

# REPORT ON STEAM TURBINE MACHINERY.

No. 6876

4a.

Received at London Office 12 JUL 1935

Port of Philadelphia

Date, First Survey May 17 1934 Last Survey May 8 1935

When handed in at Local Office June 22 1935

Survey held at Trenton N.J. 9 Camden N.J.

on the S.S. MAGNOLIA.

By whom built New York Ship Bldg Co. Yard No. 415

By whom made De Laval Steam Turbine Co. Engine No. 223945

By whom made Forta Wheel Co. Boiler No.

When made 1935

Port belonging to New York

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted

Shaft Horse Power at Full Power 4000

Owners Economy Vacuum Oil Co. Inc.

Is Electric Light fitted

Propelling Motors, Type

Direct coupled, single or double reduction geared to

propelling shafts.

## STEAM TURBINE ENGINES, &c.—Description of Engines.

No. of Turbines 2

Direct coupled, single reduction geared to one propelling shafts.

No. of primary pinions to each set of reduction gearing Two.

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

supplying power for driving Propelling Motors, Type

Direct coupled, single or double reduction geared to propelling shafts.

R.BINE				H.P.			I.P.			L.P.			ASTERN.		
ADING.				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.
EXPANSION				1.430	20.330	2				1.030	32.600	1	1.848	34.257	2
				1.710	16.816	1				1.570	33.410	1	2.20	34.611	1
				1.790	16.816	1				1.935	33.980	1	2.450	38.046	1
				1.875	16.816	1				2.970	35.800	1	3.860	39.796	1
				1.975	16.816	1				3.645	37.330	1			
				1.085	16.816	1				5.010	39.640	1			
				1.875	20.736	1				7.470	46.230	1			
				1.000	20.736	1									
				930	20.736	1									
				1.105	20.736	1									
				1.320	20.736	1									

Shaft Horse Power at each turbine { H.P. 2000 I.P. 2000 L.P. 2000

Revolutions per minute, at full power, of each Turbine Shaft { H.P. 5480 I.P. 4262 L.P. 4262

1st reduction wheel 703

main shaft 75

1st reduction wheel 18 3/4"

main wheel 48"

1st reduction wheel 15 1/2"

main wheel 44 3/8"

1st 10.220

2nd 13.114

Generator Shaft, diameter at bearings

Propelling Motor Shaft, diameter at bearings

Thrust Shaft, diameter at collars

Tube Shaft, diameter

Bronze Liners, thickness in way of bushes

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

Is the space charged with a

Is an approved Oil Gland

Length of Bearing in Stern Bush next to and supporting propeller

Total Developed Surface

Can the H.P. or I.P. Turbine exhaust direct to the

No. of Turbines fitted with astern wheels

Feed Pumps

No. and size

How driven

Lubricating Oil Pumps, including Spare Pump, No. and size

Oil Cooler

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes

Are they fitted with Valves or Cocks

Are the Overboard Discharges above or below the deep water line

Are the Blow Off Cocks fitted with a spigot and brass covering plate

How are they protected

Have they been tested as per rule

Is the Shaft Tunnel watertight

Is it fitted with a watertight door



BOILERS, &c. - (Letter for record *WT*) Total Heating Surface of Boilers *11164 sq. ft.*  
Is Forced Draft fitted *Yes* No. and Description of Boilers *3 WT 1* *2 superheated for propulsion* Working Pressure *430 lbs*  
*405 lbs*  
Is a Report on Main Boilers now forwarded? *Yes*  
Is *a Donkey* Boiler fitted? *Yes* *could be used for propulsion* If so, is a report now forwarded? *Yes*  
*an Auxiliary* *Copy of approved plans were forwarded with first entry report*  
Plans. Are approved plans forwarded herewith for Shafting *Main Boilers* *Auxiliary Boilers* *Donkey Boilers*  
(If not state date of approval) *on motor ship SOCONY VACUUM. Phila report No 6889.*

Superheaters. General Pumping Arrangements. Oil Fuel Burning Arrangements.  
Spare Gear. State the articles supplied: - *370 condenser tubes, 394 ferrules, 2% of tubes for oil cooler, 2 bolts nuts for each size of rotor bearings, gear wheel bearings & pinion bearings, 1 set of coupling bolts of each size, used 68 coupling bolts & nuts, 10% of bolts & nuts for gear casings, & turbine casings, 2 thermometers for oil circulating system, 1 set of bearings for each size gear shaft & rotor, pinion shafts, 3 sets of thrust shoes, 1 set of labyrinth packing, 1 set lined for adjusting block, 1 escape valve & spring of each size, 1 set of valves for all pumps, 1 tail shaft, 4 propeller blades, air pump rod, circulating pump shaft & impeller, assorted bolts & nuts, bars, plates, boxes of mixed steel & brass.*

The foregoing is a correct description, *D. Campbell* Manufacturer

Dates of Survey while building	{	During progress of work in shops --	1934. May 17. 1934. June 31. 1934. July 7. 1934. Aug. 5-6. 10-17. 20. 1934. Sept. 10. 21. 1934. Oct. 2. 25. 23. 26. 31. 1934. Nov. 7. 19. 22. 30. 1934. Dec. 2. 10. 21. 31. 1934. Jan. 2. 10. 21. 31. 1935. Feb. 19. 27. 1935. March. 5-6. 7. 2. 9. 16. 23. 1935. Apr. 2. 9. 16. 23. 1935. May 7. 1935.						
		During erection on board vessel ---							
		Total No. of visits	50						
Dates of Examination of principal parts									
Casings	July 6 <sup>th</sup> 1934	Rotors	Aug. 10 <sup>th</sup> 1934	Blading	1934. Aug. 17 <sup>th</sup> - 26 <sup>th</sup>	Gearing	1934. Aug. 10 <sup>th</sup> - 26 <sup>th</sup>		
Wheel shaft	Oct 26 1934	Thrust shaft	Oct 26 1934	Intermediate shafts	May 4 1934	Tube shaft	✓	Screw shaft	May 4 1934
Propeller	Jan 23 1935	Stern tube	March 6 1935	Engine and boiler seating	April 16 1935	Engine holding down bolts	April 23 1935		
Completion of pumping arrangements	May 8 1935	Boilers fired	Dec 31 1934	Engines tried under steam	May 8 1935				
Main boiler safety valves adjusted	May 1 1935	Thickness of adjusting washers							
Rotor shaft, Material and tensile strength	1 - OH Steel 86000	1 - alloy steel 121400				Identification Mark	1317. 1319.		
Flexible Pinion Shaft, Material and tensile strength						Identification Mark	1359. 1369		
Pinion shaft, Material and tensile strength	Nickel steel - L P 85500 78250. H P 82750 82000					Identification Mark	1362. 1363		
1st Reduction Wheel Shaft, Material and tensile strength	OH Steel 87000					Identification Mark	1371		
Wheel shaft, Material	OH Steel	Identification Mark	1369	Thrust shaft, Material	OH Steel	Identification Mark	1369		
Intermediate shafts, Material	Steel	Identification Marks	2094. 2099	Tube shaft, Material	✓	Identification Marks	✓		
Screw shaft, Material	Steel	Identification Marks	2095. 2097	Steam Pipes, Material	Steel	Test pressure			
Date of test		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 the use of oil as fuel been complied with	Yes ✓						
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo	Oil tanker	If so, have the requirements of the Rules been complied with	Yes ✓						
Is this machinery a duplicate of a previous case	Yes ✓	If so, state name of vessel	SOCONY VACUUM.						

General Remarks (State quality of workmanship, opinions as to class, &c.) *This machinery has been constructed under special survey, and in accordance with the approved plans. The workmanship & materials are good. The machinery has been satisfactorily installed on board the vessel tried out under working conditions & found in good working order. In my opinion this installation is eligible for the record of +LMC 5-35, subject to machinery being found satisfactory after full power trials are carried out. This vessel is now laid up indefinitely due to strike.*

*Charged to De Laval Co. 26/11/34 - \$ 255 } Paid*  
*Exp - 50 } 28/12/34*

The amount of Entry Fee	\$ 30 : 00	When applied for,
Special Part...	\$ 130 : 00	21 <sup>st</sup> June 35
Main Boiler Fee	\$ 30 : 00	When received,
Travelling Expenses (if any)	\$ 25 : 25	22-7-35

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

NEW YORK JUL 3 - 1935  
Committee's Minute  
Assigned + LMC 5-35