

REC'D NEWY

JAN 13 1945

REPORT ON STEAM TURBINE MACHINERY. No. 3764

Rpt. 4a.

Received at London Office 23 FEB 1945

Date of writing Report Sept. 14, 1942 When handed in at Local Office 1942 Port of Boston, Massachusetts
No. in Survey held at Lynn, Mass. Date, First Survey June 27, Last Survey September 1, 1942
Reg. Book on the Hull No. 232 S/S "Markay"
Built at Chester, Pa. By whom built Sun S.B. & D.D. Co. Yard No. 232 When built 1942
Engines made at Lynn, Mass. By whom made General Electric Co. Engine No. HP 48364 LP 48365 When made 1942
Boilers made at By whom made Boiler No. When made
Shaft Horse Power at Full Power 9000 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 Cross Compound Turbines and double reduction gears

No. of Turbines Ahead Two One propelling shafts. No. of primary pinions to each set of reduction gearing Two
Astern One 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	1.135	30.040	1				1.340	38.710	1	1.220	44.328	2
2ND	.750	18.630	1				1.870	39.570	1	4.355	48.642	1
3RD	.870	18.870	1				2.640	40.910	1			
4TH	.970	19.070	1				3.800	42.688	1			
5TH	1.140	19.410	1				5.620	45.490	1			
6TH	1.340	19.810	1				8.120	49.090	1			
7TH	1.680	20.490	1				10.450	52.562	1			
8TH	1.970	21.070	1									
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine H.P. 4700 I.P. -- L.P. 4550
Revolutions per minute, at full power, of each Turbine Shaft H.P. 6522 I.P. -- L.P. 3790
Rotor Shaft diameter at journals H.P. 3 I.P. 8.8" L.P. 12.2"
Pitch Circle Diameter 1st pinion 18" 2nd pinion 18" main wheel 161.666
Width of Face 1st reduction wheel 17" main wheel 41"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 16-1/2" 1st reduction wheel 15-1/4"
2nd pinion 30-3/4" main wheel 32-1/2"
Flexible Pinion Shafts, diameter at bearings External 1st 6" 2nd 13" diameter at bottom of pinion teeth 1st 8.401" 2nd 17.353"
Internal 1st -- 2nd 9"

Wheel Shafts, diameter at bearings 1st 10" main 24" diameter at wheel shroud, 1st 10-3/8" main 26.943" Generator Shaft, diameter at bearings
Propelling Motor Shaft, diameter at bearings
Intermediate Shafts, diameter as per rule as fitted 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 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 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 I.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 } 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,

L. O. Grube
General Electric Co. Manufacturer

Dates of Survey { During progress of work in shops - - } June 27, July 4-18, August 31 and September 1, 1942
 { During erection on board vessel - - }
while building { Total No. of visits } 5 visits

Dates of Examination of principal parts—Casings June 27 July 4-18 Rotors Sept. 1 Blading Sept. 1 Gearing June 27-18 July 4-18 Sept. 1-19

Wheel shaft June 27 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 HP 121,000 LP 109,000 Identification Mark 771 1-9-42 T.B. 772 1-9-42 T.B.

Flexible Pinion Shaft, Material and tensile strength HS HP 103,500 LS HP 100,000 Identification Mark 763-4-5-6

Pinion shaft, Material and tensile strength O.H.Steel HS LP 101,500 LS LP 105,000 Identification Mark 1-9-42 T.B.

1st Reduction Wheel Shaft, Material and tensile strength O.H.Steel 106,750 107,000 Identification Mark 767-8 1-9-42 T.B.

Wheel shaft, Material O.H.Steel Identification Mark 769 1-9-42 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..... 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 1/2 full power and found satisfactory. The unit has been forwarded to Sun S.B. & D.D. Company, Chester, Pa. 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 £ 400.00 : When applied for,
Special £ \$ 300.00 : 14-9 1942
Donkey Boiler Fee £ : : When received,
Travelling Expenses (if any) £ : 5.00 : 6-10 1942

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

Committee's Minute

NEW YORK JAN 13 1943

Assigned See attached First Entry Report.



© 2020

Lloyd's Register Foundation