Rpt. 4.

No. 52301.

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

3 FEB 1944

Date of writing Report 11-11-1943. When handed in at Local Office ..... 19.... Port of HULL

Received at London Office 2 FEB 1944

No. in Reg. Book ..... Survey held at HULL. Date, First Survey 22.1.43. Last Survey 24.1.1944 (Number of Visits 51.)

on the STEAM TUG. EMPIRE CHARLES (Henry Scarr Ltd. completed by Richard Dunston Ltd.) A/MS 707 Tons Gross 244 Net nil

Built at HESSLE By whom built Richard Dunston Ltd Yard No 1432. When built 1944

Engines made at HULL. By whom made Chas. D. Holmes Ltd Engine No. 1652. When made 1944

Boilers made at Do. By whom made Do. Boiler No. 1651 When made 1944

Registered Horse Power ..... Owners Ministry of War Transport Port belonging to .....

Nom. Horse Power as per Rule 177. Is Refrigerating Machinery fitted for cargo purposes NO Is Electric Light fitted YES

Trade for which vessel is intended Towing Services

ENGINES, &c.—Description of Engines Triple expansion. CONTRACT. Revs. per minute 116.

Dia. of Cylinders 16", 26", 43" Length of Stroke 30". No. of Cylinders 3. No. of Cranks 3.

Crank shaft, dia. of journals as per Rule 8.8. as fitted 9 1/8". Crank pin dia. 9 1/8". Crank webs Mid. length breadth — Mid. length thickness — Thickness parallel to axis shrunk 5 3/4". Thickness around eye-hole 4 1/16".

Intermediate Shafts, diameter as per Rule 8.375. as fitted 8 5/8". Thrust shaft, diameter at collars as per Rule 8.8. as fitted 9 1/8".

Tube Shafts, diameter as per Rule — as fitted NONE. Screw Shaft, diameter as per Rule 9.7 as fitted 9 7/8". Is the {tube / screw} shaft fitted with a continuous liner {—} No.

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

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 Ya. If so, state type NEWARK.

Propeller, dia. 11'-0". Pitch 11'-8". No. of Blades 4. Material Cl. whether Moveable Solid. Length of Bearing in Stern Bush next to and supporting propeller 42". Total Developed Surface 46. sq. feet

Feed Pumps worked from the Main Engines, No. 2 Diameter 3" Stroke 18" Can one be overhauled while the other is at work Ya.

Bilge Pumps worked from the Main Engines, No. 2. Diameter 3". Stroke 18". Can one be overhauled while the other is at work Ya.

Feed Pumps {No. and size One 7"x5"x6" Duplex / How driven Independent Steam.} Pumps connected to the Main Bilge Line {No. and size One 7"x7"x8" Duplex / How driven Independent Steam.} {2-3"x18" ME.}

Ballast Pumps, No. and size One 7"x7"x8" Duplex Lubricating Oil Pumps, including Spare Pump, No. and size NONE.

Are two independent means arranged for circulating water through the Oil Cooler NONE. Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps:—In Engine and Boiler Room 2@2". 2@2 1/4"

In Pump Room — In Holds, &c. One @ 2" Dia in each of the following Spaces:- Fore peak. Frd. Bilge. After Peak

Main Water Circulating Pump Direct Bilge Suctions, No. and size One @ 5 1/2". Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One @ 2 1/4". Bl. Rm One @ 2 1/4"

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

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 Ya.

Are all Sea Connections fitted direct on the skin of the ship (YES, OR) ON STL. PLATED BOXES Are they fitted with Valves or Cocks Bott.

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

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

What Pipes pass through the bunkers NONE. How are they protected —

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 Ya.

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 Ya. Is the Shaft Tunnel watertight NONE. Is it fitted with a watertight door — worked from —

MAIN BOILERS, &c.—(Letter for record S.) Total Heating Surface of Boilers 2778 ft

Which Boilers are fitted with Forced Draft All. Which Boilers are fitted with Superheaters NONE.

No. and Description of Boilers One S.E. Working Pressure 210 lbs/in

IS A REPORT ON MAIN BOILERS NOW FORWARDED? Ya.

IS A DONKEY BOILER FITTED? No. If so, is a report now forwarded? —

Can the donkey boiler be used for domestic purposes only —

PLANS. Are approved plans forwarded herewith for Shafting 3.1.41. Main Boilers 15.2.43. Auxiliary Boilers — Donkey Boilers — (If not state date of approval)

Superheaters — General Pumping Arrangements 1-11-40. Oil fuel Burning Piping Arrangements NONE

SPARE GEAR.

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

State the principal additional spare gear supplied As Specification.

The foregoing is a correct description.

FOR CHARLES D. HOLMES & CO., LTD.

W. P. Evans Manufacturer.

EMPIRE CHARLES. A/MS 707.

Dates of Survey while building

During progress of work in shops — 1943 Jan 22. Apr. 2. 9. 26 29. May 6. 14. 20 June 1, 11. 19. 25. July 2. 8. 15. 16. 29 Aug 3. 6. 13. 21. Sept 2. 8. 6. 7. 10. Oct 1. Nov. 10. 12. 19. 22. Dec. 3. Jan 12. 13.

During erection on board vessel — 1943 OCT 22, 26, 28. NOV 1, 3, 5, 8, 10, 12, 13, 30. 1944 JAN 8, 19, 20, 23. 26, 24.

Total No. of visits 51.

Dates of Examination of principal parts—Cylinders 16/7/43. 15/7/43. 20/7/43 Slides 6.8.43. Covers 16/7/43. 15/7/43. 20/7/43.

Pistons 13/8/43. 6/8/43. Piston Rods 6/8/43. Connecting rods 6/8/43.

Crank shaft 2-9-43. Thrust shaft 20-5-43. Intermediate shafts 11-6-43.

Tube shaft NONE. Screw shaft 1-6-43. Propeller 28/10/43.

Stern tube 26/10/43. Engine and boiler seatings 1/11/43 Engines holding down bolts 10/11/43.

Completion of fitting sea connections 26/10/43.

Completion of pumping arrangements 13/11/43 Boilers fixed 10/11/43 Engines tried under steam 13/11/43.

Main boiler safety valves adjusted 13/11/43 Thickness of adjusting washers F 11/32" A 13/32"

Crank shaft material F.I. Steel C475. Journal C476. Identification Mark Pins 6453. C.P. 7-5-43. Thrust shaft material F.I. Steel Identification Mark 465. C.P. 25/5/43. 6-5-43.

Intermediate shafts, material F.I. Steel. Identification Marks 466 C.P. 5/5/43. Tube shaft, material NONE. Identification Mark ✓

Screw shaft, material F.I. Stl. Identification Mark 464 C.P. 4/5/43. Steam Pipes, material Steel Test pressure 630 lbs (10" Date of Test 10-11-43.

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 ✓

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

General Remarks (State quality of workmanship, opinions as to class, &c. S. Tug. EMPIRE BIRCH. Hull Rpt: 51472

The Machinery of this Vessel has been constructed in accordance with the approved plans, the Rules and the Specification: of tested material made by firms approved by the Society.

The Workmanship and materials are good

The Machinery and auxiliaries have been fitted on board and when tried under steam at as near full power as practicable in the basin were found satisfactory in every respect

It is eligible, in our opinion, when classed to have records of ✠ L.M.C. 1.44. and O.G. and notation T. 3 cy. 16", 26", 43", — 30". 177 NHP. One S.B. 210 lbs 10" 3 Cf. G.S. 64 ℔. HS. 7778 ℔ FD.

Certificate to be sent to

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee	£	3 : 0	When applied for, 1 FEB 1944 19
Special CLASS SPEC 25%	£	44 : 5 / 11 : 1	
Donkey Boiler Fee	£	:	When received, 19
Travelling Expenses (if any)	£	:	

W. S. Shields & J. Thomson
Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute TUES. 8 FEB 1944

Assigned + LMC 1.44 FD OG