

REPORT ON MACHINERY.

No. *5445*

(Received at London Office) 22nd *JUNE* 18*82*

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

Date, first Survey *25/8/81* Last Survey *19.6.1882*

on the *Screw Steamer "Onapere"* Tons *541*
352

Master *J. Orkney* Built at *Dumbarton* When built *1882*

Engines made at *Dumbarton* By whom made *Denny & Co.* when made *1882*

Boilers made at *"* By whom made *"* when made *1882*

Registered Horse Power *80* Owners *Union Co. New Zealand* Port belonging to *Dumbarton*

ENGINES, &c.—

Description of Engines *Compound Inverted Direct Acting*
Diameter of Cylinders *24" & 42"* Length of Stroke *30"* No. of Rev. per minute *98* Point of Cut off, High Pressure *1/10"* Low Pressure *1/10"*
Diameter of Screw shaft *8"* Diameter of Tunnel shaft *4"* Diameter of Crank shaft journals *8"* Diameter of Crank pin *8"* size of Crank webs *5" x 10"*
Diameter of screw *10' 6"* Pitch of screw *12' 6"* No. of blades *4* state whether moveable *yes* total surface *28' 8" to 2' 6"*
No. of Feed pumps *2* diameter of ditto *2 1/4"* Stroke *15 3/16"* Can one be overhauled while the other is at work *yes*
No. of Bilge pumps *2* diameter of ditto *2 1/2"* Stroke *15 3/16"* Can one be overhauled while the other is at work *yes*
Where do they pump from *All Compartments*
No. of Donkey Engines *One* Size of Pumps *8 C. 4 P. 9 inch* Where do they pump from *All Compart. Hotwell*
Sea.

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 *One* and sizes *5"* Are they connected to condenser, or to circulating pump *Circulating Pump*
How are the pumps worked *Eccentrics on Crankshaft*
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 *Bilge pump discharges* How are they protected *Close up to deck*
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 launching*
Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Upper deck*

BOILERS, &c.—

Number of Boilers *One* Description *Cylindrical Single Ended Horizontal* *Steel Internals*
Working Pressure *40 lbs.* Tested by hydraulic pressure to *140 lbs.* Date of test *8th of April 1882*
Description of superheating apparatus or steam chest *None*
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 *62* Description of safety valves *Direct Spring*
No. to each boiler *Two* area of each valve *15.9"* 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 *14' 0 1/4"* Length of boilers *9' 1"* description of riveting of shell long. seams *double* circum. seams *double*
Thickness of shell plates *1" fore* diameter of rivet holes *1 3/16"* whether punched or drilled *drilled* pitch of rivets *4 1/2" & 2 1/2"*
Lap of plating *7 3/8" long* per centage of strength of longitudinal joint *43.8* working pressure of shell by rules *82 lbs.*
Size of manholes in shell *13" x 14"* size of compensating rings *32" x 30" x 1"*
No. of Furnaces in each boiler *3 Compound* outside diameter *3' 6" mean* length, top *6' 0"* bottom *8' 5"*
Thickness of plates *7/16"* description of joint *Welded* if rings are fitted *No* greatest length between rings *"*
Working pressure of furnace by the rules *74 lbs.*
Combustion chamber plating, thickness, sides *1/2"* back *1/2"* top *1/2"*
Pitch of stays to ditto *"* sides *9" x 7 1/2"* back *9" x 7 1/2"* top *Round*
If stays are fitted with nuts or riveted heads *riveted* working pressure of plating by rules *49 lbs.*
Diameter of stays at smallest part *1 1/4"* working pressure of ditto by rules *49 lbs.*
End plates in steam space, thickness *3/4"* pitch of stays to ditto *14 1/2" x 14"* how stays are secured *Nuts & Washers*
Working pressure by rules *93 lbs.* diameter of stays at smallest part *2 1/4"* working pressure by rules *94 lbs.*
Front plates at bottom, thickness *3/4"* Back plates, thickness *7/8"* greatest pitch of stays *12 1/2" x 7 1/2"* working pressure by rules *103 lbs.*
with belms on round of furnace

5745 sps.

Diameter of tubes $3\frac{1}{2}$ " pitch of tubes $4\frac{3}{4}$ " thickness of tube plates, front $\frac{1}{16}$ " back $\frac{1}{16}$ "
How stayed *Stay tubes* pitch of stays $1\frac{1}{4} \times 1\frac{1}{4}$ " width of water spaces 6"
Diameter of Superheater or Steam chest *None* length "
Thickness of plates " description of longitudinal joint " diameter of rivet holes " pitch of rivets "
Working pressure of shell by rules " 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 " How stayed "
Superheater or steam chest; how connected to boiler "

DONKEY BOILER— Description *Vertical, Insulated Cone & Cross-tubes of Steel*
Made at *Dumbarton* By whom made *Denny & Co.* when made *1882*
Where fixed *Northwood* working pressure *40 lbs.* Tested by hydraulic pressure to *140 lbs.* No. of Certificate *446*
Fire grate area *13'5"* Description of safety valves *direct spring* No. of safety valves *one* area of each *4'06*
If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *yes*
Diameter of donkey boiler *5'6 1/4"* length *Height 8'9 1/4"* description of riveting *double*
thickness of shell plates *3/8"* diameter of rivet holes *13/16"* whether punched or drilled *drilled*
pitch of rivets *3 1/4" x 1 5/8"* lap of plating *4 1/4"* per centage of strength of joint *75*
thickness of crown plates *1/2"* stayed by *4 rod stay 2 7/8 dia.*
Diameter of furnace, top *4'2 1/2"* bottom *4'6 1/2"* length of furnace "
thickness of plates *7/16"* description of joint *drilled*
thickness of furnace crown plates *7/16"* stayed by *4 rod stay 2 7/8 dia.*
Working pressure of shell by rules *42 lbs.* working pressure of furnace by rules *45 lbs.*
diameter of uptake *16"* thickness of plates *3/8"* thickness of water tubes *3/8"*

The foregoing is a correct description,
Denny & Co. Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *The above Engines & Boilers have been built under special survey. The workmanship is good and are now in good and safe working condition and in my opinion eligible to be noted in the Register.*
"LLOYD'S M.C." 6.82.

It is submitted that this vessel is suitable to be classed as Lloyd's M.C. 6/82, and recommended.
23.6.82

The amount of Entry Fee £ 2 : 0 : 0 received by me, *[Signature]*
Special .. £ 12 : 0 : 0
Certificate (if required) .. £ 0 : 0 : 0 *2/6/1882*
To be sent as per margin. £ 14 : 0 : 0
(Travelling Expenses, if any, £)
Committee's Minute *Friday, 23rd June, 1882,*
Comp [Signature]

Chas. Brown
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
Clyde District
Lloyd's Register Foundation