

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 31527

Date of writing Report 5 May 1930 When handed in at Local Office 19 Port of New York
No. in Survey held at Schenectady N.Y. Date, First Survey 24 Feb Last Survey 3 May 1930
Reg. Book. Single on the Triple Screw vessel "LTC No 3" Tons { Gross 548 Net 321
Built at Quincy, Mass By whom built Bethlehem S. B. Corp Yard No. 1442 When built 1930
Engines made at Cleveland, O. By whom made Winton Engine Co Engine No. When made 1930
Donkey Boilers made at ✓ By whom made ✓ Boiler No. When made
SHAFT Horse Power 500 Owners Lake Tankers Corporation Port belonging to WILMINGTON DEL.
Nom. Horse Power as per Rule 142 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes
Trade for which vessel is intended INLAND WATERS.

OIL ENGINES, &c.—Type of Engines 2 or 4 stroke cycle Single or double acting
Maximum pressure in cylinders Diameter of cylinders Length of stroke No. of cylinders No. of cranks
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge Is there a bearing between each crank
Revolutions per minute 200 Flywheel dia. 5.43" Weight Means of ignition Kind of fuel used
MOTOR Crank Shaft, dia. of journals as per Rule 7" Crank pin dia. Crank Webs Mid. length breadth Thickness parallel to axis
as fitted 7" Thickness around eyehole
Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as per Rule 5.51
as fitted as fitted as fitted as fitted 6.5
Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule 5.88 Is the tube shaft fitted with a continuous liner YES.
as fitted as fitted as fitted 6.5 screw
Bronze Liners, thickness in way of bushes as per Rule 47 Thickness between bushes as per rule 35 Is the after end of the liner made watertight in the
as fitted 56 as fitted 37.5 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 ✓
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 No If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller 26"
Propeller, dia. 90" Pitch 70" No. of blades 4 Material CAST STEEL whether Moveable No Total Developed Surface ✓ sq. feet
Method of reversing Engines Is a governor or other arrangement fitted to prevent racing of the engine when declutched Means of lubrication
Thickness of cylinder liners Are the cylinders fitted with safety valves Are the exhaust pipes and silencers water cooled or lagged with
non-conducting material If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine
Cooling Water Pumps, No. Is the sea suction provided with an efficient strainer which can be cleared within the vessel
Bilge Pumps worked from the Main Engines, No. Diameter Stroke Can one be overhauled while the other is at work
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 Machinery Spaces In Pump Room
In Holds, &c.

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule
Can the internal surfaces of the receivers be examined and cleaned Is a drain fitted at the lowest part of each receiver
High Pressure Air Receivers, No. Cubic capacity of each Internal diameter thickness
Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules Actual 2021
Starting Air Receivers, No. Total cubic capacity Internal diameter thickness
Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules Actual Lloyd's Register

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IS A DONKEY BOILER FITTED? No

If so, is a report now forwarded? ✓

Is the donkey boiler intended to be used for domestic purposes only? ✓
 PLANS. Are approved plans forwarded herewith for Shifting GENERATOR FORWARDED WITH
 (If not, state date of approval) NYK REP 31406 Receivers ✓ Separate Tanks ✓
 Donkey Boilers General Pumping Arrangements YES Oil Fuel Burning Arrangements ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

FOR GENERAL DESCRIPTION OF ELECTRIC APPARATUS FOR PROPULSION OF VESSEL, PLEASE SEE FOLLOWER SHEET HEREWITH.

The foregoing is a correct description,
 General Electric Company

By 4020 Niver Manufacturer.

Manager, Federal & Marine Dept

Dates of Survey while building { During progress of work in shops -- 1930 Feb 24 Mar 8, 11, 19, APR 23 MAY 3
 During erection on board vessel -- MAR 3, AP 24, MAY 20, 23, 28, JUNE, 3, 5, 9, 10, 12, 16, 21, 24, 30, 1930
 Total No. of visits 65.14

Dates of Examination of principal parts—Cylinders Covers Pistons Rods Connecting rods
 GENERATOR 19/3/30 Flywheel shaft 19/3/30 Intermediate shafts Tube shaft

Screw shaft 3-3-30 Propeller 24-4-30 Stern tube 29-4-30 Engine seatings 23-5-30 Engines holding down bolts 16-6-30

Completion of fitting sea connections 9-6-30 Completion of pumping arrangements 16-6-30 Engines tried under working conditions 30-6-30

GENERATOR Shaft Material Steel Identification Mark LLOYDS JSH 3-19-30 Flywheel shaft, Material Identification Mark
 MOTOR Shaft, Material Steel Identification Mark LLOYDS JSH 3-19-30 Intermediate shafts, Material Identification Marks
 Tube shaft, Material Identification Mark LLOYDS JSH 3-19-30 Screw shaft, Material OH STEEL Identification Mark LLOYDS NY 1046 EW, 17.1.30

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

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with YES

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 duplicate of a previous case yes If so, state name of vessel Please see N.Y. Rpts 31405 + 31406

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

The Main + Auxiliary Generators, the double armature Motor, + the Control Board have been built under Special Survey in accordance with the Rules + approved plans, + the workmanship + material are good.

They have been forwarded to Quincy to be fitted on board, + when this has been done in accordance with the Rules + to the satisfaction of the Surveyor, + the machinery has been satisfactorily tried at full power, it will be eligible, in my opinion, to received the record + LMC (with date) + the notation "2 OIL ENGINES CONNECTED TO ELEC. MOTOR & SC. SHAFT." THE MAIN AUX GENERATORS, AND MOTOR HAVE BEEN FITTED IN THE VESSEL, QUALITY OF WORKMANSHIP +

MATERIALS IS GOOD THE ENGINES HAVE BEEN EXAMINED UNDER WORKING CONDITIONS AND FOUND SATISFACTORY. IN THE OPINION OF THE

UNDER SIGNED THEY ARE ELIGIBLE TO HAVE THE RECORD OF LMC 630 WITH NOTATION 2 OIL ENGINES, CONNECTED TO ELECTRIC MOTOR + SC. SHAFT

The amount of Entry Fee Boston \$100.00 When applied for, May 9th 1930

Special ... NYK \$100.00

Donkey Boiler Fee ... \$75.00 When received, 29.5.30

Travelling Expenses (if any) \$

Committee's Minute

Assigned + LMC 630, 2 oil engs. connected to Elec. Motor + Sc. Shaft

CERTIFICATE WRITTEN

Rpt. 9a.

Port of NEW YORK

Continuation of Report No. 31527 dated 5 May 1930 on the

ELECTRICAL MACHINERY FOR PROPULSION

(BETHLEHEM S. B. CORP. 1442)

The propulsion equipment consists of two Winton Diesel engines, each direct connected to a General Electric Co. generator rated LDRM 7-A - 6 Pole - 210 k.w. - 375 R.P.M., 250 volt, shunt wound. These two generators supply power to the main motor, which is of the double armature type and each motor is rated LDRM-9-A - 8 Poles - 250 H.P. - 200 R.P.M., 240 volts, total 500 H.P. 500 volts.

The two main generators are operated in series with the two armatures of the double motor. The generators are operated at constant speed, the speed of the motor being obtained by varying the voltage of the generator, this being the variable voltage system of control.

Reversal is obtained by reversing the fields of the main generator.

In addition to the above, there are two auxiliary generators or exciters, rated MPC 6 - 20 k.w. - 375 R.P.M. 125 volts; one of each of these is mounted on the shaft extension of each main generator. These auxiliary generators are exciters operating at constant speed and constant voltage, and provide excitation for the main generators and motors and power for the various motor driven auxiliaries.

The forgings have been tested as per Rules, the generators and motors examined during construction and the workmanship and material found good.

The generators and electric motor have been tested at the works by being run against each other and under these conditions were found good.

John S. Heck

Engineer Surveyor to Lloyd's Register of Shipping.



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009004-009004

28 JUL 1930