

NEW YORK FEB 15 1925

# REPORT ON OIL ENGINE MACHINERY.

No. 344

st. 4b.

Received at London Office

1 FEB 1925

of writing Report

When handed in at Local Office

Port of Cleveland, Ohio

Date, First Survey April 21-1925

Last Survey

19

in Survey held at St Louis, Mo.

Number of Visits

on the Single Screw vessels M/S "E. T. BEDFORD"

Tons { Gross 9563  
Net 5948

Built at Kearny N. J.

By whom built Federal S. B. Co. Yard No. 769

When built 1921-6

By whom made Diesel Eng. Co.

Engine No. 5770

When made 1925-12

Boilers made at St Louis, Mo.

Boiler No. \_\_\_\_\_

When made \_\_\_\_\_

Boilers made at \_\_\_\_\_

Owners Standard Oil Co.

Port belonging to New Jersey

Indicated Horse Power 3000, Total

Is Electric Light fitted yes

Indicated Horse Power as per Rule 1262

Is Refrigerating Machinery fitted for cargo purposes No.

## ENGINES, &c.

Type of Engines Basch-Dulger Vertical

Port + Starboard

2 or 4 stroke cycle 2 Single or double acting 5

Maximum pressure in cylinders 600

No. of cylinders 4

No. of cranks 4

Diameter of cylinders 30"

Length of stroke 42"

Revolutions per minute 90

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) 3'-4 3/8"

Indented Keel partly held

Distance between centres of main bearings 4'-10 3/4"

Is a flywheel fitted yes

Diameter of crank shaft journals 17.85"

Diameter of crank pins 19 1/2"

Breadth of crank webs 23.43"

Thickness of ditto 10 5/16"

Diameter of flywheel shaft 19 1/2"

Diameter of tunnel shaft 13.27"

Diameter of thrust shaft 13.93"

Diameter of screw shaft 14 1/2"

Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes

If the liner is in more than one length are the joints burned yes

Is the after end of the liner made watertight in the propeller boss yes

Is 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 yes

Are two liners fitted, is the shaft lapped or protected between the liners yes

If without liners, is the shaft arranged to run in oil yes

Type of outer gland fitted to stern tube yes

Length of stern bush 16' 6 3/4"

Diameter of propeller 15' 0"

Pitch of propeller 13' 5/8" at 5 feet

No. of blades 4

state whether moveable yes

Total surface 712 square feet

Method of reversing Claws

Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes

Thickness of cylinder liners 2 7/16"

Are the cylinders fitted with safety valves yes

Means of lubrication Forced

Are the exhaust pipes and silencers water cooled or bagged with yes

Are non-conducting material yes

If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine yes

Are bucket water yes

No. of cooling water pumps 2

Is the sea suction provided with an efficient strainer which can be cleared yes

Are bilge pumps in the vessel yes

No. of bilge pumps fitted to the main engines 2

Diameter of ditto 17 1/2"

Stroke 32"

Can one be overhauled while the other is at work yes

No. of auxiliary pumps connected to the main bilge lines 2

How driven yes

Sizes of pumps \_\_\_\_\_

No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room 2-6"

Are ballast pumps in holds, etc. yes

No. of ballast pumps 2

How driven yes

Sizes of pumps \_\_\_\_\_

Is the ballast pump fitted with a direct suction from the engine room bilges yes

State size \_\_\_\_\_

Is a separate auxiliary pump suction fitted in yes

Engine Room and size \_\_\_\_\_

Are all the bilge suction pipes fitted with roses yes

Are the roses in Engine Room always accessible yes

Are the sluices on Engine Room bulkheads always accessible yes

Are all connections with the sea direct on the skin of the ship yes

Are they valves or cocks valves

Are they sized sufficiently high on the ship's side to be seen without lifting the floor plates yes

Are the discharge pipes above or below the deep water line yes

Are they each fitted with a discharge valve always accessible on the plating of the vessel yes

Are all pipes, cocks, valves and pumps in connection with the machinery accessible at all times yes

Are the bilge suction pipes, cocks and valves arranged so as to prevent any yes

Is communication between the sea and the bilges yes

Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes

Are they worked from yes

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

No. of main air compressors 2

No. of stages 3

Diameters 6 3/8", 14 1/2", 23 1/2"

Stroke 32"

Driven by Main Eng.

No. of auxiliary air compressors 2

No. of stages 3

Diameters \_\_\_\_\_

Stroke \_\_\_\_\_

Driven by ?

No. of small auxiliary air compressors 1

No. of stages 3

Diameters \_\_\_\_\_

Stroke \_\_\_\_\_

Driven by Main Eng.

No. of scavenging air pumps \_\_\_\_\_

Diameter 29 1/2", 38"

Stroke 41"

Driven by Main Eng.

Diameter of auxiliary Diesel Engine crank shafts 1 1/4"

Are the air compressors and their coolers made so as to be easy of access yes

## AIR RECEIVERS:—

No. of high pressure air receivers 2 each engine

Internal diameter 16"

Cubic capacity of each 8400 Cub. ins.

Material Steel

Seamless, lap welded or riveted longitudinal joint Seamless

Range of tensile strength 375 tons actual

Thickness 2 1/32"

working pressure by Rules 1120

No. of starting air receivers 2

Internal diameter 5' 0"

Total cubic capacity 62720/71680

Material Steel

Seamless, lap welded or riveted longitudinal joint TRDBS

Range of tensile strength 62720/71680

thickness 1 1/4"

Working pressure by rules 530 lb

Is each receiver, which can be isolated, yes

Are they fitted with a safety valve as per Rule yes

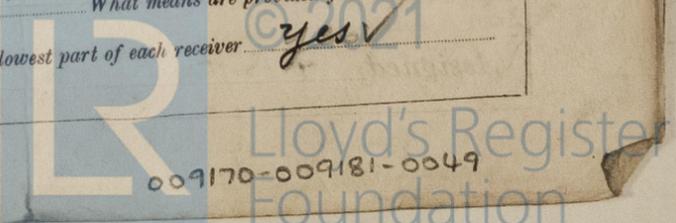
Can the internal surfaces of the receivers be examined yes

What means are provided for cleaning their yes

inner surfaces Manhole

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

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



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IS A DONKEY BOILER FITTED? *Yes*

If so, is a report now forwarded? *Yes*

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS <i>Levers</i>		<i>Maximum</i> 600 lbs.	1000 lbs.	<i>EP</i>	<i>Test applied to combustion space</i>
" " COVERS		600 "	1000 "		
" " JACKETS		30 "	100 "		
" PISTON WATER PASSAGES		45 "	100 "		
MAIN COMPRESSORS—1st STAGE <i>LP</i>		45 "	100 "		
" 2nd " <i>LP</i>		250 "	500 "		
" 3rd " <i>LP</i>		1200 "	2000 "		
AIR RECEIVERS—STARTING					
" INJECTION		1200	2500		<i>Stays test 2500 lbs. Nos 281, 282, 283, 280 W.D. 4. 10-23-25</i>
AIR PIPES		1200	2500		
FUEL PIPES					
FUEL PUMPS					
SILENCER					
" WATER JACKET					
SEPARATE FUEL TANKS					

PLANS. Are approved plans forwarded herewith for shafting *Yes* Receivers *Yes* Separate Tanks

SPARE GEAR *Please see list attached hereto.*

The foregoing is a correct description,

*Arthur S. Hawks*

Manufacturer.

Dates of Survey while building  
 During progress of work in shops -- *1925/ April 21, Aug 25, Sept. 15, Oct 13, Nov 11, Dec 3 + 22.*  
 During erection on board vessel --  
 Total No. of visits

Dates of Examination of principal parts—Cylinders *25/8/25* Covers *25/8/25* Pistons *15/9/15* Rods *26/8/25* Connecting rods *15/9/25*  
 Crank shaft *15/9/25* Thrust shaft *3/12/25* Tunnel shafts Screw shaft *PTS 4-8-26* Propeller *5-8-26* Stern tube *PS 4-8-26* Engine seatings *16-8-26*  
 Engines holding down bolts *7-14-21/9-26* Completion of pumping arrangements *4-11-26* Engines tried under working conditions *SE 12-11-26*  
 Completion of fitting sea connections *5-8-26* Stern tube *4-8-26* Screw shaft and propeller *5-8-26*  
 Material of crank shaft *Off. steel* Identification Mark on Do. *Lloyds 2079 CRH. 9-6-25* Material of thrust shaft *Off. steel* Identification Mark on Do. *Lloyds 4763 + 4764*  
 Spare section *Lloyds 2110 27-7-25 CRH.* Material of tunnel shafts *Lloyds 126 8-6-25 CRH. + Lloyds 2080 29-7-25 CRH.* 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. *The above mentioned engines (Port + Starboard) have been built under Special Survey, & on completion were tested under full load in the shops. The workmanship & materials were found to be sound & efficient. When the engines have been fitted in the vessel, & tried out under working conditions, to the satisfaction of the Society's surveyors; the will be eligible in my opinion for second FINE (with date)*

The amount of Entry Fee ... £ : : When applied for,  
 Special ... *\$1065.00* : : *See 30* 1925  
 Donkey Boiler Fee ... £ : : When received,  
 Travelling Expenses (if any) *\$240.00* : : *Jan 28* 1926  
*\$1305.00*

*G. Drummond*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

NEW YORK JAN 19 1927

Assigned *+ N.E. 12-26*



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Certificate (if required) to be sent to  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)