

# REPORT ON OIL ENGINE MACHINERY.

No 103126

Received at London Office 13 SEP 1945

of writing Report

When handed in at Local Office

6. 9. 1945 Port of

NEWCASTLE-ON-TYNE

in Survey held at

NEWCASTLE - ON - TYNE.

Date, First Survey (1944) June 7th

Last Survey Aug. 22nd 1945

Number of Visits 98

on the Single Screw vessel

TANKER "EMPIRE NEPTUNE."

Tons Gross 8285 Net 4755

uilt at NEWCASTLE.

By whom built

HAWTHORN, LESLIE & CO. LD.

Yard No. 666. When built 1945.

Engines made at

NEWCASTLE.

By whom made

HAWTHORN, LESLIE & CO. LD.

Engine No. 4010. When made 1945.

Boiler made at

WALLSEND.

By whom made

N.E. MARINE ENG CO. LD.

Boiler No. 3092. When made 1945.

Indicated Horse Power 3500

Owners MINISTRY OF WAR TRANSPORT.

Port belonging to

Indicated Horse Power as per Rule 502.

Is Refrigerating Machinery fitted for cargo purposes NO.

Is Electric Light fitted YES.

Use for which vessel is intended

OCEAN GOING CARRYING PETROLEUM IN BULK.

ENGINES, &c. Type of Engines HAWTHORN - WORKS POOR SUPERCHARGED 2 or 4 stroke cycle 4 Single or double acting SINGLE.

Maximum pressure in cylinders 700 LBS./sq. in.

Diameter of cylinders

650" M.

Length of stroke

1400" M.

No. of cylinders

8.

No. of cranks

8.

Indicated Pressure 135 LBS./sq. in.

Distance between centers of adjacent cranks

844" M.

Is there a bearing between each crank YES.

Revolutions per minute

120.

Flywheel dia.

2260" M.

Weight

6000 KG.

Means of ignition

COMPRESSION

Kind of fuel used

HEAVY OIL.

Shaft, dia. of journals

as per Rule

448" M.

Crack pin dia.

460" M.

Mid. length breadth

870" M.

Thrust parallel to axis

267" M.

290" M.

Wheel Shaft, diameter

as per Rule

448" M.

Intermediate Shafts, diameter

as per Rule

325" M.

Thrust Shaft, diameter at collars

as per Rule

341" M.

as fitted

460" M.

Shaft, diameter

as per Rule

358" M.

Screw Shaft, diameter

as per Rule

400" M.

Is the tube shaft fitted with a continuous liner

YES.

Brass Liners, thickness in way of bushes

as per Rule

18.55" M.

Thickness between bushes

as per Rule

13.9" M.

Is the after end of the liner made watertight in the

Boiler boss

YES.

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

ONE LENGTH.

Does 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

TIGHT FIT.

Are 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

Length of Bearing in Stern Bush next to and supporting propeller

1585" M.

Propeller, dia.

15'-0".

Pitch

12'-0".

No. of blades

4.

Material M. BRONZE. whether Movable

NO.

Total Developed Surface 72. sq. feet

Method of reversing Engines AIR SERVO MOTOR. Is a governor or other arrangement fitted to prevent racing of the engine when disconnected YES.

Thickness of cylinder liners

55" M.

Are the cylinders fitted with safety valves

YES.

Are the exhaust pipes and silencers water cooled or lagged with

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

FUNNEL.

Cooling Water Pumps, No. and size 2. CENTRIFUGAL STEAM DRIVEN. SW. Is the sea suction provided with an efficient strainer which can be cleared within the vessel

YES.

Bilge Pumps worked from the Main Engines, No. ONE. Diameter ROTARY. Stroke Can be overhauled while the other is at work

YES.

Pumps connected to the Main Bilge Line

No. and size

3. - 1 M.E. ROTARY.

1 G. 3 1/2" x 8 1/2" x 12 1/2" 100" M.

1 Bilge Pump 6" x 6" x 6" 32" M.

How driven

(MAIN ENGINE.)

(STEAM.)

(STEAM.)

Is the cooling water led to the bilges

NO.

If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping

Oil Pumps, No. and size 1. 12" x 8 1/2" x 12"

Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2. 1. 8" x 6" x 10" 50" M.

Are two independent means arranged for circulating water through the Oil Cooler

YES.

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size: In Machinery Spaces

3 @ 3 1/2"

In Pump Room

Holds, &c. FORE HOLD 2 @ 2". FORE PUMP ROOM 1 @ 2". FORE STAGE 2 @ 2". F. & A. COFFERDAMS 1 @ 4" EACH.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 7". 1 @ 5".

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strainer-boxes

YES.

Are the Bilge Suctions in the Machinery Spaces

YES.

Are all Sea Connections fitted direct on the skin of the ship

YES.

Are they fitted with Valves or Cocks

BOTH.

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates

YES.

Are the Overboard Discharges above or below the deep water line

BOTH.

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel

YES.

Are the Blow Off Cocks fitted with a spigot and brass covering plate

YES.

Do all pipes pass through the bunkers 1 - 4" SUCTION FROM AFT COFFERDAM.

How are they protected

NOT NECESSARY.

Do all pipes pass through the deep tanks

Have they been tested as per Rule

YES.

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

YES.

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

YES.

Is the Shaft Tunnel watertight

NONE.

Is it fitted with a watertight door

worked from

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

Main Air Compressors, No.

NONE.

No. of stages

1

Diameters

ONE - 30 cu/ft P/M.

Stroke

350 LBS./sq. in.

Driven by AUX OIL ENGINE.

Auxiliary Air Compressors, No.

2.

No. of stages

2

Diameters

ONE - 120 cu/ft P/M.

Stroke

350 LBS./sq. in.

Driven by STEAM ENGINE.

Small Auxiliary Air Compressors, No.

NONE.

No. of stages

1

Diameters

ONE - 120 cu/ft P/M.

Stroke

350 LBS./sq. in.

Driven by

What provision is made for first Charging the Air Receivers STEAM & DIESEL DRIVEN AIR COMPRESSORS.

Scavenging Air Pumps, No.

NONE.

Diameter

1

Stroke

1

Driven by

1

Auxiliary Engines crank shafts, diameter

as per Rule

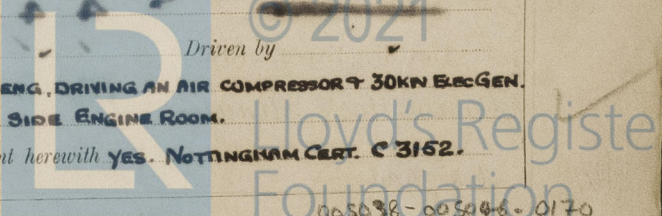
RUSTON HORNSBY.

No. ONE 4 CYL OIL ENG. DRIVING AN AIR COMPRESSOR & 30 KN ELECTRIC GEN.

Have the Auxiliary Engines been constructed under special survey

YES.

Is a report sent herewith YES. NOTTINGHAM CERT. C 3152.





AIR RECEIVERS: - Have they been made under survey ☒ YES. State No. of Report or Certificate ☒ YES.  
Is each receiver, which can be isolated, fitted with a safety valve as per Rule ☒ YES.  
Can the internal surfaces of the receivers be examined and cleaned ☒ YES. Is a drain fitted at the lowest part of each receiver ☒ YES.  
Injection Air Receivers, No. NONE. Cubic capacity of each 24 8 J Internal diameter thickness  
Seamless, lap-welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules Actual  
Starting Air Receivers, No. ONE. Total cubic capacity 500 cu.ft. Internal diameter 5-6 1/4 thickness 15/16  
Seamless, lap-welded or riveted longitudinal joint TR. D.B.S. Material STEEL. Range of tensile strength 28/32 T Working pressure by Rules Actual 371 lbs. 350 lbs.

IS A DONKEY BOILER FITTED? ☒ YES. TWO BOILERS. If so, is a report now forwarded? ☒ YES.

Is the donkey boiler intended to be used for domestic purposes only No.  
PLANS. Are approved plans forwarded herewith for Shafting 13.5.44. Receivers Separate Fuel Tanks 1.  
(If not, state date of approval)

Donkey Boilers 1-6-43. General Pumping Arrangements 27.1.44. Pumping Arrangements in Machinery Space 27.1.44.  
Oil Fuel Burning Arrangements 28.1.44.

### SPARE GEAR.

Has the spare gear required by the Rules been supplied ☒ YES.

State the principal additional spare gear supplied

- |                                  |                                   |  |
|----------------------------------|-----------------------------------|--|
| 2. CROSSHEAD BEARING BOLTS.      | 6. SUPERCHARGER VALVES.           | 1 SET PUMP DRIVE BEARING BUSHES.       |
| 1. SET GUIDE SHOE BOLTS.         | 1. SUPERCHARGER CASING IN HALVES. | 1 TURNING MOTOR WITH BRUSHES & HOLDERS |
| 6. EXHAUST VALVES.               | 1. SET TELESCOPIC P.C.W. PIPES.   |  |
| 2. FUEL VALVES.                  | 1. SET PUMP DRIVE GEAR WHEELS.    |  |
| 4. FUEL VALVE NEEDLES & NOZZLES. | 1. SET PUMP DRIVE ROTORS.         |  |

The foregoing is a correct description.

*R.B. Fletcher* Manufacturer.

Dates of Survey while building  
During progress of work in shops - (1944) June 7, 20, Aug 9, 11, 16, 18, 21, 25, Sep 6, 5, 8, 13, 15, 18, 20, 22, 26, Oct 4, 7, 11, 13, 17, 19, 24, 27, Nov 2, 3, 6, 7, 10, 15, 17, 20, 22, 27, Dec 1, 7, 8, 14, 20, 21, 28 (1945) Jan 3, 4, 9, 10, 11, 12, 15, 16, 19, 22, 29, Feb 6, 11, 9, 14, 19, 21, Mar 2, 9, 12, 14, 15, 20, 22, 27, Apr 5, 7, 12, 13, 20, 24, 25, May 1, 2, 7, 15, 24, 25, 28, 30, June 4, 6, 21, July 3, 6, 17, 19, 23, 26, 30, 31 Aug 3, 22.  
Total No. of visits 98

Dates of Examination of principal parts - Cylinders 22/3/44 - 27/10/44 Covers 22/3/44 - 27/10/44 Pistons 16-21/3/44. Rods 11/8/44. Connecting rods 5-13/9/44.  
Crank shaft 22/11/44. Flywheel shaft 12/4/45. Thrust shaft 20/11/44. Intermediate shafts 27/3/45. Tube shaft  
Screw shaft 9/3/45. Propeller 5/4/45. Stern tube 20/3/45. Engine seatings 5-4-45. Engines holding down bolts 6-6-45.  
Completion of fitting sea connections 12/4/45. Completion of pumping arrangements 31.7.45. Engines tried under working conditions 3/8/45.  
Crank shaft, Material STEEL. Identification Mark 13668. HM. Flywheel shaft, Material STEEL. Identification Mark 13213. AEM.  
Thrust shaft, Material STEEL. Identification Mark 13013. AEM. Intermediate shafts, Material STEEL. Identification Marks S 9331. AEM.  
Tube shaft, Material STEEL. Identification Mark S 9201. AEM.  
Screw shaft, Material STEEL. Identification Mark S 9201. AEM.

Identification Marks on Air Receiver  
LLOYDS TEST 550 LBS/D.  
WR 350 LBS/D.  
AEM. 27-11-44.

DONKEY BOILER SAFETY VALVES. 7 1/16 3 3/8 15 1/32

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.

Description of fire extinguishing apparatus fitted

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo ☒ TANKER. If so, have the requirements of the Rules been complied with ☒ YES.

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with ☒ NOT DESIRED.

Is this machinery duplicate of a previous case ☒ YES. If so, state name of vessel NAVICELLA H.L. 1606. 4003.

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

The machinery of this vessel has been constructed under special Survey in accordance with the approved plans and the Society's Rules, and the materials and workmanship are good.

The machinery has been efficiently fitted on board the vessel, and tested under working conditions with satisfactory results, and is eligible in my opinion to have the record of LMC 8.45 and notation 2.D.B. 180 LBS/D. CL. OIL ENG MACH. AFT.

The amount of Entry Fee .. £ 6 : 0 :  
Special SPECIMEN £ 100 : 2 :  
ONE STARTING AIR RECEIVER .. £ 25 : 0 :  
Travelling Expenses (if any) £ 4 : 4 :  
When applied for, SEP 11 1945  
When received, 19

Committee's Minute

Assigned

+ LMC 8.45 Oil eng.  
CL 2 DB - 180 lb