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25 JUN 1945

## REPORT ON STEAM TURBINE MACHINERY. No 102944

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

18th June 1945

Reg. Book.

on the 1/2 EMPIRE ALLENBY.

(Number of Visits)

Gross Tons

Net Tons

Built at Sunderland

By whom built J.L. Thompson &amp; 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

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

Trade for which Vessel is intended Ocean going.

## STEAM TURBINE ENGINES, &amp;c.—Description of Engines HP &amp; LP Turbines, D/R Geared to one Se. Shaft

No. of Turbines Ahead 2, Astern 1. Direct coupled, single reduction geared to one propelling shaft. No. of primary pinions to each set of reduction gearing 2.

direct coupled to Alternating Current Generator phase periods per second rated Kilowatts Volts at revolutions per minute; Direct Current Generator

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.	H.P.			I.P.			L.P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION												
2ND												
3RD												
4TH												
5TH												
6TH												
7TH												
8TH												
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine H.P. 3500, I.P. 3300, L.P. 2863. 1st reduction wheel 731, main shaft 116.

Rotor Shaft diameter at journals H.P. Pitch Circle Diameter 1st pinion 1st reduction wheel, 2nd pinion main wheel. Width of Face 1st reduction 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 Pinion Shafts, diameter at bearings External 1st, 2nd diameter at bottom of pinion teeth 1st, 2nd.

Wheel Shafts, diameter at bearings 1st diameter at wheel shroud, main Generator Shaft, diameter at bearings 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 tube screw shaft fitted with a continuous liner Yes.

Bronze Liners, thickness in way of bushes as per rule 821, as fitted 7/8". Thickness between bushes as per rule 615, as fitted 3/4". 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 In one piece.

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 14 3/8" to 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 I.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 Fire bilge pump, one 8" Ballast Pump. How driven each by Elec. motor driven.

Ballast Pumps, No. and size one 8" Drysdale (Vert.) Lubricating Oil Pumps, including Spare Pump, No. and size 2-5" 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 Room, 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 FIRE 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 for bilge, ballast & oil pipes pass thro a pipe tunnel thro D.T.K. forward. 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. Fitted with escape trunk worked from one forward & one aft.



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FTER PE  
TEEL

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*  
*Survey Letter E. 21-9-44*  
*to Richardson Westgarth & Co.*  
Is *a Donkey* Boiler fitted? *Yes* ✓ *Vertical Cochran Bldr.* ✓ 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 Pipes. 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 Specif<sup>n</sup>.*

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

The foregoing is a correct description,

*John Neill*

Manufacturer.

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*  
Propeller *at Works. 27-9-44* Stern tube *30-9-44* Engine and boiler seatings *11-1-45* Engine holding down bolts *26-2-45*  
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.B.L.R. 7/16"* *STAR N.B.L.R. 3/8"* *DRUM SV 19/64* *SUPERHEAT SV 5/16* *OUTER COCHREAN VERT. DR. 3/4"* *RE-GENERATOR SV. 1/2"*  
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 \_\_\_\_\_  
Intermediate shafts, Material *7.5LL* Identification Marks *LLOYDS 8547 ERB; 8452 ERB (20H); 8481 ERB (20H); 8485 ERB (20H).*  
Screw shaft, Material *7.5LL* Identification Marks *22-1-44* Steam Pipes, Material *S.D. STL (OH.)* Test pressure *1470 lbs*  
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 NO 631*  
General Remarks (State quality of workmanship, opinions as to class, &c.) *(Exp. by RICH. WESTGARTH. NO 27444. NEWCASTLE RPT. NO 102540)*

*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, *26 JUN 1945*  
Special *3/5 TMS 05/30-13/* £ *78 : 10/-*  
*25% for Spec. Superheat* £ *19 : 12/6*  
Donkey Boiler Fee ... £ \_\_\_\_\_ When received, \_\_\_\_\_  
Travelling Expenses (if any) £ \_\_\_\_\_

Committee's Minute *FRI. 20 JUL 1945*

Assigned *+ LMC 6.45*  
Fitted for oil fuel *6.45 FLASH POINT ABOVE 150° F. F.D. C.L. 2 WT Bldr 490 lbs. (Sp. 475 lbs.) D.B. 105 lbs.*

*a watt*

Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation