

## REPORT ON MACHINERY.

Port of *Dundee*

3 NOV. 1898

Received at London Office

18

No. in Survey held at *Dundee*  
Book.Date, first Survey *5<sup>th</sup> May*Last Survey *28<sup>th</sup> October 1898*(Number of Visits *30*)4 on the *Steel Screw Steamer "Tagus"*Tons { Gross *937*  
Net *509*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*Machinery 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*

## MACHINERY, &amp;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"*

Diameter of Tunnel shaft

as per rule *9.75"*

Diameter of Crank shaft journals

*10 1/4"*

Diameter of Crank pin

*10 1/4"*Size of Crank webs *19 1/2" x 7 1/4"*

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 &amp; size

*yes 2 1/4"*

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*

Are 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 suctions*

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 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*

Is it worked from

*top platform*

## BOILERS, &amp;c.—

(Letter for record *(0)*)

Total Heating Surface of Boilers

*1997*

No. 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

No. of valves

*2 Spring*

Area of each valve

*7.07*

Pressure to which they are adjusted

*164*

Are they fitted

Lifting 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, 8bl & Triple*

long. seams

*S. B. & T. 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*

plate

*85.7*

Working pressure of shell by rules

*160 lbs*

Size of manhole in shell

*17" x 13"*

Compensating ring

*Mc Neil*

No. and Description of Furnaces in each boiler

*3 Morrison*

Material

*Steel*

Outside diameter

*47 1/4"*

Thickness of plain part

*top 1 1/2"*

bottom

*1 1/2"*

Thickness of plates

*1 1/2"*

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"*

Thickness of 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

*8 nuts & 4 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*

Material of Lower back plate

*Steel*

Thickness

*1"*

Greatest pitch of stays

*15 1/4" x 9"*

Working pressure of plate by rules

*160*

Pitch 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*

Working pressures by rules

*14 1/4*

Girders to Chamber tops: Material

*iron*

Depth and

*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

Diameter

*yes*

Length

*yes*

Thickness of shell plates

*yes*

Material

*yes*

Description of longitudinal joint

*yes*

Diam. of rivet

*yes*

Pitch of rivets

*yes*

Working pressure of shell by rules

*yes*

Diameter of flue

Material of flue plates

*yes*

Thickness

*yes*

Distance between rings

*yes*

Working pressure by rules

*yes*

End plates: Thickness

*yes*

How stayed

*yes*

Pressure of end plates

*yes*

Area of safety valves to superheater

*yes*

Are they fitted with easing gear

*yes*



DONKEY BOILER— Description *One steel cylindrical single ended*

Made at *Dumdee* By whom made *Calidon & 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 3/8* Per centage of strength of joint *77.5* Rivets *77.5* Thickness of *end* plates *3/4* Material *Steel* Pitch *14x12*

eff Dia. of stays. *1 3/4* Diameter of furnaces *28 3/8* Length *78"* Length of furnace *top 54* Thickness of furnace plates *7/16* Description of

joint *D.B. - Sing Riv* Thickness of *com cham* 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 *tubes* *2 3/4* Thickness of *tube* plates *3/4* Pitch *4"*

*Some 36" diam, 5/8 plate, seam 3/16 Riv 4 1/2 lap, 3/8 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*

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*

Certificate (if required) to be sent to

*Sender office*

The amount of Entry Fee. £ *2 : 0 : 0* When applied for,

Special .. .. £ *20 : 8 : 0* *2/11/98*

Donkey Boiler Fee .. .. £ *✓* : : When received,

Travelling Expenses (if any) £ *✓* : : *9. 11. 98*

Committee's Minute

*FRI, 4 NOV 1898*

Assigned

*+ L.M.C. 10.98*

*W. B. Morrison*

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



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Foundation