

# REPORT ON MACHINERY.

No. 3107

FRIDAY 2 JAN 1885

No. in Survey held at *Belfast* Date, first Survey *9th Oct* Last Survey *18th Dec 1884*  
 Reg. Book. on the *"British King"* (Number of Visits *7*) Tons *2559*  
 Master *Kelly* Built at *Belfast* By whom built *Harland & Wolff* When built *1881*  
 Engines made at *Liverpool* By whom made *J. Suck & Co* when made *1881*  
 Boilers made at *at Barrow* By whom made *Barnes Ship Building Co Ltd* when made *1884*  
 Registered Horse Power *400* Owners *British Ship Owners Co Ltd* Port belonging to *Liverpool*

## ENGINES, &c.—

Description of Engines  
 Diameter of Cylinders Length of Stroke No. of Rev. per minute Point of Cut off, High Pressure Low Pressure  
 Diameter of Screw shaft Diam. of Tunnel shaft Diam. of Crank shaft journals Diam. 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  
 Where do they pump from  
 No. of Donkey Engines Size of Pumps Where do they pump from  
 Are all the bilge suction pipes fitted with roses Are the roses always accessible Are the sluices on Engine room bulkheads always accessible  
 No. of bilge injections and sizes Are they connected to condenser, or to circulating pump  
 How are the pumps worked  
 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 accessible at all times  
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection 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 and fitted with a sluice door worked from

## BOILERS, &c.—

Number of Boilers *Three* Description *Cylindrical D. 6 ft Lined* Whether Steel or Iron *Steel*  
 Working Pressure *90 lbs* Tested by hydraulic pressure to *180 lbs* Date of test *29/8/68 23rd/9/84*  
 Description of superheating apparatus or steam chest *Angular Cylindrical Receiver*  
 Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *no superheater*  
 No. of square feet of fire grate surface in each boiler *94* Description of safety valves *Spring* No. to each boiler *Two*  
 Area of each valve *25.912* Are they fitted with easing gear *yes* No. of safety valves to superheater *1* area of each valve *1*  
 Are they fitted with easing gear *1* Smallest distance between boilers and bunkers or woodwork *12* Diameter of boilers *11-6*  
 Length of boilers *17-6* description of riveting of shell long. seams *D. 6 ft 13/16 in D. 6 ft 1/2 in* circum. seams *Lap 4-6 in* Thickness of shell plates *3/4*  
 Diameter of rivet holes *1* whether punched or drilled *drilled* pitch of rivets *4"* Lap of plating *13/16 in 10' wide*  
 Percentage of strength of longitudinal joint *75* working pressure of shell by rules *101 lbs* size of manholes in shell *16 x 12*  
 Size of compensating rings *Rectangular Plate 28 x 24 x 3/4* No. of Furnaces in each boiler *Four*  
 Outside diameter *46* length, top *6-6* bottom *6-6* thickness of plates *7/16* description of joint *Corrugated* if rings are fitted *1*  
 Greatest length between rings *1* working pressure of furnace by the rules *108 lbs* combustion chamber plating, thickness, sides *7/16* back *1/2* top *7/16*  
 Pitch of stays to ditto, sides *9 x 9* back *1* top *9 x 9* If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *95 lbs* Diameter of stays at smallest part *1.3824* working pressure of ditto by rules *109 lbs* end plates in steam space, thickness *7/16*  
 Pitch of stays to ditto *16 x 14* how stays are secured *Nuts & 9/16 in Washers* working pressure by rules *95-6 lb Washers* diameter of stays at smallest part *2 3/8* working pressure by rules *118 lbs* Front plates at bottom, thickness *7/16* Back plates, thickness *1*  
 Greatest pitch of stays *about 12* working pressure by rules *109 lbs* Diameter of tubes *3 3/4* pitch of tubes *4 1/2 x 4 1/2* thickness of tube plates, front *7/16* back *7/16* how stayed *Stay Guts* pitch of stays *13 1/2 x 9* width of water spaces *1 1/4*  
 Diameter of Superheater or Steam chest *2-6* length *20 1/2* thickness of plates *3/8* description of longitudinal joint *Lap 2 Rivets* diam. of rivet holes *3/4*  
 Pitch of rivets *7-6* working pressure of shell by rules *20.5 lbs* diameter of flue *1* thickness of plates *1* If stiffened with rings *1*  
 Distance between rings *1* working pressure by rules *1* end plates of superheater, or steam chest; thickness *1/2* how stayed *dished*  
 also 2 Gussset-Rings fitted Superheater or steam chest; how connected to boiler *by 2 1/2 in pipes & 1 1/2 in flanges*



**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 \_\_\_\_\_ if fitted with easing gear \_\_\_\_\_ if steam from main boilers can  
enter the donkey boiler \_\_\_\_\_ diameter of donkey boiler \_\_\_\_\_ length \_\_\_\_\_ description of riveting \_\_\_\_\_  
Thickness of shell plates \_\_\_\_\_ diameter of rivet holes \_\_\_\_\_ whether punched or drilled \_\_\_\_\_ pitch of rivets \_\_\_\_\_ lap of plating \_\_\_\_\_  
per centage of strength of joint \_\_\_\_\_ thickness of crown plates \_\_\_\_\_ stayed by \_\_\_\_\_  
Diameter of furnace, top \_\_\_\_\_ bottom \_\_\_\_\_ length of furnace \_\_\_\_\_ thickness of 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 plates \_\_\_\_\_ thickness of water tubes \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:—

The foregoing is a correct description,

Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c. Survey has been held in accordance with the rules for Special Survey No. 1.

Main Boiler being fitted also in accordance with the rules for Special Survey No. 1.  
New Boilers as above described fitted in board old machinery, re-fitted with  
exception of two off cranks & pistons which have been renewed. Piston Rods examined  
& found in satisfactory condition. Crankshafts examined. Cracks exist in long  
near bottom parts of L.P. cylinders these do not appear to interfere with the efficiency  
of the cylinders at present. Slide valves & all pumps overhauled & examined.  
Condition of same satisfactory. A new after length of crank shaft fitted & the  
original half length placed forward in the latter a slight flaw (1/4" long) exists  
in number 2 bearing the extent of which has been marked. Condenser tubes  
renewed all parts cleaned & examined & tubes re-packed in place.  
Main Frame re-bored and new stern tube fitted. Stern-hub part re-bored.  
Propeller & Tail Shaft examined. Condition of same satisfactory. all  
sea connections in good order.  
Engines & Boilers tried under steam. the safety valves found  
adjusted to a load of 90 lbs per square inch.

The machinery and Boilers of this Vessel are in good order & safe working  
condition and in my opinion eligible to have the certification ☒ R.B. L.R. C. 12-84  
recorded in the Register Book.

It is respectfully recommended that owing to defects noted in L.P. cylinders and  
crank shaft these parts should be again examined in 12 months from last date of this survey.

The amount of Entry Fee £ . . . received by me,

Special . . . £ 0 : 10 : . . .

Donkey Boiler Fee . . . £ . . .

Certificate (if required) . . . £ . . . 31.12.1884

To be sent as per margin.

(Travelling Expenses, if any, £ 6-6-0.)

Committee's Minute

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

James Ritchie

+ R.B. L.R. C. 12.84