

REPORT ON OIL ENGINE MACHINERY.

No. 70305

9 - JAN 1946

Received at London Office

4b.

pt. 7030

Port of **GLASGOW.**

Date of writing Report

When handed in at Local Office

5.1.46

GLASGOW.

Survey held at

GLASGOW.

Date, First Survey 17:11:43

Last Survey 12th Dec. 1945

Number of Visits 100

on the **Single** Screw vessel **M/V "EMPIRE GRANADA"**

Tons { Gross
Net

built at **GLASGOW**

By whom built **HARLAND & WOLFF LTD.**

Yard No. **1197** When built -

Engines made at **Do.**

By whom made **do.**

Engine No. **A/MS/462** When made **1945.**

Boilers made at -

By whom made -

Boiler No. - When made -

Indicated Horse Power **3200** ✓

Owners **M.E. MOSS & CO.**

Port belonging to -

Horse Power as per Rule **490** ✓

Is Refrigerating Machinery fitted for cargo purposes **No** ✓

Is Electric Light fitted **Yes** ✓

Trade for which vessel is intended

Tanker. ✓

ENGINES, &c. Type of Engines **Heavy Oil, Airless injection** ✓ 2 or 4 stroke cycle **4** ✓ Single or double acting **Single** ✓

Maximum pressure in cylinders **700 lbs** ✓ Diameter of cylinders **740m/m** ✓ Length of stroke **1500m/m** ✓ No. of cylinders **6** ✓ No. of cranks **6** ✓

Indicated Pressure **128** lb sq. in.

Distance between bearings, adjacent to the Crank, measured from inner edge to inner edge **972 m/m** ✓ Is there a bearing between each crank **Yes.**

Revolutions per minute **115** ✓ Flywheel dia. **2489m/m** ✓ Weight **2590Kgs.** ✓ Means of ignition **Compression** ✓ Kind of fuel used **Diesel** ✓

Crank Shaft, { Solid forged dia. of journals as per Rule **505m/m as approved** ✓ Crank pin dia. **505 m/m** ✓ Crank Webs Mid. length breadth **980 m/m** ✓ Thickness parallel to axis **310m/m** ✓
Semi built as fitted **505m/m** ✓ Bored **230m/m** ✓ Mid. length thickness **310m/m** ✓ Thickness around eyehole **292.5m/m** ✓
All built Bored **115 m/m** ✓

Intermediate Shafts, diameter as per Rule **As approved** ✓ Thrust Shaft, diameter at collars as per Rule **As approved** ✓

Wheel Shaft, diameter as per Rule - as fitted - Intermediate Shafts, diameter as per Rule **17"** ✓ as fitted - Thrust Shaft, diameter at collars as per Rule **454 m/m** ✓ as fitted -

Propeller Shaft, diameter as per Rule - as fitted - Screw Shaft, diameter as per Rule **as approved** ✓ as fitted **16"** ✓ Is the { screw } shaft fitted with a continuous liner { **Yes.** ✓

Bronze Liners, thickness in way of bushes as per Rule **as approved** ✓ as fitted **13/16"** ✓ Thickness between bushes as per Rule **as approved** ✓ as fitted **21/32"** ✓ 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 -

Does the liner do 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 -

Are two liners 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 -

Length of Bearing in Stern Bush next to and supporting propeller **510"** ✓

Propeller, dia. **15'6"** ✓ Pitch **12'0"** ✓ No. of blades **4** ✓ Material **Bronze** ✓ Whether Moveable **No** ✓ Total Developed Surface **75 sq. ft.** ✓

Method of reversing Engines **Direct** Is a governor or other arrangement fitted to prevent racing of the engine when de-clutching **Yes.** Means of lubrication -

Thickness of cylinder liners **53 m/m to 41 m/m** Are the cylinders fitted with safety valves **Yes** Are the exhaust pipes and silencers water cooled or lagged with -

Insulating 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 -

Boiling Water Pumps, No. **2 S.W. and 2 F.W.** ✓ Is the sea suction provided with an efficient strainer which can be cleared within the vessel -

Large Pumps worked from the Main Engines, No. **One** Diameter - Stroke - Can one be overhauled while the other is at work -

Pumps connected to the Main Bilge Line { No. and Size - How driven -

Is the cooling water led to the bilges - If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements -

Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size **2 @ 100 tons/hour.**

Are two independent means arranged for circulating water through the Oil Cooler - Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge -

Pumps, No. and size: - In Machinery Spaces - In Pump Room -

Hold, &c. -

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size -

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes - Are the Bilge Suctions in the Machinery Spaces -

from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges -

Are all Sea Connections fitted direct on the skin of the ship - Are they fitted with Valves or Cocks -

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates - Are the Overboard Discharges above or below the deep water line -

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel - Are the Blow Off Cocks fitted with a spigot and brass covering plate -

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 -

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 -

apartment to another - Is the Shaft Tunnel watertight - Is it fitted with a watertight door - worked from -

On 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. **None** No. of stages - Diameters - Stroke - Driven by -

Auxiliary Air Compressors, No. **2** No. of stages **2** Diameters **280m/m** Stroke **130m/m** Driven by **Steam.**

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

Is any provision made for first Charging the Air Receivers **Steam driven compressors.**

Reversing Air Pumps, No. **None** Diameter - Stroke - Driven by -

Auxiliary Engines crank shafts, diameter as per Rule - as fitted - No. - Position -

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

PUTTING OUT - B.C. CLASSIFICATION



002522-002528-0159

AIR RECEIVERS:—Have they been made under survey **Yes** ✓ State No. of Report or Certificate **Bel. Cert. No. Z. 1398**
 Is each receiver, which can be isolated, fitted with a safety disc. **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 **900cu.ft.** Internal diameter **6'05/16** thickness **1"** ✓
 Seamless, lap welded or riveted longitudinal joint **Riveted** Material **Steel** ✓ Range of tensile strength **28/32tons** Working pressure by Rules **361.51** Actual **356 1/2**

IS A DONKEY BOILER FITTED? 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 **15: 1: 44.** Receivers **2: 12: 43.** Separate Fuel Tanks -
 (If not, state date of approval) **7: 1: 44.** **2: 12: 44.**
 Donkey Boilers - General Pumping Arrangements - Pumping Arrangements in Machinery Space -
 Oil Fuel Burning Arrangements -
SPARE GEAR.
 Has the spare gear required by the Rules been supplied **Yes** ✓
 State the principal additional spare gear supplied **As per rule and specification.**

The foregoing is a correct description,
 For **HARLAND AND WOLFF, LIMITED.** Manufacturer.
 Wm. W. Wright. Finnieston Secretary
 Dates of Survey while building
 During progress of work in shops - 1943 Nov 17, 1944 Jan 10, 24 Feb 9, Mar 15, 28 Apr 26 May 1, 4, 16, 18, 24, 31 Jun 5, 7, 12, 15, 19, 22, 28 Jul 4, 26 Aug 7, 14, 17, 20, 24 Sep 14, 27 Oct 4, 11, 18, 25 Nov 1, 8, 15, 22, 29 Dec 6, 13, 20, 27
 During erection on board vessel - -
 Total No. of visits **100**
 Dates of Examination of principal parts—Cylinders **14: 2: 45** Covers **14: 2: 45** Pistons **8: 3: 45** Rods **8: 3: 45** Connecting rods **7: 2: 45**
 Crank shaft **11: 9: 44.** Flywheel shaft - Thrust shaft **11: 9: 44** Intermediate shafts **12: 12: 45.** Tube shaft -
 Screw shaft **12: 12: 45.** Propeller **12: 12: 45.** Stern tube **29: 11: 45.** Engine seatings - Engines holding down bolts -
 Completion of filling sea connections - Completion of pumping arrangements - Engines tried under working conditions **26: 11: 45**
 Crank shaft, Material **Steel** Identification Mark **Lloyds 9507** Flywheel shaft, Material - Identification Mark -
 Thrust shaft, Material **Steel** Identification Mark **Lloyds 3.9523** Intermediate shafts, Material **Steel** Identification Mark **G.E.M. 12: 12: 45**
 Tube shaft, Material - Identification Mark **GEM 11: 9: 44** Screw shaft, Material **Steel** Identification Mark **Lloyds 14507**
 Identification Marks on Air Receivers **No. 306** **No. 307**
Lloyds Test 556 lbs. **Lloyds Test 556 lbs.**
W.P. 356 lbs/sq. in. **W.P. 356 lbs**
1: 11: 44 T.D.S. **16: 11: 44 T.D.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 **Yes** ✓ If so, state name of vessel **"BRITISH MIGHT."**

General Remarks (State quality of workmanship, opinions as to class, &c. **The machinery of this vessel has been constructed under Special survey, and in accordance with the approved plans, the Rules of this Society, and the Ministry of War Transport specification for the main engines. The materials and workmanship are good. On completion the engine was tried in the shop at full power, with satisfactory results. This engine is intended for a vessel No. 1197 building at Messrs. Harland & Wolff Ltd., Govan to B.C. Classification.**

NOTE: Torsional records, notice No. 1803. This machinery is a duplicate of M/V British Courage, see London letter 20th March, 1944. *The shafting is not a duplicate of British Courage whose screw shaft is 15 7/8" & intermediate is 16"*

The amount of Entry Fee	£	:	:	When applied for,
Special Specification	65	13	4	29/12/45
Donkey Boiler Fee	16	8	0	When received,
Travelling Expenses (if any)	£	:	:	-19

G. E. Murdoch.
 Engineer Surveyor to Lloyd's Register of Shipping.
 10 MAY 1946

Committee's Minute
 Assigned *Transmit to London*

See also file 2020619
 Lloyd's Register Foundation

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