

# REPORT ON MACHINERY.

No. 15290  
TUES. 31 DEC 1907

Port of Greenock

Received at London Office

19

No. in Survey held at Port Glasgow  
Reg. Book.

Date, first Survey 25<sup>th</sup> July Last Survey 21<sup>st</sup> Dec<sup>r</sup> 1907

(Number of Visits 45)

on the **SCREW STEAMER 'LUNA.'**

Master Olivetta Built at Port Glasgow By whom built Blyde S.B. & Eng. Co<sup>y</sup> Lim<sup>td</sup> When built 1907  
Tons { Gross 2807.87  
Net 1800.80

Engines made at Port Glasgow By whom made Blyde S.B. & Eng. Co<sup>y</sup> Lim<sup>td</sup> when made 1907

Boilers made at Port Glasgow By whom made Blyde S.B. & Eng. Co<sup>y</sup> Lim<sup>td</sup> when made 1907

Registered Horse Power \_\_\_\_\_ Owners Navigazione Libera - Trieste Port belonging to Trieste

Nom. Horse Power as per Section 28 269 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

## ENGINES, &c.—Description of Engines Triplic Expansion No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 23" 38" 61" Length of Stroke 42" Revs. per minute 90 Dia. of Screw shaft as per rule 12.9" Material of screw shaft Iron  
as fitted 13.8"

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 If 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 Yes If two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 4' 4 1/2"

Dia. of Tunnel shaft as per rule 11.47" Dia. of Crank shaft journals as per rule 12.05" Dia. of Crank pin 12 1/4" Size of Crank webs 22 1/2" x 1 1/2" Dia. of thrust shaft under collars 12 1/2" Dia. of screw 15.9" Pitch of Screw 16.0" No. of Blades 4 State whether moceable No Total surface 80 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" Stroke 21" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Three Sizes of Pumps (6x4x6) (5x3x5) (8x9x8) No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room Three: Centre 3 1/2" dia Aug<sup>r</sup> 3" dia In Holds, &c. No<sup>1</sup> Hold: Two 3" dia No<sup>2</sup> Hold: 2-3" dia  
No<sup>3</sup> Hold: one 3 1/2" dia and two 3" dia Tunnel Well: one 3 1/2" dia

No. of Bilge Injections 1 sizes 6" Connected to condenser, or to circulating pump C. P. 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 Yes

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

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 Above

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 and all boiler mountings accessible at all times Yes

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes

Dates of examination of completion of fitting of Sea Connections 28/11/07 of Stern Tube 22/11/07 Screw shaft and Propeller 28/11/07

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper platform

## BOILERS, &c.—(Letter for record \$.) Manufacturers of Steel Steel Company of Scotland

Total Heating Surface of Boilers 42244 #<sup>ft</sup> Is Forced Draft fitted No No. and Description of Boilers Two: Compound Multi & Single Ended

Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 16/11/07 No. of Certificate 863

Can each boiler be worked separately Yes Area of fire grate in each boiler 60 Sq. ft. No. and Description of Safety Valves to each boiler Two: Direct Spring Area of each valve 4.06 Pressure to which they are adjusted 185 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork About 12" Mean dia. of boilers 15.6" Length 10.6" Material of shell plates Steel

Thickness 1 1/4" Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap Double  
long. seams Butt Straps Diameter of rivet holes in long. seams 1 7/8" Pitch of rivets 9 3/8" 4 1/2" Lap of plates or width of butt straps 19 1/2"

Per centages of strength of longitudinal joint 86 Working pressure of shell by rules 189 lb Size of manhole in shell END: 16 x 12"

Size of compensating ring Plate flanged No. and Description of Furnaces in each boiler: Eighteen Material Steel Outside diameter 48 1/2"

Length of plain part top 6.9" Thickness of plates bottom 7/16" Description of longitudinal joint Weld No. of strengthening rings None

Working pressure of furnace by the rules 182 lb Combustion chamber plates: Material Steel Thickness: Sides 3/32" Back 1/32" Top 1/32" Bottom 3/4"

Pitch of stays to ditto: Sides 7 3/8" x 9" Back 8 3/8" x 8" Top 7 3/8" x 9" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 185 lb

Material of stays Steel Diameter at smallest part 1 3/8" Area supported by each stay 66 Working pressure by rules 180 lb End plates in steam space: Material Steel Thickness 1 1/8" Pitch of stays 14 x 18" How are stays secured 2 1/2" nuts Working pressure by rules 185 lb Material of stays Steel

Diameter at smallest part 2 3/4" Area supported by each stay 308 Working pressure by rules 189 lb Material of Front plates at bottom Steel

Thickness 3/16" Material of Lower back plate Steel Thickness 3/8" Greatest pitch of stays 14 1/2" Working pressure of plate by rules 191 lb

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 1 1/8" Back 7/16" Mean pitch of stays 9 3/8"

Pitch across wide water spaces 15 1/2" Working pressures by rules 189 lb 185 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 1/4" x 1 3/4" Length as per rule 30 3/8" Distance apart 9" Number and pitch of stays in each 3: 4 3/8"

Working pressure by rules 23 1/4 lb Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked separately \_\_\_\_\_

Diameter \_\_\_\_\_ Length \_\_\_\_\_ Thickness of shell plates \_\_\_\_\_ Material \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_ Diam. of rivet \_\_\_\_\_

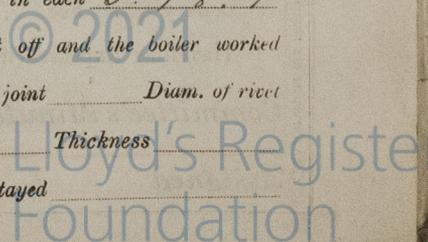
holes \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_ Diameter of flue \_\_\_\_\_ Material of flue plates \_\_\_\_\_ Thickness \_\_\_\_\_

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 \_\_\_\_\_

If not, state whether, and when, one will be sent

5m. 11.



**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No. \_\_\_\_\_ Description \_\_\_\_\_

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Safety \_\_\_\_\_

Valves \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_

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 \_\_\_\_\_ Plates \_\_\_\_\_

Working pressure of shell by rules \_\_\_\_\_ 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 \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— *Propeller shaft and Propeller, 2 Connecting Rod Bottom End Bolts, 2 Cross-head Bolts, 2 Main Bearing Bolts, 1 Set Coupling Bolts, 1 Set Feed pump valves, 1 Set Bilge pump valves, 1 Set Escape valve springs, 1 Set Air pump valves, 1 Set Circulating pump valves, 1 main Boiler safety valve spring, 1 Donkey Boiler safety valve spring, Iron Bolts etc.*

The foregoing is a correct description,

THE GLYDE SHIPBUILDING & ENGINEERING CO. LIMITED,

*John Moir* Manufacturer.

Dates of Survey while building	During progress of work in shops - -	1907 July 25, 29, 31 Aug 21, 23, 27, 29 Sept 2, 5, 6, 10, 16, 17, 18, 20, 24, 30 Oct 3, 4, 8, 9, 12, 14, 17
	During erection on board vessel - -	22, 25, 28, 30 Nov 4, 8, 11, 12, 14, 16, 20, 22, 28 Dec 5, 10, 11, 12, 17, 18, 20, 21
	Total No. of visits	45

Is the approved plan of main boiler forwarded herewith Yes  
 " " " donkey " " " Yes

**Dates of Examination of principal parts**—Cylinders 21/12/07 Slides 12/10/07 Covers 21/12/07 Pistons 11/11/07 Rods 12/10/07  
 Connecting rods 12/10/07 Crank shaft 28/10/07 Thrust shaft 8/11/07 Tunnel shafts 8/11/07 Screw shaft 11/11/07 Propeller 8/11/07  
 Stern tube 11/11/07 Steam pipes tested 11/12/07 Engine and boiler seatings 10/12/07 Engines holding down bolts 12/12/07  
 Completion of pumping arrangements 18/12/07 Boilers fixed 14/12/07 Engines tried under steam 21/12/07  
 Main boiler safety valves adjusted 14/12/07 Thickness of adjusting washers *MAIN BOILERS: 1/4" PV 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100* *DONKEY BOILER: PV 3, SV 13*

Material of Crank shaft Steel Identification Mark on Do. 638 Material of Thrust shaft Steel Identification Mark on Do. 639  
 Material of Tunnel shafts Steel Identification Marks on Do. 640, 644 Material of Screw shafts Iron Identification Marks on Do. 645-6  
 Material of Steam Pipes Copper loid drawn Test pressure 360 lbs

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

*The Engines and Boilers of this vessel have been built under special survey and the materials and workmanship are good. When completed they were examined under steam while running full power trials in the Firth and found to work satisfactorily.*

*The machinery throughout is now in good and efficient condition and eligible in my opinion to have the record of **LMC 12,07** marked in the Society's Register Book.*

It is submitted that this vessel is eligible for THE RECORD + LMC 12.07.

*AJB.*  
*E.S. 21.08.*  
 2.1.08

The amount of Entry Fee..	£ 2 : . :	When applied for,
Special .. .. .	£ 33 : 9 :	21/12/1907
Donkey Boiler Fee .. .. .	£ : : :	When received,
Travelling Expenses (if any) £	: : :	27/12/07

*Wm. Austin*  
 Engineer (Surveyor to Lloyd's Register of British & Foreign Shipping.)

Glasgow 30 DEC 1907

Assigned **+ LMC 12,07**

MACHINER CERTIFICATE WRITTEN 31/12/07



Greenock

Certificate (if required) to be sent to

(The Surveyors are requested not to write on or below the space for Committee's Minute.)