

# REPORT ON STEAM TURBINE MACHINERY. No. 8026

Date of writing Report 27 May 41 When handed in at Local Office 28 May 41 Port of Philadelphia  
 No. in Survey held at Hinton NJ Date, First Survey 23 Jan 1941 Last Survey 16 Dec 1941  
 Reg. Book, S/S "Sinclair Rubilene" (Number of Visits 8)  
 on the Fore River Mfg Co By whom built Bethlehem SB Co Yard No. 1489 Tons } Gross  
 Engines made at Hinton NJ By whom made De Laval Steam Turbine Engine No. 230908 When built 1941  
 Boilers made at Hinton NJ By whom made De Laval Steam Turbine Boiler No. 230908 When made "  
 Shaft Horse Power at Full Power 4000 Owners Sinclair Oil Co Port belonging to "  
 Nom. Horse Power as per Rule 898 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes  
 Trade for which Vessel is intended Carrying Petroleum in bulk

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

No. of Turbines 2 Ahead 1 Direct coupled, single reduction geared } to 1 propelling shafts. No. of primary pinions to each set of reduction gearing 2  
 Afters 1 double reduction geared }  
 Direct coupled to Alternating Current Generator phase 3 periods per second } rated 4000 Kilowatts Volts 2200 revolutions per minute;  
 supplying power for driving Propelling Motors, Type  
 rated 4000 Kilowatts Volts 2200 revolutions per minute. Direct coupled, single or double reduction geared to 1 propelling shafts.

TURBINE	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.
1st EXPANSION	600	22.500	1				1.020	31.476	1	720	35.200	1
2nd	570	16.356	1				1.185	33.246	1	1390	36.296	1
3rd	615	16.466	1				1.680	35.676	1	3750	39.570	1
4th	685	16.606	1				2.000	27.796	1			
5th	760	16.756	1				3.100	40.160	1			
6th	845	16.926	1				4.800	41.880	1			
7th	605	20.146	1				8.300	45.948	1			
8th	700	20.336	1									
9th	820	20.576	1									
10th	955	20.846	1									
11th	1115	21.166	1									

Shaft Horse Power at each turbine H.P. 2000 I.P. 1938 1st reduction wheel 1623  
 I.P. 2000 L.P. 4078 main shaft 70  
 Motor Shaft diameter at journals H.P. 5" Pitch Circle Diameter 1st pinion 9.200 L.P. 1st reduction wheel 48.200  
 I.P. 7" 2nd pinion 13.041 main wheel 174.947 Width of Face 1st reduction wheel 14"  
 L.P. 7" 2nd pinion 13.041 main wheel 174.947 main wheel 217/8"  
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 10 1/4" 1st reduction wheel 12 1/8"  
2nd pinion 20 1/8" main wheel 21 7/8"  
 Flexible Pinion Shafts, diameter 1st 6 1/2" Pinion Shafts, diameter at bearings External 1st 4 1/2" 2nd 9" diameter at bottom of pinion teeth 1st 3.754 L.P.  
2nd 12.279"  
 Wheel Shafts, diameter at bearings 1st 6 1/2" diameter at wheel shroud, 1st 8" Generator Shaft, diameter at bearings 20"  
main 16" Propelling Motor Shaft, diameter at bearings 20"  
 Intermediate Shafts, diameter as per rule Thrust Shaft, diameter at collars as per rule Tube Shaft, diameter as per rule  
as fitted as fitted as fitted  
 Crew Shaft, diameter as per rule Is the tube shaft fitted with a continuous liner Yes Bronze Liners, thickness in way of bushes as per rule  
as fitted 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  
 made by fusion through the whole thickness of the liner Yes If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a as fitted  
 elastic material insoluble in water and non-corrosive Yes If two liners are fitted, is the shaft lapped or protected between the liners Yes Is an approved Oil Gland as fitted  
 other appliance fitted at the after end of the tube shaft Yes Length of Bearing in Stern Bush next to and supporting propeller as fitted  
 Propeller, diameter as per rule No. of Blades as per rule State whether Moreton as per rule Total Developed Surface as per rule  
as fitted as fitted as fitted Can the H.P. or I.P. Turbine exhaust direct to the as fitted  
 condenser Yes No. of Turbines fitted with astern wheels 1 Feed Pumps No. and size  
as fitted as fitted as fitted How driven as fitted

Pumps connected to the Main Bilge Line No. and size  
as fitted How driven as fitted  
 Ballast Pumps, No. and size as per rule  
as fitted Lubricating Oil Pumps, including Spare Pump, No. and size as per rule  
as fitted Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge as per rule  
as fitted as fitted  
 Main Water Circulating Pump Direct Bilge Suctions, No. and size as per rule  
as fitted Independent Power Pump Direct Suctions to the Engine Room as per rule  
as fitted Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes as per rule  
as fitted Are the Bilge Suctions in the Machinery Space led from easily accessible man-boxes, placed above the level of the working floor, with straight tail pipes to the bilges as per rule  
as fitted Are all Sea Connections fitted direct on the skin of the ship as per rule  
as fitted Are they fitted with Valves or Cocks as per rule  
as fitted Are they sized sufficiently high on the ship's side to be seen without lifting the stowhold plates as per rule  
as fitted Are the Overboard Discharges above or below the deep water line as per rule  
as fitted Are they each fitted with a Discharge Valve always accessible on the plating of the vessel as per rule  
as fitted Are the Blow Off Cocks fitted with a spigot and brass covering plate as per rule  
as fitted How are they protected as per rule  
as fitted Have they been tested as per rule as per rule  
as fitted All Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times as per rule  
as fitted 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 as per rule  
as fitted compartment to another as per rule  
as fitted Is the Shaft Tunnel watertight as per rule  
as fitted Is it fitted with a watertight door as per rule  
as fitted worked from as per rule



BOILERS, &c.—(Letter for record)

Total Heating Surface of Boilers

Is Forced Draft fitted

No. and Description of Boilers

Working Pressure

Is a Report on Main Boilers now forwarded?

Is a Donkey Boiler fitted?

If so, is a report now forwarded?

Plans. Are approved plans forwarded herewith for Shafting  
(If not state date of approval)

Main Boilers

Auxiliary Boilers

Donkey Boilers

Superheaters

General Pumping Arrangements

Oil Fuel Burning Arrangements

Spare Gear. State the articles supplied:—

Please see attached sheets.

As per rule.

OF TURBINES & GEARS—J.H. Schenckel - De Laval Steam Turbine Co.

The foregoing is a correct description,

Manufacturer

Dates of Survey while building  
During progress of work in shops --  
During erection on board vessel ---  
Total No. of visits

23 Jan 24-27 Feb 18-20 March 5-11-16 April 1941.

Dates of Examination of principal parts—Casings

24 Feb.

Rotors

16 April

Blading

16 April

Gearing

16 April

Wheel shaft

16 April

Thrust shaft

Intermediate shafts

Tube shaft

Screw shaft

Propeller

Stern tube

Engine and boiler seatings

Engine holding down bolts

Completion of pumping arrangements

Boilers fixed

Engines tried under steam

Main boiler safety valves adjusted

Thickness of adjusting washers

Rotor shaft, Material and tensile strength

O.H. Steel

102000 lb

103000 lb 100000 lb.

Identification Mark 3484. G.D.

Flexible Pinion Shaft, Material and tensile strength

Pinion shaft, Material and tensile strength

O.H. Steel

107500. 105000

Identification Mark

Identification Mark 6608. 6615. HBC

1st Reduction Wheel Shaft, Material and tensile strength

O.H. Steel

81000.

Identification Mark 4149 W.H.R.

Wheel shaft, Material

O.H. Steel

Identification Mark 4157 W.H.R.

Thrust shaft, Material

Identification Mark

Intermediate shafts, Material

Identification Marks

Tube shaft, Material

Identification Marks

Screw shaft, Material

Identification Marks

Steam Pipes, Material

Test pressure

Date of test

Is an installation fitted for burning oil fuel

Is the flash point of the oil to be used over 150°F.

Have the requirements of the Rules for the use of oil as fuel been complied with

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

Hull 1488

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 unit has been shipped to Fore River. When this unit has been satisfactorily installed on board the vessel, tried out under full power, and to the satisfaction of the Surveyors, it will be eligible in my opinion to receive the record of +LMC with date.

The amount of Entry Fee

\$30.00

When applied for,

Special

\$200.00

29 May 1941

Donkey Boiler Fee

\$30.00

When received,

Travelling Expenses (if any)

\$

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Committee's Minute

Assigned

See N.Y.K. RPT 41921

W.D. Vamham  
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation