

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 12 MAR 1942

Date of writing Report *9.3.1942* When handed in at Local Office *Port of Glasgow*

No. in Survey held at *Glydebank* Date, First Survey *1st: 1.4.1941* Last Survey *20: 2. 1942*
 Reg. Book. *EMPIRE CADET* (Number of Visits *55*)

on the *EMPIRE CADET* Tons } Gross *813*
 Net *333*

Built at *G'mouth* By whom built *G'mouth D'yd C: L^a* Yard No. *436* When built *1942*

Engines made at *G'banks* By whom made *A'son Blair L^a* Engine No. *230* When made *1942*

Boilers made at *Glasgow* By whom made *S. Rowan & Co.* Boiler No. *B456* When made

Registered Horse Power Owners Port belonging to

Nom. Horse Power as per Rule *139* Is Refrigerating Machinery fitted for cargo purposes *No.* Is Electric Light fitted *Yes.*

Trade for which Vessel is intended

ENGINES, &c.—Description of Engines *Triple expansion* Revs. per minute

Dia. of Cylinders *15-25 1/2-41"* Length of Stroke *30"* No. of Cylinders *3* No. of Cranks *3*

Crank shaft, dia. of journals *as per Rule 18-11-40 8.17* Crank pin dia. *8 3/8"* Crank webs Mid. length breadth *16"* Thickness parallel to axis *5 1/2"*
 as fitted *8 3/8"* Mid. length thickness *5 1/2" shrunk* Thickness around eye-hole *4"*

Intermediate Shafts, diameter *as per Rule 7.78* Thrust shaft, diameter at collars *as per Rule 6-11-40 8.17*
 as fitted *none* as fitted *8 3/8"*

Tube Shafts, diameter *as per Rule* Screw Shaft, diameter *as per Rule 6-11-40 8.67*
 as fitted *as fitted 8 7/8"* Is the *tube* shaft fitted with a continuous liner *Yes*

Bronze Liners, thickness in way of bushes *as per Rule 19/32"* Thickness between bushes *as per Rule 17/32"* 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 *one length*
 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 *Yes*
 If two liners are fitted, is the shaft lapped or protected between the liners *Yes* Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft *No* If so, state type

Propeller, dia. *10'-9"* Pitch *11'-3"* No. of Blades *4* Material *C.C.* whether Moveable *Solid* Total Developed Surface *41* sq. feet

Feed Pumps worked from the Main Engines, No. *none* Diameter Stroke *Can one be overhauled while the other is at work*
 Bilge Pumps worked from the Main Engines, No. *2* Diameter *4"* Stroke *16 1/2"* *Can one be overhauled while the other is at work* *Yes*

Feed Pumps { No. and size *2-5" x 7" x 12"* Pumps connected to the { No. and size *1-6 1/2" x 7" x 15"*
 How driven *Steam* Main Bilge Line How driven *Steam*

Ballast Pumps, No. and size *1-6 1/2" x 7" x 15"* Lubricating Oil Pumps, including Spare Pump, No. and size *none* Reg'd by Rules 30 tons/hr.

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", 2-2" oily bilge*
 In Pump Room *Yes* In Holds, &c. *Yes*

Main Water Circulating Pump Direct Bilge Suctions, No. and size *1-4"* Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *1-8"*
 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 *Boch*
 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 *Below*
 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 *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 *none* Is it fitted with a watertight door *Yes* worked from *Yes*

MAIN BOILERS, &c.—(Letter for record *5*) Total Heating Surface of Boilers *2100 sq ft*
 Which Boilers are fitted with Forced Draft *Yes* Which Boilers are fitted with Superheaters *none*
 No. and Description of Boilers *1- Multitubular* Working Pressure *190*

IS A REPORT ON MAIN BOILERS NOW FORWARDED?
 IS A DONKEY BOILER FITTED? 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 *Yes* Main Boilers Auxiliary Boilers Donkey Boilers
 (If not state date of approval)
 Superheaters General Pumping Arrangements *Yes* 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
 1- Conn rod bottom end bush
 1- " " " "
 1- set HP piston rings
 1- set air pump valves
 1- set thrust pads
 1- set air pump valves

The foregoing is a correct description.

AITCHISON, BLAIR, LIMITED.

Arch Blair DIRECTOR

Manufacturer.



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Lloyd's Register Foundation

014843-014848-0050

1941 Jan: 14, 16, 21, 24, 27, 30 Feb: 6, 11, 13, 21 Mar: 13 May 6 June 17 July: 29 Aug: 1, 8, 12, 19
 During progress of work in shops -- } 28 Sep: 3, 8, 11, 17, 19, 22, 24 Oct: 6, 9, 21, 23, 29 Nov: 6, 7, 14, 26 Dec: 4, 17
 Dates of Survey while building } During erection on board vessel --- }
 1941 Sep: 12, 24 Oct: 3, 13, 22, 28, 29 (1942) Jan: 12, 19, 21, 22, 29, 30 Feb: 6, 7, 9, 15, 20
 Total No. of visits 55

Dates of Examination of principal parts—Cylinders 19-8-41 eli Slides 26-11-41 eli Covers 8-9-41 eli
 Pistons 8-9-41 eli Piston Rods 22-9-41 eli Connecting rods 22-9-41 eli
 Crank shaft 26-31/1/41 eli Thrust shaft 22-9-41 eli Intermediate shafts ✓
 Tube shaft Screw shaft 3-9-41 eli Propeller 17-12-41
 Stern tube 13-8-41 eli Engine and boiler seatings 23-10-41 Engines holding down bolts 19-12-42
 Completion of fitting sea connections 3-10-41
 Completion of pumping arrangements 6-2-42 Boilers fixed 12-1-42 Engines tried under steam 20-2-42
 Main boiler safety valves adjusted 7-2-42 Thickness of adjusting washers P 7/16 S 5/32
 Crank shaft material S Identification Mark 5494 Thrust shaft material S Identification Mark 219
 Intermediate shafts, material tub Identification Marks ✓ Tube shaft, material ✓ Identification Mark ✓
 Screw shaft, material S Identification Mark 219 Steam Pipes, material Steel ✓ Test pressure 570 Date of Test 26-1-42
 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 Yes ✓ If so, have the requirements of the Rules been complied with Yes ✓
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with No ✓
 Is this machinery duplicate of a previous case Yes ✓ If so, state name of vessel EMPIRE LASS ✓

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel has been built under special Survey in accordance with the approved plans and the Society's Rules and requirements, the materials and workmanship are good, it has been securely fitted on board and satisfactorily tried under steam, and in our opinion is eligible for the record + L. M. C. 2-42-CL.

RB
 9/3/42

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 ...	£ 3 :-	When applied for,
Special ...	£ 20 : 7	10 MAR 1942
Donkey Boiler Fee ...	£ 5 : 4	When received,
Travelling Expenses (if any) £	1 : 10	19

Jas. Cairns, M. Dale
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 10 MAR 1942
 Assigned 1- Dec 2.42

