

REPORT ON MACHINERY.

No. 23215

Port of Glasgow

JULY 31 OCT 1906

Received at London Office

19

No. in Survey held at
Reg. Book.Glasgow & DalmarDate, first Survey 6th June 06Last Survey 18th Oct^r

1906

on the

S.S. "Highland Laddie"

(Number of Visits)

Tons

Gross 3750Net 2400When built 1901

Master

Built at

Glasgow

By whom built

W. Beardmore & Co. Ltd.

Engines made at

Glasgow

By whom made

W. Beardmore & Co. Ltd.when made 1901

Boilers made at

Do.

By whom made

Do.when made 1901

Registered Horse Power

355

Owners

Belton Line (H. & R. Belton & Co. Ltd.)

Port belonging to

London

Nom. Horse Power as per Section 28

316

Is Refrigerating Machinery fitted for cargo purposes

Yes

Is Electric Light fitted

No

ENGINES, &c.—Description of Engines

Triple expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

23" 38" 62"

Length of Stroke

48"

Revs. per minute

Dia. of Screw shaft

as per rule 13.24

Material of

Steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

Yes

Is the after end of the liner made water tight

in the propeller boss Yes. If the liner is in more than one length are the joints burned no length the liner does not fit tightly at the part

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

liners are fitted, is the shaft lapped or protected between the liners

Dia. of Tunnel shaft as per rule 12.04Dia. of Crank shaft journals as per rule 12.64Dia. of Crank pin 12 7/8" Size of Crank webs 9 1/2" Dia. of thrust shaft undercollars 12 7/8" Dia. of screw 17.0" Pitch of screw 14.9" No. of blades 4 State whether moveable No Total surface 88 sqNo. of Feed pumps 2 Diameter of ditto 8" x 10" Stroke 15" Can one be overhauled while the other is at work YesNo. of Bilge pumps 2 Diameter of ditto 5 1/2" Stroke 22" Can one be overhauled while the other is at work YesNo. of Donkey Engines 2 Sizes of Pumps 9" x 9" x 10" + 7 1/2" x 5" x 6" No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room 2 on starb. 3 1/2" 3 1/2" on port In Holds, &c. No. 1 hold 2 at 3 1/2" No. 2 hold2 at 3 1/2" No. 3 hold 2 at 3 1/2" No. 4 hold 3 1/2" tunnel well 2 1/4"No. of bilge injections 1 sizes 7" Connected to condenser, or to circulating pump C. pump Is a separate donkey suction fitted in Engine room & size Yes 3 1/2"Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible —Are 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 YesWhat pipes are carried through the bunkers none How are they protected —Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges YesWhen were stern tube, propeller, screw shaft, and all connections examined in dry dock 14/10/05 Is the screw shaft tunnel watertight YesIs it fitted with a watertight door Yes worked from upper deck

BOILERS, &c.—

(Letter for record (S))

Total Heating Surface of Boilers

6420 sq

Is forced draft fitted

No

No. and Description of Boilers

3 cyl. single ended.

Working Pressure

180 lb.Tested by hydraulic pressure to 360 lb.Date of test 9.2.05

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

59.66 sq

No. and Description of safety valves to

each boiler 2 spring loaded Area of each valve 7.06" Pressure to which they are adjusted 185 lb. Are they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 15.3" Length 11.0" Material of shell plates SteelThickness 1 3/4" Range of tensile strength 29.32 Are they welded or flanged No Descrip. of riveting: cir. seams DR & TR long. seams DB strapsDiameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 7/8" Lap of plates or width of butt straps 19 1/2"Per centages of strength of longitudinal joint 85.2 Working pressure of shell by rules 190 lb. Size of manhole in shell 17" x 12 1/2"Size of compensating ring 7" x 1 3/4" No. and Description of Furnaces in each boiler 3 Beardmore Material Steel Outside diameter 3' 11 1/2"Length of plain part top 1 1/2" bottom 1 1/2" Thickness of plates top 9/16" bottom 7/16" Description of longitudinal joint welded No. of strengthening rings ✓Working pressure of furnace by the rules 185 lb. Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 13/16"Pitch of stays to ditto: Sides 7 1/4" x 7 1/4" Back 7 1/4" x 7 1/4" Top 7 1/4" x 7 1/4" stays are fitted with nuts or riveted heads nuts Working pressure by rules 182 lb.Material of stays Steel Diameter at smallest part 1.41 Area supported by each stay 60" Working pressure by rules 188 lb. End plates in steam space:Material Steel Thickness 1 3/16" Pitch of stays 18 1/2" x 16" How are stays secured D. nuts Working pressure by rules 187 lb. Material of stays SteelDiameter at smallest part 5.45" Area supported by each stay 296" Working pressure by rules 184 lb. Material of Front plates at bottom SteelThickness 7/8" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 12" Working pressure of plate by rules 238 lb.Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" x 4 7/8" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 10.6"Pitch across wide water spaces 15" Working pressures by rules 219 lb., 180 lb. Girders to Chamber tops: Material Steel Depth andthickness of girder at centre 2 (9 1/4" x 3 1/4") Length as per rule 2' 10" Distance apart 7 3/4" Number and pitch of Stays in each 3 - 7 3/4"Working pressure by rules 184 lb. Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler workedseparately — Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivetholes — Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —If stiffened with rings — Distance between rings — Working pressure by rules — End plates: Thickness — How stayed —Working pressure of end plates — Area of safety valves to superheater — Are they fitted with easing gear —

W649-0258

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DONKEY BOILER— No. *None* Description

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure _____ tested by hydraulic pressure to _____ No. of Certificate _____ Fire grate area _____ Description of safety valves _____

No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____

Dia. of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____ Range of tensile strength _____

Descrip. of riveting long. seams _____ Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____

Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Thickness of shell crown plates _____ Radius of do. _____ No. of Stays to do. _____

Dia. of stays _____ Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____

Thickness of furnace crown plates _____ Stayed by _____ Working pressure of shell by rules _____

Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied:— *2 top end and 2 bottom end bolts and nuts, 2 main bearing bolts & nuts, 1 set coupling bolts, 1 set feed and bilge pump valves, 1 set piston springs, assorted bolts & nuts, iron of various sizes, set escape valve springs, safety valve springs etc.*

The foregoing is a correct description,

For WILLIAM BEARDMORE & CO. LIMITED Manufacturer.

Dates of Survey while building

During progress of work in shops—	1902: June 6. 13. July 29. Aug. 2. 4. 8. 15. 20. Sep. 3. 14. Oct. 6. 15. 18. 25. Nov. 4. 8. 15. 17. 24. Dec. 9. 14. 16.
During erection on board vessel—	26. 1902: Jan. 13. Feb. 9. 10. 21. Mar. 2. 15. 22. 28. Apr. 5. 12. 27. 28. 31. June 15. 29. Oct. 12. 16. 18.
Total No. of visits	41

Is the approved plan of main boiler forwarded herewith *Yes*

" " " donkey " " "

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

The engines and boilers have been built under special survey, the materials and workmanship are of good description. The boilers were tested by hydraulic press: to double the working press. I were found tight & sound in every respect. In my opinion the above are eligible for second *L.M.C 10.05.*

It is submitted that this vessel is eligible for THE RECORD *L.M.C 10.05* (subject to the propeller being reduced to 15' 10" in dia)

See Ind. 5.12.05

3.11.05

5.12.05

The amount of Entry Fee.. £ 3: : When applied for, OCT 1905 19
Special .. £ 27. 14: :
Donkey Boiler Fee .. £ : :
Travelling Expenses (if any) £ : : When received, 17. 10. 1905

Committee's Minute

Glasgow 30 OCT 1905

Assigned

MACHINERY CERTIFICATE
WRITTEN 31.10.05

Wm. Buchanan & James Hollison
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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