

## REPORT ON STEAM TURBINE MACHINERY.

No. 97030

Received at London Office 1931 22 JAN 1932

Date of writing Report 19<sup>th</sup> Jan 1932. When handed in at Local Office 19<sup>th</sup> Dec 1931. Port of London  
 No. in Survey held at Rugby Date, First Survey 11<sup>th</sup> June 1930 Last Survey 10<sup>th</sup> October 1931  
 Reg. Book. 1524 on the Twin Screw Turbo-Electric S/S "STRATHAIRD" (Number of Visits 3) Gross 225744 Tons  
 Net 13621  
 Built at Barrow By whom built Messrs. Vickers-Armstrong & Co. Yard No. 664 When built 1932  
 Engines made at Rugby By whom made Messrs. British Thomson-Houston Engine No. 18 When made 1932  
 Boilers made at Barrow By whom made Messrs. Vickers-Armstrong & Co. Boiler No. 664 When made 1932  
 Shaft Horse Power at Full Power 28,000 Owners Messrs. P & O Steam Navigation Co. Port belonging to London  
 Nom. Horse Power as per Rule 6,315 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

## STEAM TURBINE ENGINES, &amp;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 3, 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 126 revolutions per minute. Direct coupled, single or double reduction geared to Two propelling shafts.

## PARTICULARS OF TURBINE BLADING.

	H. P.			H. P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF EXPANSION	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF EXPANSION	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION	1.87"	41.92"	9 <sup>1/2</sup>	2.75"	31.66"	16 <sup>1/2</sup>	2.79"	50.34"	
2ND "	2.05"	30.26"	10 <sup>1/2</sup>	2.96"	32.08"	17 <sup>1/2</sup>	3.52"	51.80"	
3RD "	2.16"	30.48"	11 <sup>1/2</sup>	3.20"	32.56"	18 <sup>1/2</sup>	4.84"	54.64"	
4TH "	2.28"	30.72"	12 <sup>1/2</sup>	3.50"	33.16"	19 <sup>1/2</sup>	7.30"	57.90"	
5TH "	2.42"	31.00"	13 <sup>1/2</sup>	3.77"	33.70"	20 <sup>1/2</sup>	10.80"	63.40"	
6TH "	2.30"	30.76"	14 <sup>1/2</sup>	4.00"	34.16"	21 <sup>1/2</sup>	15.90"	72.40"	
7TH "	2.47"	31.10"	15 <sup>1/2</sup>	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 1st reduction wheel ✓  
 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,  
 Width of Face, 1st reduction wheel ✓ main wheel ✓ Flexible Pinion Shafts, diameter 1st ✓ 2nd ✓  
 1st pinion ✓ 2nd pinion ✓ 1st reduction wheel ✓ main wheel ✓ Pinion Shafts, diameter at bearings External 1st ✓ 2nd ✓ diameter at bottom of teeth of pinion 1st ✓ 2nd ✓  
 Internal 1st ✓ 2nd ✓ Wheel Shafts, diameter at bearings, 1st ✓ main ✓ diameter at wheel shroud, 1st ✓ main ✓  
 Generator Shafts, diameter at bearings 12" Propelling Motor Shafts, diameter at bearings 22"  
 Main Shafting, diameter of Tunnel Shafting as per rule 19.5" as fitted 20.74" diameter of Thrust Shafting as per rule 20.47" as fitted 21.74"  
 diameter of Screw Shafts as per rule 21.05" 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 On length 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 appliance fitted at the after end of the shaft to permit of it being efficiently  
 lubricated No Length of Stern Bush Aft 9'-0" 4 3'-9" Diameter of Propeller 18'-6" ✓  
 Pitch of Propeller 19'-6" No. of Blades 4 State whether Moveable No Total Surface 147 1/2 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 L.P. Turbine can exhaust direct to the Condenser ✓  
 No. of Turbines fitted with astern wheels None Total number of power driven Main and Auxiliary Pumps Forty four  
 No. and size of Feed Pumps Two 2 Turbo 35,000 lbs/hr. How driven Steam No. and size of Pumps connected to the Main Bilge Line Four  
 How driven Motor No. and size of Ballast Pumps One 255 ton @ 60' head No. and size of Lubricating Oil Pumps, including  
 Spare Pump Capacity 120 gals/min Are two independent means arranged for circulating water through the Oil Cooler Yes No. and size of suction  
 connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room ✓ No. and size of Donkey Pump Direct Suctions  
 No. and size of Main Water Circulating Pump Bilge Suctions Two of 20" ✓ No. and size of Donkey Pump Direct Suctions  
 to the Engine Room Bilges Two of 8" in E.R. and Two of 6 1/2" in B.R. 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 all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line Below  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes  
 What pipes are carried through the bunkers None How are they protected ✓  
 Are 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 above F Deck and Bridge  
 BOILERS, &c.—(Letter for record) Total Heating Surface of Boilers 56,000 sq. ft.  
 Is Forced Draft fitted Yes No. and Description of Boilers 6 Water Tube (4 main 2 aux.) Working Pressure 425 lbs/sq. in.

003659-003670-0025

Lloyd's Register  
Foundation



