

# REPORT ON OIL ENGINE MACHINERY

No. 506

7 SEP 1938

Received at London Office

Date of writing Report 18-8-1939 When handed in at Local Office 18-8-1939 Port of Sheffield  
 No. in Survey held at Loughborough Date, First Survey 28-11-38 Last Survey 14-8-1939  
 Reg. Book. 7/16 Number of Vests 16

on the Single Screw vessel Fleming & Ferguson 550 Abercraig Tons Gross   
Triple Net   
 Built at Paisley By whom built Fleming & Ferguson Ltd. Yard No. 550 When built 1939  
 Engines made at Loughborough By whom made Brush Electrical Engineering Co. Ltd. Engines No. 259 When made 1939  
 Donkey Boilers made at  By whom made  Boiler No. 266 When made   
 Brake Horse Power 750 Owners Dundee Harbour Trust Port belonging to   
 Nom. Horse Power as per Rule 147 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.  
 Trade for which vessel is intended Ferry Service.

**II ENGINES, &c.** Type of Engines Twin, Brush VIS-A-VIS. 2 or 4 stroke cycle Yes Single acting Yes.  
 Maximum pressure in cylinders 750 lbs Diameter of cylinders 9 3/4" Length of stroke 16 1/2" No. of cylinders 8 each eng. No. of cranks 4 per eng.  
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 15 5/8" Is there a bearing between each crank Yes.  
 Revolutions per minute 440 Flywheel dia. 4'-0" Weight 1 1/2 TON. Means of ignition Compression Kind of fuel used Siodol oil.

Crank Shaft, dia. of journals as per Rule  6 3/4" Crank pin dia. 6 3/4" Crank Webs Board 2 3/4" Mid. length breadth 9 1/4" Thickness parallel to axis   
 as fitted 5 7/8" 3 1/2" Mid. length thickness 3 3/4" shrunk Thickness around eye-hole   
 Flywheel Shaft, diameter as per Rule  Intermediate Shafts, diameter as per Rule  Thrust Shaft, diameter at collars as per Rule   
 as fitted 3 as fitted as fitted

Tube Shaft, diameter as per Rule  Screw Shaft, diameter as per Rule  Is the tube  screw  shaft fitted with a continuous liner   
 as fitted as fitted 6" as fitted  
 Bronze Liners, thickness in way of bushes as per Rule  Thickness between bushes as per rule  Is the after end of the liner made watertight in the  
 as fitted as fitted as fitted as fitted 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   
 If so, state type Length of Bearing in Stern Bush next to and supporting propeller

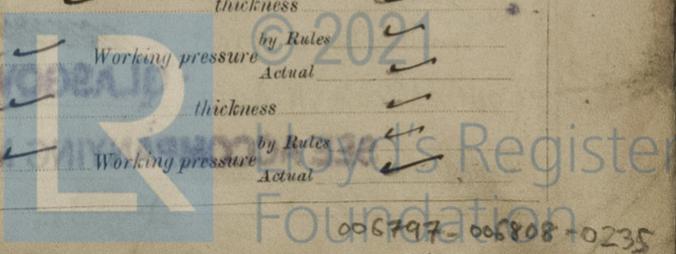
Propeller, dia.  Pitch  No. of blades  Material  whether Moveable  Total Developed Surface  sq. feet  
 Method of reversing Engines None. Is a governor or other arrangement fitted to prevent racing of the engine when decelerated Yes Means of lubrication Forced feed  
 Thickness of cylinder liners 1" Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled or lagged with  
 non-conducting material  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.  Is the sea suction provided with an efficient strainer which can be cleared within the vessel   
 What special arrangements are made for dealing with cooling water if discharged into bilges

Bilge Pumps worked from the Main Engines, No.  Diameter  Stroke  Can one be overhauled while the other is at work   
 Pumps connected to the Main Bilge Line  No. and Size   
 How driven   
 Ballast Pumps, No. and size  Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size   
 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   
 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  
 fitted 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   
 How are they protected   
 Are the pipes pass through the bunkers  Have they been tested as per Rule   
 Are the pipes pass through the deep tanks

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   
 On 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.  No. of stages  Diameters  Stroke  Driven by   
 Auxiliary Air Compressors, No.  No. of stages  Diameters  Stroke  Driven by   
 Small Auxiliary Air Compressors, No.  No. of stages  Diameters  Stroke  Driven by   
 Ventilating Air Pumps, No.  Diameter  Stroke  Driven by   
 Auxiliary Engines crank shafts, diameter as per Rule  No.:— 2.  
 as fitted 4 1/2" pins 5 1/2" journals. Position

**RECEIVERS:**—Is each receiver, which can be isolated, fitted with a safety valve as per Rule   
 Are 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   
 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   
 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  (If not, state date of approval)

Receivers  No.

Separate Tanks  No.

Donkey Boilers  No.

General Pumping Arrangements  No.

Oil Fuel Burning Arrangements  No.

SPARE GEAR.

Has the spare gear required by the Rules been supplied

None specified by Rules.

State the principal additional spare gear supplied

The foregoing is a correct description.

Enatum. Flywheel is 34" dia & weigh 1 1/2 tons

per pro. The British Electrical Engineering Co. Ltd

Chief Designer, Diesel Department.

Dates of Survey while building: During progress of work in shops - From 28/11/38 - 14.8.39. During erection on board vessel - Total No. of visits 16.

Dates of Examination of principal parts: Cylinders 24.4.39 6.4.39 13.4.39 6.4.39 Covers 14.6.39 13.4.39 8.6.39 Pistons 9.6.39 15.6.39 Rods Connecting rods 19.6.39 15.6.39

Crank shaft 9.6.39 15.6.39 Flywheel shaft Thrust shaft Intermediate shafts Tube shaft

Screw shaft Propeller Stern tube Engine seatings Engines holding down bolts

Completion of filling sea connections Completion of pumping arrangements Engines tried under working conditions 8.6.39 14.6.39

Crank shaft, Material O.H. Ingot Steel, Identification Mark 9036 9112, Flywheel shaft, Material Identification Mark 31-8-38 10-2-39.

Thrust shaft, Material Identification Mark 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. AWK. CRANKSHAFTS. 3108, 3109. A.S. 11-5-39. 19-6-39.

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 No If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery described above has been constructed under Special Survey, & in accordance with Rule requirements. It agrees with the approved plans, shop trials have been witnessed with satisfactory results & in my opinion the machinery is eligible for classification upon being satisfactorily installed in the vessel for which it is intended.

For identification the engines have been marked on their crankcases:-

Table with 4 columns: STARBOARD ENGINE, PORT ENGINE, AUXILIARY ENGINES. Entries include LLOYD'S 260, 259, 258, 257 and dates like 9-6-39, 15-6-39, 14-8-39, 20-7-39.

The amount of Entry Fee... Special Lond. 19/3/38 44... Donkey Boiler Fee... Travelling Expenses (if any) 5/12 19 39

W. K. Simes, Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 31 OCT 1939 SEE ACCOMPANYING MACHINERY REPORT.

