

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

30 NOV 1942

Received at London Office 2 DEC 1942

Date of writing Report 19 _____ When handed in at Local Office _____ 19 _____ Port of Thorn

No. in Survey held at Thorn Date, First Survey 24. 7. 42 Last Survey 20. 11. 1942
 Reg. Book _____ (Number of Visits 10)

on the Single Screw Tug "EMPIRE ARIEL" Tons {Gross 129
 Net 72

Built at Thorn By whom built Richard Dunston Ltd. Yard No. T 373 When built 1942

Engines made at Yarmouth By whom made Crabtree (1931) Ltd. Engine No. 632 When made "

Boilers made at Stockton By whom made Stockton Chemical Engg. & Shipbuilding Co. Ltd. Boiler No. 6585 When made "

Registered Horse Power _____ Port belonging to _____

Nom. Horse Power as per Rule 85 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 - See Spanish Rpt. No 110,643. Revs. per minute 150

Dia. of Cylinders 11 3/4, 19 1/2, 32 Length of Stroke 22 No. of Cylinders 3 No. of Cranks 3

Crank shaft, dia. of journals as per Rule _____ as fitted 6 3/8 Crank pin dia. 6 3/8 Crank webs _____ Mid. length breadth _____ Thickness parallel to axis 4 1/2
 as fitted _____ Crank pin dia. 6 3/8 Crank webs _____ Mid. length thickness _____ Thickness around eye-hole 2 13/16

Intermediate Shafts, diameter as per Rule _____ as fitted 6 1/4 Thrust shaft, diameter at collars as per Rule _____ as fitted 6 3/8

Tube Shafts, diameter as per Rule _____ as fitted _____ Screw Shaft, diameter as per Rule _____ as fitted 7 1/8 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 yes 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 _____

If two liners are fitted, is the shaft lapped or protected between the liners 1 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 2-5

Propeller, dia. 8'-0" Pitch 8'-4" No. of Blades 4 Material C.I. whether Moveable no Total Developed Surface 28 sq. feet

Feed Pumps worked from the Main Engines, No. One Diameter 2 1/2" Stroke 11" Can one be overhauled while the other is at work yes

Bilge Pumps worked from the Main Engines, No. One Diameter 2 1/2" Stroke 11" Can one be overhauled while the other is at work yes

Feed Pumps { No. and size One 6" x 4 1/2" x 10" Pumps connected to the Main Bilge Line { No. and size One 5" x 3 1/2" x 6"
 How driven Ind. Stm. How driven Ind. Stm.

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 yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps:—In Engine and Boiler Room One each of 2" dia. also direct suction - see below

In Pump Room Bunker tunnel one of 2" dia. Peck fitted with drain valve controlled from upper deck In Holds, &c. One each of 2" dia. in fore & aft compartments

Main Water Circulating Pump Direct Bilge Suctions, No. and size One 3 1/2" dia Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size F.B. space, one each 2 1/2" dia 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 or on robust steel 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 Yes Is it fitted with a watertight door access from above worked from

MAIN BOILERS, &c.—(Letter for record 5) Total Heating Surface of Boilers 1367 sq. ft.

Which Boilers are fitted with Forced Draft The only boiler Which Boilers are fitted with Superheaters none

No. and Description of Boilers 15B Working Pressure 200 lb

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 29-11-39 Main Boilers 16-7-41 Auxiliary Boilers yes Donkey Boilers yes
 (If not state date of approval)

Superheaters yes General Pumping Arrangements 17-3-41 Oil fuel Burning Piping Arrangements yes

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.

Manufacturer.



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E. ARIEL

During progress of work in shops - -

Dates of Survey while building

During erection on board vessel - - -

1942. July 24. Sept 8. 17. 25. Oct 15. 29. Nov. 5. 16. 18. 20.

Total No. of visits 10.

Dates of Examination of principal parts—Cylinders Slides Covers

Pistons Piston Rods Connecting rods

Crank shaft Thrust shaft Intermediate shafts

Tube shaft Screw shaft Propeller

Stern tube Engine and boiler seatings Engines holding down bolts

Completion of fitting sea connections

Completion of pumping arrangements Boilers fixed Engines tried under steam

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

Crank shaft material Identification Mark Thrust shaft material Identification Mark

Intermediate shafts, material Identification Marks Tube shaft, material Identification Mark

Screw shaft, material Identification Mark Steam Pipes, material Steel Test pressure 600 lb Date of Test 5/11/42

Is an installation fitted for burning oil fuel *no* Is the flash point of the oil to be used over 150° F.

Have the requirements of the Rules for the use of oil as fuel been complied with

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. *No* If so, state name of vessel. *Empire Joby*.

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

The machinery noted above has been installed onboard *Empire Ariel* in accordance with the Rules, approved plans, and to the Specification. The workmanship and materials are good and when tested as prescribed in the Rules & Specification the machinery was found satisfactory in every respect.

Religiously to have records of LMC 11,42 OG. and notation of T. 3 cy. 11 3/4, 19 1/2, 32 - 22, NHP 85.

15B, 200 lb, 2 cf., FD.

GS 36.5 # HS 1367 #.

The amount of Entry Fee	£	:	:	When applied for,
Special (Part)	£	5	11:9	50 NOV 1942
Donkey Boiler Fee	£	:	:	When received,
Travelling Expenses (if any)	£	:	:	19

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

Committee's Minute TUE 15 DEC 1942
 Assigned *Lomb 11.42*
W.S. Shields



Certificate to be sent to

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

NOTE.—The words which do not apply should be deleted. If not, state whether, and when, one will be sent.