

REPORT ON OIL ENGINE MACHINERY.

No. 25373

Date of writing Report 19/4/55 to 13/5/1955

Received at London Office

18 MAY 1955

13 JUL 1955

When handed in at Local Office 13/5/1955

Port of GREENOCK

No. in Reg. Book 91424

Survey held at GREENOCK

Date, First Survey 20/8/54

Last Survey 6<sup>th</sup> MAY 1955

Number of Visits 73

Single Screw vessel "AYIA MARKELLA"

Tons Gross Net

Built at SUNDERLAND

By whom built BARTRAM & SONS LTD.

Yard No. 348

When built 1955

Engines made at GREENOCK

By whom made JOHN G. KINCAID & CO. LTD.

Engine No. K164

When made 1955

Donkey Boilers made at GREENOCK

By whom made JOHN G. KINCAID & CO. LTD.

Boiler No. K164

When made 1955

Brake Horse Power Maximum 4400 Service 880

Owners C.M.L. MARITIME CO. LTD.

Port belonging to CHIOS

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

Trade for which vessel is intended OPEN SEA SERVICE.

OIL ENGINES, &c. - Type of Engines KINCAID - BURMEISTER & WAIN 2 or 4 stroke cycle 2 Single or double acting SINGLE

Maximum pressure in cylinders 700 lbs/sq. in Diameter of cylinders 610mm Length of stroke 470mm No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure 6.3 kg/cm<sup>2</sup> Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 1194mm

Is there a bearing between each crank YES Revolutions per minute Maximum 115 Service

Flywheel dia. 8.17 ft. Weight 2.35 tons Moment of inertia of flywheel 2218.2 Kg.M<sup>2</sup> Means of ignition COMP. Kind of fuel used HEAVY OIL

balance wts. 1629 Kg.M<sup>2</sup>

Crank Shaft dia. of journals 485mm Crank pin dia. 560mm Crank webs Mid. length breadth 1020mm Mid. length thickness 250mm

Flywheel Shaft diameter 440mm Intermediate Shafts, diameter 13" Thrust Shaft, diameter at collar's 440mm

Tube Shaft, diameter as fitted Screw Shaft, diameter as fitted 18" Is the shaft fitted with a continuous liner YES

Bronze Liners, thickness in way of bushes 7/8" Thickness between bushes 2 1/2" 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 YES

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 YES

If two liners are fitted, is the shaft lapped or protected between the liners YES Is an approved Oil Gland fitted at the after end of stern tube NO

Propeller, dia. 16.50' Pitch 13.48' No. of blades 4 Material BRONZE whether moveable SOLID Total developed surface 101.6 sq. feet

Moment of inertia of propeller including entrained water 13460 Kg.M<sup>2</sup> Kind of damper, if fitted YES

Method of reversing Engines DIRECT Is a governor fitted to prevent racing of the engine YES

Lubrication FORCED Thickness of cylinder liners 45mm Are the cylinders fitted with safety valves YES

Are the exhaust pipes and silencers 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 YES

Cooling Water Pumps, No. and how driven 2 F.W. & 2 S.W. Working F.W. (1) M.E. DRIVEN

S.W. (1) M.E. DRIVEN Spare F.W. (1) STEAM S.W. (1) STEAM 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. and capacity NONE Can one be overhauled while the other is at work YES

Pumps connected to the Main Bilge Line No. and capacity of each 1x 100 TONS/H.R. 1x 250 TONS/H.R. How driven 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 YES

Ballast Pumps, No. and capacity 1x 250 TONS/H.R. Power Driven Lubricating Oil Pumps, including spare pump, No. and size 1x M.E. DRIVEN 284 TONS/H.R. 1x STEAM 235 TONS/H.R.

Are two independent means arranged for circulating water through the Oil Cooler YES Branch Bilge Suctions 3"

No. and size: - In machinery spaces 3x 3" FORB. C/OAM 1x 2 1/2" AFF. C/OAM 1x 2 1/2" OILY BILGES 2" P.X.S. FORO. In pump room 2"

In holds, &c. NO 1 - 3" P.X.S., NO 2 HOLD - 3 1/2" P.X.S., NO 3 - 4" P.X.S., NO 4 - 3" P.X.S., NO 5 - 3" P.X.S. 2 1/2" TUNNEL WELL.

Direct Bilge Suctions to the engine room bilges, No. and size 1x 9", 1x 5 1/2", 1x 3"

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes YES

Are the bilge suction pipes in holds and tunnel well fitted with strum-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 ON RESERVOIRS OR Are they fitted with valves or cocks YES

Are they each fitted with a discharge valve always accessible on the plating of the vessel YES

Are the overboard discharges above or below the deep water line YES

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 YES

How are they protected YES

What pipes pass through the deep tanks YES

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

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 No. of stages 2 diameters stroke driven by STEAM ENGINES

Auxiliary Air Compressors, No. TWO No. of stages 2 diameters 9" x 4" stroke 6" driven by

Small Auxiliary Air Compressors, No. YES No. of stages 2 diameters stroke driven by

What provision is made for first charging the air receivers STEAM DRIVEN AIR COMPRESSORS.

Scavenging Air Blowers, No. 2 How driven CHAIN DRIVEN FROM ENGINE.

Auxiliary Engines Have they been made under survey YES Engine Nos. Position of each in engine room Report No.

**AIR RECEIVERS:**—Have they been made under survey... **YES** State No. of report or certificate **CERT. NO. 4912 & 49**  
 State full details of safety devices **FUSIBLE PLUGS ON AIR RECEIVERS AND RELIEF VALVE ON CHARGING LINE.**  
 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, welded or riveted longitudinal joint  Material  Range of tensile strength  Working pressure   
 Starting Air Receivers, No. **2** Total cubic capacity **600 ft<sup>3</sup>** Internal diameter **5'-10 1/4"** thickness **15 1/16"**  
 Seamless, welded or riveted longitudinal joint **RIVETED** Material **STEEL** Range of tensile strength **SWELL 29/33 TONS/IN<sup>2</sup>** Working pressure **350 lbs/IN<sup>2</sup>**

**DONKEY BOILERS 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... **YES** Receivers... **YES** Separate fuel tanks... **YES**  
 Donkey boilers... **YES** General pumping arrangements... **YES** Pumping arrangements in machinery space... **YES**  
 Oil fuel burning arrangements **YES**  
 Have Torsional Vibration characteristics been approved... **YES** Date and particulars of approval **19/7/54**  
**23/7/54. APPROVED FOR SERVICE SPEED OF 115 R.P.M.**

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied... **YES** State if for "short voyages" only... **No**  
 State the principal additional spare gear supplied... **COMPLETE LIST OF SPARE GEAR ATTACHED TO REPORT.**

For **JOHN G. KINCAID & COY. LIMITED.**  
 The above is a correct description of...  
**W. H. Taylor** Chief Draughtsman. Manufacturer.

Dates of Survey while building  
 During progress of work in shops - - (1954) AUG. 20-30. SEPT. 8-15-24. OCT. 22-25-27-29. NOV. 1-3-5-15-17-19-22-24-26-29-30. DEC. 1-3-6-8-10-13-15-17-20-22-24-27-29.  
 During erection on board vessel - - (1955) JAN. 7-10-12-14-17-19-21-24-26-27-28-31. FEB. 2-14-16-18-23-28. MAR. 2-4-7-9-11-14-16-21-23-25-28-30. APRIL 1-4-6-8-11-13-15-20-22-24-26-28-30. MAY 6.

Total No. of visits **45**  
 Dates of examination of principal parts—Cylinders **22/10/54 to 22/4/55** Covers  Pistons **1/11/54 to 8/4/55** Rods **26/11/54 to 8/4/55** Connecting rods **26/11/54 to 8/4/55**  
 Crank shaft **22/12/54 to 8/4/55** Flywheel shaft **22/12/54 to 8/4/55** Thrust shaft **8/4/55** Intermediate shafts **8/12/54 to 17/1/55** Tube shaft   
 Screw shaft **22/4/54 to 17/12/54** Propeller **22/11/54 to 17/12/54** Stern tube **15/11/54 to 29/11/54** Engine seatings  Engine holding down bolts   
 Completion of fitting sea connections  Completion of pumping arrangements  Engines tried under working conditions   
 Crank shaft, material **WES-C.S.** Identification mark **SEE SHIP REPORTS NOS. F56290, F59555, F61083, F61310, L.R. 21957, F6492.** Flywheel shaft, material **AS THRUST** Identification mark **SEE OORTMUNO CERTS.**  
 Thrust shaft, material **I.S. 28/32** Identification mark **L.R. 21957, F6492.** Intermediate shafts, material **DOES NOT IDENTIFICATION MARKS**  
 Tube shaft, material  Identification mark  Screw shaft, material **DOES NOT IDENTIFICATION MARKS**  
 Identification marks on air receivers **C.4912 LLOYDS TEST-GAR. 550 lbs. W.P. 350 lbs. H.K.T. 31/12/54. C.4913 LLOYDS TEST-GAR. 550 lbs. W.P. 350 lbs. H.K.T. 10/8/55.**

Welded receivers, state Makers' Name...  
 Is the flash point of the oil to be used over 150°F...   
 Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with...   
 Full description of fire extinguishing apparatus fitted in machinery spaces... **CHEMICAL EXTINGUISHERS SUPPLIED. COMPLETE LIST OF FIRE EXTINGUISHING APPLIANCE ATTACHED TO REPORT.**  
 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...  
 What is the special notation desired...  
 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, Speed restrictions, &c.) **THE MACHINERY OF THIS VESSEL HAS BEEN CONSTRUCTED UNDER SPECIAL SURVEY IN ACCORDANCE WITH THE APPROVED PLANS AND THE RULES OF THIS SOCIETY. THE MATERIALS AND THE WORKMANSHIP ARE GOOD. THE MACHINERY IS SUITABLE FOR FITTING IN A CLASSED VESSEL AND ON EFFICIENT INSTALLATION AND TEST, WILL BE ELIGIBLE FOR THE RECORD OF LMC (WITH DATE AND NOTATIONS TS CL, 2 DB'S 150 lbs/IN<sup>2</sup>, OIL ENGINE 25 CSA. ON COMPLETION OF THE SHOP TESTS, THE ENGINE FABRICATIONS WERE EXAMINED AND FOUND IN ORDER. CRANKCASE EXPLOSION DOORS ARE FITTED TO MAIN ENGINE. THE MACHINERY HAS BEEN DESPATCHED TO SUNDERLAND FOR INSTALLATION IN THE VESSEL.**

The amount of Entry Fee **ENGINE £198-0-0**  
 Special ... **WELDOES £22-15-0** When applied for **12<sup>th</sup> MAY 1955.**  
 Donkey Boiler Fee... **£57-0-0**  
 Air Receivers **£16-0-0** When received **19**  
 Travelling Expenses (if any) **£**

Committee's Minute **GLASGOW 17 MAY 1955**  
 Assigned **Deferred for completion.**  
**H. K. Taylor**  
 Engineer Surveyor to Lloyd's Register of Shipping.  
**TUESDAY 30 AUG 1955**  
 Lloyd's Register Foundation