

REPORT ON MACHINERY.

8524

No. 8524

Port of Glasgow

Received at London Office 11 MAY 88

No. in Survey held at Paisley

Date, first Survey 11th Novemb^r 1884 Last Survey 15th May 1888

Reg. Book.

(Number of Visits 21)

Tons 332.45

on the

S. S. "Brunner"

Master (McGhigman) Built at Paisley By whom built

When built 1888

Engines made at Paisley By whom made Bow & McLachlan when made 1888

Boilers made at Paisley By whom made Bow & McLachlan when made 1888

Registered Horse Power 95. Owners Martin Kennedy Port belonging to Dunedeen

ENGINES, &c.—

Description of Engines Triple Expansion three cranks.

Diameter of Cylinders 17" 27" & 43". Length of Stroke 30" No. of Rev. per minute 95 Point of Cut off, High Pressure $\frac{1}{2}$ Low Pressure $\frac{1}{3}$

Diameter of Screw shaft 8 $\frac{1}{2}$ " Diam. of Tunnel shaft 8" Diam. of Crank shaft journals 8 $\frac{1}{2}$ " Diam. of Crank pin 8 $\frac{1}{2}$ " size of Crank webs 6" x 9 $\frac{3}{4}$ "

Diameter of screw 10" 4" Pitch of screw 12" - 3" No. of blades 4. state whether moveable *yes* total surface 40 sq ft

No. of Feed pumps 2. diameter of ditto 3 $\frac{1}{2}$ " Stroke 15". Can one be overhauled while the other is at work *yes*

No. of Bilge pumps 2. diameter of ditto 3 $\frac{1}{2}$ " Stroke 15". Can one be overhauled while the other is at work *yes*.

Where do they pump from All compartments.

No. of Donkey Engines 2 - Size of Pumps { 5 $\frac{1}{2}$ " x 5" x 3 $\frac{1}{4}$ " } Where do they pump from Hotwell, sea

and bilges ballast tank 7" x 12" x 7"

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 *yes*

No. of bilge injections 1. and sizes 4" Are they connected to condenser, or to circulating pump *yes*

How are the pumps worked by levers off intermediate engine crosshead.

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 *about*

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 *on stocks before launching*

Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *upper platform*

BOILERS, &c.—

Number of Boilers One Description Multitubular Whether Steel or Iron *steel*

Working Pressure 150 lbs. Tested by hydraulic pressure to 300 lbs. Date of test 1st March 1888

Description of superheating apparatus or steam chest *none*

Can each boiler be worked separately *no* Can the superheater be shut off and the boiler worked separately *no*

No. of square feet of fire grate surface in each boiler 52.8" Description of safety valves *direct spring* No. to each boiler *two*

Area of each valve 8.3" Are they fitted with easing gear *yes* No. of safety valves to superheater *no* area of each valve *no*

Are they fitted with easing gear *no* Smallest distance between boilers and bunkers or *woodwork* 9" Diameter of boilers 13" 9 $\frac{1}{2}$ "

Length of boilers 10" 6" description of riveting of shell long. seams *trub. riv. d. butt* circum. seams *double riv lap* Thickness of shell plates 1 $\frac{3}{16}$ "

Diameter of rivet holes 1 $\frac{1}{4}$ " whether punched or drilled *drilled* pitch of rivets 7 $\frac{1}{4}$ " x 3 $\frac{5}{8}$ " Lap of plating 18 $\frac{1}{2}$ " *butted*

Percentage of strength of longitudinal joint 82% working pressure of shell by rules 154 lbs size of manholes in shell 12" x 16"

Size of compensating rings 6" broad double riv. to shell No. of Furnaces in each boiler *three*

Outside diameter 41" length, top 6" 6" bottom 10" 0" thickness of plates $\frac{1}{2}$ " description of joint *fox welded* if rings are fitted *no*

Greatest length between rings *no* working pressure of furnace by the rules 1 combustion chamber plating, thickness, sides 9 $\frac{1}{16}$ " back 9 $\frac{1}{16}$ " top 5 $\frac{3}{8}$ "

Pitch of stays to ditto, sides 8" x 8" back 8" x 8 $\frac{1}{2}$ " top 8" x 8 $\frac{1}{2}$ " If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by

rules 150 lbs Diameter of stays at smallest part 1 $\frac{3}{4}$ " x 1 $\frac{1}{2}$ " working pressure of ditto by rules 152 lbs end plates in steam space, thickness 9 $\frac{1}{16}$ " & riv. work

Pitch of stays to ditto 17" x 14" how stays are secured *d. nuts* working pressure by rules 150 lbs diameter of stays at

smallest part 2 $\frac{5}{8}$ " bars. working pressure by rules 151 lbs Front plates at bottom, thickness 3 $\frac{1}{4}$ " Back plates, thickness 3 $\frac{1}{4}$ "

Greatest pitch of stays *no* working pressure by rules *no* Diameter of tubes 3 $\frac{1}{4}$ " pitch of tubes 4 $\frac{1}{2}$ " x 4 $\frac{3}{4}$ " thickness of tube

plates, front 7 $\frac{1}{8}$ " back 3 $\frac{1}{4}$ " how stayed *stayed* pitch of stays 9" x 9 $\frac{1}{2}$ " width of water spaces 6"

Diameter of Superheater or Steam chest *no* length *no* thickness of plates *no* description of longitudinal joint *no* diam. of rivet holes *no*

Pitch of rivets *no* working pressure of shell by rules *no* diameter of flue *no* thickness of plates *no* If stiffened with rings *no*

Distance between rings *no* working pressure by rules *no* end plates of superheater, or steam chest; thickness *no* how stayed *no*

Superheater or steam chest; how connected to boiler *no*

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DONKEY BOILER— Description *Vertical with 4 Cross tubes*
 Made at *Paisley* by whom made *Bow & McLachlan* when made *1888* where fixed *Stokehold*
 Working pressure *60 lbs* tested by hydraulic pressure to *120 lbs* No. of Certificate *1857* fire grate area *15 5/8* description of safety
 valves *direct spring* No. of safety valves *2* area of each *7* if fitted with easing gear *yes* if steam from main boilers can
 enter the donkey boiler *no* diameter of donkey boiler *5'6"* length *9'0"* description of riveting *single & double*
 Thickness of shell plates *7/16* diameter of rivet holes *3/4* whether punched or drilled *drill* pitch of rivets *3"* lap of plating *4 1/4"*
 per centage of strength of joint *75%* thickness of crown plates *3/8* stayed by *7 stays 2" diameter*
 Diameter of furnace, top *4'5" iron* bottom *4'9"* length of furnace *4'3"* thickness of plates *7/16 iron* description of joint *lap*
 Thickness of furnace crown plates *1/2* stayed by *as above* working pressure of shell by rules *60 lbs*
 Working pressure of furnace by rules *60 lbs* diameter of uptake *16" iron* thickness of plates *3/8* thickness of water tubes *3/8*

SPARE GEAR. State the articles supplied:— *Propeller shaft, four prop blades. HP. valve
 spindle. Crank pin brasses. Feed & bilge pump valves. Coupling and
 connecting rod bolts. One length crankshaft. Bolts nuts & assorted.*

The foregoing is a correct description,
Bow. McLachlan & Co. Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *The above mentioned*)
engines and boilers are now completed on board in a satisfac-
tory manner and the machinery, which is of good material
and workmanship, is now in my opinion eligible
to be noted in the Society's Register: T.L.M.C. 5.88.

*It is submitted that this vessel
 is eligible to have the notification
 + sub 5. 88 recorded*
 D.P.
 17/5/88

[Large blue ink signature]

The amount of Entry Fee .. £ *1* : - : - received by me,
 Special .. £ *14* : *5* : -
 Donkey Boiler Fee .. £ : - : -
 Certificate (if required) .. £ : - : - *11/5/1888*
 To be sent as per margin.

John Sanderson
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

(Travelling Expenses, if any, £)
 Committee's Minute
+ L.M.C 5/88

FRIDAY 18 MAY 1888

