

REPORT ON MACHINERY.

No. 7221

Port of *Leith*

Received at London Office **THUR 29 JUN 1893**

No. in Survey held at *Kinghorn*
g. Book.

Date, first Survey *12th January* Last Survey *27th June* 18 *93*

(Number of Visits *14*)

on the *Screw Steamer Saturnus*

Tons { Gross *913*
Net *566*
When built *1893.*

Master *M. de Garter* Built at *Kinghorn* By whom built *John Scott & Co.*

Engines made at *Kinghorn* By whom made *John Scott & Co.*

when made *1893.*

Milers made at *Do.* By whom made *Do.*

when made *1893.*

Registered Horse Power *250.*

Owners *Messrs Macleod Bros.*

Port belonging to *Leith*

Net Horse Power as per Section 28 *160*

ENGINES, &c.— Description of Engines *Triple* No. of Cylinders *3*
Diameter of Cylinders *19 x 31 x 51* Length of Stroke *36* Revolutions per minute *75* Diameter of Screw shaft *as per rule 9.1*
Diameter of Tunnel shaft *as per rule 8.7* Diameter of Crank shaft journals *10 1/4* Diameter of Crank pin *10 1/4* Size of Crank webs *built*
Diameter of screw *11-6"* Pitch of screw *15-6"* No. of blades *4* State whether moveable *no* Total surface *41 ft²*
No. of Feed pumps *2* Diameter of ditto *3"* Stroke *21"* Can one be overhauled while the other is at work *yes*
No. of Bilge pumps *2* Diameter of ditto *3"* Stroke *21"* Can one be overhauled while the other is at work *yes*
No. of Donkey Engines *Two* Sizes of Pumps *duplex 5 1/4 x 5 x 3 1/4* No. and size of Suctions connected to both Bilge and Donkey pumps
Engine Room *2 x 2 1/2 1 x 3 1/2* In Holds, &c. *Holds 3 x 2 1/2 tunnel well 2 1/2*
No. of bilge injections *1* sizes *4"* Connected to condenser, or to circulating pump *CR* Is a separate donkey suction fitted in Engine room & size *yes 3 1/2*
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 *yes 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*
That pipes are carried through the bunkers *none* How are they protected *-*
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*
Then were stern tube, propeller, screw shaft, and all connections examined in dry dock *while building* Is the screw shaft tunnel watertight *yes*
Is it fitted with a watertight door *yes* worked from *Main deck.*

BOILERS, &c.— (Letter for record *S*) Total Heating Surface of Boilers *2454 ft²*
No. and Description of Boilers *one: Cyl. double: single ended.* Working Pressure *160.* Tested by hydraulic pressure to *320.*
Date of test *20/5/93.* Can each boiler be worked separately *-* Area of fire grate in each boiler *84 ft²* No. and Description of safety valves to
each boiler *two direct spring.* Area of each valve *9.6* Pressure to which they are adjusted *160 lb* Are they fitted
with easing gear *yes* Smallest distance between boilers or uptakes and bunkers or woodwork *6"* Mean diameter of boilers *15-6"*
Length *11-0"* Material of shell plates *steel* Thickness *1 3/8* Description of riveting: circum. seams *L, D.R.* long. seams *D.B.S., T.R.*
Diameter of rivet holes in long. seams *1 3/16* Pitch of rivets *8 3/8 x 4 3/16* Lap of plates or width of butt straps *19"*
Percentages of strength of longitudinal joint *84.8%* Working pressure of shell by rules *200* Size of manhole in shell *15 1/2 x 11 1/2*
Size of compensating ring *24 x 24 x 1 3/8* No. and Description of Furnaces in each boiler *one Adamson reg. 4, one each furnace.* Material *steel* Outside diameter *41"*
Length of plain part *top 3-10" bottom 3-10"* Thickness of plates *top 3/4" bottom 3/4"* Description of longitudinal joint *welded.* No. of strengthening rings *one*
Working pressure of furnace by the rules *190* Combustion chamber plates: Material *steel* Thickness: Sides *3/8* Back *9/16* Top *3/8* Bottom *3/4*
Pitch of stays to ditto: Sides *7 3/4* Back *7 1/2* Top *8 x 8 1/2* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *176*
Material of stays *steel* Diameter at smallest part *1 1/4* Area supported by each stay *580* Working pressure by rules *160* End plates in steam space:
Material *steel* Thickness *1 1/16* Pitch of stays *16"* How are stays secured *D.R.W.* Working pressure by rules *208* Material of stays *steel*
Diameter at smallest part *2 3/8* Area supported by each stay *2560* Working pressure by rules *160* Material of Front plates at bottom *steel*
Thickness *3/4* Material of Lower back plate *steel* Thickness *3/4* Greatest pitch of stays *11 1/2* Working pressure of plate by rules *160*
Diameter of tubes *3 1/2* Pitch of tubes *4 3/4 x 4 3/8* Material of tube plates *steel* Thickness: Front *3/4* Back *3/16* Mean pitch of stays *9 1/2 x 9 1/4*
Pitch across wide water spaces *14 1/2* Working pressures by rules *160* Girders to Chamber tops: Material *steel* Depth and
thickness of girder at centre *8 1/2 x 1 1/2* Length as per rule *30 1/2* Distance apart *8 1/2* Number and pitch of Stays in each *3 x 8"*
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 *-*
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 *-*

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DONKEY BOILER— Description *Ordinary vertical 3x tubes.*
 Made at *Kinghorn* By whom made *John Scott & Co.* When made *1893.* Where fixed *Stokholm*
 Working pressure *90* tested by hydraulic pressure to *180* No. of Certificate *299* Fire grate area *21.5* Description of safety valves *direct-spring.*
 No. of safety valves *2* Area of each *3.9* Pressure to which they are adjusted *90* If fitted with easing gear *Yes* If steam from main boilers can
 enter the donkey boiler *No* Diameter of donkey boiler *6'-0"* Length *10'-0"* Material of shell plates *steel* Thickness *2.0"*
 Description of riveting long. seams *L.D.C.* Diameter of rivet holes *3/16* Whether punched or drilled *D.* Pitch of rivets *3 3/8*
 Lap of plating *3 3/16* Per centage of strength of joint *66%* Rivets *72%* Thickness of shell crown plates *1 1/16* Radius of do. *Flat* No. of Stays to do. *8*
 Dia. of stays. *2 1/8* Diameter of furnace Top *4'-5"* Bottom *5'-5"* Length of furnace *4'-6"* Thickness of furnace plates *1/2* Description of
 joint *Lap long. L.D.C.* Thickness of furnace crown plates *3/4* Stayed by *8 stays as above* Working pressure of shell by rules *99.*
 Working pressure of furnace by rules *90* Diameter of uptake *14"* Thickness of uptake plates *1/2 iron* Thickness of water tubes *3/8 iron.*

SPARE GEAR. State the articles supplied:— *As required by the Rules.*

*Also the following. Tailshaft, Crank shaft complete, Boos and eight perfect
 blades, Air and circulating pump rods, one set crank pin and crosshead brass
 one valve spindle. Air pump discharge valve and seat.*

The foregoing is a correct description,

Manufacturer.

John Scott & Co.

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

*The machinery of this vessel has been built under special survey,
 fitted on board, tried under steam, and is now in
 safe working condition, and eligible in my opinion to be classed
 with the notation * LMC 6-93.*

*It is submitted that
 this vessel is eligible for
 THE RECORD + LMC 6-93-*

29/6/93-

MACHINERY CERTIFICATE
 Certificate (if required) to be sent to
 The amount of Entry Fee.. £ *2 : 0 : 0* When applied for,
 Special £ *24 : 0 : 0* *28 June 93*
 Donkey Boiler Fee £ : : : When received,
 Travelling Expenses (if any) £ *3 : 12 : 0* *20 June 93*

Committee's Minute

Assigned

FRI 30 JUN 1893

+ LMC 6, 93

W. Darling & James W. Manion
 Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.



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