

REPORT ON OIL ENGINE MACHINERY.

No. 51120.
MAR - 7 1941

Received at London Office

Date of writing Report

When handed in at Local Office

Port of

No. in Survey held at
Reg. Book.

Date, First Survey

Last Survey

Number of Visits

on the Single
Triple
Quadruple Screw vesselEMPIRE FORELAND.Tons ^{Gross} 873
_{Net} 459

Built at Goole By whom built Goole S.B. & Repg Co Ltd Yard No. 358 When built 1941-3
 Engines made at Glasgow By whom made British Auxiliary Ld. Engine No. 577 When made do.
 Donkey Boilers made at None By whom made ✓ Boiler No. ✓ When made ✓
 Brake Horse Power 520 Owners The Ministry of Shipping Port belonging to ✓
 Nom. Horse Power as per Rule 118 Is Refrigerating Machinery fitted for cargo purposes ✓ Is Electric Light fitted Yes
 Trade for which vessel is intended Coasting 9 13 16 16

IL ENGINES, &c.—Type of Engines Heavy Oil (Type M. 47.1) 2 or 4 stroke cycle 2 Single or double acting S.A.

Maximum pressure in cylinders 782 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 Crank pin dia. 170 mm Crank Webs Mid. length breadth 226 mm Thickness parallel to axis shrunk
Semi-built as fitted 170 mm Mid. length thickness 95 mm Thickness around eyehole ✓
Alt built

Flywheel Shaft, diameter as per Rule 155 mm Intermediate Shafts, diameter as per Rule 117 mm Thrust Shaft, diameter at collars as per Rule 123 mm
as fitted 170 mm as fitted 5 3/16" as fitted 170 mm

Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule 5.38" Is the tube shaft fitted with a continuous liner ✓
as fitted as fitted 6 1/8" 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

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 If so, state type See Eng. App. 2 12. 8. 40. Length of Bearing in Stern Bush next to and supporting propeller 23 1/2"

Propeller, dia. 77" Pitch 49" No. of blades 4 Material C.I. whether Moveable Fixed 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
& Auxiliary Pumps.

Cooling Water Pumps, No. 1 & 150 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 160 mm Can one be overhauled while the other is at work ✓

Pumps connected to the Main Bilge Line No. and Size One duplex 150 ton/h² One Centrifugal 47 ton/h² One 120 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 Both above Aux. Pumps Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 @ 2775 gals each/h²

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

In Holds, &c. Hold 2 @ 2" dia for 1 & 2 @ 3" dia aft, 4 & 2 peak tanks. 1 @ 3" dia end. 1 @ 1" dia. 3 @ 3" dia 1 @ 2" dia 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
 ed 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 ✓

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 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 ✓

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

Auxiliary Air Compressors, No. One No. of stages 2 Diameters 16 cu ft @ 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 Stroke 170 mm Driven by Main Engine

Auxiliary Engines crank shafts, diameter as per Rule See Separate Rpt. No. 40 Position For's side

Have the Auxiliary Engines been constructed under special survey Yes Is a report sent herewith Yes

AIR RECEIVERS:—Have they been made under survey *No. Admiralty Survey* State No. of Report or Certificate *see for file 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. *None* 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 *28 Cu. ft.* Internal diameter *21"* thickness *13/32"*
Seamless, lap welded or riveted longitudinal joint *Proctor* Material *Steel* Range of tensile strength *36/32 tons/2"* Working pressure *by Rules* *Actual* *355 lbs/2"*

IS A DONKEY BOILER FITTED? *None* 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 *As for Legitimacy. 31-3-37.*

Donkey Boilers *None* 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 Gk Rpt 63310*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building
During progress of work in shops-- *1940. Aug. 9. Sept. 24. Nov. 22. 29.*
During erection on board vessel-- *1941. Jan. 8. Feb. 11, 17, 19. 20. 21, 25. 26. 28. Mar. 4.*
Total No. of visits *14.*

Dates of Examination of principal parts—Cylinders *See Gk Rpt* Covers *Gk Rpt* Pistons *Gk Rpt* Rods *Gk Rpt* Connecting rods *Gk Rpt*
Crank shaft *Gk Rpt* Flywheel shaft *7* Thrust shaft *Gk Rpt* Intermediate shafts *11. 2-41* Tube shaft *✓*
Screw shaft *29-11-40* Propeller *29-11-40* Stern tube *22-11-40* Engine seatings *8. 1. 41* Engines holding down bolts *11. 2. 41*
Completion of fitting sea connections *29-11-40* Completion of pumping arrangements *26. 2. 41* Engines tried under working conditions *3-3-41*

Crank shaft, Material *Steel* Identification Mark *17314 W.T.M. 22/8/40* Flywheel shaft, Material *and 1* Identification Mark *4977 J.F.C.*
Thrust shaft, Material *Steel* Identification Mark *228. T.T. 53 1-8-40* Intermediate shafts, Material *Steel* Identification Marks *23. 7. 40*
Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *Steel* Identification Mark *4974 J.F.C. 24. 5. 40.*

Identification Marks on Air Receivers
W.T.D., Teeles 555 lbs/2" 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 *Empire Cleft Thel Rpt No 51051*

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

The Machinery of this vessel has been fitted on board under Special Survey in accordance with the Rules & the approved plans. The workmanship & materials 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 L.M.C. 3. 41 & O.G. & the notation of Oil Eng. 2. S.C. S.A. 7 G. 9 7/8" x 16 9/16" 118.N.H.P.

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	£	:	When applied for,
Special	£	:	19
Donkey Boiler Fee	£	:	When received,
Travelling Expenses (if any)	£	:	19

Committee's Minute
Assigned *admb. 3 41 oil Eng. O.G.*

Engineer Surveyor to Lloyd's Register of Shipping.
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