

# REPORT ON OIL ENGINE MACHINERY.

No. 140

7. 9. 36

Date of writing Report 1st Sept 1936 When handed in at Local Office 1st Sept 1936 Port of Wintarthur Received at London Office 7. 9. 36  
Date, First Survey 30 Dec 1935 Last Survey 1st Sept 1936

No. in Survey held at Wintarthur Reg. Book. Wintarthur Number of Visits

on the Single Twin Triple Quadruple Screw vessel "BRISBANE STAR" Tons <sup>Gross</sup> <sub>Net</sub>

Built at Birkenhead By whom built Messrs Bammell Laird & Co Yard No. 1016 When built 1936

Engines made at Wintarthur By whom made Messrs Sulzer Bros. Engine No. 6581 When made 1936

Donkey Boilers made at By whom made Boiler No. When made

Brake Horse Power 13500 (2 Engrs) Owners Messrs Blue Star Line Ltd Port belonging to London

Nom. Horse Power as per Rule 2800 (2 Engrs) Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

Trade for which vessel is intended

**OIL ENGINES, &c.**—Type of Engines Sulzer Solid Injection 2 or 4 stroke cycle 2 Single or double acting Single  
Maximum pressure in cylinders 850 lb/sq. in. Diameter of cylinders 720 mm. Length of stroke 1250 mm. No. of cylinders 20 (2 Engrs) No. of cranks 20 (2 Engrs)  
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 930 mm. Is there a bearing between each crank yes

Revolutions per minute 120 Flywheel dia. 2,350 mm. Weight 2000 kg. Means of ignition Compression Kind of fuel used Heavy fuel oil  
Temperature due to Compression

Crank Shaft, dia. of journals as per Rule 483 mm. Crank pin dia. 490 mm. Crank Webs Mid. length breadth — Thickness parallel to axis 305 mm.  
as fitted 490 " Mid. length thickness — shrunk Thickness around eye-hole 244 "

Flywheel Shaft, diameter as per Rule 483 " Intermediate Shafts, diameter as per Rule 392 mm. Thrust Shaft, diameter at collars as per Rule 412 "  
as fitted 490 " as fitted as fitted

Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule Is the tube shaft fitted with a continuous liner

Bronze Liners, thickness in way of bushes as per Rule Thickness between bushes as per rule Is the after end of the liner made watertight in the propeller boss

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 If so, state type Length of Bearing in Stern Bush next to and supporting propeller

Propeller, dia. Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet

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

Thickness of cylinder liners 45 mm. Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material lagged

Cooling Water Pumps, No. 3 — sea water pumps for fresh water cooling / standing for piston cooling. 2 — combined jacket & piston cooling & sea suction provided with an efficient strainer which can be cleared within the vessel

What special arrangements are made for dealing with cooling water if discharged into bilges

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

Pumps connected to the Main Bilge Line No. and Size How driven Blowing 55 m<sup>3</sup>/HR

Ballast Pumps, No. and size Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 3 sets, 1 Spare Cross Head 8 m<sup>3</sup>/hr

Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces In Pump Room

In Holds, &c. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes 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

Are all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Are the Overboard Discharges above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate

What pipes pass through the bunkers How are they protected

What pipes pass through the deep tanks 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

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 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

Main Air Compressors, No. No. of stages Diameters Stroke Driven by

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

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

Scavenging Air Pumps, No. 2 random D.A. each Engine Diameter 1365 mm. Stroke 750 mm Driven by Crankshaft

Auxiliary Engines crank shafts, diameter as per Rule 179 mm Journals 210 mm, pins 180 mm. Position yes

AIR 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, manhole Is a drain fitted at the lowest part of each receiver yes

High Pressure 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. 2 Total cubic capacity 39 cubic metres Internal diameter 1532 mm thickness 34 mm

Seamless, lap welded or riveted longitudinal joint fusion welded Material S.M. steel Range of tensile strength 26-30 Tons for End Plates Working pressure by Rules 474 lb/sq. in. Actual 427 lb/sq. in.

IS A DONKEY BOILER FITTED?

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 31-1-36 Receivers 16-3-36 Separate Tanks  
 (If not, state date of approval)  
 Donkey Boilers General Pumping Arrangements Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied

yes  
 See separate list

State the principal additional spare gear supplied

The foregoing is a correct description.

*Sulzer Brothers*  
*Limitees*  
*Approved Machinery* Manufacturer.

Dates of Survey while building	During progress of work in shops --	<u>30-12-35 to 1-9-36</u> — 65 visits				
	During erection on board vessel --					
Total No. of visits						
Dates of Examination of principal parts		Cylinders	Covers	Pistons	Rods	Connecting rods
Crank shaft		<u>18-8-36</u>	<u>18-8-36</u>	<u>29-6-36</u>	<u>29-6-36</u>	<u>18-8-36</u>
Flywheel shaft		<u>18-8-36</u>	<u>28-8-36</u>	<u>1-7-36</u>	<u>28-7-36</u>	<u>28-8-36</u>
Thrust shaft		<u>1-9-36</u>	<u>18-8-36</u>	<u>28-7-36</u>		
Intermediate shafts			<u>1-9-36</u>			
Tube shaft						
Screw shaft						
Propeller						
Stern tube						
Engine seatings						
Engines holding down bolts						
Completion of fitting sea connections		Completion of pumping arrangements		Engines tried under working conditions		
Crank shaft, Material <u>Annals S.M. Ingot Steel</u> Identification Mark <u>Lloyds 12027 M.B. 3.4.36</u>		Flywheel shaft, Material <u>Annals S.M. Ingot Steel</u> Identification Mark <u>Lloyds 12060 M.B. 7.4.36</u>		Intermediate shafts, Material <u>Annals S.M. Ingot Steel</u> Identification Mark <u>Lloyds 10463 J.L. 7.4.36</u>		
Thrust shaft, Material <u>see flywheel shaft</u> Identification Mark <u>see flywheel shaft</u>		Intermediate shafts, Material <u>see flywheel shaft</u> Identification Mark <u>see flywheel shaft</u>		Identification Marks <u>see flywheel shaft</u>		
Tube shaft, Material Identification Mark		Screw shaft, Material Identification Mark		Identification Mark		

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

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

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 yes If so, state name of vessel "MELBOURNE STAR"

General Remarks (State quality of workmanship, opinions as to class, &c. These engines have been constructed under special survey in accordance with the requirements of the Rules, the Secretary's letters and the approved plans. Material and workmanship good. Full power trials of engines in shop satisfactory.  
The engines have been dispatched to Messrs Bammell Laird & Co Ltd; Birkenhead, to be installed in the vessel.

These engines have been satisfactorily installed on board & examined under working conditions. J.B. Melton

The amount of Entry Fee	£ <u>28</u> /50-	When applied for,
Special	£ " <u>4254</u> -	<u>31<sup>st</sup> Aug 1936</u>
Donkey Boiler Fee	£ :	When received,
Travelling Expenses (if any)	£ :	<u>3<sup>rd</sup> Sept 1936</u>

H. G. Vallis, G. H. Forsyth.  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 30 APR 1937

WED 4 AUG 1937  
 TUE 24 AUG 1937  
 TUE 14 SEP 1937

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