

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

13 MAY 1942

Date of writing Report 8th MAY 1942 When handed in at Local Office 9th MAY 1942 Port of GREENOCK
 No. in Survey held at GREENOCK Date, First Survey 1st JULY 1941 Last Survey 6th MAY 1942
 Reg. Book. on the S/s EMPIRE AUSTEN (Number of Visits 64.) Tons Gross 7054.29 Net 4991.26
 Built at PORT GLASGOW By whom built LITHGOWS LTD Yard No. 969 When built 1942
 Engines made at GREENOCK By whom made JOHN G. KINCAID & CO. LTD Engine No. 732 When made 1942
GLASGOW JOHN THOMPSON MARINE BOILERS LTD (AUX BLR.) 5173
 Boilers made at GREENOCK By whom made JOHN G. KINCAID & CO. LTD Boiler No. 732 When made 1942
 Registered Horse Power Owners MINISTRY OF WAR TRANSPORT Port belonging to GREENOCK
 Nom. Horse Power as per Rule 520 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted YES.
 Trade for which Vessel is intended Open Sea Service

ENGINES, &c.—Description of Engines Triple Expansion Revs. per minute 68
 Dia. of Cylinders 23.5"-37.5"-68" Length of Stroke 48" No. of Cylinders 3 No. of Cranks 3
 Crank shaft, dia. of journals as per Rule 13.639" Crank pin dia. 13.75" Crank webs Mid. length breadth 1.9" Thickness parallel to axis 8 3/4"
 as fitted 13.75" Mid. length thickness 8 3/4" shrunk Thickness around eye-hole 6 3/4"
 Intermediate Shafts, diameter as per Rule 12.89" Thrust shaft, diameter at collars as per Rule 13.639"
 as fitted 13" as fitted 13.75"
 Tube Shafts, diameter as per Rule 14.511" Screw Shaft, diameter as per Rule 14.75" Is the { tube } shaft fitted with a continuous liner { yes }
 as fitted 14.75" as fitted 14.75" Is the { screw } shaft fitted with a continuous liner { yes }
 Bronze Liners, thickness in way of bushes as per Rule .742" Thickness between bushes as per Rule .536"
 as fitted .75" as fitted .536" 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
 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 No If so, state type Length of Bearing in Stern Bush next to and supporting propeller 4'-11 1/8"
 Propeller, dia. 18'-3" Pitch 17'-3" No. of Blades 4 Material C.I. whether Moveable No Total Developed Surface 109.25 sq. feet
 Feed Pumps worked from the Main Engines, No. 1 Diameter 4" Stroke 24" Can one be overhauled while the other is at work yes
 Bilge Pumps worked from the Main Engines, No. 2 Diameter 4" Stroke 24" Can one be overhauled while the other is at work yes
 Feed Pumps { No. and size Two 9 1/2 x 7 1/2 Pumps connected to the { No. and size Two 8 x 6 Duplex & one 9 x 11 Duplex }
 { How driven Steam Main Bilge Line { How driven Steam }
 Ballast Pumps, No. and size One Duplex 9 x 11 1/2 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 Two @ 3" Tunnel well One @ 2 1/2" Cofferdam One @ 2 1/2"
 In Pump Room In Holds, &c. Six @ 3" Two @ 2 1/2" Cross bunker Two @ 2 1/2"

Main Water Circulating Pump Direct Bilge Suctions, No. and size One @ 8" Independent Power Pump Direct Suctions to the Engine Room Bilges,
 No. and size One @ 5" & One 3" Flex hose 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 yes
 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 For bilge suction How are they protected Wood casings
 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 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 No worked from Accum from Upward deck

MAIN BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 7718
 Which Boilers are fitted with Forced Draft All boilers Which Boilers are fitted with Superheaters None
 No. and Description of Boilers Two four furnaces & one three furnaces SE Working Pressure 220 lbs/sq. in.
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? yes
 IS A DONKEY BOILER FITTED? yes If so, is a report now forwarded? yes 96 N° 65101
 Can the donkey boiler be used for domestic purposes only

PLANS. Are approved plans forwarded herewith for Shafting 9-12-40 Main Boilers 25-10-40 Auxiliary Boilers 6-25-40 Donkey Boilers
 (If not state date of approval)
 Superheaters General Pumping Arrangements 21-11-41 Oil fuel Burning Piping Arrangements

SPARE GEAR.

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

The foregoing is a correct description.
 For JOHN G. KINCAID & CO. LIMITED.

Director.

Manufacturer.



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(1941) JULY 1. 3. 18. AUG. 1. 6. 20. SEPT. 10. 15. 23. OCT. 2. 6. 10. 13. 28. 30. NOV. 6. 10. 13. 14. 24.
 During progress of work in shops - - 26. 27. DEC. 1. 3. 5. 8. 10. 12. 19. 24. 31. (1942) JAN. 5. 8. 12. 14. 20. 23. 26. 28. 30. FEB. 2. 6. 12.
 Dates of Survey while building During erection on board vessel - - 16. 19. 23. 25. 26. MAR. 2. 4. 11. 20. 23. 24. APR. 2. 8. 10. 17. 18. 20. 24. 24. 28. MAY 6.
 Total No. of visits 64.

Dates of Examination of principal parts—Cylinders 23.9.41 Slides 23.9.41 Covers 23.9.41
 Pistons 23.9.41 Piston Rods 12.1.42 Connecting rods 12.1.42
 Crank shaft 12.1.42 Thrust shaft 12.1.42 Intermediate shafts 10.12.41
 Tube shaft ✓ Screw shaft 2.3.42 Propeller 2.3.42
 Stern tube 26.11.42 Engine and boiler seatings 24.3.42 Engines holding down bolts 18.4.42
 Completion of fitting sea connections 23.3.42
 Completion of pumping arrangements 28.4.42 Boilers fixed 10.4.42 Engines tried under steam 25.4.42
 Main boiler safety valves adjusted 27.4.42 Thickness of adjusting washers $\frac{3}{8}$ $\frac{3}{8}$ $\frac{3}{8}$ $\frac{3}{8}$ $\frac{5}{16}$
 Crank shaft material S Identification Mark 10367 CNY Thrust shaft material S Identification Mark 10423 CNY
 Intermediate shafts, material S Identification Marks 103-10474 CNY Tube shaft, material ✓ Identification Mark ✓
 Screw shaft, material S Identification Mark 10423 CNY Steam Pipes, material S.O.S. ✓ Test pressure 660 lb Date of Test 11-20/4/42
 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 ✓ 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 ZEAL GPK N° 21769.

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

These engines & boilers have been built under special survey in accordance with the Rules and approved plans. The materials & workmanship are sound & good. This machinery has been installed on board & tried out under full working conditions at a short sea trial with satisfactory results.

The plans & specification have been supervised, a copy of certificate issued is enclosed herewith.

This machinery is eligible in my opinion to be classed in the Society's Register Book with Record

+ L195-420 the notation T5CL 2SB & 1000 SB. 220 lbs/ft² FD.

Several Certificates for forgings to this engine - for 733 to follow will be attached to 733 report when completed.

Certificate to be sent to

The amount of Entry Fee ... £ 6 : 0 :
 Special ... £ 89 - 2 :
 Donkey Boiler Fee ... £ 22 - 5 / 6 :
 Travelling Expenses (if any) £ : :
 When applied for, 19
 When received, 19

Charles J. Henderson
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 12 MAY 1942

Assigned 1- Dec 5. 42



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