

67

REPORT ON MACHINERY.

Port of *Dundee*

Received at London Office **WED. FEB 27 1901**

No. in Survey held at *Dundee* Date, first Survey *21st Sept, 1900* Last Survey *26th February 1901*

Leg. Book. *on the Steel Screw Steamer "Tinana"* (Number of Visits *44*)

Tons Gross *790.55*
Net *469.91*

Master *Cunningham* Built at *Dundee* By whom built *Caledon M^r & Eng^y Coy* When built *1901*

Engines made at *Dundee* By whom made *Caledon M^r & Eng^y Coy Lim^d* when made *1901*

Boilers made at *Dundee* By whom made *Caledon M^r & Eng^y Coy Lim^d* when made *1901*

Registered Horse Power Owners *Australasian United M^r & Eng^y Coy* Port belonging to *Adelaide*

Tom. Horse Power as per Section 28 *130* Is Refrigerating Machinery fitted *no* Is Electric Light fitted *yes*

ENGINES, &c.—Description of Engines *Inverted Direct Acting Triple Expansion* No. of Cylinders *three* No. of Cranks *3*

Dia. of Cylinders *17-28-45* Length of Stroke *33* Revs. per minute *90* Dia. of Screw shaft as per rule *8.9* Lgth. of stern bush *38"*

Dia. of Tunnel shaft as per rule *none* Dia. of Crank shaft journals as per rule *8.73* Dia. of Crank pin *9* Size of Crank webs *16 1/2 x 6 1/2* Dia. of thrust shaft under collars *9"* Dia. of screw *10'-0"* Pitch of screw *15'-0"* No. of blades *4* State whether moveable *yes* Total surface *34.8 sq ft*

No. of Feed pumps *2* Diameter of ditto *2 1/2* Stroke *18"* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2* Diameter of ditto *2 1/2* Stroke *18"* Can one be overhauled while the other is at work *yes*

No. of Donkey Engines *Two* Sizes of Pumps *Ballast = 2 1/2 6 Pulverizer
Feed = 5 1/2 x 3 1/2 x 5"* No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room *Two 2 1/4" dia suction* In Holds, &c. *No 1 hold two 2" suction*

No. of bilge injections *1* sizes *4 1/2* Connected to ~~condensers~~ to circulating pump *yes* Is a separate donkey suction fitted in Engine room & size *yes-2 1/4"*

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 *yes*

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*

What pipes are carried through the bunkers *none* How are they protected *✓*

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 before launch* Is the screw shaft tunnel watertight *none*

Is it fitted with a watertight door *✓* worked from *✓*

OILERS, &c.— (Letter for record. *(R)*) Total Heating Surface of Boilers *2153* Is forced draft fitted *no*

No. and Description of Boilers *One cylindrical Single Ended* Working Pressure *160* Tested by hydraulic pressure to *320*

Date of test *21/12/00* Can each boiler be worked separately *✓* Area of fire grate in each boiler *66 sq ft* No. and Description of safety valves to each boiler *2 Spring* Area of each valve *7.07* Pressure to which they are adjusted *164 lbs* Are they fitted with easing gear *yes*

Smallest distance between boilers on ~~upstays~~ and bunkers or ~~woodwork~~ *15"* Mean dia. of boilers *15'-6"* Length *11'-0"* Material of shell plates *steel*

Thickness *1 1/2"* Range of tensile strength *28-92* Are they welded or flanged *no* Descrip. of riveting: cir. seams *Lap. 8bl* long. seams *5 Rivets per 8bl*

Diameter of rivet holes in long. seams *1 1/4"* Pitch of rivets *8 1/2"* ~~lap of plates~~ width of butt straps *18 1/2"*

Per centages of strength of longitudinal joint rivets *103* Working pressure of shell by rules *174* Size of manhole in shell *17 x 13*

Size of compensating ring *3/8" rails* No. and Description of Furnaces in each boiler *3- Morrison's* Material *steel* Outside diameter *50*

Length of plain part top *✓* Thickness of plates crown *9"* Description of longitudinal joint *welded* No. of strengthening rings *10*

Working pressure of furnace by the rules *176* Combustion chamber plates: Material *steel* Thickness: Sides *7/8"* Back *7/8"* Top *3/8"* Bottom *1"*

Pitch of stays to ditto: Sides *8 x 7 3/4"* Back *7 1/2 x 8 1/4"* Top *9 x 7 3/4"* If stays are fitted with nuts or riveted heads *nuts on fire side only* Working pressure by rules *175*

Material of stays *steel* Diameter at smallest part *1.38* Area supported by each stay *69.75* Working pressure by rules *170* End plates in steam space:

Material *steel* Thickness *1 1/8"* Pitch of stays *18 x 16* How are stays secured *to nuts* Working pressure by rules *175* Material of stays *IRON*

Diameter at smallest part *2.79* Area supported by each stay *288* Working pressure by rules *160* Material of Front plates at bottom *steel*

Thickness *1 3/8"* Material of Lower back plate *steel* Thickness *7/8"* Greatest pitch of stays *13 1/4"* Working pressure of plate by rules *186*

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

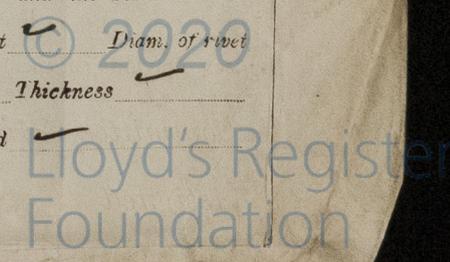
Pitch across wide water spaces *14 1/4"* Working pressures by rules *186* Girders to Chamber tops: Material *IRON* Depth and thickness of girder at centre *10 1/4" x 1 1/2"* Length as per rule *33* Distance apart *9* Number and pitch of Stays in each *3-7 3/4"*

Working pressure by rules *170* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked separately *✓*

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 *✓*

2520-448900-189000



DONKEY BOILER— No. *one* Description *One steel vertical with three cross tubes.*
 Made at *Gateshead* By whom made *Clarke Chapman & Co* When made *28/1/01* Where fixed *stokehold*
 Working pressure *80* tested by hydraulic pressure to *160* No. of Certificate *5977* Fire grate area *16 sq* Description of safety valves *Spring*
 No. of safety valves *2* Area of each *4.9* Pressure to which they are adjusted *83* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *5'-9"* Length *12'-0"* Material of shell plates *steel* Thickness *13/32"* Range of tensile strength *27-32* Descrip. of riveting long. seams *Stl Riv. Lap* Dia. of rivet holes *13/16* Whether punched or drilled *Drilled* Pitch of rivets *3"*
 Lap of plating *4 1/8"* Per centage of strength of joint Rivets *72.3* Thickness of shell crown plates *7/16"* Radius of do. *5 ft* No. of Stays to do. *6*
 Dia. of stays. *1 5/8* Diameter of furnace Top *4-5 1/4* Bottom *4'-10"* Length of furnace *5 ft* Thickness of furnace plates *7/16* Description of joint *Lap Single* Thickness of furnace crown plates *1/2* Stayed by *as shell crown* Working pressure of shell by rules *92*
 Working pressure of furnace by rules *83* Diameter of uptake *15"* Thickness of uptake plates *1/2"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *As per Rule and 1/3" crank shaft; one tail end shaft; one thrust shaft; 2 propeller blades, 3 valve spindles, one pair con. and bottom end brasses; one circulating pump piston and rod, one air pump bucket and rod, one eccentric strap; 36 condenser tubes, 12 Boiler tubes; 2 springs for safety valves; one set feed check valves, one piston ring for each cylinder.*

The foregoing is a correct description,

in the *Caledon Shipbuilding Co. Ltd* Manufacturer.

W. S. Thompson
 Dates of Survey while building
 During progress of work in shops— *Sept 21. 24. 28; Oct 3. 5. 10. 13. 16. 18. 23. 26. 30; Nov 1. 6. 8. 13. 15. 20. 22. 30; Dec 5. 12. 19. 21. 24; - 1900*
 During erection on board vessel— *Jan 8. 14. 17. 24. 26. 28. 30. Feb 1. 5. 6. 9. 11. 13. 18. 19. 21. 22. 25. 26; - 1901*
 Total No. of visits *44* Is the approved plan of main boiler forwarded herewith *yes*
 " " " donkey " " " *yes*

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

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 and main steam pipe have been tested by hydraulic pressure and the engines and boilers have been examined under steam and 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 \times L.M.C. 2.01 in the Register Book

Under office

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

It is submitted that this vessel is eligible for THE RECORD \times L.M.C. 2.01. *Electric Light.*

W. S. Thompson
 27.2.01

The amount of Entry Fee. £ *2 : 0 : 0* When applied for, *26th Feb 1901*
 Special .. £ *19-10-9*
 Donkey Boiler Fee .. £ *✓*
 Travelling Expenses (if any) £ *✓* When received, *28/2/01*

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

Committee's Minute

FRI. 1 MAR 1901

Assigned

+ L.M.C. 2.01

MACHINERY CERTIFICATE
 WRITTEN.



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