

REPORT ON STEAM TURBINE MACHINERY. No. 8005

Date of writing Report 5 March 41 When handed in at Local Office 5 March 41 Port of Philadelphia Received at London Office 12 FEB 1942
No. in Survey held at Jenison N.J. Date, First Survey 28 Oct 1940 Last Survey 20 Feb 1941
Reg. Book. (Number of Visits 11)
on the Fore River, Mass. By whom built Bethlehem S.B. Co Yard No. 1488 Tons 1941
Engines made at Jenison N.J. By whom made De Laval Steam Turbine Co Engine No. 230907 When made "
Boilers made at " By whom made " Boiler No. " When made "
Shaft Horse Power at Full Power 4000 Owners Simclair Gil Co Port belonging to "
Nom. Horse Power as per Rule 905 Is Refrigerating Machinery fitted for cargo purposes " Is Electric Light fitted "
Trade for which Vessel is intended "

STEAM TURBINE ENGINES, &c.—Description of Engines

De Laval Impulse Compound

No. of Turbines Ahead 2 Direct coupled, single reduction geared } to 1 propelling shafts. No. of primary pinions to each set of reduction gearing 2
Astern 1 double reduction geared }

direct coupled to { Alternating Current Generator phase periods per second } rated Kilowatts Volts at revolutions per minute;
for supplying power for driving { Direct Current Generator }

Propelling Motors, Type rated Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

TURBINE
BLADING.

TURBINE BLADING.	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.
1ST EXPANSION	1.600	22.500	1				1.020"	31.476	1	1.730	35.200	2
2ND	1.560	16.356	1				1.185	33.246	1	3.750	36.296	1
3RD	1.615	16.466	1				1.680	35.676	1			
4TH	1.685	16.606	1				2.000	37.796	1			
5TH	1.760	16.756	1				3.100	40.160	1			
6TH	1.845	16.936	1				4.800	44.880	1			
7TH	1.605	20.146	1				8.300	45.948	1			
8TH	1.700	20.336	1									
9TH	1.820	20.576	1									
10TH	1.955	20.846	1									
11TH	1.115	21.166	1									
12TH												

Shaft Horse Power at each turbine H.P. 2000 I.P. 1938 L.P. 4518 1st reduction wheel 862.3
Revolutions per minute, at full power, of each Turbine Shaft I.P. 7000 L.P. 90

Rotor Shaft diameter at journals H.P. 5" I.P. 7" L.P. 7" Pitch Circle Diameter 1st pinion 7.000" 2nd pinion 13.041" 1st reduction wheel 48.200" main wheel 124.947" Width of Face 1st reduction wheel 14" main wheel 29"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 10 1/4" 2nd pinion 20 7/8" 1st reduction wheel 17 7/8" main wheel 21 7/8"

Flexible Pinion Shafts, diameter 1st 6.5" 2nd 6.5" Pinion Shafts, diameter at bearings External 1st 4 1/2" 2nd 9" Internal 1st 8" 2nd 7" diameter at bottom of pinion teeth 1st 6.584" 2nd 8.784"

Wheel Shafts, diameter at bearings 1st 6 1/2" 2nd 16" diameter at wheel shroud, 1st 8" 2nd 20" Generator Shaft, diameter at bearings 20" Propelling Motor Shaft, diameter at bearings 20"

Intermediate Shafts, diameter as per rule 10 1/2" Thrust Shaft, diameter at collars as per rule 10 1/2" Tube Shaft, diameter as per rule 10 1/2"

Screw Shaft, diameter as per rule 10 1/2" Is the tube shaft fitted with a continuous liner Yes Bronze Liners, thickness in way of bushes as per rule 10 1/2"

Thickness between bushes as per rule 10 1/2" 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 Yes

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 Yes If two liners are fitted, is the shaft lapped or protected between the liners Yes Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft Yes

Length of Bearing in Stern Bush next to and supporting propeller Yes Propeller, diameter 48" Pitch 20" No. of Blades 16 State whether Movable Yes Total Developed Surface 1000 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. Turbine exhaust direct to the Condenser Yes

No. of Turbines fitted with astern wheels 1 Feed Pumps No. and size 1 How driven Electric

Pumps connected to the Main Bilge Line No. and size 1 How driven Electric

Ballast Pumps, No. and size 1 Lubricating Oil Pumps, including Spare Pump, No. and size 1

Are two 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 1

In Holds, &c. 1 Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 Independent Power Pump Direct Suctions to the Engine Room 1

Bilges, No. and size 1 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 Yes Are they fitted with Valves or Cocks Yes

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 Yes 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 1 How are they protected Yes What pipes pass through the deep tanks 1 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 Yes Is it fitted with a watertight door Yes

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?
{ an Auxiliary }

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.—

As per rule. ✓

The foregoing is a correct description,

DE LAVAL STEAM TURBINE Co. J. S. Miller
MGR. CONTRAST DIVISION

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

Oct 28. 29. Nov 25. Dec 3. 1940. Jan 6. 23 Feb 4. 11. 15. 17. 20. 1941

Dates of Examination of principal parts—Casings

17 Feb 1941

Rotors

17 Feb 1941

Blading

17 Feb 1941

Gearing

11 Feb 1941

Wheel shaft

15 Feb 1941

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 96500, 97000, 94000

Identification Mark 3478 LR.

Flexible Pinion Shaft, Material and tensile strength

Identification Mark

Pinion shaft, Material and tensile strength

O.H. Steel 105000, 104000, 103500

Identification Mark 4162 4161 WHR

1st Reduction Wheel Shaft, Material and tensile strength

O.H. Steel 78500 lb

Identification Mark 6603. 6607 HBC

Wheel shaft, Material

O.H. Steel

Identification Mark

4156 WHR

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

No

If so, state name of vessel

General Remarks

(State quality of workmanship, opinions as to class, &c.)

This machinery has been constructed under Special Survey & 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 +LNC with date.

The amount of Entry Fee

\$ 30.00

Special

\$ 200.00

Donkey Boiler Fee

£

Travelling Expenses (if any)

\$ 41.25

When applied for,

25th March 1941

When received,

19

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

NEW YORK DEC 23 1941

Assigned

See N.Y.K. RPT. 41897



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