

REPORT ON MACHINERY.

3638

Port of Belfast

Received at London TUES 3 DEC 1889

No. 3638

No. in Survey held at Belfast

Date, first Survey 10th Nov. 1888 Last Survey 30th Nov. 1889

Reg. Book.

39 Sup. on the Steel Screw Steamer "Mount Lebanon"

Number of Visits 50 Net 1668
Tons 1972
Gross 2560

Master E. Elliott Built at Belfast By whom built MacLuraine & MacColl When built 1889

Engines made at Belfast By whom made MacLuraine & MacColl when made 1889

Boilers made at - By whom made - when made 1889

Registered Horse Power 300 Owners Smith & Service Port belonging to Glasgow
Estimated 1400
Clough's = 238 with Auxiliary Boiler included = 253 N.H.P.

ENGINES, &c.—

(Triple expansion)

Description of Engines Triple Compound B.A.I. 3 cylinders + 3 cranks.

Diameter of Cylinders 23.37.60 Length of Stroke 42 No. of Rev. per minute 72 Point of Cut off, High Pressure .59 Low Pressure .56

Diameter of Screw shaft 1 1/2 Diam. of Tunnel shaft 10 3/4 Diam. of Crank shaft journals 1 1/2 Diam. of Crank pin 1 1/2 size of Crank webs 15 x 8 1/2

Diameter of screw 15-0 Pitch of screw 16-0 No. of blades 4 state whether moveable no total surface 65 sq. ft.

No. of Feed pumps 2 diameter of ditto 3 1/2 Stroke 21 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 diameter of ditto 4 1/2 Stroke 21 Can one be overhauled while the other is at work Yes

Where do they pump from Feed from holwell Bilge from holds & 1st space & tunnel and sea.

No. of Donkey Engines Three Size of Pumps See 2nd. 4 1/2 x 7 1/2. 1 1/2 x 2 1/2. 2 1/2 x 3 1/2 where do they pump from Boiler, holwell, sea

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 Yes

No. of bilge injections One and sizes 4 1/2 Are they connected to condenser, or to circulating pump Circulating Suction

How are the pumps worked By links and levers from Crosshead of Centre engine. Separate centrifugal circulating pump 1 cyl. 6" dia. 6" stroke & 8" suction.

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

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 Below

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 23rd. Oct. 1889 before launching.

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

BOILERS, &c.—

Note: - The Wouffey Boiler can be used as Auxiliary to main if required.

Number of Boilers Two Description Single Ended. Incl. Cir.? Whether Steel or Iron Steel.

Working Pressure 160 lbs. Tested by hydraulic pressure to 320 lbs. Date of test 27th. Oct. 1889

Description of superheating apparatus or steam chest None.

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

No. of square feet of fire grate surface in each boiler 60 Description of safety valves 10 Cockburn's No. to each boiler two

Area 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 18" Diameter of boilers 14-0"

Length of boilers 10-6" description of riveting of shell long. seams 3/16" grip in one circum. seams 1/8" ends. cut in tube & way round. Thickness of shell plates 1 1/8"

Diameter of rivet holes 1 3/8" whether punched or drilled drilled pitch of rivets 8 1/2" Lap of plating 18 1/2" x 1 1/2" 13.25 x 4 1/2"

Per centage of strength of longitudinal joint 86% & 98% working pressure of shell by rules 160 lbs. size of manholes in shell 12" x 16"

Size of compensating rings In end plate through doubling No. of Furnaces in each boiler three

Outside diameter 43" length, top 7-3" bottom 7-3" thickness of plates 5/8" description of joint Welded if rings are fitted Cor.

Greatest length between rings Cor 7' working pressure of furnace by the rules 169 lbs. combustion chamber plating, thickness, sides 5" back 5" top 3 1/2"

Pitch of stays to ditto, sides 6 7/8" back 6 7/8" top 9 7/8" If stays are fitted with nuts or riveted heads Nutted working pressure of plating by rules 162 x 13 lbs.

Diameter of stays at smallest part 1 5/8" working pressure of ditto by rules 168 lbs. end plates in steam space, thickness 1 3/8" doubled with 3/4" plate. diameter of stays at smallest part 2 1/4" steel working pressure by rules 166 lbs. Front plates at bottom, thickness 1/6" Back plates, thickness 1/6"

Greatest pitch of stays 12" with doubling working pressure by rules 160 lbs. Diameter of tubes 3 1/2" iron pitch of stays 4 3/4" x 4 3/4" thickness of tube plates, front 1/6" back 1/6" how stayed stay tubes & 2 1/2" stay. pitch of stays 14 1/2" x 9 1/2" width of water spaces See 2nd. 1 1/2" tubes.

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

Sanding pt. plus fitted

Lloyd's Register Foundation

BEL56-0112

DONKEY BOILER Description *Single Ended. Cir. Mult: with 2 furnaces of Steel*
 Made at *Belfast* by whom made *MacLuraine & MacCall* when made *1889* where fixed *Fore end of*
 Working pressure *160 lbs.* tested by hydraulic pressure to *320 lbs.* No. of Certificate *57* fire grate area *26 1/2 sq. ft.* description safety
 valves *O. Cockburns* No. of safety valves *two* area of each *4.91 sq. ft.* fitted with easing gear *yes* if steam from main boilers can
 enter the donkey boiler *no* diameter of donkey boiler *6-4 1/2* length *8-0* description of riveting *5/16 Strap 5 rivets in one*
 Thickness of shell plates *3/4* diameter of rivet holes *3/4* whether punched or drilled *Drilled* pitch of rivets *5* lap of plating *1 1/2*
 per centage of strength of joint *85 + 87* thickness of ~~plates~~ *plates* *7/16* *4/16* stayed by *Steel stays 2 1/2 w. J. fitted with double nuts & double*
 Diameter of furnace, *2-9 3/32* bottom *✓* length of furnace *5 1/2* thickness of plates *4 3/16* description of joint *welded*
 Thickness of furnace crown plates *3/32* stayed *top by girders & screw stays remainder* working pressure of shell by rules *1*
 Working pressure of furnace by rules *162 lbs. limits* diameter of uptake *✓* thickness of plates *✓* thickness of water tubes *✓*

SPARE GEAR. State the articles supplied:— *1 propeller, 1 valve spindle (common to all slides), 1 air pump*
rod, 2 Ramsbottom rings for each piston, 2 gads to bilge pump valves, 2 bot to top end Cov. r.
bolts & nuts, 2 main bearing & 2 eccentric strap bolts & nuts, 1 set of coupling bolts & nuts & 9 assorted
bolts & nuts, 12 boiler tubes, 12 condenser tubes, 7 1/2 7 1/2 7 1/2.

The foregoing is a correct description,
MacLuraine & MacCall Manufacturers.

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

The machinery of this steamer has been constructed in accordance with the approved plans of main and auxiliary boilers as amended, the Secretary's letters dated 30th Oct. 9th 19th Nov. 21st Dec. -88 & 24th April -89, the Rules of the Society or equal thereto and to the satisfaction of the undersigned.

The steel used in the construction of boilers has been tested as required by Rules and endorsed copies of invoices received at this office.

The shafting when finished was carefully examined and found free from visible defects. Memo. of forgings of plain shafting was omitted to be sent to us by Engineers.

The main & auxiliary boilers, ^{and main steam pipes} were tested by hydraulic to 320 lbs. per sq. inch and showed no signs of weakness or leakage.

The engines were tried running full speed under steam and the safety valves adjusted to 160 lbs. W.P.

The material used in the construction of the machinery and the workmanship throughout are good & satisfactory; I would therefore respectfully recommend that the Special Notification **+L.M.C. 11.89** be granted.

It is submitted that this vessel is eligible to have + L.M.C. 11-89 recorded
 W.D.
 3-11-89

The amount of Entry Fee £ 3 : 0 : 0 ^{not} received by me,
 Special £ 35 : 0 : 0
 Donkey Boiler Fee £ : :
 Certificate (if required) .. £ : :
 To be sent as per margin.

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

Committee's Minute **FRIDAY 6 DEC 1889**
 Machinery Committee

+L.M.C. 11/89

