

REPORT ON STEAM TURBINE MACHINERY. No. 6497

Received at London Office 19 NOV 1951

4a.

Writing Report Sept. 11th., 1951 When handed in at Local Office Sept. 11th., 1951 Port of Newport News, Virginia
 Survey held at Newport News, Virginia Date, First Survey June 11th., 1951 Last Survey Aug. 7th., 1951
 (Number of Visits 27.)
 Tons { Gross 10222
 Net 6181
 When built 1939
 By whom built Bethlehem Steel Co. Yard No. --
 When made April, 1946
 By whom made DeLaval Steam Turbine Co. Engine No. 244405
 Boiler No. --
 When made --
 By whom made ---
 Owners Socony Vacuum Oil Co. Inc. Port belonging to Wilmington
 Is Refrigerating Machinery fitted for cargo purposes --- Is Electric Light fitted Yes

STEAM TURBINE ENGINES, &c. — Description of Engines Impulse - Compound - DeLaval Steam Turbines

of Turbines Ahead 2 Direct coupled, single reduction geared } to 1 propelling shafts. No. of primary pinions to each set of reduction gearing 2
 Astern 1 double reduction geared }
 coupled to { Alternating Current Generator - phase - periods per second } rated - Kilowatts - Volts at - revolutions per minute;
 Direct Current Generator }
 supplying power for driving - Propelling Motors, Type -
 1 - Kilowatts - Volts at - revolutions per minute. Direct coupled, single or double reduction geared to - propelling shafts.

TURBINE STAGE	H. P.			I. P.			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	.750"	26.400"	1				1.015"	40.435"	1	1.980"	42.610"	2
2nd	.610"	21.120"	1				1.470"	42.790"	1	5.000"	48.420"	1
3rd	.673"	21.246"	1				2.130"	45.610"	1			
4th	.735"	21.370"	1				3.100"	48.880"	1			
5th	.808"	21.516"	1				4.540"	52.120"	1			
6th	.880"	21.660"	1				7.700"	55.270"	1			
7th	1.015"	21.930"	1				11.415"	59.680"	1			
8th	1.110"	22.120"	1									
9th	1.308"	22.516"	1									
10th	1.505"	22.910"	1									
11th	1.765"	23.430"	1									

shaft Horse Power at each turbine { H.P. 3630
 I.P. --
 L.P. 3170
 9,800 HP
 1st reduction wheel 728.1
 main shaft 100
 Shaft diameter at journals { I.P. 5"
 L.P. 7"
 Pinion Diameter 4.200"
 1st reduction wheel 67.400"
 main wheel 139.93"
 1st reduction wheel 18 5/8"
 main wheel 35 1/2"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 13 3/4"
 2nd pinion 25.3/4"
 1st reduction wheel 14 1/2"
 main wheel 30"
 Pinion Shafts, diameter at bearings { External 7"
 Internal Solid 9 3/32"
 diameter at bottom of pinion teeth { 1st 13.784"
 2nd 18.689"

Wheel Shafts, diameter at bearings { 1st 8 1/2"
 main 22"
 diameter at wheel shroud, { 1st 12 1/2"
 main 26"
 Generator Shaft, diameter at bearings --
 Propelling Motor Shaft, diameter at bearings --
 Intermediate Shafts, diameter as per rule --
 as fitted 16 3/4" Thrust Shaft, diameter at collars as per rule --
 as fitted 11 3/4" Tube Shaft, diameter as per rule --
 as fitted --

Stem Shaft, diameter as per rule --
 as fitted 18 3/8" Is the screw { screw } shaft fitted with a continuous liner { Yes }
 Thickness between bushes as per rule --
 as fitted 13/16" 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 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 other appliance fitted at the after end of the tube shaft -- Length of Bearing in Stern Bush next to and supporting propeller 6' - 1 1/2"
 Propeller, diameter 19' 8" Pitch 16' 0" No. of Blades 4 State whether Moveable Yes Total Developed Surface 151 square feet.
 Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Yes Can the H.P. Turbine exhaust direct to the

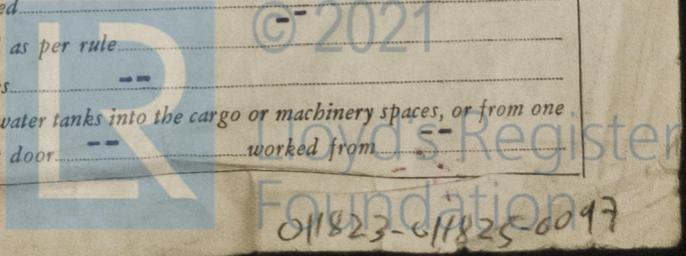
condenser Yes No. of Turbines fitted with astern wheels 1 Feed Pumps { No. and size as original
 How driven --
 Pumps connected to the Main Bilge Line { No. and size --
 How driven --

Fast 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 -- Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size: -- In Engine and Boiler Room --

Holds, &c. -- Independent Power Pump Direct Suctions to the Engine Room --
 Main Water Circulating Pump Direct Bilge Suctions, 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 --
 How are they protected --
 Are pipes pass through the bunkers -- Have they been tested as per rule --

Are 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 --



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?..... No

Is { a Donkey } Boiler fitted?..... No If so, is a report now forwarded?.....
 { an Auxiliary }

Plans. Are approved plans forwarded herewith for Shafting..... Yes 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:— One complete bearing assembly for each size bearing of turbines and gear shafts. One set of main thrust pads.

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

By: *L.C. Robertson* Manufacturer
 L. C. Robertson, Manager of Ship Repairs

The foregoing is a correct description,

Dates of Survey while building { During progress of work in shops -- } June 11th, July 6th.
 { During erection on board vessel --- } June 20th, 21st, 26th, 27th., 28th., /July 2nd., 3rd., July 5th., 6th., 7th., 9th., 16th., 18th.,
 Total No. of visits 23rd., 27th., 28th., 30th., 31st., Aug. 1st., 2nd., 3rd., 4th., 5th., 6th., 7

Dates of Examination of principal parts—Casings..... 7/6/51 Rotors..... 7/6/51 Blading..... 7/6/51 Gearing..... 7/7/51

Wheel shaft..... 7/7/51 Thrust shaft..... -- Intermediate shafts..... 4/19/51 Tube shaft..... -- Screw shaft..... 4/25/51

Propeller..... 7/8/51 Stern tube..... -- Engine and boiler seatings..... 6/9/51 Engine holding down bolts..... 6/18/51

Completion of pumping arrangements..... -- Boilers fixed..... -- Engines tried under steam..... 8/7/51

Main boiler safety valves adjusted..... Thickness of adjusting washers.....

Rotor shaft, Material and tensile strength..... O.H. Steel Identification Mark..... LP Ser 26299-6 HP Ser #5048

Flexible Pinion Shaft, Material and tensile strength..... -- Identification Mark.....

Pinion shaft, Material and tensile strength..... O.H. Steel Identification Mark..... AB25 HP Ser. #2119 AB25 LP Ser. 6098

1st Reduction Wheel Shaft, Material and tensile strength..... O.H. Steel Identification Mark..... AB25 HP Ser 26298

Wheel shaft, Material..... O.H. Steel Identification Mark..... HT-5C-266 Ser.#26298 Thrust shaft, Material..... -- Identification Mark..... --

Intermediate shafts, Material..... O.H. Steel Identification Marks..... HT-39204-3-F-518 Tube shaft, Material..... -- Identification Marks..... --

Screw shaft, Material..... O.H. Steel Identification Marks..... (spare) HT-1723-2-F-519 Steam Pipes, Material..... Seamless Steel Test pressure..... 975 PSI

Date of test..... 7/30/51 Is an installation fitted for burning oil fuel..... Yes

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..... No If so, state name of vessel..... --

General Remarks (State quality of workmanship, opinions as to class, &c. This machinery was built under survey of the American Bureau of Shipping Surveyors, for the U.S. Maritime Commission, and placed in storage as War Surplus Material. The turbines and gears were opened up, examined over all parts and found in satisfactory condition. Reduction gears were previously examined as per Philadelphia Rpt. dated June 12th. The shafting was manufactured under survey by the Society's Surveyor and material tested as per Rule requirement, in accordance with drawings approved by the New York Office of the Society, The workmanship being of good quality. It is our opinion that this propelling unit is suitable for installation on a vessel classed by this Society.

The amount of Entry Fee	\$1150.00	When applied for,
Special	1	Sept. 28, 1951.
Donkey Boiler Fee	\$ 15.00	When received,
(Late fee)	20.00	
Travelling Expenses (if any)	1	19
Aug. 8th 7:00 AM to 9:45 PM)		

W.D. Wardle + Johnson
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK OCT 24 1951

Assigned N.E. '46 FITTED 8.51

MOBILE



Certificate (if required) to be sent to... (The Surveyors are requested not to write on or below the space for Committee's Minute.)