

# REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

Date of writing Report 19-12-42  
 No. in Survey held at HULL  
 Reg. Book  
 on the STEAM TUG **EMPIRE ACE**  
 Built at SELBY By whom built Cochrane & Sons Ltd Yard No. 1255 When built 1942  
 Engines made at HULL By whom made Amos & Smith Ltd Engine No. 714 When made 1942  
 Boilers made at HULL By whom made Amos & Smith Ltd Boiler No. 714 When made 1942  
 Registered Horse Power 132 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 Towing Services

ENGINES, &c.—Description of Engines Triple Expansion CONTRACT Revs. per minute 122.  
 Dia. of Cylinders 15" x 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" Thickness parallel to axis 5 1/2" shrunk Mid. length thickness 15 1/2" Thickness around eye-hole 3 5/8"  
 Intermediate Shafts, diameter as per Rule 8.05. 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 None Screw Shaft, diameter as per Rule 8.865. as fitted 9 1/4" Is the screw shaft fitted with a continuous liner No.  
 Bronze Liners, thickness in way of bushes as per Rule as fitted If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner  
 propeller boss 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  
 Propeller, dia. 10'-0" Pitch 11'-9" No. of Blades 4 Material CI 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 4 1/4" x 6" How driven Ind. Stm. Pumps connected to the Main Bilge Line No. and size One Duplex 6" x 4 1/4" x 6" How driven Independent Means Ran 2 3/4" x 15" Stroke 2 on Main Eng.  
 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" Bl. Bu 2 @ 2 1/2"  
 In Pump Room In Holds, &c. One @ 2" dia in each of the following: Fore Peak Fore Hold, Apr Hold, Apr Peak Hold  
 Main Water Circulating Pump Direct Bilge Suctions, No. and size One @ 5" dia. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Two @ 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 No 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.E. 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 Donkey Boilers  
 (If not state date of approval)  
 Superheaters 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.  
 per pro AMOS & SMITH LTD.

ASST. SECRETARY

Manufacturer.



EMPIRE ACE.

1942 June 29, 17, July 24, 25 Aug 18, 20, 31. Sept 2, 4, 11, 14, 15. Oct. 2, 16, 24, 26, 28  
 Nov. 2, 4, 10, 20, 27; Dec 13, 15

Dates of Survey while building: During progress of work in shops - -  
 During erection on board vessel - - -

Total No. of visits 37

Dates of Examination of principal parts - Cylinders 3/8/42 2/9/42 4/9/42 Slides 18/8/42 Covers 3/8/42 2/9/42 4/9/42  
 Pistons 30-6-42 Piston Rods 30/6/42 Connecting rods 9/7/42  
 Crank shaft 26/10/42 Thrust shaft 25/7/42 Intermediate shafts 2/6/42  
 Tube shaft None Screw shaft 25/7/42 Propeller 9/9/42  
 Stern tube 9/9/42 Engine and boiler seatings 14/9/42 Engines holding down bolts 3/12/42  
 Completion of fitting sea connections 9/9/42  
 Completion of pumping arrangements 15/12/42 Boilers fixed 3/12/42 Engines tried under steam 15/12/42  
 Main boiler safety valves adjusted 15/12/42 Thickness of adjusting washers P 13/32 8 11/32  
 Crank shaft material M.S. Identification Mark 782.F.W.11-4-42 Thrust shaft material M.S. Identification Mark 852.F.W.16-6-42  
 Intermediate shafts, material M.S. Identification Marks 782.F.W.11/4 Tube shaft, material None Identification Mark -  
 Screw shaft, material M.S. Identification Mark 904.F.W. Steam Pipes, material Steel Test pressure 600lb Date of Test 1/12/42  
 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 S.T.M. [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 plan. The Rule and the Specification, of tested material made by firms accredited by the Society.  
 The Workmanship and Material are good.  
 The Machinery and Auxiliaries have been fitted on board and, when tried under steam at or near full power as practicable in the basin, were found satisfactory in every respect.  
 Eligible to have record of \*LMC 12.42. OG. and notation of T. 3cy. 15", 25", 42" - 27" NHP 132.  
 15B. 200lb. 3c.f. HS 2390 4  
 Fitted for oil fuel 12.42. FP. above 150°F.

The amount of Entry Fee	£ 3	When applied for,
Special Spec. 25%	£ 33	16/11/1943
Donkey Boiler Fee	£ 8	When received,
Travelling Expenses (if any)	£	19

J. Shields  
 Engineer Surveyor to Lloyd's Register of Shipping.

TUE 26 JAN 1943

Committee's Minute  
 Assigned + done 12.42  
 Fitted for oil fuel 12.42 at atm 150°F

