

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*) Tons { Gross *1988.84*
Rich^d Macgath Built at *Dundee* By whom built *Caledon M^r & S^{on} by* Net *1182.53*
 made at *Dundee* By whom made *Caledon M^r & S^{on} by* when made *1902*
 made at *Dundee* By whom made *Caledon M^r & S^{on} by* when made *1902*
 red Horse Power. Owners *Melbourne Steamship Co* Port belonging to *Melbourne*
 Horse Power as per Section 28. *249* Is Refrigerating Machinery fitted *no* Is Electric Light fitted *yes*

VES, &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 Feed 7 1/2 x 5 x 6 Reserve 5 1/2 x 5 1/2 x 5* No. and size of Suctions connected to both Bilge and Donkey pumps
 in 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 with 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"*
 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*
 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*
 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*
 pipes are carried through the bunkers *fore hold suction* How are they protected *wood ceiling*
 pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times *yes*
 bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges *yes*
 stern tube, propeller, screw shaft, and all connections examined in dry dock *yes* Is the screw shaft tunnel watertight *yes*
 fitted with a watertight door *yes* worked from *top platform*

ERS, &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*
 test *11.2.02* 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
 boiler *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 *uptakes and bunkers* *7 ft* Mean dia. of boilers *15'-6"* Length *10'-6"* Material of shell plates *steel*
 ss *1 1/2* Range of tensile strength *28-32* Are they welded or flanged *no* Descrip. of riveting: cir. seams *Lap 8" & Trillong. seams* *DB-T Riv*
 er of rivet holes in long. seams *1 1/2"* Pitch of rivets *10"* Lap of plates or width of butt straps *22"*
 stages of strength of longitudinal joint rivets *91* Working pressure of shell by rules *208* Size of manhole in shell *17" x 13"*
 plate *85*
 compensating ring *McNeil* No. and Description of Furnaces in each boiler *3 corrugated* Material *steel* Outside diameter *49"*
 of plain part top *✓* Thickness of plates crown *5/8"* Description of longitudinal joint *Welded* No. of strengthening rings *11*
 bottom *✓* Thickness of plates bottom *5/8"* Back *5/8"* Top *1 1/16"* Bottom *7/8"*
 pressure of furnace by the rules *205* Combustion chamber plates: Material *steel* Thickness: Sides *5/8"* Back *5/8"* Top *1 1/16"* Bottom *7/8"*
 stays to ditto: Sides *9" x 8"* Back *8 1/2" x 8 1/2"* Top *9" x 9"* If stays are fitted with nuts or riveted heads *Nuts except at* Working pressure by rules *186*
 al of stays *steel* Diameter at smallest part *1.5* Area supported by each stay *81* Working pressure by rules *199* End plates in steam space:
 al *steel* Thickness *1 1/4"* Pitch of stays *18" x 15"* How are stays secured *8 1/2" nuts* Working pressure by rules *255* Material of stays *IRON*
 er at smallest part *3.04* Area supported by each stay *270* Working pressure by rules *201* Material of Front plates at bottom *Steel*
 ss *13/16* Material of Lower back plate *steel* Thickness *7/8"* Greatest pitch of stays *13 1/2"* Working pressure of plate by rules *180*
 er of tubes *3 1/2"* 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"*
 across wide water spaces *14 1/2"* Working pressures by rules *220* Girders to Chamber tops: Material *IRON* Depth and
 ss of girder at centre *9 1/4" x 1 1/2"* Length as per rule *28"* Distance apart *9"* Number and pitch of Stays in each *2 = 9"*
 ng pressure by rules *241* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked
 ely *✓* Diameter *✓* Length *✓* Thickness of shell plates *✓* Material *✓* Description of longitudinal joint *✓* Diam. of rivet
✓ Pitch of rivets *✓* Working pressure of shell by rules *✓* Diameter of flue *✓* Material of flue plates *✓* Thickness *✓*
 med with rings *✓* Distance between rings *✓* Working pressure by rules *✓* End plates: Thickness *✓* How stayed *✓*
 ng pressure of end plates *✓* Area of safety valves to superheater *✓* Are they fitted with easing gear *✓*

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* 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" & 3/4"* Range of tensile strength *27-32* Descrip. of riveting long. seams *Lap 8H 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 *71.3* Rivets *71.3* Thickness of shell crown plates *5/8"* Radius of do. *7 ft* No. of Stays to do. *6*
 Dia. 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 *3/4"* Stayed by *1 1/2" 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 4H & 1 H. cylinder; 1 tail end & 1 length crank shaft; 4 cast iron propeller blades; 1 valve spindle; 1 ecst 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.

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 { board vessel— *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 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 *✓*

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

A.L.
15.4.02

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

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

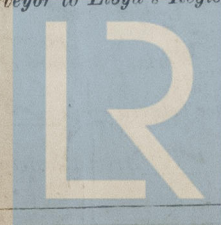
Committee's Minute

Assigned

TUES. 15 APR 1902

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

MACHINERY CERTIFICATE
 WRITTEN.



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Dundee office

Certificate (if required) to be sent to
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)