

# REPORT ON STEAM TURBINE MACHINERY.

No. 7699  
20 JUL 1942

Received at London Office

4a. Date of writing Report 15th June 1942 When handed in at Local Office 23rd June 1942 Port of Baltimore, Maryland  
 Date, First Survey 19th Dec. 1941 Last Survey 9th May 1942  
 (Number of Visits 29)  
 Survey held at Baltimore, Maryland  
 Reg. Book. S.S. "COLINA"  
 on the S.S. "COLINA" Tons Gross 9930  
Net 5907  
 Built at Sparrows Point, Md. By whom built Bethlehem Steel Co. Yard No. 4358 When built 1942  
HP45796  
 Engines made at Lynn, Mass. By whom made General Electric Co. Engine No. LP 45797 When made 1942  
 Boilers made at Carteret, N.J. By whom made Foster Wheeler Corp. Boiler No. 458 When made 1941  
 Shaft Horse Power at Full Power 12000 Owners Socony-Vacuum Oil Co. Port belonging to New York  
 Nom. Horse Power as per Rule 1884 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
 Trade for which Vessel is intended Carrying petroleum in bulk.

## STEAM TURBINE ENGINES, &c.—Description of Engines Cross compound turbines and double reduction gear.

No. of Turbines Two Direct coupled, single reduction geared, double reduction geared to One propelling shafts. No. of primary pinions to each set of reduction gearing Two  
 Astern One  
 Direct coupled to Alternating Current Generator phase - periods per second - rated - Kilowatts - Volts at - revolutions per minute;  
 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.	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.
EXPANSION	.75"	29.35"	1				2.08"	45.14"	1	.77"	50.458"	2
"	.79"	25.54"	1				2.64"	45.83"	1	.91"	50.738"	1
"	.92"	25.80"	1				3.54"	47.328"	1	4.635"	54.422"	1
"	.97"	25.90"	1				4.16"	48.348"	1			
"	1.14"	26.24"	1				5.30"	49.988"	1			
"	1.395"	26.608"	1				7.40"	52.40"	1			
"	1.14"	26.24"	1				9.32"	54.63"	1			
"	1.34"	26.64"	1				11.38"	57.213"	1			
"	1.68"	27.32"	1									
"	2.24"	28.44"	1									

Shaft Horse Power at each turbine H.P. 6000 I.P. - L.P. 6000 Revolutions per minute, at full power, of each Turbine Shaft  
 Propeller Shaft diameter at journals H.A. 00 both ends Gear Pitch Circle 1st pinion LP 10.60" 1st reduction wheel HP 87.20" LP 66.60" Width of Face  
LP 6.50" end Diameter 2nd pinion 21.00" main wheel 145.33" 1st reduction wheel 22.5"  
LP 8.00 Exh. end Diameter 2nd pinion 21.00" main wheel 145.33" Face main wheel 47.5"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings  
1st pinion HP & LP 16-7/8" 1st reduction wheel HP & LP 17"  
2nd pinion 2' - 10-1/4" main wheel 2' - 10-1/2"  
 Pinion Shafts, diameter at bearings External 1st HP 6.00" LP 8.00" 14.00" diameter at bottom of pinion teeth  
Internal 1st Solid 2nd 10.50" HP 10.087" LP 13.819"  
2nd LP 20.353"

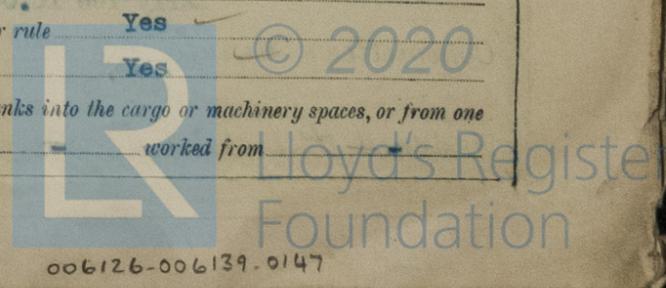
Shaft diameter at bearings 1st HP 11.00" LP 11.00" diameter at wheel shroud,  
main 24.00" 1st 11.375" Generator Shaft, diameter at bearings -  
main 26.75" Propelling Motor Shaft, diameter at bearings -  
 Intermediate Shafts, diameter as per rule 19.4" Thrust Shaft, diameter at collars as per rule - Tube Shaft, diameter as per rule -  
as fitted 19.5" as fitted - as fitted -  
 Propeller Shaft, diameter as per rule 21-1/16" Is the shaft fitted with a continuous liner Yes Bronze Liners, thickness in way of bushes as per rule .95"  
as fitted 22-22-1/16" 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  
as per rule .712" as fitted 1-7/64" as fitted -

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  
 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  
 appliance fitted at the after end of the tube shaft No Length of Bearing in Stern Bush next to and supporting propeller 7' - 4"  
 Propeller, diameter 19' 8" Pitch 18' 10" No. of Blades 4 State whether Moveable No Total Developed Surface - square feet.  
 Angle 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 3 - 250 gals. per min at 4000 revs.

Pumps connected to the Main Bilge Line GSP 1-400 GPM Bilge ER 1-175 GPM Fd. P.R. 1-75 GPM Aft ER 1-75 GPM  
 How driven Rot. Turb. Rot. Motor Rot. Turb. Rot. Turb.  
 Fast Pumps, No. and size 1-300 GPM 1-600 GPM Pump GSP 1-400 2 Vert. Rotary 19 - 25 HP  
Rot. Turb. Cent. Motor Room Rot. Turb. Lubricating Oil Pumps, including Spare Pump, No. and size motors 450 G.P.M.  
 Are independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
 pumps, No. and size:—In Engine and Boiler Room 2-3" at fwd. end of Engine Room; 4-2" at Fwd. end of Engine Room

Direct Bilge Suctions, No. and size 1 - 18" Independent Power Pump Direct Suctions to the Engine Room  
 Bilges, No. and size 1-4" Are all the Bilge Suction pipes in pump room & peaks Are they fitted with strum-boxes Yes  
 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 Yes  
 Are all Sea Connections fitted direct on the skin of the ship Built up sea chests Are they fitted with Valves or Cocks Valves  
with doublers on shell  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Overboard Discharges above or below the deep water line Below  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate welded  
spigot

Do pipes pass through the bunkers None How are they protected -  
 Do pipes pass through the deep tanks Fore peak ballast line 3-1/2" Have they been tested as per rule Yes  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes  
 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 Yes Is the Shaft Tunnel watertight - Is it fitted with a watertight door - worked from -



**BOILERS, &c.** (Letter for record)  S Total Heating Surface of Boilers: 7400 sq. ft.  
 Is Forced Draft fitted  Yes No. and Description of Boilers 2 Foster Wheeler water tube Working Pressure 490 lbs.  
 Is a Report on Main Boilers now forwarded?  Yes  
 Is a Donkey or Auxiliary Boiler fitted?  No If so, is a report now forwarded? -  
 Plans. Are approved plans forwarded herewith for Shafting 18-7-40 Main Boilers 10-7-40 Auxiliary Boilers - Donkey Boilers  
 (If not state date of approval)  
 Superheaters 10-7-40 General Pumping Arrangements 18-11-40 Oil Fuel Burning Arrangements 12-6-40  
 Spare Gear. State the articles supplied: Spare gear has been supplied in excess of the Rule Requirements  
 copy attached.

The foregoing is a correct description,

BETHLEHEM-SPARROWS POINT  
 SHIPYARD, INC.  
 SPARROWS POINT, MD.

J. A. Woddy

Manufact

Dates of Survey white building  
 During progress of work in shops - - Nov. 5, 6; Dec. 1, 1941 Jan. 26, Feb. 4, 5, 17, 1942  
 During erection on board vessel - - 1941 Dec. 9, 20, 23, 26; 1942 Jan 2, 6, 9, 10, 13, 20, Feb. 6, 11, 18, Mar. 2, 6, 17, 18, 21, 23, 26, 28,  
 Total No. of visits 29  
 Dates of Examination of principal parts - Casings Nov. 5, 6, 21, Feb. 5, 1942 Rotors Nov. 5, 1941 Blading Nov. 5, 1941 Gearing Nov. 5,  
 Wheel shaft Nov. 5, 1941 Thrust shaft Integral with wheel shaft Intermediate shafts Oct. 3, 1941 Tube shaft - - - Screw shaft 3 Oct. 19  
 Propeller 2-4-42 Stern tube 9th Jan. 1942 Engine and boiler seatings Blr. 9th Dec. 1941 Engine, holding down bolts 2nd Mar. 19  
 Completion of pumping arrangements 11th Feb. 1942 Boilers fixed 26 Dec. 1941 Engines tried under steam 26th Mar. 1942  
 Main boiler safety valves adjusted 18th Feb. 1942 Thickness of adjusting washers -  
 Rotor shaft, Material and tensile strength OH Steel HP 116000 LP 105000 106500 513 5-11-41  
 Identification Mark 514 5-11-41  
 Flexible Pinion Shaft, Material and tensile strength None Identification Mark -  
 Pinion shaft, Material and tensile strength OH Steel HS HP 109500 HS LP 106000 Identification Mark 505 5-11-41  
 506 5-11-41  
 507 5-11-41  
 1st Reduction Wheel Shaft, Material and tensile strength OH Steel LS HP 108000 LS LP 100500 Identification Mark 508 5-11-41  
 Wheel shaft, Material O H Steel Identification Mark 511 5-11-41 Thrust shaft, Material Integral with wheel shaft Identification Mark  
 Intermediate shafts, Material O.H. Steel Identification Marks 3120 JVCM Tube shaft, Material - Identification Marks  
 3065 JVCM  
 Screw shaft, Material O H Steel Identification Marks 3062 JVCM Steam Pipes, Material Seamless Steel Test pressure 1000 lb  
 Date of test 6th Feb. 1942 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 - - If so, have the requirements of the Rules been complied with -  
 Is this machinery a duplicate of a previous case  Yes If so, state name of vessel Corsicana, Caddo, Calusa, Catawba

**General Remarks** (State quality of workmanship, opinions as to class, &c.) The machinery of this vessel has been built under Survey in accordance with the Society's Rules. Please refer to reports from New York, No. 41994, Boston, Mass. Nos. 3715, 3676 and 3677 also forging and casting reports which are attached to this report. Same has now been installed and fitted on the vessel inclusive of the erection and completion of the Water Tube Boilers and their accessories and all auxiliaries have been tested under full working conditions and the machinery is in safe working condition and eligible to have the record of \* LMC 3,42 fitted for oil fuel 3,42 F.P. above 150° F.

The amount of Entry Fee ... £ 30.00 : When applied for,  
 Special ... £ 207.50 : June 2, 1942  
 Economisers ... £ 56.50 :  
 Donkey Boiler Fee ... £ : :  
 Travelling Expenses (if any) £ 34.75 : :  
 Early fee 10.00

Wm. C. Cowin  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK JUL 1 1942

Assigned + LMC - 5,42



© 2020

Lloyd's Register Foundation

NOTE - CL  
 2 WTB (cht) 490 lbs.