

# REPORT ON MACHINERY.

3212

No. 3212

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No. in Survey held at *Belfast* Date, first Survey *10<sup>th</sup> April 1883* Last Survey *20<sup>th</sup> April 1886*  
 Reg. Book. *57 in Log the Steel Screw Steamer "Saint Fillans" Harland & Wolff N<sup>o</sup> 186 Tons 2007.87 net*  
 Master *E. D. Fitz Gerald* Built at *Belfast* By whom built *Harland & Wolff* When built *1886*  
 Engines made at *Belfast* By whom made *Harland & Wolff* when made *1886*  
 Boilers made at *Belfast* By whom made *Harland & Wolff* when made *1886*  
 Registered Horse Power *320* Owners *Ranunculus & Co* Port belonging to *Liverpool*

## ENGINES, &c.—

Description of Engines *Triple Expansion Three Cranks.*  
 Diameter of Cylinders *24 1/2 37 1/2 64* Length of Stroke *48* No. of Rev. per minute \_\_\_\_\_ Point of Cut off, High Pressure \_\_\_\_\_ Low Pressure \_\_\_\_\_  
 Diameter of Screw shaft *3 1/4* Diam. of Tunnel shaft *2 1/4* Diam. of Crank shaft journals *13 1/4* Diam. of Crank pin *13 1/4* size of Crank webs *9 x 15*  
 Diameter of screw *16-4* Pitch of screw *18-0* No. of blades *four* state whether moveable *no* total surface *71 sq feet*  
 No. of Feed pumps *Two* diameter of ditto *3 1/2* Stroke *28* Can one be overhauled while the other is at work *yes*  
 No. of Bilge pumps *Two* diameter of ditto *4* Stroke *28* Can one be overhauled while the other is at work *yes*  
 Where do they pump from *N<sup>o</sup> 1, 2, 3 & 4 holds & from machinery spaces.*  
 No. of Donkey Engines *Three* Size of Pumps *Ballast 10" bore acting 10" stroke* Where do they pump from *Sea, main Boilers,*  
*hotwell, ballast tanks & bilges.*  
 Are all the bilge suction pipes fitted with roses *yes* Are the roses always accessible *yes* Are the sluices on Engine room bulkheads always accessible *yes*  
 No. of bilge injections *One* and sizes *5"* Are they connected to condenser, or to circulating pump *to circulating pump.*  
 How are the pumps worked *by levers from after engine. A centrifugal pump for circulating.*  
 Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *both valves & cocks*  
 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 *above*  
 Are they each fitted with a discharge valve always accessible on the plating of the vessel *yes* Are the blow off cocks fitted with a spigot and brass covering plate *yes*  
 What pipes are carried through the bunkers *bilge suction* How are they protected *boxed in with wood.*  
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times *yes*  
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges *yes, by master cocks & return valves.*  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock *before launching 13-2-86*  
 Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *upper deck.*

## BOILERS, &c.—

Number of Boilers *Two* Description *Fired from both Ends.* Whether Steel or Iron *Steel*  
 Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs* Date of test *18<sup>th</sup> February 1886.*  
 Description of superheating apparatus or steam chest *none fitted.*  
 Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *✓*  
 No. of square feet of fire grate surface in each boiler *85* Description of safety valves *Cockburns* No. to each boiler *Two 3 1/4" dia*  
 Area of each valve *8.3* Are they fitted with easing gear *yes* No. of safety valves to superheater *✓* area of each valve *✓*  
 Are they fitted with easing gear *✓* Smallest distance between boilers and bunkers or woodwork *14"* Diameter of boilers *12-3*  
 Length of boilers *17-3* description of riveting of shell long. seams *d/b butt shape, 2/3 circum.* seams *lap, 2/3 Riv.* Thickness of shell plates *1/8*  
 Diameter of rivet holes *1/4* whether punched or drilled *drilled* pitch of rivets *7-33 1/2 3-70* Lap of plating *butt shape 2 1/2" lap*  
 Per centage of strength of longitudinal joint *82.94* working pressure of shell by rules *165 lbs* size of manholes in shell *12" x 15"*  
 Size of compensating rings *Square plate 24" x 27 1/2 1 1/4"* No. of Furnaces in each boiler *Six*  
 Outside diameter *36* length, top *6-9* bottom *6-9* thickness of plates *7/32* description of joint *Corrugated* if rings are fitted *✓*  
 Greatest length between rings *✓* working pressure of furnace by the rules *180 lbs* combustion chamber plating, thickness, sides *7/16* back *✓* top *7/16*  
 Pitch of stays to ditto, sides *7 3/4 x 7* back *7 1/2 x 7* If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by  
 rules *161 1/8 lbs* Diameter of stays at smallest part *1 1/4 (Steel)* working pressure of ditto by rules *181 3/4 lbs* end plates in steam space, thickness *7/8*  
 Pitch of stays to ditto *15 x 14* how stays are secured *d/b nut & washer 13 dia x 16 thick* working pressure by rules *139 1/4 lbs* diameter of stays at  
 smallest part *3" Iron* working pressure by rules *202 lbs* Front plates at bottom, thickness *13/16* Back plates, thickness *✓*  
 Greatest pitch of stays *about 12* working pressure by rules *187 1/2 lbs* Diameter of tubes *3 1/4* pitch of tubes *4 1/6 x 4 1/2* thickness of tube  
 plates, front *7/8* back *2 3/32* how stayed *Stay Tube* pitch of stays *9 1/8 x 9* width of water spaces *1 1/4 bet tubes*  
 Diameter of Superheater or Steam chest *✓* length *✓* thickness of plates *✓* description of longitudinal joint *✓* diam. of rivet holes *✓*  
 Pitch of rivets *✓* working pressure of shell by rules *✓* diameter of flue *✓* thickness of plates *✓* If stiffened with rings *✓*  
 Distance between rings *✓* working pressure by rules *✓* end plates of superheater, or steam chest; thickness *✓* how stayed *✓*  
 Superheater or steam chest; how connected to boiler *✓*

BEL 53-0228

Lloyd's Register  
Foundation



## DONKEY BOILER—

Description In particulars of this boiler see sheet attached herewith.

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:— a two bladed propeller One air pump rod, a set of main slide valve spindles, a set of connecting rod bolts, two holding down bolts, 1/2 set of air pump valves, 1/2 set of furnace bars, 25 boiler tubes, a quantity of assorted bolts & nuts and iron of various sizes. 4 Ramsbottom piston rings for high P & intermediate cyls 4 for each cyl.

The foregoing is a correct description,  
*James Maxton* Manufacturer.

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

At the underrated stage in the progress of the work upon the engines and boilers of this vessel, the survey of the machinery was transferred to Mr Maxton. — Cylinders and Bed-plate Cast-liner for M.C. bored all Shafts in Shop and Crank Thrust Propeller and two lengths of Tunnel Shaping, tapered Shells of main Boilers built. Tube Plates flanged and drilled & Comb. Chamber plates flanged. Donkey Boiler nearly completed.

The material & workmanship is good & satisfactory so far as the same has been surveyed by me. *D. Ritchie.*

The machinery of this vessel has been built in accordance with the photograph approved by the Committee and likewise in accordance with or equal to Rules for Special Survey (New Machinery; the material and workmanship throughout are good and satisfactory; the boilers have been tested under hydraulic and the machinery under steam pressures; giving entire satisfaction and in my opinion eligible for the notification **L.M.C.** entered in the Society's Register Book with a date attached.

The amount of Entry Fee .. £ 3 : 0 : 0 received by me,

Special .. £ 36 : 0 : 0

Donkey Boiler Fee .. £ .. : .. : ..

Certificate (if required) .. £ basis: 20-4-1886

To be sent as per margin.

(Travelling Expenses, if any, £ 4-19-0)

Committee's Minute

TUESDAY 25 MAY 1886

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