

REPORT ON MACHINERY.

No. 9449 Port of Glasgow THURS 10 APRIL 1890
 No. in Survey held at Glasgow Date, first Survey 4th October 1889 Last Survey 14th March 1890
 Reg. Book. S. S. Cornelian (Number of Visits 19)
 on the Master Thomas Nelson Built at Bowling By whom built Scott & Co
 Engines made at Glasgow By whom made Muir & Houston when made 1890
 Boilers made at Do. By whom made Do. when made 1890
 Registered Horse Power 60 Owners Wm Robertson Port belonging to Glasgow

ENGINES, &c.—

Description of Engines Inverted Direct Acting Triple Expansion No. of Cylinders Three
 Diam. of Cylinders 13, 21½, 34" Length of Stroke 27" Rev. per minute 85 Point of Cut off, High Pressure 5/8 Low Pressure 5/8
 Diameter of Screw shaft 7" Diam. of Tunnel shaft 7" Diam. of Crank shaft journals 7" Diam. of Crank pin 7" size of Crank webs 10 x 15"
 Diameter of screw 9-0" Pitch of screw 13-0" No. of blades Four state whether moveable No total surface 28 sq ft.
 No. of Feed pumps One diameter of ditto 2¼" Stroke 13½" Can one be overhauled while the other is at work ✓
 No. of Bilge pumps One diameter of ditto 2½" Stroke 13½" Can one be overhauled while the other is at work ✓
 Where do they pump from Engine Room & Hold
 No. of Donkey Engines One Size of Pumps 4½ cwt. 2¼ pump & 4 stroke Where do they pump from Engine room, Hold, Sea, Hotwell & Tank
 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 Aff.
 No. of bilge injections One and sizes 3" dia Are they connected to condenser, or to circulating pump Circulating
 How are the pumps worked By lines from lenshead of Intermediate engine
 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 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 No tunnel and fitted with a sluice door ✓ worked from ✓

BOILERS, &c.—

No. of Boilers One Description Cylindrical, Mult^{le} Material Steel Letter (for record) (S)
 Working Pressure 160 lb. Tested by hydraulic pressure to 320 lb. Date of test February 11th 1890
 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 49 Description of safety valves Direct spring No. to each boiler Two
 Area of each valve 4.9 sq ins 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 No side bunkers Diameter of boilers 12-0"
 Length of boilers 10.0 description of riveting of shell long. seams Butt. Three rows circum. seams Lap double Thickness of shell plates 1½"
 Diameter of rivet holes 1½" whether punched or drilled Drilled pitch of rivets 7½ & 3¾" Lap of plating 17" butt.
 Per centage of strength of longitudinal joint 85 working pressure of shell by rules 163 lb. size of manholes in shell 11 x 6"
 Size of compensating rings Doubling plate No. of Furnaces in each boiler Three Description of Furnaces Plain
 Outside diameter 37" length 6-6" thickness of plates 1½" description of joint Butt. if rings are fitted No
 Greatest length between rings ✓ working pressure of furnace by the rules 162 lb. combustion chamber plating, thickness, sides ½" back ½" top ½"
 Pitch of stays to ditto, sides 7 x 7 back 7 x 7 top 7 x 7½ If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 157 lb.
 Diameter of stays at smallest part 1½ x 1½ working pressure of ditto by rules 160 lb. end plates in steam space, thickness 3½"
 Pitch of stays to ditto 14½ x 13½ how stays are secured Nuts working pressure by rules 180 lb. diameter of stays at smallest part 2¼"
 working pressure by rules 160 lb. Front plates at bottom, thickness 13/16" Back plates, thickness 13/16"
 Greatest pitch of stays 12 x 7 working pressure by rules 160 lb. Diameter of tubes 3½" pitch of tubes 4¾" thickness of tube plates, front 13/16" back 13/16" how stayed Tubes pitch of stays 14 x 9½" width of water spaces 5½ x 6"
 Diameter of Superheater or Steam chest None 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 ✓

DONKEY BOILER—

Description

Vertical. Two Cross tubes.

Made at Glasgow.

by whom made

Muir & Houston.

when made 1890.

where fixed

On deck

Working pressure 70 lb.

tested by hydraulic pressure to 140 lb.

No. of Certificate 2568.

fire grate area 9 sq ft.

description of safety

valves Direct spring.

No. of safety valves One.

area of each 4.9 sq in.

if fitted with easing gear yls.

if steam from main boiler

enter the donkey boiler No.

diameter of donkey boiler 4-3"

length 9-6"

description of riveting

Lap double

Thickness of shell plates $\frac{3}{8}$ "diameter of rivet holes $\frac{15}{16}$ "

whether punched or drilled Rimead

pitch of rivets $3\frac{1}{4}$ "

lap of plating 4"

per centage of strength of joint 78

thickness of crown plates $\frac{9}{16}$ "

stayed by

Three stays.

 $1\frac{1}{2}$ dia

Diameter of furnace, top 3-0"

bottom 3-6"

length of furnace 4-6"

thickness of plates $\frac{7}{16}$ "

description of joint Lap

Thickness of furnace crown plates $\frac{7}{16}$ "

stayed by

Three stays. $1\frac{1}{2}$ dia

working pressure

shell by rules 120 lb

Working pressure of furnace by rules 77 lb.

diameter of uptake 10"

thickness of plates $\frac{7}{16}$ "thickness of water tubes $\frac{3}{8}$ "

SPARE GEAR. State the articles supplied:—

Two top & bottom end bolts & nuts for connecting rod.

Two main bearing bolts. One set of coupling bolts. Feed & bilge pump valves.

 $\frac{1}{2}$ set of fire bars. Six condenser tubes. Iron bolts & nuts assorted.

The foregoing is a correct description,

Muir & Houston Manufacturer.

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

These engines & boilers have been constructed under special survey — they are of good material & workmanship. They have been well fitted on board — satisfactorily tested under steam. In opinion they are eligible to be classed + L.M.C. 3-90 in the Register Book.

Appended hereto are two Reports on Forgings. The crankshaft was examined by me while under construction at the works of Messrs Robt Harvey & Co and is found free from defects.

It is submitted that this vessel is eligible to have + L.M.C. 3-90 recorded
W.D.
10.4.90

The amount of Entry Fee .. £ 1 : : : received by me,

Special .. £ 9 : : :

Donkey Boiler Fee .. £ : : :

Certificate (if required) .. £ : : : 24/3/1890

To be sent as per margin.

(Travelling Expenses, if any, £)

Committee's Minute

FRIDAY 11 APRIL 1890

+ L.M.C. 3/90

Walter P. Robson

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



Lloyd's Register Foundation