

RECEIVED

REPORT ON STEAM TURBINE MACHINERY. No 102944

Rpt. 4a.

Received at London Office

Date of writing Report 19 When handed in at Local Office 20-6-45 Port of NEWCASTLE ON TYNE

No. in Survey held at Newcastle on Tyne Date, First Survey (1945) Nov 8th Last Survey 15th June 1945

Reg. Book. on the 1/2 EMPIRE ALLENBY. Tons Gross Net

Built at Sunderland By whom built J.L. Thompson & Co Ltd Yard No. 633 When built 1945

Engines made at Newcastle on Tyne By whom made C.A. Parsons Ltd Engine No. 2606-7. When made 1945

Boilers made at ditto. By whom made N.E. Mar. Eng. Co (1938) Ltd Boilers No. 3074 When made 1945.

Shaft Horse Power at Full Power 6800 Owners Min. of War Transport Port belonging to

Nom. Horse Power as per Rule 1226 @ 490 h.p. Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which Vessel is intended Ocean going.

STEAM TURBINE ENGINES, &c. - Description of Engines HP & LP Turbines, D/R Geared to One Se. Shaft

No. of Turbines Ahead 2. Astern 1. Direct coupled to Alternating Current Generator phase periods per second Direct Current Generator rated Kilowatts Volts at revolutions per minute;

for supplying power for driving Propelling Motors, Type rated Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

TURBINE BLADING table with columns: H.P., I.P., L.P., ASTERN. Includes rows for 1st to 12th expansion.

Shaft Horse Power at each turbine H.P. 3500 I.P. L.P. 3300 Revolutions per minute, at full power, of each Turbine Shaft H.P. 3969 1st reduction wheel 731 I.P. L.P. 2863 main shaft 116.

Rotor Shaft diameter at journals H.P. I.P. L.P. Pitch Circle Diameter 1st pinion 1st reduction wheel Width of Face 1st reduction wheel 2nd pinion main wheel main wheel

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 1st reduction wheel 2nd pinion main wheel

Flexible Pinion Shafts, diameter 1st 2nd Pinion Shafts, diameter at bearings External Internal 1st 2nd diameter at bottom of pinion teeth 1st 2nd

Wheel Shafts, diameter at bearings 1st diameter at wheel shroud, main Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter as per rule 15.54" as fitted 16" Thrust Shaft, diameter at collars as per rule 16.31 as fitted 17.

Tube Shaft, diameter as per rule as fitted Screw Shaft, diameter as per rule 17.04 as fitted 17 3/4" Is the shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per rule 1.821 as fitted 7/8" Thickness between bushes as per rule 6.15 as fitted 3/4" Is the after end of the liner made watertight in the propeller boss 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 a tight fit. 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 mean 13-11 3/4 Length of Bearing in Stern Bush next to and supporting propeller 70" Propeller, diameter 18'-0" Pitch varying 1 1/4" to 3 3/8" 12'-0" at tip. No. of Blades 4 State whether Moveable No Total Developed Surface 121. square feet.

If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Yes Can the H.P. or L.P. Turbine exhaust direct to the Condenser Yes No. of Turbines fitted with astern wheels One main blue Feed Pumps No. and size Two of 3" Turbo-Feed 2 Stage (weirs) each by Steam Turbine.

Pumps connected to the Main Bilge Line No. and size one Fore bilge pump, one 8" Drysdale (Vert.) How driven each by Elec. motor driven. Lubricating Oil Pumps, including Spare Pump, No. and size 2-5" Drysdale (Vert.)

Ballast Pumps, No. and size one 8" Drysdale (Vert.) Are two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size: - In Engine and Boiler Room 5 of 3 1/2", & 1 of 2" in Thrust Recess, 1-2 1/2" TUNNEL, 1-2 1/2" TUNNEL WELL In Pump Room

In Holds, &c. Nos 1, 2, 5 & 6 Holds, 2 of 3" in each; No 3 Hold, 2 of 3 1/2"; No 4 (Cargo D.Tk), 2 of 3 1/2" & 1-2 1/2" FOR PIPE TUNNEL THRO D.T.K. AND COFFER DAM. Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 of 1 3/2" on p. side Independent Power Pump Direct Suctions to the Engine Room

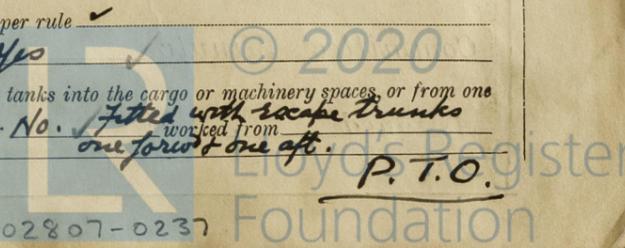
Bilges, No. and size 1 of 5 1/2" on Starboard side Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes. Yes Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges 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 Nil. How are they protected

What pipes pass through the deep tanks all fore bilge, ballast & O.F. pipes pass thro a pipe tunnel thro D.T.K. forward. 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 No. Fitted with escape trunk worked from one forward & one aft.

See Report on Steam Turbines & D/R Geared to One Se. Shaft made by C.A. Parsons Ltd Rpt. No 102396



BOILERS, &c.—(Letter for record *S.* ✓ Total Heating Surface of Boilers *6840 square feet.* ✓
 Is Forced Draft fitted *Yes* ✓ No. and Description of Boilers *2 Foster-Wheeler "D" Type* Working Pressure *490 lbs/10"* ✓
 Is a Report on Main Boilers now forwarded? *Yes* ✓ *in accordance with Serjeant's Letter E. 21-9-44 to Richardson Westgarth & Co.*
 Is *a Donkey* Boiler fitted? *Yes* ✓ *Vertical Cochran Blr.* ✓ If so, is a report now forwarded? *Yes* ✓
 Is the donkey boiler intended to be used for domestic purposes only *No—also for Evaporators & Distillers* ✓
 Plans. Are approved plans forwarded herewith for Shafting *31-4-44* Main Boilers *3-9-43* Auxiliary Boilers _____ Donkey Boilers ✓
 (If not state date of approval) *Main Steam Paper. 20-10-44*
 Superheaters *3-9-43* General Pumping Arrangements *2-1-45* Oil Fuel Burning Arrangements *20-10-44*
 Has the spare gear required by the Rules been supplied *Yes* ✓ *SPARE GEAR.*
 State the principal additional spare gear supplied *as per Specifⁿ.*

THE NORTH EASTERN MARINE ENGINEERING CO. (1938) LTD.

John Nell **DIRECTOR**

Manufacturer.

The foregoing is a correct description,

Dates of Survey *(1943) Nov. 8, 9, 10, 11, 16, 20, 29 Dec. 24, 28 (1944) Jan. 5, 11, 12, 14, 20, 24, 25, 28, Feb. 12, 10, 24, Mar. 2, 23, 28, Apr. 4, 6, 14, 17, 25 May 8, 11, 24, 25, 31 June 12, 14, 16, 19, 22, 23, 28, 29 July 4, 6, 10, 11, 12, 13, 25, 31 Aug. 2, 10, 11, 17, 18, 22, 25, 28, 29 Sept. 18, 27, Oct. 16, 12, 13, 16, 18, Nov. 21 Dec. 8, 19 (1945) Jan. 11, 17, 18, 19, 20, 22, 25, Feb. 5, 6, 7, 9, 11, 21, 26, Mar. 1, 12, 14, 23, 26 Apr. 3, 19, 20, 27, May 2, 3, 24, 25, 28, 31 June 8, 14, 18*
 During progress of work in shops ---
 During erection on board vessel ---
 Total No. of visits *103*

Dates of Examination of principal parts—Casings _____ Rotors ✓ Blading ✓ Gearing ✓
 Wheel shaft _____ Thrust shaft *8-11-43* Intermediate shafts *8-5-44* Tube shaft _____ Screw shaft *27-9-44*
at Works. 27-9-44 *also 18-9-44*
 Propeller *at Ship 10-10-44* Stern tube *30-9-44* Engine and boiler seatings *11-1-45* Engine holding down bolts *26-2-45*
at SLD. *at SLD.*
 Completion of fitting sea connections *17-10-44* Completion of pumping arrangements *25-5-45* Boilers fixed *5-2-45* Engines tried under steam *AT SEA 31-5-44*
 Main boiler safety valves adjusted *3-5-45* Thickness of adjusting washers *PORT. N.BLR. 7/16" DRUM SV SUPERHE. SV 1 1/4" OUTR. COCHRAN. VERT. DR. 5/16" SV FOR ? 1/2" RE-GENERATOR SV. 3/8" F.A. 1 1/4"*
 Rotor shaft, Material and tensile strength ✓ Identification Mark _____
 Flexible Pinion Shaft, Material and tensile strength ✓ Identification Mark _____
 Pinion shaft, Material and tensile strength ✓ Identification Mark _____
 1st Reduction Wheel Shaft, Material and tensile strength ✓ Identification Mark _____
 Wheel shaft, Material ✓ Identification Mark _____ *LLOYDS 8497. ERB 10-4-43.*
 Intermediate shafts, Material *7. Stl.* Identification Marks _____ *LLOYDS 8547 ERB; 8452 ERB (20H); 8481 ERB (20H); 8485 ERB (20H). 4-5-43. Tube shaft, Material 1-4-43 Identification Marks*
 Screw shaft, Material *7. Stl.* Identification Marks _____ *LLOYDS 62 AEG/num. 80. 22-1-44 Steam Pipes, Material S. D. Stl. (OH.) Test pressure 1470 lbs for 490 lbs for 105 lbs WP*
 Date of test *8-12-44 to 26-3-45.* 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 *not desired*

Is this machinery a duplicate of a previous case *Yes* ✓ If so, state name of vessel *EMPIRE DYNASTY, J.L. THOMPSON'S YARD N° 631. (Sup. by RICH. WESTGARTH. N° 2744. NEWCASTLE RPT. N° 102540)*

General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery of this vessel has been constructed and installed under Special Survey and the materials and workmanship are good.

The machinery has been tested under working conditions at Quay, and at sea under full power, found satisfactory, and is eligible, in my opinion, for record + LMC 6.45, and notations 2 WT Bldr (490 lbs), Sp. 475 lbs., D.B. 105 lbs., TS cl.

The amount of Entry Fee ... £ 6 : 0/- : When applied for,
 Special *3/5 THS 05/30-14* £ 78 : 10/- : *26 JUN 1945*
 Donkey Boiler Fee ... £ 19 : 12/6 :
 Travelling Expenses (if any) £ : : : 19

a watt

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 20 JUL 1945*

Assigned *+ LMC 6.45*
 FITTED FOR OIL FUEL. *6.45 FLASH POINT ABOVE 180° F. F.D. C.L. 2 WT Bldr 490 lbs. (Sp. 475 lbs.) D.B. 105 lbs.*



NEWCASTLE, ENGLAND

Certificate (if required) to be sent to...