

REPORT ON STEAM TURBINE MACHINERY.

No. 49218

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Date of writing Report 19 17 When handed in at Local Office 17 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 13.12.28 Last Survey 7 May 1929
 Reg. Book. S/S "Coryvale" (Number of Visits 14)
 on the S/S "Coryvale" Tons } Gross
 Built at Glasgow By whom built Harland & Wolff Yard No. 826 When built 1929
 Engines made at Glasgow By whom made H. Beardmore & Co. Engine No. BW 8 When made 1929
 Boilers made at Glasgow By whom made Raukii Blackburn & Co. Boiler No. 433 When made 1929
 Shaft Horse Power at Full Power 600 Owners A Crawford & Co. Port belonging to Glasgow
 Nom. Horse Power as per Rule 100 Is Refrigerating Machinery fitted for cargo purposes 970 Is Electric Light fitted Yes
 Trade for which Vessel is intended Foreign

STEAM TURBINE ENGINES, &c.—Description of Engines BAUER WACH INSTALLATION N° 8
 Built by Messrs W. BEARDMORE & CO.
 No. of Turbines one Direct coupled, single reduction geared } to one propelling shaft. No. of primary pinions to each set of reduction gearing one
 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							96 7/8	792 7/8	1			
3RD							108	816	1			
4TH							119	838	1			
5TH							133	866	1			
6TH							146	892	1			
7TH							160	920	1			
8TH												
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine { H.P. — I.P. — L.P. 600 } Revolutions per minute, at full power, of each Turbine Shaft { H.P. — I.P. — L.P. 4390 } 1st reduction wheel 640 main shaft 80

Rotor Shaft diameter at journals { H.P. — I.P. — L.P. 110 7/8 } Pitch Circle Diameter { 1st pinion 6.642 1st reduction wheel 45.42 2nd pinion 10.57 main wheel 76.845 } Width of Face { 1st reduction wheel 8.47 main wheel 19.1

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 210 7/8 1st reduction wheel 285 7/8 2nd pinion 400 7/8 main wheel 470 7/8

Flexible Pinion Shafts, diameter { 1st — 2nd — } Pinion Shafts, diameter at bearings External 1st 140 7/8 2nd 220 7/8 Internal 1st solid 2nd solid diameter at bottom of pinion teeth { 1st 6.0654 2nd 9.7976

Wheel Shafts, diameter at bearings { 1st 200 7/8 main 420 7/8 } diameter at wheel shroud, { 1st 1078 7/8 Generator Shaft, diameter at bearings — main 1860 7/8 Propelling Motor Shaft, diameter at bearings — }
 Intermediate Shafts, diameter as per rule 11.53 as fitted 120 12 1/4 Thrust Shaft, diameter at collars as per rule 307.5 as fitted 330 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 } 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 — 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 — Length of Bearing in Stern Bush next to and supporting propeller —

Propeller, diameter — Pitch — No. of Blades — State whether Moveable — Total Developed Surface — square feet.
 If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine — Can the H.P. or I.P. Turbine exhaust direct to the Condenser — No. of Turbines fitted with astern wheels — Feed Pumps { No. and size — How driven — }
 Pumps connected to the Main Bilge Line { No. and size — How driven — }
 Ballast Pumps, No. and size — Lubricating Oil Pumps, including Spare Pump, No. and size Two - 6 1/2" x 7" x 15"
 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 —
 In Holds, &c. —

Main Water Circulating Pump Direct Bilge Suctions, No. and size — Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size — Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes —
 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 —
 Are all Sea Connections fitted direct on the skin of the ship — Are they fitted with Valves or Cocks —
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates — Are the Overboard Discharges above or below the deep water line —
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel — Are the Blow Off Cocks fitted with a spigot and brass covering plate —
 That pipes pass through the bunkers — How are they protected —
 That pipes pass through the deep tanks — Have they been tested as per rule —
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times —
 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 — Is the Shaft Tunnel watertight — Is it fitted with a watertight door —

BOILERS, &c.—(Letter for record) Total Heating Surface of Boilers
 Is Forced Draft fitted No. and Description of Boilers Working Pressure

Is a Report on Main Boilers now forwarded?

Is { a Donkey } Boiler fitted? If so, is a report now forwarded?
 { an Auxiliary }

Plans. Are approved plans forwarded herewith for Shafting Main Boilers Auxiliary Boilers Donkey Boilers
 (If not state date of approval) *Approved 24/1/29*

Superheaters General Pumping Arrangements Oil Fuel Burning Arrangements

Spare Gear. State the articles supplied:— *One set turbine bearing bushes, one each bearing bush for 1st + 2nd pinions, clutch shaft bearing bush, main wheel bearing bush, thrust pads, one set each for turbine, 2nd reduction pinion, propeller thrust. Coupling bolts Lubricating oil pumps, one set suction + delivery valves etc. 1 set piston rings, 1 pump bush 4 tubes for oil cooler.*

The foregoing is a correct description *FOR WILLIAM BEARDMORE & CO., LIMITED. Robert Love* Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1928 Dec 13-17 (1929) Mar 1-7-12-14-22 Apr 3-5-11-18-22-29 May 7
 { During erection on board vessel --- }
 Total No. of visits *14*

Dates of Examination of principal parts—Casings *5/4/29* Rotors *1/3/29* Blading *7/3/29* Gearing *18/4/29*
 Wheel shaft *22/4/29* Thrust shaft *22/4/29* Intermediate shafts Tube shaft Screw shaft
 Propeller Stern tube Engine and boiler seatings Engine holding down bolts
 Completion of pumping arrangements Boilers fixed Engines tried under steam
 Main boiler safety valves adjusted Thickness of adjusting washers
 Rotor shaft, Material and tensile strength *S.M. Steel 32.4 to 37.0 tons* Identification Mark *8019*
 Flexible Pinion Shaft, Material and tensile strength *Nickel Steel 43.5 to 43.8 tons* Identification Mark *8166 and 8173*
 Pinion shaft, Material and tensile strength *S.M. Steel 37.0 tons* Identification Mark *8168*
 1st Reduction Wheel Shaft, Material and tensile strength *S.M. Steel* Identification Mark *8167* Thrust shaft, Material *S.M. Steel* Identification Mark *8167*
 Wheel shaft, Material *S.M. Steel* Identification Marks Tube shaft, Material Identification Marks
 Intermediate shafts, Material Identification Marks Steam Pipes, Material Test pressure
 Screw shaft, Material Identification Marks
 Date of test Is an installation fitted for burning oil fuel
 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
 Is this machinery a duplicate of a previous case *no* If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.)
*This L.P. turbine and D.R. gearing and hydraulic coupling have been built under special survey in accordance with the approved plans and the Society's Rules. The materials and workmanship are good.
 The installation has been dispatched to Greenock to be used in conjunction with steam engines 2.433 building by Messrs Rankin and Blackmore L.*

The amount of Entry Fee ... £ : :
 Special ... £ *10* : - : *21 MAY 1929*
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : : *2nd A.C. 21.9.29*

When applied for, *A. Campbell*
 When received, *21 MAY 1929*
 Engineer Surveyor to Lloyds Register of Shipping.

Committee's Minute *GLASGOW 21 MAY 1929*
 Assigned *Deferred.*
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