

REPORT ON OIL ENGINE MACHINERY.

No. 94275

12 OCT 1936

Date of writing Report 9/10/36 When handed in at Local Office Port of **NEWCASTLE-ON-TYNE**
 Date, First Survey 16 Jan/36 Last Survey 8th Oct 1936
 No. in Survey held at **Newcastle** Number of Visits **42**
 Reg. Book.

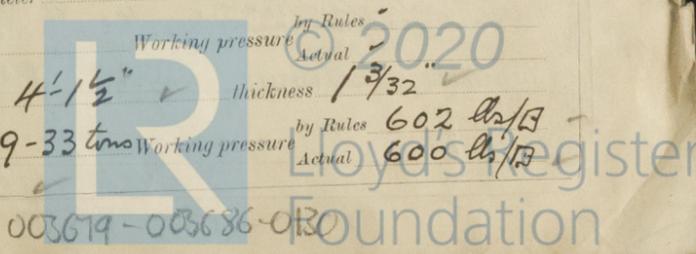
on the **Single** Screw vessel **BRITISH ENDURANCE.** Tons ^{Gross} 8303 _{Net} 4939
 Built at **Newcastle** By whom built **Swan Hunter & Wigham Richardson** Yard No. 1500 When built 1936
 Engines made at **Sunderland** By whom made **W. Daxford & Sons** Engine No. 190 When made 1936
 Donkey Boilers made at **Newcastle** By whom made **Swan Hunter & Wigham Richardson** Boiler No. 1500 When made 1936
 Brake Horse Power **2850** Owners **British Tanker Co** Port belonging to **LONDON**.
 Nom. Horse Power as per Rule **687** Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **Yes**
 Trade for which vessel is intended **Ocean going**

OIL ENGINES, &c. Type of Engines **Daxford opposed piston Oil Engines** 2 or 4 stroke cycle **2** Single or double acting **Single**
 Maximum pressure in cylinders **40 Kg/cm²** Diameter of cylinders **600 mm** Length of stroke **upper 1340 mm lower 980** No. of cylinders **4** No. of cranks **4**
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge **25 tons weight** Is there a bearing between each crank **Yes**
 Revolutions per minute **97** Flywheel dia. **50"** Means of ignition **Compression** Kind of fuel used **Heavy oil fuel**
Crank Shaft, dia. of journals **as per Rule** Crank pin dia. **as per Rule** Crank Webs **as per Rule** Thickness parallel to axis **shrunk**
Flywheel Shaft, diameter **as per Rule** Intermediate Shafts, diameter **as per Rule** Thrust Shaft, diameter at collars **as per Rule**
Tube Shaft, diameter **as per Rule** Screw Shaft, diameter **as per Rule** Is the shaft fitted with a continuous liner **Yes**
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 **Yes**
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner **In one length.**
 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 **Light fit**
Propeller, dia. **16'9"** Pitch **13.4 ft max** No. of blades **4** Material **Manx Bronze** Whether Moveable **No** Total Developed Surface **91** sq. feet
Method of reversing Engines **See Sunderland Report no. 31877 for Main Engines** 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 up funnel**

Cooling Water Pumps, No. **1 main Eng. driven 1 steam standby** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **Yes**
 What special arrangements are made for dealing with cooling water if discharged into bilges **Discharges overboard.**
Bilge Pumps worked from the Main Engines, No. **See Rpt on Main Engines** Can one be overhauled while the other is at work **Yes**
Pumps connected to the Main Bilge Line { No. and Size **1 duplex 10 x 12 x 10 180 tons/hr** } How driven **Steam** { one main Eng. driven, one standby }
Ballast Pumps, No. and size **one 10 x 12 x 10 aft in E. Room Power Driven Lubricating Oil Pumps**, including Spare Pump, No. and size **one 8 x 8 x 10 in Fore Hold Pump Room**
 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 **3-3 1/2, also 1-2 1/2 from ER Coffin dam & 2-2 1/2 from fore Oil Putterways** In Pump Room **Fore 2 of 4, Aft 2 of 4**
 In Holds, &c. **In Fore Cargo Hold 2 of 2 1/2 and 2 of 2.**
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size **2 of 6"**
 Are all the Bilge Suction pipes in Holds and Tanked 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 - 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 **both**
 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 **Yes** Is it fitted with a watertight door **Yes** worked from **Yes**
 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. **Airless Injection** stages **3** Diameters **11 1/2 to 2 3/4** Stroke **7"** Driven by **Steam Engines**
Auxiliary Air Compressors, No. **2** No. of stages **3** Diameters **11 1/2 to 2 3/4** Stroke **7"** Driven by **Steam Engines**
Small Auxiliary Air Compressors, No. **1** No. of stages **3** Diameters **11 1/2 to 2 3/4** Stroke **7"** Driven by **Steam Engines**
Scavenging Air Pumps, No. **1** Diameter **11 1/2** Stroke **7"** Driven by **Steam Engines**
Auxiliary Engines crank shafts, diameter **as per Rule** **In Oil Eng. See Manchester Rpt no 8648.** No. **One 30KW Oil Eng Dyno Set** Position **Side in E. Room**
One 30KW Steam Dyno Set
One 8 KW Steam Lighting Set

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule **Yes** Is a drain fitted at the lowest part of each receiver **Yes**
 Can the internal surfaces of the receivers be examined and cleaned **Yes**
High Pressure Air Receivers, No. **None** Airless Dyno Capacity of each **None** Internal diameter **None** thickness **None**
 Seamless, lap welded or riveted longitudinal joint **Riveted** Material **Steel** Range of tensile strength **29-33 tons** Working pressure **602 lbs/sq in**
Starting Air Receivers, No. **2** Total cubic capacity **280 cub. ft** Internal diameter **4'-1 1/2"** thickness **1 3/32"**
 Seamless, lap welded or riveted longitudinal joint **Riveted** Material **Steel** Range of tensile strength **29-33 tons** Working pressure **600 lbs/sq in**



003619-003686-0130

IS A DONKEY BOILER FITTED? *Yes - two boilers* If so, is a report now forwarded? *Yes*
 Is the donkey boiler intended to be used for domestic purposes only *No, for Auxy Pumps & Air Compressor etc*
 PLANS. Are approved plans forwarded herewith for Shafting *No. 30/12/35* Receivers *10/1/36 & 7/3/36* Separate Tanks *7/3/36*
 (If not, state date of approval)
 Donkey Boilers *15/11/35 & 22/11/35* General Pumping Arrangements *In E.R. 11/3/36* Oil Fuel Burning Arrangements *Oil Fuel 24/4/36*
SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes*
 State the principal additional spare gear supplied
*1 set of ahead thrust pads
 1 - 6 feed T+K lubricator for cylinders
 1 - Solid C. I. Propeller.
 1 - Screw Shaft (C.I.) & nut.
 2 - feed check valve lids
 12 - boiler tubes
 1 - safety valve spring
 1 - set of cages for feed water filters.
 1 - nest of tubes for distilled water cooler
 1 nest of tubes for oil cooler
 1 set of cages or strainers for forced lubrication filters.*

The foregoing is a correct description,
 FOR **SWAN, HUNTER & WIGHAM RICHARDSON, LTD.**
G. J. Sweeney Manufacturer.
 DIRECTOR.

Dates of Survey while building
 During progress of work in shops - *1936*
 During erection on board vessel - *Jan. 16, 22, 30. Feb. 10, 25. Mar. 3, 10, 18, 20, 27. Apr. 9, 14, 16, 23, 28, 30. May 4, 5, 6, 12, 13, 18, 25, 26, 28, 29.
 June 5, 11, 15, 18, 19. July 7, 13, 20. Aug. 4, 10, 12, 20, 25, 29. Oct. 2, 8.*
 Total No. of visits *42.*

Dates of Examination of principal parts - Cylinders *See Sunderland Rpt 31877 for main Engines*
 Crank shaft *✓* Flywheel shaft *✓* Thrust shaft *✓* Intermediate shafts *12-8-36* Tube shaft *✓*
 Screw shaft *7-7-36* Propeller *7-7-36* Stern tube *10-8-36* Engine seatings *7-9-36* Engines holding down bolts *7-9-36*
 Completion of fitting sea connections *19-8-36* Completion of pumping arrangements *2-10-36* Engines tried under working conditions *8-10-36*
 Crank shaft, Material *✓* Identification Mark *✓* Flywheel shaft, Material *✓* Identification Mark *✓*
 Thrust shaft, Material *✓* Identification Mark *✓* Intermediate shafts, Material *S.M. Steel* Identification Marks
 Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *S.M. Steel* Identification Mark *working spare.*

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 *✓* 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 *British Fame, Nwc. Rpt. 94124.*

General Remarks (State quality of workmanship, opinions as to class, &c.)
*The machinery of this vessel has been constructed under special survey in accordance with the Rules and approved plans, and the materials and workmanship are good. The machinery has been satisfactorily installed on board and tested under working conditions.
 The vessel is eligible, in my opinion, for record + LMC. 10.36. Oil by Cl.*

See Correspondence

The amount of Entry Fee .. *By Eng. Bldro* When applied for, *9.10.1936*
 Special *1/5th installing* 21: 17: *9.10.1936*
 2 Donkey Boilers Fee *10-2* 27: 8: *When received, 17.10.36*
 Starting Air Recrs. *7* 4: 4: *19/10*
 Travelling Expenses (if any) *3*

Committee's Minute **TUE. 13 OCT 1936**
 Assigned *+ LMC 10.36
 2 S.B. 150lb oil engines*

