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 each only  
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# Report on Steam Turbine Machinery. No. P.B. 35

Received at London Office

When handed in at Local Office 19 Port of ROUEN  
 Date, First Survey 5.3.59 Last Survey 6.II. 1960  
 (Number of Visits 58)

1062 on the Single Screw Vessel "J. PAUL GETTY"  
 Built at Dunkirk By whom built At. & Ch. de France Yard No. 228 When built 1960-II  
 Engines made at Saint-Nazaire By whom made Ch. de l'Atlantique Engine No. T.18 When made 1959-9  
 Boilers made at Dunkirk By whom made At. & Ch. de France Boiler No. 9 & 10 When made 1960-II  
 Shaft Horse Power { Maximum 24000 Owners Hemisphere Transportation Corpn. Port belonging to Monrovia  
 { Service 4800  
 M.N. as per Rule 4800 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
 Trade for which Vessel is intended International tanker

## STEAM TURBINE ENGINES, &c.—Description of Engines Double reduction geared steam turbine (Parson)

No. of Turbines 2 Ahead 2 Direct coupled, single reduction geared to 1 propelling shafts. No. of primary pinions to each set of reduction gearing 2  
 Astern 2 double reduction geared  
 direct coupled to { Alternating Current Generator phase periods per second }  
 { Direct Current Generator } rated Kilowatts Volts at revolutions per minute;  
 for 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 BLADING.	H. P.	I. P.	L. P.	ASTERN.
Impulse Blading				
No. of rows				
Reaction Blading				
No. of stages				
No. of rows in each stage				

Shaft Horse Power at each turbine { H.P. I.P. L.P. }  
 Revolutions per minute, at full power, of each Turbine Shaft { H.P. I.P. L.P. }  
 Rotor Shaft diameter at journals { H.P. I.P. L.P. }  
 Pitch Circle Diameter { 1st pinion 1st reduction wheel 2nd pinion main wheel }  
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 1st reduction wheel 2nd pinion main wheel }  
 Flexible Pinion Shafts, diameter { 1st 2nd }  
 Pinion Shafts, diameter at bearings { External Internal 1st 2nd }  
 diameter at bottom of pinion teeth  
 Wheel Shafts, diameter at bearings { 1st main }  
 diameter at wheel shroud, { 1st main }  
 Generator Shaft, diameter at bearings  
 Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter as per rule as fitted 596 m/m  
 Thrust Shaft, diameter at collars as per rule as fitted  
 Tube Shaft, diameter as per rule as fitted  
 Screw Shaft, diameter as per rule as fitted 711 m/m  
 Is the { tube x screw } shaft fitted with a continuous liner { Yes }

Bronze Liners, thickness in way of bushes as per rule as fitted 33 m/m  
 Thickness between bushes as per rule as fitted 28.5  
 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 or other appliance fitted at the after end of the tube shaft No  
 If so, state type

Propeller, diameter 7500 m/m Pitch variable No. of Blades 5 State whether Moveable No Total Developed Surface PD2 (1000 m/m Fwd) 416160 Kgs/m<sup>2</sup> square feet.  
 If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Yes Can the H.P. or I.P. Turbines exhaust direct to the

Condenser Yes No. of Turbines fitted with astern wheels 2 Feed Pumps { No. and size 3- 133 tons/hr. How driven Steam turbine

Pumps connected to the Main Bilge Line { No. and size Eng. Room I- 150 m<sup>3</sup>/hr., I- 150 m<sup>3</sup>/hr., I- 50 m<sup>3</sup>/hr. Fwd. Pp. rm. How driven steam electric electric I- 100 m<sup>3</sup>/hr. steam  
 Ballast Pumps, No. and size Eng. room (I- 150 m<sup>3</sup>/hr) stripping - Aft Pp. rm. I- 102 m<sup>3</sup>/hr, Fwd. Pp. rm. I- 100 m<sup>3</sup>/hr.  
 Are two independent means arranged for circulating water through the Oil Cooler Yes Branch Bilge Suctions, No. and size:—In Engine

and Boiler Rooms Eng. room 5 port side, 5 starbd. side 125 m/m Dia., 6- 50 m/m Dia. In Pump Rooms I- 100 m/m Diameter  
 In Holds, &c. Hold 2- 50 m/m D., Chain locker I- 65 m/m D., Main c/ds. forward & aft each IP, I S - 76 m/m D

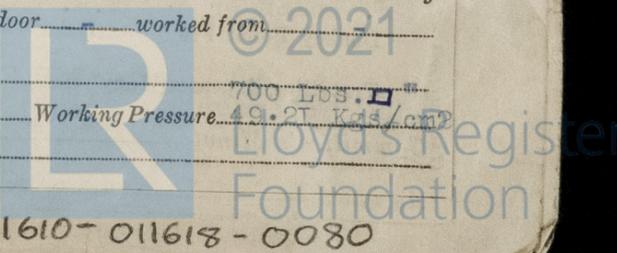
Main Water Circulating Pump Direct Bilge Suctions, No. and size 2- 350 m/m D. P. sid Direct Bilge Suctions to the Engine and/or Boiler Room  
 Bilges, No. and size 1 Port 150 m/m D. 1 starbd. 175 m/m D. Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes  
 Are the Bilge 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 Part to chests no. & distn. pieces Are they fitted with Valves or Cocks Both  
 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 Yes What pipes pass through the bunkers  
 How are they protected

What pipes pass through the deep tanks  
 Have they been tested as per rule  
 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

OILERS, &c.—Total Heating Surface of Boilers 13523 sq. ft. x 2 = 27046 sq. ft.  
 Is Forced Draught fitted Yes No. and Description of Boilers 2- W.T. Foster Wheeler Working Pressure 700 Lbs. sq. in. 49.27 Kgs/cm<sup>2</sup>  
 Is a Report on Main Boilers now forwarded? Yes

PLEASE SEE DRAWINGS PPT. N 787



Is  a Donkey Boiler fitted? NO If so, is a report now forwarded? NO  
 an Auxiliary Boiler fitted? NO If so, is a report now forwarded? NO  
 Is the donkey boiler intended to be used for domestic purposes only? NO

Plans. Are approved plans forwarded herewith for Shafting 19.3.58 Main Boilers 12.9.57 Auxiliary Boilers 7.5.58 Donkey Boilers 7.5.58  
 (If not, state date of approval) 2/12/58, 17/12/58

Superheaters 15.8.58 General Pumping Arrangements 22/12/58 Oil Fuel Burning Arrangements 2.6.58  
 Geared turbines situated aft. } Have torsional vibration characteristics of system been approved YES Boiler feed 15.1.58, 22/5/59  
 Date of approval 19th March, 1958.

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied? YES  
 State the principal additional spare gear supplied. Screw shaft, impeller & shafts for main circulating, extraction & condensate pumps.

The foregoing is a correct description.

Manufacturer

Dates of Survey while building	During progress of work in shops - -	1959. 5/3, 28/5, 3/7, 25/8, 3/9, 17/9, 24/9, 23/10, 10/11, 18/11, 24/11, 9/12, 17/12.
	During erection on board vessel - -	1960. 18/1, 3/2, 4/2, 10/2, 12/2, 25/2, 28/2, 26/2, 8/3, 25/3, 1/4, 4/4, 15/4, 22/4, 5/5, 9/5, 11/5, 10/6, 18/6, 4/7, 15/7, 22/7, 24/7, 25/7, 1/8, 13/8, 15/8, 13/5, 17/8, 1/9
	Total No. of visits.	58. 23/4, 13/5, 30/8, 16/9, 26/9, 27/9, 24/8, 16/9, 26/10, 3/11, 4/11, 5/11, 6/11.

Dates of Examination of principal parts—Casings Nts Rpt 78I Rotors Nts Rpt 78I Blading Nts Rpt 78I Gearing Nts Rpt 78I Impulse Blading

Wheel shaft Nts Rpt 78I Thrust shaft Intermediate shafts 24.9.59 Tube shaft Screw shaft 15.4.60

Propeller 15.4.60 Stern tube 4.3.60 Engine and boiler seatings 15.4.60 Engine holding down bolts 15.4.60

Completion of fitting sea connections 15.4.60 Completion of pumping arrangements 16.9.60 Boilers fixed 15.4.60 Engines tried under steam 22.25/10

Main boiler safety valves adjusted 24.9.60 Thickness of adjusting washers

Rotor shaft, Material and tensile strength Nts Rpt 78I Identification Mark

Flexible Pinion Shaft, Material and tensile strength Nts Rpt 78I Identification Mark

Pinion shaft, Material and tensile strength Nts Rpt 78I Identification Mark

If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment

1st Reduction Wheel Shaft, Material and tensile strength Identification Mark

Wheel shaft, Material Nts Rpt 78I Identification Mark Thrust shaft, Material Identification Mark

Intermediate shafts, Material 44/50kg/mm<sup>2</sup> S M steel Marseilles 234 & 238 Identification Marks 234 & 238 Tube shaft, Material Identification Marks

Screw shaft, Material 44/50kg/mm<sup>2</sup> S M steel Marseilles 230 Identification Marks 230 Steam Pipes, Material Alloy steel chromeseco Test pressure 86.4kg/cm<sup>2</sup>

Date of test 1/10/59, 14/10/59, 2/11/59, 5/10/60, 5/11/59 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  
 (water service) portable fire exting. froth exting CO<sub>2</sub> a

Full description of Fire Extinguishing Apparatus fitted in machinery spaces machy. space, steam smothering app. for pump rooms, cargo tanks, oil fuel, bunker tanks, cofferdams.

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

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with NO

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.) The Machinery has been securely fitted on board and examined under working conditions during sea trials in accordance with the Rules and approved

No evidence of torque reversal in the form of gear hammer was noted in the main gearing and in accordance with the terms of the Secretary's letter dated 27th August 1957, the tooth contact distribution of pinions and wheels were coated with an approved spirit lacquer and on examination after sea trials marking indicated freedom from hard bearing of more than 70% contact across the faces over the involute profile.

The materials and workmanship are good. The two main boilers have been securely fitted on board (fitted to burn oil fuel F.P. above 150°F) in accordance with Rule Requirements and safety valves adjusted under steam to approved working pressure.

The Machinery is eligible in our opinion to have notation L.M.C. II.60, T.S. (C.L.)  
2 W.T.B. 700 lbs. sq. ins (SPT)

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

The amount of Entry Fee ... £	:	:	When applied for
Special ... N.F.£	6,397.50	:	3.2.19.61
Mr. Bolender N.F.	162.50	:	
Donkey Boiler Fee ... £	:	:	When received
Travelling Expenses (if any) N.F.	2,706.90	:	19
Mr. Bolender		:	
Committee's Minute	FRIDAY - 3 MAR 1961		
Assigned	See Rpt. 1		

*[Signature]* for W. Ronald, Ch. Bolender,  
 Engineer Surveyor to Lloyd's Register of Shipping.  
*[Signature]* J. Martin and self.

