

REPORT ON MACHINERY.

No. 21549

Port of *Glasgow*Received at London Office *11 FEB 1904*

No. in Survey held at *Penryn* Date, first Survey *30th June 13* Last Survey *25th July 1902*
 Reg. Book. on the *Imperial Road Pump Hopper Dredger "Madras"* (Number of Visits *23*)
 Master *Penryn* Built at *Penryn* By whom built *Tom Simon & Co Ltd* Tons *Gross 835*
 Engines made at *Penryn* By whom made *Tom Simon & Co Ltd* when made *1904*
 Boilers made at *Penryn* By whom made *Tom Simon & Co Ltd* when made *1904*
 Registered Horse Power *181* Owners *Sadeau Government* Port belonging to *Madras*
 Nom. Horse Power as per Section 28 *181* Is Refrigerating Machinery fitted *No* Is Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines *Two Inlet Expansion* No. of Cylinders *6* No. of Cranks *6*
 Dia. of Cylinders *13" 20 1/2" 34 1/2"* Length of Stroke *22* Revs. per minute *138* Dia. of Screw shaft *as per rule 6 1/2"* Material of *Steel*
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube *no liners* Is the after end of the liner made water tight
 in the propeller boss *✓* If the liner is in more than one length are the joints burned *✓* If the liner does not fit tightly at the part
 between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *✓* If two
 liners are fitted, is the shaft lapped or protected between the liners *✓* Length of stern bush *2'-9"*
 Dia. of Tunnel shaft *as per rule 7"* Dia. of Crank shaft journals *as per rule 6 1/2"* Dia. of Crank pin *6 1/2"* Size of Crank webs *12" x 4 1/2"* Dia. of thrust shaft under
 collars *6 1/2"* Dia. of screw *7'-6"* Pitch of screw *10' 0"* No. of blades *4* State whether moveable *no* Total surface *32 sq ft*
 No. of Feed pumps *2* Diameter of ditto *3"* Stroke *12"* Can one be overhauled while the other is at work *yes*
 No. of Bilge pumps *2* Diameter of ditto *3"* Stroke *12"* Can one be overhauled while the other is at work *yes*
 No. of Donkey Engines *Two* Sizes of Pumps *5 1/4" x 4" x 5" 5 1/4" x 5" x 5"* No. and size of Suctions connected to both Bilge and Donkey pump
 in Engine Room *Stokehold four 2 1/2" bon* In Holds, &c. *five 2 1/2" bon*

No. of bilge injections *2* sizes *3"* Connected to *condenser, or to* circulating pump Is a separate donkey suction fitted in Engine room & size *yes 2 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 *no*
 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 *Main Tank Steam & Pump Room* How are they protected *with iron casing*
 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 *25/2/04* Is the screw shaft tunnel watertight *no*
 Is it fitted with a watertight door *✓* worked from *✓*

BOILERS, &c.—(Letter for record *S*) Total Heating Surface of Boilers *2854 sq ft* Is forced draft fitted *no*
 No. and Description of Boilers *Two single ended plain tubes* Working Pressure *160 lbs* Tested by hydraulic pressure to *320*
 Date of test *4/12/03* Can each boiler be worked separately *yes* Area of fire grate in each boiler *45 sq ft* No. and Description of safety valves to
 each boiler *one pair direct spring* Area of each valve *5.93 sq in* Pressure to which they are adjusted *165 lbs* Are they fitted with easing gear *yes*
 Smallest distance between boilers or uptakes and bunkers or woodwork *18"* Mean dia. of boilers *12-9* Length *10-0* Material of shell plates *Steel*
 Thickness *1"* Range of tensile strength *27/32* Are they welded or flanged *no* Descrip. of riveting: cir. seams *Lap double long. seams butt triple*
 Diameter of rivet holes in long. seams *1 3/16"* Pitch of rivets *8 1/4"* Lap of plates or width of butt straps *17 1/2"*
 Percentages of strength of longitudinal joint *101%* Working pressure of shell by rules *165* Size of manhole in shell *16" x 12"*
 Size of compensating ring *12" x 12"* No. and Description of Furnaces in each boiler *2 Morrison's* Material *Steel* Outside diameter *49 1/4"*
 Length of plain part *top 12" bottom 32"* Thickness of plates *12" 32"* Description of longitudinal joint *welded* No. of strengthening rings *✓*
 Working pressure of furnace by the rules *166* Combustion chamber plates: Material *Steel* Thickness: Sides *3/16"* Back *3/16"* Top *3/16"* Bottom *3/4"*
 Pitch of stays to ditto: Sides *8 x 8* Back *8 x 8* Top *8 x 8* If stays are fitted with nuts or riveted heads *no* Working pressure by rules *171 lbs*
 Material of stays *Steel* Diameter at smallest part *1-4 1/2"* Area supported by each stay *64"* Working pressure by rules *181* End plates in steam space:
 Material *Steel* Thickness *2 1/2"* Pitch of stays *16" x 14 1/2"* How are stays secured *22 x 15* Working pressure by rules *167 lbs* Material of stays *Steel*
 Diameter at smallest part *5-05"* Area supported by each stay *232 sq in* Working pressure by rules *217* Material of front plates at bottom *Steel*
 Thickness *13/16"* Material of Lower back plate *Steel* Thickness *3/4"* Greatest pitch of stays *14" with doubling* Working pressure of plate by rules *337 lbs*
 Diameter of tubes *3 1/4"* Pitch of tubes *4 1/2" x 4 1/2"* Material of tube plates *Steel* Thickness: Front *13/16"* Back *13/16"* Mean pitch of stays *11 1/4"*
 Pitch across wide water spaces *15" with 3/4" double* Working pressures by rules *187 + 215* Girders to Chamber tops: Material *Steel* Depth and
 thickness of girder at centre *8 3/4" x 4 1/2"* Length as per rule *32"* Distance apart *8* Number and pitch of Stays in each *(3) 8"*
 Working pressure by rules *188* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked
 separately *no* Diameter *no* Length *no* Thickness of shell plates *no* Material *no* Description of longitudinal joint *no* Diam. of rivet
 no Pitch of rivets *no* Working pressure of shell by rules *no* Diameter of flue *no* Material of flue plates *no* Thickness *no*
 stiffened with rings *no* Distance between rings *no* Working pressure by rules *no* End plates: Thickness *no* How stayed *no*
 Working pressure of end plates *no* Area of safety valves to superheater *no* Are they fitted with easing gear *no*

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DONKEY BOILER— No. 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 Pressure to which they are adjusted If fitted with easing gear If steam from main boilers can enter the donkey boiler

Dia. of donkey boiler Length Material of shell plates Thickness Range of tensile strength

Descrip. of riveting long seams Dia. of rivet holes Whether punched or drilled Pitch of rivets

Lap of plating Per centage of strength of joint Rivets Thickness of shell crown plates Radius of do. No. of Stays to do.

Dia. of stays. Diameter of furnace Top Bottom Length of furnace Thickness of furnace 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 uptake plates Thickness of water tubes

SPARE GEAR. State the articles supplied:— 1 set of top end bolts & nuts 1 set of bottom end bolts & nuts 2 main bearing bolts & nuts 1 set of coupling bolts & nuts 1 set of fuel and ludge pump valves, 1 set of piston springs for each cylinder, crank shaft propeller shaft slow tube air circulating pump

The foregoing is a correct description, bucket & rods, iron bolts & nuts of various sizes

FOR WM. SIMONS LTD

Manufacturer.

Wm. Simons DIRECTOR.

Dates During progress of work in shops— 1903: June 30 July 6. 10. Aug 20, Sept 18. 24. Oct 14. 29. Nov 5. 12. 30. Dec 4. 10. 22

f Survey During erection on board vessel — 24. 29. 1904: Jan 13. 18. 25. 29. Feb 9. 11. 25

while building Total No. of visits 22.

Is the approved plan of main boiler forwarded herewith *yes*

" " " donkey " " " *yes*

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

These engines and boilers have been built under special survey the materials and workmanship are of good description they have been well fitted on board and tried under steam.

In my opinion this machinery is eligible to have notification of **FLMC 2 04** in the Register Book.

It is submitted that this vessel is eligible for THE RECORD FLMC 2-04. ELEC. LIGHT.

ms
1.3.04

ms
1.3.04

Certificate (if required) to be sent to

The amount of Entry Fee. £ 2 : : When applied for, 1.3.04

Special .. £ 22 : 13 : When received, 5/3/04

Donkey Boiler Fee .. £ : : 1904

Travelling Expenses (if any) £ : : 1904

A. M. McLeod

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

Committee's Minute

Glasgow 29 FEB 1904

Assigned

+ FLMC 2.04.
within fee is paid



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MACHINERY CERTIFICATE
WRITTEN 2-3-04