

REPORT ON MACHINERY.

11198

No. 11198 Port of Glasgow Received at London Office 18
 No. in Survey held at Paisley Date, first Survey 14th Nov^r 1890 Last Survey 26th Dec^r 1891
 Reg. Book. S. S. "Upolu" (Number of Visits 53)
 on the Arthur Built at Paisley By whom built Heming & Ferguson Tons { Gross 1141
 Master Arthur When built 1891 Net 400
 Engines made at Paisley By whom made Heming & Ferguson when made 1891
 Boilers made at Paisley By whom made Bow, McLachlan & Co when made 1891
 Registered Horse Power 120. Owners Union Steam Ship Co. N.Y. Port belonging to Dunedin

ENGINES, &c.—

Description of Engines Inadrupte Expansion No. of Cylinders Four
 Diam. of Cylinders 15", 23", 30" & 45" Length of Stroke 33" Rev. per minute 95 Point of Cut off, High Pressure Var Low Pressure Var
 Diameter of Screw shaft 9" Diam. of Tunnel shaft 8 3/4" Diam. of Crank shaft journals 9" Diam. of Crank pin 9" size of Crank webs 6" x 10 1/2"
 Diameter of screw 11'-6" Pitch of screw 14'-0" No. of blades 4. state whether moveable yes total surface 38 sq. ft.
 No. of Feed pumps 2. diameter of ditto 2 3/4" Stroke 15" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2. diameter of ditto 3" Stroke 15" Can one be overhauled while the other is at work yes
 Where do they pump from all Compartments
 No. of Donkey Engines Two Feed Size of Pumps 7" x 4 3/8" Where do they pump from Hotwell, Sea, tanks & bilges
Ballast 10" x 8"
 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 3" Are they connected to condenser, or to circulating pump yes
 How are the pumps worked by levers
 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 on stocks before launching
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from upper platform

OILERS, &c.—

No. of Boilers One Description Multitubular Material Steel Letter (for record) S
 Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 14th June 1891
 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 63. Description of safety valves d. Spring No. to each boiler two
 Area of each valve 4" 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 10" Diameter of boilers 14'-6"
 Length of boilers 10'-6" Description of riveting of shell long. seams d. butt str. circum. seams Lap Thickness of shell plates 1 7/8"
 Diameter of rivet holes 1 5/8" whether punched or drilled drilled pitch of rivets 9 1/2" & 4 3/4" Lap of plating 7 3/4"
 Percentage of strength of longitudinal joint 81% working pressure of shell by rules 200 lbs. size of manholes in shell 13" x 14"
 Number of compensating rings 1 5/8" x 4" No. of Furnaces in each boiler 3. Description of Furnaces Purvis
 Inside diameter 42" length 6'-6" thickness of plates 5/8" description of joint welded if rings are fitted —
 Greatest length between rings — working pressure of furnace by the rules 221 lbs. combustion chamber plating, thickness, sides 3/32" back 7/8" top 3/32"
 Pitch of stays to ditto, side 7 3/4" back 7 3/4" top 8 1/2" If stays are fitted with nuts or riveted heads Nuts inside working pressure of plating by rules 200 lbs. Diameter of stays at smallest part 1 3/4" & 1 1/2" working pressure of ditto by rules 210 lbs. end plates in steam space, thickness 1 7/8" dbl. pl.
 Pitch of stays to ditto 18" x 18" how stays are secured d. nuts working pressure by rules 200 lbs. diameter of stays at smallest part 3 1/2" bars working pressure by rules 200 lbs. Front plates at bottom, thickness 3/4" Back plates, thickness 3/4"
 Greatest pitch of stays — working pressure by rules — Diameter of tubes 3" pitch of tubes 4 7/8" thickness of tube plates, front 1 5/8" back 1 3/16" how stayed stayed pitch of stays 9 1/2" width of water spaces 6"
 Diameter of Superheater or Steam chest — length — thickness of plates — description of longitudinal joint — diam. 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 —

11198 gls

DONKEY BOILER—

Description

Vertical with Cross tubes

Made at Gateshead

by whom made

Clark, Chapman & Co

when made

where fixed

Stokehold

Working pressure 80 lbs.

tested by hydraulic pressure to 160 lbs

No. of Certificate 3647

fire grate area 19 sq ft

description of safety

valves d. Spring

No. of safety valves 2

area of each 5.9

if fitted with easing gear Yes

if steam from main boilers can

enter the donkey boiler No

diameter of donkey boiler 4'-0"

length 11'-0"

description of riveting double

Thickness of shell plates 15/32

diameter of rivet holes 7/8

whether punched or drilled drilled

pitch of rivets 3 1/2

lap of plating 4 1/2

per centage of strength of joint 41

thickness of crown plates 5/8

stayed by seven stays

Diameter of furnace, top 5'-6"

bottom 6'-0"

length of furnace 4'-10"

thickness of plates 5/8

description of joint lap single

Thickness of furnace crown plates 9/16

stayed by as above

working pressure of shell by rules 85 lbs

Working pressure of furnace by rules 90 lbs.

diameter of uptake 18"

thickness of plates 7/16

thickness of water tubes 3/8

SPARE GEAR. State the articles supplied:—

Bottom end bolts. Main bearing &

coupling bolts. Thrust shaft. Propeller shaft.

Crank shaft. Red & blue pump valves &c —

The foregoing is a correct description,

Manufacturer.

Henry Thompson

General Remarks

(State quality of workmanship, opinions as to class, &c.)

The above mentioned

engines and boilers have been built under special survey and are of good workmanship and material. — The machinery has been properly fitted outboard the vessel and tried under steam with satisfactory results. The vessel is now in my opinion eligible to the notation: *L.M.C. 12.91*

+ L.M.C. 12-91

M.A. 1-1-92

MACHINERY CERTIFICATE WRITTEN.

Certificate (if required) to be sent to

The amount of Entry Fee .. £ 2 : .. received by me,

Special .. £ 18 : ..

Donkey Boiler Fee .. £ ..

5/1/92

(Travelling Expenses, if any, £ ..)

Committee's Minute

TUES. 5 JAN 1892

+ L.M.C. 12, 91

John Sanderson

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

Glasgow. Lloyd's Register Foundation