

REPORT ON OIL ENGINE MACHINERY.

No. 58610

Received at London Office

JUL 14 1937

Date of writing Report

When handed in at Local Office

10. 7. 37 Port of

Glasgow

No. in Survey held at Reg. Book.

Glasgow

Date, First Survey

17. 3. 37

Last Survey

7. 7. 1937

Number of Visits

17

on the
 Single
 Twin
 Triple
 Quadruple
 Screw vessel

Tons
 Gross
 Net

Built at

Hong Kong

By whom built

Hong Kong & Whampoa Dock Co.

Yard No. 771

When built

Engines made at

Glasgow

By whom made

Harland & Wolff, Ltd.

Engine No. 7029

When made

1937

Donkey Boilers made at

By whom made

Boiler No.

When made

Brake Horse Power

460

Owners

Burns Philp & Co.

Port belonging to

Nom. Horse Power as per Rule

84

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

yes

Trade for which vessel is intended

OIL ENGINES, &c.—Type of Engines *Enclosed trunk airless injection* 2 or 4 stroke cycle *2* Single or double acting *S.A.*

Maximum pressure in cylinders

700 lb.

Diameter of cylinders

280 mm.

Length of stroke

500 mm.

No. of cylinders

4

No. of cranks

4

Mean Indicated Pressure

100

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

358 mm.

Is there a bearing between each crank

yes

Revolutions per minute

330

Flywheel dia.

1246 mm.

Weight

420 Kgs.

Means of ignition

Compression

Kind of fuel used

Diesel oil

Crank Shaft, dia. of journals

as per Rule 1749 mm.
as fitted 220 mm.

Crank pin dia.

200 mm.

Crank Webs

Mid. length breadth 270 mm.
Mid. length thickness 108 mm.

shrunk

Thickness parallel to axis Solid
Thickness around eye-hole 7 forged.

Flywheel Shaft, diameter

as per Rule 1749 mm.
as fitted 220 mm.

Intermediate Shafts, diameter

as per Rule 4.664
as fitted

Thrust Shaft, diameter at collar

as per Rule 4.88 = 124 mm.
as fitted 220 mm with 62 mm. central hole.

Tube Shaft, diameter

as per Rule
as fitted

Screw Shaft, diameter

as per Rule
as fitted

Is the { tube } shaft fitted with a continuous liner { screw }

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

If so, state type

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

Thickness of cylinder liners

22 to 15 mm.

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.

F.W.

20

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

Bilge Pumps worked from the Main Engines, No.

2

Diameter

142 mm.

Stroke

100 mm.

Can one be overhauled while the other is at work

yes

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 Log wheel pump, engine driven, 18 tons per hour

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

In Pump Room

In Holds, &c.

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

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

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

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

130 x 115 mm

Stroke

160 mm.

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

Scavenging Air Pumps, No.

One

Diameter

Centrifugal

Stroke

Rotor type

Driven by

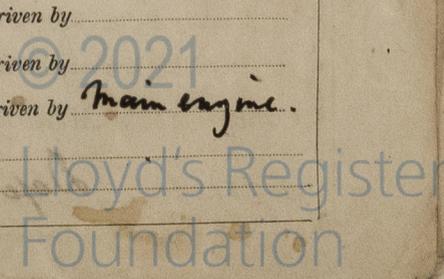
Main engine

Auxiliary Engines crank shafts, diameter

as per Rule
as fitted

No.

Position



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. *1*

Cubic capacity of each *7.01*

Internal diameter

thickness

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure by Rules

Starting Air Receivers, No. *One*

Total cubic capacity *48 cu. ft.*

Internal diameter *3-0"*

thickness *19/32*

Seamless, lap welded or riveted longitudinal joint *Riveted*

Material *Steel*

Range of tensile strength *Shell, 28/32 ton*

Working pressure by Rules *356 lb*

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

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

PLANS: Are approved plans forwarded herewith for Shafting *yes*

Receivers *yes*

Separate Fuel Tanks

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 *See attached list.*

The foregoing is a correct description,
For HARLAND AND WOLFF, LIMITED.

Manufacturer.

Dates of Survey while building { During progress of work in shops -- *Finnlestone Secretary 1937 Mar: 17. 25 Apr: 23. 29 May: 5. 11. 13. 17. 24. 28 June: 1. 3. 8. 10*
During erection on board vessel -- *28 July: 5. 7*
Total No. of visits *17*

Dates of Examination of principal parts—Cylinders *3-6-37* Covers *10-6-37* Pistons *8-6-37* Rods *8-6-37*
Crank shaft *1-6-37* Flywheel shaft Thrust shaft *1-6-37* Intermediate shafts
Screw shaft Propeller Stern tube Engine seatings Tube shaft

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

Crank shaft, Material *Steel* Identification Mark *7561 P.9.* Flywheel shaft, Material Identification Mark

Thrust shaft, Material *Steel* Identification Mark *7197 P.7.* Intermediate shafts, Material Identification Marks

Tube shaft, Material Identification Mark Screw shaft, Material Identification Mark

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

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 If so, state name of vessel

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

*This engine has been built under Special Survey in accordance with the approved plans and the Rules of this Society.
The materials and workmanship are good.
The engine has been tried under full load on the Works test bed with satisfactory results, & is now being despatched to Hong Kong to be installed on board the vessel.
On completion the machinery will be eligible in my opinion to have the Record + Lmc with date in the Register Book.*

10/7/37

P. Fitzgerald
Engineer Surveyor to Lloyd's Register of Shipping.

FRI 19 NOV 1937

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Lloyd's Register Foundation

The amount of Entry Fee .. £ 2 : 0
Special *1/2 Lmc 74.* £ 16 : 16
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, *13 JUL 1937*
When received, *6.9 1937*

Committee's Minute **GLASGOW 13 JUL 1937**

Assigned *Defered. 110*

See H.M. J.E. 7928

Certificate (if required) to be sent to
(The Surveyors are requested not to write on or below the space for Committee's Minute.)