Rpt. 4.

No. 51887.

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Date of writing Report 4 FEB 1943 19 When handed in at Local Office 19 Received at London Office 5 FEB 1943

Port of HULL

No. in Reg. Book ... Survey held at ... Date, First Survey 6. 6. 42. Last Survey 20. 1. 1943. (Number of Visits 40)

on the STEAM TUG. EMPIRE DENIS. Tons Gross 274 Net nil

Built at SELBY. By whom built Cochrane & Sons Ld Yard No. 1256. When built 1943

Engines made at HULL By whom made Amos & Smith Ld Engine No. 715. When made ,

Boilers made at HULL. By whom made Amos & Smith Ld Boiler No. 715. When made ,

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

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 Service

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 8¼" Crank pin dia. 8¼". Crank webs Mid. length breadth 15½" Mid. length thickness 5¼" shrunk Thickness parallel to axis 5¼" Thickness around eye-hole 3 5/8".

Intermediate Shafts, diameter as per Rule 7.665. as fitted 8". Thrust shaft, diameter at collars as per Rule 8.05. as fitted 8¼".

Tube Shafts, diameter as per Rule — as fitted None Screw Shaft, diameter as per Rule 8.86. as fitted 9¼". Is the {tube / screw} shaft fitted with a continuous liner {—} No.

Bronze Liners, thickness in way of bushes as per Rule — as fitted None 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 Yes - If so, state type "NEWARK" Length of Bearing in Stern Bush next to and supporting propeller 3'-2½".

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

Feed Pumps worked from the Main Engines, No. 2 Diameter 2¾" Stroke 15" Can one be overhauled while the other is at work Yes.

Bilge Pumps worked from the Main Engines, No. 2. Diameter 2¾" Stroke 15". Can one be overhauled while the other is at work Yes.

Feed Pumps {No. and size One 6"x4¼"x6". / How driven Independent Steam.} Pumps connected to the Main Bilge Line {No. and size One 6"x4¼"x6". 2 Rams 2¾" 9.15" St. / How driven Independent Stm. M.E.}

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 @ 2½", 2 @ 3" Dia. Bilge Pump 2 @ 2½".

In Pump Room ✓ In Holds, &c. F. P. Tank. 1 @ 2" Dia. Fore Hold 1 @ 2". Aft Hold One @ 2" Dia. A.P. Tank. One @ 2" Dia.

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 B.M.

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, S) Total Heating Surface of Boilers 2390 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 lbs/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.

For AMOS & SMITH LTD.

A. E. Lewis

DIRECTOR.

Manufacturer.

EMPIRE DENIS.

Dates of Survey while building

During progress of work in shops - -
1942. June 6, 30. July 9, 24, 25. Aug 11, 18, 21. Sept 14, 26, 29, 30. Oct 2, 16, 24, 28.
Nov. 2, 4, 11, 19, 23, 30. Dec. 1, 10, 21, 22, 23, 24, 30, 31.

During erection on board vessel - - -
1943. Jan. 1, 4, 5, 6, 8, 11, 12, 13, 18, 20.

Total No. of visits 40.

Dates of Examination of principal parts—Cylinders 26/9/42. 29/9/42. 30/9/42. Slides 28/10/42. Covers 26/9/42. 29/9/42. 30/9/42.

Pistons 30/6/42. 9/7/42. Piston Rods 26/9/42. Connecting rods 25/7/42.

Crank shaft 7/11/42. Thrust shaft 25/7/42. Intermediate shafts 6/6/42.

Tube shaft None. Screw shaft 4-8-42. Propeller 14/9/42.

Stern tube 14/9/42. Engine and boiler seatings 10-12-42. Engines holding down bolts 10-12-42.

Completion of fitting sea connections 14/9/42.

Completion of pumping arrangements 6/1/43. Boilers fixed 10-12-42. Engines tried under steam 6/1/43.

Main boiler safety valves adjusted 6/1/43. Thickness of adjusting washers P 5/16 S 11/32.

Crank shaft material F. 1. Stl. 783 F.W. 11/5/42. 772. N.G. Identification Mark 28.4.42. Thrust shaft material F. 1. Stl. Identification Mark 903. F.W. 16.6.42.

Intermediate shafts, material F. 1. Stl. Identification Marks 783. F.W. 11-5-42. Tube shaft, material None. Identification Mark —

Screw shaft, material F. 1. Stl. Identification Mark 904. F.W. Steam Pipes, material Steel. Test pressure 600 lbs/□". Date of Test 31-12-42.

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 Stm Tug EMPIRE PAT. 5/1723.

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 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 1, 43. OG. and notation of T 3 Cy. 15", 25", 42"-27" NHP 132. 158. 200 lb. 3 cf. H.S. 2390 ft

Fitted for oil fuel 1, 43. F.P. above 150°F.

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

Certificate to be sent to

The amount of Entry Fee ... £ 3 : :
Special ... ... £ 33 : :
Spec 25% 8 : 5
Donkey Boiler Fee ... ... £ : :
Travelling Expenses (if any) £ : :

When applied for, 4 FEB 1943 19
When received, 19

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

FRI. 12 FEB 1943

Committee's Minute

Assigned + Lmc 6.1.43 Fitted for oil fuel OG