

# REPORT ON STEAM RECIPROCATING ENGINE MACHINERY

Received at London Office

19 JAN 1943

Date of writing Report *14-11-1942* When handed in at Local Office *19* Port of *Sp Sunch*  
 No. in Survey held at *Jarmouth* Date, First Survey *24-11-41* Last Survey *12-11-1942*  
 Req. Book. *"EMPIRE SERAPH"* (Number of Visits *21*) Gross *129*  
 on the *"EMPIRE SERAPH"* Tons Net *710*  
 Built at *Jarmouth* By whom built *Richard Dunston Ltd.* Yard No. *T374* When built *1942*  
 Engines made at *Jarmouth* By whom made *Cadtree (1931) Ltd.* Engine No. *633* when made *1942*  
 Boilers made at *Jarmouth* By whom made *Jarmouth* Boiler No. *✓* when made *✓*  
 Registered Horse Power *94.8* Owners *✓* Port belonging to *✓*  
 Nom. Horse Power as per Rule *94.8* Is Refrigerating Machinery fitted for cargo purposes *no* Is Electric Light fitted *✓*  
 Trade for which Vessel is intended *✓*

**ENGINES, &c.**—Description of Engines *Triple Expansion* Revs. per minute *150*  
 Dia. of Cylinders *11 3/4", 19 1/4", 32"* Length of Stroke *22* No. of Cylinders *3* No. of Cranks *3*  
 Crank shaft, dia. of journals *as per Rule 6 3/8"* Crank pin dia. *6 3/8"* Crank webs Mid. length breadth *✓* Thickness parallel to axis *4 1/4"*  
 as fitted *6 3/8"* Mid. length thickness *✓* shrunk Thickness around eye-hole *2 3/16"*  
 Intermediate Shafts, diameter *as per Rule 6 1/4"* Thrust shaft, diameter at collars *as per Rule 6 3/8"*  
 as fitted *6 1/4"* as fitted *6 3/8"*  
 Tube Shafts, diameter *as per Rule 7 1/8"* Screw Shaft, diameter *as per Rule 7 1/8"* Is the *tube* shaft fitted with a continuous liner *no*  
 as fitted *7 1/8"* as fitted *7 1/8"* Is the *screw* shaft fitted with a continuous liner *no*  
 Bronze Liners, thickness in way of bushes *as per Rule 1/8"* Thickness between bushes *as per Rule 1/8"* Is the after end of the liner made watertight in the  
 as fitted *✓* as fitted *✓* 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 *✓*  
 Propeller, dia. *8'0"* Pitch *P-4"* No. of Blades *4* Material *C-1* whether Moveable *no* Total Developed Surface *28* sq. feet  
 Feed Pumps worked from the Main Engines, No. *6m* Diameter *2 1/2"* Stroke *11"* Can one be overhauled while the other is at work *✓*  
 Bilge Pumps worked from the Main Engines, No. *6m* Diameter *2 1/2"* Stroke *11"* Can one be overhauled while the other is at work *✓*  
 Feed Pumps { No. and size } Pumps connected to the { No. and size }  
 { How driven } Main Bilge Line { How driven }  
 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 *✓*  
 In Holds, &c. *✓*

**Main Water Circulating Pump Direct Bilge Suctions, No. and size** *✓* **Independent Power Pump Direct Suctions to the Engine Room Bilges,**  
 No. and size *✓* 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 *✓*  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stowchold 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 bunkers *✓* How are they protected *✓*  
 What pipes pass through the deep tanks *✓* 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 *✓* Is it fitted with a watertight door *✓* worked from *✓*

**MAIN BOILERS, &c.**—(Letter for record *✓*) Total Heating Surface of Boilers *✓*  
 Is Forced Draft fitted *✓* No. and Description of Boilers *✓* Working Pressure *✓*  
**IS A REPORT ON MAIN BOILERS NOW FORWARDED?** *✓*  
**IS A DONKEY BOILER FITTED?** *✓* If so, is a report now forwarded? *✓*  
**PLANS.** Are approved plans forwarded herewith for Shafting *25-9-41* Main Boilers *✓* Auxiliary Boilers *✓* Donkey Boilers *✓*  
 Superheaters *✓* General Pumping Arrangements *✓* Oil fuel Burning Piping Arrangements *✓*

**SPARE GEAR.** State the articles supplied:— *One pair main bearing houses, 2 main bearing bolts, One bottom end  
 complete, One top end complete, One set feed pump valves & seats, One set HP, IP & LP piston  
 rings & springs, One set rings for HP piston valves, One set of blocks & springs for each valve & piston rod,  
 One set packs for Thrust, 12 condenser tubes & ferrules, One set-completing bolts, One set bilge  
 pump suction & delivery valves, One main & Aux. check valves, 12 Boiler tube stoppers,  
 Assorted bolts, nuts & iron.*

The foregoing is a correct description,  
FOR CRADTREE (1931) LTD.

*A. J. Smith*  
Managing Director

Manufacturer.



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NOTE.—The words which do not apply should be deleted.

If not, state whether, and when, one will be sent?

Is a Report also sent on the Hull of the Ship?

Im.1.27.T.

24.11.41, 31.1.42, 27.2.42, 10.3.42, 25.3.42, 3.4.42, 22.4.42, 6.5.42, 20.5.42, 29.5.42  
 11.6.42, 17.6.42, 26.6.42, 22.7.42, 7.8.42, 25.8.42, 21.9.42, 10.10.42  
 21.10.42, 6.11.42, 12.11.42.

Dates of Survey while building  
 During progress of work in shops --  
 During erection on board vessel ---  
 Total No. of visits

21

Dates of Examination of principal parts—Cylinders 10-10-42 22-7-42 Slides 7-8-42 Covers 22-7-42 7-8-42  
 Pistons 7-8-42 Piston Rods 7-8-42 Connecting rods 7-8-42  
 Crank shaft 22-7-42 Thrust shaft 25-8-42 Intermediate shafts 25-8-42  
 Tube shaft 25-8-42 Screw shaft 25-8-42 Propeller 25-8-42  
 Stern tube 25-8-42 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  
 Crank shaft material *Steel* Identification Mark *N° 6372 J.F.C. 2/4* Thrust shaft material *Steel* Identification Mark *N° 6812 J.F.C. 2/4*  
 Intermediate shafts, material *Steel* Identification Mark *N° 6811 J.F.C. 2/4* Tube shaft, material Identification Mark  
 Screw shaft, material *Steel* Identification Mark *N° 6810 J.F.C. 2/4* Steam Pipes, material Test pressure Date of Test  
 Is an installation fitted for burning oil fuel 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 If so, have the requirements of the Rules been complied with  
 Is this machinery duplicate of a previous case *No.* If so, state name of vessel *Engine N° 632*

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

The engine has been constructed under Special Survey in accordance with the approved plans & Rule requirements. The materials & workmanship are sound. On the satisfactory installation on board the vessel, the machinery will be eligible for record of L.M.C. with date. The machinery has been dispatched to Shipbuilders.

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

The amount of Entry Fee ... £	2 : 0 : 0	When applied for,
Special $\frac{2}{5} \times 5.5 = 2.2$ + 25% $\frac{2.2}{4} = 0.55$ 11.17.6	£ 11 : 17 : 6	19.....
Donkey Boiler Fee ... £	:	When received,
Travelling Expenses (if any) £	3 : 15 : 3	19.....

*A. J. Bell.*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 19 FEB 1943

Assigned

*See Vol 7 E 51867*



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