

REPORT ON STEAM TURBINE MACHINERY.

No. 7663
AUG 14 1939

pt. 4a.

Date of writing Report 17 March 1939 When handed in at Local Office 29 March 1939 Port of Philadelphia
Date, First Survey 6 July 1938 Last Survey 13 March 1939
No. in Survey held at Essington Pa Reg. Book. Hull 4333 Tons { Gross 1938 Net 1939
Built at Sparrows Point Md By whom built Bethlehem S B Corp Yard No. 4333 When built 1938
Engines made at Essington Pa By whom made Westinghouse Elec & Mfg Co Engine No. 8089 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 Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
Trade for which Vessel is intended 769

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

No. of Turbines 2 Ahead 1 Direct coupled, single reduction geared 1 to 1 propelling shafts. No. of primary pinions to each set of reduction gearing 2
Astern 1 double reduction geared 1
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 LOADING.	HEIGHT OF BLADES.	H.P.			H.P. Cont.			L.P.			ASTERN.		
		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.	HEIGHT OF BLADES.
1ST EXPANSION <u>Imp.</u>	<u>560</u>	<u>21.620</u>	<u>1</u>	<u>13.1283</u>	<u>15.093</u>	<u>1</u>	<u>9.09</u>	<u>27.875</u>	<u>1</u>	<u>8.40</u>	<u>29.520</u>	<u>1</u>	<u>1.665</u>
2ND <u>"</u>	<u>1.110</u>	<u>22.720</u>	<u>1</u>	<u>14.1346</u>	<u>15.219</u>	<u>1</u>	<u>1.097</u>	<u>28.250</u>	<u>1</u>	<u>1.665</u>	<u>30.415</u>	<u>1</u>	<u>1.890</u>
3RD <u>"</u>	<u>753</u>	<u>14.032</u>	<u>1</u>	<u>15.1440</u>	<u>15.407</u>	<u>1</u>	<u>1.472</u>	<u>29.000</u>	<u>1</u>	<u>3.000</u>	<u>31.390</u>	<u>1</u>	<u>3.000</u>
4TH <u>"</u>	<u>784</u>	<u>14.094</u>	<u>1</u>	<u>16.1533</u>	<u>15.793</u>	<u>1</u>	<u>1.847</u>	<u>29.750</u>	<u>1</u>				
5TH <u>"</u>	<u>815</u>	<u>14.156</u>	<u>1</u>	<u>17.1658</u>	<u>15.843</u>	<u>1</u>	<u>2.347</u>	<u>30.750</u>	<u>1</u>				
6TH <u>"</u>	<u>847</u>	<u>14.220</u>	<u>1</u>	<u>18.1783</u>	<u>16.093</u>	<u>1</u>	<u>2.972</u>	<u>32.000</u>	<u>1</u>				
7TH <u>"</u>	<u>909</u>	<u>14.344</u>	<u>1</u>	<u>19.1909</u>	<u>16.374</u>	<u>1</u>	<u>3.846</u>	<u>33.750</u>	<u>1</u>				
8TH <u>"</u>	<u>971</u>	<u>14.469</u>	<u>1</u>	<u>20.2034</u>	<u>16.624</u>	<u>1</u>	<u>4.659</u>	<u>35.375</u>	<u>1</u>				
9TH <u>"</u>	<u>1.033</u>	<u>14.593</u>	<u>1</u>				<u>5.471</u>	<u>37.000</u>	<u>1</u>				
10TH <u>"</u>	<u>1.096</u>	<u>14.719</u>	<u>1</u>				<u>6.973</u>	<u>40.000</u>	<u>1</u>				
11TH <u>"</u>	<u>1.158</u>	<u>14.843</u>	<u>1</u>				<u>8.972</u>	<u>44.000</u>	<u>1</u>				
12TH <u>"</u>	<u>1.221</u>	<u>14.969</u>	<u>1</u>										

Shaft Horse Power at each turbine { H.P. 2000 1st reduction wheel 540
I.P. 2000 main shaft 75
L.P. 2000
H.P. 4 1st reduction wheel 16.5
Pitch Circle { 1st pinion 10.884 main wheel 127.454 Face { main wheel 37.5
Diameter { 2nd pinion 17.694 1st reduction wheel 35 1/2
1st pinion HR L.P. 13 1/8 main wheel 38 5/8
2nd pinion 35 1/2 1st reduction wheel 7.61710427
2nd 17.14
Pinion Shafts, diameter at bearings { External 1st 4 1/2 2nd 12 1/2 diameter at bottom of pinion teeth { 1st 7.61710427
Internal 1st 4 1/2 2nd 12 1/2 2nd 17.14
Generator Shaft, diameter at bearings 12 1/2
Propelling Motor Shaft, diameter at bearings 19
Thrust Shaft, diameter at collars 12 1/2
Tube Shaft, diameter 12 1/2
Bronze Liners, thickness in way of bushes 12 1/2
Screw Shaft, diameter 12 1/2 Is the { tube { shaft fitted with a continuous liner {
as fitted 19 Is the after end of the liner made watertight in the propeller boss {
Thickness between bushes 19 If the liner is in more than one length are the junctions
made by fusion through the whole thickness of the liner {
plastic material insoluble in water and non-corrosive {
or other appliance fitted at the after end of the tube shaft {
Propeller, diameter 19 Pitch 19 No. of Blades 19 State whether Moveable Yes Total Developed Surface 19 square feet.
Can the H.P. or L.P. Turbine exhaust direct to the Yes
If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Yes
Condenser Yes No. of Turbines fitted with astern wheels 1 Feed Pumps { No. and size 1
How driven 1

Pumps connected to the Main Bilge Line { No. and size 1
How driven 1
Ballast Pumps, No. and size 1
Are two independent means arranged for circulating water through the Oil Cooler 1
Pumps, No. and size:—In Engine and Boiler Room 1
In Holds, &c. 1
Main Water Circulating Pump Direct Bilge Suctions, No. and size 1
Independent Power Pump Direct Suctions to the Engine Room 1
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes 1
Bilges, No. and size 1
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 1
Are they fitted with Valves or Cocks 1
Are all Sea Connections fitted direct on the skin of the ship 1
Are the Overboard Discharges above or below the deep water line 1
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates 1
Are the Blow Off Cocks fitted with a spigot and brass covering plate 1
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel 1
How are they protected 1
What pipes pass through the bunkers 1
Have they been tested as per rule 1
What pipes pass through the deep tanks 1
Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times 1
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 1
Is the Shaft Tunnel watertight 1
Is it fitted with a watertight door 1
worked from 1

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? _____
 { an Auxiliary }

If so, is a report now forwarded? _____

Plans. Are approved plans forwarded herewith for Shafting _____
 (If not state date of approval)

Main Boilers _____

Auxiliary Boilers _____

Donkey Boilers _____

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. 6825*
Alfred A. 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
 { 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 fired _____ Engines tried under steam _____

Main boiler safety valves adjusted _____

Thickness of adjusting washers _____

Rotor shaft, Material and tensile strength O H Steel LP 109500 104500 HP 108500 107000 Identification Mark LP 6036 ON HP 6025 ON

Flexible Pinion Shaft, Material and tensile strength 109500 104500 Identification Mark _____

Pinion shaft, Material and tensile strength O H Steel 108500 110000 Identification Mark 3680 3682 WHR.

1st Reduction Wheel Shaft, Material and tensile strength O H Steel 107000 107000 Identification Mark 3677 3678 WHR.

Wheel shaft, Material O H Steel Identification Mark 3684 WHR. Thrust shaft, Material O H 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 under 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 +LMC with date in the Register Book.

The amount of Entry Fee \$248.00 : When applied for, 22nd April 39
 Special ... :
 Donkey Boiler Fee ... :
 Travelling Expenses (if any) \$20.00 : When received, 18.10.1939

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

Committee's Minute NEW YORK AUG 2 - 1939

Assigned See Attached Report Balt. No. 6825



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