

REPORT ON MACHINERY.

3738

Port of Belfast

Received at London Office **FRI 25 JULY 1890**

Survey held at Belfast

Date, first Survey 13th Dec. 89 Last Survey 16th July 1890

on the Steel Screw Steamer Glenarm

(Number of Visits 23) Net 256.80
Tons Gross 523.66

A. Cameron Built at Belfast By whom built MacSwaine & MacColl When built 1890.

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red Horse Power 618 98 Owners Antrim Iron Ore Co. Port belonging to Belfast.

ENGINES, &c.—

Kind of Engines Triple Compound 3 cylinders 3 cranks. I.D.S.C.

Number of Cylinders 17-27-44 Length of Stroke 30" No. of Rev. per minute 90 Point of Cut off, High Pressure 17" Low Pressure 16 1/2"

Diameter of Screw shaft 8" Diam. of Tunnel shaft 7 3/4" Diam. of Crank shaft journals 8" Diam. of Crank pin 8" size of Crank webs 5" x 10"

Pitch of screw 11-0" Pitch of screw 12-3 to 12-6 No. of blades 4 state whether moveable Yes total surface 35 sq. ft.

Feed pumps 2 diameter of ditto 2 1/2" Stroke 15" Can one be overhauled while the other is at work Yes

Bilge pumps 2 diameter of ditto 3" Stroke 15" Can one be overhauled while the other is at work Yes.

Where they pump from Bilge from holds, leak E. & W. space & tunnel. Feed from hotwell

Donkey Engines Three Size of Pumps Super. 5" cyl. 3" pump 5 1/2" 3" Section Where do they pump from Sea, ballast tanks, all tunnel hotwell and boilers.

Are the bilge suction pipes fitted with roses Yes Are the roses always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes.

Are the bilge injections One and sizes 4 1/2" Are they connected to condenser, or to circulating pump Circulating Suction.

Are the pumps worked By links & levers from Centre engine crosshead

Are the connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both Cocks & Valves.

Are the pipes 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 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

Are the pipes carried through the bunkers None. How are they protected —

Are the 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.

Are the stern tube, propeller, screw shaft, and all connections examined in dry dock 8th July 1890.

Are the screw shaft tunnel watertight Yes. and fitted with a sluice door Yes. worked from Upper deck.

BOILERS, &c.—

Number of Boilers One Description Circular, Single Ended, Multi-tubular Whether Steel or Iron Steel.

Pressure 160 lbs. Tested by hydraulic pressure to 320 lbs. Date of test 13th June 1890.

Kind of superheating apparatus or steam chest None fitted.

Can the boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately Yes

Area of fire grate surface in each boiler 60 sq. ft. Description of safety valves 2 Coakburn's No. to each boiler Two

Are each valve 7.07 sq. in. Are they fitted with easing gear Yes No. of safety valves to superheater — area of each valve —

Are the valves fitted with easing gear Yes Smallest distance between boilers and bunkers 11" Diameter of boilers 14'-6"

Are the boilers 10'-6" description of riveting of shell long. seams old butt straps circum. seams old and 2 of cut Thickness of shell plates 1 1/2"

Are the rivet holes 1 1/4" whether punched or drilled drilled pitch of rivets 10" Lap of plating 1 1/4" x 1 1/8" 13.8.

Are the joints of strength of longitudinal joint 85.7 working pressure of shell by rules 164 lbs. size of manholes in shell 12" x 16"

Are the compensating rings Manhole in mid plate through doubling plate No. of Furnaces in each boiler 3

Are the diameter 44" length, top 7'-0" bottom — thickness of plates 5 1/8" description of joint welded if rings are fitted Yes

Are the length between rings — working pressure of furnace by the rules 166 lbs. combustion chamber plating, thickness, sides 9 1/16" back 5 1/16" top 5 1/16"

Are the stays to ditto, sides 7 3/4" back 6 3/4" top 8 x 8 1/2" If stays are fitted with nuts or riveted heads nutted in shell working pressure of plating by —

Are the diameter of stays at smallest part 1 1/2" to 1 5/8" working pressure of ditto by rules 164 lbs. end plates in steam space, thickness 3/4" + 3/4" doubling

Are the stays to ditto 17" x 17" how stays are secured old nuts & washers in addition to doubling plates. working pressure by rules 160 lbs. diameter of stays at —

Are the diameter at part 2.68" working pressure by rules 170 lbs. Front plates at bottom, thickness 4/16" Back plates, thickness 4/16"

Are the pitch of stays 1 1/2" working pressure by rules 160 lbs. Diameter of tubes 3 1/2" pitch of tubes 4 3/4" x 4 3/4" thickness of tube —

Are the front 1 1/16" back 4/16" how stayed stay tubes pitch of stays 9 1/2" 9 1/2" width of water spaces back 10 1/2" 5 9"

Are the Superheater or Steam chest — length — thickness of plates — description of longitudinal joint — diam. of rivet holes —

Are the rivets — working pressure of shell by rules — diameter of flue — thickness of plates — If stiffened with rings —

Are the end plates between rings — working pressure by rules — end plates of superheater, or steam chest; thickness — how stayed —

Are the Superheater or steam chest; how connected to boiler —

Description of furnaces Samuelly Spiral Comrigated

Lloyd's Register Foundation

BEL-57-0103

DONKEY BOILER— Description *Cir. Single ended. Multitubular. Horizontal Steel with one furnace.*
 Made at *Belfast* by whom made *MacLennan Bellac Coll* when made *1890* where fixed *Star. Chokeloh.*
 Working pressure *60 lbs.* tested by hydraulic pressure to *120 lbs.* No. of Certificate *81* fire grate area *8-5 sq ft.* description of safety valves *D Cockburn* No. of safety valves *two* area of each *3.14* *one* fitted with easing gear *yes* if steam from machinery 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 *3/8"* diameter of rivet holes *4/6"* whether punched or drilled *drilled* pitch of rivets *2 1/2"* lap of plating *4"*
 per centage of strength of joint *69* thickness of ~~end~~ plates *1/2"* stayed by *1 1/2" steel stays 12" pitch with washers riveted to plates 7/8" dia. 3/4" thick.*
 Diameter of furnace *27 3/4"* bottom *✓* length of furnace *4.2 ft.* thickness of plates *3/8"* description of joint *Welded.*
 Thickness of furnace ~~end~~ plates *7/16"* stayed by *Top by girders & all parts by screw stays 1" dia.* working pressure of shell by rules *78 lbs.*
 Working pressure of furnace by rules *108 lbs.* diameter of uptake *✓* thickness of plates *✓* thickness of water tubes *✓*

SPARE GEAR. State the articles supplied:— *2 bottom end & top end connecting rod bolts and nuts, 1 set of coupling bolts, 2 main bearing bolts, 2 feed pump valves, 2 bilge pump valves, 1 set of Ramsbottom rings for each piston, bolts & nuts (an assorted quantity) etc etc.*

The foregoing is a correct description,
MacLennan Bellac Coll Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.)
 The Machinery of this vessel has been constructed in accordance with the approved plans of Main & Donkey Boilers; the Secretary's letters dated 13th & 20th November 1889 to the Rules of the Society or equal thereto and to the satisfaction of the undersigned except that the crank shaft is $\frac{1}{8}$ " less and tunnel shafting $\frac{1}{16}$ " less than the Rules require for the working pressure asked for viz: - 160 lbs.
 For further particulars in reference to the shafting see letter enclosed
 The steel used in the construction of the boilers has been tested & required by the Rules & endorsed invoices examined.
 The boilers and main steam pipes were tested as required by Rules and showed no signs of weakness or leakage: the boilers were tested under steam and the safety valves adjusted to blow off at 160 lbs. + 4 lbs. on main & 60 lbs. + 5 lbs. on donkey boiler.
 The main and auxiliary engines were tried under steam at full speed and worked satisfactorily.
 The shafting when finished was examined and found free from any visible defects.
 All the materials used in the construction of the machinery and the workmanship throughout are good & satisfactory and I would respectfully recommend that the notification **H.L.M.C. 7-90.** be granted and the same recorded in the Register Book.

The amount of Entry Fee .. £ 2 : 0 : 0 received by me,
 Special .. £ 16 : 7 : 0
 Donkey Boiler Fee .. £ : :
 Certificate (if required) .. £ *Gratis* : : : 18 90
 To be sent as per margin.
 (Travelling Expenses, if any, £ *✓*)

James Maystone 2019
 Engineer Surveyor to Lloyd's Register of British & Foreign Ships

Committee's Minute **TUES 29 JULY 1890**
 + Lmlc 7/90

