

# REPORT ON MACHINERY.

No. 44207.

Received at London Office

3 DEC 1924

Date of writing Report 19 When handed in at Local Office 29-11-1924 Port of Glasgow  
 No. in Survey held at Glasgow Date, First Survey 15-2-1924 Last Survey 27-11-1924  
 Reg. Book. on the s.s. "LUCISTON" (Number of Visits 43)

Master Built at Port-Glasgow By whom built R. Duncan & Co. Ltd. (N<sup>o</sup> 360) When built 1924  
 Engines made at Glasgow By whom made D. Rowan & Co. Ltd. (N<sup>o</sup> 794) when made 1924  
 Boilers made at Glasgow By whom made D. Rowan & Co. Ltd. (N<sup>o</sup> 794) when made 1924  
 Registered Horse Power Owners W. S. Miller & Co. Port belonging to Glasgow

Nom. Horse Power as per Section 28 476 ✓ Is Refrigerating Machinery fitted for cargo purposes No ✓ Is Electric Light fitted Yes ✓

ENGINES, &c.—Description of Engines Triple Expansion ✓ No. of Cylinders 3 ✓ No. of Cranks 3 ✓

Dia. of Cylinders 26.42-70 ✓ Length of Stroke 48 ✓ Revs. per minute 80 ✓ Dia. of Screw shaft as per rule 14.47 ✓ Material of screw shaft as fitted 15.5 ✓ 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 - 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 charged ✓ If two liners are fitted, is the shaft lapped or protected between the liners - Length of stern bush 5'-0" gland

Dia. of Tunnel shaft as per rule 12.98 ✓ Dia. of Crank shaft journals as per rule 13.629 ✓ Dia. of Crank pin 13.3/4 ✓ Size of Crank webs 21.8 3/4 ✓ Dia. of thrust shaft under collars 14 ✓ Dia. of screw 17'-6" Pitch of Screw 17'-6" ✓ No. of Blades 4 ✓ State whether moveable No ✓ Total surface 92 ft ✓

No. of Feed pumps 2 ✓ Diameter of ditto 4 ✓ Stroke 24 ✓ Can one be overhauled while the other is at work Yes ✓

No. of Bilge pumps 2 ✓ Diameter of ditto 4 ✓ Stroke 24 ✓ Can one be overhauled while the other is at work Yes ✓

No. of Donkey Engines 3 ✓ Sizes of Pumps BALLAST GENERAL HARBOUR 9"12"12" 7"4 1/2"6" 6"4 1/2"6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2 C 3 1/2"; For 2 Coppersdam 1 C 2 1/2"; After Coppersdam 1 C 3 1/2" Holds, &c. N<sup>o</sup> 1 Hold 2 C 3"; N<sup>o</sup> 2 Hold 2 C 3 1/2"; Deep Tank 2 C 2 1/2"; N<sup>o</sup> 3 Hold 2 C 3 1/2"; N<sup>o</sup> 3 Hold Well 1 C 3 1/2"; Tunnel Well 1 C 2 1/4"

No. of Bilge Injections One sizes 6 ✓ Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size 1 C 4 1/2" IN HOLDS & TUNNEL WELL MUD BOXES & STRAIGHT TAIL PIPES

Are all the bilge suction pipes fitted with roses Yes ✓ Are the in Engine room always accessible Yes ✓ Are the sluices on Engine room bulkheads always accessible None ✓

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 ✓

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

BOILERS, &c.—(Letter for record S ✓) Manufacturers of Steel Port Talbot Steel Co. Ltd., The Lanarkshire Steel Co. Ltd., Wm 3SB Beardmore & Co. Ltd. }

Total Heating Surface of Boilers 7068 ft<sup>2</sup> Is Forced Draft fitted Yes ✓ No. and Description of Boilers Three Single Ended ✓

Working Pressure 180 lbs./sq. in. Tested by hydraulic pressure to 320 lbs./sq. in. Date of test 8-9-24 No. of Certificate 16596 ✓

Can each boiler be worked separately Yes ✓ Area of fire grate in each boiler 63.3 ft<sup>2</sup> No. and Description of Safety Valves to each boiler Two spring loaded Area of each valve 8.29 ft<sup>2</sup> Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear Yes ✓

Smallest distance between boilers or uptakes and bunkers or woodwork 5'-0" Int. Mean dia. of boilers 15'-6" Length 11'-6" Material of shell plates Steel ✓

Thickness 1/4" Range of tensile strength 28/32 tons/sq. in. Are the shell plates welded or flanged No ✓ Descrip. of riveting: cir. seams D.R. LAP long. seams T.R.P.B.S. Diameter of rivet holes in long. seams 15/16" Pitch of rivets 9/16" Lap of plates or width of butt straps 19 3/4" ✓

Per centages of strength of longitudinal joint rivets 90.2 Working pressure of shell by rules 180 lbs./sq. in. Size of manhole in BACK END PLATE 16"12" ✓

Size of compensating rings None Back End Plate flanged 4 ✓ Description of Furnaces in each boiler 3 Deighton ✓ Material Steel Outside diameter 3'-11 3/16" ✓

Length of plain part top bottom Thickness of plates crown 1/2" Description of longitudinal joint weld ✓ No. of strengthening rings None ✓

Working pressure of furnace by the rules 183 lbs./sq. in. Combustion chamber plates: Material Steel Thickness: Sides 23/32" Back 1/16" Top 23/32" Bottom 23/32" ✓

Pitch of stays to ditto: Sides 9" x 10 5/16" Back 8 1/4" x 10 1/2" Top 9" x 10 5/16" If stays are fitted with nuts or riveted heads Auto ✓ Working pressure by rules 181 lbs./sq. in. ✓

Material of stays Steel Dia. over threads 1 5/8" + 1 3/4" Area supported by each stay 86.6 + 98.4 ✓ Working pressure by rules 180 lbs./sq. in. End plates in steam space: Material Steel Thickness 1 5/16" Pitch of stays 20 1/2" x 21 3/4" How are stays secured Auto ✓ Working pressure by rules 180 lbs./sq. in. Material of stays Steel ✓

DIA. AT BODY Area at smallest part 3 1/4" x 3" Area supported by each stay 460 + 424 ✓ Working pressure by rules 194 lbs./sq. in. Material of Front plates at bottom Steel ✓

Thickness 27/32" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 13 1/2" x 8 1/4" Working pressure of plate by rules 180 lbs./sq. in. ✓

Diameter of tubes 3" Pitch of tubes WINGS 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 27/32" Back 3/4" Mean pitch of stays C. 10.5" W. 10.45" ✓

Pitch across wide water spaces 14" Working pressures by rules 182 lbs./sq. in. Girders to Chamber tops: Material Steel ✓ Depth and thickness of girder at centre 10 1/4" x 20 7/8" Length as per rule 37 9/16" Distance apart 10 15/16" Number and pitch of stays in each 3 C 9" ✓

Working pressure by rules 186 lbs./sq. in. Steam dome: description of joint to shell None ✓ % of strength of joint -

Diameter - Thickness of shell plates - Material - Description of longitudinal joint - Diam. of rivet holes -

Pitch of rivets - Working pressure of shell by rules - Crown plates - Thickness - How stayed -

SUPERHEATER. Type None ✓ Date of Approval of Plan - Tested by Hydraulic Pressure to -

Date of Test - Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler -

Diameter of Safety Valve - Pressure to which each is adjusted - Is Easing Gear fitted -

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded? *-*

SPARE GEAR. State the articles supplied:— *All as per Rule requirements and, in addition; one propeller, one A.P. Piston Valve, and a quantity of small gear.*

The foregoing is a correct description,

**DAVID ROWAN & CO., LIMITED**

*Alan Thomson* Director

Manufacturer.

Dates of Survey while building { During progress of work in shops -- *1924 Feb 15, Mar 26, 27, Apr 18, May 14, 28, Jun 2, 3, 4, 5, 11, 16, 23, July 7, 9, 10, 15, 30, Aug 4, 7, 12, 14, 22, 27, Sep 3, 5, 8, 10, 12*  
During erection on board vessel -- *19 Oct 7, 9, 15, 21, 22, 24, 29, 31, Nov 4, 10, 11, 14, 27*  
Total No. of visits *43* Is the approved plan of main boiler forwarded herewith *Yes*  
" " " donkey " " " *-*

Dates of Examination of principal parts—Cylinders *12.8.24* Slides *5.9.24* Covers *12.8.24* Pistons *5.9.24* Rods *5.9.24*  
Connecting rods *5.9.24* Crank shaft *7.7.24* Thrust shaft *9.10.24* Tunnel shafts *9.10.24* Screw shaft *10.9.24* Propeller *10.9.24*  
Stern tube *19.9.24* Steam pipes tested *10.11.24* Engine and boiler seatings *15.10.24* Engines holding down bolts *11.11.24*  
Completion of pumping arrangements *11.11.24* Boilers fixed *11.11.24* Engines tried under steam *27.11.24*

Completion of fitting sea connections *and* Stern tube *and* Screw shaft and propeller *see Greenock Report*

Main boiler safety valves adjusted *14.11.24* Thickness of adjusting washers *all 3/8"*

Material of Crank shaft *Steel* Identification Mark on Do. *LLOYD'S N° 794 7.7.24 W.L.* Material of Thrust shaft *Steel* Identification Mark on Do. *LLOYD'S N° 7026 H.C.F. 9.10.24*

Material of Tunnel shafts *Steel* Identification Marks on Do. *LLOYD'S N° 794 H.C.F. 9.10.24* Material of Screw shafts *Steel* Identification Marks on Do. *LLOYD'S N° 7042 J.S.C. 10.9.24*

Material of Steam Pipes *Lapwelded wrought iron* Test pressure *540 lbs*

Is an installation fitted for burning oil fuel *No* Is the flash point of the oil to be used over 150°F. *-*

Have the requirements of Section 49 of the Rules been complied with *-*

Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *S.S. "GRETASTON" Gb. Rpt. N° 43347*

General Remarks (State quality of workmanship, opinions as to class, &c.)  
*The materials and workmanship are good. The machinery has been constructed under special survey and is eligible in our opinion for Classification and the Record + LMC 11.24. It has been properly fitted on board and tried under steam with satisfactory results.*

It is submitted that this vessel is eligible for THE RECORD. + LMC 11.24. FD. CL.

*W.D. 4/12/24* *W.D.*

*A.G. Forster* *L.D. Davis*  
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ *5 : 0 : 0* When applied for.  
Special ... £ *96 : 8 : 0* *2 DEC. 1924*  
Donkey Boiler Fee ... £ : : :  
Travelling Expenses (if any) £ : : : *408 24*

Committee's Minute *GLASGOW 2-11-24*  
*Assigned + LMC 11.24* *FD*

CERTIFICATE WRITTEN. 3.12.24



*26*  
*29/11/24*  
Certificate (if required) to be sent to  
The Surveyors are requested not to write on or below the space for Committee's Minute.

Rpt. 4.  
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