

pt. 4b.

# REPORT ON OIL ENGINE MACHINERY.

No. 32175

AUG 21 1937

Received at London Office

20 AUG. 1937 Port of

Sunderland.

in Survey held at

Sunderland.

Date, First Survey 3 May 37 Last Survey NWC 19

on the

Single Screw vessel

"ARNDALE"

Tons Gross 8296 Net 4936

built at

Newcastle

By whom built

Swan Hunter, Glasgow Richardson

Yard No. 1516

When built 1934.

engines made at

Sunderland.

By whom made

Wm. Beardmore & Co. Ltd.

Engine No. 201

When made 1934.

Boilers made at

By whom made

Boiler No.

When made

Indicated Horse Power

2850

Owners

Port belonging to

Net Horse Power as per Rule

684

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

Intended for which vessel is intended

Minimum pressure in cylinders

540 lbs/sq. in.

Type of Engines Opposed piston airless injection 2 or 4 stroke cycle

2. Single or double acting

Single

Revolutions per minute

94

Diameter of cylinders 600 in. Length of stroke 940 in.

No. of cylinders 4

No. of cranks (3 throws) between each 3 throws.

Crank Shaft, dia. of journals

425 in.

Crank pin dia. 450 in.

Crank Webs

Mid. length breadth 650 in.

Mid. length thickness 255 in.

Thickness parallel to axis 255 in.

Intermediate Shafts, diameter

450 in.

Thrust Shaft, diameter at collars

450 in.

Kind of fuel used

Compression

Temperature

Screw Shaft, diameter

as per Rule

Screw Shaft, diameter

as fitted

Is the tube screw

shaft fitted with a continuous liner

Thrust Liners, thickness in way of bushes

as per Rule

Thickness between bushes

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

When 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

When 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

Propeller, dia.

Pitch

No. of blades

Material

whether Movable

Total Developed Surface

sq. feet

Method of reversing Engines

Hand lever

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

Yes.

Means of lubrication

Thrust Liners, thickness of cylinder liners

25 in.

Are the cylinders fitted with safety valves

Yes.

Are the exhaust pipes and silencers water cooled or lagged with

Conducting material

Yes. One main engine driven

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

Working Water Pumps, No.

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

Water Pumps worked from the Main Engines, No.

None

Diameter

Stroke

Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line

No. and Size

How driven

Is 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

Power Driven Lubricating Oil Pumps, No. and size

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

One main engine driven 100 in. x 610 in.

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

Oil Cooler

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Are pumps, No. and size:—In Machinery Spaces

In Pump Room

Are 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

Are they 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

Do the pipes pass through the bunkers

How are they protected

Do the 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

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

Air Compressors, No.

No. of stages

Diameters

Stroke

Driven by

Auxiliary Air Compressors, No.

No. of stages

Diameters

Stroke

Driven by

Engining Air Pumps, No.

One

Diameter

1960 in.

Stroke

610 in.

Driven by

Drawers from main engine.

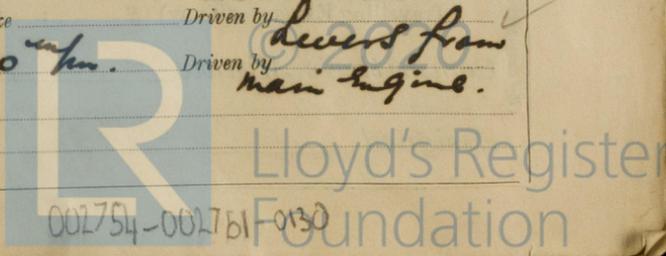
Auxiliary Engines crank shafts, diameter

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. Is a drain fitted at the lowest part of each receiver

High Pressure Air Receivers, No. 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. Total cubic capacity Internal diameter thickness

Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules Actual

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 Receivers 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

State the principal additional spare gear supplied

One cylinder liner & jacket Complete one sliding air non-return valve Complete, one cyl. relief valve Complete, 4 Scavenge pump Suct. & del. valve discs (halves), two fuel pump heads Complete with Suct. & del. valves, one intermediate crosshead with Strut & nuts, one bell crank lever & action tappet for fuel pump, four fuel valves Complete, one piston head, one roller chain for camshaft drive.

The foregoing is a correct description,

WILLIAM DOXFORD & SONS, Limited.

Manufacturer.

Dates of Survey while building During progress of work in shops - 1937 May 1, 7, 9, 20, 24, 25, 27, 28, 31. June 14, 14, 15. July 1, 5, 7, 9, 14, 15, 16, 19, 20, 21, 22, 23, 25, 27. During erection on board vessel - 28, 29, 30. Aug. 4, 5, 6, 10, 11, 12, 13, 14, 16. Total No. of visits 38

Dates of Examination of principal parts - Cylinders 19/5/37, 27/5/37. Covers 24/5/37, 28/5/37. Pistons 24/5/37. Rods 24/5/37. Connecting rods 20/4/37. Crank shaft 19/5/37. Flywheel shaft as crank. Thrust shaft as crank. 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 on test bench under working conditions 14/8/37. Crank shaft, Material Ingot Steel Identification Mark Y.S. 19/5/37. Flywheel shaft, Material as crank Identification Mark as crank. Thrust shaft, Material as crank Identification Mark as crank. 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. 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. Yls. If so, state name of vessel M/V "BRITISH FAME".

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

This machinery has been built under special survey in accordance with the approved plans, requirements of the Rules and the Secretary's letter E. 25/4/34. Workmanship & materials are good. The engine has been tried under full load conditions on the test bed with satisfactory results and has been despatched to Messrs Swan, Hunter and Wigham Richardson & Co. of Wallasey for installation, after which it will be signed, in my opinion, to have the notation of L.M.C. (with date). Oil Eng. This engine has been satisfactorily fitted on board M/V ARNDALE. As with new earth on 29th Sept 1937.

Table with columns for fee type (Entry Fee, Special, Donkey Boiler Fee, Travelling Expenses), amount (£), and date (When applied for, When received).

Committee's Minute Assigned See No. J.E. 95474

SUNDERLAND.

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

Handwritten signature and name of Engineer Surveyor to Lloyd's Register of Shipping.

