

# REPORT ON OIL ENGINE MACHINERY.

No. 51051

Date of writing Report 2-1-1941 When handed in at Local Office 14 JAN 1941 Port of HULL Received at London Office JAN 23 1941

No. in Survey held at Hull Date, First Survey 9.8.40 Last Survey 18.12.1940 Number of Visits 17

Reg. Book. Single on the Triple Quadruple Screw vessel EMPIRE CLIFF. Tons {Gross 873 Net 459

Built at Goole By whom built Goole S.B. & Rep. Co. Ltd Yard No. 357 When built 1940-12

Engines made at Glasgow By whom made British Auxiliaries Ltd Engine No. 576 When made do

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

Brake Horse Power 520 Owners The Ministry of Shipping Port belonging to Goole

Nom. Horse Power as per Rule 118 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended Coasting 9 1/16 16 9/16

IL ENGINES, &c. Type of Engines Heavy Oil (Type M.47. I.) 2 or 4 stroke cycle 2 Single or double acting S.A.

Maximum pressure in cylinders 782 1/2 lb/sq in Diameter of cylinders 250 mm Length of stroke 420 mm No. of cylinders 7 No. of cranks 7

Mean Indicated Pressure 96.7 lb/sq in Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 366 mm Is there a bearing between each crank Yes

Revolutions per minute 300 Flywheel dia. 1050 mm Weight 625 lbs Means of ignition Comp Kind of fuel used Heavy oil

Crank Shaft, {Solid forged dia. of journals as per Rule 155 mm as fitted 170 mm Crank pin dia. 170 mm Crank Webs Mid. length breadth 226 mm Thickness parallel to axis shrunk Mid. length thickness 95 mm Thickness around eyehole shrunk

Flywheel Shaft, diameter as per Rule 155 mm as fitted 170 mm Intermediate Shafts, diameter as per Rule 117 mm (4.61") as fitted 5 7/16" Thrust Shaft, diameter at collars as per Rule 123 mm as fitted 170 mm

Tube Shaft, diameter as per Rule 5.38" as fitted 6 1/8" Is the {tube screw} shaft fitted with a continuous liner Yes

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 Yes

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner Yes

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 Yes

If two liners are fitted, is the shaft lapped or protected between the liners Yes Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft Yes

Propeller, dia. 44" Pitch 49 No. of blades 4 Material C.I. whether Moveable Solid Total Developed Surface 14.2 sq. feet

Method of reversing Engines Direct 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 Yes

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

Cooling Water Pumps, No. 1 @ 150 mm x 60 mm D.A. 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. One Diameter 120 mm Stroke 60 mm Can one be overhauled while the other is at work Yes

Pumps connected to the Main Bilge Line {No. and Size One Duplex 50 ltr/h } One Centrifugal 47 ltr/h } One 120 mm x 60 mm } How driven Electric Motor } Electric Motor } Main Engine }

Is the cooling water led to the bilges One 3/8 pipe from Air Comp only If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements None

Ballast Pumps, No. and size 2 @ 2775 gals/h each. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 @ 2775 gals/h each.

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 4 @ 3" dia In Pump Room Yes

In Holds, &c. Hold 2 @ 2" for 'A' + 2 @ 3" for 'B', 4 x 'A' peaks. 1 @ 3" each, No 1 D.B.T. 3 @ 3", No 2. 4 @ 3" dia.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 @ 3" dia included 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 Yes

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 Yes

What pipes pass through the bunkers None How are they protected Yes

What pipes pass through the deep tanks None Have they been tested as per Rule Yes

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 Is the Shaft Tunnel watertight None 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 Yes

Main Air Compressors, No. One No. of stages 2 Diameters 70 x 175 mm Stroke 170 mm Driven by Main Engine

Auxiliary Air Compressors, No. One No. of stages 2 Diameters 86 x 2 Stroke 1000 RPM Driven by Aux Engine

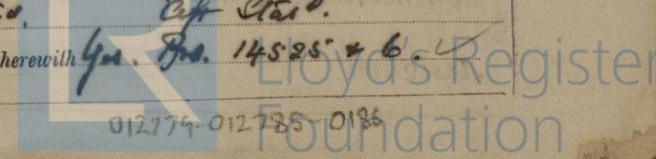
Small Auxiliary Air Compressors, No. - No. of stages - Diameters - Stroke - Driven by -

What provision is made for first Charging the Air Receivers Aux Engine hand starting

Scavenging Air Pumps, No. One Diameter 650 mm Opp. piston Stroke 170 mm Driven by Main Engine

Auxiliary Engines crank shafts, diameter as per Rule See Separate Reports No. 40 HP Position For'd. Stair 27 HP Aft Stair

Have the Auxiliary Engines been constructed under special survey Yes Is a report sent herewith Yes No. 14525 + 6



**AIR RECEIVERS:**—Have they been made under survey *No: Admiralty Survey* State No. of Report or Certificate *See Log Book 18/9/40*  
 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 *✓*  
**Starting Air Receivers, No.** *2* Total cubic capacity *98 cu ft* Internal diameter *21"* thickness *13/32"*  
 Seamless, lap welded or riveted longitudinal joint *✓* Material *Steel* Range of tensile strength *26/32/6000* Working pressure *✓* by Rules *355 lb*  
 Actual *355 lb*

**IS A DONKEY BOILER FITTED?** *Yes* 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 *22-4-36* Receivers *23-5-32* Separate Fuel Tanks *31-3-37*  
 Donkey Boilers *✓* General Pumping Arrangements *14-4-40* Pumping Arrangements in Machinery Space *5-7-40*  
 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 also list attached to G/R Rpt No 63257.*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building  
 During progress of work in shops-- *1940 Aug. 9, Sep. 24, 27, Oct. 14, 29, 31, Nov. 7, 8, 15, 18, 20, 22, 27, Dec. 3, 12, 13, 18.*  
 During erection on board vessel--  
 Total No. of visits *17*  
 Dates of Examination of principal parts—Cylinders *G/R Rpt* Covers *G/R Rpt* Pistons *G/R Rpt* Rods *G/R Rpt* Connecting rods *G/R Rpt*  
 Crank shaft *G/R Rpt* Flywheel shaft *an* Thrust shaft *G/R Rpt* Intermediate shafts *29-10-40* Tube shaft *✓*  
 Screw shaft *14-10-40* Propeller *14-10-40* Stern tube *14-10-40* Engine seatings *14-10-40* Engines holding down bolts *7-11-40*  
 Completion of filling sea connections *14-10-40* Completion of pumping arrangements *13-12-40* Engines tried under working conditions *18-12-40*  
 Crank shaft, Material *Steel* Identification Mark *182. 14-5-40. W.T.M.* Flywheel shaft, Material *Steel* Identification Mark *an.*  
 Thrust shaft, Material *Steel* Identification Mark *180 24-5-40. T.T. 20.* Intermediate shafts, Material *Steel* Identification Marks *4975 J.F.C. 24-5-40. D.L.H.C. 29-10-40.*  
 Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *Steel* Identification Mark *4976 J.F.C. 23-7-40. D.L.H.C. 14-10-40.*  
 Identification Marks on Air Receivers *W.A.D. Telled 555 lbs 10-9-40*

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 *No*  
 Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *SEQUACITY, G/R Rpt No 48523.*

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
*The Machinery of this vessel has been built & fitted on board under Special Survey in accordance with the Rules & the approved plans. The workmanship & material are good, & when tried under full working conditions it was found satisfactory in every respect. It is eligible, in my opinion, to have the records of E.S.L.M.C. 12-40. & O.G. & the notation of Oil Eng. 2.S.C. S.A. 7 Cy. 9 7/8"-16 1/2" 118 NHP.*

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

*D. J. P. [Signature]*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute  
 Assigned *+ Lmc 12, 40 Oil Eng. O.G.*



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