

REPORT ON MACHINERY.

Port of *Dundee*

Received at London Office **MUN. 22 SEP 1902**

No. in Survey held at *Dundee* Date, first Survey *20th Nov. 1901* Last Survey *19th Sept 1902*

Book. *18* on the *Steel Screw Steamer "Victoria"* (Number of Visits *105*)

Master *J. Free* Built at *Dundee* By whom built *Messrs Gourlay Bros & Co* When built *1902*

Machinery made at *Dundee* By whom made *Messrs Gourlay Bros & Co* when made *1902*

Boilers made at *Dundee* By whom made *Messrs Gourlay Bros & Co* when made *1902*

Registered Horse Power *521* Owners *Huddart Parker & Co* Port belonging to *Hullbourne*

Is Refrigerating Machinery fitted *yes* Is Electric Light fitted *yes*

GINES, & Co.—Description of Engines *Inverted Direct Acting Triple Expansion* No. of Cylinders *three* No. of Cranks *three*

No. of Cylinders *27 1/2 - 45 - 74* Length of Stroke *48* Revs. per minute *80* Dia. of Screw shaft *14.72* as per rule *15.74* as fitted Lgth. of stern bush *61"*

No. of Tunnel shaft *15"* Dia. of Crank shaft journals *14.24* as per rule *14.78* as fitted Dia. of Crank pin *14 7/8* Size of Crank webs *30"x10"* Dia. of thrust shaft under

bars *15"* Dia. of screw *17-6"* Pitch of screw *17-9"* No. of blades *4* State whether moceable *yes* Total surface *90 sq*

No. of Feed pumps *2* Diameter of ditto *4"* Stroke *33"* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2* Diameter of ditto *4"* Stroke *33"* Can one be overhauled while the other is at work *yes*

No. of Donkey Engines *3* Sizes of Pumps *Feed - 8 x 10 1/2 x 26 8 ply Aux feed - 7 1/2 x 4 1/2 x 10 Ballast - 9 x 8 1/2 x 10* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *four at 3 1/2" diam* In Holds, &c. *No. 1 hold 2 @ 3 1/2"; No. 2 hold 2 @ 3 1/2"; No. 3 hold (cross bunker) 2 @ 3 1/2"; No. 4 hold 2 @ 3 1/2"; No. 5 hold 2 @ 3 1/2"; Tunnel one at 3 1/2"*

No. of bilge injections *1* sizes *8 1/2"* Connected to *condensers* circulating pump *yes* 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 *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 *below*

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 *suctions to forward holds* How are they protected *wood ceiling*

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 *24/6/02* Is the screw shaft tunnel watertight *yes*

Is it fitted with a watertight door *yes* worked from *top platform*

BOILERS, & Co.— (Letter for record *(S)*) Total Heating Surface of Boilers *9550 sq* Is forced draft fitted *no*

No. and Description of Boilers *Two Double Ended & One Single Ended* Working Pressure *180* Tested by hydraulic pressure to *360*

Date of test *13-6-02* Can each boiler be worked separately *yes* Area of fire grate in each boiler *139 sq = DB 70 sq = SB* No. and Description of safety valves to

each boiler *2 Spring* Area of each valve *16.2 = DB 7.07 = SB* Pressure to which they are adjusted *185 lbs* Are they fitted with easing gear *yes*

Smallest distance between boilers *on uptakes* and bunkers *on woodwork* *12"* Mean dia. of boilers *15-3"* Length *17-0"* Material of shell plates *steel*

Thickness *1 3/8"* Range of tensile strength *29-32* Are they welded or flanged *no* Descrip. of riveting: cir. seams *Triple Riv² long. seams D.B.-J. Riv² 5 Rivets per pitch*

Diameter of rivet holes in long. seams *1 7/8"* Pitch of rivets *9 3/4"* Lap of plates *width of butt straps 2 1/8"*

Percentages of strength of longitudinal joint rivets *85.3* plate *89.8* Working pressure of shell by rules *210 lbs* Size of manhole in shell *16" x 12"*

Size of compensating ring *8" x 1 3/8"* No. and Description of Furnaces in each boiler *6 corrug. = DB 3 = SB* Material *steel* Outside diameter *49"*

Length of plain part *top* *bottom* Thickness of plates *5/8"* Description of longitudinal joint *Welded* No. of strengthening rings *11*

Working pressure of furnace by the rules *200* Combustion chamber plates: Material *steel* Thickness: Sides *5/8"* Back *5/8"* Top *5/8"* Bottom *7/8"*

Pitch of stays to ditto: Sides *8 3/8 x 8* Back *8 3/8 x 8* Top *8 3/8 x 8* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *198 lbs*

Material of stays *steel* Diameter at smallest part *1 1/2"* Area supported by each stay *67* Working pressure by rules *210* End plates in steam space:

Material *steel* Thickness *29/32"* Pitch of stays *16 1/8" x 15 3/4"* How are stays secured *Riv² Washers* Working pressure by rules *182* Material of stays *steel*

Diameter at smallest part *2-86* Area supported by each stay *254* Working pressure by rules *252* Material of Front plates at bottom *steel*

Thickness *29/32"* Material of Lower back plate *Steel* Thickness *29/32"* Greatest pitch of stays *13"* Working pressure of plate by rules *242*

Diameter of tubes *3 1/2"* Pitch of tubes *4 3/4 x 4 3/4* Material of tube plates *steel* Thickness: Front *15/16"* Back *7/8"* Mean pitch of stays *9 1/2"*

Pitch across wide water spaces *14 1/2"* Working pressures by rules *304* Girders to Chamber tops: Material *steel* Depth and

thickness of girder at centre *12 x 1 3/4* Length as per rule *45"* Distance apart *8"* Number and pitch of Stays in each *4 = 8 3/8"*

Working pressure by rules *212* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked separately *yes*

Are they fitted with casing gear *yes*

DONKEY BOILER— No. Description When made Where fixed

Made at By whom made

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

Diag. 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:— Two top end bolts & nuts; 2 bottom end bolts & nuts; 2 main bearing bolts and nuts; 1 1/2 sets coupling bolts & nuts; 1 set of feed & bilge pump valves; assorted bolts nuts & iron; 1 pair bottom end brasses; 1 pair top end brasses; 1 start end shaft; 1 length crank shaft; 1 valve spindle; 1 piston rings & spring; 1 centrifugal engine crank shaft, piston rod, ecc. rod & strap; 1 pair crank brasses; 1 belt strap; 4 Propeller blades (cast steel)

The foregoing is a correct description,

Gawley Brothers & Co. Manufacturer.

1901
 During progress of work in shops— Nov. 20-22-23-27; Dec 3-4-5-9-11-13-16-17-23-26-30-31;
 1902
 During erection on board vessel— March 3-5-7-14-24-26-27-31; April 2-4-5-7-9-11-12-16-17-19-23-25-28-30; May 2-6-12-15-20-23-28-29-31; June 2-3-5-12-13
 Total No. of visits Aug 4-7-11-12-13-16-19-21-22-25-27-28 Sept 2-5-8 Is the approved plan of main boilers forwarded herewith yes
 Total No. of visits 105 " " " donkey " " "

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

Material of screw shaft *Scrap iron* Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes
 Is the after end of the liner made water tight in the propeller boss yes 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 yes If two liners are fitted, is the shaft lapped or protected between the liners

The machinery of this vessel has been built under special survey in accordance with the approved plans and Secretary's letters and in general conformity with the Rules. The materials and workmanship are sound and good. The Boilers have been tested by hydraulic pressure and the engines and boilers examined under steam and found satisfactory.

The machinery of this vessel is now in a good and safe working condition and renders her eligible in my opinion to have the notation of *L.M.C. 9.02* in the Register Book

This vessel is fitted with two refrigerating spaces of 1200 cubic feet, total capacity, insulated with charcoal, for the carriage of provisions and ship's stores.
 The refrigerating appliances are on Linde's ammonia and brine system; there being one single refrigerating machines, made by the Linde British Refrigeration Co. Ltd.
 A report on the Electric Light is forwarded herewith

The amount of Entry Fee... £ 3 : 0 : 0 When applied for,
 Special ... £ 46 : 1 : 0 20th Sept 1902
 Donkey Boiler Fee ... £ ✓ : :
 Travelling Expenses (if any) £ ✓ : : 25th Sept 1902

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

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 9.02

Committee's Minute

TUES. 23 SEP 1902

TUES. 13 JAN 1903

Assigned

MACHINERY CERTIFICATE WRITTEN.



Lloyd's Register
 25.9.02

Certificate (if registered) to be sent to the Secretary of the Committee (The Secretary's name and address to be written on or below the space for Committee's Minute.)