

REPORT ON MACHINERY.

No. 283

Received at London Office

LONDON 29 OCT 1883

No. in Survey held at Dundee

Date, first Survey 24/11/82

Last Survey 13th October 1883

Reg. Book.

on the S.S. Ruby

(Number of Visits)

811.88

Tons 256.46

Master Webster Built at Dundee

By whom built W.B. Thompson

When built 1883

Engines made at Dundee

By whom made W.B. Thompson

when made 1883

Boilers made at Dundee

By whom made W.B. Thompson

when made 1883

Registered Horse Power 99

Owners Dundee Line S.S. Co. (Limited) Port belonging to Dundee
(P.H. Duncan & Son)

ENGINES, &c.—

Description of Engines Direct Acting Compound Invert Cyl Surface Condensing

Diameter of Cylinders 25" & 50" Length of Stroke 42" No. of Rev. per minute 70 Point of Cut off, High Pressure 1/2 Low Pressure 1/2

Diameter of Screw shaft 10" Diam. of Tunnel shaft 9 1/2" Diam. of Crank shaft journals 9 3/4" Diam. of Crank pin 9 3/4" size of Crank webs 6 1/2" x 11"

Diameter of screw 12" & 4" Pitch of screw 16" & 0" No. of blades 4 state whether moveable Yes total surface 46 feet

No. of Feed pumps Two diameter of ditto 3 1/2" Stroke 21" Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two diameter of ditto 3 1/2" Stroke 21" Can one be overhauled while the other is at work Yes

Where do they pump from all compartments

No. of Donkey Engines Two Size of Pumps 1 1/2" & 8" x 8 1/2" x 3 1/2" Where do they pump from 2 tanks all compartments

Two ship side. Feed from sea tanks Hotwell to boilers & on Deck

Are all the bilge suction pipes fitted with roses Yes Are the roses always accessible Yes When vessel not loaded

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 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

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 being launched

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

BOILERS, &c.—

Number of Boilers One Description Circular Tubular Whether Steel or Iron Steel

Working Pressure 100 lbs Tested by hydraulic pressure to 200 lbs Date of test 22nd September 1883

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

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

No. of square feet of fire grate surface in each boiler 72 feet Description of safety valves Direct Spring No. to each boiler Two

Area of each valve 19.63" 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 9" Diameter of boilers 14" & 6"

Length of boilers 11" & 3" description of riveting of shell long. seams Lap Ribbed R circum. seams Lap D. R. Thickness of shell plates 1"

Diameter of rivet holes 1 3/8" whether punched or drilled drilled pitch of rivets 5 3/8" Lap of plating 9 1/2" & 5 3/4"

Per centage of strength of longitudinal joint 73 & 77% working pressure of shell by rules 100 lbs size of manholes in shell 17" x 13"

Size of compensating rings angle 5" x 5" x 7/8" No. of Furnaces in each boiler Three

Outside diameter 46" length, top 7" & 9" bottom 10" & 6" thickness of plates 9/16" description of joint butt S. R. if rings are fitted flanged

Greatest length between rings 4" & 4" working pressure of furnace by the rules 14 2/3 lbs combustion chamber plating, thickness, sides 9/16" back 9/16" top 9/16"

Pitch of stays to ditto, sides 8 1/2" x 8 1/2" back 8 1/2" x 8 1/2" top 8 1/2" x 7 1/2" If stays are fitted with nuts or riveted heads nut & bolt ends working pressure of plating by rules 12 1/2 lbs

Diameter of stays at smallest part 1 1/2" & 1 3/4" working pressure of ditto by rules 45 & 13 lbs end plates in steam space, thickness 7/8"

Pitch of stays to ditto 17" x 16" how stays are secured this end nut working pressure by rules 100 lbs diameter of stays at smallest part 2 1/2" steel working pressure by rules 77 1/2 lbs

Greatest pitch of stays 11" & 8 1/2" working pressure by rules 56 & 61 lbs Diameter of tubes 3 3/4" pitch of tubes 6 1/2" x 5" thickness of tube plates, front 4/6" back 4/6" how stayed tubes

Diameter of ~~superheater~~ or Steam chest 3" & 9" length 8" & 3" thickness of plates 9/16" description of longitudinal joint Lap D. R. diam. of rivet holes 1"

Pitch of rivets 3 3/8" working pressure of shell by rules 86 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 4 3/8" how stayed 4 bolts this

ends nut & bolt 2 1/2" diameter steam chest; how connected to boiler by two malleable

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DONKEY BOILER— Description *Round Vertical 4 Cross Tubes*
 Made at *Dundee* by whom made *W.B. Thompson* when made *12/9/83* where fixed *Stokehold*
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *281* fire grate area *19 feet* description of safety
 valves *Pinch Spring Valve* No. of safety valves *one* area of each *9.62* if fitted with easing gear *yes* if steam from main boilers can
 enter the donkey boiler *no* diameter of donkey boiler *6.0* length *11.0* description of riveting *Lap D.R. Cir Lap S.R.*
 Thickness of shell plates *9/16* diameter of rivet holes *7/8* whether punched or drilled *Punched* pitch of rivets *3* lap of plating *4 1/8 2 3/8*
 Percentage of strength of joint *71 1/2* thickness of crown plates *5/8* stayed by *11 bolt stays thin top stays 2" diam*
 Diameter of furnace, top *4.6* bottom *5.8* length of furnace *6.0* thickness of plates *9/16* description of joint *Lap S.R.*
 Thickness of furnace crown plates *9/16* stayed by *as above* working pressure of shell by rules *91 lbs*
 Working pressure of furnace by rules *81 lbs* diameter of uptake *2.15 3/4* thickness of plates *7/16* thickness of water tubes *3/8*

SAFETY GEAR. State the articles supplied:— *one Propeller, set crank pin brasses, 2 bolts each*
for top bottom ends of connecting rod, 8 coupling bolts 40 turn bolts,
112 bolts assorted, pistons of safety valve springs 20 boiler tubes,
20 condenser tubes 2 each valves for circulating air bilge & feed pump
 The foregoing is a correct description,
W.B. Thompson Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *The Boilers and Engines of*
this vessel have been built under special survey. The material
and workmanship are of the best description, both engines
and boilers have been tested under steam, and the
safety valves set to 100 lbs per square inch working pressure
and in my opinion all are in good and safe working order
and eligible to be entered into the Register Book with the
distinctive mark + L.M.C. 10, 83

It is submitted that this vessel
is eligible to have the notation
+ L.M.C. 10, 83
29/10/83

The amount of Entry Fee .. £ 1 : 0 : 0 received by me,
 Special .. £ 14 : 17 : 0
 Donkey Boiler Fee .. £ - : - : -
 Certificate (if required) .. £ - : - : - 23rd Oct 1883
 To be sent as per margin.
 (Travelling Expenses, if any, £ - : - : -)
 Committee's Minute

John Starrock
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping
Dundee District 019

