

Rpt. 4b.

# REPORT ON OIL ENGINE MACHINERY.

No. 95349  
AUG 27 1937

Date of writing Report 16/8/37 10 When handed in at Local Office 16/8/37 10 Port of **NEWCASTLE-ON-TYNE**  
No. in Survey held at **Newcastle on Tyne** Date, First Survey 18 Feb 37 Last Survey 13 Aug 1937  
Reg. Book. Number of Visits 5

on the **Single** Screw vessel **"YENANGYAUNG."** Tons Gross 5447 Net 3031  
Built at **Newcastle on Tyne** By whom built **Swan, Hunter & Wigham** Yard No. **1531** When built **1937**  
Engines made at **Sunderland** By whom made **Wm Duxford & Sons, Ld** Engine No. **198** When made **1937**  
Donkey Boilers made at **Newcastle** By whom made **Swan, Hunter & W. Richardson Ld** Boiler No. **1538** When made **1937**  
Brake Horse Power **3000** Owners **BURMA OIL COY.** Port belonging to **NEWCASTLE**  
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, Carrying Petroleum in bulk.**

**L ENGINES, &c.**—Type of Engines **Duxford Opposed-piston Oil Engine** 2 or 4 stroke cycle **2**. Single or double acting **Single**.  
Maximum pressure in cylinders **568 lb** Diameter of cylinders **600 mm** Length of stroke **1340 mm** No. of cylinders **4** No. of cranks **4** No. of throws **3**  
Mean indicated pressure **85 lb** Is there a bearing between each crank **Yes**  
Distance of bearings, adjacent to the Crank, measured from inner edge to inner edge **2320**  
Revolutions per minute **100** Flywheel dia. **17.4 tons ft<sup>2</sup>** Weight **48.8 tons ft<sup>2</sup>** Means of ignition **Compression** Kind of fuel used **Heavy oil fuel**  
Crank Shaft, dia. of journals as per Rule **Yes** Crank pin dia. **Yes** Crank Webs Mid. length breadth **Yes** Thickness parallel to axis **Yes**  
as fitted **Yes** Mid. length thickness **Yes** Thickness around eyehole **Yes**  
Flywheel Shaft, diameter as per Rule **13.06"** Thrust Shaft, diameter at collars as per Rule **Yes**  
as fitted **Yes** Intermediate Shafts, diameter as per Rule **16 1/2"** as fitted **Yes**  
Tube Shaft, diameter as per Rule **15.42"** Is the shaft fitted with a continuous liner **Yes**  
as fitted **Yes** Screw Shaft, diameter as per Rule **16 1/2"** as fitted **Yes**

Bronze Liners, thickness in way of bushes as per Rule **25/32"** Thickness between bushes as per rule **19/32"** Is the after end of the liner made watertight in the stern tube **Yes**  
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 piece**  
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 **tight fit**  
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 **Yes**  
If so, state type **Yes** Length of Bearing in Stern Bush next to and supporting propeller **66 1/2"**  
Propeller, dia. **16-3"** Pitch **13-3"** No. of blades **4** Material **Mang. Bronze** whether Moveable **Solid** Total Developed Surface **90** sq. feet  
Method of reversing Engines **Hand lever** Is a governor or other arrangement fitted to prevent racing of the engine when deaccelerated **Yes** Means of lubrication **Hand & compressed air**  
Thickness of cylinder liners **Yes** 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. **one M. Eng. driven** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **Yes**  
**one Steam Stand-by** What special arrangements are made for dealing with cooling water if discharged into bilges **Yes**  
Bilge Pumps worked from the Main Engines, No. **None** Diameter **Yes** Stroke **Yes** Can one be overhauled while the other is at work **Yes**  
Pumps connected to the Main Bilge Line No. and Size **one 7x8x8 duplex + one 10x11x10 duplex** How driven **Steam driven**  
Ballast Pumps, No. and size **one 10x11x10 duplex in E.R.** Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size **one M. Eng. driven, one Steam Standby 8x7x13"**  
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 of 3 1/2", 2 of 2 1/2" from OF Gutterways** In Pump Room **2 of 4"**  
in Holds, &c. **Ford Hold 2 of 2 1/2", Pump Room in Ford Hold one of 2", Ford Cofferdam 1 of 4", Aft Cofferdam 1 of 3" (Steam ejector)**  
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size **Two of 5"**

Are all the Bilge Suction pipes in Holds **Yes** fitted with strum-boxes **Yes** Are the Bilge Suctions in the Machinery Spaces **Yes**  
connected 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 **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 **none** 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 **Yes**  
Main Air Compressors, No. **None** Airless Injection **Yes** No. of stages **3** Diameters **1960 mm** Stroke **610 mm** Driven by **levers from main engine**  
Auxiliary Air Compressors, No. **Two** No. of stages **3** Diameters **See Gms. Rpt 20056** Stroke **Two 25kW. - one oil engine driven, one Steam eng. driven** Driven by **Steam engines**  
Small Auxiliary Air Compressors, No. **None** No. of stages **Yes** Diameters **Yes** Stroke **Yes** Driven by **Yes**  
Scavenging Air Pumps, No. **one** Diameter **1960 mm** Stroke **610 mm** Driven by **levers from main engine**  
Auxiliary Engines crank shafts, diameter as per Rule **For 25kW oil eng. See Gms. Rpt 20056** No. **Two 25kW. - one oil engine driven, one Steam eng. driven** Position **Both on Starboard side in E. Room.**

**AIR RECEIVERS:**—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**  
High Pressure Air Receivers, No. **None** Cubic capacity of each **Yes** Internal diameter **Yes** thickness **Yes**  
Seamless, lap welded or riveted longitudinal joint **Yes** Material **Yes** Range of tensile strength **Yes** Working pressure by Rules **2020** Actual **Yes**  
Starting Air Receivers, No. **Two** Total cubic capacity **280 cub. ft** Internal diameter **4-1 1/2"** thickness **1 3/32"**  
Seamless, lap welded or riveted longitudinal joint **T. Riveted. Dbl. butt straps** Material **Steel** Range of tensile strength **29-33 tons** Working pressure by Rules **600 lb** Actual **600 lb**

IS A DONKEY BOILER FITTED? *Yes. Two Donkey Boilers.* If so, <sup>are</sup> reports now forwarded? *Yes.*

Is the donkey boiler intended to be used for domestic purposes only? *No.*

PLANS. Are approved plans forwarded herewith for Shafting *4/12/36* Receivers *4/9/36* Separate Tanks *11/1/37 & 25/3/37*  
(If not, state date of approval)  
 Donkey Boilers *1/9/36* General Pumping Arrangements *at Leds 27/10/36* Oil Fuel Burning Arrangements *23/3/37*  
*in Working Spec. 17/12/36*

SPARE GEAR.

Has the spare gear required by the Rules been supplied? *Yes.*

State the principal additional spare gear supplied *1 Screw Shaft; 12 gauge glasses; 1 feed check valve lid; 12 boiler tubes; 2 safety valve springs of each size; 1 set of cages for feed water filter; 1 set of cages for forced lubrication strainers; for Boiler feed pump, 1 set of valves & springs; 1 set of piston rings, 1 set of bucket rings & 1 bucket complete with rings.*

The foregoing is a correct description,

for **OWEN LUNTER & WILIAM RICHARDSON, LIMITED**

*M. Jones*

Manufacturer.

1934. *Feb. 18, 24, 25, Mar 2, 9, 11, 12, 15, 16, 22, Apr 5, 4, 8, 12, 14, 15, 16, 21, 23, 26, 27, 29, 30, May 3, 4, 10, 11, 13, 19, 25, 24, 28 June 4, 8, 15, 16, 22, 25, 30, July 5, 12, 14, 15, 20, 22, 26, 27, 30, Aug 4, 5, 12, 13.*  
 Dates of Survey while building: During progress of work in shops --  
 During erection on board vessel --  
 Total No. of visits *53.*

Dates of Examination of principal parts—Cylinders ✓ *See Sunderland, Rpt no 32109.* Covers ✓ Pistons ✓ Rods ✓ Connecting rods ✓  
 Crank shaft ✓ Flywheel shaft ✓ Thrust shaft ✓ Intermediate shafts *12/4/37* Tube shaft ✓  
 Screw shaft *12/4/37* Propeller *26/4/37* Stern tube *12/4/37* Engine seatings *5/7/37* Engines holding down bolts *6/7/37*  
 Completion of fitting sea connections *4/6/37* Completion of pumping arrangements *5/8/37* Engines tried under working conditions *13/8/37*  
 Crank shaft, Material ✓ *See Sunderland* Identification Mark ✓ Flywheel shaft, Material ✓ Identification Mark ✓  
 Thrust shaft, Material ✓ *Rpt no 32109.* Identification Mark ✓ Intermediate shafts, Material *S.M. Steel* Identification Marks *661 F.S. 11742 J.L.*  
 Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material *S.M. Steel* Identification Mark *working 3360 F.S. spare 3361 F.S.*

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 *No* If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c.)  
*The machinery of this vessel has been constructed and installed under Special Survey in accordance with the Society's Rules and the approved plans, and the materials and workmanship are good.*  
*The machinery has been satisfactorily tested under working conditions, and the vessel is eligible in my opinion, for record + LMC. 8.37, TS.Cl., 2DB. 150th. FD.*

*A Watt & W. Nicholson.*  
 Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee .. £	When applied for,	When received,
Special <i>1/5<sup>th</sup> installing</i> £ 21 : 17 :	<i>26 AUG 1937</i>	
<i>£17-6</i>		
2 Donkey Boilers Fee <i>11-10</i> £ 28 : 16 :		
2 Starting Air Rec. £ 4 : 4 :	<i>7.9</i>	<i>19.37/8.9</i>
Travelling Expenses (if any) £		

Committee's Minute *FRI 3 SEP 1937*

Assigned *+ LMC 8.37*  
*2DB-150th*  
*oil cl. CW*



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