

# REPORT ON MACHINERY.

3738

Port of Belfast

FRI 25 JULY 1890

Received at London Office

3738.

Survey held at Belfast

Date, first Survey 13<sup>th</sup> Dec. 89 Last Survey 16<sup>th</sup> July 1890

(Number of Visits 23) Net 256.80  
Tons Gross 523.66

on the Steel Screw Steamer Glenarm

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

made at Belfast By whom made MacShwane & MacColl when made 1890.

made at do. By whom made do. when made 1890.

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

NES, &c.—

tion of Engines Triple Compound 3 cylinders 3 cranks. I.D.S.C.  
r 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"

r of Screw shaft 8" Diam. of Tunnel shaft 7 1/2" Diam. of Crank shaft journals 8" Diam. of Crank pin 8" size of Crank webs 5" x 10"

r 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.

to they pump from Bilge from holds, peak & 1/3 space & tunnel. Fed from hotwell

Donkey Engines Three Size of Pumps Suppl. 5" cyl. 3 pump 5 1/2" 3 suction Where do they pump from Sea, ballast tanks, all  
including pulsometer. No. 6 Pulsometer 2 1/2" 4"

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

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

the pumps worked By links & levers from Centre engine crosshead

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

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

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 None. How are they protected —

pipes, cocks, valves, and pumps in connection with the machinery accessible at all times Yes.

pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges Yes.

ere stern tube, propeller, screw shaft, and all connections examined in dry dock 8<sup>th</sup> July 1890.

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

RS, &c.—

of Boilers One Description Circular, Single Ended, Mult. Whether Steel or Iron Steel.

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

m of superheating apparatus or steam chest none fitted.

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

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

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

fitted with easing gear ✓ Smallest distance between boilers and bunkers 11" Diameter of boilers 14'-6"

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

of 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.

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

ompensating rings Manhole in end plate through doubling plate No. of Furnaces in each boiler 3

diameter 44" length, top 7'-0" bottom ✓ thickness of plates 5" description of joint welded if rings are fitted ✓

length between rings ✓ working pressure of furnace by the rules 166 lbs. combustion chamber plating, thickness, sides 9/16" back 1/2" top 5/8"

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

aid 62 1/2 lbs. Diameter of stays at smallest part 1 1/8" to 1 1/2" working pressure of ditto by rules 164 lbs. end plates in steam space, thickness 3/4" + 3/4" doubling

m. 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

t part 2.68" working pressure by rules 170 lbs. Front plates at bottom, thickness 4/6" Back plates, thickness 4/6"

itch 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

front 1 1/6" back 4/6" how stayed stay tubes pitch of stays 9 1/2" 9 1/2" width of water spaces back 10 1/2" 5 9"

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

working pressure of shell by rules ✓ diameter of flue ✓ thickness of plates ✓ If stiffened with rings ✓

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

Superheater or steam chest; how connected to boiler —

Description of furnaces Samuelly Spiral Conjugated

Lloyd's Register Foundation

BEL-57-0101



**DONKEY BOILER—** Description *Cir. Single ended. Multitubular. Horizontal Steel with one furnace.*  
Made at *Belfast* by whom made *MacLennan & Co. Ltd.* 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 *2 Cockburn's* No. of safety valves *two* area of each *3-14 sq ft.* 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 *1/2"* whether punched or drilled *drilled* pitch of rivets *2 1/4"* 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 7/16" dia. 1/2" 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 ~~plates~~ *3/16"* 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 & Co. Ltd.* 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 13<sup>th</sup> & 20<sup>th</sup> 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, £ *✓*)

Committee's Minute

TUES 29 JULY 1890

+ Lmlb 7/90

*James Mayhew* 2019

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

Lloyd's Register Foundation