

REPORT ON STEAM TURBINE MACHINERY.

25. NOV 7 1936

Rpt. 4a.

Received at London Office

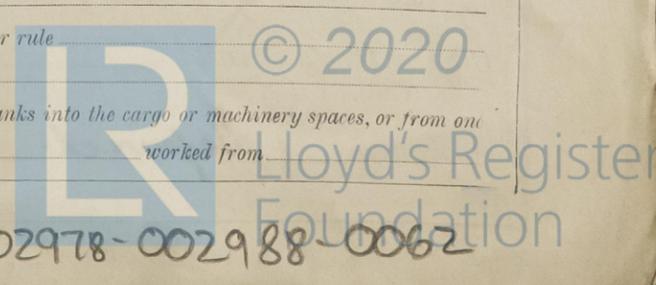
Date of writing Report 19 24.11.36 When handed in at Local Office Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 12th June 1936 Last Survey 9th Nov 1936
 Reg. Book. Greenock Dockyard Ltd Yard No. 426 S/S Blau Bauveron (Number of Visits 1)
 on the Greenock By whom built Greenock Dry Dock Co Ltd Yard No. 426 When built 1937
 Engines made at Glasgow By whom made Birdseye & Co Ltd Engine No. BW44 When made 1936
 Boilers made at S.H.P. = 2404 By whom made Blau Bauveron Boiler No. When made
Ind Horse Power at Full Power 2640 Owners Blau Bauveron Ltd Port belonging to Glasgow
 Nom. Horse Power as per Rule 433 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
 Trade for which Vessel is intended 701.

STEAM TURBINE ENGINES, &c. — Description of Engines Two I.P. turbines with D.R. gearing & hydraulic couplings

No. of Turbines Ahead 2 Direct coupled, single reduction geared } to 2 propelling shafts. No. of primary pinions to each set of reduction gearing 1.
 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							3 1/4"	35 1/2"				
2ND							3 5/8"	37 1/2"				
3RD							4 3/8"	38 1/2"				
4TH							5 1/8"	40 1/2"				
5TH							6 1/4"	41 1/2"				
6TH							6 3/4"	43 1/4"				
7TH							7 1/8"	45 1/2"				
8TH												
9TH												
10TH												
11TH												
12TH												

Ind. Horse Power at each turbine { H.P. I.P. L.P. 1335 each }
 { H.P. I.P. L.P. 3320 }
 { H.P. I.P. L.P. }
 Rotor Shaft diameter at journals { H.P. I.P. L.P. 6.64" }
 { H.P. I.P. L.P. }
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 8.784" 1st reduction wheel 63.8446" }
 { 2nd pinion 19.1397" main wheel 91.1279" }
 { 1st pinion 24.016" 1st reduction wheel 85.238" }
 { 2nd pinion 34.009" main wheel 45.67" }
 Flexible Pinion Shafts, diameter { 1st 2nd }
 Pinion Shafts, diameter at bearings External { 1st 6.29" 2nd 14.96" }
 Internal { 1st 2nd }
 diameter at bottom of pinion teeth { 1st 8.207" 2nd 18.367" }
 Wheel Shafts, diameter at bearings { 1st 11.02" }
 { main 34.64" }
 diameter at wheel shroud, { 1st 60.78" }
 { main 86.81" }
 Intermediate Shafts, diameter as per rule 13.824" Thrust Shaft, diameter at collars as per rule 14.518" Tube Shaft, diameter as per rule
 as fitted as fitted 15" as fitted
 Screw Shaft, diameter as per rule Is the { tube } shaft fitted with a continuous liner { }
 as fitted as fitted as fitted
 Thickness between bushes as per rule 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
 as fitted 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
 Are two 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
 In Holds, &c. 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
 What pipes pass through the bunkers How are they protected
 What 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** } Boiler fitted? _____ If so, is a report now forwarded? _____
 { **an Auxiliary** }

Plans. Are approved plans forwarded herewith for Shafting Ys. 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 attached List.



FOR BARCLAY, CURLE & CO., LTD. Alexander Macneil Manufacturer.

The foregoing is a correct description,

Dates of Survey while building: During progress of work in shops -- 1936 June: 12, 26 July: 29, 31 Aug: 13, 19, 21 Sep: 14, 18, 24, 29 Chief Draughtsman
 During erection on board vessel --- Oct: 9, 13, 14, 23, 27 Nov: 9
 Total No. of visits 18

Dates of Examination of principal parts—Casings 18.9.36 Rotors 21.8.36 Blading 18.9.36 Gearing 29.9.36

Wheel shaft 31.7.36 Thrust shaft 24.10.36 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. Eng. Steel 34.4 - 37.0 Tons Identification Mark 508+509-HA1-26

Flexible Pinion Shaft, Material and tensile strength _____ Identification Mark _____

Pinion shaft, Material and tensile strength S.M. Eng. Steel 44.0 - 46.2 Tons Identification Mark 504, 505, 506, 507, HA

1st Reduction Wheel Shaft, Material and tensile strength do 30.2 - 30.8 Tons Identification Mark 502+503-HA1-26

Wheel shaft, Material S.M. Eng. Steel Identification Mark 500+501-HA2-26 Thrust shaft, Material S.M. Eng. Steel Identification Mark 498+499-HA1

Intermediate shafts, Material _____ Identification Marks _____ 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 _____ If so, state name of vessel _____

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 shipped to Greenock for fitting on board.

23/11/36

See also Surveys fitted on board, tried under working conditions & found satisfactory at Greenock. Gordon Museum Greenock

The amount of Entry Fee ... £	:	:	When applied for,
Special ... £	43	6	19
Donkey Boiler Fee ... £	:	:	When received,
Travelling Expenses (if any) £	:	:	1st JANUARY 1937

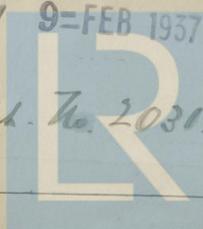
Geo. Murray
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 24 NOV 1936

Assigned Deferred. MB

GLASGOW 9-FEB 1937

See Enk. Rpt. No. 20312



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

Is a report also sent on the frame of the ship?