

# REPORT ON OIL ENGINE MACHINERY.

No. 96399

Received at London Office

Date of writing Report

When handed in at Local Office

5/7/38 Port of

NEWCASTLE-ON-TYNE

No. in Survey held at Reg. Book.

Newcastle-on-Tyne

Date, First Survey

28 May 1937

Last Survey

12 July 1938

Number of Visits

117

37886

on the *Single* *Triple* *Quadruple* Screw vessel

M.V. "DAPHNELLA"

Tons { Gross 8078 Net 4789

Built at

Newcastle-on-Tyne (Hebburn)

By whom built Messrs R.W. Hawthorn Leslie & Co Ltd

Yard No. 611.

When built 1938.

Engines made at

Newcastle-on-Tyne (St Peter)

By whom made Messrs R.W. Hawthorn Leslie & Co Ltd

Engine No. 3937.

When made 1938.

Donkey Boilers made at

Newcastle-on-Tyne (St Peter)

By whom made Messrs R.W. Hawthorn Leslie & Co Ltd

Boiler No. 3937.

When made 1938.

Brake Horse Power

3500

Owners

Messrs Anglo Saxon Petroleum Co Ltd

Port belonging to

London.

Nom. Horse Power as per Rule

502.

Is Refrigerating Machinery fitted for cargo purposes

No.

Is Electric Light fitted

Yes.

Trade for which vessel is intended

Ocean Going. Carrying Petroleum in bulk.

## OIL ENGINES, &c.

Type of Engines

Werkspoor Supercharged

2 or 4 stroke cycle

4 Single or double acting

Single

Maximum pressure in cylinders

700 lb/sq in

Diameter of cylinders

650 in

Length of stroke

1400 in

No. of cylinders

8.

No. of cranks

8.

Mean Indicated Pressure

135 lb/sq in

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge

844 in

Is there a bearing between each crank

Yes.

Revolutions per minute

120

Flywheel dia.

2260 in

Weight

6000 Kgs.

Means of ignition

Compression

Kind of fuel used

Diesel oil.

Crank Shaft, dia. of journals

as per Rule 448 in

as fitted 460 in

Crank pin dia.

460 in

Crank Webs

Mid. length breadth

870 in

Thickness parallel to axis

267 in

Flywheel Shaft, diameter

as per Rule 448 in

as fitted 460 in

Intermediate Shafts, diameter

as per Rule 325 in

as fitted 470 in

Thrust Shaft, diameter at collars

as per Rule 341 in

as fitted 460 in

Tube Shaft, diameter

as per Rule

as fitted

Screw Shaft, diameter

as per Rule 358 in

as fitted 400 in

Is the screw shaft fitted with a continuous liner

Yes.

Bronze Liners, thickness in way of bushes

as per Rule 18.55 in

as fitted 20 in

Thickness between bushes

as per Rule 13.9 in

as fitted 15 in

Is the after end of the liner made watertight in the

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

Continuous.

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

Yes.

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

Yes.

Is an approved Oil Gland or other appliance fitted at the after end of the tube

shaft

No.

If so, state type

Yes.

Length of Bearing in Stern Bush next to and supporting propeller

1585 in

Propeller, dia.

15'-0"

Pitch

12'-0"

No. of blades

4.

Material

M. Bronze whether Moveable

Solid

Total Developed Surface

72. sq. feet

Method of reversing Engines

Servo-motor

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

Yes.

Means of lubrication

Forced

Thickness of cylinder liners

55 in

Are the cylinders fitted with safety valves

Yes.

Are the exhaust pipes and silencers water cooled or lagged with non-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

Cooling Water Pumps, No.

2.

one Rotary on Engine

one Steam Centrifugal

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.

2.

Diameter

Rotary

Stroke

-

Can one be overhauled while the other is at work

Yes.

Pumps connected to the Main Bilge Line

No. and Size

2. Rotary 35 tons/hr.

How driven

Main Engine

one 8" x 8" x 10"

Driven by

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 arrangements

Ballast Pumps, No. and size

one 8" x 8" x 10"

Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size

one Rotary on M.E. 40 Tons. Standby 8" x 8" x 10" (Steam)

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

Pumps, No. and size

In Machinery Spaces

one aft well 3 1/2" dia.

two Ford P+S 3 1/2" dia.

one lub oil Cofferdam FTA 2 1/2" dia.

one hydroponic Comb 2 1/2" dia.

In Pump Room 4" dia P+S.

In Holds, &c.

Ford Hold 2" dia P+S.

W.I. Flat in Forepeak 2" dia P+S.

Ford aft Cofferdams 4" dia

one bilge direct 5" dia

one Emergency 7" dia

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size

one bilge direct 5" dia

one Emergency 7" dia

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

Yes.

Are the Bilge Suctions in the Machinery Spaces

led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges

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

Above.

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.

What pipes pass through the bunkers

Suction line from aft Cofferdam

How are they protected

Valves on bunker Bulkheads

What pipes pass through the deep tanks

None

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

Engine aft.

Is it fitted with a watertight door

Yes.

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

Auxiliary Air Compressors, No.

one

No. of stages

2.

Diameters

184 x 206 in

Stroke

160 in

Driven by Diesel Engine

Auxiliary Air Compressors, No.

one

No. of stages

2.

Diameters

184 x 206 in

Stroke

160 in

Driven by Steam

Small Auxiliary Air Compressors, No.

None

No. of stages

Yes.

Diameters

Yes.

Stroke

Yes.

Driven by

Scavenging Air Pumps, No.

None

Diameter

Yes.

Stroke

Yes.

Driven by

Auxiliary Engines crank shafts, diameter

as per Rule

as fitted

Compressor approved 6"

Generator approved 110 in

No.

Position

One Aux Air Compressor One Generator

One Generator

Position

Ford P. Side Engine Room

Aft S. Side Engine Room

Steam Engines

One Generator

One Aux Air Compressor

**AIR RECEIVERS:**—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.*

**High Pressure Air Receivers, No.** *None.*

Cubic capacity of each *✓*

Internal diameter *✓*

thickness *✓*

Seamless, lap welded or riveted longitudinal joint *✓*

Material *✓*

Range of tensile strength *✓*

Working pressure *✓*

by Rules *✓*

**Starting Air Receivers, No.** *Two*

Total cubic capacity *800 cu ft*

Internal diameter *4'-10 7/8"*

thickness *27/32"*

Seamless, lap welded or riveted longitudinal joint *T.R.D.S.*

Material *Steel*

Range of tensile strength *Shell 28-32 lbs*

Working pressure *372 lb/sq in*

by Rules *372 lb/sq in*

Actual *350 lb/sq in*

**IS A DONKEY BOILER FITTED?** *Yes.*

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 *1-6-37 + 14-3-38*

(If not, state date of approval)

Receivers *18-11-37*

Separate Fuel Tanks *20-4-38*

Donkey Boilers *17-3-37*

General Pumping Arrangements *9-9-37*

Pumping Arrangements in Machinery Space *28-9-37*

Oil Fuel Burning Arrangements *16-12-37*

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied *Yes.*

State the principal additional spare gear supplied *See attached list.*

The foregoing is a correct description of the machinery of the vessel.

*W. H. & CO. LIMITED*

Manufacturer.

**1937**  
Dates of Survey while building  
During progress of work in shops -- May 28, Aug. 18, 19, 25, Sep. 6, 10, 17, 23, 27, Oct. 1, 5, 7, 12, 14, 15, 18, 20, 21, 22, 27, 28, 29, Nov. 1, 3, 5, 8, 10, 15, 19, 22, 23, 28, 29, 30, Dec. 3, 6, 7, 8, 9, 10, 13, 14, 15, 16, 17, 20, 21, 22, 29, 30, 31, 1938 Jan. 5, 6, 7, 12, 20, 24, 26, 27, 31, 31  
During erection on board vessel -- 2, 4, 7, 9, 10, 14, 15, 17, 18, 22, 24, 26, 28, Mar. 1, 3, 7, 8, 9, 10, 14, 15, 16, 17, 18, 20, 22, 24, 25, Apr. 1, 6, 8, 11, 12, 14, 20, 28, May 4, 5, 6, 11, 13, 14, 16, 18, 23, 30, June 3, 6, 9, 11, 13, 14, 16, 28, 29, July 11  
Total No. of visits *117*

Dates of Examination of principal parts—Cylinders *29-12-37* Covers *29-12-37* Pistons *22-12-37* Rods *23-11-37* Connecting rods *31-12-37*

Crank shaft *10-2-38* Flywheel shaft *14-3-38* Thrust shaft *7-12-37* Intermediate shafts *10-2-38* Tube shaft *✓*

Screw shaft *10-2-38* Propeller *17-2-38* Stern tube *15-2-38* Engine seatings *21-3-38* Engines holding down bolts *14-5-38*

Completion of filling sea connections *16-3-38* Completion of pumping arrangements *16-6-38* Engines tried under working conditions *12-7-38*

Crank shaft, Material *Steel* Identification Mark *1069* Flywheel shaft, Material *Steel* Identification Mark *1082*

Thrust shaft, Material *Steel* Identification Mark *5537* Intermediate shafts, Material *Steel* Identification Marks *5511*

Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *Steel* Identification Mark *5520* Spare *5521*

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 *oil tanker* 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 *Main Engine (only) Nuv Rep No 92146*

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

*The machinery has been built under Special Survey in accordance with the Society's Rules & approved plans. The materials & workmanship are sound and good. The machinery was efficiently installed on board, tested & manoeuvred on completion under working conditions & found satisfactory. The machinery of this vessel is eligible in my opinion to be classed and to have the notation of "oil engine" and records of +LME 7,38 and TS 4.*

The amount of Entry Fee .. £ 6 : - : When applied for,  
Special ... £ 100 : 2 : - 4 JUL 1938  
Donkey Boiler Fee ... £ 16 : 14 : : When received,  
AIR RECEIVERS  
Travelling Expenses (if any) £ 8 : 8 : 8/7/38

*L. Pickett.*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute  
Assigned *+LME 7,38*  
*D.S.D.*  
*J.B. - 180 lb oil by*

