

REPORT ON MACHINERY.

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328
in
Materials Book.

Port of Glasgow
 Survey held at Glasgow & Leith Date, first Survey 14th April 1890 Last Survey 2nd Feb. 1891
 (Number of Visits 34)
 on the Screw Steamer "Dunbeth"
 er J. Sharp Built at Stockton By whom built Craig Taylor & Co. Tons { Gross 2276
 Net 1472
 When built 1890
 nes made at Glasgow By whom made Dunsmuir & Jackson when made 1890
 rs made at Do By whom made Do when made 1890
 erted Horse Power 206.205 Owners Macbeth & Gray Port belonging to Glasgow

INES, &c.—
 iption of Engines Inverted Direct Acting Triple Expansion No. of Cylinders Three
 of Cylinders 22, 34, 56 Length of Stroke 39 Rev. per minute 80 Point of Cut off, High Pressure 3/4 Low Pressure 3/4
 eter of Screw shaft 10 1/2 Diam. of Tunnel shaft 10 1/4 Diam. of Crank shaft journals 10 1/2 Diam. of Crank pin 10 1/2 size of Crank webs 7 1/4 x 13
 eter of screw 14-0 Pitch of screw 18-6 No. of blades Four state whether moveable Solid total surface 63 sq. ft.
 of Feed pumps Two diameter of ditto 3 1/4 Stroke 18 Can one be overhauled while the other is at work Yes
 of Bilge pumps Two diameter of ditto 3 1/4 Stroke 18 Can one be overhauled while the other is at work Yes
 do they pump from Fore & after hold. Tanks in engine room. One pump from sea.
 of Donkey Engines Two Size of Pumps Feed. 5 cwt. 3 1/2 pump + 8 stroke. Ballast 7 1/2 x 8 x 10. Where do they pump from Donkey from engine room
sea, fore & after holds. Ballast from sea & tanks.
 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
 of bilge injections One and sizes 3 dia Are they connected to condenser, or to circulating pump Circulating pump
 are the pumps worked By levers from crosshead of Intermediate engine
 all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both
 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
 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
 pipes are carried through the bunkers No How are they protected —
 all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times Yes
 the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges Yes
 were stern tube, propeller, screw shaft, and all connections examined in dry dock New vessel, before launching.
 the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Top platform.

ELERS, &c.—
 of Boilers Two Description Cylindrical - Multi Material Steel Letter (for record) S
 Working Pressure 160 lbs. Tested by hydraulic pressure to 320 lbs. Date of test 8th + 13th December 1890.
 Friction of superheating apparatus or steam chest None
 each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately ✓
 he of square feet of fire grate surface in each boiler 57 Description of safety valves Direct springs No. to each boiler Two
 of each valve 7 sq. in. Are they fitted with easing gear Yes No. of safety valves to superheater — area of each valve —
 they fitted with easing gear ✓ Smallest distance between boilers and bunkers or woodwork 10 Diameter of boilers 13-3
 th of boilers 10-9 description of riveting of shell long. seams Butt. Three rows circum. seams Lap. double. Thickness of shell plates 1 5/32
 eter of rivet holes 1 5/32 whether punched or drilled Drilled pitch of rivets 7 3/4 or 3 1/8 Lap of plating 17 1/4 x 15/16
 centage of strength of longitudinal joint 85.2 working pressure of shell by rules 164 lbs. size of manholes in shell 16 x 12
 of compensating rings McNeil No. of Furnaces in each boiler Three Description of Furnaces Purvis' patent ribbed
 ide diameter 39 length 7-6 tubes thickness of plates 17/32 description of joint Weld. if rings are fitted Yes
 atest length between rings 9 working pressure of furnace by the rules 166 lbs. combustion chamber plating, thickness, sides 9/16 back 9/16 top 19/16
 n of stays to ditto, sides 7 3/4 x 7 3/4 back 7 3/4 x 7 3/4 top 7 13/16 x 7 13/16 If stays are fitted with nuts or riveted heads Nuts working pressure of plating by
 rules 162 lbs. Diameter of stays at smallest part 1 3/8 screws working pressure of ditto by rules 162 lbs. end plates in steam space, thickness 7/16 with 13 doubling
 h of stays to ditto 18 x 18 how stays are secured Nuts working pressure by rules 166 lbs. diameter of stays at
 smallest part 3 screw working pressure by rules 175 lbs. Front plates at bottom, thickness 3/4 Back plates, thickness 1/16
 atest pitch of stays 12 + 7 3/4 working pressure by rules ✓ Diameter of tubes 3 1/2 pitch of tubes 44 thickness of tube
 doubling plate 2 riveted 13 back 25 how stayed Tubes pitch of stays 14 1/2 x 9 1/2 width of water spaces 5 to 7 1/2
 plates, front 16 32
 eter of Superheater or Steam chest None length ✓ thickness of plates ✓ description of longitudinal joint ✓ diam. of rivet holes ✓
 h of rivets ✓ working pressure of shell by rules ✓ diameter of flue ✓ thickness of plates ✓ If stiffened with rings ✓
 ance 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 Four cross tubes.*
 Made at *Motherwell* by whom made *J. Marshall & Co* when made *1890* where fixed *Stokeloid*
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate _____ fire grate area *25 sq ft* description of safety
 valves *Direct spring* No. of safety valves *Two* area of each *3 1/4 sq ft* if fitted with easing gear *Yes* if steam from main boilers can
 enter the donkey boiler *No* diameter of donkey boiler *6-6* length *14-6* description of riveting *Lap-double*
 Thickness of shell plates *7/16* diameter of rivet holes *7/8* whether punched or drilled *Drilled* pitch of rivets *3 3/16* lap of plating *4 1/2*
 per centage of strength of joint *72.5* thickness of crown plates *9/16* stayed by *Plate dished and six stays 1 9/8 screws*
 Diameter of furnace, top *5-6* bottom *5-9* length of furnace *5-6* thickness of plates *3/16* description of joint *Lap*
 Thickness of furnace crown plates *9/16* stayed by *Plate dished to 5 ft rad and six stays 1 5/8* working pressure of shell by rules *87 lbs*
 Working pressure of furnace by rules *80 lbs* diameter of uptake *15* thickness of plates *7/16* thickness of water tubes *3/8*

SPARE GEAR. State the articles supplied:— *connecting rod top & bottom end bolts & nuts - Two main
 bearings bolts - One set of coupling bolts - Feed & bilge pump valves - One propeller -
 10 condenser & 10 boiler tubes - Fire bars - Corroset bolts & nuts -*

The foregoing is a correct description,
D. Muscum & Jackson 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
 and in accordance with the requirements of the Rules throughout -
 they have been forwarded to Leith to be fitted on board the vessel -
 Appended hereto is the approved tracing of main boiler also two Reports on forgings.*

*The above machinery has been fitted on board at Leith, main & donkey
 boiler safety valves adjusted under steam & blow at 165 & 80 lbs respectively,
 & is now in good working order & suitable, in my opinion, for the class
 marked + L.M.C. 2-91.*
W. J. Darling
Leith 2nd Feb: 91.

*It is submitted that this vessel is
 eligible to have + L.M.C. 2-91
 endorsed - W.A.
 10.2.91*

Large blue handwritten signature or initials.

The amount of Entry Fee £ 2 : : : received by me,
 Special *Leith fee* .. £ 20 : 4 : :
 Donkey Boiler Fee .. £ 10 : 2 : :
 Certificate (if required) .. £ : : : : 5/2/1891
 To be sent as per margin.
 (Travelling Expenses, if any, £ _____)

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

Committee's Minute *FRI. 13 FEB 1891*
+ L.M.C. 2-91