

# REPORT ON STEAM TURBINE MACHINERY. No. 9401

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Writing Report on 5th Jan. 50. When handed in at Local Office 5th Jan. 1950 Port of PHILADELPHIA, PA.  
 Survey held at Chester, Penna. Date, First Survey 31st Mar. Last Survey 19th Dec. 1949  
 Book on the S.S. "SOVAC BRILLIANT" (Number of Visits 32) Tons {Gross 17597.94  
 at Chester, Pa. By whom built Sun Shipbuilding & D.D. Co. Yard No. 573 When built 1949  
 Lines made at Trenton, New Jersey By whom made DeLaval Steam Turbine Co. Engine No. 650146 When made "  
 Boilers made at Babcock & Wilcox By whom made Babcock & Wilcox Boiler No. MB-4341 When made "  
 Net Horse Power at Full Power 12,500 <sup>13750 Max.</sup> Owners Tankers Navigation Company Port belonging to Panama  
 Horse Power as per Rule 3096 = MN <sup>2818</sup> Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
 for which Vessel is intended Foreign

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

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

LINE	H. P.			I. P.			L. P.			ASTERN in L. P. Turbine		
	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.
1	1.800"	21.750"	2				1.140"	40.346"	1	1.800"	45.550"	2
2	1.250"	22.316"	2				1.540"	41.146"	1	6.000"	51.126"	1
3	.620"	21.306"	1									
4	.710"	21.486"	1				2.120"	42.390"	1			
5	.760"	21.586"	1				2.880"	43.910"	1			
6	.880"	21.826"	1				4.200"	46.576"	1			
7	.990"	22.046"	1				6.450"	50.826"	1			
8	1.140"	22.346"	1				9.950"	57.576"	1			
9	1.210"	22.486"	1				12.700"	63.100"	1			
10	1.410"	22.886"	1									
11	1.720"	23.506"	1									

Net Horse Power at each turbine { H.P. 6250 ✓ }  
 { L.P. 6250 ✓ }  
 { I.P. --- }  
 { H.P. 5644 ✓ } 1st reduction wheel 733  
 { L.P. 3546 ✓ } main shaft Normal 112 ✓  
 { I.P. --- } Max 115.7  
 Net diameter at journals { H.P. 5" }  
 { I.P. --- }  
 { L.P. 8" }  
 { 9.760" H.P. }  
 { 1st pinion 14.478" } 1st reduction wheel 64.743" I.P.  
 { 2nd pinion 21.75" } main wheel 154.0" Width of Face { 1st reduction wheel 18-3/4" }  
 { main wheel 35" }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 14-1/8" } 1st reduction wheel 14-5/8"  
 { 2nd pinion 25-1/4" } main wheel 28-3/4"  
 { 6" H.P. }  
 Pinion diameter { 1st --- }  
 { 2nd --- }  
 Pinion Shafts, diameter at bearings External 1st { 7" L.P. }  
 Internal 2nd { 10-31/32" } diameter at bottom of pinion teeth { 1st 9.330" H.P. }  
 { 2nd 21.109" L.P. }

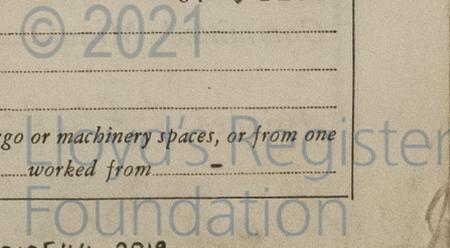
Shafts, diameter at bearings { 1st 10" ✓ } diameter at wheel shroud, { 1st 12" } Generator Shaft, diameter at bearings  
 { main 22" ✓ } { main 27" } Propelling Motor Shaft, diameter at bearings  
 Tube Shafts, diameter as per rule 19.66" Thrust Shaft, diameter at collars as per rule 13-3/4" Tube Shaft, diameter as per rule N O N E  
 as fitted 19-3/4" as fitted 13-3/4" as fitted  
 Shaft, diameter as per rule 21.32" Is the screw { shaft fitted with a continuous liner } Yes ✓  
 as fitted 22" Is the after end of the liner made watertight in the propeller boss Yes ✓  
 as per rule 733 Is the after end of the liner made watertight in the propeller boss Yes ✓  
 as fitted 27/32 If the liner is in more than one length are the junctions

Sealion through the whole thickness of the liner length 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  
 Lubrication fitted at the after end of the tube shaft - - - Length of Bearing in Stern Bush next to and supporting propeller 8'-3" ✓  
 diameter 20' Pitch 16'-10" at No. of Blades 4 State whether Moveable No Total Developed Surface 173 sq. ft. square feet.  
 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  
 Yes No. of Turbines fitted with astern wheels 1 Feed Pumps { No. and size 3-350 G.P.M. & 1-30 G.P.M. (Emergency) }  
 { How driven Turbine Motor }

Connected to the Main Bilge Line { No. and size 2-Bilge (E.R.)-200 G.P.M.-1 Gen. Serv. 400 G.P.M. }  
 { How driven Motor Motor }  
 Pumps, No. and size { 1-Ford P.R.-400 G.P.M. }  
 { 1-E.R. (Gen. Serv.)-400 G.P.M. } Lubricating Oil Pumps, including Spare Pump, No. and size 2-350 G.P.M.  
 Independent means arranged for circulating water through the Oil Cooler Yes ✓ Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
 and size:—In Engine and Boiler Room 6-3" I.P.S.  
 etc. Hold-2- 2-1/2" I.P.S. -Cofferdam - 1-4"  
 Independent Power Pump Direct Suctions to the Engine Room  
 and size 2- 5" ✓ Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes ✓

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 ✓  
 Sea Connections fitted direct on the skin of the ship Yes ✓ Are they fitted with Valves or Cocks Valves ✓  
 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 fitted  
 pipes pass through the bunkers - - - How are they protected - - -  
 pipes pass through the deep tank Fore Peak Ballast Suction ✓ Have they been tested as per rule - - -

Are Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes ✓  
 Are arrangements 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 - - -



**BOILERS, &c.**— (Letter for record) Total Heating Surface of Boilers 18720 sq ft  
 Is Forced Draft fitted Yes No. and Description of Boilers 2 Watertube Working Pressure 685  
 Is a Report on Main Boilers now forwarded? Yes  
 Is a Donkey Boiler fitted? No If so, is a report now forwarded?  
 Plans. Are approved plans forwarded herewith for Shafting No Main Boilers No Auxiliary Boilers No Donkey Boilers No  
 Superheaters No General Pumping Arrangements No Oil Fuel Burning Arrangements No

Spare Gear. State the articles supplied:—  
 LP & HP 1st Red. Pinions, HP & LP Quill Shafts and Coupling hubs, (additional)  
 Spare Gear required by the Rules has been supplied. ✓

DELAVAL STEAM TURBINE COMPANY  
 VICE PRESIDENT &  
 EXECUTIVE ENGINEER  
*[Signature]* Manufacturer

The foregoing is a correct description,

Dates of Survey while building  
 During progress of work in shops: Mar. 31, April 4, May 3, June 2-21-27-28 August 11, 1949.  
 During erection on board vessel: August 31, Sept. 6-22-27. Oct. 5-10-12-13-19-21-27 Nov. 7-10-16-25-28 Dec. 1-5-15-16-19, 1949  
 Total No. of visits: 32

Dates of Examination of principal parts—Casings 28 June Rotors 28 June Blading 28 June Gearing 11 Aug  
 Wheel shaft 11 Aug Thrust collar 11 Aug Intermediate shafts Tube shaft - Screw shaft Aug 1  
 Propeller Aug. 1 Stern tube 12 Oct. Engine and boiler seatings 4 Oct. Engine holding down bolts 25 Nov.  
 Completion of pumping arrangements 12 Dec. Boilers fixed 13 Oct. Engines tried under steam 16 Dec.  
 Main boiler safety valves adjusted 12 Dec. Thickness of adjusting washers Locknuts

Rotor shaft, Material and tensile strength O.H. Steel HP 100,000, 101,000, 102,000 LP 88,000 Identification Mark 5928 CC.1164 J  
 Quill Shaft, Material and tensile strength O.H. Steel HP 97,000 LP 94,500 Identification Mark 7235 WHR 8533  
 Pinion shaft, Material and tensile strength O.H. Steel HP 1st Red. 108,500 HP 2nd Red. 108,500 Identification Mark 6207 SS 1197  
 1st Reduction Wheel Shaft, Material and tensile strength O.H. Steel LP 1st Red. 110,500 LP 2nd Red. 118,500 Identification Mark 7367 WHR 1209  
 Wheel shaft, Material O.H. Steel Identification Mark 3798 JKH Thrust shaft, Material - Identification Mark -  
 Intermediate shafts, Material O.H. Steel Identification Marks 9160, 9284 S.S. Tube shaft, Material - Identification Marks -  
 Spare 6415 SS. Screw shaft, Material O.H. Steel Identification Marks Serv. 6461 SS Steam Pipes, Material O.H. Steel Test pressure

Date of test Various from 31 Aug. to 7 Nov. 1949 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 No 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 S.S. "SOVAC PEGASUS" -Sun Hull

**General Remarks** (State quality of workmanship, opinions as to class, &c.) The machinery has been satisfactorily installed on board the vessel, tried out under full power and found satisfactory. In our opinion, the installation is entitled to receive the record of \*IMC 12,49, fitted for oil fuel 12,49 F.P. above 150°  
 This machinery has been constructed under S.S. and in accordance with the approved plans, the workmanship and materials are good.

*Torionals appd 28/10/48 for 112 + 115.7*

The amount of Entry Fee £380.00 : When applied for,  
 Special £ : 4 Jan 1950  
 Donkey Boiler Fee £ : per F.A.G.  
 Travelling Expenses (if any) £ 70.00 : When received, 19

*[Signature]*  
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute NEW YORK MAR 8 - 1950

Assigned + LMC-12, 49.

NOTE-2WTB.6P5 lbs. (NPT)

