

REPORT ON MACHINERY.

No. 14977.

Port of Greenock

Received at London Office

TUES. FEB 26 1907

No. in Survey held at Greenock
Reg. Book.

Date, first Survey 2nd May 1906. Last Survey 19th Feb 1907.

(Number of Visits 55.)

on the SCREW STEAMER "LORD SEFTON"

Master Glushan Built at Dumbarton By whom built A. McMillan & Co. Tons } Gross
Net } When built 1904.

Engines made at Greenock By whom made Rankin & Blackmore. when made 1904.

Boilers made at Greenock By whom made Rankin & Blackmore. when made 1904.

Registered Horse Power _____ Owners J. Herron & Co. Port belonging to Liverpool

Nom. Horse Power as per Section 28 410. 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 26-42-70 Length of Stroke 48 Revs. per minute 62 Dia. of Screw shaft 14.65 Material of Steel
as per rule 14.4 screw shaft)

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 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 Yes. If two
liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 60"

Dia. of Tunnel shaft 12.98 as per rule 13 Dia. of Crank shaft journals 13.6 as per rule 13.5 Dia. of Crank pin 13.5 Size of Crank webs 9x18.5 Dia. of thrust shaft under
collars 13.5 Dia. of screw 18.0 Pitch of Screw 17.0 No. of Blades 4 State whether moveable No Total surface 96 sq. ft.

No. of Feed pumps 2 Diameter of ditto 3.5 Stroke 24 Can one be overhauled while the other is at work Yes.

No. of Bilge pumps 2 Diameter of ditto 4.5 Stroke 24 Can one be overhauled while the other is at work Yes.

No. of Donkey Engines 3 Sizes of Pumps 7.5x8.5, 11x12, 14x2.5 No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Stokehold: four - 3.5 dia. In Holds, &c. No. 1 Hold: two - 3.5 dia. No. 2 Hold: two - 3.5 dia.
No. 3 Hold: two - 3.5 dia. No. 4 Hold: one - 3.5 dia. Tunnel Well: one - 3.5 dia.

No. of Bilge Injections 1 sizes 5.5 Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size Yes. 3.5 dia.

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 Yes.

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 _____ of Stern Tube _____ Screw shaft and Propeller _____

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

OILERS, &c.—(Letter for record £.) Manufacturers of Steel Plates by Steel Coy of Ireland. Bars by Danaher's Steel Coy

Total Heating Surface of Boilers 5523 sq. ft. Is Forced Draft fitted Yes. No. and Description of Boilers Two Cylinders, Multi-End.

Working Pressure 180 lb. Tested by hydraulic pressure to 360 lb. Date of test 10th Jan'y '07 No. of Certificate 808

Can each boiler be worked separately Yes. Area of fire grate in each boiler 59 sq. ft. No. and Description of Safety Valves to
each boiler 2: Screw Spring. Area of each valve 1104 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 18". Mean dia. of boilers 15' 6". Length 11' 6". Material of shell plates Steel

Thickness 1.5". Range of tensile strength 28.5-32 lb. Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams Lap Double
long. seams Double Butt Straps. Diameter of rivet holes in long. seams 1.32". Pitch of rivets 9.5". Lap of plates or width of butt straps 18.5"

Per centages of strength of longitudinal joint rivets 85-9 plate 86 Working pressure of shell by rules 180 lb. Size of manhole in shell 16" x 12"

Size of compensating ring 20" x 26" x 1.5" No. and Description of Furnaces in each boiler 3: Daytons Material Steel Outside diameter 49"

Length of plain part top 1.9" Thickness of plates front 9" Description of longitudinal joint Weld No. of strengthening rings None
bottom 1.49" bottom 7.6"

Working pressure of furnace by the rules 180 lb. Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 3/8" Top 5/8" Bottom 3/4"

Pitch of stays to ditto: Sides 7/8" x 7/8" Back 7/8" x 8/8" Top 8/8" x 9" If stays are fitted with nuts or riveted heads Nuts. Working pressure by rules 182 lb.

Material of stays Steel Diameter at smallest part 1.5" Area supported by each stay 65 sq. in. Working pressure by rules 182 lb. End plates in steam space:

Material Steel Thickness 1" Pitch of stays 15.5" x 16". How are stays secured Double nuts Working pressure by rules 194 lb. Material of stays Steel

Diameter at smallest part 2.76" Area supported by each stay 244 sq. in. Working pressure by rules 194 lb. Material of Front plates at bottom Steel

Thickness 1.3" Material of Lower back plate Steel Thickness 7/16" Greatest pitch of stays 12.5" Working pressure of plate by rules 182 lb.

Diameter of tubes 2.5" Pitch of tubes 3.32" x 3.32" Material of tube plates Steel Thickness: Front 3/4" with 2" Back 3/4" Mean pitch of stays 9.24"

Pitch across wide water spaces 13.5" Working pressures by rules front 205 lb. back 225 lb. Girders to Chamber tops: Material Steel Depth and
thickness of girder at centre 9.5" x 1.4". Length as per rule 31.6". Distance apart 8.5". Number and pitch of stays in each 2: 9"

Working pressure by rules 192 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 _____

W613-0155

Lloyd's Register Foundation

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. *One* Description *1. Cylindrical boiler with 2 furnaces.*
 Made at *Glasgow* By whom made *Lindsay Burnett & Co.* When made *18/12/06* Where fixed *On Deck*
 Working pressure *100 lbs* tested by hydraulic pressure to *200 lbs*. Date of test *18/12/06*. No. of Certificate *8299*. Fire grate area *30.6* Description of Safety
 Valves *Screw Spring*. No. of Safety Valves *2*. Area of each *5.94*. Pressure to which they are adjusted *105 lbs*. Date of adjustment *13/2/07*.
 If fitted with easing gear *Yes*. If steam from main boilers can enter the donkey boiler *No*. Dia. of donkey boiler washers *7 1/2"* Length *12 1/2"*
 Material of shell plates Thickness Range of tensile strength Descr. 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
 Working pressure of shell by rules Thickness of shell crown plates Radius of do. No. of stays to do. Dia. of stays Plates
 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, Propeller shaft, Two main Bearings, Bolts, Two Crosshead Bolts, Two Crank pin Bolts, 1 set Coupling Bolts, one set Feed & Bilge pump valves, Half set Air Circulating pump valves, Rambottom Pump for H.P. & L.P. pistons Bolts & nuts assorted, Iron spacers & sizes.*

The foregoing is a correct description,

Hamilton & Watson Manufacturer.

Dates of Survey while building
 During progress of work in shops— 1906. May 2, 7, 11, 14, 17, 21, 29. June 6, 14, 21, 26. July 2, 4, 8, 21. Aug 9, 29. Sep 6, 12, 20, 27, 28. Oct 4, 9, 18, 26
 During erection on board vessel— 31. Nov 5, 9, 13, 16, 20, 24, 28. Dec 5, 12, 18, 21, 24, 29. 1907. Jan 10, 16, 18, 28. Feb 2, 4, 5, 6, 11, 13, 14, 15, 16, 18, 19.
 Total No. of visits *55* Is the approved plan of main boiler forwarded herewith *Yes*.

Dates of Examination of principal parts—Cylinders *16/2/07* Slides *21/12/06*. Covers *16/2/07*. Pistons *21/12/06*. Rods *19/2/07*.
 Connecting rods *21/12/06*. Crank shaft *16/1/07*. Thrust shaft *16/1/07*. Tunnel shafts *16/1/07*. Screw shaft *16/1/07*. Propeller *13/2/07*.
 Stern tube *12/12/06*. Steam pipes tested *4th Feb '07*. Engine and boiler seatings *6th Feb '07*. Engines holding down bolts *6th Feb '07*.
 Completion of pumping arrangements *14th Feb 1907*. Boilers fixed *13th Feb 1907*. Engines tried under steam *16th Feb 1907*.
 Main boiler safety valves adjusted *13th Feb 1907*. Thickness of adjusting washers *P.V. 13 3/4" 5.7" 13" P.V. 3 3/4" 5.7" 13"*
 Material of Crank shaft *Steel* Identification Mark on Do. *1122* Material of Thrust shaft *Steel* Identification Mark on Do. *434*.
 Material of Tunnel shafts *Steel* Identification Marks on Do. *438-441* Material of Screw shafts *Steel* Identification Marks on Do. *435*.
 Material of Steam Pipes *Copper S.D. 4 W.G.* Test pressure *400 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 workmanship and materials appeared good.
*When completed the machinery was examined while running full power trials in the Firth and found to work satisfactorily. It is now in good and efficient condition and eligible in my opinion to have the record of **MLMC 2,07** marked in the Society's Register Book.*

It is submitted that this vessel is eligible for THE RECORD **MLM.C. 2.07. F.D.**

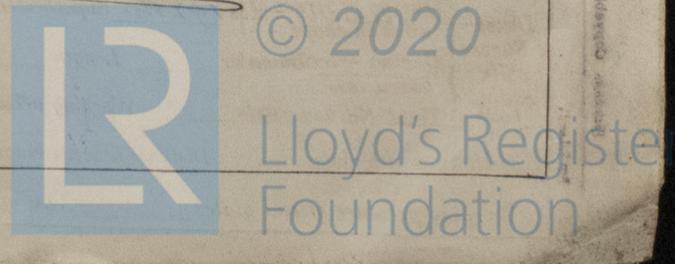
The amount of Entry Fee.. £ 3 : : : When applied for.
 Special £ 10 : : : 20/2/1907
 Donkey Boiler Fee £ : : :
 Travelling Expenses (if any) £ : : : 20/2/1907

R. Austin
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *Glasgow 25 FEB 1907*

Assigned *L.M.C. 2,07.*

MACHINERY CERTIFICATE WRITTEN 26 2 07



Certificate (if required) to be sent to Greenock