

RECEIVED

19 MAR 1946

IN DO

Rpt. 4a.

Report on Steam Turbine Machinery. No. 17999

Date of writing Report 19 When handed in at Local Office 2 3 1946 Port of MIDDLESBROUGH Received at London Office 14 MAR 1946
No. in Survey held at MIDDLESBROUGH Date, First Survey 24 May 1944 Last Survey 19 46
Reg. Book (Number of Visits 56)
on the M.S. "WAVE SOVEREIGN" Tons {Gross 8182
Net 4559
Built at Haverton Hill-on-Tees. By whom built Furness Shipbuilding Co. Ltd. Yard No. 364 When built 1946-2
Engines made at West Hartlepool By whom made Richardsons Westgarth & Co. Ltd. Engine No. 2754 When made 1946
Boilers made at -do- By whom made -do- Boiler No. 2754 When made 1946
Shaft Horse Power at Full Power 6800 Owners Admiralty. Port belonging to London.
Nom. Horse Power as per Rule 1216 1226 NHP Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
Trade for which Vessel is intended MY 1346 1470

STEAM TURBINE ENGINES, &c.—Description of Engines.

No. of Turbines Ahead..... Direct coupled, single reduction geared } to..... propelling shafts. No. of primary pinions to each set of reduction gearing.....
Astern..... double reduction geared }
direct coupled to { Alternating Current Generator..... phase..... periods per second } 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.

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...... I.P...... L.P...... }
Revolutions per minute, at full power, of each Turbine Shaft { H.P...... 1st reduction wheel.....
I.P...... main shaft.....
L.P...... main shaft.....

Rotor Shaft diameter at journals { H.P...... I.P...... L.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 { 1st..... 2nd..... }
Shafts, diameter { Pinion Shafts, diameter at bearings { External 1st..... 2nd..... diameter at bottom of pinion teeth
Internal 1st..... 2nd.....

Wheel Shafts, diameter at bearings { 1st..... 2nd..... }
diameter at wheel shroud, { 1st..... Generator Shaft, diameter at bearings.....
main..... Propelling Motor Shaft, diameter at bearings.....

Intermediate Shafts, diameter { as per rule..... as fitted..... }
Thrust Shaft, diameter at collars { as per rule..... as fitted..... }

Tube Shaft, diameter { as per rule..... as fitted..... }
Screw Shaft, diameter { as per rule..... as fitted..... }
Is the { tube } shaft fitted with a continuous liner { Yes
screw }

Bronze Liners, thickness in way of bushes { as per rule..... as fitted..... }
Thickness between bushes { as per rule..... as fitted..... }
Is the after end of the liner made watertight in the propeller boss.....

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.....

If so, state type..... Length of Bearing in Stern Bush next to and supporting propeller..... 5'10"

Propeller, diameter 18'0" Pitch Varying No. of Bades 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. Turbines exhaust direct to the Condenser Yes

No. of Turbines fitted with astern wheels one Feed Pumps { No. and size 2 - 3" Weirs.
How driven Turb. driven.

Pumps connected to the Main Bilge Line { No. and size 1 Fire & Bilge 10" x 9" x 10" & 1 ballast 10" x 9" x 10".
How driven Steam.

Ballast Pumps, No. and size 1 - 10" x 9" x 10" Lubricating Oil Pumps, including Spare Pump, No. and size 2 - 9" x 8" x 13"

Are two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected both to Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room 4 - 3 1/2" x 2 - 2 1/2" Tunnel well 1 - 2 1/2"

In Holds, &c. In Pump Room Fore Peak 1 - 4"

Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 - 13 1/2" Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 - 5"

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..... How are they protected.....
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 No Is it fitted with a watertight door No worked from (Escape hatch)

004710-004717-0100

NOTE.—The words which do not apply should be deleted.

1m.1.42 T.

TOTAL H.S. 6840 } 10905#
2 S/H 1660 }
50% of 2 Econ. 2405 } boilers only

BOILERS, &c.—(Letter for record) Total Heating Surface of Boilers 6840 sq. ft.
Is Forced Draft fitted Yes No. and Description of Boilers 2 Foster Wheeler "D" Working Pressure 490 lbs per
Is a Report on Main Boilers now forwarded? Yes See West Hartlepool Report No. 18639 Type (Sp. 475 lb.)
Is { a Donkey } Boiler fitted? Yes 2 If so, is a report now forwarded? Yes See Middlesbrough Rpt
{ an Auxiliary } Nos. 17840 & 17860
Is the donkey boiler intended to be used for domestic purposes only No
Plans. Are approved plans forwarded herewith for Shafting Main Boilers Auxiliary Boilers Donkey Boilers
(If not, state date of approval)
Superheaters General Pumping Arrangements Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes
State the principal additional spare gear supplied See attached list.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building During progress of work in shops - 1944. Nov. 9, 1945, Jan. 9, July 26, Sept. 20, 24, 25, Oct. 3, 24, Nov. 7, 14, 15, 16, 17, 19, 20, 21, 22, 26, 27, 29, 30, Dec. 3, 4, 6, 7, 10, 12, 13, 14, 17, 18, 19, 20, 21, 24, 27, 28, 31, 1946, Jan. 3, 1947, Feb. 7, 8, 10, 11, 14, 15, 18, 19, 21, 22, 23, 25, 31, Feb. 4, 1948, Jan. 3, 1949.
During erection on board vessel -
Total No. of visits 56 (SEE REPORT 9)

Dates of Examination of principal parts—Casings Rotors Blading Gearing
Wheel shaft Thrust shaft Intermediate shafts 27.11.45 Tube shaft Screw shaft 24.9.45
Propeller 24.9.45 Stern tube 20.9.45 Engine and boiler seatings 24.9.45 Engine holding down bolts 27.12.45
Completion of fitting sea connections 19.11.45 Completion of pumping arrangements 4.2.46 Boilers fixed 12.12.45 Engines tried under steam 23.1.46
Main boiler safety valves adjusted 23.1.46 Thickness of adjusting washers P. Blr. Sat. Stm. 1" Spt. P. 7/32" S = 3/4"
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 Thrust shaft, Material Steel Identification Mark 13489 HAT 7.
Intermediate shafts, Material Steel Identification Marks 7.9.45 Tube shaft, Material Identification Marks
Screw shaft, Material Steel Identification Marks 7.9.45 Steam Pipes, Material Steel Test pressure 1440 lbs per sq. in.
Date of test 10.1.46 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 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 S.S. "WAVE REGENT"

General Remarks. (State quality of workmanship, opinions as to class, &c.)
These engines and boilers were fitted on board this vessel, in accordance with the approved plans and Rule Requirements and on completion the machinery was tried out under working conditions and found satisfactory and in my opinion is now eligible for record of LMC. 2.46 and notation of TS. (C.L) 2.46. Forced draught and superheated.

The amount of Entry Fee LMC £ 26 : 1 : 6 : When applied for.
Special Supervision 6 : 10 : 4 : 13/3/1946
Donkey Boiler Fee ... £ : : When received.
Travelling Expenses (if any) £ : : 19.

L. Roman Stuart
Engineer Surveyor to Lloyd's Register of Shipping.

FRI. 5 APR 1946

Committee's Minute

Assigned LMC* 2.46

2.46 FLASH POINT ABOVE 150°F, F.D. C.L. 2 WTB. (Sp. 475 lb.)
2 DB 180 lb.