

REPORT ON STEAM TURBINE MACHINERY.

No. 84248

Received at London Office 30 MAY 1929

pt. 4a.

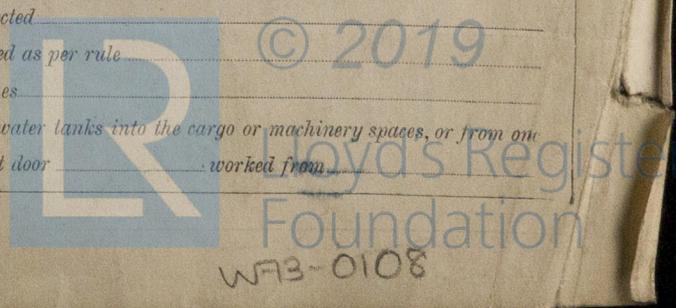
Date of writing Report 29/5/29 When handed in at Local Office 29/5/29 Port of Newcastle-on-Tyne
 No. in Survey held at Walker Date, First Survey 11 March Last Survey 22 May 1929
 Reg. Book. 31458 on the two Bauer-Wash turbines for the S.S. "St. Demian" (Number of Visits 27)
 Tons Gross 8191 Net 5152
 Built at Belfast By whom built Workman Clark & Co. Yard No. - When built 1918-5
 Engines made at ~ do ~ By whom made ~ do ~ Engine No. - When made ~ do ~
 Boilers made at Walker By whom made Swan Hunter, W-R & Co. Boiler No. 1318 When made 1929
 Shaft Horse Power at Full Power 2000 Owner: Government of India Post belonging to India
 Nom. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes
 Use for which Vessel is intended Great Indian

STEAM TURBINE ENGINES, &c.—Description of Engines Two Bauer-Wash turbines.

of Turbines Ahead 1st & 2nd Direct coupled, single reduction geared to two propelling shafts. No. of primary pinions to each set of reduction gearing One
 Astern - double reduction geared
 Connected to Alternating Current Generator phase periods per second Direct Current Generator rated Kilowatts Volts at revolutions per minute;
 Applying power for driving Propelling Motors, Type
 Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

EXPANSION	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.
							404	290	6			
							93	936				
							114	984				
							142	1034				
							140	1090				
							200	1150				

Horse Power at each turbine { H.P. - I.P. - L.P. 1000 } Revolutions per minute, at full power, of each Turbine Shaft { H.P. - I.P. - L.P. 3310 }
 Shaft diameter at journals { H.P. - I.P. - L.P. 140 mm } Pitch Circle Diameter { 1st pinion 230.96 mm, 2nd pinion 345.46 mm } 1st reduction wheel 1489.4 mm, main wheel 2165.4 mm, Face { 1st reduction wheel 250 mm, main wheel 530 mm }
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 235.365 mm, 2nd pinion 410 mm } 1st reduction wheel 260 + 1480 mm, main wheel 530 mm
 Pinion Shafts, diameter at bearings { 1st 95 mm, 2nd - } External diameter at bottom of pinion teeth { 1st 140 mm, 2nd 225 mm }
 Pinion Shafts, diameter at bearings { 1st 190 mm, 2nd 260 mm } diameter at wheel shroud, { 1st 1421 mm, 2nd 2049 mm } Generator Shaft, diameter at bearings - Propelling Motor Shaft, diameter at bearings -
 Intermediate Shafts, diameter as per rule 12, as fitted 12 5/8" Thrust Shaft, diameter at collars as per rule 13.02, as fitted 350 mm Tube Shaft, diameter as per rule - as fitted -
 Propeller Shaft, diameter as per rule - as fitted - Is the shaft fitted with a continuous liner { tube - screw - } Bronze Liners, thickness in way of bushes as per rule - as fitted -
 Distance 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 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 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 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.
 Exhaust 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 user
 No. of Turbines fitted with astern wheels Feed Pumps { No. and size How driven }
 Is connected to the Main Bilge Line { No. and size How driven }
 Oil Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size
 No independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room
 Pumps, &c. Independent Power Pump Direct Suctions to the Engine Room
 No. and size Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes
 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
 Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks
 Are 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 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
 Pipes pass through the bunkers How are they protected
 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 worked from



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 (an Auxiliary) Boiler fitted? — If so, is a report now forwarded? —

Plans. Are approved plans forwarded herewith for Shafting yes Main Boilers — Auxiliary Boilers — Donkey Boilers —
(If not state date of approval)

Superheaters — General Pumping Arrangements — Oil Fuel Burning Arrangements —

Spare Gear. State the articles supplied:— as per list attached

FOR SWAN, HUNTER & WIGHAM RICHARDSON, LTD.

Rowland Secretary

The foregoing is a correct description,

Dates of Survey while building } 1929 }
During progress of work in shops -- } Mar. 11, 18, 21, 28. Apr. 3, 5, 9, 10, 11, 12, 15, 16, 18, 22, 23, 26, 29. May 1, 2, 3, 6, 7, 8, 14, 16, 17, 22.
During erection on board vessel --- }
Total No. of visits 27.

Dates of Examination of principal parts—Casings 11. 4. 29 Rotors 11. 4. 29 Blading 11. 4. 29 Gearing 11. 4. 29.

Wheel shaft 18. 3. 29 Thrust shaft 18. 3. 29 Intermediate shafts — Tube shaft — Screw shaft —

Propeller — Stern tube — Engine and boiler seatings — Engine holding down bolts 2. 5. 29.

Completion of pumping arrangements — Boilers fixed — Engines tried under steam 22. 5. 29

Main boiler safety valves adjusted — Thickness of adjusting washers —

Rotor shaft, Material and tensile strength Steel 35 Tons per sq. inch Identification Mark 59260

Pinion Shaft, Material and tensile strength Steel 40/44 Tons Identification Mark 19. 3. 29

Pinion shaft, Material and tensile strength Steel 28 TONS Identification Mark ~ do ~

Reduction Shaft, Material and tensile strength Steel 40/44 TONS Identification Mark ~ do ~

Wheel shaft, Material Steel Identification Mark 59260 Thrust shaft, Material Steel Identification Mark ~ do ~

Intermediate shafts, Material Steel Identification Marks ~ do ~ Tube shaft, Material — Identification Marks —

Screw shaft, Material — Identification Marks — Steam Pipes, Material — Test pressure —

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.) The machinery has been built under special survey in accordance with the approved plans & the Rules of the Society. The machinery has been securely fitted on board the vessel, tried under full working conditions & found satisfactory. The workmanship & materials are of good quality throughout.

Certificates (if required) to be sent to... (The Surveys are requested not to write on or below the space for Committee's Minutes)

The amount of Entry Fee ... £ : :
Special ... £ 33 : 6
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 28 MAY 1929
When received, 5. 6. 29

Wm. A. Ferguson
Engineer Surveyor to Lloyd's Register of Shipping.

TUE. 27 MAY 1930
FRI. 14 NOV 1930
TUE. 28 APR 1931

Committee's Minute
Assigned See two y.p. 9 attached

