

# REPORT ON STEAM TURBINE MACHINERY.

No. 55954  
31 JUL 1935

Rpt. 4a.

Received at London Office

Date of writing Report 29. 7. 1935 Port of Glasgow  
When handed in at Local Office 6. 4. 34 Last Survey 25. 7. 1935  
No. in Survey 137  
Reg. Book. on the new steel S/S "MARWARRI".  
Built at Port Glasgow By whom built Wm Hamilton & Co. Ltd. Yard No. 417  
Engines made at Glasgow By whom made Davis Rowan & Co. Ltd. Engine No. 969  
Boilers made at Glasgow By whom made Davis Rowan & Co. Ltd. Boiler No. 969  
Shaft Horse Power at Full Power 5500 Owners T. J. Brocklebank & Co. Ltd. Port belonging to Liverpool  
Nom. Horse Power as per Rule 1150 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
Trade for which Vessel is intended

## STEAM TURBINE ENGINES, &c. — Description of Engines

Parsons turbines

No. of Turbines Ahead 3 Direct coupled, single reduction geared to one propelling shafts. No. of primary pinions to each set of reduction gearing 3  
Astern 2 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 Direct coupled, single or double reduction geared to propelling shafts.  
rated Kilowatts Volts at revolutions per minute.

### TURBINE BLADING.

	H. P. ROTOR			I. P. ROTOR			L. P. ROTOR			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	1 1/16"	20 3/8"	13	1 7/8"	2-5 1/4"	7	3 5/8"	4-1 1/4"	2	HP Astern in 1 casing - Impulse wheel 45" mean dia 3 rows of blades		
2ND	1"	21"	13	2 9/8"	2-6 3/4"	7	5 1/2"	4-3 1/2"	2	L.P. Astern - Impulse wheel 45" mean dia 2 rows of blades & Reaction blading thus -		
3RD	1 5/16"	21 5/8"	13	3 5/16"	2-8 1/8"	7	6 1/2"	4-7"	1	2 1/8"	3-4 1/4"	2
4TH	1 7/8"	22 3/4"	13	4 3/8"	2-10 1/4"	7	8"	4-10"	1	3"	3-6"	2
5TH	2 9/16"	23 5/8"	13	4 3/8"	2-10 1/4"	7	9"	5-0"	1	4 1/4"	3-8 1/2"	2
6TH							9"	5-0"	1	4 1/4"	3-8 1/2"	2
7TH										4 1/4"	3-8 1/2"	2
8TH										4 1/4"	3-8 1/2"	2
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine { H.P. 1760 I.P. 1760 L.P. 1760 }  
Revolutions per minute, at full power, of each Turbine Shaft { H.P. 2008 I.P. 2008 L.P. 2008 }  
Rotor Shaft diameter at journals { H.P. 6 1/2" I.P. 6 1/2" L.P. 6 1/2" }  
Pitch Circle Diameter { 1st pinion 7.498 1st reduction wheel main wheel 145.029" 2nd pinion 13 1/4" - 16 1/2" 1st reduction wheel main wheel 18 3/4" }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st 6" 2nd 6" }  
Flexible Pinion Shafts, diameter at bearings { 1st 6" 2nd 6" }  
Generator Shaft, diameter at bearings { 1st 17 1/2" 2nd 17 1/2" }Propelling Motor Shaft, diameter at bearings { 1st 15.603" 2nd 15.603" }Tube Shaft, diameter at bearings { 1st 8" 2nd 8" }Thrust Shaft, diameter at collars { 1st 16 1/2" 2nd 16 1/2" }Screw Shaft, diameter at bearings { 1st 16.4" 2nd 16.4" }Is the tube shaft fitted with a continuous liner yes

Thickness between bushes as per rule 13/16" as fitted 13/16" Is the after end of the liner made watertight in the propeller boss yes 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 yes 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 6'-0"

Propeller, diameter 18'-6" Pitch 15'-7 1/2" No. of Blades 4 State whether Moveable no Total Developed Surface 108.4 square feet. Can the H.P. or I.P. Turbine exhaust direct to the L.P. Turbine yes No. and size 1 turbine pump 1, Recip'g 10'-13 1/2" x 24" & 1, 8" x 10 1/2" x 22"

Condenser yes No. of Turbines fitted with astern wheels 2 Feed Pumps { No. and size 109-8x18, 109-8x18, 109-8x18 & the ballast pump }  
Pumps connected to the Main Bilge Line { No. and size 12'-10 1/2" x 24" }  
Lubricating Oil Pumps, including Spare Pump, No. and size 109-10x24 & 10 1/2" x 10 1/2" x 24"

Ballast Pumps, No. and size 12'-10 1/2" x 24" Are two independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size: — In Engine and Boiler Room 3 @ 3 1/2" Stroke hole 2 @ 2 1/2" & 2 @ 3 1/2" In Holds, &c. No. 1 hole 2 @ 3 1/2" No. 2 hole 2 @ 3 1/2" No. 3 hole 2 @ 3 1/2" No. 4 hole 2 @ 3 1/2" No. 5 hole 2 @ 3 1/2" Tunnel well 1 @ 3 1/2" All fitted at Enk.

Main Water Circulating Pump Direct Bilge Suctions, No. and size one @ 5 1/2" Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes

Bilges, No. and size one @ 5 1/2" 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 yes

Are all Sea Connections fitted direct on the skin of the ship yes Are they fitted with 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 Blow Off Cocks fitted with a spigot and brass covering plate yes

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel yes How are they protected under timber boards

What pipes pass through the bunkers forward hold suction D.B. air pipes Have they been tested as per rule yes

What pipes pass through the deep tanks Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes

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 yes Is the Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Upper deck



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This image shows a blank, aged, cream-colored page, likely an endpaper or flyleaf of a book. The paper has a slightly textured appearance with some minor creases and discoloration, characteristic of old paper. A dark vertical strip is visible along the right edge, possibly a binding or gutter.

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