

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office SEP - 2 1940

Date of writing Report 21/8/40 When handed in at Local Office 22/8/40 Port of MIDDLESBROUGH

No. in Survey held at Middlesbrough & S. Bank Date, First Survey 15-6-40 Last Survey 15/8/1940

Reg. Book. 9500 on the S.S. "EMPIRE ENDURANCE" ex "ALSTER" (Number of Vols. 28)

Built at Hamburg By whom built Deutsche Schiff- u. Machf. Werke and No. Vulcan Tons Gross 8570.41
Net 5354.04

Engines made at do By whom made do Engine No. when made 1928

Boilers made at do By whom made do Boiler No. when made 1928

Registered Horse Power 6400 H.P. Owners The Ministry of Shipping Port belonging to Middlesbrough

Nom. Horse Power as per Rule 1000 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes

Trade for which Vessel is intended Ocean going cargo.

ENGINES, &c. — Description of Engines Triple Expansion Revs. per minute 78

Dia. of Cylinders 870, 1340, 2200 Length of Stroke 1450 No. of Cylinders 3 No. of Cranks 3

Crank shaft, dia. of journals 462 Crank pin dia. 472 Crank webs Mid. length breadth shrunk Thickness parallel to axis 290

Intermediate Shafts, diameter 438 Thrust shaft, diameter at collars 620 Ext. 432

Tube Shafts, diameter 444 Screw Shaft, diameter 444 Is the shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes Approved Thickness between bushes Approved 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 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 Yes

Propeller, dia. 6350 Pitch 5850 No. of Blades 4 Material 7. Bronze whether Movable Yes Total Developed Surface 12.2 M²

Feed Pumps worked from the Main Engines, No. 2 Diameter 168 Stroke 625 Can one be overhauled while the other is at work Yes

Bilge Pumps worked from the Main Engines, No. 2 Diameter 168 Stroke 625 Can one be overhauled while the other is at work Yes

Feed Pumps { No. and size 2-400 x 280 x 600 Pumps connected to the Main Bilge Line { No. and size 1-280 x 360 x 675

How driven Steam How driven Steam

Ballast Pumps, No. and size 1-280 x 360 x 675 Lubricating Oil Pumps, including Spare Pump, No. and size 2

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 ER. 1 (port) 90 Starboard 90 Stolehold 1 (port) 90 Starboard 90

In Holds, &c. No. 1. 2-90 No. 2. 2-90 No. 3. 3-90 No. 4. 2-90

No. 5. 2-90 No. 6. 2-90 Tunnel well 1-90

Main Water Circulating Pump Direct Bilge Suctions, No. and size 1-310 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1-105

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 No 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 Bilge Pipes How are they protected Strong casings

What pipes pass through the deep tanks do 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 Yes worked from Top ER platform

MAIN BOILERS, &c. — (Letter for record S) Total Heating Surface of Boilers 1500 M² = 16140

Is Forced Draft fitted Yes No. and Description of Boilers 5-S.E Working Pressure 14.5 Kg/cm² = 206 lb

IS A REPORT ON MAIN BOILERS NOW FORWARDED? No — See letter to See 29/6/40

IS A DONKEY BOILER FITTED? No. If so, is a report now forwarded? Yes

PLANS. Are approved plans forwarded herewith for Shafting 10/7/40 Main Boilers 2/7/40 Auxiliary Boilers Yes Donkey Boilers Yes

(If not state date of approval)

Superheaters Yes General Pumping Arrangements 3/7/40 Oil fuel Burning Piping Arrangements Yes

SPARE GEAR. State the articles supplied: — 1 - top end bearing complete; 1 bottom end bearing complete; 1 eccentric gear & pulley complete; 1 set of coupling bolts; propeller blade with studs & nuts; 1 set air pump valves; valve lid for main feed check valve; 1 set valves for liquor end of each independent pump; 1 set of bilge pump valves & seats; 1 set of metallic packing complete for each size of main piston rod; complete set of piston rings for H.P. M.P. & L.P. cylin; 1 valve spindle; 1 set of rings for H.P. piston valve; 3 main bearing bolts; bearing bushes for each turbine gear wheel; water pinion shafts; 12 boiler tube stoppers complete; quantity of assorted bolts, studs & nuts; steel bars & plates of various sizes.

The foregoing is a correct description,

Manufacturer.



Lloyd's Register Foundation

1665-0127

Dates of Survey while building

During progress of work in shops - -

During erection on board vessel - - -

Total No. of visits 28

Dates of Examination of principal parts - Cylinders 22, 26/7. 6/8/40 Slides 22 + 26/7/40 Covers 22, 26/7 + 6/8/40

Pistons 22, 26/7 + 6/8/40 Piston Rods 22, 26/7 + 6/8/40 Connecting rods 22, 26/7 + 6/8/40

Crank shaft 16, 23, 24/7/40 Thrust shaft 3/7/40 Intermediate shafts 29/7/40

Tube shaft ✓ Screw shaft 3/7/40 Propeller 3/7/40

Stern tube 3/7/40 Engine and boiler seatings 4/7/40 Engines holding down bolts 4/7/40

Completion of fitting sea connections -

Completion of pumping arrangements - Boilers fixed -

Main boiler safety valves adjusted 4/8/40 Thickness of adjusting washers

Crank shaft material S.M. Steel Identification Mark - Thrust shaft material S.M. Steel Identification Mark -

Intermediate shafts, material S.M. Steel Identification Marks - Tube shaft, material ✓ Identification Mark ✓

Screw shaft, material S.M. Steel Identification Mark - Steam Pipes, material S.D. Steel Test pressure - Date of Test -

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 carrying and burning oil fuel been complied with ✓

Is this machinery duplicate of a previous case ✓ If so, state name of vessel ✓

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

The machinery of this vessel is eligible in my opinion to have a record of L.M.C. (with date) on completion of the survey. (See also Mchly Report - 9.) Notation of T.S.(C.L.) 7/40 Forced draught, & superheated. See See Letters 12/6/40 S; 4/7/40 E; The materials & workmanship are good.

The amount of Entry Fee ... £ : : When applied for,

Special ... £ 45 : : 19

Donkey Boiler Fee ... £ : : When received,

Travelling Expenses (if any) £ : : 26-10 19

R. J. Easthope
 Engineer Surveyor to Lloyd's Register of Shipping.

TUE. 10 SEP 1940

Committee's Minute

Assigned See other Indb. Rpt. 16891



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