

REPORT ON STEAM TURBINE MACHINERY.

No. 60390
 Received at London Office NOV 16 1938

4a.

Report of writing Report 12th Nov 1938 When handed in at Local Office 14th 11th 1938 Port of Glasgow
 in Survey held at Glasgow Date, First Survey 19th 11th 37 Last Survey 11th Nov 1938
 on the Twin Screw S.S. CLAN FRASER (Number of Visits 45) Tons ^{Gross} _{Net}
 built at Greenock By whom built Greenock Dockyard Co Ltd Yard No. 435 When built
 engines made at Glasgow By whom made Barclay Currie & Co Ltd Engine No. B.W 57 When made
 boilers made at By whom made Boiler No. When made
 shaft Horse Power at Full Power 2480 Owners Port belonging to
 Indicated Horse Power as per Rule 413 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
 made for which Vessel is intended

STEAM TURBINE ENGINES, &c.—Description of Engines Two - L.P. Turbines with D.R. Gearing & Hydraulic Coupling

Number of Turbines 2 ^{Ahead} 2 ^{Astern} ~~Direct coupled~~ single reduction geared to 2 propelling shafts. No. of primary pinions to each set of reduction gearing one
 Direct coupled to Alternating Current Generator phase periods per second Direct Current Generator rated Kilowatts Volts at revolutions per minute;
 supplying 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.
1-2-3	/	/	/	/	/	/	3 7/16	35 23/32	one	/	/	/
"	/	/	/	/	/	/	3 55/64	37 3/32	one	/	/	/
"	/	/	/	/	/	/	4 33/64	38 23/32	one	/	/	/
"	/	/	/	/	/	/	5 25/64	40 1/32	one	/	/	/
"	/	/	/	/	/	/	6 7/64	41 33/64	one	/	/	/
"	/	/	/	/	/	/	6 3/32	43 7/16	one	/	/	/
"	/	/	/	/	/	/	7 1/8	45 1/2	one	/	/	/

shaft Horse Power at each turbine H.P. I.P. L.P. 1240 Revolutions per minute, at full power, of each Turbine Shaft H.P. I.P. L.P. 3320
 Pinion Shaft diameter at journals H.P. I.P. L.P. 6.69 Pitch Circle Diameter 1st pinion 8.784 2nd pinion 19.1397 1st reduction wheel 63.8446 main wheel 91.1279 Width of Face 1st reduction wheel 11.0238 main wheel 25.197

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 11.22 + 12.496 2nd pinion 18.504 + 18.504 1st reduction wheel 15.448 + 69.489 main wheel 22.835 + 22.835

Pinion Shafts, diameter at bearings External 1st 6.29 2nd 14.96 Internal diameter at bottom of pinion teeth 1st 8.207 2nd 18.367

Generator Shaft, diameter at bearings 1st 11.02 2nd 34.64 diameter at wheel shroud, 1st 60.48 2nd 86.81 Propelling Motor Shaft, diameter at bearings

Thrust Shaft, diameter at collars as per rule as fitted 15 Tube Shaft, diameter as per rule as fitted

Shaft fitted with a continuous liner 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

Leakage 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

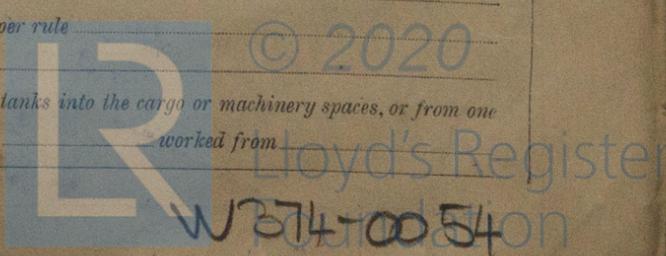
Other appliance fitted at the after end of the tube shaft Length of Bearing in Stern Bush next to and supporting propeller square feet.

Propeller, diameter Pitch No. of Blades State whether Moveable Total Developed Surface square feet.

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



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 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:— See 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 -- 1937 Nov: 19 Dec: 8-14-20-22 (1938) Jan: 13-28 Feb: 9 Apr: 7-15 May: 2-5-11-30 June: 6-13-20-30 July: 5-13-28 Aug: 1-5-9-15-23 Sep: 2-8-14-15-23-27-30 Oct: 4-7-14 Total No. of visits 4-5-17-21-24-26-28 Nov: 3-4-8-11

Dates of Examination of principal parts—Casings 24-10-38 Rotors 13-6-38 Blading 26-10-38 Gearing 28-10-38

Wheel shafts 8-9-38 Thrust shaft 28-10-38 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 shafts Material and tensile strength S.M. Ingot Steel 36.7 ton & 34.2 ton Identification Mark N° 549 & 1049 GA

1st Red Pinion Shaft, Material and tensile strength Nickel Steel 42.3 ton & 41.1 ton Identification Mark N° 1055 & 1056 GA

2nd Red Pinion shaft, Material and tensile strength Nickel Steel 41.5 & 41.1 ton Identification Mark N° 2636 & 2637 GA

1st Reduction Wheel Shaft, Material and tensile strength S.M. Ingot Steel 31.1 ton Identification Mark N° 994 & 998 GA

Wheel shafts Material S.M. Ingot Steel Identification Mark N° 519 & 520 GA Thrust shaft, Material S.M. Ingot Steel Identification Mark N° 954 & 2642 GA

Transmission Intermediate shafts, Material S.M. Ingot Steel Identification Marks N° 918 & 919 GA 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 Yes If so, state name of vessel Bendley Curle B.W. 56 Gt. No. 60156

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. The machinery has been shipped to Greenock for installation in the vessel.

9th 14/11/38 These valves securely fitted on board. Fuel under stress found satisfactory. Wm. Gordon. Greenock

Table with 4 columns: Fee Type, Amount (£), Date Applied (15 NOV 1938), Date Received (6th JAN 1939). Rows include Entry Fee, Special, Donkey Boiler Fee, Travelling Expenses.

Signature of Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 8861 1051 15 NOV 1938

Assigned TRANSMIT TO LONDON

