

# REPORT ON OIL ENGINE MACHINERY.

No. 26211.

Received at London Office 1 FEB 1927

Date of writing Report 4 April 1926 When handed in at Local Office 4 April 1926 Port of New York  
 Date, First Survey 23 Sept. '15 Last Survey 3 March 1926  
 Number of Visits 7  
 Survey held at New London, Conn.  
 Name of vessel E. T. BEDFORD  
 Type of vessel Single Twin Triple Screw vessels  
 Built at Keamy, N. J. By whom built Federal S. B. Co. Yard No. 592 When built 1921  
 By whom made New London Ship & Engine Co. Engine No. 593 When made 1926  
 Boiler No. 594 When made 1926  
 Owners Standard Oil Co (New Jersey) Port belonging to New York  
 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

## AUXILIARY

L ENGINES, &amp;c.

Type of Engines Diesel 2 or 4 stroke cycle 4 Single or double acting single  
 Maximum pressure in cylinders 600 lb No. of cylinders 3 No. of cranks 3 Diameter of cylinders 12"  
 Length of stroke 18" Revolutions per minute 260 Means of ignition Compression Kind of fuel used Diesel oil

Is there a bearing between each crank yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 16 1/4"  
 Distance between centres of main bearings 24 3/4" Is a flywheel fitted yes Diameter of crank shaft journals 7 5/8" as per Rule 7 5/8" as fitted

Diameter of crank pins 7 7/8" Breadth of crank webs 10 3/4" as per Rule 10 3/4" as fitted Thickness of ditto 4 1/4" as per Rule 4 1/4" as fitted

Diameter of flywheel shaft as per Rule as fitted Diameter of tunnel shaft as per Rule as fitted Diameter of thrust shaft as per Rule as fitted

Diameter of screw shaft as per Rule as fitted Is the screw shaft fitted with a continuous liner the whole length of the stern tube Indented keel pl. to  
 the after end of the liner made watertight in the propeller boss fair BS partly held.

If the liner is in more than one length are the joints burned fair BS partly held.  
 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 If without liners, is the shaft arranged to run in oil.

Type of outer gland fitted to stern tube Length of stern bush Diameter of propeller Total surface square feet 1 1/8"

Pitch of propeller No. of blades state whether moveable Thickness of cylinder liners 1 1/8"

Method of reversing not reversible Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Are the exhaust pipes and silencers water cooled or lagged with

Are the cylinders fitted with safety valves yes Means of lubrication gravity pressure 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

No. of cooling water pumps one Is the sea suction provided with an efficient strainer which can be cleared

within the vessel No. of bilge pumps fitted to the main engines Diameter of ditto Stroke

Can one be overhauled while the other is at work No. of auxiliary pumps connected to the main bilge lines How driven

Sizes of pumps No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room

and in holds, etc. No. of ballast pumps How driven Sizes of pumps

Is the ballast pump fitted with a direct suction from the engine room bilges State size Is a separate auxiliary pump suction fitted in

Engine Room and size Are all the bilge suction pipes fitted with roses Are the roses in Engine Room always accessible

Are the sluices on Engine Room bulkheads always accessible Are all connections with the sea direct on the skin of the ship

Are they valves or cocks Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates

Are the discharge pipes above or below the deep water line Are they each fitted with a discharge valve always accessible on the plating of the vessel

Are all pipes, cocks, valves and pumps in connection with the machinery accessible at all times Are the bilge suction pipes, cocks and valves arranged so as to prevent any

communication between the sea and the bilges Is the screw shaft tunnel watertight Is it fitted with a watertight door

worked from If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

No. of main air compressors No. of stages Diameters Stroke Driven by

No. of auxiliary air compressors Two No. of stages 3 Diameters Stroke Driven by above engines

No. of small auxiliary air compressors No. of stages Diameters Stroke Driven by

No. of scavenging air pumps Diameter Stroke Driven by

Diameter of auxiliary Diesel Engine crank shafts as per Rule as fitted Are the air compressors and their coolers made so as to be easy of access

AIR RECEIVERS:—No. of high pressure air receivers Internal diameter Cubic capacity of each

material Seamless, lap welded or riveted longitudinal joint Range of tensile strength

thickness working pressure by Rules No. of starting air receivers Internal diameter

Total cubic capacity Material Seamless, lap welded or riveted longitudinal joint

Range of tensile strength thickness Working pressure by rules Is each receiver, which can be isolated,

fitted with a safety valve as per Rule Can the internal surfaces of the receivers be examined What means are provided for cleaning their

inner surfaces Is there a drain arrangement fitted at the lowest part of each receiver



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

st. 4b.

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS .....			LINERS 800 LBS		Owing to the distance of the works from New York, it has not been practicable to witness tests except as opportunity offered. The builder's system of inspection & testing is rigid & careful & it is respectfully submitted that this might be accepted by the Committee.
" " COVERS .....			50 LBS		
" " JACKETS .....			50		
" PISTON WATER PASSAGES .....					
MAIN COMPRESSORS—1st STAGE .....					
" 2nd " .....					
" 3rd " .....					
AIR RECEIVERS—STARTING .....					
" INJECTION .....					
AIR PIPES .....					
FUEL PIPES .....					
FUEL PUMPS .....					
SILENCER .....					
" WATER JACKET .....					
SEPARATE FUEL TANKS .....					

PLANS. Are approved plans forwarded herewith for shafting (If not, state date of approval)

Receivers

Separate Tanks

SPARE GEAR One complete set of valves & springs for one cylinder, several spare nozzles for fuel. One complete set of piston rings. One set of connecting rod bolts & nuts, one set main bearing bolts & nuts. One set of piston rings for auxiliary compressors. One set of valves for auxiliary compressors. A complete set of working parts for fuel pump.

The foregoing is a correct description.

THE NEW LONDON SHIP & ENGINE COMPANY

Frank T. Cable  
Vice-President & General Manager

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1925 Sept 23 Oct 6, Nov 5 1926 Jan 15, 29 Feb 16 Mar 3  
During erection on board vessel - -  
Total No. of visits 7

Dates of Examination of principal parts—Cylinders 5/11/25 Covers 23/10/25 Pistons 5/11/25 Rods Connecting rods 23/10/25

Crank shaft 5/11/25 Thrust shaft Tunnel shafts Screw shaft Propeller Stern tube Engine seatings

Engines holding down bolts Completion of pumping arrangements Engines tried under working conditions

Completion of fitting sea connections Stern tube Screw shaft and propeller

Material of crank shaft steel Identification Mark on Do. 11.5.25 Material of thrust shaft Identification Mark on Do.

Material of tunnel shafts Identification Marks on Do. Material of screw shafts Identification Marks on Do.

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

Is this machinery duplicate of a previous case no If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. These 3 Auxiliary Diesel Engines have been

built under Special Survey in accordance with the Rules & approved plans, & the workmanship & material are good. They have been satisfactorily tried under full load & will be fitted on board the above vessel for driving auxiliaries as follows. One engine will drive a 100 KW generator direct. The two other engines will each drive a 50 KW generator & can be coupled up to drive auxiliary compressors of 150 cu ft/minute capacity.

When the above engines, & the main engines, have been fitted on board in accordance with the Rules & to the satisfaction of the surveyor, the vessel will be eligible, in my opinion, to receive the notation + LMC (with date)

The amount of Entry Fee ... £ : When applied for,  
Special ... £ \$150.00 : 30 April 1926  
Donkey Boiler Fee ... £ : When received,  
Travelling Expenses (if any) £ 100.00 : 21 June 1926

Committee's Minute NEW YORK JAN 19 1927

Assigned See Cleveland Rpt. 344

John S. Heck

Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation