

# REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

14 SEP 1944

Received at London Office

18 SEP 1944

Date of writing Report 23-8-44 When handed in at Local Office 19 Port of HULL

No. in Survey held at HULL Date, First Survey 1.4.43 Last Survey 30.8.1944

Reg. Book on the STEAM TUG EMPIRE CHRISTOPHER A/MS. 872 (Number of Visits 26) (Gross 274.35) (Net NIL)

Built at SELBY By whom built Cochrane & Sons Ltd Yard No. 1285 When built 1944

Engines made at HULL By whom made Amos & Smith Ltd Engine No. 755 When made

Boilers made at HULL By whom made Amos & Smith Ltd Boiler No. 755 When made

Registered Horse Power Owners Ministry of War Transport Port belonging to

Nom. Horse Power as per Rule 132. Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

Trade for which vessel is intended Joining Services

ENGINES, &c.—Description of Engines TRIPLE EXPANSION CONTRACT. Revs. per minute 122.

Dia. of Cylinders 15"-25"-42" Length of Stroke 27" No. of Cylinders 3 No. of Cranks 3

Crank shaft, dia. of journals as per Rule 8.05" as fitted 8 1/4" Crank pin dia. 8 1/4" Crank webs Mid. length breadth 15 1/2" Mid. length thickness 5 1/2" Thickness parallel to axis 5 1/4" Thickness around eye-hole 3 5/8"

Intermediate Shafts, diameter as per Rule 7.66" as fitted 8" Thrust shaft, diameter at collars as per Rule 8.05" as fitted 8 1/4"

Tube Shafts, diameter as per Rule None as fitted Screw Shaft, diameter as per Rule 8.865" as fitted 9 1/4" 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 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 Yes. If so, state type NEWARK Length of Bearing in Stern Bush next to and supporting propeller 2'-2 1/2"

Propeller, dia. 10'-0" Pitch 11'-9" No. of Blades 4 Material C.I. whether Moveable SOLID Total Developed Surface 38 sq. feet

Feed Pumps worked from the Main Engines, No. 2 Diameter 2 3/4" Stroke 15" Can one be overhauled while the other is at work Yes

Bilge Pumps worked from the Main Engines, No. 2 Diameter 2 3/4" Stroke 15" Can one be overhauled while the other is at work Yes

Feed Pumps No. and size One 6" x 6 1/2" x 6" Duplex Pumps connected to the Main Bilge Line No. and size One 7 1/2" x 5" x 6" Duplex How driven Independent Gear

Ballast Pumps, No. and size None 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 1/2" 2 @ 3" Dia Boiler Rm. 2 @ 2 1/2"

In Pump Room One @ 2" Dia in each of the Apr Hold, Apr Peak, Tank In Holds, &c. following:—Fore peak tank, Fore Hold

Main Water Circulating Pump Direct Bilge Suctions, No. and size One @ 5" Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One @ 3" included above 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 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

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 None Is it fitted with a watertight door worked from

MAIN BOILERS, &c.—(Letter for record 5) Total Heating Surface of Boilers 2390 sq. ft.

Which Boilers are fitted with Forced Draft None Which Boilers are fitted with Superheaters None

No. and Description of Boilers ONE S.B. Working Pressure 200 lb / sq. in.

IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes

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 28-7-41 Main Boilers 3-7-41 Auxiliary Boilers NONE Donkey Boilers NONE (If not state date of approval)

Superheaters NONE General Pumping Arrangements 3-9-41 Oil fuel Burning Piping Arrangements 8-5-42

### SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied See attached list.

The foregoing is a correct description.  
**FORBES & SMITH LTD.**

*W. E. Brown*

DIRECTOR

Manufacturer.



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W300-0103

EMPIRE CHRISTOPHER.

Dates of Survey while building  
 During progress of work in shops - - 1943. Apr. 1. May 11, 13, 16, 17, 19, 24. June 6, 20, 29. July 12. Aug 21.  
 During erection on board vessel - - - 1944. Apr 4, 18. May 17, 24, 28. Aug 3, 10, 11, 14, 16, 17, 23, 24. 30.  
 Total No. of visits. 26.

Dates of Examination of principal parts—Cylinders 17/5/44 16/5/44 19/5/44 Slides 20/6/44 Covers 17/5/44 16/5/44 19/5/44  
 Pistons 20/6/44 Piston Rods 20/6/44 Connecting rods 20/6/44  
 Crank shaft 29/6/44 Thrust shaft 11/5/44 Intermediate shafts 24/5/44  
 Tube shaft NONE Screw shaft 1/4/44 Propeller 18. 4. 44  
 Stern tube 4. 4. 44 Engine and boiler seatings 17. 7. 44 Engines holding down bolts 3. 8. 44

Completion of fitting sea connections 18. 4. 44  
 Completion of pumping arrangements 24. 8. 44 Boilers fixed 3. 8. 44 Engines tried under steam 24. 8. 44  
 Main boiler safety valves adjusted 24. 8. 44 Thickness of adjusting washers P 7/16" S 1/2"

Crank shaft material F. 1. 8 steel Identification Mark 3918 T.T. 28/4/44 Thrust shaft material F. 1. 8 steel Identification Mark 3918 T.T. 28/4/44  
 Intermediate shafts, material F. 1. 8 steel Identification Marks 3918 T.T. 28/4/44 Tube shaft, material NONE Identification Mark -  
 Screw shaft, material F. 1. 8 steel Identification Mark 1937 CP. Steam Pipes, material S Steel Test pressure 600 @ 10" Date of Test 21/8/44  
 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 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 8m Tug EMPIRE PAT. HUL. RPT. 51723

General Remarks (State quality of workmanship, opinions as to class, &c.)

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

The Workmanship and Materials are good  
 The Machinery & 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.

The Vessel is eligible, in our opinion, when classed to have the records of LMC 8,44. and O.G. and the Notations T. 3 Cy 15", 25", 42" — 27" 132 NHP. 200 @ 10" 15.B. 3.Cf. H.S. 2390.

Fitted for Oil Fuel F.P. above 150° F.

The amount of Entry Fee	£	3	0	0	When applied for, 14 SEP 1944
Special CLASS. SPECIFICATION	£	33	0	0	
Donkey Boiler Fee	£	8	0	0	When received,
Travelling Expenses (if any)	£				

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

Committee's Minute ... FRI. 22 SEP 1944  
 Assigned ... LMC 8.44



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