

# REPORT ON OIL ENGINE MACHINERY.

No. 8391

Received at London Office AUG 21 1939

Date of writing Report 11<sup>th</sup> July 1939 When handed in at Local Office 11<sup>th</sup> July 1939 Port of Hongkong  
 Date, First Survey May 10<sup>th</sup> 1938 Last Survey 7<sup>th</sup> July 1939  
 Number of Visits 73

Survey held at Hongkong  
 Book. 0267 on the Single Twin Triple Quadruple Screw vessel  
 Tons { Gross 2280.94  
 Net 1679.79

By whom built HK - Whampoa Dock Co. Ltd Yard No. 804 When built 1939  
 By whom made - do - Engine No. - When made 1939  
 By whom made Buchanan & Co Annan Ltd Boiler No. 14124 When made 1938  
 Owners Burns Philp (South Sea) Co Ltd Port belonging to Hongkong  
 Brake Horse Power Total 2420  
 Indicated Horse Power 396 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes  
 Trade for which vessel is intended South Sea Islands

TYPE OF ENGINES, &c.—Type of Engines Direct Reversing, Solid injection 2 or 4 stroke cycle 2 Single or double acting Single  
 Maximum pressure in cylinders 500/700 lbs Diameter of cylinders 350 mm Length of stroke 620 mm No. of cylinders 12 No. of cranks 12  
 Mean Indicated Pressure 110 lbs.

Distance between bearings, adjacent to the Crank, measured from inner edge to inner edge 518 mm + 530 mm Is there a bearing between each crank Yes  
 Revolutions per minute 280 Flywheel dia. as approved Weight ✓ Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, { Solid forged  
 Semi built  
 All built } dia. of journals as per Rule Crank pin dia. 240 mm Crank Webs Mid. length breadth 320 mm Thickness parallel to axis ✓  
as fitted 270 mm Mid. length thickness 134 mm Thickness around eyehole ✓

Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule 6.6" Thrust Shaft, diameter at collars as per Rule as approved  
as fitted as fitted 6.75" as fitted 270 mm

Abse Shaft, diameter as per Rule Screw Shaft, diameter as per Rule 7.56" Is the { tube } shaft fitted with a continuous liner { Yes  
as fitted as fitted 8" in way of stern tube

Bronze Liners, thickness in way of bushes as per Rule Thickness between bushes as per Rule 17/32 Is the after end of the liner made watertight in the  
as fitted 1/2, 9/16, 17/32 as fitted 32

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 ✓  
 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

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  
 If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller 2'-11 5/8"

Propeller, dia. 7'-3" Pitch 6'-0" No. of blades 4 Material Stainless Steel whether Moveable No Total Developed Surface 23 1/2 sq. feet  
London Certif. dated 20/2/39

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when decelerated Yes Means of lubrication  
Forced Thickness of cylinder liners 26 mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with  
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

Non-conducting material Lagged Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes  
 Cooling Water Pumps, No. one F.W. - one S.W. per engine Stand-by one each engine Diameter 162 mm Stroke 160 mm Can one be overhauled while the other is at work Yes

Bilge Pumps worked from the Main Engines, No. one each engine Diameter 162 mm Stroke 160 mm Can one be overhauled while the other is at work Yes  
 Pumps connected to the Main Bilge Line { No. and Size 2 @ 162 mm x 160 mm one Vertical self Priming, 60 Tons/Hour.  
 How driven Main engines Electric Motor

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 ✓

Ballast Pumps, No. and size 1- Vertical 160 Tons/hr. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2- main Engines 40 Tons/hr.  
1- Spare 35 Tons/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 1- 2 1/4" in Cofferdam Fr. 8-9, 1- 3" in Cofferdam Fr. 13-14, 1- 3" + 1- 2 1/4" in Pump Room compartment.  
1- 2" dia.

in Holds, &c. Fore Hold 2- 2 1/4", Cofferdam Fr. 71-72, 1- 2", Main Hold 2- 3", Main Hold bilge well 2- 2"  
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2- 4" dia

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces  
✓ and 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 Yes  
✓ How are they protected ✓ Have they been tested as per Rule ✓

That pipes pass through the bunkers None That pipes pass through the deep tanks None  
✓ 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 Manhole 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 ✓  
 Main Air Compressors, No. Two No. of stages Two Diameters 220/195 mm Stroke 200 mm Driven by Main engines

Auxiliary Air Compressors, No. One No. of stages Two Diameters 3 1/8" + 7 1/4" Stroke 6" Driven by Electric Motor

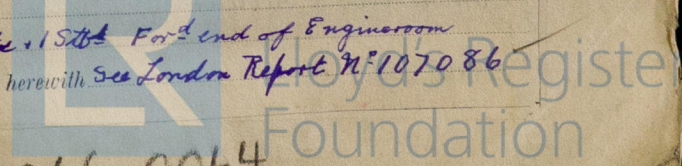
Small Auxiliary Air Compressors, No. one No. of stages Two Diameters 3 1/4" + 2 1/4" Stroke 2 1/16" Driven by Steam Engine

What provision is made for first Charging the Air Receivers Steam driven small auxiliary air compressor Driven by Main Engines

Scavenging Air Pumps, No. One on each engine Diameter Rotary Stroke ✓ No. Three  
as per Rule as approved Position 1 Port, 1 Center, 1 Stern For end of Engine room

Auxiliary Engines crank shafts, diameter as fitted 140 mm Crank pins 150 mm Is a report sent herewith See London Report No. 107086  
✓ Have the Auxiliary Engines been constructed under special survey Yes

W266-0064





IS A DONKEY BOILER FITTED? *yes* ✓ If so, is a report now forwarded? *yes* ✓ Actual *350 lbs*

Is the donkey boiler intended to be used for domestic purposes only? *yes, except for steam driven air compressor* ✓

PLANS. Are approved plans forwarded herewith for Shafting *Kobe 21/4/38, 17/5/38* Receivers *Kobe 4/7/38* Separate Fuel Tanks *Kobe 10/1/39*  
(If not, state date of approval) *15/11/38*

Donkey Boilers *See Glasgow Report* General Pumping Arrangements *Kobe 30/12/30, 29/12/38* Pumping Arrangements in Machinery Space *Kobe 30/12/38*  
*N: 60351*

Oil Fuel Burning Arrangements *Kobe 10/1/39*

Has the spare gear required by the Rules been supplied *Yes* ✓

State the principal additional spare gear supplied *See List attached.*

Chief Manager.....Manufacturer.

Dates of Examination of principal parts—Cylinders. 22-12-38 to 29-4-39 Covers 22-12-38 to 29-4-39 Pistons 10-1-39 to 29-4-39 Rods 10-5-38 to 20-3-39  
Crank shaft 9-11-38 to 23-2-39 Flywheel shaft 9-11-38 to 23-2-39 Thrust shaft 14-11-38 to 23-2-39 Intermediate shafts 23-2-39 Tube shaft 19-5-39 to 25-7-39  
Screw shaft 20-3-39 Propeller 21-3-39 Stern tube 24-11-38 Engine seatings 15-3-39 Engines holding down bolts 9-5-39, 25-7-39  
Completion of fitting sea connections 25-3-39 Completion of pumping arrangements 22-6-39 Engines tried under working conditions 9-5-39, 25-7-39  
Crank shaft, Material Steel Identification Mark LLOYDS N° 522-3 Flywheel shaft, Material ✓ Identification Mark ✓  
Thrust shaft, Material ✓ Identification Mark T.S.M. 23-2-39 Intermediate shafts, Material Steel Identification Marks LLOYDS N° 522-3  
Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material Steel Identification Mark T.S.M. 23-2-39

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. These engines have been built under special survey in accordance with the approved plans & the Rules of this Society & the materials and workmanship are good. They were tested under full load & 10% overload on the Mather test bed & all working parts were afterwards opened up & examined & found satisfactory.

The three auxiliary engines were constructed under special survey at Bedford & have now been installed in accordance with the Rules. (See London Report N° 107086).

Forging reports enclosed. Copies of certificates for air receivers, pumps + cylinder covers enclosed.  
Plan of piping arrangements as fitted herewith.

The machinery was tested under full working conditions & found satisfactory & it is recommended that the vessel be classed with Lloyd's Machinery Certificate & the record of + LMC 7-39 C.L. be made in the Register Book.

The amount of Entry Fee	.. £10 = 163	When applied for,
Special ...	... £168-14 = 2747	7 <sup>th</sup> July 1939
<i>Installation of</i>		
Donkey Boiler Fee	... £ : 50	
" Air Receivers	£12-12/- : 205	When received,
Travelling Expenses (if any)	£ : 170	1.9. 1939
Total	\$3335	

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

## Committee's Minute

FRI. 1 SEP 1939

*Assigned*

+ line 7.39  
DB 100 lb

Lloyd's Register Foundation