

REPORT ON STEAM TURBINE MACHINERY.

No. 57571

21 OCT 1936

Date of writing Report

19

When handed in at Local Office

19. 10. 1936

Port of

Glasgow

Received at London Office

No. in Survey held at
Reg. Book.

7306. on the

Glasgow

Date, First Survey

30. Oct 1935

Last Survey

16. Oct 1936.

Tons

Gross 11081.

Net 6720.

Built at

Glasgow

By whom built

Baird & C. Ltd.

Yard No.

656.

When built

1936.

Engines made at

Birkenhead

By whom made

Cammell Laird & Co. Ltd.

Engine No.

2193.

When made

1936.

Boilers made at

Glasgow

By whom made

Baird & C. Ltd.

Boiler No.

656.

When made

1936.

Shaft Horse Power at Full Power

4260 (max)

Owners

Ellerman Line Ltd.

Port belonging to

Glasgow

Nom. Horse Power as per Rule

1450.

Is Refrigerating Machinery fitted for cargo purposes

No.

Is Electric Light fitted

Yps.

Trade for which Vessel is intended

Indian.

STEAM TURBINE ENGINES, &c.—Description of Engines

See Liverpool Report No. 107460.

No. of Turbines Ahead..... Direct coupled, single reduction geared } to propelling shafts. No. of primary pinions to each set of reduction gearing
Astern..... double reduction geared }

direct coupled to { Alternating Current Generator..... phase..... periods per second } rated..... Kilowatts..... Volts at..... revolutions per minute;
for supplying power for driving..... Propelling Motors, Type.....

rated..... Kilowatts..... Volts at..... revolutions per minute. Direct coupled, single or double reduction geared to..... propelling shafts.

TURBINE
BLADING.

	H.P.			I.P.			L.P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION												
2ND												
3RD												
4TH												
5TH												
6TH												
7TH												
8TH												
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine { H.P.
I.P.
L.P. } Revolutions per minute, at full power, of each Turbine Shaft { H.P.
I.P.
L.P. } 1st reduction wheel
main shaft 96 (max).

Rotor Shaft diameter at journals { H.P.
I.P.
L.P. } Pitch Circle { 1st pinion 1st reduction wheel
Diameter { 2nd pinion main wheel } Width of Face { 1st reduction wheel
main wheel }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 1st reduction wheel
2nd pinion main wheel }

Flexible Pinion Shafts, diameter { 1st
2nd } Pinion Shafts, diameter at bearings { External 1st 2nd
Internal 1st 2nd } diameter at bottom of pinion teeth { 1st
2nd }

Wheel Shafts, diameter at bearings { 1st
main } diameter at wheel shroud, { 1st
main } Generator Shaft, diameter at bearings
Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter { as per rule
as fitted } Thrust Shaft, diameter at collars { as per rule
as fitted } Tube Shaft, diameter { as per rule
as fitted }

Screw Shaft, diameter { as per rule
as fitted } Is the { tube
screw } shaft fitted with a continuous liner { Yps. } Bronze Liners, thickness in way of bushes { as per rule
as fitted }

Thickness between bushes { as per rule
as fitted } Is the after end of the liner made watertight in the propeller boss. Yps. If the liner is in more than one length are the junctions

made by fusion through the whole thickness of the liner 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 Is an approved Oil Gland

or other appliance fitted at the after end of the tube shaft. No. Length of Bearing in Stern Bush next to and supporting propeller 8'-4" ✓
Propeller, diameter 19'-6" Pitch 18'-8" No. of Blades 4 State whether Moveable No. Total Developed Surface 118.6 square feet.

If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Yps. Can the L.P. or I.P. Turbine exhaust direct to the
Condenser Yps. No. of Turbines fitted with astern wheels 2 Feed Pumps { No. and size 20 17" x 12 2" x 24"
How driven }

Pumps connected to the Main Bilge Line { No. and size 10 10 1/2" x 12 1/2" x 21": 10 9 1/2" x 11" x 18": 20 12 1/2" x 9" x 15"
How driven } Steam

Ballast Pumps, No. and size 10 10 1/2" x 12" x 24" ✓ Lubricating Oil Pumps, including Spare Pump, No. and size 20 10 1/2" x 12" x 24" ✓
Are two independent means arranged for circulating water through the Oil Cooler Yps. Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Engine and Boiler Room 40 3 1/2": 20 2 1/2": 40 10 2 1/2": 20 10 2 1/2": 20 10 2 1/2": 20 10 2 1/2": 20 10 2 1/2": 20 10 2 1/2":
In Holds, &c. 10 1.2.3.4.5. 20 3": 10 6 hold. 20 2 1/2": 20 2 1/2": 20 2 1/2": 20 2 1/2": 20 2 1/2": 20 2 1/2": 20 2 1/2":

Main Water Circulating Pump Direct Bilge Suctions, No. and size 10 18" ✓ Independent Power Pump Direct Suctions to the Engine Room
Bilges, No. and size 30 5" ✓ Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yps. ✓

Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yps. ✓
Are all Sea Connections fitted direct on the skin of the ship Yps. ✓ Are they fitted with Valves or Cocks Both. ✓

Are they fixed sufficiently high on the ship's side to be seen without lifting the stowhold plates Yps. ✓ Are the Overboard Discharges above or below the deep water line Both. ✓
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yps. ✓ Are the Blow Off Cocks fitted with a spigot and brass covering plate Yps. ✓

What pipes pass through the bunkers 10 hold Suctions How are they protected Struts wood casing. Yps. ✓
What pipes pass through the deep tanks 10 hold Suctions Have they been tested as per rule Yps. ✓

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yps. ✓
Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another Yps. ✓ Is the Shaft Tunnel watertight Yps. ✓ Is it fitted with a watertight door Yps. ✓ worked from Puller deck.

W369-0104

BOILERS, &c.—(Letter for record 5) Total Heating Surface of Boilers 15700 sq ft
Is Forced Draft fitted *Yes. Also in hull* No. and Description of Boilers Working Pressure
Is a Report on Main Boilers now forwarded? *Yes.*
Is { a Donkey } Boiler fitted? *No.* If so, is a report now forwarded?
{ an Auxiliary }
Plans. Are approved plans forwarded herewith for Shafting 14.9.35. Main Boilers *Yes.* Auxiliary Boilers *Yes.* Donkey Boilers *Yes.*
(If not state date of approval)
Superheaters General Pumping Arrangements *Yes.* Oil Fuel Burning Arrangements *Yes.*
Spare Gear. State the articles supplied:—
As per attached sheets.

Safety Valve adjusting washers:
Port B. aff.:- Port $\frac{3}{8}$ " $\frac{11}{32}$ " $\frac{11}{32}$ "
Stern ":- " $\frac{23}{64}$ " $\frac{21}{64}$ " $\frac{11}{32}$ "
Star ":- " $\frac{23}{64}$ " $\frac{11}{32}$ " $\frac{3}{8}$ "
Port Fwd. B. aff.:- " $\frac{3}{8}$ " $\frac{3}{8}$ " $\frac{5}{16}$ "
Hull ":- " $\frac{11}{32}$ " $\frac{11}{32}$ " $\frac{11}{32}$ "

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1935 Oct.: 30 (1936) Jan.: 29 Feb.: 18. 28 Mar.: 4. 6. 10. 17. 25. 30 Apr.: 3. 8. 17. 24. 29 May: 5. 13. 21. 28 June: 1. 2. 4. 9. 12. 15. 18. 22. 25. 26 July: 2. 7. 15. 29. 30 Aug.: 11. 13. 19. 21. 26. 28 Sep.: 5. 12. 19. 26. 28
{ During erection on board vessel ---
Total No. of visits: 52 - 1. 3. 9. 10. 14. 16. 18. 24. 29 Oct.: 3. 7. 16

Dates of Examination of principal parts—Casings Rotors Blading Gearing
Wheel shaft Thrust shaft 25.3.36. Intermediate shafts 18.6.36. Tube shaft — Screw shaft 12.6.36.
Propeller 18.6.36. Stern tube 4.6.36. Engine and boiler seatings 30.4.36. Engine holding down bolts 24.9.36.
Completion of pumping arrangements 4.10.36. Boilers fixed 29.9.36. Engines tried under steam 4.10.36.
Main boiler safety valves adjusted 29.9.36. Thickness of adjusting washers *See above.*

Rotor shaft, Material and tensile strength Identification Mark

Flexible Pinion Shaft, Material and tensile strength Identification Mark

Pinion shaft, Material and tensile strength Identification Mark

1st Reduction Wheel Shaft, Material and tensile strength Identification Mark

Wheel shaft, Material Identification Mark 6060-62.67.68.69-71 Thrust shaft, Material *St. Steel* Identification Mark 6060-34-6.2.36-54

Intermediate shafts, Material *St. Steel* Identification Marks 126-HA1-24 Tube shaft, Material Identification Marks

Screw shaft, Material *do.* Identification Marks 6060-45-HA1-36 Steam Pipes, Material *Steel* Test pressure 825 lb.

Date of test 13.10.36. 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 the Rules for carrying and burning oil fuel been complied with *Yes.*

Is this machinery a duplicate of a previous case *Yes.* If so, state name of vessel *Yes.*

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

This machinery has been built under special Survey and in accordance with the Rules. The materials and workmanship are good. It has been efficiently secured in position on board and afterwards tried under full running conditions and found satisfactory.

The machinery of this vessel is, in my opinion, to be classed in the Register Book with notation of + LMC 10.36.

17/10/36

The amount of Entry Fee ... £ 6 : - : When applied for,

Special *outstanding* £ 82 : 7 : 157/10.36.

Donkey Boiler Fee ... £ : : When received,

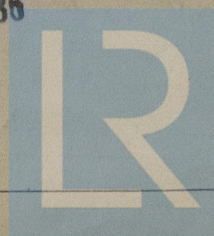
Travelling Expenses (if any) £ : : 24.11.36

Committee's Minute GLASGOW 20 OCT 1936

TUE. 29 DEC 1936

Assigned + LMC 10.36

FD.



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