

REPORT ON MACHINERY.

5843

No. 182

(Received at London Office 2nd Oct. 1882)

No. in Survey held at Dundee & Glasgow Reg. Book.

Date, first Survey 21/2/82

Last Survey 26th Sept. 1882

on the T.S.S. "Parahyba".

Tons 655 344

Master J. Jarvis Built at Glasgow When built 1882

Engines made at Dundee By whom made W.B. Thompson when made 1882

Boilers made at Dundee By whom made W.B. Thompson when made 1882

Registered Horse Power 140 Owners Fry Miers & Co Port belonging to London

ENGINES, &c.—

Description of Engines Compound Direct Acting Inot. Cyls Surface Condensing

Diameter of Cylinders 30" & 60" Length of Stroke 33" No. of Rev. per minute 65 Point of Cut off, High Pressure 8 1/2% Low Pressure 9 1/2%

Diameter of Screw shaft 9 3/4" Diameter of Tunnel shaft 9 1/2" Diameter of Crank shaft journals 9 3/4" Diameter of Crank pin 9 3/4" size of Crank webs 7" x 11"

Diameter of screw 11" 9" Pitch of screw 15" 6" No. of blades 4 state whether moveable both total surface 48 feet

No. of Feed pumps two diameter of ditto 3 1/2" Stroke 23" Can one be overhauled while the other is at work Yes

No. of Bilge pumps two diameter of ditto 3 1/2" Stroke 23" Can one be overhauled while the other is at work Yes

Where do they pump from all Compartments

No. of Donkey Engines two 73 Ballast Size of Pumps 7" x 18" x 8" 6" x 9" x 3 1/2" Where do they pump from Ballast from Tanks all

Compartments—Two Condenser and Ship side (Feed) from sea Hatchwell to Boilers

Are all the bilge suction pipes fitted with roses Yes Are the roses always accessible Yes When vessel not load on Deck Are the sluices on Engine room bulkheads always accessible

No. of bilge injections one and sizes 5" Are they connected to condenser, or to circulating pump circulating

How are the pumps worked by levers from after engine

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Valves

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

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 before launch 4/8/82

Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Top of Cylinders

BOILERS, &c.—

Number of Boilers two Description Circular Tubular (steel shells & ends)

Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs Date of test 26th July 1882

Description of ~~superheating apparatus~~ steam chest Horizontal Dumb

Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately

No. of square feet of fire grate surface in each boiler 35 feet Description of safety valves Direct Spring Load W.B.T.

No. to each boiler two area of each valve 9.62 sq ft Are they fitted with easing gear Yes

No. of safety valves to superheater area of each valve are they fitted with easing gear

Smallest distance between boilers and bunkers or woodwork 6"

Diameter of boilers 12' 0" Length of boilers 10' 6" description of riveting of shell long. seams Lap Double R. circum. seams Lap D.R.

Thickness of shell plates 3/4" diameter of rivet holes 1 1/8" whether punched or drilled drilled pitch of rivets 4.38

Lap of plating 8 3/4" & 5 5/8" per centage of strength of longitudinal joint 74 & 82 % working pressure of shell by rules 88 lbs

Size of manholes in shell 16" x 13" size of compensating rings 4" x 4" x 3/4"

No. of Furnaces in each boiler two outside diameter 40" length, top 7' 6" bottom 9' 10"

Thickness of plates 1/2" description of joint welded if rings are fitted flanges in centre greatest length between rings 4' 6"

Working pressure of furnace by the rules 113 lbs between flanges

Combustion chamber plating, thickness, sides 1/2" back 1/2" top 1/2"

Pitch of stays to ditto sides 9" x 9" back 9" x 9" top 9" x 8 1/2"

If stays are fitted with nuts or riveted heads nuts both ends working pressure of plating by rules 95 lbs

Diameter of stays at smallest part 1 1/2" 73.7. working pressure of ditto by rules 3811 lbs

End plates in steam space, thickness 7/8" pitch of stays to ditto 17" x 17" how stays are secured this ends nuts


Working pressure by rules 94 lbs diameter of stays at smallest part 2 1/4" working pressure by rules 5928 lbs

Front plates at bottom, thickness 3/4" Back plates, thickness 3/4" greatest pitch of stays working pressure by rules

Diameter of tubes $3\frac{1}{2}$ " pitch of tubes $4\frac{5}{8}$ " thickness of tube plates, front $\frac{1}{16}$ " back $\frac{1}{16}$ "
How stayed *tubes nuts* pitch of stays $9\frac{1}{4} \times 9\frac{1}{4}$ " width of water spaces $1\frac{1}{8}$ "
Diameter of ~~Superheater~~ Steam chest $3\frac{1}{2}$ " length $8\frac{1}{2}$ " 5843 *gl.*
Thickness of plates $\frac{3}{8}$ " 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 123 lbs Diameter of flue --- thickness of plates ---
If stiffened with rings --- distance between rings --- Working pressure by rules ---
End plates of ~~superheater~~ steam chest; thickness $\frac{3}{4}$ " How stayed *by 4 bolts through ends $1\frac{1}{8}$ " diam.*
~~Superheater~~ steam chest; how connected to boiler *by two malleable necks riveted to shells*

DONKEY BOILER— Description *one round vertical*
Made at *Dundee* By whom made *W.B. Thompson* when made *1882*
Where fixed *Stokehold* working pressure 50 lbs Tested by hydraulic pressure to 100 lbs No. of Certificate *189*
Fire grate area 13 feet Description of safety valves *D.S.L.* No. of safety valves *one* area of each $7\frac{1}{4}$ "
If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no*
Diameter of donkey boiler $4\frac{1}{2}$ " length $7\frac{1}{2}$ " description of riveting *lap D.R.*
thickness of shell plates $\frac{3}{8}$ " diameter of rivet holes $\frac{3}{4}$ " whether punched or drilled *punched*
pitch of rivets $2\frac{3}{4}$ " lap of plating $4\frac{1}{2} \times 2\frac{1}{2}$ " per centage of strength of joint
thickness of crown plates $\frac{5}{8}$ " stayed by *6 bolt stays thro furnace top $1\frac{1}{2}$ " diam.*
Diameter of furnace, top $3\frac{1}{2}$ " bottom $4\frac{1}{2}$ " length of furnace $4\frac{1}{2}$ "
thickness of plates $\frac{7}{16}$ " description of joint *lap single riveted*
thickness of furnace crown plates $\frac{1}{2}$ " stayed by *6 bolt stays thro top of boiler*
Working pressure of shell by rules 72 lbs working pressure of furnace by rules 91 lbs
diameter of uptake $13\frac{1}{2}$ " thickness of plates $\frac{3}{8}$ " thickness of water tubes $\frac{3}{8}$ "

The foregoing is a correct description,
Geo Cooper Manufacturer. *W.B. Thompson*

General Remarks (State quality of workmanship, opinions as to class, &c. *The Engines and Boilers of this vessel have been built in accordance with the requirements of the Rules for Special Survey, and to plans of boilers submitted for the Committee's approval dated 22/2/82. The material and workmanship are of the best description. The boilers and engine have been tested under steam, and the safety valves set to 80 lbs working pressure and those for donkey boiler to 50 lbs working pressure, and in my opinion she is in good and safe working order and eligible to be entered into the Register Book with the destination mark  Lloyd's M.C. 9. 82 in red*

The submitted plans of this vessel is eligible to have the notation of 'Special' recorded
M 2/10/82

The amount of Entry Fee .. £ 2 : 0 : 0 received by me,
Special .. £ 21 : 0 : 0
Certificate (if required) .. £ : 2 : 6 *24 Sep 1882*
To be sent as per margin.
(Travelling Expenses, if any, £ 1-16-6)

Committee's Minute *Tues 1st 3rd October, 1882.*

John Sturrock
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping
Dundee Dist