

# Report on Steam Turbine Machinery. No. 113777

Received at London Office 29 MAY 1956

4a. /R.

Date of writing Report 19 When handed in at Local Office 2-10-1956 Port of Newcastle-on-Tyne  
No. in Survey held at Wallsend Date, First Survey 3-1-52 Last Survey 14-9-1956  
(Number of Visits 107)

on the ~~Single~~ ~~Deck~~ ~~Double~~ ~~Compound~~ Screw Vessel "AYRSHIRE" Tons {Gross Net  
built at Greenock By whom built Greenock Drydock Co. Yard No. 488 When built  
Engines made at Wallsend-on-Tyne By whom made Parsons Marine Turbine Co. Engine No. 513 When made 1956  
Boilers made at By whom made Boiler No. When made  
Shaft Horse Power {Maximum 11550 Service 10500 Owners Clan Line Ltd. Port belonging to  
I.N. as per Rule {2310 Is Refrigerating Machinery fitted for cargo purposes - Is Electric Light fitted -  
Trade for which Vessel is intended Ocean Going.

STEAM TURBINE ENGINES, &c.—Description of Engines HP LP and LP Turbines D.R. geared.  
No. of Turbines Ahead 3 ~~Direct coupled~~ ~~single reduction geared~~ to one propelling shafts. No. of primary pinions to each set of reduction gearing 3  
Astern 2 ~~double reduction geared~~  
Manufacture { Alternating Current Generator - phase - periods per second } rated - Kilowatts - Volts at - revolutions per minute;  
or 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.	
				HP 3-Rotor 2-Cylr.	LP 2-Rotor 1-Cylr.
Impulse	None	None	None		
Blading	4	5	10	None	6
Reaction		Stages 1,2&3 - 4 Rows	One		One
Blading	8	" 4&5 = 3 "			
stage					

Shaft Horse Power at each turbine { H.P. 3500 I.P. 4010 L.P. 4040 }  
Revolutions per minute, at full power, of each Turbine Shaft { H.P. 4210 I.P. 4210 L.P. 2500 }  
Rotor Shaft diameter at journals { H.P. 5" I.P. 5" L.P. 7" }  
Pitch Circle Diameter { 1st pinion 53.775 2nd pinion 139.297 }  
Width of Face { 1st reduction wheel 20" main wheel 34" 1st reduction wheel 36 1/2" }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 16 7/8 2nd pinion 36 1/2 }  
Flexible Pinion Shafts, diameter at bearings { External 1st 6" 2nd - Internal 1st 6" 2nd - }  
Wheel Shafts, diameter at bearings { 1st 12 1/2" 2nd 21 1/2" }  
Generator Shaft, diameter at bearings 48.7858"  
Propelling Motor Shaft, diameter at bearings 134.5"  
Thrust Shaft, diameter at collars as per rule as fitted  
Tube Shaft, diameter as per rule as fitted  
Screw Shaft, diameter as per rule as fitted  
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 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  
If so, state type Length of Bearing in Stern Bush next to and supporting propeller

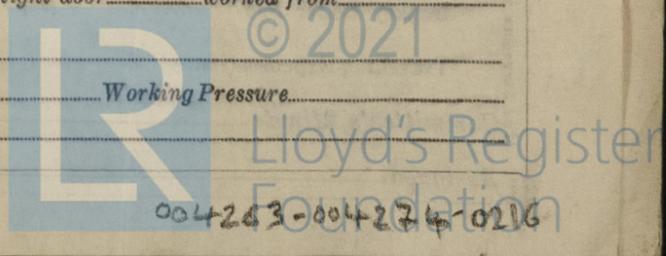
Propeller, diameter Pitch No. of Blades State whether Moveable Total Developed Surface square feet.  
If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Yes Can the H.P. or I.P. Turbines exhaust direct to the  
Condenser Yes No. of Turbines fitted with astern wheels 2 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 Branch Bilge Suctions, No. and size:—In Engine  
and Boiler Rooms In Pump Room

Main Water Circulating Pump Direct Bilge Suctions, No. and size Direct Bilge Suctions to the Engine and/or Boiler 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.—Total Heating Surface of Boilers  
Is Forced Draught 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?   
 Is the donkey boiler intended to be used for domestic purposes only?   
 Plans. Are approved plans forwarded herewith for Shafting  Main Boilers  Auxiliary Boilers  Donkey Boilers   
 Arrgt. (If not, state date of approval)  
 Arrgt. of gearing 3.2.54 General Pumping Arrangements  Oil Fuel Burning Arrangements   
 Geared turbines situated aft. } Have torsional vibration characteristics of system been approved?  Date of approval

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied?  Yes  
 State the principal additional spare gear supplied: Tubes, ferrules etc., for condensers and cooler. Main circulation pump with Impeller with spindle, bushes and armature. Extraction Pump Impeller shaft and bearing. Air Ejector Nozzles. Forced Lub. Pump Bearings.

The foregoing is a correct description.

FOR PARSONS MARINE TURBINE CO. LIMITED

*No. 12000* Manufac

Dates of Survey while building: During progress of work in shops - *VARIOUS DATES BETWEEN 3-1-52 AND 14-9-56*  
 During erection on board vessel - *17-11-52, 17-12-52, 17-1-53, 17-2-53, 17-3-53, 17-4-53, 17-5-53, 17-6-53, 17-7-53, 17-8-53, 17-9-53, 17-10-53, 17-11-53, 17-12-53, 17-1-54, 17-2-54, 17-3-54, 17-4-54, 17-5-54, 17-6-54, 17-7-54, 17-8-54, 17-9-54, 17-10-54, 17-11-54, 17-12-54, 17-1-55, 17-2-55, 17-3-55, 17-4-55, 17-5-55, 17-6-55, 17-7-55, 17-8-55, 17-9-55, 17-10-55, 17-11-55, 17-12-55, 17-1-56, 17-2-56, 17-3-56, 17-4-56, 17-5-56, 17-6-56, 17-7-56, 17-8-56, 17-9-56, 17-10-56, 17-11-56, 17-12-56, 17-1-57, 17-2-57, 17-3-57, 17-4-57, 17-5-57, 17-6-57, 17-7-57, 17-8-57, 17-9-57, 17-10-57, 17-11-57, 17-12-57, 17-1-58, 17-2-58, 17-3-58, 17-4-58, 17-5-58, 17-6-58, 17-7-58, 17-8-58, 17-9-58, 17-10-58, 17-11-58, 17-12-58, 17-1-59, 17-2-59, 17-3-59, 17-4-59, 17-5-59, 17-6-59, 17-7-59, 17-8-59, 17-9-59, 17-10-59, 17-11-59, 17-12-59, 17-1-60, 17-2-60, 17-3-60, 17-4-60, 17-5-60, 17-6-60, 17-7-60, 17-8-60, 17-9-60, 17-10-60, 17-11-60, 17-12-60, 17-1-61, 17-2-61, 17-3-61, 17-4-61, 17-5-61, 17-6-61, 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