

REPORT ON MACHINERY.

3408

Port of BelfastReceived at London Office WED 11 JUNE 1890To. 3408No. in Survey held at BelfastDate, first Survey 20th July 1889 Last Survey 2nd June 1890Reg. Book. Sup(Number of Visits 34) Net 184.78

96 on the

Tons 464.51Master J. Bannister Built at Belfast By whom built MacIlwaine & MacColl When built 1890Engines made at Belfast By whom made MacIlwaine & MacColl when made 1890Boilers made at do. By whom made do. when made 1890Estimated Horse Power 550 Owners Jas. Fisher & Sons Port belonging to BarrowRegistered Horse Power 550 Owners Jas. Fisher & Sons Port belonging to Barrow

Engines, &c. —

Description of Engines Triple Compound 3 cyls 3 cranks D.A.I. — S.C.Diameter of Cylinders 17" 27" 44" Length of Stroke 30 No. of Rev. per minute 90 Point of Cut off, High Pressure .57 Low Pressure .573Diameter of Screw shaft 8" Diam. of Tunnel shaft 7 1/4" Diam. of Crank shaft journals 8" Diam. of Crank pin 8" size of Crank webs 10" x 5"Diameter of screw 11-0 Pitch of screw 12-3 No. of blades 4 state whether moveable no total surface 36 sq. ft.No. of Feed pumps 2 diameter of ditto 2 1/4" 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 Feed from hotwell. Bilge from holds & W.B. spaceNo. of Donkey Engines Two Size of Pumps 5" Cyl. 5 1/2" 3" pump 3" aug. Where do they pump from Sea. ballast tanksall bilges in holds and W.B. space boilersAre all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible yesNo. of bilge injections one and sizes 4" Are they connected to condenser, or to circulating pump Circulating Suction.How are the pumps worked By links & levers from Centre engine. Separate centrifugalAre all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks BothAre 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 AboveAre 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 YesHow are the pipes carried through the bunkers none How are they protected byAre 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 3rd May 1890Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Main deck.

Boilers, &c. —

Number of Boilers One Description Single Inded. Cir. Mult. Whether Steel or Iron SteelWorking Pressure 160 lbs. Tested by hydraulic pressure to 320 lbs. Date of test 19th Feby. 1890Description of superheating apparatus or steam chest None fitted.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 54 Description of safety valves Cockburn's No. to each boiler TwoArea of each valve 7.07 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 6 feet. Diameter of boilers 13-5Length of boilers 10-4 1/2" description of riveting of shell long. seams Double Straps 647 circum. seams Double & Double Thickness of shell plates 1 1/4"Diameter of rivet holes 1 1/8" 1 3/8" whether punched or drilled drilled pitch of rivets 9 3/8" in 1 1/8" plates Lap of plates 1 1/4"Percentage of strength of longitudinal joint 88 to 98 working pressure of shell by rules 160 lbs. size of manholes in shell 16" x 12"Size of compensating rings Through front plate in Steam Space No. of Furnaces in each boiler threeOutside diameter 40" length, top 7-0" bottom 7-0" thickness of plates 3 3/4" description of joint Welded if rings are fitted Cor.Greatest length between rings 7" working pressure of furnace by the rules 165 lbs. combustion chamber plating, thickness, sides 5" back 5" top 5 1/8"Pitch of stays to ditto, sides 6 3/8" back 6 3/8" top 8 1/2" 7 3/4" If stays are fitted with nuts or riveted heads Nutted working pressure of plating byrules 162 1/2 lbs. Diameter of stays at smallest part 1 1/8" steel working pressure of ditto by rules 168 lbs. end plates in steam space, thickness 3/4" with 3/4" doublingPitch of stays to ditto 17" x 17 1/4" how stays are secured two nuts & working pressure by rules 160 lbs. diameter of stays atsmallest part 2 3/4" steel working pressure by rules 183 lbs. Front plates at bottom, thickness 1 1/4" Back plates, thickness 1 1/4"Greatest pitch of stays 12 1/2" working pressure by rules 160 lbs. Diameter of tubes 3 1/2" pitch of tubes 4 3/4" thickness of tubeplates, front 1 1/4" back 1 1/4" how stayed Stay tubes & pitch of stays 14 1/4" x 9 1/2" width of water spaces 1 1/4" at C.C.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 ✓Superheater or steam chest; how connected to boiler ✓Superheater or steam chest; how connected to boiler ✓Superheater or steam chest; how connected to boiler ✓Superheater or steam chest; how connected to boiler ✓Superheater or steam chest; how connected to boiler ✓Superheater or steam chest; how connected to boiler ✓Superheater or steam chest; how connected to boiler ✓Superheater or steam chest; how connected to boiler ✓Superheater or steam chest; how connected to boiler ✓Superheater or steam chest; how connected to boiler ✓

Lloyd's Register

Foundation

BEL 57-0015.1

DONKEY BOILER— Description *Steel, Horizontal, Single Circular with one furnace*
Made at *Belfast* by whom made *MacIlwaine & MacColl* when made *1890* where fixed *Star side of Stokelock*
Working pressure *60 lb.* tested by hydraulic pressure to *120 lb.* No. of Certificate *63* fire grate area *82.5 sq ft* description of safety
valves *D. Lockburn* No. of safety valves *two* area of each *3.14 sq ft* if fitted with easing gear *Yes* if steam from main boilers can
enter the donkey boiler *No* diameter of donkey boiler *5'-6"* length *6'-6"* description of riveting *Lap & double riveted*
Thickness of shell plates *3/4 full* diameter of rivet holes *1/4"* whether punched or drilled *drilled* pitch of rivets *3 1/4"* lap of plating *4 1/4"*
per centage of strength of joint *69* thickness of ~~shell~~ plates *7/16"* stayed by *1 1/2" steel stays 12" pitch double nuts & 6 1/2" x 3/4" washers*
Diameter of furnace, top *28"* bottom *28"* length of furnace *4'-0"* thickness of plates *3/8"* description of joint *Welded*
Thickness of ~~furnace~~ ^{C.C. and thick} crown plates *7/16"* stayed by *Top & bot by girders & 1" steel screw stays* working pressure of shell by rules *79 lb*
Working pressure of furnace by rules *117 lb.* diameter of uptake *✓* thickness of plates *✓* thickness of water tubes *✓*

SPARE GEAR. State the articles supplied:— *2 top end and 2 bottom end connecting rod bolts and nuts, 2 main bearing bolts, 6 coupling bolts, 2 bilge and 2 feed pump valves, 3 air pump valves, 6 pin & ring bolts and Ramsbottom rings for all pistons, &c &c.*

The foregoing is a correct description,

MACILWAINE & MACCOLL, LIMITED. Manufacturers.
M. MacColl

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

The machinery of this vessel has been constructed in accordance with the approved plan of main boiler enclosed the Secretary's letter dated 11th July, 1889; the Rules of the Society for New Machinery, or equal thereto and to the satisfaction of the undersigned; except in the following:— the crank shaft is 5' and the tunnel shafting 4" less in dia. than the Rule; no bilge injection pipe is fitted to the injection valve box; no tunnel suction fitted and no valve fitted to ship's side on the pulsometer discharge pipe. For further particulars see letter enclosed.

The steel used in the construction of the boilers has been tested as required by the Rules and endorsed invoices examined.

The main and donkey boilers and main steam pipes were tested by water to twice the working pressure and showed no signs of weakness or leakage; the boilers were tested under steam and the safety valves adjusted to blow off at exactly 160 lb. on main and 60 + 4 lb. on donkey boiler.

The main and auxiliary engines were tried under steam at full speed and worked satisfactorily.

The shafting when finished was examined & found free from any visible defects.

All the materials used in the construction of the machinery and the workmanship throughout are good and satisfactory and provided there be fitted a bilge injection pipe, a tunnel suction and a pulsometer discharge valve on vessel's side, I would respectfully recommend that the Registration **+L.M.C. 690** be granted and the same recorded in the Register Book.

The amount of Entry Fee .. £ 2 : 0 : 0 received by me,

Special £ 15 : 6 : 0

Donkey Boiler Fee £ : : :

Certificate (if required) .. £ *Gratis* 7-6-1890

To be sent as per margin.

(Travelling Expenses, if any, £)

Committee's Minute

FRI 13 JUNE 1890

TUES 16 SEPT 1890

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



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