

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Date of writing Report 19 When handed in at Local Office 31 OCT 1944 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)

Built at *Sunderland* By whom built *Shiplbuilding Corp. (Hess Brand)* Yard No. 4 Tons { Gross 7072
 Engines made at *Clydebank* By whom made *J. Brown & Co Ld* Engine No. A.65 When built 1944
 Boilers made at *Sunderland* By whom made *G. Clark (1938) Ld* Boiler No. 1332 When made 1944

Registered Horse Power Owners *Ministry of War Transport* Port belonging to *Sunderland*
 Nom. Horse Power as per Rule 512 Is Refrigerating Machinery fitted for cargo purposes. Is Electric Light fitted *Yes*

Trade for which vessel is intended

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

Dia. of Cylinders *23½ - 34½ - 68* Length of Stroke *48"* No. of Cylinders No. of Cranks

Crank shaft, dia. of journals as per Rule Crank pin dia. Crank webs Mid. length breadth Thickness parallel to axis
 as fitted Mid. length thickness shrunk Thickness around eye-hole

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

Tube Shafts, diameter as per Rule Screw Shaft, diameter as per Rule Is the { tube } shaft fitted with a continuous liner { *Yes*
 as fitted as fitted

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
 as fitted as fitted 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 *one length*

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

at *Yes* If so, state type *(Variable)* Length of Bearing in Stern Bush next to and supporting propeller *4' - 11"*

Propeller, dia. *18' 3"* Pitch *14' 3½"* No. of Blades *4* Material *C.I.* whether Moveable *Yes* Total Developed Surface *108½* sq. feet

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 { No. and size 2 @ 9½" x 4" x 21" Pumps connected to the { No. and size 1-8" x 5" x 8" Ballast Pumps.
 Pumps How driven *Steam* Main Bilge Line 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" x 4" F.R. + B.L. Rm. 1 @ 2½" Tunnel well.

In Pump Room In Holds, &c. N° 3. 3" φ r.s. N° 4. 3" φ r.s. N° 1. 3" φ r.s. N° 2. 3½" φ r.s. X Bunker hold 2½" 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 *Both*

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 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 *hard 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 *Yes (Bekhd) intact*

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

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* If so, is a report now forwarded? *Yes (Barrow Rpt. 2959)*

IS A DONKEY BOILER FITTED? *Yes* Can the donkey boiler be used for domestic purposes only *Yes*

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

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.

GEORGE CLARK 1880 LTD

Archie J. Barry
 DIRECTOR GENERAL MANAGER

Manufacturer.



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Lloyd's Register

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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, 13, 27, 29, 30, 31 Apr 17, 19, 24 May 2, 18
23 June 1, 6, 20 July 4, 18, 21 Aug 1, 12, 14, 17, 21, 22, 24, 25, 28, 29, 30 Sep 1, 5, 7, 12, 15, 20 Oct
During erection on board vessel - - 9, 12, 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 Gl. Rpt. 65362.
Tube shaft - Screw shaft Gl. 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" 11/16" 3/8"
Crank shaft material - Identification Mark Gl. 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 ho. ✓ 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 ho. ✓ 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, (Gl. 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 1/2 LMC. 10.44, T.S (CL) 2 SB (Spl.) 1 Aux. Bl. 220 h.p.

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

Not. K. Asw.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

+ LMC 10.44

F.D. C.L. 2 S.B. (Spl.) 1 Aux. Bl. 220 h.p.



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