

REPORT ON MACHINERY.

Port of *Glasgow*

14 OCT 1902

No. in Survey held at *Penryn* Date, first Survey *14 Oct 01* Last Survey *11 June 1902*
 Reg. Book. on the *Twin Screw Band Pump Dredge "Grampus"* (Number of Visits *43*)
 Master *Penryn* Built at *Penryn* By whom built *Tom Simons & Co Ltd* Tons { Gross *1028.73*
 Engines made at *Penryn* By whom made *Tom Simons & Co Ltd* when made *1902* Net *603.43*
 Boilers made at *Glasgow* By whom made *Londra & Glasgow S.P. & Co* when made *1902*
 Registered Horse Power *164* Owners *Natal Government Port belonging to Durban*
 Nom. Horse Power as per Section 28 *164* Is Refrigerating Machinery fitted *No* Is Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines *Twin screw Exp. expansion* No. of Cylinders *6* No. of Cranks *6*
 Dia. of Cylinders *16 1/2" 24 1/2" 39"* Length of Stroke *24"* Revs. per minute *130* Dia. of Screw shaft *7 1/2"* Lgth. of stern bush *36 1/2"*
 Dia. of Tunnel shaft *7 1/2"* Dia. of Crank shaft journals *7 1/2"* Dia. of Crank pin *7 1/2"* Size of Crank webs *12 3/4 x 5 1/4"* Dia. of thrust shaft under
 collars *7 1/2"* Dia. of screw *8-3"* Pitch of screw *10-0"* No. of blades *4* State whether moveable *No* Total surface *27 ft²*
 No. of Feed pumps *two* Diameter of ditto *3 1/4"* Stroke *12"* Can one be overhauled while the other is at work *Yes*
 No. of Bilge pumps *two* Diameter of ditto *3 1/4"* Stroke *12"* Can one be overhauled while the other is at work *Yes*
 No. of Donkey Engines *two* Sizes of Pumps *2-6 x 8 x 15-1-5 x 7 x 15-1-4 x 4 x 5* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *than 24* In Holds, &c. *in 24"*

No. of bilge injections *two sizes 3"* Connected to condenser, or to circulating pump *pump* Is a separate donkey suction fitted in Engine room & size *one 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 *none*
 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 *forward steam & exhaust* How are they protected *by strong steel 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 *by launch* Is the screw shaft tunnel watertight *Yes*
 Is it fitted with a watertight door *worked from*

BOILERS, &c.—(Letter for record *0*) Total Heating Surface of Boilers *26700 sq ft* Is forced draft fitted *No*
 No. and Description of Boilers *two single ended cylindrical* Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs*
 Date of test *29/1/02* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *52 ft²* No. and Description of safety valves to
 each boiler *one pair direct opening* Area of each valve *7.06 sq"* Pressure to which they are adjusted *160 lbs* Are they fitted with easing gear *Yes*
 Smallest distance between boilers or uptakes and bunkers or woodwork *24"* Mean dia. of boilers *13-0* Length *10-0* Material of shell plates *steel*
 Thickness *3/8"* Range of tensile strength *27/32* Are they welded or flanged *No* Descrip. of riveting: cir. seams *double lap* long. seams *double butt*
 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 1/4"*
 Per centages of strength of longitudinal joint *89* Working pressure of shell by rules *184* Size of manhole in shell *16 x 12"*
 Size of compensating ring *7 in rivets* No. and Description of Furnaces in each boiler *3 Morrison* Material *steel* Outside diameter *42 1/4"*
 Length of plain part *top 3 1/2" bottom 3 1/2"* Thickness of plates *3 1/2"* Description of longitudinal joint *welded* No. of strengthening rings *none*
 Working pressure of furnace by the rules *163* Combustion chamber plates: Material *steel* Thickness: Sides *7/8"* Back *9/16"* Top *7/8"* Bottom *3/4"*
 Pitch of stays to ditto: Sides *8 1/4 x 8* Back *8 1/4 x 8* Top *8 1/2 x 8* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *167 lbs*
 Material of stays *steel* Diameter at smallest part *1 1/4"* Area supported by each stay *68 sq"* Working pressure by rules *166* End plates in steam space:
 Material *steel* Thickness *7/8"* Pitch of stays *16 1/2 x 15"* How are stays secured *2 nuts* Working pressure by rules *173 lbs* Material of stays *iron*
 Diameter at smallest part *5.05"* Area supported by each stay *214 sq"* Working pressure by rules *176 lbs* Material of Front plates at bottom *steel*
 Thickness *3/4"* Material of Lower back plate *steel* Thickness *3/4"* Greatest pitch of stays *12 7/8"* Working pressure of plate by rules *378 lbs*
 Diameter of tubes *3 1/4"* Pitch of tubes *4 1/2 x 4 1/2"* Material of tube plates *steel* Thickness: Front *1 5/16"* Back *3/8"* Mean pitch of stays *11 1/4"*
 Pitch across wide water spaces *14 1/4"* Working pressures by rules *336 lbs* Girders to Chamber tops: Material *steel* Depth and
 thickness of girder at centre *8" x 1" double* Length as per rule *36 7/16"* Distance apart *8 1/2"* Number and pitch of Stays in each *Two 8*
 Working pressure by rules *254 lbs* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked
 separately *Yes* 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

DONKEY BOILER—

No. *one*

Description

*Vertical cross tube*Made at *Newark*

By whom made

Abbott

When made

1902

Where fixed

in stockhold

Working pressure

100

tested by hydraulic pressure to

200

No. of Certificate

Fire grate area

11 1/2

Description of safety valves

spring loaded

No. of safety valves

2

Area of each

3 1/4

Pressure to which they are adjusted

100 lbs

If fitted with easing gear

yes

If steam from main boilers can

enter the donkey boiler

no

Dia. of donkey boiler

4' 6"

Length

11' 6"

Material of shell plates

steel

Thickness

3/8

Range of tensile

strength

27/32

Descrip. of riveting long. seams

double rivet lap

Dia. of rivet holes

1 3/16

Whether punched or drilled

drilled

Pitch of rivets

Lap of plating

4"

Per centage of strength of joint

88.7

Thickness of shell crown plates

3/16

Radius of do.

4' 6"

No. of Stays to do.

4

Dia. of stays

1 1/4"

Diameter of furnace Top

3' 9"

Bottom

4' 0"

Length of furnace

4' 7 1/2"

Thickness of furnace plates

1/2"

Description of

joint

single lap

Thickness of furnace crown plates

3/16

Stayed by

disturbed 44 stays

Working pressure of shell by rules

100 lbs

Working pressure of furnace by rules

101.5 lbs

Diameter of uptake

12"

Thickness of uptake plates

1/2"

Thickness of water tubes

3/8

SPARE GEAR. State the articles supplied:—

*1 set of top end bolts & nuts, 1 set bottom end bolts & nuts**1 set coupling bolts & nuts, 2 main bearing bolts, 1 set of feed & budge pump**valves, bolts & nuts assorted & iron of various sizes.*

The foregoing is a correct description,

by **WM. SIMONS & CO., LIMITED**

Manufacturer.

Dates of Survey while building

During progress of work in shops—	1901: Oct. 14, 21, 23, 25, 29, 31. Nov. 7, 12, 14, 15, 20, 25, 27. Dec. 3, 6, 10, 13.
During erection on board vessel—	14, 20, 26, 1902: Jan. 7, 9, 23, 24, 29. Feb. 18, 20, 25. Mar. 3, 14, 17, 28. Apr. 7, 17.
Total No. of visits	43. 23, 30. May. 2, 12, 14, 23, 29. Is the approved plan of main boiler forwarded herewith <i>yes</i>

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

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

+ L M C 6 02

Material of screw shaft

iron

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

no liner

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

no liners

This machinery has been built under special survey the materials and workmanship are of good description the same have been well fitted on board and tried under steam.

In my opinion this machinery is eligible to have the above notification in the Register Book.

Our finding report is hereto appended.

It is submitted that
this vessel is eligible for
THE RECORD —

+ L M C 6 02 Elec. Light

The amount of Entry Fee.

£ *2*

When applied for.

Special

£ *24.12*

When received.

Donkey Boiler Fee

£

Travelling Expenses (if any)

£

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

Committee's Minute

GLASGOW. 2-JUL 1902

Assigned

*+ L M C 6 02**When fee paid*

MACHINERY CERTIFICATE
WRITTEN, 8-7-02



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Foundation