

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. (Number of Vistas 13)

81 on the New Boilers for S. S. "Maharani" Tons {Gross 1667
Net 1534

Master Built at Belfast By whom built Harland & Wolff Ltd When built 1879-81

Engines made at Glasgow By whom made N. Rowan when made 1879

Boilers made at Belfast By whom made Harland & Wolff Ltd when made 1895

Registered Horse Power 212 Owners Asiatic Steam Nav. Co. Ltd Port belonging to Liverpool

Nom. Horse Power as per Section 28 20977 Calcutta Class ss nos 10001 LMC 10, 91
85 nos 10, 91 8, 95 Bd 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 _____ as per rule _____ as fitted _____

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

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 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 Coelburn'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 sharp double riveted

Diameter of rivet holes in long. seams 7/8 Pitch of rivets 3.71 Top of plates or width of butt straps 9 1/2 x 1 3/32 thick

Per centages of strength of longitudinal joint _____ 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 _____ Thickness of plates _____ 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 9/16 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 & large riv. washers Working pressure by rules 82 Material of stays Steel

Diameter at smallest part 1 15/16 Area supported by each stay 2.80 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

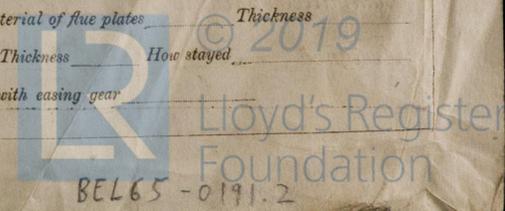
Pitch across wide water spaces 1.3 Working pressures by rules 80 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 1/4 x 1 3/4 Length as per rule 3.7 3/4 Distance apart 9/2 Number and pitch of Stays in each four at 9

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 casing 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 _____ Plates _____ 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. 1/11/95 regarding the boilers for the sister vessel.

In my opinion the vessel will be eligible for the record + *71 B* 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. *JMS*
 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) £ : : _____

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

Will be to work & write Cal.

