

## REPORT ON OIL ENGINE MACHINERY.

No. 97224

MAR -3 1939

Received at London Office

NEWCASTLE-ON-TYNE

Date of writing Report

When handed in at Local Office

12<sup>th</sup> Mar 1939. Port of

Date, First Survey

24 Feb/1938

Last Survey

28<sup>th</sup> Feb

1939.

Number of Visits

98.

No. in Survey held at  
Leg. Book.

37781

on the <sup>Single</sup>  
~~Triple~~  
~~Quadruple~~

Screw vessel

DARONIATons { Gross 8139.  
Net 4840.Built at Two-on-Tyne (Hebburn)

By whom built

R &amp; W Hawthorn Leslie &amp; Co. Ltd.

Yard No.

617.

When built

1939.

Engines made at

Two-on-Tyne (St. Peter)

By whom made

R &amp; W Hawthorn Leslie &amp; Co. Ltd.

Engine No.

3954

When made

1939.

Boilers made at

Two-on-Tyne (St. Peter)

By whom made

R &amp; W Hawthorn Leslie &amp; Co. Ltd.

Boiler No.

3954

When made

1939.

Horse Power

3500

Owners

Anglo Saxon Petroleum Co. Ltd.

Port belonging to

London.

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.

L ENGINES, &amp;c.

Type of Engines

Werkopoor Supercharged.

2 or 4 stroke cycle

4

Single or double acting

Single

Maximum pressure in cylinders

700 lb/sq. in.

Diameter of cylinders

25<sup>3</sup>/<sub>16</sub> 650<sup>1</sup>/<sub>16</sub> in.

Length of stroke

55<sup>3</sup>/<sub>8</sub> in.

No. of cylinders

8.

No. of cranks

8.

Mean Indicated Pressure

135 lb/sq. in.

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

84<sup>1</sup>/<sub>4</sub> in.

Is there a bearing between each crank

Yes.

Revolutions per minute

120

Flywheel dia.

226<sup>1</sup>/<sub>16</sub> in.

Weight

6000 Kgs

Means of ignition

Compression

Kind of fuel used

Diesel oil.

Crank Shaft, dia. of journals

as per Rule 449<sup>1</sup>/<sub>16</sub> in.as fitted 460<sup>1</sup>/<sub>16</sub> in.

Crank pin dia.

460<sup>1</sup>/<sub>16</sub> in.

Crank Webs

Mid. length breadth 870<sup>1</sup>/<sub>16</sub> in.

Thickened parallel to axis

267<sup>1</sup>/<sub>16</sub> in.

Flywheel Shaft, diameter

as per Rule 449<sup>1</sup>/<sub>16</sub> in.as fitted 460<sup>1</sup>/<sub>16</sub> in.

Intermediate Shafts, diameter

as per Rule 325<sup>1</sup>/<sub>16</sub> in.as fitted 470<sup>1</sup>/<sub>16</sub> in.

Thrust Shaft, diameter at collars

as per Rule 341<sup>1</sup>/<sub>16</sub> in.as fitted 460<sup>1</sup>/<sub>16</sub> in.

Stern Shaft, diameter

as per Rule 359<sup>1</sup>/<sub>16</sub> in.as fitted 400<sup>1</sup>/<sub>16</sub> in.

Screw Shaft, diameter

as per Rule 359<sup>1</sup>/<sub>16</sub> in.as fitted 400<sup>1</sup>/<sub>16</sub> in.

Is the

shaft fitted with a continuous liner

Yes.

Bronze Liners, thickness in way of bushes

as per Rule 17<sup>1</sup>/<sub>16</sub> in.as fitted 20<sup>1</sup>/<sub>16</sub> in.

Thickness between bushes

as per Rule 13<sup>1</sup>/<sub>16</sub> in.as fitted 15<sup>1</sup>/<sub>16</sub> 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

Yes.

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.

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

Yes.

Length of Bearing in Stern Bush next to and supporting propeller

1585<sup>1</sup>/<sub>16</sub> 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

Servomotor

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

Yes.

Means of lubrication

Forecast

Thickness of cylinder liners

55<sup>1</sup>/<sub>16</sub> in.

Are the cylinders fitted with safety valves

Yes.

Are the exhaust pipes and silencers water cooled or lagged with

lagged

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

Yes.

Cooling Water Pumps, No.

Two

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

35 tons/hr.

Can one be overhauled while the other is at work

Yes.

Pumps connected to the Main Bilge Line

No. and Size

2 Rotary

How driven

Main Engine

one 8" x 8" x 10"

Steam.

If 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

Yes.

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/hr.

one 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:—In Machinery Spaces

one aft well 3<sup>1</sup>/<sub>2</sub> dia; one fore P.S. 3<sup>1</sup>/<sub>2</sub> dia; one hydrophone Comp. 2<sup>1</sup>/<sub>2</sub> dia

In Pump Room

4<sup>1</sup>/<sub>2</sub> dia P.S.

Holds, &amp;c.

Fore Hold 2<sup>1</sup>/<sub>2</sub> dia P.S.W.T. Ret. Forepeak 2<sup>1</sup>/<sub>2</sub> dia P.S.Fore + aft Cofferdams 4<sup>1</sup>/<sub>2</sub> dia.

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

one 5<sup>1</sup>/<sub>2</sub> dia to G.S. pump.one 7<sup>1</sup>/<sub>2</sub> dia Emergency Bilge to C.W. Pumps.

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

Yes.

Are the Bilge Suctions in the Machinery Spaces

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.

That pipes pass through the bunks

Suction from aft Cofferdam

How are they protected

Values on bunker Bulkheads

That pipes pass through the deep tanks

Yes.

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

Eachy aft

Is it fitted with a watertight door

Yes.

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.

Auxiliary Air Compressors, No.

one

No. of stages

2

Diameters

184 x 206<sup>1</sup>/<sub>16</sub> in.

Stroke

160<sup>1</sup>/<sub>16</sub> in.

Driven by

Diesel Engine.

Auxiliary Air Compressors, No.

one

No. of stages

2

Diameters

184 x 206<sup>1</sup>/<sub>16</sub> in.

Stroke

160<sup>1</sup>/<sub>16</sub> in.

Driven by

Steam

Small Auxiliary Air Compressors, No.

NONE

No. of stages

NONE

Diameters

NONE

Stroke

NONE

Driven by

NONE

Scavenging Air Pumps, No.

NONE

Diameter

NONE

Stroke

NONE

Driven by

NONE

Auxiliary Engines crank shafts, diameter

as per Rule 6<sup>1</sup>/<sub>16</sub> in.as fitted 6<sup>1</sup>/<sub>16</sub> in.

Compressor

Approved.

Generator

Approved.

No.

one and air compressor

Position

Fore Aft Side Eng Room

Aft. 8 side Eng Room

Steam Engines (one Generator, one air compressor).

Register

Foundation



AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule

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 Actual

Starting Air Receivers, No. Two Total cubic capacity 800 cu ft. Internal diameter 4'-10 7/8" thickness 2 1/32"

Seamless, lap welded or riveted longitudinal joint T.R.D.B.S. Material Steel Range of tensile strength Steel 28-32 tons. Working pressure by Rules Actual 372 lbs/sq. in. 350 lbs/sq. in.

IS A DONKEY BOILER FITTED?

Is the donkey boiler intended to be used for domestic purposes only

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

Donkey Boilers 28-12-37. General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

The foregoing is a correct description,

R. & W. HAWTHORN, LEE & CO. LIMITED

R. B. Johnson

Manufacturer.

1938  
Dates of Survey while building  
During progress of work in shops--  
During erection on board vessel--  
Total No. of visits 98.

Dates of Examination of principal parts—Cylinders 5-7-38. Covers 5-7-38. Pistons 30-8-38. Rods 18-8-38. Connecting rods 22-7-38.

Crank shaft 27-8-38. Flywheel shaft 29-9-38. Thrust shaft 7-7-38. Intermediate shafts 23-11-38. Tube shaft.

Screw shaft 15-11-38. Propeller 15-11-38. Stern tube 9-11-38. Engine seatings 15-12-37. Engines holding down bolts 12-1-39.

Completion of fitting sea connections 15-12-38. Completion of pumping arrangements 14-2-39. Engines tried under working conditions 28-2-39.

Crank shaft, Material Steel Identification Mark 1183+1184 Flywheel shaft, Material Steel Identification Mark 10186.

Thrust shaft, Material Steel Identification Mark 5726. Intermediate shafts, Material Steel Identification Marks 2096.

Tube shaft, Material Identification Mark Screw shaft, Material Steel Identification Mark 2095.

Is the flash point of the oil to be used over 150° F. Yes. Spare 2099.

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 "DAPHNELLA" Nue Rm No 96399.

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

The machinery has been constructed under Special Survey in accordance with the Society's Rules and approved plans. The materials & workmanship are sound and good. The machinery was efficiently installed on board tested & manoeuvred on completion under working conditions and found satisfactory. The machinery of this vessel is eligible in our opinion to be classed and to have the notation "oil engine" and records of LMC 2,39 and TS etc.

The amount of Entry Fee .. £ 6 : - : When applied for,

Special ... £ 100 : 2 : 2 MAR 1939

Donkey Boiler Fee ... £ 16 : 8 : When received,

AIR RECEIVERS Travelling Expenses (if any) £ 8 : 8 : 6. 3. 1939 7/3.

Committee's Minute

Assigned

+ LMC 2.39 Oil Eng

DB 180 lb CL

L. P. P. & H. P. P.

Engineer Surveyor to Lloyd's Register of Shipping.



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