

# REPORT ON OIL ENGINE MACHINERY.

No 13289

a List of pt. 4b.

17 NOV 1942

Received at London Office 17 JUL 1942  
LIVERPOOL 18 NOV 1942

Date of writing Report 19 *15.1.42* When handed in at Local Office *15.1.42* Port of *Belfast*  
Date, First Survey *30 Dec 1941* Last Survey *9 July 1942*  
Number of Visits *45*

Survey held at *Belfast & Birkenhead*  
on the *Single* Screw vessel **BRITISH PROMISE.** Tons: Gross *8443*  
*Triple*  
*Quadruple*

built at *Birkenhead* By whom built *Cammell Laird & Co. Ltd.* Yard No. *1068* When built *1942*  
Engines made at *Belfast* By whom made *Harland & Wolff Ltd.* Engine No. *2100* When made *1942*  
Boilers made at *Birkenhead* By whom made *Cammell Laird & Co. Ltd.* Boiler No. *1068* When made *1942*  
Horse Power *3300* Owners \_\_\_\_\_ Port belonging to \_\_\_\_\_  
Horse Power as per Rule *489* Is Refrigerating Machinery fitted for cargo purposes *no* Is Electric Light fitted *yes*  
made for which vessel is intended \_\_\_\_\_

ENGINES, &c.—Type of Engines *Harland & Wolff - 8 cyl. Oilless Injection* 2 or 4 stroke cycle *H* Single or double acting *single*  
Maximum pressure in cylinders *700 lbs* Diameter of cylinders *7 1/8"* Length of stroke *1500 mm.* No. of cylinders *6* No. of cranks *6*  
Indicated Pressure *128 lbs*

Number of bearings, adjacent to the Crank, measured from inner edge to inner edge *972 mm.* Is there a bearing between each crank *yes*  
Revolutions per minute *110* Flywheel dia. *2489 mm.* Weight *2590 kgs* Means of ignition *Compression* Kind of fuel used *diesel oil*

Crankshaft, dia. of journals *as per Rule approved* Crank pin dia. *505 mm.* Crank Webs Mid. length breadth *980 mm.* Thickness parallel to axis *310 mm.*  
*ALL built* as fitted *505 bore 115 mm.* Mid. length thickness *310 mm.* Thickness around eye-hole *292.5 mm.*

Propeller Shaft, diameter *as per Rule 13.7* Intermediate Shafts, diameter *as per Rule 13.48* Thrust Shaft, diameter at collars *as per Rule approved*  
as fitted *Thrust Shaft* fitted *17.7* as fitted *454 mm.*

Propeller Shaft, diameter *as per Rule 15.1* Screw Shaft, diameter *as per Rule 14.81* Is the shaft filled with a continuous liner *yes*  
as fitted \_\_\_\_\_ as fitted *16*

Propeller Liners, thickness in way of bushes *as per Rule 25/32* Thickness between bushes *as per Rule 9/16* Is the after end of the liner made watertight in the  
after boss *yes* as fitted *27/32* as fitted *11/16* 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 \_\_\_\_\_

Propeller, dia. *16'0"* Pitch *11'6"* No. of blades *4* Material *Bronze* whether Moveable *no* Total Developed Surface *81* sq. feet  
Method of reversing Engines *air-oil brake cylinders* Is a governor or other arrangement fitted to prevent racing of the engine when declutched *yes* Means of lubrication \_\_\_\_\_

Exhaust, thickness of cylinder liners *53 mm.* Are the cylinders fitted with safety valves *yes* Are the exhaust pipes and silencers water cooled or lagged with  
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 \_\_\_\_\_

Working Water Pumps, No. *2-1 Salt* Is the sea suction provided with an efficient strainer which can be cleared within the vessel *yes*  
*1 Fresh*

Water Pumps worked from the Main Engines, No. *1* Diameter \_\_\_\_\_ Stroke \_\_\_\_\_ Can one be overhauled while the other is at work, \_\_\_\_\_  
Pumps connected to the Main Bilge Line No. and Size *1 Bilge Sanitary 8'x8'x10" duplex* *1 Ballast 10'x11'x10" duplex*  
How driven *Steam & Main engine driven.*

Is cooling water led to the bilges *blow-off only* If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping  
arrangements *Nothing additional to normal bilge sections.*

Water Pumps, No. and size *1 @ 10'x11'x10"* Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size *One engine driven 100 tons @ 10"*  
*3 @ 3 1/2"* Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge \_\_\_\_\_  
*1 @ 2 1/2" P.S.* *4wd store 1 @ 2" P.S.* In Pump Room *3 @ 4"*  
*Forehold 1 @ 2"*

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *1 @ 6" from aft Well, 1-8" Emergency P.S.*  
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes *yes* Are the Bilge Suctions in the Machinery Spaces \_\_\_\_\_

Are the Bilge Suctions easily accessible mud-boxes, placed above the level of the working floor, with straight tail-pipes to the bilges *yes*  
All Sea Connections fitted direct on the skin of the ship *Built boxes* 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 *Below*  
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*

Do pipes pass through the bunkers *none* How are they protected \_\_\_\_\_  
Do pipes pass through the deep tanks *none* 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 *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  
department to another *yes* Is the Shaft Tunnel watertight \_\_\_\_\_ Is it fitted with a watertight door \_\_\_\_\_ worked from \_\_\_\_\_

Is a good vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork \_\_\_\_\_

Auxiliary Air Compressors, No. *2* No. of stages *2* Diameters *1' @ 8 7/8"* Stroke *6 1/4"* Driven by *Steam*  
Auxiliary Air Compressors, No. \_\_\_\_\_ No. of stages \_\_\_\_\_ Diameters \_\_\_\_\_ Stroke \_\_\_\_\_ Driven by \_\_\_\_\_

Is provision made for first Charging the Air Receivers *Steam Compressor*  
Refrigerating Air Pumps, No. \_\_\_\_\_ Diameter \_\_\_\_\_ Stroke \_\_\_\_\_ Driven by \_\_\_\_\_

Auxiliary Engines crank shafts, diameter *as per Rule* No. \_\_\_\_\_ Position \_\_\_\_\_  
*as fitted*

Have the Auxiliary Engines been constructed under special survey \_\_\_\_\_ Is a report sent herewith \_\_\_\_\_

AIR RECEIVERS: - Have they been made under survey yes State No. of Report or Certificate 3633

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

Injection 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 450 cf rods Internal diameter 4'-10 7/8" thickness 27/32"  
Seamless, lap welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength 28/32 Ton Working pressure by Rules 370 lb  
Actual 350 lb

IS A DONKEY BOILER FITTED? yes - two 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 30<sup>th</sup> Aug. 1940 Receivers 30/10/40 Separate Fuel Tanks ✓  
Donkey Boilers 23-7-40 General Pumping Arrangements 12-7-41 Pumping Arrangements in Machinery Space 22-10-41  
Oil Fuel Burning Arrangements 2-10-41

SPARE GEAR.

Has the spare gear required by the Rules been supplied In accordance with the Emergency Arrangements  
State the principal additional spare gear supplied see attached list.

For HARLAND AND WOLFF, LIMITED.  
The foregoing is a correct description.

A. Marshall Secretary

Manufacturer.

W. A. W. Cameron CAMMELL LAIRD & CO. LIMITED

Dates of Survey while building: During progress of work in shops - 1941 Dec 30 1942 Jan 5 Feb 2, 10, 14, 20 Mar 10, 19, 26, 30 Apr 3, 15, 20, 24  
During erection on board vessel - June 2, 3, 4, 5, 8, 9, 10, 11, 15, 16, 17, 18, 19, 20, 22, 23, 25, 26, 27, 29, 30 July 8, 9  
Total No. of visits 45 + 78.

Dates of Examination of principal parts - Cylinders 19.6.42 & 25.6.42 Covers 26.5.42 & 26.4.42 Pistons 15.6.42 & 23.6.42 Rods 22.6.42 Connecting rods 11.6.42  
Crank shaft 29.5.42 Flywheel shaft ✓ Thrust shaft 29.5.42 Intermediate shafts 3-2-42 Tube shaft ✓  
Screw shaft 3-2-42 Propeller 3-2-42 Stern tube 14-7-42 Engine sealings 17-8-42 Engines holding down bolts 15-10-42  
Completion of filling sea connections 25-6-42 Completion of pumping arrangements 4-11-42 Engines tried under working conditions 6-11-42

Crank shaft, Material O. H. Steel Identification Mark LLOYD'S No. 1047 Flywheel shaft, Material ✓ Identification Mark ✓  
Thrust shaft, Material O. H. Steel Identification Mark LLOYD'S No. 1047 Intermediate shafts, Material Steel Identification Marks 6614 CP  
Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material Steel Identification Mark 9847 CP

Identification Marks on Air Receivers  
NO 3633  
LLOYD'S TEST.  
550 lbs  
WP 350 lb  
No. 28-1-42

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  
Description of fire extinguishing apparatus fitted Chemical  
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 Engo. no. 2099. British Tradition

General Remarks (State quality of workmanship, opinions as to class, &c.)  
This machinery has been constructed under special survey. The materials & workmanship are sound and good. Test bed trials at full load & over-load were satisfactory. In my opinion the machinery is eligible for a class vessel. It has been shipped to Birkenhead for installation.

These engines have been properly fitted in M<sup>rs</sup> Cammell Laird's No 1068, British Promise, & together with their auxiliary boiler & machinery all tried under working conditions and found satisfactory.

The amount of Entry Fee .. £ 5 : 0 : 0  
Special for Belfast ... £ 65 : 11/4 : 0  
Boiler Fee ... £ 32 : 15/8 : 0  
Air Receivers ✓  
Travelling Expenses (if any) £ 4 : 4/1 : 0

When applied for, 17 NOV 1942  
When received, 19

Ree James H. Sutherland  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute LIVERPOOL 17 NOV 1942  
Assigned + L.M.C. 11.42 C.L.  
Oil Engines.

