

# REPORT ON STEAM TURBINE MACHINERY. No. 9401

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Writing Report. 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 "  
 Horse Power at Full Power 12,500 Normal Owners Tankers Navigation Company Port belonging to Panama  
 Horse Power as per Rule 3096 = MN ✓ Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
 for which Vessel is intended Foreign

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

Head 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~~  
 led to { Alternating Current Generator phase periods per second } rated Kilowatts Volts at revolutions per minute;  
 Direct Current Generator  
 ing power for driving Propelling Motors, Type  
 Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

LINE ING.	H. P.			I.X.R.			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.
ENSION	1.800"	21.750"	2				1.140"	40.346"	1	1.800"	45.550"	2
"	1.250"	22.316"	1				1.540"	41.146"	1	6.000"	51.126"	1
"	.620"	21.306"	1				2.120"	42.390"	1			
"	.710"	21.486"	1				2.880"	43.910"	1			
"	.760"	21.586"	1				4.200"	46.576"	1			
"	.880"	21.826"	1				6.450"	50.826"	1			
"	.990"	22.046"	1				9.950"	57.576"	1			
"	1.140"	22.346"	1				12.700"	63.100"	1			
"	1.210"	22.486"	1									
"	1.410"	22.886"	1									
"	1.720"	23.506"	1									

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

etween 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. } 9.330" H.P.  
 { 7" L.P. } 10-31/32" diameter at bottom of pinion teeth { 1st 14.048" L.P.  
 { 2nd 21.109" L.P.  
 Pinion Shafts, diameter at bearings External 1st { 7" L.P. } 2nd { 10-31/32" }  
 Internal { 7" L.P. } 2nd { 10-31/32" }

afts, 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  
 ate Shafts, diameter as per rule 19.66" Thrust Shaft, diameter at collars as per rule Tube Shaft, diameter as per rule N O N E  
 as fitted 19-3/4" as fitted 13-3/4" as fitted

ft, diameter as per rule 21.32" Is the screw { shaft fitted with a continuous liner } Yes ✓ Bronze Liners, thickness in way of bushes as per rule .977"  
 as fitted 22" as fitted 1-1/8"  
 between bushes as per rule .733 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 fitted 27/32" Made in One ✓

sion 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  
 rial 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  
 liance 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.

crew, 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  
 No. and size 2-Bilge (E.R.)-200 G.P.M.-1 Gen. Serv. 400 G.P.M.  
 How driven Motor

ected 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  
 mps, No. and size 1-Ford P.R.-400 G.P.M. Lubricating Oil Pumps, including Spare Pump, No. and size 2-350 G.P.M.  
 1-E.R. (Gen. Serv.) 400 G.P.M.  
 ependent 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.  
 Hold-2- 2-1/2" I.P.S. - Cofferdam - 1-4"

er Circulating Pump Direct Bilge Suctions, No. and size 1- 16" ✓ 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 ✓  
 ey 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  
 ey 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 - -

Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes ✓  
 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  
 arment to another Yes ✓ Is the Shaft Tunnel watertight - - Is it fitted with a watertight door - - worked from

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?  
{ an Auxiliary }  
Plans. Are approved plans forwarded herewith for Shafting No Main Boilers No Auxiliary Boilers Donkey Boilers -  
(If not state date of approval)  
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, (additi  
Spare Gear required by the Rules has been supplied. ✓

DELAVAL STEAM TURBINE COMPANY  
VICE PRESIDENT &  
EXECUTIVE ENGINEER  
Manufacture

The foregoing is a correct description,

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

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  
HP 1st Red. 108,500 HP 2nd Red. 108,500 Identification Mark 6207 SS 1197  
Pinion shaft, Material and tensile strength O.H. Steel LP 1st Red. 110,500 LP 2nd Red. 118,500 Identification Mark 7367 WHR 1209  
1st Reduction Wheel Shaft, Material and tensile strength O.H. Steel HP 84,500 LP 84,500 Identification Mark 2998-1-2 JKH  
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 -  
Screw shaft, Material O.H. Steel Identification Marks Spare 6415 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 instal-  
lation 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 workp  
manship and materials are good.

Torionals app? 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,  
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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)



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