5978

REPORT ON MACHINERY.

No. 5978

(Received at London Office 18th JAN. 1883)

No. in Reg. Book. Survey held at Dumbarton Date, first Survey Feb'y 3. 82 Last Survey Jany 11 1883

on the Screw Steamer "Waihora" Tons 1269

Master J. Orkney Built at Dumbarton When built 1882

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

Boilers made at do By whom made —"— when made 1882

Registered Horse Power 253 Owners Union Co. New Zealand Port belonging to Dunedin

ENGINES, &c.—

Description of Engines Compound Inverted Surface Condensing

Diameter of Cylinders 38" & 68" Length of Stroke 45" No. of Rev. per minute 70 Point of Cut off, High Pressure 7/10" Low Pressure 7/10"

Diameter of Screw shaft 12 7/16" Diameter of Tunnel shaft 11 1/2" Diameter of Crank shaft journals 12 1/2" Diameter of Crank pin 12 1/2 size of Crank webs 15" x 8 1/4"

Diameter of screw 14' 6" Pitch of screw 18' 6" No. of blades 4 state whether moveable Yes total surface 62 Sq Ft

No. of Feed pumps 2 diameter of ditto 4 1/4" Stroke 22 3/4" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 diameter of ditto 4 1/4" Stroke 22 3/4" Can one be overhauled while the other is at work Yes

Where do they pump from Holds. Engine Room & Stokehold

No. of Donkey Engines Two Size of Pumps 8" x 10" & 4" x 9" Where do they pump from Sea. Holds. Hotwell. Engine Room & Stokehold.

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 5" Are they connected to condenser, or to circulating pump Circulating Pump

How are the pumps worked By Eccentrics on Crank Shaft.

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 below

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 Launching

Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Upper Platform

BOILERS, &c.—

Number of Boilers Two Description Cylindrical Multitubular (Double ended)

Working Pressure 44 lbs Tested by hydraulic pressure to 148 lbs Date of test 23rd November 1882

Description of superheating apparatus or steam chest Horizontal

Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately No

No. of square feet of fire grate surface in each boiler 84 Sq Ft. Description of safety valves Direct Spring

No. to each boiler Two area of each valve 21.6 Sq in 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 14" Inches

Diameter of boilers 11' 10" Length of boilers 16' 4" description of riveting of shell long. seams Hy Lap circum. seams Doub Lap.

Thickness of shell plates 13/16" diameter of rivet holes 1 1/8" whether punched or drilled Drilled pitch of rivets 4 1/2"

Lap of plating 8 1/2" per centage of strength of longitudinal joint Plate 43 In 73 working pressure of shell by rules 49 lbs

Size of manholes in shell 17" x 13" size of compensating rings 34" x 34" x 13/16"

No. of Furnaces in each boiler 4 outside diameter 43" length, top 6' 0 bottom Through

Thickness of plates 1/2" description of joint Doub. Butt. if rings are fitted Yes greatest length between rings 6' 0"

Working pressure of furnace by the rules 86 lbs

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

Pitch of stays to ditto sides 8" x 8" back — top Girders

If stays are fitted with nuts or riveted heads Nutted Heads working pressure of plating by rules 100 lbs

Diameter of stays at smallest part 1 1/4 working pressure of ditto by rules 115 "

End plates in steam space, thickness 13/16" pitch of stays to ditto 15 1/2" x 16 1/2" how stays are secured Nuts Washers

Working pressure by rules 84 lbs diameter of stays at smallest part 2 3/16" working pressure by rules 81 lbs

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

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Diameter of tubes 3 1/4" pitch of tubes 4 1/2" thickness of tube plates, front 11/16" back 11/16"

How stayed Tube Stays pitch of stays 18" x 13 1/2" width of water spaces 6"

Diameter of Superheater or Steam chest 3' 2 3/4" length 22' 4 3/4"

Thickness of plates 1/2" description of longitudinal joint Lap diameter of rivet holes 7/8" pitch of rivets 3 1/4"

Working pressure of shell by rules 143 lbs 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 1/2" How stayed Dished

Superheater or steam chest; how connected to boiler by necks flanged and riveted to both

DONKEY BOILER— Description Circular Vertical with inverted Cone

Made at Dumbarton By whom made Denny & Co when made Tested Nov 23rd 1882

Where fixed On Deck working pressure 70 lbs Tested by hydraulic pressure to 140 lbs No. of Certificate 932

Fire grate area 15 sq ft. Description of safety valves direct Spring No. of safety valves 2 area of each 7 sq in

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' 2" description of riveting Doubl. Single Lap.

thickness of shell plates 13/32" diameter of rivet holes 13/16 whether punched or drilled drilled

pitch of rivets 3 1/4" lap of plating 4 3/8" per centage of strength of joint 75

thickness of crown plates 1/2" stayed by 4 stays 2 5/8 dia

Diameter of furnace, top 4' 7" bottom 5' 4" length of furnace 6' 0

thickness of plates 7/16 description of joint Lap single riveted

thickness of furnace crown plates 7/16" stayed by 4 stays 2 5/8 dia

Working pressure of shell by rules 77 lbs working pressure of furnace by rules 70 lbs

diameter of uptake 16 3/4" thickness of plates 3/8" thickness of water tubes 3/8"

The foregoing is a correct description,

Manufacturer. Denny & Co

General Remarks (State quality of workmanship, opinions as to class, &c. The above Engines & Boilers have been constructed under Special survey. The material and workmanship are of good description and were found satisfactory when tested under steam and are in my opinion eligible for the notification "✠ LLOYD'S M.C." 1. 83 in the Society's Register Book

It is submitted that this vessel is eligible to have the notification ✠ L M C 1.83 recorded. B.G. 18/1/83

The amount of Entry Fee ... £ 3 : 0 : 0 received by me,

Special ... £ 32 : 13 : 0

Certificate (if required) ... £ Gratis 10/1/1883

To be sent as per margin.

(Travelling Expenses, if any, £)

J. McGregor

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

Committee's Minute Friday, 19th January 1883.

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Robert Edmund Taylor & Son Printers, 19, Old Street, Goswell Road, London, E.C.