch of Stays in each four at 9"
Working pressure by rules 82 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— 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 & Co Manufacturer.

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

Dates of Survey while building: During progress of work in shops - Sept 18. 24 Oct 10. 30 Nov 11. 14. 19. 29 Dec 4. 6. 11. 16. 20.
 During erection on board vessel - To be fitted on board elsewhere.
 Total No. of visits 13.

These two main boilers have been made under special survey & in accordance with the approved photoprint. They have been tested as required by the Rules & furnace front & uptakes have been fitted. The boiler mountings; safety valves stop valves etc have been made but not fitted to the boilers. The main steam pipes are to be made in Glasgow & the surveyors there are being advised.

The boilers are being sent from here to Liverpool, & it is probable that they will be shipped from there to Calcutta to be fitted on board the S.S. "Maharaja". A letter has been written to the Calcutta Surveyor advising him of this.

The approved photoprint of the boilers is forwarded with this report.

These boilers are duplicates of those made for the S.S. "Maharaja" (Bel. Rep. No 4551) & the fee charged is in accordance with the Secretary's letter M. 1/4/95 regarding the boilers for the sister vessel.

In my opinion the vessel will be eligible for the record + *11.13* with date of fitting boilers on board when this has been done, all mountings & steam pipes fitted & the safety valves adjusted under steam.

It is submitted that this report be forwarded to Calcutta for the Surveyors guidance. *Wm S.*

21.12.95

Certificate (if required) to be sent to

The amount of Entry Fee. £ : :
 Special £ 5 : 5 :
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 20th Dec 1895
 When received, 10.1.1896

A. L. Jones

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

Committee's Minute

Assigned

Not for Com yet

FRI. 9 JUL 1897



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Will be to work & write Cal.