

# REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Date of writing Report 19 When handed in at Local Office 6 JAN 1943 Port of NEWCASTLE-ON-TYNE  
 No. in Survey held at 80315 on the SS. "EMPIRE COLLINS" Date, First Survey 27/3/42 Last Survey 29/12/1942  
 Reg. Book. 80315 (Number of Visits 34)  
 Built at Sunderland By whom built Sir J. Laing & Sons Ltd. Yard No. 745 When built  
 Engines made at Wallsend. By whom made N.E. Marine Engls (1938) Engine No. 3033 When made 1942  
 Boilers made at " By whom made " Boiler No. 3033 When made 1942  
 Registered Horse Power " Owners Ministry of War Transport Port belonging to Sunderland  
 Nom. Horse Power as per Rule 674 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
 Trade for which Vessel is intended Carrying Petroleum in bulk.

**ENGINES, &c.**—Description of Engines Triple Expansion Revs. per minute 85  
 Dia. of Cylinders 27-44-76 Length of Stroke 51 No. of Cylinders 3 No. of Cranks 3  
 Crank shaft, dia. of journals as per Rule 16.2 Crank pin dia. 16" Crank webs HP 4P 9 3/8" Mid. length breadth 2-3 1/4" Thickness parallel to axis 9 1/8" & 10 1/8"  
 as fitted 15 1/2" Mid. length thickness 10 1/8" Thickness around eye-hole 1 1/4" & 1 3/8"  
 Intermediate Shafts, diameter as per Rule 14.48 Thrust shaft, diameter at collars as per Rule 15.2  
 as fitted 14 3/4" as fitted 15 1/2"  
 Tube Shafts, diameter as per Rule 16.0 Screw Shaft, diameter as per Rule 16 1/4" Is the tube shaft fitted with a continuous liner yes  
 as fitted 16 1/4" as fitted 16 1/4" Is the screw shaft fitted with a continuous liner yes  
 Bronze Liners, thickness in way of bushes as per Rule 7.89 Thickness between bushes as per Rule 5.9 Is the after end of the liner made watertight in the  
 as fitted 13 1/16" as fitted 13 1/16" 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 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 yes Length of Bearing in Stern Bush next to and supporting propeller 5'-5 1/2"  
 Propeller, dia. 18'-3" Pitch 14'-6" No. of Blades 4 Material Brass whether Moveable no Total Developed Surface 131 3/4 sq. feet  
 Feed Pumps worked from the Main Engines, No. 1 Diameter 5" Stroke 27" Can one be overhauled while the other is at work yes  
 Bilge Pumps worked from the Main Engines, No. 2 Diameter 5" Stroke 27" Can one be overhauled while the other is at work yes  
 Feed Pumps { No. and size 2 @ 12" x 9" x 24" 1 @ 9" x 6" x 10" Pumps connected to the Main Bilge Line { No. and size 1 @ 10" x 12" x 12" & 2 @ 5" x 27"  
 How driven Steam How driven Steam M. Eng.  
 Ballast Pumps, No. and size 1 @ 10" x 12" x 12" Lubricating Oil Pumps, including Spare Pump, No. and size 1  
 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 1 P+S 3 1/2" Eng Room 1 @ 3 1/2" Eng Room Aft. 1 @ 3 1/2" P+S Boiler Room  
 In Pump Room Main. 4" P+S Fwd. 1 @ 2 1/2" In Hold, &c. 2 1/2" P+S (1 @ 3" P+S bil Gutter to Transfer Pump)

**Main Water Circulating Pump Direct Bilge Suctions, No. and size** 1 @ 10" **Independent Power Pump Direct Suctions to the Engine Room Bilges,**  
 No. and size 1 @ 5" 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 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 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 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 none Is it fitted with a watertight door yes worked from yes

**MAIN BOILERS, &c.**—(Letter for record S.) Total Heating Surface of Boilers 10020 sq. ft. 10,020  
 Is Forced Draft fitted yes No. and Description of Boilers 3 S.B. Working Pressure 220  
**IS A REPORT ON MAIN BOILERS NOW FORWARDED?** yes  
**IS A DONKEY BOILER FITTED?** no If so, is a report now forwarded? yes  
 Is the donkey boiler intended to be used for domestic purposes only yes

**PLANS.** Are approved plans forwarded herewith for Shafting 19.1.40 Main Boilers 8.12.41 Auxiliary Boilers yes Donkey Boilers yes  
 (If not state date of approval)  
 Superheaters 8.4.41 General Pumping Arrangements 11.2.42 Oil fuel Burning Piping Arrangements 11.2.42

### SPARE GEAR.

Has the spare gear required by the Rules been supplied yes  
 State the principal additional spare gear supplied yes

*Harry Hunt*

DIRECTOR.

Manufacturer.



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005429-005435-0157

Dates of Survey while building  
 During progress of work in shops - - 27/3/42, 14.24.27.29/4/42, 4.8/5/42, 11.15.24.26/6/42, 1.10/7/42.  
 During erection on board vessel - - 31/8/42, 3.8.15.24/9/42, 1.5.9.26.29/10/42, 29.11.12.19.25/11/42, 11.4.10/12/42.  
 Total No. of visits 34.

Dates of Examination of principal parts—Cylinders 5.10.42 Slides 26.10.42 Covers 5.10.42  
 Pistons 26.10.42 Piston Rods 26.10.42 Connecting rods 26.10.42  
 Crank shaft 1.10.42 Thrust shaft 29.10.42 Intermediate shafts 9.10.42  
 Tube shaft ✓ Screw shaft 10.7.42 Propeller 8.9.42  
 Stern tube 3.9.42 & 15.9.42 Engine and boiler seatings 25.11.42 Engines holding down bolts 25.11.42  
 Completion of fitting sea connections 24.9.42  
 Completion of pumping arrangements 29.12.42 Boilers fixed 25.11.42 Engines tried under steam 21.22/12/42  
 Main boiler safety valves adjusted 21.12.42 Thickness of adjusting washers P 7/16 Spt 7/16 C 5/16 Spt 7/16 S 5/16 Spt 7/16 7782 CP  
 Crank shaft material Steel Identification Mark Red. 1.10.42 Thrust shaft material Steel Identification Mark Red 29.10.42  
 Intermediate shafts, material Steel Identification Marks Red 9.10.42 Tube shaft, material ✓ Identification Mark 24.11.42 to 816 CP  
 Screw shaft, material Steel Identification Mark Red 10.7.42 Steam Pipes, material Steel Test pressure 660 Date of Test 22.12.42  
 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 "Empire Airman"

General Remarks (State quality of workmanship, opinions as to class, &c. This machinery has been constructed under Special Survey in accordance with the approved Plans, the Requirements of the Rules & the Specification. The materials & workmanship are good & the machinery proved satisfactory under working conditions at quay.

The machinery is eligible in my opinion to have the Record + LMC 12.42. Rht. 3SB Spt F.A. C.L.

NEWCASTLE-ON-TYNE

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 ... £ 6 : 0 : 0  
 Special + 25.7 ... £ 135 : 17 : 6  
 Donkey Boiler Fee ... £ : :  
 Travelling Expenses (if any) £ : :

When applied for, 173 JAN 1943

When received, 19

R. Moffatt  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE 19 JAN 1943

Assigned

See Old. J.C. 23571  
 + LMC 12.42 Rht.  
 Fitt for oil fuel 12.42 Rht.



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