

REPORT ON MACHINERY.

(Received at London Office 20th April 1882)

5648

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Survey held at Dumbarton Date, first Survey 25.8.81 Last Survey 19.4.1882
 on the Steamer "Mahinopua" Tons 394
 Master J. Jones Built at Dumbarton When built 1882
 Engines made at Dumbarton By whom made Denny & Co. when made 1882
 Movers made at " By whom made " when made 1882
 Rated Horse Power 80. Owners Union Coy. of N. Zealand Port belonging to Dunedin

Engines, &c.—
 Kind of Engines Compound Inverted Direct Acting Iron Screw.
 Number of Cylinders two pairs Length of Stroke 24" No. of Rev. per minute 100 Point of Cut off, High Pressure 1/10" Low Pressure 1/10"
 Diameter of Screw shaft 5 1/2" Diameter of Tunnel shaft 5 1/4" Diameter of Crank shaft journals 5 1/4" Diameter of Crank pin 5 1/4" size of Crank webs 7/2" x 3 1/2"
 Diameter of screws 4' 0" Pitch of screw 9' 0" No. of blades 4' state whether moveable no total surface 13' 5" No. 9' 6"
 Number of Feed pumps two diameter of ditto 2 1/4" Stroke 12" Can one be overhauled while the other is at work yes
 Number of Bilge pumps two diameter of ditto 2 1/4" Stroke 12" Can one be overhauled while the other is at work yes
 Where do they pump from Engine room bilges & Holds.
 No. of Donkey Engines one Size of Pumps 2 1/2" 4" 9" Stroke Where do they pump from Sea. San No Bilges Holds

H. Hotwell
 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 two and sizes 2 1/2" Are they connected to condenser, or to circulating pump. Circulating pumps
 Are the pumps worked by levers.
 Connections with the sea direct on the skin of the ship yes Are they Valves or Cocks both
 Are they 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 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
 Are they carried through the bunkers none How are they protected "
 Are the valves, and pumps in connection with the machinery accessible at all times yes
 Are the valves, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes
 Are the tube, propeller, screw shaft, and all connections examined in dry dock before launching
 Is the tunnel watertight yes and fitted with a sluice door yes worked from Upper deck

Boilers, &c.—
 Number of Boilers one Description Cylindrical. Single ended Scantling tubular Steel Internals
 Working Pressure 90 lbs. Tested by hydraulic pressure to 140 lbs. Date of test 9. 12. 81
 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 "
 Area of square feet of fire grate surface in each boiler 62 Description of safety valves direct spring
 Area of each valve 15' 9" Are they fitted with easing gear yes
 Area of each valve " are they fitted with easing gear "
 Distance between boilers and bunkers on woodwork 6"
 Length of boilers 14' 0 1/4" description of riveting of shell long. seams hot lap. circum. seams double lap.
 Diameter of rivet holes 1 3/16" whether punched or drilled drilled pitch of rivets 3 1/4" x 2 1/4"
 Percentage of strength of longitudinal joint 73 working pressure of shell by rules 82
 Size of shell 14' x 13' size of compensating rings 32" x 30 x 1"
 Number of rings 3 outside diameter 3' 8" length, top 6' 0" bottom 8' 5"
 Description of joint Welded if rings are fitted no greatest length between rings "
 Working pressure by the rules 94 lbs
 Thickness, sides 1/2" back 1/2" top 1/2"
 Sides 9' x 7 1/2" back 8 1/2' x 7 1/2" top round
 Working pressure of plating by rules 49 lbs
 Working pressure of ditto by rules 90 lbs.
 Thickness of stays at smallest part 1 1/4" pitch of stays to ditto 14' x 14 1/2" how stays are secured 2. Nuts & Washers
 Working pressure by rules 93 lbs. diameter of stays at smallest part 2 1/4" working pressure by rules 97 lbs
 Thickness of plates at bottom, thickness 3/4" Back plates, thickness 5/8" greatest pitch of stays 8 1/2' x 7 1/2' working pressure by rules 89 lbs

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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 $14\frac{1}{4}$ " width of water spaces 6"
 Diameter of Superheater or Steam chest " 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, Inverted Cone & Cross-tubes of steel*
 Made at *Burntwood* By whom made *Denny & Co.* when made *1882*
 Where fixed *St. Michaels* working pressure *40 lbs* Tested by hydraulic pressure to *140 lbs* No. of Certificate *9*
 Fire grate area *13'9" ft.* Description of safety valves *direct spring* No. of safety valves *one* area of each *4.0*
 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"* description of riveting *double single*
 thickness of shell plates *3/8"* diameter of rivet holes *13/16"* whether punched or drilled *drilled*
 pitch of rivets *3 1/4"* lap of plating *4 1/2"* per centage of strength of joint *75*
 thickness of crown plates *1/2"* stayed by *4 rod stays 2 5/8" dia.*
 Diameter of furnace, top *4'2 1/2"* bottom *4'8 1/2"* length of furnace "
 thickness of plates *7/16"* description of joint *single riveted lap joint*
 thickness of furnace crown plates *7/16"* stayed by *4 rod stay 2 5/8" dia.*
 Working pressure of shell by rules *94 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 Machinery & Boilers*
of the above named vessel are of good workmanship and are now in safe working condition and are in my opinion eligible to be noted in the Register-Bo
 " LLOYD'S I.C.,

*Submitted this 19/4/82
 is eligible to be noted
 4.82-10*

The amount of Entry Fee £ 2 : 0 : 0 received by me,
 Special £ 12 : 0 : 0
 Certificate (if required) .. £ 0 : 0 : 0 19/4/1882
 To be sent as per margin. £ 14 : 0 : 0
 (Travelling Expenses, if any, £)

Thos Brown
 Engineer Surveyor to Lloyd's Register of British & Foreign Sh

Committee's Minute Friday, April 21st. 1882.

Lloyd's

Clyde District
 Lloyd's Register
 Foundation