

# REPORT ON OIL ENGINE MACHINERY.

No. 7928

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No. in Survey held at Hong Kong Date, First Survey April 19<sup>th</sup> Last Survey 16<sup>th</sup> Oct. 1937  
Reg. Book. Number of Visits 22

on the <sup>Single</sup> <sup>Triple</sup> <sup>Quadruple</sup> Screw vessel "MOAMO" Tons { Gross 553.91  
Net 296.31

Built at Hong Kong By whom built The Hongkong & Whampoa Dock Co. Yard No. 771 When built 1937

Engines made at Glasgow By whom made Harland & Wolff Ltd Engine No. 7029 When made 1937

Donkey Boilers made at None By whom made ✓ Boiler No. ✓ When made ✓

Brake Horse Power 460 Owners Burns Philp (South Sea) Co. Ltd Port belonging to Hong Kong

Nom. Horse Power as per Rule 84 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes

Trade for which vessel is intended South Sea Island Trade

OIL ENGINES, &c.—Type of Engines Enclosed Trunk airless injection 2 or 4 stroke cycle 2 Single or double acting S. A.

Maximum pressure in cylinders 700 lbs. Diameter of cylinders 280 mm Length of stroke 500 mm No. of cylinders 4 No. of cranks 4

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 358 mm Is there a bearing between each crank yes

Revolutions per minute 330 Flywheel dia. 1246 mm Weight 420 kgs. Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, dia. of journals as per Rule 174.9 mm Crank pin dia. 200 mm Crank Webs Mid. length breadth 270 mm Kind of fuel used Diesel oil  
as fitted 220 mm with 62 mm central hole Mid. length thickness 108 mm Thickness parallel to axis Solid  
Thickness around eye hole Forged

Flywheel Shaft, diameter as per Rule 174.9 mm Intermediate Shafts, diameter as per Rule 4.66" Thrust Shaft, diameter at collars as per Rule 4.88"  
as fitted 220 mm as fitted 4.78" as fitted 220 mm with 62 mm central hole

Tube Shaft, diameter as per Rule ✓ Screw Shaft, diameter as per Rule 5.13" Is the shaft fitted with a continuous liner yes  
as fitted ✓ as fitted 5.12" Is the screw shaft fitted with a continuous liner yes

Bronze Liners, thickness in way of bushes as per Rule 4.5" Thickness between bushes as per Rule 3.4" Is the after end of the liner made watertight in the  
as fitted 9/16" as fitted 3/16" 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 one length

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 fits tightly

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 2'-1"

Propeller, dia. 5'9" Pitch 3'-5 1/2" No. of blades 4 Material Bronze whether Moveable Fixed Total Developed Surface 12.5 sq. feet

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication

forced Thickness of cylinder liners 22.5 15 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 led up funnel

Cooling Water Pumps, No. 4, S.W.I. ✓ 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 F.W. Cooling closed system. S.W. Cooling discharges overboard.

Bilge Pumps worked from the Main Engines, No. 2 Diameter 142 mm Stroke 100 mm Can one be overhauled while the other is at work yes

Pumps connected to the Main Bilge Line No. and Size 2 142 mm x 100 mm 1-3" Drysdale Centres 40 Tons, 1-2 1/2" Drysdale, 20 Tons

How driven Main Engines & Electric Motors 1-200 wheel pump, Eng. Driven

Ballast Pumps, No. and size 1-Drysdale Centres 40 Tons Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1-15 Tons per E. Motor

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 1-2" in E.R. 1-2" in tunnel well. 2" in In Pump Room ✓

In Holds, &c. 2-2 1/4" in Fore hold, 1-2 1/2" in aft hold, 2-2" in dry tank.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2-2 3/4"

Are all the Bilge Suction pipes in Holds and Tunnel 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 Valves

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 ✓

What pipes pass through the bunkers None How are they protected ✓

What pipes pass through the deep tanks Fore peak suction pipe 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 Upper deck.

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. one No. of stages 2 Diameters 130 x 115 mm Stroke 160 mm Driven by Main engine

Auxiliary Air Compressors, No. one No. of stages 2 Diameters Reavell - Co. C.S.A. 3 Stroke Driven by T.H.P. Elec. Motor

Small Auxiliary Air Compressors, No. None No. of stages 2 Diameters 15 kW Generator is hand starting. Stroke Driven by ✓

Scavenging Air Pumps, No. one Diameter Centrifugal Stroke Rotor type Driven by Main engine (Spare set gear guffied)

Auxiliary Engines crank shafts, diameter as per Rule 128 mm Position - P.F. S.F. S.A. Centre aft  
as fitted 130 mm

IR 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 ✓ Internal diameter ✓ thickness ✓

Material ✓ Range of tensile strength ✓ Working pressure Actual ✓

Starting Air Receivers, No. one Main Eng. Total cubic capacity 48 cub. ft Internal diameter 3'-0" thickness 1 1/2"

Material steel Range of tensile strength 26/30 Tons Working pressure Actual 3.56 lbs.

Material S.D. Steel Range of tensile strength 26/30 Tons Working pressure Actual 3.00 lbs.

IS A DONKEY BOILER FITTED? No

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 Inter + Tail Shafts Receivers   
(If not, state date of approval) Habe April 24<sup>th</sup> 1937

Separate Tanks Habe Aug. 13<sup>th</sup> 1937

Donkey Boilers  General Pumping Arrangements Habe Dec. 11<sup>th</sup> 1936 Oil Fuel Burning Arrangements Habe Aug. 13<sup>th</sup> 1937

SPARE GEAR.

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

State the principal additional spare gear supplied Spare propeller + propeller shaft, one set gearing for scavenging blower, chain for main engine lub. oil + cooling water pumps.

Auxil. Machinery: - 2-60 B.H.P. Allen oil engines driving 2-40 H.W. Generators (London Report N°104009)

1-30 B.H.P. oil engine driving a 15 H.W. Generator (Bremen Report dated Augsburg 22<sup>nd</sup> April 1937).

1-Air Compressor made by Reavell & Co. driven by a 7 H.P. electric motor (Ipswich Report dated 4<sup>th</sup> Feb. 1937)

1-Drysdale Centrex Ballast pump, driven by a 4/6 Allen electric motor N°1/64336/2 (Cert. not forwarded)

1- " " G.S. Pump. " " 4/6 " " N°1/64336/1 ( " " " )

1- " " Upright S.W. Cooling pump " " 2 BHP " " N°1/64346 ( " " " )

1- " " FW. " " " " 2 " " " " N°1/65634 ( " " " )

1- Horiz. F.O. Transfer " " " " 1 " " " " N°1/64341 ( " " " )

1- 1/2 " Lee Howl " Lub. oil pump driven by a 10 BHP Lancashire Dynamo + Crypto. electric motor N°37 x 390. (Certif. not forwarded)

1- 15 H.W. " Harlandic " Generator driven by chain + clutch from main engines Dynamo N°2001. (Cert. not forwarded)

The foregoing is a correct description. THE HONGKONG & SHANTON DOCK CO., Ltd.

Shed. Manufacturer.

Dates of Survey while building: During progress of work in shops - Hongkong April 19, May 5, 17, 22, 25, June 14<sup>th</sup> 21<sup>st</sup>, July 15<sup>th</sup> 23, Aug. 2, 16. 1937  
During erection on board vessel - Aug. 18, 30, Sept 6, 10, 11, 16, 20, 27, Oct. 11, 14 + 16. 1937.  
Total No. of visits 22.

Dates of Examination of principal parts - Cylinders 3-6-37 Covers 10-6-37 Pistons 8-6-37 Rods  Connecting rods 8-6-37  
Crank shaft 1-6-37 Flywheel shaft  Thrust shaft 1-6-37 Intermediate shafts 16-8-37 Tube shaft   
Screw shafts 16-8-37 Propeller 16-8-37 Stern tube 21-6-37 Engine seatings 14-6-37 Engines holding down bolts 20-9-37  
Completion of fitting sea connections 2-8-37 Completion of pumping arrangements 27-9-37 Engines tried under working conditions 11-10-37  
Crank shaft, Material Steel Identification Mark 7541 P.F. Flywheel shaft, Material  Identification Mark   
Thrust shaft, Material Steel Identification Mark 7197 P.F. Intermediate shafts, Material Steel Identification Marks 771 T.S.M.  
Tube shaft, Material  Identification Mark  Screw shaft, Material Steel Identification Mark 771 T.S.M.

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 No 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

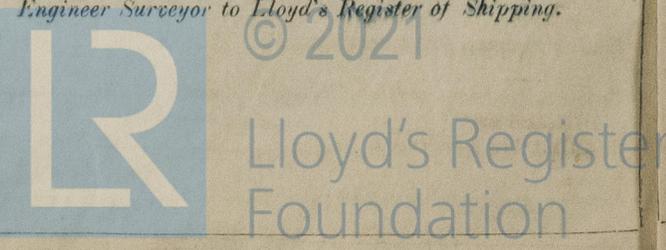
General Remarks (State quality of workmanship, opinions as to class, &c. This engine + the two main generator sets have been built under special survey (See Glasgow report N°58610 + London Report N°104009) and have now been installed on board the vessel in accordance with the Rules instructions and satisfactorily tried under working conditions + a mean speed of 9.7 knots was obtained at 315-r.p.m. Forging reports for intermediate + tail shafts enclosed.

These engines are, in my opinion, of good quality + the workmanship is good + it is recommended that the vessel be classed with Lloyd's Machinery certificate and the record of + LMC-10-37, C.L. be made in the Register Book.

The amount of Entry Fee .. £ 5/- Special £ 5. 8/- When applied for, 16<sup>th</sup> Oct. 1937  
Donkey Boiler Fee ... £ 136.00  
Travelling Expenses (if any) £ 40.00 When received, 3.12.1937  
196.00 FRI 19 NOV 1937

Committee's Minute + LMC 10.37 oil ml  
Assigned [Signature]

J. S. Morrison  
Engineer Surveyor to Lloyd's Register of Shipping.



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