

REPORT ON STEAM TURBINE MACHINERY. No. 3656

Rpt. 4a.

Date of writing Report Sept. 22 1941 When handed in at Local Office Feb 21 1942 Port of Boston, Massachusetts
 No. in Survey held at Lynn, Mass. Date, First Survey April 21 Last Survey July 23 1941
 Reg. Book. (Number of Visits 8)
 on the Hull No. 192 Tons Gross
 Built at Kearney, N.J. By whom built Federal S.B. Co. Yard No. 192 When built 1941
 Engines made at Lynn, Mass. By whom made General Electric Co. Engine No. 1941
 Boilers made at Lynn, Mass. By whom made General Electric Co. Boiler No. 1941
 Shaft Horse Power at Full Power 6000 Owners Sinclair Refining Co. Port belonging to
 Nom. Horse Power as per Rule 1165 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted Yes
 Trade for which Vessel is intended Carrying petroleum in bulk

STEAM TURBINE ENGINES, &c.—Description of Engines Cross compound, double reduction gear

No. of Turbines two Direct coupled, single reduction geared to one propelling shafts No. of primary pinions to each set of reduction gearing two
 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	.845"	29.210"	1				1.195"	34.990"	1	.850"	37.230"	2
2ND	.680"	17.710"	1				1.735"	35.870"	1	1.130"	37.51"	1
3RD	.740"	17.830"	1				2.320"	36.840"	1	3.940"	40.940"	1
4TH	.820"	17.990"	1				3.170"	38.340"	1			
5TH	.950"	18.250"	1				4.860"	40.720"	1			
6TH	1.000"	18.350"	1				7.250"	44.300"	1			
7TH	1.110"	18.570"	1				9.560"	47.760"	1			
8TH	1.230"	18.810"	1									
9TH	1.480"	19.310"	1									
10TH	1.710"	19.770"	1									
11TH	2.000"	20.350"	1									
12TH												

Shaft Horse Power at each turbine H.P. 3000 I.P. 3000 L.P. 3000 Revolutions per minute, at full power, of each Turbine Shaft HP 8,400" LP 12,600"
 Rotor Shaft diameter at journals H.P. 3" outboard end I.P. 4" gear pitch circle L.P. 6" outboard end 1st pinion 14.880" 2nd pinion 14.880" 1st reduction wheel 57.800" main wheel 142.777" Width of Face 1st reduction wheel 17" main wheel 33.25"
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 15" 2nd pinion 26-1/2" 1st reduction wheel 14" main wheel 28-1/2"
 Flexible Pinion Shafts, diameter 1st None 2nd 8.250" Pinion Shafts, diameter at bearings External 1st 6" Internal 1st solid 2nd 12" 8-3/4" diameter at bottom of pinion teeth 1st HP 8.025" 2nd LP 12.225"
 Wheel Shafts, diameter at bearings 1st 9" diameter at wheel shroud, main 21" 1st 58.068" Generator Shaft, diameter at bearings main 143.267" Propelling Motor Shaft, diameter at bearings
 Intermediate Shafts, diameter as per rule as fitted Thrust Shaft, diameter at collars as per rule as fitted 14.250"
 Tube Shaft, diameter as per rule as fitted Screw Shaft, diameter as per rule as fitted Is the tube screw shaft fitted with a continuous liner
 Bronze Liners, thickness in way of bushes as per rule as fitted Thickness between bushes as per rule as fitted 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 If so, state type 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 Yes Can the H.P. or I.P. Turbine exhaust direct to the

Condenser yes No. of Turbines fitted with astern wheels one 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 Pump 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

002870-002875-0155

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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?
{ an Auxiliary }

Is the donkey boiler intended to be used for domestic purposes only

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

Superheaters General Pumping Arrangements Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied. Please see attached list.

State the principal additional spare gear supplied

The foregoing is a correct description,

L. E. Grube, Turbine Engr. Dept. J. E. C.

Manufacturer.

Dates of Survey { During progress of } Apr. 21-30 May 29-30 June 2-9 July 23-22 1941
while { work in shops - - }
building { During erection on }
{ board vessel - - - }
Total No. of visits 8 visits

Dates of Examination of principal parts—Casings Apr. 21-30 Rotors June 9 Blading July 23 Gearing July 9
June 9-2 July 23

Wheel shaft June 9 Thrust shaft July 23 Intermediate shafts Tube shaft Screw shaft

Propeller Stern tube Engine and boiler seatings Engine holding down bolts

Completion of fitting sea connections Completion of pumping arrangements Boilers fixed Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

Rotor shafts Material and tensile strength OH H.P. 128,000 LP 106,200 Identification Mark 458 23-7-41

Flexible Pinion Shaft, Material and tensile strength

Pinion shaft, Material and tensile strength OH HS HP 100,000 Identification Mark 460 23-7-41

1st Reduction Wheel Shaft, Material and tensile strength OH HS LP 109,000 LS HP 120,000 Identification Mark 461 23-7-41

Wheel shaft, Material OH Steel Identification Mark 462 23-7-41

Thrust shaft, Material Identification Mark 463 23-7-41

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

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with

Is this machinery a duplicate of a previous case 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 and materials are good.

The installation has been tried out in the shop under 2/3 full power and found satisfactory.

The unit has been forwarded to Federal S.B. Company, Kearny, N.J. When the installation has

been satisfactorily installed aboard the vessel and to the satisfaction of the surveyor it will

in my opinion be eligible to receive the record of LMC with date.

The amount of Entry Fee ... £ : : When applied for,
Special Boston ... £ \$275.00 : 29-8 1941
Donkey Boiler Fee ... £ : : When received,
Travelling Expenses (if any) £ 5.00 : 19

Thomas Barre
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK FEB 25 1942

Assigned du N.Y.K. RPT. NO. 42143.

