

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Date of writing Report 31 OCT 1944 When handed in at Local Office Sunderland Port of Sunderland Received at London Office NOV 1944

No. in Survey held at Sunderland Date, First Survey 11 Jan Last Survey 28 Oct 1944
 Reg. Book "EMPIRE COWDRAY" (Number of Visits 53) Tons { Gross 7072 Net 4816

Built at Sunderland By whom built Shiplbuilding Corp. (then Brandy) Yrd No. 4 When built 1944

Engines made at Clydebank By whom made J. Brown & Co L^o Engine No. A.65 When made 1942

Boilers made at Sunderland By whom made G. Clark (1938) L^o Boiler No. 1332 When made 1944

Registered Horse Power 512 Owners Ministry of War Transport Port belonging to Sunderland

Nom. Horse Power as per Rule 512 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

Trade for which vessel is intended

ENGINES, &c.—Description of Engines Please see Gls. Rpts N^o 66045 & 65362. Revs. per minute

Dia. of Cylinders 23 1/2 - 34 1/2 - 68 Length of Stroke 48" No. of Cylinders ✓ No. of Cranks ✓

Crank shaft, dia. of journals as per Rule Crank pin dia. ✓ Crank webs shrunk Mid. length breadth ✓ Thickness parallel to axis ✓

Intermediate Shafts, diameter as per Rule Thrust shaft, diameter at collars as per Rule

Tube Shafts, diameter as fitted Screw Shaft, diameter as fitted Is the { tube / screw } shaft fitted with a continuous liner Yes.

Bronze Liners, thickness in way of bushes as fitted Thickness between bushes as fitted Is the after end of the liner made watertight in the propeller boss Yes.

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 one length.

If two liners are fitted, is the shaft lapped or protected between the liners. No. Is an approved Oil Gland or other appliance fitted at the after end of the tube ✓

Propeller, dia. 18-3" Pitch 14-3/4" (Variable) No. of Blades 4 Material C.I. Length of Bearing in Stern Bush next to and supporting propeller 4'-11"

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

Bilge Pumps worked from the Main Engines, No. 2 Diameter 4 Stroke 24" Can one be overhauled while the other is at work ✓

Feed Pumps { No. and size 2 @ 9 1/2" x 4" x 21" Pumps connected to the Main Bilge Line { No. and size 1-8" x 5" x 8" Ballast Pump. How driven Steam

Ballast Pumps, No. and size 1 @ 9" x 12" x 12" Lubricating Oil Pumps, including Spare Pump, No. and size -

Are two independent means arranged for circulating water through the Oil Cooler ✓ Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps:—In Engine and Boiler Room 4 @ 3" w. E.R. + Bl. Rm. 1 @ 2 1/2" Tunnel hole.

In Pump Room No. 3. 3" φ r.s. No. 4. 3" φ r.s. In Holds, &c. No. 1. 3" φ r.s. No. 2. 3 1/2" φ r.s. X Bunker hold 2 1/2" φ r.s.

Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 @ 8" Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 5"

Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes Yes.

Are the Bilge Suctions in the Machinery Space 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 Bath.

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold 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.

What Pipes pass through the bunkers In hold bilge Suctions How are they protected head casing

What 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 compartment to another Yes. Is the Shaft Tunnel watertight Yes. Is it fitted with a watertight door No (Bkhd) intact.

MAIN BOILERS, &c.—(Letter for record S.) Total Heating Surface of Boilers 7532 ϕ (Main 5446 ϕ Aux. 1486 ϕ)

Which Boilers are fitted with Forced Draft all Which Boilers are fitted with Superheaters Both main boilers

No. and Description of Boilers 2 SB (8pt.) 1 Aux. Working Pressure 220 lbs.

IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes.

IS A DONKEY BOILER FITTED? Yes. If so, is a report now forwarded? Yes. (Barrow Rpt. 2959)

Can the donkey boiler be used for domestic purposes only -

PLANS. Are approved plans forwarded herewith for Shafting Yes. Main Boilers Yes. Auxiliary Boilers Yes. Donkey Boilers Yes.

Superheaters General Pumping Arrangements Oil fuel Burning Piping Arrangements

SPARE GEAR.

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

State the principal additional spare gear supplied

The foregoing is a correct description.

Archie J. Barry
 DIRECTOR GENERAL MANAGER

Manufacturer.

Dates of Survey while building

During progress of work in shops -- 1944 Jan 11, 21, 24, 25, 27, 31 Feb 4, 11, 21 Mar 1, 7, 9, 10, 13, 15, 21, 31 Apr 17, 19, 24 May 7, 18
 23 June 1, 6, 20 July 4, 18, 21 Aug 1, 10, 14, 17, 21, 22, 24, 25, 28, 29, 30 Sep 1, 5, 7, 12, 15, 20 Oct

During erection on board vessel --- 9, 10, 17, 26, 28

Total No. of visits 53

Dates of Examination of principal parts—Cylinders Slides Covers

Pistons Piston Rods Connecting rods

Crank shaft Thrust shaft *Gls. Rpt. 65362.* Intermediate shafts *Gls. Rpt. 65362.*

Tube shaft Screw shaft *Gls. Rpt. 65362.* Propeller *Gls. Rpt. 65362.*

Stern tube 14/8/44 Engine and boiler seatings 30/8/44 Engines holding down bolts 12/9/44

Completion of fitting sea connections 14/8/44

Completion of pumping arrangements 14/10/44 Boilers fixed 30/8/44 Engines tried under steam 10/10/44

Main boiler safety valves adjusted 10/10/44 Thickness of adjusting washers *Port Bl. P. 3/8" Spl. S. 7/16 5/16 Aux. Bl. P. 3/8" Spl. S. 13/32 St. Bl. P. 7/16 3/8 S. 7/16*

Crank shaft material Identification Mark *Gls. Rpt. 66045* Thrust shaft material Identification Mark

Intermediate shafts, material Identification Marks Tube shaft, material Identification Mark 6/6/44

Screw shaft, material Identification Mark Steam Pipes, material *S.D. Steel* Test pressure 660 Date of Test 14/8/44

Is an installation fitted for burning oil fuel *no.* Is the flash point of the oil to be used over 150° F. ---

Have the requirements of the Rules for the use of oil as fuel been complied with ---

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 *not decided.*

Is this machinery duplicate of a previous case.....If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. *This machinery, Consisting of*

main Engines & Shafting by Messrs J. Brown & Co L^{td}, Clydebank, (Gls Rpt. 66045 ✓ 65362), main boilers (by G. Clark (1938) L^{td}), Auxiliary boiler (by Messrs. Vickers Armstrong L^{td} (Barrow Rpt. 2959), has been securely fitted on board & tried under working conditions alongside Quay with Satisfactory results.

The requirements of the Society's rules & the Specification have been Complied with

The machinery is now eligible in my opinion to have notation of 1/2 LMC. 10.44, T.S (CL) 2 SB (Spl.) 1 Aux. Bl. 220 lbs.

SUNDERLAND.

Certificate to be sent to

The amount of Entry Fee ... £ 6 : - : When applied for,
Old fee including Special Specification ... £ 55 : 3 : *1st Nov 1944*
Donkey Boiler Fee ... £ 25 : 3 : When received,
Barrow etc
 Travelling Expenses (if any) £ : : 19

W. H. Casw.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 17 NOV. 1944*

Assigned *+ LMC 10.44*
F.D. C.L. 2 S.B. (Spl.) 1 Aux. Bl. 220 lbs.

