

Rpt. 4b

2 JUL 1946

## REPORT ON OIL ENGINE MACHINERY.

No. 14187

Received at London Office

29 JUN 1946

Date of writing Report 26<sup>TH</sup> JUNE 1946 When handed in at Local Office 26<sup>TH</sup> JUNE 1946 Port of BELFAST

No. in Survey held at BELFAST

Date, First Survey 14<sup>th</sup> March 1945 Last Survey 20<sup>th</sup> June 1946

Reg. Book.

Number of Visits 148.

Single  
on the Twin  
Triple  
Quadruple

Screw vessel

"LYRIA"

Tons Gross 6452  
Net 3603

Built at BELFAST

By whom built HARLAND &amp; WOLFF, LD. Yard No. 1308 When built 1946

Engines made at BELFAST

By whom made HARLAND &amp; WOLFF, LD. Engine No. 1308 When made 1946

Donkey Boiler made at BELFAST

By whom made HARLAND &amp; WOLFF, LD. Boiler No. 1308 When made 1946

Brake Horse Power 2800

Owners ANGLO-SAXON PETROLEUM CO. LD. Port belonging to LONDON

Nom. Horse Power as per Rule 377

Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted YES

Trade for which vessel is intended CARRYING PETROLEUM IN BULK

OIL ENGINES, &amp;c. Type of Engines DIESEL WITH UNDER PISTON SUPERCHARGE. 2 or 4 stroke cycle 4 Single or double acting S

Maximum pressure in cylinders 700 LB/IN<sup>2</sup>Mean Indicated Pressure 128 LB/IN<sup>2</sup> Diameter of cylinders 650 MM Length of stroke 1400 MM No. of cylinders 6 No. of cranks 6

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 844 MM Is there a bearing between each crank YES

Revolutions per minute 120 Flywheel dia. 2218 MM Weight 7500 Kgs. Means of ignition COMP. Kind of fuel used DIESEL

Crank Shaft, { Solid forged as per Rule - dia. of journals as fitted 460 MM Crank pin dia. 460 MM Crank Webs Mid. length breadth 750 MM Thickness parallel to axis 267-PINS 290-JOBS. All built as fitted 460 MM 134 MM CENTRAL HOLE Mid. length thickness 267 MM Thickness around eye-hole 205 MM

Flywheel Shaft, diameter as per Rule - as fitted 460 MM Intermediate Shafts, diameter as per Rule - as fitted 16 1/2" Thrust Shaft, diameter at collars as per Rule - as fitted 15 1/2"

Tube Shaft, diameter as per Rule - as fitted - Screw Shaft, diameter as per Rule - as fitted 16" Is the { tube screw } shaft fitted with a continuous liner YES

Bronze Liners, thickness in way of bushes as per Rule - as fitted 13/16" Thickness between bushes as per Rule - as fitted 2 1/32" 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 -

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 No If so, state type - Length of Bearing in Stern Bush next to and supporting propeller 4'-10"

Propeller, dia. 14'-9" Pitch 11'-0" No. of blades 4 Material MANG. BR. whether Moveable SOLID Total Developed Surface 75 sq. feet

Method of reversing Engines COMP. AIR Is a governor or other arrangement fitted to prevent racing of the engine when disengaged YES Means of lubrication

FORCED Thickness of cylinder liners 48 MM 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 -

Cooling Water Pumps, No. 2 S.W. 2 F.W. 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. 1 Diameter ROTARY Stroke - Can one be overhauled while the other is at work -

Pumps connected to the Main Bilge Line { No. and Size 1 @ 28 T/HR 1 @ 40 T/HR 1 @ 100 T/HR How driven MAIN ENG. STEAM STEAM

Is the cooling water led to the bilges No If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping

arrangements - 1 @ 100 T/HR 1 ENG. DRIVEN @ 125 T/HR.

Ballast Pumps, No. and size 1 @ 6" x 6" x 6" FORWARD Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 INDEP. SPARE @ 100 T/HR.

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" In Pump Room 1 @ 2 1/2"

In Hold, &amp;c. 2 @ 2 1/2" Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 6" 1 @ 4" 1 @ 6" EMERGENCY.

Are all the Bilge Suction pipes in Holds and Tunnel Wall 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 YES

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 - 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

STARTING Main Air Compressors, No. 1 No. of stages 2 Diameters 124 FT<sup>3</sup> FREE AIR / MIN. Driven by STEAMSTARTING Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 90 FT<sup>3</sup> Stroke " Driven by AUX. OIL ENG.

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

What provision is made for first Charging the Air Receivers STEAM DRIVEN COMP.

Scavenging Air Pumps, No. - Diameter - Stroke - Driven by -

Auxiliary Engines crank shafts, diameter as per Rule - as fitted 4 3/16" JOUR. 3 1/4" PIN No. 1 4 CY. BHP 48 Ruston Hornsby.

Have the Auxiliary Engines been constructed under special survey YES Is a report sent herewith SEE ATTACHED

NOTT<sup>M</sup> CERT.

011047-011056-0035



AIR RECEIVERS:—Have they been made under survey

YES ✓

State No. of Report or Certificate Z1662 ✓

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

Actual

Starting Air Receivers, No.

Total cubic capacity

Internal diameter

thickness

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure

by Rules

Actual

IS A DONKEY BOILER FITTED?

YES ✓

If so, is a report now forwarded?

YES ✓

Is the donkey boiler intended to be used for domestic purposes only

No ✓

PLANS.

Are approved plans forwarded herewith for Shafting

23/2/45, 15/3/45

Receivers

10/4/45

Separate Fuel Tanks

NONE

Donkey Boilers

2/6/45

General Pumping Arrangements

9/11/45

Pumping Arrangements in Machinery Space

9/11/45

Oil Fuel Burning Arrangements

2/1/46

SPARE GEAR.

Has the spare gear required by the Rules been supplied

YES ✓

State the principal additional spare gear supplied

SEE ATTACHED LIST

N.B. FORGING RPTS. WILL BE FORWARDED WITH RPT. FOR SISTER VESSEL M.V. "LINGA" (YARD No. 1309) IN DUE COURSE.

The foregoing is a correct description,

KARLAND AND WOLFF, LIMITED Manufacturer.

Dates of Survey while building  
During progress of work in shops--  
During erection on board vessel--  
Total No. of visits

Dates of Examination of principal parts—Cylinders 3,6/10/45 Covers 4/7-14/8/45 Pistons 19/4-3/12/45 Rods 2/11/45 Connecting rods 10,15/10/45

Crank shaft 13/10/45 Flywheel shaft 13/10/45 Thrust shaft 9/10/45 Intermediate shafts 1/3/46 Tube shaft

Screw shaft 1/3/46 Propeller 12/1/46 Stern tube 22/2/46 Engine sealings 8/11/45 Engines holding down bolts 18/4/46

Completion of filling sea connections 26/2/46 Completion of pumping arrangements 14/5/46 Engines tried under working conditions 20/6/46

Crank shaft, Material STEEL Identification Mark LLOYD'S NO. 1120 Flywheel shaft, Material STEEL Identification Mark AS CRANK

Thrust shaft, Material STEEL Identification Mark LLOYD'S NO. 62265 Intermediate shafts, Material STEEL Identification Marks LLOYD'S NO. 48

Tube shaft, Material STEEL Identification Mark LLOYD'S NO. 48 Screw shaft, Material STEEL Identification Mark LLOYD'S NO. 48

Identification Marks on Air Receivers No. 335

LLOYD'S TEST 556 LBS.

W.P. 356 LBS.

J.M.A. 26/11/45

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 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.)

Constructed under Official Survey in accordance with the Society's Rules and Regulations and the Secretary's letters. The scantlings and arrangements are in accordance with the approved plans.

The materials and workmanship are good. The machinery has been efficiently installed on board the vessel and tested under full working conditions at sea with satisfactory results (Torsional vibration characteristics approved 23/3/45) ✓

In our opinion this machinery is eligible to receive the notations:-

+ L.M.C. 6,46 OIL ENGINE

T.S.-C.L. D.B. 180 LB.

The amount of Entry Fee .. £ 6 : When applied for,

Special ... £ 81 : 11 : 27-June 1946

Donkey Boiler Fee ... £ 23 : 12 : When received,

Travelling Expenses (if any) £ 4 : 19

AIR RECEIVER & 4 : FRI. 26 JUL 1946

Committee's Minute

Assigned + LMC 6,46 Oil Eng.

C.L. D.B. 180 LB.

John McAfee Esq. C. E. Esq. Engineer Surveyor to Lloyd's Register of Shipping.

Lloyd's Register Foundation