

# REPORT ON MACHINERY.

(1200  
26667)

No. 108

No. in Survey held at *Aberdeen*  
Reg. Book.

Date, first Survey *13<sup>th</sup> Decr*

Last Survey *13<sup>th</sup> Decr* 1879

*148* on the *ISS "Dee"*

*Now named "Mantes"*

Tons *126*

Master *Petitt*

Built at *Aberdeen*

When built *1873*

Engines made at *Glasgow*

By whom made *Smith Bros & Co* when made *1873*

Boilers made at *Aberdeen*

By whom made *Hall Russell & Co* when made *1879*

Registered Horse Power *44*

Owners *Loire & Thames Transit Co Ltd* Port belonging to *London*

## ENGINES, &c.—

Description of Engines *Compound Inlet Cyls surface Condensing*

Diameter of Cylinders *20" & 30"* Length of Stroke *20"* No. of Rev. per minute *100* Point of Cut off, High Pressure *✓* Low Pressure *✓*

Diameter of Screw shaft *5 1/2"* Diameter of Tunnel shaft *5"* Diameter of Crank shaft journals *5 1/2"* Diameter of Crank pin *5 1/2"* size of Crank webs

Diameter of screw *8" 0"* Pitch of screw *12" 0"* No. of blades *4* state whether moveable *Solid* total surface *✓*

No. of Feed pumps *one* diameter of ditto *3 3/4"* Stroke *10"* Can one be overhauled while the other is at work *✓*

No. of Bilge pumps *one* diameter of ditto *3 3/8"* Stroke *10"* Can one be overhauled while the other is at work *✓*

Where do they pump from *Engine room only*

No. of Donkey Engines *one* Size of Pumps *6" x 8" x 3 1/2"* Where do they pump from *Tanks, sea, bottom, to*

*boiler through ship side and on Deck*

Are all the bilge suction pipes fitted with roses *yes* Are the roses always accessible *yes* Are the sluices on Engine room bulkheads always accessible *✓*

Are the bilge injections *one* and sizes *3"* Are they connected to condenser, or to circulating pump *circulating*

Are the pumps worked by levers

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 *no* 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 *✓*

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

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times *yes*

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges *yes*

When were stern tube, propeller, screw shaft, and all connections examined in dry dock *✓*

Is the screw shaft tunnel watertight *✓* and fitted with a sluice door *✓* worked from *✓*

## OILERS, &c.—

Number of Boilers *one* Description *circular tubular*

Working Pressure *70 lbs* Tested by hydraulic pressure to *140 lbs* Date of test *7<sup>th</sup> October 1879*

Description of superheating apparatus or steam chest *vertical dumb*

Can each boiler be worked separately *✓* Can the superheater be shut off and the boiler worked separately *✓*

Area of square feet of fire grate surface in each boiler *27 feet* Description of safety valves *direct spring load*

Area of each boiler *two* area of each valve *8.34"* Are they fitted with easing gear *yes*

Area of safety valves to superheater *✓* area of each valve *✓* are they fitted with easing gear *✓*

Smallest distance between boilers and bunkers or woodwork *✓*

Diameter of boilers *10" 0"* Length of boilers *8' 8"* description of riveting of shell long. seams *lap & riveted* circum. seams *lap & R.*

Thickness of shell plates *3/4"* diameter of rivet holes *1 1/16"* whether punched or drilled *drilled* pitch of rivets *4 1/2"*

Plating *7 1/4" & 4 1/2"* per centage of strength of longitudinal joint *76 rivets 71* working pressure of shell by rules *78 lbs*

Manholes in shell *17" x 12"* size of compensating rings *4 1/2" x 3" x 3/8"*

Furnaces in each boiler *two* outside diameter *36"* length, top *6" 0"* bottom *8" 0"*

Plating of plates *24 1/16" B 1/2"* description of joint *lap & riveted* if rings are fitted *no* greatest length between rings *✓*

Pressure of furnace by the rules *top 74 lbs bottom 77 lbs*

Plating, thickness, sides *7/16"* back *7/16"* top *1/2"*

Plating to ditto *sides 8" x 9"* back *8 1/2" x 8 1/2"* top *9" x 9 1/4"*

Are they fitted with nuts or riveted heads *nuts both side* working pressure of plating by rules *75 lbs*

Stays at smallest part *1 1/4"* working pressure of ditto by rules *5108 lbs*

Plating in steam space, thickness *3/4" & 1/2" large basket* pitch of stays to ditto *14" x 14"* how stays are secured *thru ends & nuts*

Pressure by rules *88 lbs* diameter of stays at smallest part *2"* working pressure by rules *4368 lbs*

Plating at bottom, thickness *3/4"* Back plates, thickness *3/4"* greatest pitch of stays *9 1/2" x 8"* working pressure by rules *5373 lbs*



Diameter of tubes  $2\frac{3}{4}$ " pitch of tubes  $4 \times 4$ " thickness of tube plates, front  $\frac{3}{4}$ " back  $\frac{4}{8}$ "  
How stayed *tubes & nuts* pitch of stays  $12 \times 12$ " width of water spaces  $1\frac{1}{4}$ "  
Diameter of ~~Superheater~~ Steam chest  $3' 0"$  length  $4' 2"$  26667 Jan  
Thickness of plates  $\frac{1}{2}$ " description of longitudinal joint *lap D. R.* diameter of rivet holes  $\frac{3}{4}$ " pitch of rivets  $2\frac{1}{2}$ "  
Working pressure of shell by rules  $150$  lb Diameter of flue ☒ thickness of plates ☒  
If stiffened with rings ☒ distance between rings ☒ Working pressure by rules ☒  
End plates of ~~superheater~~ or steam chest; thickness  $\frac{7}{8}$ " How stayed *dished*  
~~Superheater~~ steam chest; how connected to boiler *riveted to shell*

DONKEY BOILER—

Description  
Made at \_\_\_\_\_ By whom made \_\_\_\_\_ when made \_\_\_\_\_  
Where fixed \_\_\_\_\_ working pressure \_\_\_\_\_ Tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_  
Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_ No. of safety valves \_\_\_\_\_ area of each \_\_\_\_\_  
If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_  
Diameter of donkey boiler \_\_\_\_\_ length \_\_\_\_\_ description of riveting \_\_\_\_\_  
thickness of shell plates \_\_\_\_\_ diameter of rivet holes \_\_\_\_\_ whether punched or drilled \_\_\_\_\_  
pitch of rivets \_\_\_\_\_ lap of plating \_\_\_\_\_ per centage of strength of joint \_\_\_\_\_  
thickness of crown plates \_\_\_\_\_ stayed by \_\_\_\_\_  
Diameter of furnace, top \_\_\_\_\_ bottom \_\_\_\_\_ length of furnace \_\_\_\_\_  
thickness of plates \_\_\_\_\_ description of joint \_\_\_\_\_  
thickness of furnace crown plates \_\_\_\_\_ stayed by \_\_\_\_\_  
Working pressure of shell by rules \_\_\_\_\_ working pressure of furnace by rules \_\_\_\_\_  
diameter of uptake \_\_\_\_\_ thickness of plates \_\_\_\_\_ thickness of water tubes \_\_\_\_\_

The foregoing is a correct description,

Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. A new boiler has been fitted on board of this vessel at this time; agreeable to tracing submitted for the Committee's approval dated 3/2/79. Both material and workmanship are satisfactory. The safety valves have been tested under steam and set to a working pressure of 70 lb per square inch; the engines have been seen at work and in my opinion are now in good working order.

The sea cocks on skin of vessel, and bilge piping are not in accordance with the requirements of the Rules, and which have to be seen after the necessary alterations had been made. but no opportunity has been afforded me for making the final survey in this district

*It is submitted that this be deferred until the vessel again comes under survey JMS 21/10/80*

The amount of Entry Fee £ : : received by me, *JMS*  
Special £ 3 : 3 : 0 Oct 12 *and sent to Dundee*  
Certificate (if required) £ : : 18 80 *See entry on*  
To be sent as per margin.  
(Travelling Expenses, if any, £ 2-13-3)

Committee's Minute

Friday, 30th June, 1882.

John Sturrock  
Engineer Surveyor to Lloyd's Register of British & Foreign Steamships

Dundee District

Lloyd's Register  
Foundation