

# REPORT ON OIL ENGINE MACHINERY.

No. 64284

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Date of writing Report 19 29. 9. 41 When handed in at Local Office 19 41 Port of Glasgow  
 No. in Survey held at Reg. Book. 23257 on the *Single* *Oil* *Glasgow* *Screw* vessel. *M.V. "Empire Pride"* Date, First Survey 19. 6. 40 Last Survey 5. 9. 1941  
 Number of Visits 76 Tons { Gross 9248 Net 5754  
 Built at Glasgow By whom built Barclay Mils. & Co. Ld. Yard No. 680 When built 1941-9  
 Engines made at do. By whom made do. Engine No. 680 When made 1941.  
 Donkey Boilers made at do. By whom made do. Boiler No. 680 When made 1941.  
 Brake Horse Power 9000. Owners Ministry of War Transport. Port belonging to No.  
 Nom. Horse Power as per Rule 1421. Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Y/s.

**OIL ENGINES, &c.** Type of Engines *Barclay built Duple opposed piston 2 or 4 stroke cycle 2* Single or double acting *Single*.  
 Maximum pressure in cylinders *710 lb.* Diameter of cylinders *6 7/8"* Length of stroke *2320"* No. of cylinders *8* No. of cranks *24*  
 Mean Indicated Pressure *86 1/2 lb.* Span of bearings, adjacent to the Crank, measured from inner edge to inner edge *1300"* Is there a bearing between each crank *No.*  
 Revolutions per minute *119.* Flywheel dia. *5' 7 1/2"* Weight *2.9 Tons* Means of ignition *Comp.* Kind of fuel used *Diesel oil.*  
 Crank Shaft, { Solid forged dia. of journals as per Rule *app.* Crank pin dia. *5 1/2"* Crank Webs Mid. length breadth *7 1/2"* Thickness parallel to axis *285 1/2"*  
 { Semi built dia. as fitted *5 00 1/2"* Mid. length thickness *285 1/2"* shrunk Thickness around eye hole *219 1/2"*  
 { All built  
 Flywheel Shaft, diameter as per Rule *app.* Intermediate Shafts, diameter as per Rule *app.* Thrust Shaft, diameter at collars as per Rule *app.*  
 as fitted *4 50 1/2"* as fitted *10"* as fitted *5 00 1/2"*  
 Tube Shaft, diameter as per Rule *app.* Screw Shaft, diameter as per Rule *app.* Is the shaft fitted with a continuous liner { *Y/s.*  
 as fitted *10 1/8"* as fitted *16 1/8"* screw }  
 Bronze Liners, thickness in way of bushes as per Rule *app.* Thickness between bushes as per Rule *app.* Is the after end of the liner made watertight in the  
 as fitted *13 1/16"* as fitted *6 1/8"* propeller boss *Y/s.* 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 *No.* If so, state type - Length of Bearing in Stern Bush next to and supporting propeller *5' 7"*  
 Propeller, dia. *16' 0"* Pitch *15' 4"* No. of blades *3.* Material *bronz* whether Moveable *Y/s.* Total Developed Surface *78* sq. feet  
 Method of reversing Engines *Direct.* Is a governor or other arrangement fitted to prevent racing of the engine when declutched *Y/s.* Means of lubrication  
*Snail.* Thickness of cylinder liners *28 1/2"* Are the cylinders fitted with safety valves *Y/s.* Are the exhaust pipes and silencers water cooled or lagged with  
 non-conducting material *Y/s.* 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. *5* Is the sea suction provided with an efficient strainer which can be cleared within the vessel *Y/s.*  
 Bilge 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 *1-8" rotary (Ballast) 2-5" rotary 110T/hr. 10 1/2 x 6 x 26 DA: 1-5" rotary 80 S.*  
 How driven *Rotary pumps - the latter driven by DA pump - Steam*  
 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 *1-8" rotary 2 1/2 ton/hr.* Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size *3 rotary 450 gal/hr.*  
 Are two independent means arranged for circulating water through the Oil Cooler *Y/s.* Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
 Pumps, No. and size: - In Machinery Spaces *4 1/2 1/2": 2 1/2 1/2" only bilge: 1 1/2 1/2" ppc passage 1 1/2 1/2" off main* In Pump Room -  
 In Holds, &c. *10 1/2 1/2": 10 1/2 1/2": 10 1/2 1/2": 10 1/2 1/2": 10 1/2 1/2": 10 1/2 1/2" kind with 10 1/2 1/2" ppc passage 10 1/2 1/2" ppc passage 10 1/2 1/2" ppc passage*  
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *10 1/2 1/2": 10 1/2 1/2" ppc: 10 1/2 1/2": 10 1/2 1/2" ppc*  
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes *Y/s.* 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 *Y/s.*  
 Are all Sea Connections fitted direct on the skin of the ship *Y/s.* 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 *Y/s.* Are the Overboard Discharges above or below the deep water line *Below*  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel *Y/s.* Are the Blow Off Cocks fitted with a spigot and brass covering plate *Y/s.*  
 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. *Y/s.*  
 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 *Y/s.* Is the Shaft Tunnel watertight *Y/s.* Is it fitted with a watertight door *Y/s.* worked from *Shells etc.*  
 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. - No. of stages - Diameters - Stroke - Driven by -  
 Auxiliary Air Compressors, No. *2* No. of stages *3* Diameters *15 1/2" - 8 1/4"* Stroke *8"* Driven by *Elbe, Intas*  
 Small Auxiliary Air Compressors, No. *1* No. of stages *2* Diameters *6-1 1/4 x 2 1/4"* Stroke *4 1/2"* Driven by *St. Louis*  
 What provision is made for first Charging the Air Receivers *Steam driven Compress.*  
 Scavenging Air Pumps, No. *1 on each engine* Diameter *15 00 1/2"* Stroke *1320"* Driven by *Main Eng.*  
 Auxiliary Engines crank shafts, diameter as per Rule *Y/s.* No. *4*  
 as fitted *Y/s.* Position *3rd hold of E.R. 4th hold Tunnel recess.*  
 Have the Auxiliary Engines been constructed under special survey *Y/s.* Is a report sent herewith *Y/s. (Copies)*

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

Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yls.*  
Can the internal surfaces of the receivers be examined and cleaned *Yls.* Is a drain fitted at the lowest part of each receiver *Yls.*

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. *3.* Total cubic capacity *711 ft.* Internal diameter *5'-0* thickness *1 5/16"*  
Seamless, lap welded or riveted longitudinal joint *Welded* Material *S* Range of tensile strength *29-33 Tons* Working pressure by Rules — Actual *350 lb.*

IS A DONKEY BOILER FITTED? *Yls.* If so, is a report now forwarded? *Yls.*  
Is the donkey boiler intended to be used for domestic purposes only *No.*

PLANS. Are approved plans forwarded herewith for Shafting *27.3.40* Receivers *11.10.39* Separate Fuel Tanks *3.18.40*  
(If not, state date of approval)

Donkey Boilers *Yls.* General Pumping Arrangements *Yls.* Pumping Arrangements in Machinery Space *Yls.*  
Oil Fuel Burning Arrangements *11.11.40*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yls.*  
State the principal additional spare gear supplied *See Foot attached*



The foregoing is a correct description,  
**FOR BARCLAY, CURLE & CO., LTD**  
*Alexander Macnault.* Manufacturer.

Dates of Survey while building  
During progress of work in shops -- July: 16.23.26 Aug: 1 Sep: 20.24 Oct: 1.7.18.21.25.29 Nov: 4.7.11.13.18.20.25.26.27 Dec: 2.7.9.11.13.  
During erection on board vessel -- Mar: 4.5.10.18.27 Apr: 3.7.15.21.25.30 May: 12.15.26 June: 5.16.20.23 July: 9 Aug: 18.22.26  
Total No. of visits *76*

Dates of Examination of principal parts—Cylinders *28.1.41* Covers — Pistons *14.2.41* Rods *17.2.41* Connecting rods *22.1.41*  
Crank shaft *out* Flywheel shaft *out* Thrust shafts *9.12.40* Intermediate shafts *14.1.41* Tube shaft —  
Screw shaft *30.12.40* Propellers *8.1.41* Stern tube *23.12.40* Engine seatings *24.11.40* Engines holding down bolts *5.6.41*  
Completion of fitting sea connections *12.5.41* Completion of pumping arrangements *18.8.41* Engines tried under working conditions *5.9.41*  
Crank shaft, Material *5% hg. steel* Identification Mark *S A.T.B.-16.41* Flywheel shaft, Material — Identification Mark —  
Thrust shaft, Material — Identification Mark — Intermediate shafts, Material *5% hg. steel* Identification Marks *A.T.B. Nos. -14*  
Tube shaft, Material — Identification Mark — Screw shaft, Material *do.* Identification Mark *(S) 5100-762-3.9.40-A.T.B.*  
Identification Marks on Air Receivers  
*LLOYD TEST 800 lb WP. 600 lb 2 1/2 A.T.B.-24.1.41*  
*LLOYD TEST 800 lb WP. 600 lb 1 1/2 A.T.B.-17.2.41*

Is the flash point of the oil to be used over 150° F. *Yls.*  
Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *Yls.*  
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 *Yls.* If so, state name of vessel *M.V. "Empire Trust" Yls Report 63440. except pumping arrangements.*

General Remarks (State quality of workmanship, opinions as to class, &c.)  
*The machinery of this vessel has been built under special Survey and in accordance with the Rules and approved plans. The materials and workmanship are good. It has been efficiently secured in position and on completion it has been tried under working conditions with satisfactory results.*  
*The machinery of this vessel is eligible, in my opinion, to be classed in the Register Book with regard to L.M.C. 9.41. and notation C.L. 2. D.B. 120 lb.*

The amount of Entry Fee .. £ 6 : - : When applied for, 13-9-1941.  
Special ... £ 143 : - :  
Donkey Boiler Fee *spec* £ 35 : 15 :  
Travelling Expenses (if any) *weeding* £ 25 : 4 :  
*Air Receipts* £ 9 : 9 :  
When received, 19.

Committee's Minute **GLASGOW 1 OCT 1941**

Assigned *-i- L.M.C. 9.41 oil Eng*  
*L.S.B. 120 lb.*

*Prof. J. A. J. Brown & N. Russell*  
Engineer Surveyor to Lloyd's Register of Shipping.



GLASGOW

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