

# REPORT ON STEAM TURBINE MACHINERY. No. 7663

pt. 4a. Received at London Office AUG 14 1939

Date of writing Report 17 March 1939 When handed in at Local Office 29 March 1939 Port of Philadelphia

No. in Survey held at 6 on the Hull 4333 Date, First Survey 6 July 1938 Last Survey 13 March 1939 (Number of Visits 18)

Reg. Book. on the Sparrows Point Md By whom built Bethlehem S B Corp Yard No. 4333 Tons } Gross  
When built 1938/1939  
Engines made at Essington Pa By whom made Westinghouse Elec & Mfg Co Engine No. 8089 Tons } Net  
When made " "  
Boilers made at By whom made Boiler No. When made  
Shaft Horse Power at Full Power 4000 Owners Socony Vacuum Oil Co Port belonging to  
Nom. Horse Power as per Rule 977 706 79 Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted ays  
Trade for which Vessel is intended 269

TEAM TURBINE ENGINES, &c.—Description of Engines **Cross Compound double reduction.**

No. of Turbines Ahead 2 ✓ Direct coupled, single reduction geared } to 1 propelling shafts. No. of primary pinions to each set of reduction gearing 2  
Aster 1 ✓ double reduction geared }

direct coupled to Alternating Current Generator phase periods per second } rated Kilowatts Volts at revolutions per minute;  
Direct Current Generator }

for 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 LADING.	H.P.			H.P. Cont.			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.
1ST EXPANSION Imp.	560	21.620	1	13. 1.283	15.093	1	909	27.875	1	840	29.520	1
2ND " React	1.110	22.720	1	14. 1.346	15.219	1	1.097	28.250	1	1.665	30.415	1
3RD " "	753	14.032	1	15. 1.440	15.407	1	1.472	29.000	1	1.890	31.390	1
4TH " "	784	14.094	1	16. 1.533	15.593	1	1.847	29.750	1	2.000	32.500	1
5TH " "	815	14.156	1	17. 1.658	15.843	1	2.347	30.750	1			
6TH " "	847	14.220	1	18. 1.783	16.093	1	2.972	32.000	1			
7TH " "	909	14.344	1	19. 1.909	16.374	1	3.846	33.750	1			
8TH " "	971	14.469	1	20. 2.034	16.624	1	4.659	35.375	1			
9TH " "	1.033	14.593	1				5.471	37.000	1			
10TH " "	1.096	14.719	1				6.273	40.000	1			
11TH " "	1.158	14.843	1				8.972	44.000	1			
12TH " "	1.221	14.969	1									

Shaft Horse Power at each turbine { H.P. 2000 ✓ Revolutions per minute, at full power, of each Turbine Shaft }  
I.P. 2000 ✓  
L.P. 2000 ✓

Rotor Shaft diameter at journals { H.P. 4" ✓ Pitch Circle Diameter }  
I.P. 4" ✓  
L.P. 6 1/4" ✓

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion H.P. 10.894" ✓ 1st reduction wheel 89.710" ✓  
2nd pinion 17.694" ✓ main wheel 127.454" ✓

Pinion Shafts, diameter at bearings { 1st 4 1/2" ✓ External }  
2nd 12 1/2" ✓ Internal } diameter at bottom of pinion teeth { 1st 7.61" 10.427" ✓  
2nd 17.14" ✓

Generator Shaft, diameter at bearings  
Propelling Motor Shaft, diameter at bearings  
Thrust Shaft, diameter at collars as per rule 12 1/2" ✓ as fitted  
Tube Shaft, diameter as per rule as fitted

Screw Shaft, diameter as per rule Is the tube } shaft fitted with a continuous liner }  
as fitted screw }

Thickness between bushes as per rule Is the after end of the liner made watertight in the propeller boss  
as fitted 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 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

Propeller, diameter Pitch No. of Blades State whether Moveable Total Developed Surface square feet.  
Can the H.P. or L.P. Turbine exhaust direct to the

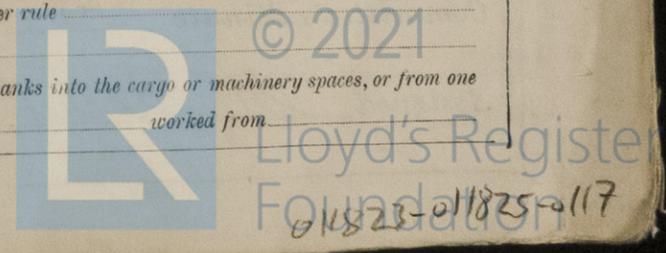
Condenser ays No. of Turbines fitted with astern wheels 1 Feed Pumps { No. and size }  
How driven

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  
Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Are two independent means arranged for circulating water through the Oil Cooler  
Pumps, No. and size:—In Engine and Boiler Room  
In Holds, &c.

Main Water Circulating Pump Direct Bilge Suctions, No. and size Independent Power Pump Direct Suctions to the Engine Room  
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 they fitted with Valves or Cocks  
Are all Sea Connections fitted direct on the skin of the ship  
Are the Overboard Discharges above or below the deep water line  
Are they fixed sufficiently high on the ship's side to be seen without lifting the stowhold plates  
Are the Blow Off Cocks fitted with a spigot and brass covering plate  
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel  
How are they protected  
What pipes pass through the bunkers  
Have they been tested as per rule  
What pipes pass through the deep tanks  
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.**—(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 } Boiler fitted? \_\_\_\_\_ If so, is a report now forwarded? \_\_\_\_\_  
 { an Auxiliary }

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:— *Please see attached sheet.*

**RECEIVED**

JUL 20 1939

LLOYD'S REGISTER OF SHIPPING

PER *Balt. No. 6821*  
*Alfred de Philadelphia*

The foregoing is a correct description,

*Westinghouse Elec. & Mfg. Co.*

*J. H. Brown* Manufacturer

Dates of Survey while building { During progress of work in shops - - } *July 6, Aug 10, Oct 5, 18, Nov 25, Dec 5, 14, 20, 21, 23, 28, 29, 1938, Jan 20, 23, 24, Feb 27, March 8, 13, 1939* 18 visits  
 { During erection on board vessel - - - }  
 Total No. of visits

Dates of Examination of principal parts—Casings *Dec 21* Rotors *Jan 20* Blading *Jan 20* Gearing *March 13*

Wheel shaft *Aug 10* Thrust shaft *March 13* 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 shaft, Material and tensile strength *OH Steel LP 109500 104500 108500 110000* Identification Mark *LP 6036 ON HP 6025 ON*

Flexible Pinion Shaft, Material and tensile strength \_\_\_\_\_ Identification Mark \_\_\_\_\_

Pinion shaft, Material and tensile strength *OH Steel 107000 107000* Identification Mark *3680 3682 WHR.*

1st Reduction Wheel Shaft, Material and tensile strength *OH Steel 108500 108200* Identification Mark *3677 3678 WHR.*

Wheel shaft, Material *OH Steel* Identification Mark *3684 WHR.* Thrust shaft, Material *OH Steel* Identification Mark *3690 WHR.*

Intermediate shafts, Material \_\_\_\_\_ Identification Marks \_\_\_\_\_ 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 the use of oil as fuel been complied with \_\_\_\_\_

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo \_\_\_\_\_ If so, have the requirements of the Rules been complied with \_\_\_\_\_

Is this machinery a duplicate of a previous case \_\_\_\_\_ If so, state name of vessel \_\_\_\_\_

General Remarks (State quality of workmanship, opinions as to class, &c. *The above machinery has been constructed and*

*Special Survey? in accordance with the approved plans, the workmanship & materials are good. The installation has been tried out under steam in the shop & proven satisfactory. When the installation has been fitted on board the vessel to the satisfaction of the Surveyor, and tried out under full power, the installation will in my opinion be eligible to receive the record of +L.M.C. with date in the Register Book.*

Certificate (if required) to be sent to \_\_\_\_\_

The amount of Entry Fee ... *\$248.00* : When applied for, *22nd April 1939*  
 Special ... £ : :  
 Donkey Boiler Fee ... £ : :  
 Travelling Expenses (if any) *\$ 20.00* : When received, *18.10.1939*

*W. A. Runkel*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **NEW YORK AUG 2 - 1939**

Assigned *See attached Report Balt. No. 6821*



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