

No. 9620

REPORT ON STEAM TURBINE MACHINERY.

Received at London Office 19 AUG 1931

4a.

Writing Report

When handed in at Local Office

19 AUG 1931

Port of London

Survey held at Rugby

Date, First Survey 11 June 1930 Last Survey 11 June 1931

Survey held at Barrow

on the Twin Screw Turbo-Electric S/S "STRATHNAVER"

Gross Tons 22544
Net Tons 19620

Engines made at Rugby

By whom built Messrs. Gickers-Armstrong Yard No. 663

When built 1931

Boilers made at Glasgow

By whom made Messrs. British Thomson-Houston Ltd Engine No. 17

When made 1931

Shaft Horse Power at Full Power 28,000

By whom made Messrs. Yarrow & Co Ltd Boiler No. 1598

When made 1931

Nom. Horse Power as per Rule 6,315

Owners Messrs. P & O Am. Nav. Co Port belonging to London

When made 1931

Is Refrigerating Machinery fitted for cargo purposes Yes

Is Electric Light fitted Yes

STEAM TURBINE ENGINES, &c.—Description of Engines

Turbo-Electric

No. of Turbines Two

Direct coupled, single or double reduction geared to ✓ propelling shafts. No. of primary pinions to each set of reduction gearing ✓, direct coupled to 3 phase 50 periods per second, Alternating Current Generator rated 10,700 Kilowatts 3,000 Volts at 3,000 revolutions per minute; for supplying power for driving Two double unit Propelling Motors. Propelling Motors, Type Double Unit Synchronous rated 10,700 Kilowatts 3,000 Volts at 125 revolutions per minute. Direct coupled, single or double reduction geared to Two propelling shafts.

PARTICULARS OF TURBINE BLADING.

STAGE	H.P.			H.P.			H.P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF BLADES.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF BLADES.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1st EXPANSION	1.87"	41.92"	9 ^{1/2}	2.75"	31.66"	16 ^{1/2}	2.79"	50.34"				
2nd "	2.05"	30.26"	10 ^{1/2}	2.96"	32.08"	17 ^{1/2}	3.52"	51.80"				
3rd "	2.16"	30.48"	11 ^{1/2}	3.20"	32.56"	18 ^{1/2}	4.84"	54.64"				
4th "	2.28"	30.72"	12 ^{1/2}	3.50"	33.16"	19 ^{1/2}	7.30"	57.90"				
5th "	2.42"	31.00"	13 ^{1/2}	3.77"	33.70"	20 ^{1/2}	10.80"	63.40"				
6th "	2.30"	30.76"	14 ^{1/2}	4.00"	34.16"	21 ^{1/2}	15.90"	72.40"				
7th "	2.47"	31.10"	15 ^{1/2}	4.33"	34.82"							
8th "	2.56"	31.28"										

Shaft Horse Power at each turbine 14,600 Revolutions per minute, at full power, of each Turbine Shaft 3,000

Main shaft ✓ Pitch Circle Diameter, 1st pinion ✓ 2nd pinion ✓ 1st reduction wheel ✓ main wheel ✓ Distance between centres of pinion and wheel faces and the centre of the adjacent bearings, 1st pinion ✓ 2nd pinion ✓ 1st reduction wheel ✓ main wheel ✓ Flexible Pinion Shafts, diameter 1st ✓ 2nd ✓

Pinion Shafts, diameter at bearings External 1st ✓ 2nd ✓ diameter at bottom of teeth of pinion 1st ✓ 2nd ✓ Wheel Shafts, diameter at bearings, 1st ✓ main ✓ diameter at wheel shroud, 1st ✓ main ✓ Propelling Motor Shafts, diameter at bearings 22"

Generator Shafts, diameter at bearings 12" Main Shafting, diameter of Tunnel Shafting as per rule 19 1/4 as fitted 20 1/4 diameter of Thrust Shafting as per rule 20 1/4 as fitted 21 1/4

Diameter of Screw Shaft as per rule 20 3/4 as fitted 22" Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes 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 joints burned No 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 fits all the length If two liners are fitted, is the shaft lapped or protected between the liners ✓ Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated no Length of Stern Bush 9'-0" Diameter of Propeller 18'-6"

Pitch of Propeller 19'-6" No. of Blades Four State whether Moveable no Total Surface 144 square feet. If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine, and either the H.P. or I.P. Turbine can exhaust direct to the Condenser Yes Even Screw

No. of Turbines fitted with astern wheels None Total number of power driven Main and Auxiliary Pumps 41

No. and size of Feed Pumps 2 Rotary 350000 lb/hr, 17x2 1/2 x 11 x 15" How driven Steam No. and size of Pumps connected to the Main Bilge Line 3 of 255 tons 1 of 50 tons

How driven Electric motor No. and size of Ballast Pumps One of 255 tons No. and size of Lubricating Oil Pumps, including Spare Pump 4 capacity 120 gals/min Are two independent means arranged for circulating water through the Oil Cooler Yes and in Holds, &c. 18 of 3 1/2 and 4 of 2 1/2

connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room 10 of 3 1/2 and two 3 1/2 x 2 1/2 No. and size of Donkey Pump Direct Suctions to the Engine Room Bilges two of 8" and 1 1/2 BR Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes

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 they Valves or Cocks both

Are all connections with the sea direct on the skin of the ship Yes Are the Discharge Pipes above or below the deep water line 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 ✓ What pipes are carried through the bunkers none 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 Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Bridge and Deck

BOILERS, &c.—(Letter for record) Total Heating Surface of Boilers 56,000 sq. ft. Working Pressure 425 lbs/sq. in.

Is Forced Draft fitted Yes No. and Description of Boilers 6 Water Tube (4 main 2 Aux.)

003418-003420-0026

Lloyd's Register Foundation

