

REPORT ON OIL ENGINE MACHINERY.

No 66732,

Received at London Office 3 MAR 1943

Date of writing Report

When handed in at Local Office

1. 3. 43 Port of GLASGOW

No. in Survey held at
Reg. Book,

GLASGOW

Date, First Survey 1st Oct 1941

Last Survey 23rd Feb. 1943

Number of Visits

Single
on the ~~Top~~
~~Triple~~
~~Quadruple~~

Screw vessel

"EMPIRE COURAGE"

Now named "PHILIPS WOUWERMANN"

Tons
Gross
Net

Built at

GLASGOW

By whom built DARCLAY CURLEY & CO. LD. Yard No. 689 When built 1943

Engines made at

-Do-

By whom made

-Do-

Engine No 690 When made 1943

Donkey Boilers made at

-Do-

By whom made

-Do-

Boiler No 689 When made 1943

Brake Horse Power 3350

Owners MINISTRY OF WAR TRANSPORT Port belonging to GLASGOW

Nom. Horse Power as per Rule

685 687

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

YES

Trade for which vessel is intended

(23 5/8)

(91 5/16)

IL ENGINES, &c. Type of Engines OPPOSED-PISTON

2 or 4 stroke cycle 2 Single or double acting SINGLE

Maximum pressure in cylinders

6.00 lb. ✓

Diameter of cylinders

6.00 mfm ✓

Length of stroke

23.20 ✓

No. of cylinders

4 ✓

No. of cranks

12 ✓

Mean Indicated Pressure

8.8 lb. ✓

Span of ~~connecting rods~~ SIDE RODS

measured from inner edge to inner edge

12.00 mfm ✓

Is there a bearing between each crank

YES ✓

Revolutions per minute

108 ✓

Flywheel dia.

20.06 mfm ✓

Weight

1.4 tons ✓

Means of ignition

Comp. m. ✓

Kind of fuel used

Diesel Oil ✓

Crank

Semi built

dia. of journals

as per Rule app. ✓

Crank pin dia.

4.50 mfm ✓

Crank Webs

Mid. length breadth

6.50 mfm ✓

shrink

Thickness parallel to axis

2.55 mfm ✓

Shaft,

Solid forged

dia. of journals

as fitted 4.50 mfm ✓

Crank pin dia.

4.50 mfm ✓

Crank Webs

Mid. length thickness

2.55 mfm ✓

shrink

Thickness around eyehole

2.00 mfm ✓

Flywheel Shaft, diameter

as per Rule

as fitted

Intermediate Shafts, diameter

as per Rule

as fitted 14 3/8" ✓

Thrust Shaft, diameter at collars

as per Rule

as fitted 4.50 mfm ✓

Tube Shaft, diameter

as per Rule

as fitted

Screw Shaft, diameter

as per Rule

as fitted 16" ✓

Is the

screw

shaft fitted with a continuous liner

YES ✓

Bronze Liners, thickness in way of bushes

as per Rule

as fitted 13/16" ✓

Thickness between bushes

as per Rule

as fitted 5/8" ✓

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

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

NO

If so, state type

Length of Bearing in Stern Bush next to and supporting propeller

5'3"

Propeller, dia.

16'0" ✓

Pitch

12'6" ✓

No. of blades

4 ✓

Material

M.B.R. ✓

whether Moveable

NO ✓

Total Developed Surface

86 sq. feet

Method of reversing Engines

Direct ✓

Is a governor or other arrangement fitted to prevent racing of the engine when detached

YES

Means of lubrication

Hard

Thickness of cylinder liners

2.5 mfm ✓

Are the cylinders fitted with safety valves

YES ✓

Are the exhaust pipes and silencers water-cooled or lagged with

non-conducting material

YES

If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine

Cooling Water Pumps, No.

2 FW 3 SW ✓

Is the sea suction provided with an efficient strainer which can be cleared within the vessel

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

1-95 + Bilge 90 tons ✓ 1-Ballast 20 tons ✓

How driven

5 Steam ✓

Is 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

10 20 tons ✓

Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size

1-ME 4 3/4" x 15 3/4" ✓

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

4 @ 3" 2 @ 2 1/2" Oil Bilge Tunnel well 10 @ 2 1/2" In Pump Room

In Holds, &c. Nos. 1, 2, 4, 5 Holds

2 @ 3" Nos. 3 Hold

2 @ 2 1/2" Deck tank

2 @ 2 1/2" ✓

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size

10 @ 8" + 10 @ 5" ✓

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

Both ✓

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

Both ✓

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 ✓

What pipes pass through the bunkers

Bilge + Ballast ✓

How are they protected

Encased in steel tube ✓

What pipes pass through the deep tanks

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

NO ✓

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.

2 ✓

No. of stages

3

Diameters

10 1/2" - 2 1/4" ✓

Stroke

6"

Driven by

Steam engine ✓

Small Auxiliary Air Compressors, No.

-

No. of stages

Diameters

Stroke

Driven by

What provision is made for first Charging the Air Receivers

Steam driven compressors ✓

Scavenging Air Pumps, No.

6 ✓

Diameter

19.60 mfm ✓

Stroke

60.8 mfm ✓

Driven by

Main engine ✓

Auxiliary Engines crank shafts, diameter

as per Rule

as fitted

No.

Position

Have the Auxiliary Engines been constructed under special survey

Is a report sent herewith

YES ✓

011877-011885-0064

AIR RECEIVERS: — Have they been made under survey *Yes*

State No. of Report or Certificate —

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 —

Starting Air Receivers, No. *2*

Total cubic capacity *278 cu. ft.*

Internal diameter *4'-1 1/2"*

thickness *1 3/32"*

Seamless, lap welded or riveted longitudinal joint *welded*

Material *Steel*

Range of tensile strength *29/33 tons*

Working pressure by Rules *600 lb.*

Actual *600 lb.*

IS A DONKEY BOILER FITTED? *Yes*

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 *Yes*

(If not, state date of approval)

Receivers *Yes*

Separate Fuel Tanks *Yes*

Donkey Boilers *Yes*

General Pumping Arrangements *Yes*

Pumping Arrangements in Machinery Space *Yes*

Oil Fuel Burning Arrangements *Yes*

SPARE GEAR.

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

State the principal additional spare gear supplied

List attached

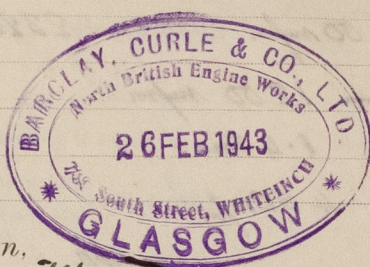
For BANGLAY, CURLE & Co., Ltd

The foregoing is a correct description.

Chief Draughtsman

Alfred Macneil

Manufacturer.



Dates of Survey while building { During progress of work in shops — 1941 Oct 1, 7, Nov 14, 25, 28 Dec 2, 8, 9, 16, 24, 31 1942 Jan 5, 8, 13, 27 Feb 2, Mar 3, 12, 13, 16, 18, 30 Apr 1, 3, 9, 16, 24, 30 May 4
During erection on board vessel — 5, 6, 7, 30, 29 Jan 2, 3, 4, 5, 8, 9, 10, 15, 19, 23, 25, 29, 30 July 3, 6, 10, 29, 31 Aug 10, 20, 25, 27 Sep 9, 11, 17, 22, 30 Nov 3, 9, Dec 7, 9, 11, 1943
Total No. of visits *70*

Dates of Examination of principal parts — Cylinders *29-5-42* Covers — Pistons *10-3-42* Rods *10-3-42* Connecting rods *3-7-42*

Crank shaft *7-8-42* Flywheel shaft — Thrust shaft *7-8-42* Intermediate shafts *30-6-42* Tube shaft —

Screw shaft *30-6-42* Propeller *30-6-42* Stern tube *30-7-42* Engine seatings *8-12-42* Engines holding down bolts *12-1-43*

Completion of fitting sea connections *3-12-42* Completion of pumping arrangements *10-2-43* Engines tried under working conditions *23-2-43*

Crank shaft, Material *SM. Steel* Identification Mark *10731 AJB* Flywheel shaft, Material — Identification Mark —

Thrust shaft, Material *SM. Steel* Identification Mark *10731 AJB* Intermediate shafts, Material *SM. Steel* Identification Marks *10573 AJB*

Tube shaft, Material — Identification Mark *+ test no.* Screw shaft, Material *SM. Steel* Identification Mark *10573 AJB*

Identification Marks on Air Receivers *LLOYD'S TEST 800 lb.*

WP 600 lb. AJB 4-6-42 & 10-6-42

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 *Steam jet*

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *Yes*

If so, have the requirements of the Rules been complied with *Yes*

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 *"EMPIRE HIGHWAY" Gls. Rpt. 66280*

General Remarks (State quality of workmanship, opinions as to class, &c. *This machinery has been built under special survey in accordance with the Rules and approved plans, and the materials and workmanship are good. It has been efficiently installed in the vessel, tested under working conditions and found satisfactory and, in my opinion, is eligible to be classed with record + LMC 2, 43 and notation CL. 2 DB. 120 lb.*

The specification requirements have been carried out satisfactorily.

The amount of Entry Fee .. £ *6* : : When applied for, *2 MAR 1943*
Special *109* : *5* :
SPEC FEE ... £ *27* : *6* :
Donkey Boiler Fee ... £ *27* : *17* :
AIR RECEIVERS
Travelling Expenses (if any) £ *4* : *4* :
WELDING FEE *12* : *12* :
Committee's Minute *GLASGOW 2 MAR 1943*

Assigned *-1- LMC 2.43 Oil Eng*
2 AB 120 lb.

M. J. Brown
Engineer Surveyor to Lloyd's Register of Shipping.

