

# REPORT ON MACHINERY.

3 NOV. 1898

Port of *Dundee*

Received at London Office 18

No. in Survey held at *Dundee* Date, first Survey *5<sup>th</sup> May* Last Survey *28<sup>th</sup> October 1898*  
Book. (Number of Visits *30*)

4 on the *Steel Screw Steamer "Tagus"* Tons { Gross *937*  
Net *509*

By *G. W. Muir* Built at *Dundee* By whom built *Caledon S. B. & Eng Co Lim<sup>d</sup>* When built *1898*

Lines made at *Dundee* By whom made *Caledon S. B. & Eng Co Lim<sup>d</sup>* when made *1898*

Engines made at *Dundee* By whom made *Caledon S. B. & Eng Co Lim<sup>d</sup>* when made *1898*

Registered Horse Power Owners *J. Leyland & Co Lim<sup>d</sup>* Port belonging to *Liverpool*

Horse Power as per Section 28 *135.68*

ENGINES, &c.— Description of Engines *Inverted Direct-acting Compound* No. of Cylinders *two*

Diameter of Cylinders *18" - 48"* Length of Stroke *36"* Revolutions per minute *100* Diameter of Screw shaft *as per rule 10.75 - as fitted 10 3/4*

Diameter of Tunnel shaft *as fitted 9 3/4* Diameter of Crank shaft journals *10 1/2* Diameter of Crank pin *10 1/2* Size of Crank webs *19 1/2 x 7 1/2*

Diameter of screw *12' - 0"* Pitch of screw *13' - 0"* No. of blades *4* State whether moveable *no* Total surface *45 sq*

No. of Feed pumps *2* Diameter of ditto *2 3/4* Stroke *18"* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2* Diameter of ditto *3 1/4* Stroke *18"* Can one be overhauled while the other is at work *yes*

No. of Donkey Engines *2* Sizes of Pumps *Feed = 7 1/2 x 3 3/4 x 10* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *Two 2" & one 2 1/4"* In Holds, &c. *Fore hold one = 2 1/4; Main hold one = 2 1/4*

After hold one = 2 1/4; Funnel one = 2 1/4

Bilge injections *1 size 4 1/2* Connected to condenser, or to circulating pump *yes* Is a separate donkey suction fitted in Engine room of 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 *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*

Are the pipes carried through the bunkers *Fore & Main hold suction* 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*

Were the stern tube, propeller, screw shaft, and all connections examined in dry dock *not in dry dock* Is the screw shaft tunnel watertight *yes*

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

BOILERS, &c.— (Letter for record *(0)*) Total Heating Surface of Boilers *1997*

Kind and Description of Boilers *One cylindrical Single Ended* Working Pressure *160* Tested by hydraulic pressure to *320*

Date of test *26.9.98* Can each boiler be worked separately *yes* Area of fire grate in each boiler *48 sq* No. and Description of safety valves to boiler

*2 Spring* Area of each valve *7.07* Pressure to which they are adjusted *164* Are they fitted with easing gear *yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *8 ft -* Mean diameter of boilers *15' - 0"*

Material of shell plates *Steel 28 tons* Thickness *1 3/32* Description of riveting: circum. seams *Lap, All & Treble long. seams* S. B. - J. Riv *5 Rivets per pitch*

Diameter of rivet holes in long. seams *1 1/8"* Pitch of rivets *7 7/8"* Lap of plates or width of butt straps *17"*

Stages of strength of longitudinal joint rivets *85.8* Working pressure of shell by rules *160 lbs* Size of manhole in shell *17" x 13"*

plate *85.7* Description of longitudinal joint *Welded* No. of strengthening rings *9*

Compensating ring *Mc Neil's* No. and Description of Furnaces in each boiler *3 Morrison's* Material *Steel* Outside diameter *47 1/2"*

Thickness of plain part top *17"* crown *17"* bottom *32"* Description of longitudinal joint *Welded* No. of strengthening rings *9*

Working pressure of furnace by the rules *173* Combustion chamber plates: Material *steel* Thickness: Sides *5/8* Back *5/8* Top *5/8* Bottom *1/16"*

Stays to ditto: Sides *9 x 8 3/4* Back *9 x 9* Top *9 x 9* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *167*

Material of stays *steel* Diameter at smallest part *1 1/2* Area supported by each stay *81* Working pressure by rules *168* End plates in steam space:

Material *steel* Thickness *1"* Pitch of stays *18 x 15 1/2* How are stays secured *with nuts & iron washers* Working pressure by rules *165* Material of stays *iron*

Diameter at smallest part *2.79* Area supported by each stay *279* Working pressure by rules *164* Material of Front plates at bottom *steel*

Thickness *1"* Material of Lower back plate *steel* Thickness *1"* Greatest pitch of stays *15 1/4 x 9* Working pressure of plate by rules *160*

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

Distance across wide water spaces *14 1/4* Working pressures by rules *176* Girders to Chamber tops: Material *iron* Depth and

Material of girders at centre *9 1/2 x 1 1/2* Length as per rule *28.375* Distance apart *9* Number and pitch of Stays in each *2 = 9"*

Working pressure by rules *240* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked

by *yes* 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*

End plates with rings *yes* Distance between rings *yes* Working pressure by rules *yes* End plates: Thickness *yes* How stayed *yes*

Working pressure of end plates *yes* Area of safety valves to superheater *yes* Are they fitted with easing gear *yes*



DU127-0081

**DONKEY BOILER**— Description *One steel cylindrical single ended*  
 Made at *Dumdee* By whom made *Caldon & Co. Eng. Co.* When made *1898* Where fixed *Main Deck*  
 Working pressure *100* tested by hydraulic pressure to *200* No. of Certificate *746* Fire grate area *108* Description of safety valves *Spring*  
 No. of safety valves *2* Area of each *3.14* Pressure to which they are adjusted *100* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *7'-5 1/2"* Length *7'-0"* Material of shell plates *steel* Thickness *7/16*  
 Description of riveting long. seams *Lap. Triple Riveted* Diameter of rivet holes *7/8* Whether punched or drilled *Drilled* Pitch of rivets *3 1/2*  
 Lap of plating *5 1/2* Per centage of strength of joint Rivets *77.5* Thickness of ~~shell~~ <sup>end</sup> plates *3/4* Material *Steel* Pitch of Stays to do. *14x12*  
 Dia. of stays. *1 3/4* Diameter of furnaces ~~Top~~ <sup>com cham</sup> *28 3/4* Bottom *78"* Length of furnace *top 54* Thickness of furnace plates *7/16* Description of joint *S-B - Sing Riv* Thickness of ~~furnace~~ <sup>com cham</sup> plates *1/2"* Stayed by *1 1/4* eff dia stays, *8 1/2 x 9"* pitch Working pressure of shell by rules *108*  
 Working pressure of furnace by rules *120* Diameter of ~~uptake~~ <sup>tubes</sup> *2 3/4* Thickness of ~~uptake~~ <sup>tube</sup> plates *3/4* Thickness of water tubes *4"*  
*Some 36" diam, 5/8 plate, seam 3/8 lap, 1/2 holes, 3" pitch; top plate 1 1/8"; 15" neck to boiler*  
 SPARE GEAR. State the articles supplied:—

*As per Rule and one eccentric strap, one air pump piston and rod, one circulating pump piston and rod, and 2 valve spindles*

The foregoing is a correct description,

Manufacturer.

*W. B. Morrison*  
 FOR THE LLOYD SHIPBUILDING AND ENGINEERS CO., LTD.

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

*The machinery of this vessel has been built under special survey and 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. 10.98 in the Register Book*

It is submitted that this vessel is eligible for THE RECORD. L.M.C. 10.98.

*A.C.H.*  
*3. 11. 98.*  
*A.S.*  
*3. 11. 98*

Please Stowages are requested not to write on or damage the space for Committee's Minute.

Certificate (if required) to be sent to *Dumdee Office*

The amount of Entry Fee..	£ 2 : 0 : 0	When applied for,	
Special .. .. .	£ 20 : 8 : 0		<i>2/11/98</i>
Donkey Boiler Fee .. .	£ ✓	When received,	<i>10/11/98</i>
Travelling Expenses (if any) £	✓		<i>9. 11. 98</i>

*Wm Morrison*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Ships

Committee's Minute **FRI, 4 NOV 1898**

Assigned *+ L.M.C. 10, 98*

