

## REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Date of writing Report 27-8-42. When handed in at Local Office 29 SEP 1942. Port of HULL. Received at London Office 1 OCT 1942.

No. in Survey held at Reg. Book. 27-8-42. Date, First Survey 7. 4. 42. Last Survey 3. 9. 1942. (Number of Visits 45)

on the STEAM TUG **EMPIRE SAM.** Gross Tons 275 Net Tons Nil

Built at SELAY. By whom built Cochrane & Co. Ltd. Yard No. 1250. When built 1942

Engines made at HULL. By whom made Angus & Smith Ltd. Engine No. 711. When made "

Boilers made at HULL. By whom made Angus & Smith Ltd. Boiler No. 711. When made "

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 purposes.

**ENGINES, &c.**—Description of Engines Triple Expansion. Crankshaft 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 1/2". Thickness around eye-hole 3 3/8".

Intermediate Shafts, diameter as per Rule 8". as fitted 8". Thrust shaft, diameter at collars as per Rule 8.05". as fitted 8.25".

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 —. 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? —. Length of Bearing in Stern Bush next to and supporting propeller 3'-2 1/2".

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? —.

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? —.

Feed Pumps { No. and size One 6" x 4 1/2" x 6". How driven Ind. steam. Pumps connected to the Main Bilge Line { No. and size One Duplex 6" x 4 1/2" x 6". How driven 2 M.E. Pumps. 2 3/4" Bore x 15" Stroke.

Ballast Pumps, No. and size —. 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 2 @ 2 1/2", 2 @ 3". In Holds, &c. Fore Peak Tank 1 @ 2" Dia. Fore Hold 1 @ 2" Dia.

In Pump Room Apr. Hld 1 @ 2" Dia. Apr. Peak Tank 1 @ 2" Dia.

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 Two @ 3" Dia. Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes? —.

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? —.

Are all Sea Connections fitted direct on the skin of the ship? —. Are they fitted with Valves or Cocks Bolt.

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

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? —.

What Pipes pass through the tankers? 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? —.

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? —. Is the Shaft Tunnel watertight? No. Is it fitted with a watertight door? —.

**MAIN BOILERS, &c.**—(Letter for record S) 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 Single Ended Boiler. Working Pressure 200 lb. / sq. in.

IS A REPORT ON MAIN BOILERS NOW FORWARDED? —.

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 3/41. 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? —.

State the principal additional spare gear supplied See attached list.

The foregoing is a correct description.  
For AMOS & SMITH LTD.

A. E. Cowley  
DIRECTOR

Manufacturer.



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# EMPIRE SAM.

During progress of work in shops - - - 1942  
 Apr. 7. 20. 30. May. 4. 8. 13. 16. 22. 27. 28. 29. June 1. 2. 3. 4. 11. 16. 17. 30. July 1. 2. 13. 16. 17. 24.  
 Aug. 7. 10. 12. 13. 14. 15. 18. 19. 20. 21. 24. 25. 26. 27. 28. 29. 31. Sept 1. 2. 3.  
 During erection on board vessel - - -  
 Total No. of visits 45.

Dates of Examination of principal parts—Cylinders 4/6/42. 3/6/42. Slides 30-6-42. Covers 4/6/42. 3/6/42.  
 Pistons 3/6/42. Piston Rods 8/5/42. Connecting rods 4/5/42.  
 Crank shaft 29-5-42. Thrust shaft 7/4/42. Intermediate shafts 7/4/42.  
 Tube shaft 1. Screw shaft 20/4/42. Propeller 1/6/42.  
 Stern tube 22.5.42. Engine and boiler seatings 1/6/42. Engines holding down bolts 16.6.42.  
 Completion of fitting sea connections 1.6.42.  
 Completion of pumping arrangements 27.8.42. Boilers fixed 16.6.42. Engines tried under steam 28.8.42.  
 Main boiler safety valves adjusted 28.8.42. Thickness of adjusting washers P 1/32" S 1/4"  
 Crank shaft material M.S. Identification Mark 614.H.P. 19/3/42. Thrust shaft material M.S. Identification Mark 617.J.B. 7/4/42.  
 Intermediate shafts material M.S. Identification Marks 7.4.42. Tube shaft material None Identification Mark ✓  
 Screw shaft material M.S. Identification Mark 22.1.42. Steam Pipes material Steel Test pressure 600 lb Date of Test 26.8.42.  
 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 EMPIRE PAT.

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

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

The Workmanship and Materials are good.

The Machinery and Auxiliaries have been fitted as described, when tried under steam at as near full power as practicable in the basin, were found satisfactory in every respect.

Vessel's machinery is eligible for record of \* LMC 9, 42. T.S. 69. & the notation T 3cy. 15", 25", 42", — 27". 132 NHP. 1 SB 200 lb 3 cf. HS 2390  
 Fitted for oil fuel 9, 42. F.P. above 150°F.

The amount of Entry Fee ... £ 33 : - :  
 Special 25% ... £ 8 : 5 :  
 Donkey Boiler Fee ... £ : :  
 Travelling Expenses (if any) £ : :  
 When applied for, 29 SEP 1942  
 When received, 19

Committee's Minute

FRI 9 OCT 1942

Assigned

+ LMC 9. 42  
 Fitted for oil fuel  
 Oly

J. P. Allen & W. S. Shields  
 Engineer Surveyor to Lloyd's Register of Shipping.



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