

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 25th July Last Survey 21st Dec 1907
(Number of Visits 45)

on the SCREW STEAMER LUNA.

Master Olivetta Built at Port Glasgow By whom built Clyde S.B. & Eng. Co. Ltd. When built 1904
Engines made at Port Glasgow By whom made Clyde S.B. & Eng. Co. Ltd. when made 1904.
Boilers made at Port Glasgow By whom made Clyde S.B. & Eng. Co. Ltd. when made 1904.
Registered Horse Power Owners Navigazione Libera - Tristina 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 Triple 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" 9/16" Material of screw shaft as fitted 12" 9/16" Material of screw shaft as fitted 12" 9/16"
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 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 If two liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 4' 4 1/2"
Dia. of Tunnel shaft as per rule 11 1/4" Dia. of Crank shaft journals as per rule 12 1/2" Dia. of Crank pin 12 1/4" Size of Crank webs 22 1/2" x 1/2" Dia. of thrust shaft under collars 12 1/4" Dia. of screw 15 9/16" Pitch of Screw 16 1/2" No. of Blades 4 State whether moveable 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 (6 1/2" x 6") (5 1/2" x 5 1/2") (8 1/2" x 8 1/2") No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Three Centre 3 1/2" dia. In Holds, &c. No. 1 Hold Two 3" dia. No. 2 Hold Two 3" dia. No. 3 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 28/11/04 of Stern Tube 22/11/04 Screw shaft and Propeller 28/11/04
Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from upper platform.

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

Total Heating Surface of Boilers 11244 sq. ft. Is Forced Draft fitted No No. and Description of Boilers Two: Cylindrical Multi Single Ended.
Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 16/11/04 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 sq. in. 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 5/16" Pitch of rivets 9 3/8" 4 1/2" Lap of plates on width of butt straps 19 1/2"
Per centages of strength of longitudinal joint rivets 86 plate 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: Brightons Material Steel Outside diameter 48 1/2"
Length of plain part top 6' 9" bottom 6' 9" Thickness of plates crown 7/16" bottom 7/16" Description of longitudinal joint Welded 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 1/4"
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 sq. in. Working pressure by rules 180 lb End plates in steam space:
Material Steel Thickness 1 1/8" Pitch of stays 14" x 18 1/2" 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 sq. in. Working pressure by rules 189 lb Material of Front plates at bottom Steel
Thickness 1 1/8" Material of Lower back plate Steel Thickness 1 1/8" 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 188 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 1/2" 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 1/2 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

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 &c

The foregoing is a correct description,

THE CLYDE 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 <small>MAIN BOILERS</small> <table border="0"><tr><td>Star</td><td>SK</td><td>22</td><td>PV</td><td>3</td><td>Port</td><td>SK</td><td>16</td><td>PV</td><td>6</td></tr><tr><td colspan="10"><small>base base</small></td></tr></table> <small>DONKEY BOILER</small> <table border="0"><tr><td>PV</td><td>3</td><td>SV</td><td>13</td></tr><tr><td colspan="4"><small>full</small></td></tr></table>				Star	SK	22	PV	3	Port	SK	16	PV	6	<small>base base</small>										PV	3	SV	13	<small>full</small>			
Star	SK	22	PV	3	Port	SK	16	PV	6																									
<small>base base</small>																																		
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		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 solid 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.

agb.
E.S. 21.08.
2.1.08

The amount of Entry Fee..	£ 2 : .	When applied for,
Special	£ 33 : 9	24/12/1907
Donkey Boiler Fee	£ : :	When received,
Travelling Expenses (if any) £	: :	27/12/07

Committee's Minute

Assigned

+ LMC 12,07

MACHINER. CERTIFICATE
WRITTEN 31/12/07



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Foundation