

REPORT ON MACHINERY.

SAI. APL 12 1902

Port of *Dundee*

Received at London Office _____ 19

Survey held at *Dundee* Date, first Survey *7th Aug 1901* Last Survey *10th April 1902*
 on the *Steel screw steamer "Sydney"* (Number of Visits *67*)
 Rick^d *Macgrath* Built at *Dundee* By whom built *Caledon MS & Eng Coy* Tons { Gross *1988.84*
 made at *Dundee* By whom made *Caledon MS & Eng Coy* when made *1902* Net *1182.53*
 made at *Dundee* By whom made *Caledon MS & Eng Coy* when made *1902*
 red Horse Power. Owners *Melbourne Steamship Coy* Port belonging to *Melbourne*
 Horse Power as per Section 28. *249* Is Refrigerating Machinery fitted *no* Is Electric Light fitted *yes*

ENGINES, &c.—Description of Engines *Triple, Inverted Direct acting* No. of Cylinders *3* No. of Cranks *3*
 Cylinders *22"-35"-59"* Length of Stroke *36* Revs. per minute *99* Dia. of Screw shaft *as per rule 11.25* Lgth. of stern bush *53"*
 Tunnel shaft *as per rule 10.52* Dia. of Crank shaft journals *as per rule 11.04* Dia. of Crank pin *11 1/4"* Size of Crank webs *20 1/4 x 8"* Dia. of thrust shaft under
11 1/4" Dia. of screw *13'-0"* Pitch of screw *14'-3"* No. of blades *4* State whether moveable *yes* Total surface *57 3/4 sq ft*
 Feed pumps *2* Diameter of ditto *3 1/2"* Stroke *20"* Can one be overhauled while the other is at work *yes*
 Bilge pumps *2* Diameter of ditto *3 1/2"* Stroke *20"* Can one be overhauled while the other is at work *yes*
 Donkey Engines *3* Sizes of Pumps *Ballast 7x7x8* No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room *four 2 3/4" dia; dry tank (B-spec) one 2 1/2"* In Holds, &c. *No 1 hold one 2 1/2"; No 2 hold two 2 3/4";*
hold two 2 3/4"; tunnel well one 2 1/4"
 Bilge injections *1* sizes *6"* Connected to ~~condensers~~ circulating pump *yes* Is a separate donkey suction fitted in Engine room & size *yes 3"*
 Are 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*
 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*
 How are they pipes are carried through the bunkers *fore hold suction* How are they protected *wood ceiling*
 Are pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times *yes*
 Are bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges *yes*
 Were stern tube, propeller, screw shaft, and all connections examined in dry dock *yes* Is the screw shaft tunnel watertight *yes*
 Is the tunnel fitted with a watertight door *yes* worked from *top platform*

BOILERS, &c.— (Letter for record *(0)*) Total Heating Surface of Boilers *4141* Is forced draft fitted *no*
 Description of Boilers *Two Cylindrical Single Ended* Working Pressure *180* Tested by hydraulic pressure to *360*
 Can each boiler be worked separately *yes* Area of fire grate in each boiler *67.5 sq ft* No. and Description of safety valves to
 test *11.2.02* *two Spring* Area of each valve *7.07* Pressure to which they are adjusted *183 lbs* Are they fitted with easing gear *yes*
 distance between ~~bunkers~~ uptakes and bunkers *7 ft* Mean dia. of boilers *15'-6"* Length *10'-6"* Material of shell plates *steel*
 Range of tensile strength *28-32* Are they welded or flanged *no* Descrip. of riveting: cir. seams *Lap 8 lbs 7/16 long. seams* *DB-7 Riv*
 Range of rivet holes in long. seams *1 1/2"* Pitch of rivets *10"* Lap of plates or width of butt straps *22"* *5 Riv per 12 in.*
 Working pressure of shell by rules *208* Size of manhole in shell *17x13"*
 stages of strength of longitudinal joint rivets *91* plate *85*
 No. and Description of Furnaces in each boiler *3 corrugated* Material *steel* Outside diameter *49"*
 Description of longitudinal joint *Welded* No. of strengthening rings *11*
 Thickness of plates: crown *5/8"* Sides *5/8"* Back *5/8"* Top *11/16"* Bottom *7/8"*
 Working pressure of furnace by the rules *205* Combustion chamber plates: Material *steel* Thickness: Sides *5/8"* Back *5/8"* Top *11/16"* Bottom *7/8"*
 If stays are fitted with nuts or riveted heads *Nuts except at* Working pressure by rules *186*
 Diameter at smallest part *1.5* Area supported by each stay *81* Working pressure by rules *199* End plates in steam space:
 Material *steel* Thickness *1 1/4"* Pitch of stays *18x15"* How are stays secured *8 lb nuts* Working pressure by rules *255* Material of stays *IRON*
 Area supported by each stay *270* Working pressure by rules *201* Material of Front plates at bottom *Steel*
 Material of Lower back plate *steel* Thickness *7/8"* Greatest pitch of stays *13 1/2"* Working pressure of plate by rules *180*
 Pitch of tubes *4 3/4"* Material of tube plates *steel* Thickness: Front *1 1/4 + 13/16"* Back *29/32"* Mean pitch of stays *9 1/2"*
 Working pressures by rules *220* Girders to Chamber tops: Material *IRON* Depth and
 Length as per rule *28"* Distance apart *9"* Number and pitch of Stays in each *2 = 9"*
 Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked
 Diameter *yes* Length *yes* Thickness of shell plates *yes* Material *yes* Description of longitudinal joint *yes* Diam. of rivet
 Pitch of rivets *yes* Working pressure of shell by rules *yes* Diameter of flue *yes* Material of flue plates *yes* Thickness *yes*
 Distance between rings *yes* Working pressure by rules *yes* End plates: Thickness *yes* How stayed *yes*
 Area of safety valves to superheater *yes* Are they fitted with easing gear *yes*

W1100-0028



DONKEY BOILER— No. *one* Description *Steel Vertical ("Victoria")*
 Made at *Gateshead* By whom made *Clarke Chapman & Co* When made *6/2/02* Where fixed *Stokehold*
 Working pressure *90* tested by hydraulic pressure to *180* No. of Certificate *6247* Fire grate area *28 sq* Description of safety valves *Spring*
 No. of safety valves *2* Area of each *7.07* Pressure to which they are adjusted *93 lb* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *7'-0"* Length *15'-0"* Material of shell plates *steel* Thickness *1/2" & 3/8"* Range of tensile strength *27-32* Descrip. of riveting long. seams *Lap & H. Riveted* Dia. of rivet holes *7/8"* Whether punched or drilled *drilled* Pitch of rivets *2 3/32"*
 Lap of plating *4 1/8"* Per centage of strength of joint Rivets *71.3* Thickness of shell crown plates *5/8"* Radius of do. *7 ft* No. of Stays to do. *6*
 Descrip. of stays *13" x 1/2"* Diameter of furnace Top *74"* Bottom *74"* Length of furnace *37"* Rod Thickness of furnace plates *5/8" & 1/2"* Description of joint *Lap - Single* Thickness of furnace plates *3/8"* Stayed by *1 3/8" off dia stays, pitched 10 1/2, 11 1/2"* Working pressure of shell by rules *97 lb*
 Working pressure of furnace by rules *90 lb* Diameter of uptake *2 1/2"* Thickness of uptake plates *1 1/2" B-1/2"* Thickness of water tubes *1 1/2" W-9*

SPARE GEAR. State the articles supplied:— *2 piston rod, top end bottom nuts; 2 bottom end con rod bottom nuts; 2 main bearing bottom nuts; 1 set coupling bottom nuts; 1 set feed & bilge pump valves; assorted bolts nuts and iron; 1 piston ring for H.P. & 1 H.P. cylinder; 1 tail end & 1 length crank shaft; 4 cast iron propeller blades; 1 valve spindle; 1 ecet strap; 1 air & 1 cond pump rod; 1 set feed check valves; one pair con rod bottom end bushes complete; one set crosshead frames.*
 The foregoing is a correct description,

Manufacturer.

OF THE CALEDON SHIPBUILDING & ENGINEERING CO.

J. C. Bruce SECY.

Dates { During progress of work in shops - *Aug-7-8-17-21: Sept-13-17-19-26-30: Oct-2-4-7-9-12-17-21-25-28-31: Nov-4-7-11-12-14-18-21-23.*
 { During erection on board vessel - *Dec-4-9-12-16-18-20-27: Jan-7-10-13-16-20-24-27-31: Feb-5-7-8-10-11-12-17-18-21-24-28: March-4-6-7-8-14-18-21-25-27.*
 { while building - *April-1-2-8-9-10.*
 Total No. of visits *67*

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

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 *no* If the liner is in more than one length are the joints banded *✓*
 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 *✓*

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

The machinery is now in a good and safe working condition and renders the vessel eligible, in my opinion, to have the notation of *L.M.C-4.02* in the Register Book

It is submitted that this vessel is eligible for THE RECORD, + L.M.C 4.02 Elec. light.

C.M.
14.4.02
J.L.
15.4.02

The amount of Entry Fee. *2 : 0 : 0* When applied for, *10th April 1902*
 Special *32 9*
 Donkey Boiler Fee *£ ✓* When received *18th April 1902*
 Travelling Expenses (if any) *£ ✓*

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

Committee's Minute

TUES. 15 APR 1902

Assigned

+ L.M.C. 4.02
 Elect. light.

MACHINERY CERTIFICATE WRITTEN.



Under Office

Certificate (if required) to be sent to the Surveyors or below the space for Committee's Minute.