

# REPORT ON MACHINERY.

No. 12445

Port of Glasgow

Received at London Office, 13 MAR 1894

No. in Survey held at Glasgow  
Reg. Book.

Date, first Survey 8<sup>th</sup> July 1893 Last Survey 8<sup>th</sup> March 1894  
(Number of Visits 41)

on the S. S. John Williams

Tons { Gross 663  
Net 340

Master Turpie Built at Govan By whom built R. Napier & Sons When built 1894

Engines made at Glasgow By whom made R. Napier & Sons when made 1894

Boilers made at Glasgow By whom made R. Napier & Sons when made 1894

Registered Horse Power 80 Owners London Missionary Society Port belonging to London

Nom. Horse Power as per Section 28 95

**ENGINES, &c.**— Description of Engines Triple Expansion Inverted direct acting No. of Cylinders three

Diameter of Cylinders 15, 24, 39 Length of Stroke 27 Revolutions per minute 114 Diameter of Screw shaft as per rule 7.3  
as fitted 8

Diameter of Tunnel shaft as per rule 6.9 Diameter of Crank shaft journals 8" Diameter of Crank pin 8" Size of Crank webs 6" x 15"  
as fitted 7 3/4

Diameter of screw 9' 6" Pitch of screw 12' 0" No. of blades 2 State whether moveable Keel Total surface 16.9

No. of Feed pumps one Diameter of ditto 2 1/2 Stroke 15 Can one be overhauled while the other is at work —  
and an automatic pump

No. of Bilge pumps one Diameter of ditto 3 1/2 Stroke 15 Can one be overhauled while the other is at work —  
and two duplex pumps.

No. of Donkey Engines three Sizes of Pumps 1/2 x 5 1/2 x 12 Weir duplex and size of Suctions connected to both Bilge and Donkey pumps 5 1/2 x 5 x 5 duplex, 5 x 3 x 4 1/2 automatic feed.

In Engine Room three 2 1/2" In Holds, &c. 2 1/2"

No. of bilge injections one sizes 4" Connected to condenser, or to circulating pump no. Is a separate donkey suction fitted in Engine room & size yes 3"

Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible yes

Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks both

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 Steam to Winches, and Bilge Pumps. How are they protected Iron Coverings

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times yes

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock before launching Is the screw shaft tunnel watertight apparently

Is it fitted with a watertight door yes worked from Main Deck.

**BOILERS, &c.**— (Letter for record S.) Total Heating Surface of Boilers 1689

No. and Description of Boilers One Multitubular Cylindrical Working Pressure 175 Tested by hydraulic pressure to 350

Date of test Can each boiler be worked separately — Area of fire grate in each boiler 63 No. and Description of safety valves to each boiler two spring loaded Area of each valve 15.9 Pressure to which they are adjusted 175 lb. Are they fitted with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork stands clear Mean diameter of boilers 171"

Length 10' 3" Material of shell plates Stal Thickness 1 1/8 Description of riveting: circum. seams Cap 2 kinds long. seams Double butt 5 R.

Diameter of rivet holes in long. seams 1 7/16 Pitch of rivets 8 3/4 Lap of plates or width of butt straps 19 1/4

Per centages of strength of longitudinal joint 88 Working pressure of shell by rules 189 Size of manhole in shell 11 x 18

Size of compensating ring 1 1/4 No. and Description of Furnaces in each boiler None Material Stal Outside diameter 46"

Length of plain part top 36.9" Thickness of plates bottom 3 9/16 Description of longitudinal joint welded No. of strengthening rings Corrugation

Working pressure of furnace by the rules 196 Combustion chamber plates: Material Stal Thickness: Sides 19/32 Back 19/32 Top 7/8 Bottom 7/8

Pitch of stays to ditto: Sides 8 x 7 1/2 Back 8 x 7 3/4 Top 7 1/2 x 7 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 190

Material of stays Stal area at smallest part 1.99 Area supported by each stay 62 Working pressure by rules 288 End plates in steam space:

Material Stal Thickness 9/16 Pitch of stays 15 x 16 1/4 How are stays secured D. Nuts Working pressure by rules 280 Material of stays Stal

area at smallest part 3 5/8 Area supported by each stay 214 Working pressure by rules 270 Material of Front plates at bottom Stal

Thickness 7/8 Material of Lower back plate Stal Thickness 7/8 9 1/8 double Greatest pitch of stays 13 1/4 Working pressure of plate by rules 268

Diameter of tubes 3 1/2 Pitch of tubes 4 7/8 4 3/4 Material of tube plates Stal Thickness: Front 7/8 5/8 double Back 3/4 Mean pitch of stays 10.7

Pitch across wide water spaces 14 1/2 Working pressures by rules 176 257 Girders to Chamber, tops: Material Stal Depth and thickness of girder at centre 7 1/8 x 2 x 3/4 Length as per rule 30 Distance apart 7 1/4 Number and pitch of Stays in each 3 x 7 1/2

Working pressure by rules 175 Superheater or Steam chest; how connected to boiler None 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

If not, state whether, and when, one will be sent? In a Report also sent on the Hull of the Ship? L.R.P.H.—5,000—Form No. 8.—4.

GLS169-0212

12775 g/s

**DONKEY BOILER**— Description *Blaker Patent. Cylindrical vertical*  
 Made at *Manchester* By whom made *James Blaker Liverpool* When made *1893* Where fixed in *Statehold*  
 Working pressure *80* tested by hydraulic pressure to *160* No. of Certificate *1196* Fire grate area Description of safety valves *Spring*  
 No. of safety valves *400* Area of each *3.98* Pressure to which they are adjusted *80* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *52"* Length *9'-3"* Material of shell plates *Steel* Thickness *3/8"*  
 Description of riveting long seams *double rivet* Diameter of rivet holes *13/16"* Whether punched or drilled *Drilled* Pitch of rivets *2 3/4 x 2"*  
 Lap of plating *4"* Per centage of strength of joint Rivets *45%* Thickness of shell crown plates *1/16"* Radius of do. — No. of Stays to do. *2 Gunst*  
 Dia. of stays. *1/2"* Diameter of furnace Top *1'-9"* Bottom *2'-11"* Length of furnace *1'-6"* Thickness of furnace plates *1/16"* Description of joint *Lap* Thickness of furnace crown plates *1/16"* Stayed by *—* Working pressure of shell by rules *82 lbs*  
 Working pressure of furnace by rules *85 lbs* Diameter of tubes *3"* Thickness of uptake plates *1/16"* Thickness of water tubes *—*

SPARE GEAR. State the articles supplied:— *As required by the rules, also a Spare propeller. Piston Packing rings, Crank pin brasses, one eccentric shaft strap & spindle and various other items.*

The foregoing is a correct description,  
 Manufacturer.

*T.R. Napier & Son  
 & W.M. Ma*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The Engines & boiler of this vessel were built under the conditions of Special Survey and have been securely fitted on board & tested under steam and found satisfactory. The material & workmanship are good and in my opinion the vessel is eligible for the record + L.M.C. 3-94. One large bilge pump instead of two small ones has been fitted at the owners request.*

*It is submitted that this vessel is eligible for THE RECORD + L.M.C. 3-94*

*W.A. 15-3-94*

*[Large blue ink scribble/signature]*

Certificate (if required) to be sent to

MACHINERY CERTIFICATE WRITTEN

The amount of Entry Fee..	£ 1 : " : .	When applied for,
Special .. .. .	£ 14 : 5 : .	10/31 94
Donkey Boiler Fee .. .	£ " : " : .	When received,
Travelling Expenses (if any)	£ " : " : .	12/31 94

*C.F. Stromeyer*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

FRI 16 MAR 1894

Assigned

*+ L.M.C. 3,94*



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 Foundation

The Surveys are required to be written on or below the space for Committee's Minute.