

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Date of writing Report 19 24 JAN 1942 When handed in at Local Office 27 JAN 1942 Received at London Office 27 JAN 1942 Port of HULL.

No. in Survey held at HULL. Date, First Survey 12.2.41 Last Survey 10.12.1941
 Reg. Book. on the Steamer **EMPIRE BIRCH**. (Number of Visits 45) Gross 250.
 Built at HESSLE By whom built Richard Dunstan & Co. Yard No. 418. Net -
 Engines made at HULL By whom made Messrs. Chas. D. Holmes & Co. Engine No. 1577 When built 1941-12
 Boilers made at HULL By whom made Messrs. Chas. D. Holmes & Co. Boiler No. 1577 When made 1941-12
 Registered Horse Power - Owners The 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.

Dia. of Cylinders 16" - 26" - 43" Length of Stroke 30" No. of Cylinders 3 Revs. per minute -
 Crank shaft, dia. of journals as per Rule 8.8 Crank pin dia. 9.125 Crank webs Mid. length breadth - No. of Cranks 3
 as fitted 9.125 Mid. length thickness - Thickness parallel to axis 5 3/4"
 Intermediate Shafts, diameter as per Rule 8.375 Thrust shaft, diameter at collars as per Rule 8.8
 as fitted 8.625 as fitted 9 1/8"
 Tube Shafts, diameter as per Rule - Screw Shaft, diameter as per Rule 9.695 Is the no screw shaft fitted with a continuous liner No
 as fitted - as fitted 9.875
 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 propeller boss Yes
 as fitted - as fitted -
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner 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 Yes
 If two liners are fitted, is the shaft lapped or protected between the liners Yes Is an approved Oil Gland or other appliance fitted at the after end of the tube Yes
 If so, state type NEWARK No. 1 Length of Bearing in Stern Bush next to and supporting propeller 42"
 Propeller, dia. 11'-0" Pitch 11'-8" No. of Blades 4 Material C.I. whether Moveable Slid 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 Yes
 Bilge Pumps worked from the Main Engines, No. 2 Diameter 3" Stroke 18" Can one be overhauled while the other is at work Yes
 Feed Pumps { No. and size One 7" x 5" x 6" Duplex Pumps connected to the { No. and size 2 @ 3" x 18" One 7" x 7" x 8" Duplex
 How driven Independent Steam Main Bilge Line { How driven Main Eng. Independent Steam
 Ballast Pumps, No. and size One 7" x 7" x 8" 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" 1 @ 2" in tunnel between Bunkers
 In Pump Room In Holds, &c. Fore peak. Ford. Bilge. Aft Peak. 2" in each

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" One @ 2 1/4" One @ 2 1/4" 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 No 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 Above
 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 NONE How are they protected Yes
 What pipes pass through the deep tanks NONE 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 NONE Is it fitted with a watertight door Yes worked from Yes

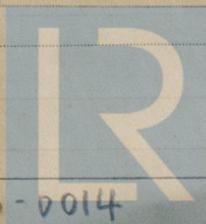
MAIN BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 2778 sq. ft.
 Which Boilers are fitted with Forced Draft All Which Boilers are fitted with Superheaters NONE
 No. and Description of Boilers 1 SB. Working Pressure 210 lbs/sq. in.
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes
 IS A DONKEY BOILER FITTED? No If so, is a report now forwarded? Yes
 Can the donkey boiler be used for domestic purposes only Yes

PLANS. Are approved plans forwarded herewith for Shafting S. 1. 41 Main Boilers S. P. 40 Auxiliary Boilers Yes Donkey Boilers Yes
 (If not state date of approval)
 Superheaters Yes General Pumping Arrangements 1-11-40 Oil fuel Burning Piping Arrangements Yes

SPARE GEAR.
 Has the spare gear required by the Rules been supplied Yes - short voyagers
 State the principal additional spare gear supplied Out for as per Specification.

The foregoing is a correct description.
 FOR CHARLES D. HOLMES & CO., LTD.
W.R. Evans

Manufacturer.



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EMPIRE BIRCH.

Dates of Survey while building: During progress of work in shops -- 1/41. Feb 12. Mar. 28. Apr. 4. 10. 23. May. 30. June 13. 19. July. 4. 11. 18. 18. 22. 25. 26. 29. Aug. 6. 7. 8. 9. 14. 15. 15. 21. 22. 25. 26. 29. Sep. 2. 5. 9. 19. 23. 29. Oct. 1. 6. 7. 8. 17. Nov. 3. 12.
 During erection on board vessel -- Dec. 1. 2. 6. 10
 Total No. of visits 41

Dates of Examination of principal parts: Cylinders 15/8/41 7/8/41 6/8/41 Slides 15/8/41 Covers 15/8/41 7/8/41 6/8/41
 Pistons 4/7/41 27/7/41 15/8/41 Piston Rods 27/8/41 15/8/41 Connecting rods 20/5/41
 Crank shaft 22/7/41 Thrust shaft 13/6/41 Intermediate shafts 29/7/41
 Tube shaft Screw shaft 13/7/41 Propeller 26-7-41
 Stern tube 26-7-41 Engine and boiler seatings 26-7-41 Engines holding down bolts 23-9-41
 Completion of fitting sea connections 26-7-41 Boilers fixed 23-9-41 Engines tried under steam 10-12-41
 Completion of pumping arrangements 10-12-41 Thickness of adjusting washers 3/8" both.
 Main boiler safety valves adjusted 2-12-41 Identification Mark 5214 AEG.
 Crank shaft material M.S. Identification Mark 5211 Jammals 5212 AEG. 9-5-41 Thrust shaft material M.S. Identification Mark 9-5-41
 Intermediate shafts, material M.S. Identification Marks 5215 AEG. 9-5-41 Tube shaft, material Identification Mark 630 Rules
 Screw shaft, material M.S. Identification Mark 5213 AEG. 9-5-41 Steam Pipes, material M.S. Test pressure 600 lb Date of Test 29-9-41
 Is an installation fitted for burning oil fuel Yes Is the flash point of the oil to be used over 150°F. Yes
 Have the requirements of the Rules for the use of oil as fuel been complied with Yes
 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 Yes
 Is this machinery duplicate of a previous case Yes If so, state name of vessel (see of class).

General Remarks (State quality of workmanship, opinions as to class, &c.)
 The machinery of this tug has been constructed & fitted on board under Special Survey in accordance with the approved plans, the Rules & the Specification. The workmanship & materials are good & when tried under steam it was found satisfactory in every respect.
 The vessel is eligible, in our opinion, when classed, to have the records of L.M.C. 12-41-09 & the notation T 3 Cy 16; 26; 43 - 30' 177 NHP.
 210 lb. I.S.B. 3 of G.S. 64 H.S. 2778 F.D

The amount of Entry Fee ... £ 3 : - :
 25% Special Donkey Boiler Fee ... £ 44 : 5 : 3
 Travelling Expenses (if any) £ : :
 When applied for, 25 JAN 1942
 When received, 19

D. J. Phillips & J. F. Fuleman
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 13 FEB 1942
 Assigned + L.M.C. 12-41
 22, 0.9.

