

# REPORT ON OIL ENGINE MACHINERY.

17 AUG 1946

Received at London Office

Date of writing Report

19 14 AUG 1946 When handed in at Local Office

Port of HULL

No. in Survey held a Selby & Hull Reg. Book.

Date, First Survey 19. 12. 45. Last Survey 24. 7. 1946 Number of Visits 16

57445 on the Single Twin Triple Quadruple Screw vessel Tug "FOSSA"

Tons { Gross 66.42 Net Nil

Built at Selby By whom built Cochrane & Sons Ltd. Yard No. 1316 When built 1946

Engines made at Glasgow By whom made British Polar Engines Ltd. Engine No. B.618 When made -do-

Donkey Boilers made at - By whom made - Boiler No. - When made -

Brake Horse Power 450 Owners Gaselee & Sons Ltd. Port belonging to London

Nom. Horse Power as per Rule MN 116 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended Towing services on the River Thames.

OIL ENGINES, &c.—Type of Engines Heavy Oil engine (see Glasgow Report No. 70775) 2 or 4 stroke cycle 2 Single or double acting S.A.

Maximum pressure in cylinders 853 lbs Diameter of cylinders 9.13/16" Length of stroke 16.167" No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure 97 lbs 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. 900 mm Weight 420 Kgs. Means of ignition Compression Kind of fuel used Pool Diesel

Crank Shaft, { Solid forged as per Rule 166 mm Crank pin dia. 170 mm Crank Webs Mid. length breadth 215 mm Thickness parallel to axis - Semi built dia. of journals as fitted 170 mm Mid. length thickness 226.5 mm Thickness around eyehole - All built

Flywheel Shaft, diameter as per Rule 166 mm Intermediate Shafts, diameter as per Rule approx. Thrust Shaft, diameter at collars as per Rule 170 mm as fitted 170 mm as fitted 4.75" as fitted 124 mm

Tube Shaft, diameter as per Rule - Screw Shaft, diameter as per Rule approx. Is the shaft fitted with a continuous liner { no liners as fitted - as fitted 5 1/8" large end of cone, 6" body, 5 1/8" for'd end. }

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 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 Yes

Propeller, dia. 5'6" Pitch 4'0" No. of blades 4 Material C.I. whether Moveable No Total Developed Surface 12 1/2 sq. feet

Method of reversing Engines Diesel by Air. Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication Forced

Thickness of cylinder liners 19.5 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 led thro' exhaust funnel

Cooling Water Pumps, No. 2 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. 1 Diameter 110 mm Stroke 60 mm Can one be overhauled while the other is at work -

Pumps connected to the Main Bilge Line { No. and Size One 110 mm x 60 mm 20 tons/hr. How driven M.E. Ind Oil Eng.

Is 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 arrangements -

Ballast Pumps, No. and size none Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2- 2375 galls./hr. each working in series but may be used independently.

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 PAER 1 - 2" from ME SAER 1 - 2" from aux. set. In Pump Room none

In Holds, &c. F.P., cabin, crew space, A.P. each 1 - 2"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 - 2" to PER Aft - see above.

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

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

What pipes pass through the bunkers none How are they protected -

What pipes pass through the deep tanks none 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 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 (NRV) Is the Shaft Tunnel watertight Part ER Is it fitted with a watertight door No 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 two Diameters 140 & 55 mm Stroke 240 mm Driven by ME

Auxiliary Air Compressors, No. one No. of stages two Diameters see Inswick Cert D. 14275. Stroke - Driven by Ind. Aux. Oil eng.

Small Auxiliary Air Compressors, No. - No. of stages - Diameters - Stroke - Driven by above hand starting.

What provision is made for first Charging the Air Receivers as above.

Scavenging Air Pumps, No. one Diameter 720 mm Stroke 240 mm Driven by ME

Auxiliary Engines crank shafts, diameter as per Rule approx. No. 3998 Position SEER

as fitted 2 3/8" Have the Auxiliary Engines been constructed under special survey Yes Is a report sent herewith See Mch. Rpt. No. 3998.



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See Glasgow Rpt. No. 70775

**AIR RECEIVERS:**—Have they been made under survey  Yes State No. of Report or Certificate 57645

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.** - 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.** 2 Total cubic capacity 36 cu.ft. Internal diameter 21" thickness 9/16"

Seamless, lap welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength 26/30 ton sq.in Working pressure by Rules 355 lbs Actual 355 lbs

**IS A DONKEY BOILER FITTED?** No 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 Brit. Polar E. 618 Receivers see Gls. Rpt. No. 70775 Separate Fuel Tanks -

Donkey Boilers - General Pumping Arrangements 6.11.45. Pumping Arrangements in Machinery Space -

Oil Fuel Burning Arrangements -

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied As per attached list.

State the principal additional spare gear supplied -

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops - - } see Glasgow Rpt. No. 70775  
 { During erection on board vessel - - } 1945 Dec 19. 1946 Jan 22. Feb 15. May 6. June 15. 18. 19. 20. 26. 28. July 10. 17. 19. 23. 24.  
 Total No. of visits 16

Dates of Examination of principal parts—Cylinders See Glasgow Rpt. No. 70775

Crank shaft Flywheel shaft Thrust shaft Intermediate shafts 31.1.46. Tube shaft -

Screw shaft 31.1.46. Propeller 15.2.46. Stern tube 15.2.46. Engine seatings 6.5.46. Engines holding down bolts 20.6.46.

Completion of fitting sea connections 15.2.46. Completion of pumping arrangements 23.7.46. Engines tried under working conditions 19.7.46. & 23.7.46.

Crank shaft, Material See Gls. Rpt. No. 70775 Identification Mark LR 3720 FH Flywheel shaft, Material See Gls. Rpt. No. 70775 Identification Mark -

Thrust shaft, Material -do- Identification Mark LR 330 TS Intermediate shafts, Material steel Identification Marks LR 7190 CP 8.1.46.

Tube shaft, Material - Identification Mark 4358 18.9.45. Screw shaft, Material -do- Identification Mark LR 6310 CP 21.12.45.

Identification Marks on Air Receivers 57645 LR TP 555/355 lbs NK 30.4.46.

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  No 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 "WASP"

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

The above machinery has been installed by Messrs. Charles D. Holmes & Co. Ltd., their No. 1722 under Special Survey in accordance with the Secretary's letters, approved plans and the Rules. The materials and workmanship are good. Machinery eligible in my opinion to be recorded in the Register Book +LMC 7,46. O.G. M.N.1 Oil engine 2 SC SA 6 cyl. 9.13/16" x 16.9/16".

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

The amount of Entry Fee	£	see Glasgow Rpt. 70775	When applied for,
Special	£	:	19
Donkey Boiler Fee	£	:	When received,
Travelling Expenses (if any)	£	:	19

*W. Shields*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute  
 Assigned +LMC 7.46 O.G.  
 6 SEP 1946

