

## REPORT ON OIL ENGINE MACHINERY.

No. 7928

Received at London Office

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Date of writing Report 20-10-1937 When handed in at Local Office 20-10-1937 Port of Hong Kong

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

Number of Visits 22

Single  
Twin  
Triple  
Quadruple

Screw vessel

"MOA MOA"

Tons

Gross 553.91  
Net 296.31

Built at Hong Kong

By whom built The Hongkong &amp; Whampoa Dock Co. Yard No. 771 When built 1937

Engines made at Glasgow

By whom made Harland &amp; 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, &amp;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 Thickness parallel to axis Solid  
as fitted 220 mm with 62 mm central hole Mid. length thickness 108 mm Thickness around eye-hole ForgedFlywheel 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 holeTube Shaft, diameter as per Rule 5.13" Is the tube shaft fitted with a continuous liner Yes  
as fitted 5.13" as fitted 5.13"Screw Shaft, diameter as per Rule 4.5" Thickness between bushes as per Rule 3.4"  
as fitted 4.5" as fitted 4.5" 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 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 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. 1. 1 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 2.2 142 mm x 100 mm 1-3" Drysdale Centres 40 Ton, 1-2 1/2" Drysdale, 20 Ton

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

Ballast Pumps, No. and size 1-Drysdale Centres 40 Ton Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1-15 Ton 1/2" 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, &amp;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 Forepeak 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 7-H.P. Elec. Motor

Small Auxiliary Air Compressors, No. None No. of stages 2 Diameters 150 mm Stroke 150 mm Driven by

Scavenging Air Pumps, No. one Diameter Centrifugal Stroke Rotor type Driven by Main engine

Auxiliary Engines crank shafts, diameter as per Rule 128 mm Position PF. 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

Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules Actual

Starting Air Receivers, No. one Main Eng. Total cubic capacity 48 cu. ft. Internal diameter 3.0" thickness 1.5"

as fitted 130 mm Riveted steel Range of tensile strength 26/30 Tons Working pressure by Rules Actual 3.56 lbs.

Seamless, lap welded or riveted longitudinal joint Material S.D. Steel Range of tensile strength 26/30 Tons Working pressure by Rules 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 Hobe April 24<sup>th</sup> 1937  
(If not, state date of approval)

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

Donkey Boilers ☒

General Pumping Arrangements Hobe Dec. 11<sup>th</sup> 1936

Oil Fuel Burning Arrangements Hobe 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 1/2 Allen electric motor N°1/64336/2 (Cert. not forwarded)

1- " " Q.S. Pump. " " 4 1/2 " " N°1/64336/1 " " " " }

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

1- " " F.W. " " " 2 " " " " N°1/65634 " " " " }

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

1-1 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.

Leeds Manufacturer.

Hong Kong  
Dates of Survey while building { During progress of work in shops - 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 815 rev. 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 .. £ ✓ : : When applied for, 16<sup>th</sup> Oct. 1937

1/5<sup>th</sup> Special £ 8. 8/- £ 136. 00.

Donkey Boiler Fee ... £ ✓ : : When received, 3. 12. 1937

Travelling Expenses (if any) £ 60. 00. £ 196. 00. FRI 19 NOV 1937

Committee's Minute

Assigned

J. S. Morrison

Engineer Surveyor to Lloyd's Register of Shipping.



Lloyd's Register Foundation