

REPORT ON STEAM TURBINE MACHINERY. No. 7372

Date of writing Report 19 When handed in at Local Office 19 Port of Philadelphia Received at London Office DEC 29 1937
No. in Survey held at Trenton, N.J. Date, First Survey 20 Sept Last Survey 22 Sept 1937
Reg. Book. S/S "Esso Bayway" (Number of Visits 2)
on the
Built at Kearney, N.J. By whom built Federal SB Co Yard No. 144 Tons { Gross 7699
Engines made at Trenton, N.J. By whom made De Laval Steam Turbine Co Engine No. 226495 Net 4654
Boilers made at By whom made Boiler No. When built 1937
Shaft Horse Power at Full Power 2000 Owners Port belonging to
Nom. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
Trade for which Vessel is intended

STEAM TURBINE ENGINES, &c.—Description of Engines Impulse compound steam turbines

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 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.		
	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	1.10	22.463	1				1.280	25.828	1	7.20	30.707	1
2ND	1.40	15.611	1				"	27.028	1	1.390	31.803	1
3RD	1.670	"	1				1.450	28.398	1	3.330	35.218	1
4TH	1.625	"	1				2.140	30.848	1			
5TH	1.695	"	1				2.720	33.088	1			
6TH	7.70	"	1				3.730	35.188	1			
7TH	7.20	19.826	1				6.500	38.798	1			
8TH	8.50	"	1									
9TH	8.20	"	1									
10TH	9.65	"	1									
11TH	1.180	"	1									
12TH												

Shaft Horse Power at each turbine { H.P. 1585 } H.P. 6005 } 1st reduction wheel 897.5
I.P. } Revolutions per minute, at full power, of each Turbine Shaft { I.P. } main shaft 90.
L.P. 1595 } L.P. 5043 }

Rotor Shaft diameter at journals { H.P. 4" } Pitch Circle { 1st pinion 8.221" HP } 1st reduction wheel 46.200" } Width of { 1st reduction wheel 12"
I.P. } Diameter { 2nd pinion 11.856" } main wheel 118.241" } Face { main wheel 26.700"
L.P. 4" 6" } J.S.H. }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 10" } 1st reduction wheel 10"
2nd pinion 19 3/8" } main wheel 22 5/8"

Flexible Pinion { 1st } Pinion Shafts, diameter at bearings External 1st 5 1/2" 2nd 9" } diameter at bottom of pinion teeth { 1st 6.572" HP
Shafts, diameter { 2nd } Internal 1st 6" } 2nd 11.094" LP
2nd }

Wheel Shafts, diameter at bearings { 1st } diameter at wheel shroud, { 1st } Generator Shaft, diameter at bearings
main 15" } main Propelling Motor Shaft, diameter at bearings

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

Screw Shaft, diameter as per rule Is the { tube } shaft fitted with a continuous liner { Bronze Liners, thickness in way of bushes as per rule
as fitted as fitted as fitted

Thickness between bushes as per rule Is the after end of the liner made watertight in the propeller boss 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 Length of Bearing in Stern Bush next to and supporting propeller

Propeller, diameter Pitch No. of Blades State whether Moveable Total Developed Surface square feet.
If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Can the H.P. or L.P. Turbine exhaust direct to the

Condenser No. of Turbines fitted with astern wheels Feed Pumps { No. and size
How driven

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

Ballast Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size
Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Engine and Boiler Room
In Holds, &c.

Main Water Circulating Pump Direct Bilge Suctions, No. and size Independent Power Pump Direct Suctions to the Engine Room

Bilges, No. and size Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes

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

Are all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Overboard Discharges above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate

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
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 Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from

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
(an Auxiliary) 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:—

The foregoing is a correct description, of PROPELLING MACHINERY

De Laval Steam Turbine Co
per J. H. Schenckler
Eng. Dept.

Manufacturer

Dates
of Survey
while
building

(During progress of
work in shops --)
(During erection on
board vessel ---)
(Total No. of visits

Sept 20th 22nd 1937.

Dates of Examination of principal parts—Casings

22 Sept

Rotors

22 Sept

Blading

22 Sept

Gearing

22 Sept

Wheel shaft

22 Sept

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

Identification Mark

Flexible Pinion Shaft, Material and tensile strength

Identification Mark

Pinion shaft, Material and tensile strength

Identification Mark

1st Reduction Wheel Shaft, Material and tensile strength

Identification Mark

Wheel shaft, Material

Identification Mark

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

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

The above turbines & gears have been constructed under the rules of the American Bureau of Shipping, and material tested by them. The installation has been tried out under steam in the shop & found satisfactory. After the trial the turbines & gears were opened up, examined & found in good order. When the installation has been satisfactorily installed on board the vessel, and tried out under steam to the satisfaction of the Societies' Surveyors, it will in my opinion be eligible to receive the record of LMC with date.

The amount of Entry Fee ... £

Special ... £

Donkey Boiler Fee ... £

Travelling Expenses (if any) ... £

When applied for,

19

When received,

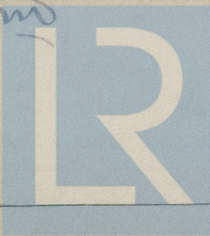
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Committee's Minute

Assigned See N.Y.K. 38079

NEW YORK DEC 15 1937

W. H. Runkham
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation