

REPORT ON OIL ENGINE MACHINERY.

No. 7076

Received at London Office 28 NOV 1945

Date of writing Report

When handed in at Local Office

19. 11. 45 Port of

GLASGOW.

No. in Survey held at
Reg. Book.

GLASGOW

Date, First Survey

6. 9. 45

Last Survey

2. 11. 45

19 45

Number of Visits

13

on the ~~Triple~~ ^{Single} Screw vessel

"CATO"

Tons { Gross
Net

442

Built at

GOOLE

By whom built GOOLE SHIPBUILDING & REPAIRING CO.

Licence No. 1006. Hard No. 442 When built 1945

Engines made at

GLASGOW

By whom made BRITISH POLAR ENGINES LTD. Engine No. 584 When made 1945

Donkey Boilers made at

✓

By whom made

✓

Boiler No. ✓ When made ✓

Brake Horse Power

520 ✓

Owners The Bristol Steam Nav. Co. Ltd.

Port belonging to Bristol

Nom. Horse Power as per Rule

118 ✓

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

Trade for which vessel is intended

Coastal Service

OIL ENGINES, &c.—Type of Engines 2 stroke Cycle Single acting or 4 stroke cycle 2 ✓ Single or double acting Single

Maximum pressure in cylinders

782 lbs. ✓

Diameter of cylinders

250 m/m ✓

Length of stroke

420 m/m ✓

No. of cylinders 7 each

No. of cranks 7 each

Mean Indicated Pressure

96.7 ✓

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

366 m/m ✓

Is there a bearing between each crank

Yes.

Revolutions per minute

300 ✓

Flywheel dia. 1050 m/m

Weight

625 lbs. ✓

Means of ignition Compression

Kind of fuel used Heavy Oil ✓

Crank Shaft, { Solid forged
Semi built
All built

dia. of journals

as per Rule 155 m/m
as fitted 170 m/m

Crank pin dia. 170 m/m

Crank Webs

Mid. length breadth 226 m/m
Mid. length thickness 95 m/m

Thrust parallel to axis

Thrust around eyehole

Thrust Shaft, diameter

as per Rule 123 m/m
as fitted 170 m/m

Flywheel Shaft, diameter

as per Rule
as fitted

Thrust Shaft.

Intermediate Shafts, diameter

as per Rule
as fitted

Thrust Shaft, diameter at collars

as per Rule
as fitted

Tube Shaft, diameter

as per Rule
as fitted

Screw Shaft, diameter

as per Rule
as fittedIs the { tube
screw } shaft fitted with a continuous liner {

Bronze Liners, thickness in way of bushes

as per Rule
as fitted

Thickness between bushes

as per Rule
as fitted

Is the after end of the liner made watertight in the

propeller boss

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

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

If 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

shaft If so, state type

Length of Bearing in Stern Bush next to and supporting propeller

propeller, dia.

Pitch

No. of blades

Material

whether Moveable

Total Developed Surface

sq. feet

Method of reversing Engines Direct

Is a governor or other arrangement fitted to prevent racing of the engine when disengaged. Yes

Means of lubrication

forced Thickness of cylinder liners

19.5 m/m

Are the cylinders fitted with safety valves Yes

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

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

Cooling Water Pumps, No.

One—120 m/m Bore x 60 m/m stroke

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

Bilge Pumps worked from the Main Engines, No.

1

Diameter 120 m/m

Stroke 60 m/m

Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line

No. and Size

How driven

Is the cooling water led to the bilges

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

Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 off 2780 Galls per hour.

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

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Machinery Spaces

In Pump Room

In Holds, &c.

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

Are the Bilge Suctions in the Machinery Spaces

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

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

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

Are they fitted with Valves or Cocks

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

Are the Overboard Discharges above or below the deep water line

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

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

What pipes pass through the bunkers

How are they protected

What pipes pass through the deep tanks

Have they been tested as per Rule

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

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

Is the Shaft Tunnel watertight

Is it fitted with a watertight door

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

Main Air Compressors, No.

One

No. of stages

2

Diameters

175 x 70 m/m

Stroke 170 m/m

Driven by Main engine.

Auxiliary Air Compressors, No.

No. of stages

Diameters

Stroke

Driven by

Small Auxiliary Air Compressors, No.

No. of stages

Diameters

Stroke

Driven by

What provision is made for first Charging the Air Receivers

Scavenging Air Pumps, No.

One

Diameter

650 m/m

Stroke

170 m/m

Driven by Main engine.

Auxiliary Engines crank shafts, diameter

as per Rule
as fitted

No.

Position

Have the Auxiliary Engines been constructed under special survey

Is a report sent herewith

Lloyd's Register
Foundation

003154-003161-0165

AIR RECEIVERS:—Have they been made under survey **Yes** State No. of Report or Certificate **-**
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 **-** Internal diameter **-** thickness **-**
Seamless, lap welded or riveted longitudinal joint **-** Material **-** Range of tensile strength **-** Working pressure **-**
Starting Air Receivers, No. **Two** Total cubic capacity **30 cub.ft.** Internal diameter **1' - 9"** thickness **13/32"**
Seamless, lap welded or riveted longitudinal joint **Riveted** Material **Steel** Range of tensile strength **Shell 28/32 tons.** Working pressure **by Rules 355 lbs.**
ends 26/30tons Actual **355 lbs.**

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 **26:12:44.** Receivers **26:12:44.** Separate Fuel Tanks **-**
(If not, state date of approval)

Donkey Boilers **-** General Pumping Arrangements **-** Pumping Arrangements in Machinery Space **-**

Oil Fuel Burning Arrangements **-**

SPARE GEAR.

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

State the principal additional spare gear supplied **As per attached list.**

It is stated by the Engine Builders that the torsional vibration calculations, as required by Notice No. 1803, have been submitted by the Shipbuilder and have been approved.

The foregoing is a correct description.

M. D. A. B.

Manufacturer.

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

1945 Aug 20, Sep. 6, 7, 9, 13, 17, 26, 28, Oct. 4, 23, 27 Nov 2

13

Dates of Examination of principal parts—Cylinders **29.8.45.** Covers **9.9.45.** Pistons **13.9.45.** Rods **13.9.45.** Connecting rods **7.9.45.**

Crank shaft **6.9.45.** Flywheel shaft **Thrust Shaft** Thrust shaft **6.9.45.** Intermediate shafts **-** Tube shaft **-**

Screw shaft **-** Propeller **-** Stern tube **-** Engine seatings **-** Engines holding down bolts **-**

Completion of fitting sea connections **-** Completion of pumping arrangements **-** Engines tried under working conditions **-**

Crank shaft, Material **Steel** Identification Mark **50FW 10:8:45** Flywheel shaft, Material **Thrust Shaft** Identification Mark **-**

Thrust shaft, Material **Steel** Identification Mark **747MB 2971** Intermediate shafts, Material **-** Identification Marks **-**

Tube shaft, Material **-** Identification Mark **-** Screw shaft, Material **-** Identification Mark **-**

Identification Marks on Air Receivers
No. 56170
Lloyd's Test.
555 lbs.
W.P. 355 lbs.
1:8:45. W.A.L.

No. 56171
Lloyd's Test.
555 lbs.
W.P. 355 lbs.
1:8:45. W.A.L.

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 **-** 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 **M/V "LA RWING" Gls. Rpt. No. 68374.**

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

This engine has been built under Special Survey in accordance with the Rules and approved plans.

The materials and workmanship are good. On completion it has been tried on the bench at full power with satisfactory results.

This engine has been despatched to Goole for installation in a vessel building at Goole Shipbuilding & Repairing Co., Ltd.,

Forging Reports and certificates attached for Engine Nos. 583/4.

Brinell tests were carried out on the Connecting rods and these were found satisfactory

Material tests on these rods were carried out under B.C. Survey, and Certificates are attached. (See above re. Torsional Vibration Calculations.)

The amount of Entry Fee **£ 3 0 0** When applied for, **7 NOV 1945**

Special **£ 20 10 0** When received, **7 NOV 1945**
Donkey Boiler Fee **£ 35 8 0**

Travelling Expenses (if any) **£ :**

Committee's Minute

GLASGOW 27 NOV 1945

Assigned

Deferred for Completion

Engineer Surveyor to Lloyd's Register of Shipping.

FRI. 26 JUL 1946

Lloyd's Register Foundation