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NEWCASTLE-ON-TYNE, 102540

24 MAY 1944

REPORT ON STEAM TURBINE MACHINERY. No. 18550

Received at London Office

Date of writing Report 20/5/1944 When handed in at Local Office 22/5/1944

Port of W. Hartlepool

23 MAY 1944

No. in Survey held at Hartlepool

Date, First Survey 17th Dec, 1943 Last Survey 15th May, 1944

Reg. Book. on the EMPIRE DYNASTY.

Built at Sunderland By whom built J.L. Thompson & Sons Yard No. 631 When built 1944

Engines made at Hartlepool By whom made Richardson & Welford & Co Engine No. 2744 When made 1944

Boilers made at " By whom made " " Boiler No. 2744 When made 1944

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

Nom. Horse Power as per Rule 1215 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which Vessel is intended 1226

TEAM TURBINE ENGINES, &c.—Description of Engines Double Reduction geared Turbines

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.

Table with columns: TURBINE, H.P., I.P., L.P., ASTERN. Rows include details like HEIGHT OF BLADES, DIAMETER AT TIP, NO. OF ROWS, etc.

Shaft Horse Power at each turbine H.P. 3500 I.P. 3300 L.P. 3969

Revolutions per minute, at full power, of each Turbine Shaft 1st reduction wheel 431 main shaft 116

Motor Shaft diameter at journals H.P. 5" I.P. 9.426" L.P. 51.204"

Pitch Circle Diameter 1st pinion 13.068" 2nd pinion 19.789" main wheel 124.647"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 10 1/8" 2nd pinion 16 3/4"

Pinion Shafts, diameter at bearings External 1st 6 7/8" 2nd 11" Internal 1st 12 1/2" 2nd 5"

Generator Shaft, diameter at bearings 1st 3'-11" 2nd 9'-11 3/4"

Propelling Motor Shaft, diameter at bearings as per rule 15.54" as fitted 16"

Thrust Shaft, diameter at collars as per rule 17.04" as fitted 17 3/4"

Screw Shaft, diameter as per rule 8.21" as fitted 7 7/8"

Thickness between bushes as per rule 6.15" as fitted 3 3/4"

Is the after end of the liner made watertight in the propeller boss Yes

Is an approved Oil Gland or other appliance fitted at the after end of the tube Length of Bearing in Stern Bush next to and supporting propeller 5'-10"

Propeller, diameter 18'-0" Pitch Varying No. of Blades 4 State whether Moveable NO Total Developed Surface 121 square feet.

Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Yes

No. and size 2-3" Turbo Feed Pumps (Wears) How driven Steam

No. and size 1-5" Fire & Bilge (Drysdale) & 1-8" Ballast (Drysdale) How driven Electric

Lubricating Oil Pumps, including Spare Pump, No. and size 2-5" Drysdale

Oil Cooler Yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room 4-3 1/2" 6" Pipe

Holds, &c. 2-3" No 1 Hold, 2-3" No 2 Hold, 2-3 1/2" No 3 Hold, 2-3 1/2" Cargo Tank, 2-3" No 5 Hold, 2-3" No 6 Hold

Main Water Circulating Pump Direct Bilge Suctions, No. and size 1-13 1/2" Independent Power Pump Direct Suctions to the Engine Room

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

How are they protected Special tunnel 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

Is it worked from No

011628-011635-0270

Rpt. 5c.
 Date of writing
 No. in Reg. Bk.
 Built at
 Engine's make
 Boilers make
 Nominal HP
 WATER
 Date of Approval
 of Boilers
 No. of Certificates
 Is forced draft
 No. and type
 each boiler
 Are they fitted
 Smallest diameter
 Steam Drum
 Range of Temperature
 Cir. seams
 Lap of plate
 Diameter of
 Working pressure
 Radius of
 in each boiler
 welded or flange
 long. seams
 Percentage strength
 Percentage strength
 Tensile strength
 Size of manhole
 Material
 Thickness
 Inside diameter
 Description of
 butt straps
 Working Pressure
 Thickness
 SUPERHEATERS
 Thickness
 or flanged
 long. seams
 Percentage strength
 Percentage strength
 Thickness
 Working pressure
 Date of Test
 No. and description
 Pressure to which
 Spare Gear
 Dates of Survey while building
 Is this boiler
 GENERAL
 Construction & Specification
 The machinery
 Survey Fee
 Travelling Expenses
 Committee
 Assigned

BOILERS, &c. (Letter for record 5) Total Heating Surface of Boilers 6840 sq. ft.
 Is Forced Draft fitted Yes No. and Description of Boilers 2 Foster Wheeler D Type Working Pressure 480 lb.

Is a Report on Main Boilers now forwarded? Yes
 Is a Donkey Boiler fitted? Yes If so, is a report now forwarded? No
 Is the donkey boiler intended to be used for domestic purposes only No. - also for Steam to Evaporator & Distiller. and

Plans. Are approved plans forwarded herewith for Shafting 18/6/42 Main Boilers 18/6/42 Auxiliary Boilers _____ Donkey Boilers _____
 (If not state date of approval)

Superheaters 22/7/42 General Pumping Arrangements 3/6/43 Oil Fuel Burning Arrangements 3/6/43
 SPARE GEAR.

Has the spare gear required by the Rules been supplied? Yes. and
 State the principal additional spare gear supplied As per Specification and

For RICHARDSONS, WESTGARTH & Co. LIMITED.

W. J. Forbridge
 DIRECTOR Manufacture

The foregoing is a correct description,

Dates of Survey while building	During progress of work in shops --	1943. Jan. 17. 24. 26. 28. April 1. 29. May 14. 18. 23. June 3. 17. July 2. 5. 14. 19. Aug. 20. 24. 25. 26. 31. Sept. 5. 13. 18. 24. 30. 7. 11. 12. 16. 18. 19. 23. 26. 28. Nov. 2. 8. 11. 18. 24. 29. Dec. 9. 14. 21. 28. 29. 1944. Jan. 4. 6. 10. 11. 18. 19. 27. 28. 29. 3. 7. 8. 10. 12. 14. 16. 17. 18. 22. 24. 25. 28. 29. March 2. 3. 7. 8. 9. 16. 20. 31. 32. 34. 27. 29. 30. 31. April 4. 5. 20. 24. 28. May 1. 5. 9. 12. 15
	During erection on board vessel ---	
	Total No. of visits	95

Dates of Examination of principal parts - Casings 28/10/43 Rotors 9/11/43 Blading 20/11/43 Gearing 10/3/44
 Wheel shaft 13/1/44 Thrust shaft 11/2/44 Intermediate shafts 4/4/44 Tube shaft _____ Screw shaft 3/3/44

Propeller _____ Stern tube 5/4/44 Engine and boiler seatings _____ Engine holding down bolts _____
 Completion of fitting sea connections _____ Completion of pumping arrangements _____ Boilers sized _____ Engines tried under steam _____

Main boiler safety valves adjusted _____ Thickness of adjusting washers _____
 Rotor shaft, Material and tensile strength steel 3 1/2 x 38 Identification Mark 5823 WH. 6168, 5855

Flexible Coupling Shaft, Material and tensile strength stars 28/32 Slews 34/38 steel Identification Mark 1092 T.T.

Pinion shaft, Material and tensile strength nickel steel 40 Identification Mark 86450, J2388

1st Reduction Wheel Shaft, Material and tensile strength nickel steel 40 Identification Mark 6504 WH, J2438

Wheel shaft, Material steel Identification Mark 6500 WH. Thrust shaft, Material steel Identification Mark 12888 H.

Intermediate shafts, Material steel Identification Marks 26 AEG 19 8100, 8101, 24 AEG Tube shaft, Material steel Identification Marks 8665, 8627 ERB

Screw shaft, Material steel Identification Marks 12888 HAT Steam Pipes, Material steel Test pressure 1290 LB / 350 PSI

Date of test 15/1/43, 3/3/44 Is an installation fitted for burning oil fuel _____
 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 a duplicate of a previous case Yes If so, state name of vessel RW 2739

General Remarks (State quality of workmanship, opinions as to class, &c.) The engines & boilers of this vessel have been constructed under Special Survey & in accordance with the approved plans & Specification. The workmanship & materials have been found good.

The machinery has been forwarded to the Yarn for fitting on board Messrs. Thompson Yard No 634.

The machinery of this vessel will be eligible, in my opinion, to Law report of + L.M.C. - with date - on completion.

the machinery has been efficiently fitted on board. See also new Rpt. No. 26/1

Clive Bell
 Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee	£ 6 : - : -	When applied for,
Special <u>4 LMC less 3 drums</u>	£ 95 : 19 : -	<u>4 22/5/1944</u>
Donkey Boiler Fee	£ : : -	When received,
<u>Supervisor</u>	£ 28 : 13 : 8	19.
Travelling Expenses (if any)	£ : : -	19.

Committee's Minute FRL 5 JAN 1945

Assigned Su F.F. machy rpt

