

# REPORT ON STEAM TURBINE MACHINERY. No. 10,068

Received at London Office 12 NOV 1928

ing Report 19 When handed in at Local Office 9 Nov 1928 Port of Belfast  
 Survey held at Belfast Date, First Survey 31 Aug 1928 Last Survey 30 Oct 1928  
 in the STEEL TWIN SC STATENDAM (Number of Visits 51)  
 Tons Gross 28150  
 By whom built Harland & Wolff Ltd Yard No. 612 When built  
 By whom made Harland & Wolff Ltd Engine No. 5012 When made  
 By whom made Babcock & Wilcox - Harland & Wolff Boiler No. When made  
 Owners Nederl.-Amerik. Stoomvaart. Maats. (Holland America Line) Port belonging to Rotterdam  
 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
 for which Vessel is intended Ocean-going

## TURBINE ENGINES, &c.—Description of Engines Parsons High-pressure Twin Screw

Ahead Star Direct coupled, single reduction geared } to two propelling shafts. No. of primary pinions to each set of reduction gearing three  
 Astern Star double reduction geared }  
 Alternating Current Generator phase periods per second } rated Kilowatts Volts at revolutions per minute;  
 Direct Current Generator }  
 Propelling Motors, Type  
 Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

	H.P.			I.P.			L.P.			ASTERN.		
	EFFECTIVE 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	1.1"	24.325"	14	1.6"	30.2"	9	3.4375"	58.875"	3	1.25" 1/2 3.5"	42" M.D.	3 IMPULSE
2nd	1.3"	24.725"	14	2.2"	31.4"	9	4.8125"	61.625"	3	1.625" 1/2 2.625"	58" M.D.	2 "
3rd	1.6"	25.525"	14	3.1"	33.2"	9	6.375"	64.75"	2	2.8125"	47.625"	2 REACTION
4th	2"	26.125"	14	4.4"	35.8"	8	7.5"	67"	2	3.875"	49.75"	2 "
5th	2.5"	27.125"	14	4.4"	35.8"	8	9.25"	70.5"	2	5.25"	52.5"	2 "
6th							10.875"	73.75"	1	5.25"	52.5"	2 "
7th							12"	76"	1	5.25"	52.5"	2 "
8th							12"	76"	1			
9th							12"	76"	1			
10th							12"	76"	1			

Power at each turbine { H.P. 3850 I.P. 3050 L.P. 2850 }  
 Shaft diameter at journals { H.P. 6 3/4" I.P. 6 3/4" L.P. 9 1/2" }  
 Pitch Circle Diameter { 1st pinion 11.35" 2nd pinion 13.06" }  
 Width of Face { 1st reduction wheel 42" main wheel 125" }

between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 1st reduction wheel 2nd pinion main wheel }

Pinion diameter { 1st 8" 2nd 4" }  
 Pinion Shafts, diameter at bearings { 1st 20" main 20" }  
 Generator Shaft, diameter at bearings { 1st 150" }  
 Propelling Motor Shaft, diameter at bearings { 1st 17.95" as per rule 17.95" as fitted 18" }  
 Tube Shaft, diameter { 1st 18.63" as per rule 18.63" as fitted 19" }  
 Thrust Shaft, diameter at collars { 1st 17.95" as per rule 17.95" as fitted 18" }  
 Tube Shaft, diameter { 1st 18.63" as per rule 18.63" as fitted 19" }  
 Bronze Liners, thickness in way of bushes { 1st 87" as per rule 87" as fitted 87.5" }

Is the after end of the liner made watertight in the propeller boss { 1st 10.77" 2nd 12.5" }  
 Is the liner in more than one length are the junctions charged with a material insoluble in water and non-corrosive { 1st 10.77" 2nd 12.5" }  
 Is an approved Oil Gland fitted at the after end of the tube shaft { 1st 10.77" 2nd 12.5" }  
 Length of Bearing in Stern Bush next to and supporting propeller 89 3/8"

Can the H.P. or I.P. Turbine exhaust direct to the { 1st 10.77" 2nd 12.5" }  
 No. of Turbines fitted with astern wheels 2  
 Feed Pumps { 1st 10.77" 2nd 12.5" }  
 Lubricating Oil Pumps, including Spare Pump, No. and size 4 75 ton/hr each

Independent means arranged for circulating water through the Oil Cooler { 1st 10.77" 2nd 12.5" }  
 Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge { 1st 10.77" 2nd 12.5" }  
 Water Circulating Pump Direct Bilge Suctions, No. and size 4 75 ton/hr each

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes { 1st 10.77" 2nd 12.5" }  
 Are they fitted with Valves or Cocks { 1st 10.77" 2nd 12.5" }  
 Are the Overboard Discharges above or below the deep water line { 1st 10.77" 2nd 12.5" }  
 Are the Blow Off Cocks fitted with a spigot and brass covering plate { 1st 10.77" 2nd 12.5" }

How are they protected { 1st 10.77" 2nd 12.5" }  
 Have they been tested as per rule { 1st 10.77" 2nd 12.5" }  
 Are the Shaft Tunnel watertight { 1st 10.77" 2nd 12.5" }  
 Is it fitted with a watertight door { 1st 10.77" 2nd 12.5" }

worked from { 1st 10.77" 2nd 12.5" }  
 Is the Shaft Tunnel watertight { 1st 10.77" 2nd 12.5" }  
 Is it fitted with a watertight door { 1st 10.77" 2nd 12.5" }



BOILERS, &c.—(Letter for record 5 ) Total Heating Surface of Boilers 42,960 sq ft

Is Forced Draft fitted Yes No. and Description of Boilers Six Babcock & Wilcox water tube Working Pressure

Is a Report on Main Boilers now forwarded?

Is { a Donkey } 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:— As per list herewith

FOR HARLAND AND WOLFF, LIMITED.

The foregoing is a correct description,

Dates of Survey while building During progress of work in shops -- Aug 31 Sept 1 4 5 11 12 13 14 19 21 25 26 27 29 Oct 1 2 3 5 8 9 11 12  
During erection on board vessel --- 18 23 24 26 29 30  
Total No. of visits 31

Dates of Examination of principal parts—Casings 29. 10. 28 12. 10. 28 Rotors 29. 10. 28 12. 10. 28 Blading 31. 8. 28 Gearing 12. 10. 28

Wheel shafts 16. 10. 28 30. 10. 28 Thrust shaft 8. 6. 28 Intermediate shafts 8. 14. 18 June 1928 Tube shaft 12. 10. 28 Screw shaft 12. 10. 28

Propeller 12. 6. 28 Stern tube 10. 6. 28 Engine and boiler seatings Engine holding down bolts

Completion of pumping arrangements Boilers fired Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

Rotor shaft, Material and tensile strength Siemens Steel 35 to 37.8 Tons per sq. in. Identification Marks 411, 449, 471

Flexible Pinion Shaft, Material and tensile strength Identification Mark

Pinion shaft, Material and tensile strength Nickel Steel 43.6 to 45.2 Tons per sq. in. Identification Marks 310, 323

1st Reduction Wheel Shaft, Material and tensile strength Identification Mark

Wheel shaft, Material S. M. Eng. Steel Identification Mark 5 5 R. L. A Thrust shaft, Material S. M. Eng. Steel Identification Mark

Intermediate shafts, Material S. M. Eng. Steel Identification Marks 289, 310, 386 R. L. A Tube shaft, Material Identification Marks

Screw shaft, Material S. M. Eng. Steel Identification Marks 41, 107, 259, 310 R. L. A Steam Pipes, Material Solid drawn Steel Test pressure 120 lb

Date of test 23<sup>rd</sup> to 30<sup>th</sup> Oct. 1928 Is an installation fitted for burning oil fuel Yes

Is the flash point of the oil to be used over 150°F. Yes Have the requirements of the Rules for carrying and burning oil fuel been complied with

Is this machinery a duplicate of a previous case No If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.)

The main propelling machinery of this vessel was constructed under special survey. The materials and workmanship are sound and good. It was erected on test bed. Engine works and tried out under steam with satisfactory results. It has been sent to Rotterdam for installing on the T. S. S. "STATENDAM".

The amount of Entry Fee ... £ 6 : 0 : 0 When applied for, 9<sup>th</sup> Nov 1928

Special Chargeable at Relyport 155 : 12 : 0 Total £ 216 : 2 : 0

Donkey Boiler Fee " Rotterdam 60 : 10 : 0 When received, 12. 12. 28

Travelling Expenses (if any) £ : : 12. 12. 28

R. Lee Ames

Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute TUE. 19 APR. 1929

Assigned See Minute on Rot Rpt 18287



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