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NEW YORK FEB 15 1925

REPORT ON OIL ENGINE MACHINERY.

No. 344

of writing Report

When handed in at Local Office

Port of Cleveland, Ohio

Date, First Survey April 21-1925 Last Survey

Number of Visits

in Survey held at St Louis, Mo.

on the Single Twin Triple 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 St Louis, Mo.

By whom made Busch-Sulzer Bros.

Engine No. 5770 When made 1925-12

Boiler No. When made

Monkey Boilers made at

By whom made

Port belonging to New Jersey

Indicated Horse Power 3000, Total

Owners Standard Oil Co.

Is Electric Light fitted yes

Net Horse Power as per Rule 1262

Is Refrigerating Machinery fitted for cargo purposes

ENGINES, &c.

Type of Engines

Basch-Sulzer 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 plating

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

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

yes

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

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

Reverser

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

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

yes

No. of cooling water pumps 2

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

Is the vessel

yes

No. of bilge pumps fitted to the main engines

yes

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

yes

No. of auxiliary pumps connected to the main bilge lines

yes

How driven

Sizes of pumps

No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps

yes

No. of ballast pumps

How driven

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

Engine Room and size

yes

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

yes

Are they fixed 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 the screw shaft tunnel watertight

yes

Is it fitted with a watertight door

yes

Is the vessel

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 stages 3

Diameters 6 3/8", 14 1/2", 23 1/2" Stroke 32

Driven by Main Eng.

No. of main air compressors

2

No. of stages 3

Diameters

Stroke

Driven by

No. of auxiliary air compressors

1

No. of stages 3

Diameters

Stroke

Driven by

No. of small auxiliary air compressors

1

No. of stages 3

Diameters 29 1/2", 38" Stroke 41"

Driven by Main Eng.

No. of scavenging air pumps

1

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

50,000 lbs.

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

Working pressure by rules

530 lbs.

Is each receiver, which can be isolated,

Range of tensile strength

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 A DONKEY BOILER FITTED?

If so, is a report now forwarded?

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS <i>Levers</i>		<i>600 lbs.</i>	<i>1000 lbs.</i>	<i>EP.</i>	<i>Test applied to combustion space</i>
" " COVERS		<i>600 "</i>	<i>1000 "</i>		
" " JACKETS		<i>30 "</i>	<i>100 "</i>		
" " PISTON WATER PASSAGES		<i>45 "</i>	<i>100 "</i>		
MAIN COMPRESSORS—1st STAGE <i>LP.</i>		<i>45 "</i>	<i>100 "</i>		
" 2nd <i>LP.</i>		<i>250 "</i>	<i>500 "</i>		
" 3rd <i>LP.</i>		<i>1200 "</i>	<i>2000 "</i>		
AIR RECEIVERS—STARTING					
" INJECTION		<i>1200</i>	<i>2500</i>		<i>Stops test 2500 lbs. Not 281.282.283.280 10-23-25</i>
AIR PIPES		<i>1200</i>	<i>2500</i>		
FUEL PIPES					
FUEL PUMPS					
SILENCER					
" WATER JACKET					
SEPARATE FUEL TANKS					

PLANS. Are approved plans forwarded herewith for shafting

Receivers

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 *STS 3-8-26* 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 *OH. steel* Identification Mark on Do. *Lloyds 2079 CRH. 9-6-25* Material of thrust shaft *OH. steel* Identification Mark on Do. *Lloyds 4763 + 4764*
Spoke 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 F.N.E. (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

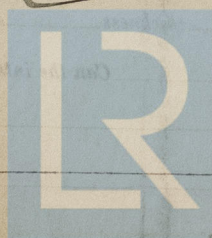
Committee's Minute

NEW YORK JAN 19 1927

Assigned *+ N.E. 12-26*

G. Drummond

Engineer Surveyor to Lloyd's Register of Shipping.



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