

# REPORT ON MACHINERY. 6031

No. 6031 Port of Leith Received at London Office MON 9 DEC 1889  
No. in Survey held at Leith Date, first Survey 14<sup>th</sup> Feb. 89 Last Survey 3<sup>rd</sup> Dec. 1889  
Reg. Book. 940 on the S.S. "Stettin" (Number of Visits 39) 551  
Tons 884  
Master Robertson Built at Glasgow By whom built Barclay, Curle & Co. When built 1864  
Engines made at Leith By whom made Hawthornes & Co. when made 1889  
Boilers made at Do. By whom made Do. when made 1889  
Registered Horse Power 98 Owners Leith Hull & Hamb. S. F. R. Co. Port belonging to Leith

ENGINES, &c.— S.S. 403: New Boilers & Engines, Triples  
Description of Engines Triple expansion  
Diameter of Cylinders 16 1/4 x 27 x 43 Length of Stroke 33 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 one Description cyl. multitubular Whether Steel or Iron steel (S)  
Working Pressure 150 Tested by hydraulic pressure to 300 Date of test 1.10.89  
Description of superheating apparatus or steam chest none  
Can each boiler be worked separately ✓ Can the superheater be shut off and the boiler worked separately ✓  
No. of square feet of fire grate surface in each boiler 454 Description of safety valves spring No. to each boiler two  
Area of each valve 5.94 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 12 Diameter of boilers 13-17 1/4  
Length of boilers 9-5 description of riveting of shell long. seams D.B.S., T.R. circum. seams L.D.R. Thickness of shell plates 1 1/16  
Diameter of rivet holes 1 1/4 whether punched or drilled D pitch of rivets 7 Lap of plating 9 3/4  
Percentage of strength of longitudinal joint 82 working pressure of shell by rules 154 size of manholes in shell 16 x 12  
Size of compensating rings 26 1/4 x 26 1/4 x 13 1/4 No. of Furnaces in each boiler 3  
Outside diameter 3-4 length, top 6-3 bottom 6-3 thickness of plates 7/8 description of joint welded if rings are fitted ✓  
Greatest length between rings ✓ working pressure of furnace by the rules 150 combustion chamber plating, thickness, sides 9/16 back 1/2 top 1/2  
Pitch of stays to ditto, sides 8 back 7 1/8 top 7 1/8 If stays are fitted with nuts or riveted heads nuts working pressure of plating by rules 150 Diameter of stays at smallest part 1 1/4 working pressure of ditto by rules 600 end plates in steam space, thickness 7/8  
Pitch of stays to ditto 18" how stays are secured D.N. R. ship working pressure by rules 150 diameter of stays at smallest part 3 1/4 working pressure by rules 150 Front plates at bottom, thickness 7/8 Back plates, thickness 7/8  
Greatest pitch of stays per section working pressure by rules ✓ Diameter of tubes 3 1/4 pitch of tubes 4 1/2 thickness of tube plates, front 7/8 back 1 1/16 how stayed stay pitch of stays 9" width of water spaces 1 1/4  
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 ✓

Vertical text on right margin: Long Patent

DONKEY BOILER— Description *Cyl: multi: Steel.*  
 Made at *Leith* by whom made *Hawthorn's rbo.* when made *1889* where fixed *main deck*  
 Working pressure *50* tested by hydraulic pressure to *100* No. of Certificate *163* fire grate area *10.5 sq ft* description of safety  
 valves *spring* No. of safety valves *one* area of each *5.9 sq ft* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler *7-6* length *7-3* description of riveting *F.D.R.*  
 Thickness of shell plates *7/16* diameter of rivet holes *3/4* whether punched or drilled *D* pitch of rivets *2 1/2* lap of plating *3 3/4*  
 per centage of strength of joint *70%* thickness of crown plates *5/8* stayed by *17 3/4 - 50 lb.*  
 Diameter of furnace, top *3-6* bottom *4-6* length of furnace *4-6* thickness of plates *5/8* description of joint *D.B.S., S.R.*  
 Thickness of furnace crown plates *7/16* stayed by *Pilot of Stays 10 3/8 x 10 = 50* working pressure of shell by rules *70*  
 Working pressure of furnace by rules *79* diameter of uptake *2 1/4* thickness of plates *5/8* thickness of water tubes *3/4*

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

Manufacturer.

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

The above boiler have been built under special survey, workmanship materials good.

The engines have been tripped by the addition of HP engine fitted at forward end of bed plate. I.P. & B. cyls: bound out & liner fitted in B. new crank & tunnel shafting fitted. Condenser and pump overhauled. Engines generally repairs & but in good order. Result placed in dry dock propeller taken off, shaft drawn in, examined & replaced new propeller fitted.

The engine & boilers have been run under steam, & main safety valves adjusted to blow at 155 lbs & donkey at 50 lbs per sq.

The machinery of this vessel is now in good working order & reliable, in my opinion, to be classed marked *L.M.C. 12-89 + N.B. 89*

It is submitted that this vessel is eligible to have L.M.C. 12-89 + N.B. 89 recorded.

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

Special .. £ 12 : 12 :

Donkey Boiler Fee .. £ 2 : 2 :

Certificate (if required) .. £ : 2 : 6

To be sent as per margin.

(Travelling Expenses, if any, £ *none*)

Committee's Minute

TUES 10 DEC 1889

+ N.B. 89

L.M.C. 12/89

*W. J. Darling*  
 Engineer & Surveyor to Lloyd's Register of British & Foreign Shipping.