

REPORT ON STEAM TURBINE MACHINERY. No. 74046

Date of writing Report 21-5-1949 When handed in at Local Office 30 MAY 1949 Port of GLASGOW Received at London Office 1 JUN 1949

No. in Survey held at GLASGOW Date, First Survey 14-1-49 Last Survey 3-5-1949

Reg. Book. 19558 on the SS "WAVE MONARCH" (Number of Visits 22)

Tons Gross 8159 Net 4545

Built at GLASGOW By whom built HARLAND & WOLFF LTD. Yard No. When built 1944

Engines made at GLASGOW By whom made BARCLAY CURLE & CO LTD Engine No. EW 2 When made 1944

Boilers made at RENFREW By whom made BABCOCK & WILCOX LTD. Boiler No. When made 1944

Shaft Horse Power at Full Power 6800 Owners THE ADMIRALTY Port belonging to LONDON

Nom. Horse Power as per Rule 1496 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted YES

Trade for which Vessel is intended CARRYING PETROLEUM IN BULK

STEAM TURBINE ENGINES, &c.—Description of Engines IMPULSE REACTION STEAM TURBINES

Co. of Turbines Ahead 1 HP 1 LP Direct coupled, single reduction geared to ONE propelling shafts. No. of primary pinions to each set of reduction gearing 2

Astern ONE double reduction geared

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

supplying power for driving Propelling Motors, Type

led Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

TURBINE LOADING.	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.
EXPANSION (IMPULSE)	1.36 x 1.68	20.11 x 31.61	2				1.875	39.45	3			
" (REACTION)	1.23	17.46	4				1.324	40.628	1	5	49.5	1 st Row
"	1.52	18.04	4				1.896	41.492	1	4.845	52.45	2 nd Row
"	1.68	18.36	6				2.468	42.936	1	9	55.0	3 rd Row
"	2.04	19.14	6				3.109	44.218	1			
"	2.58	20.16	6				3.824	45.648	1			
"							4.509	47.078	1			
"							5.30	48.6	1			
"							6.13	50.26	1			
"							7.044	52.094	1			
"							8.185	54.34	1			
"							9.0	56.0	1			

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. 3941 I.P. - L.P. 2865

or Shaft diameter at journals H.P. 5" I.P. - L.P. 4" Pitch Circle Diameter 1st pinion 19.4624 1st reduction wheel 51.2041 2nd pinion 19.4894 main wheel 124.6448

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 16 3/4 1st reduction wheel 3' - 2 3/4 2nd pinion 3' - 2 3/4 main wheel 3' - 6"

Pinion Shafts, diameter at bearings External 1st 11" 2nd 11" Internal 1st 4 1/2" 2nd 5" diameter at bottom of pinion teeth 1st 12.923" 2nd 18.9412"

Generator Shaft, diameter at bearings 11" Propelling Motor Shaft, diameter at bearings 119.45"

Intermediate Shafts, diameter as per rule 16" Thrust Shaft, diameter at collars 16 3/4" Tube Shaft, diameter as per rule 16"

Shaft, diameter as per rule 16" Is the tube screw shaft fitted with a continuous liner YES

Bronze Liners, thickness in way of bushes as per rule 16"

Shaft, diameter as per rule 16" 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 by fusion through the whole thickness of the liner YES

If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a material insoluble in water and non-corrosive YES

If two liners are fitted, is the shaft lapped or protected between the liners YES

Is an approved Oil Gland appliance fitted at the after end of the tube shaft YES

Length of Bearing in Stern Bush next to and supporting propeller 121 square feet.

eller, diameter 18 ft. Pitch VAR. No. of Blades 4 State whether Moveable No Total Developed Surface 121 square feet.

gle 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

ser YES No. of Turbines fitted with astern wheels ONE Feed Pumps No. and size 2 3" WEIR'S TURBO How driven STEAM

s connected to the Main Bilge Line No. and size 1 - 10" x 9" x 10" FIRE & BILGE 1 - 10" x 9" x 10" BALLAST How driven STEAM

t Pumps, No. and size 1 - 10" x 9" x 10" Lubricating Oil Pumps, including Spare Pump, No. and size 2 @ 8" x 9" x 18"

independent means arranged for circulating water through the Oil Cooler YES Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

No. and size:—In Engine and Boiler Room 4 @ 3 1/2, 2 @ 2 1/2, 1 @ 2 1/2 TUNNEL WELL

s, &c. FORE HOLD STOWAGE LOCKER 2 @ 2" FORE HOLD 2 @ 2" FORE HOLD PUMP ROOM 1 @ 3"

Water Circulating Pump Direct Bilge Suctions, No. and size 1 @ 14" Independent Power Pump Direct Suctions to the Engine Room

No. and size 1 @ 5" Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes YES

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

Sea Connections fitted direct on the skin of the ship YES Are they fitted with Valves or Cocks BOTH

fixed sufficiently high on the ship's side to be seen without lifting the stowhold plates YES Are the Overboard Discharges above or below the deep water line BELOW

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

pass through the bunkers YES How are they protected YES

pass through the deep tanks YES Have they been tested as per rule YES

pes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times YES

ngement 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

nt to another YES Is the Shaft Tunnel watertight YES Is it fitted with a watertight door YES

BOILERS, &c.—(Letter for record) Total Heating Surface of Boilers 12050 ^{sq}
Is Forced Draft fitted ☒ YES. No. and Description of Boilers Two - BABCOCK & WILCOX Working Pressure 460 Lbs/A
Is a Report on Main Boilers now forwarded? ☒ YES
Is ^{a Donkey} ~~auxiliary~~ Boiler fitted? ☒ YES - TWO If so, is a report now forwarded? ☒ YES
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. State the articles supplied:— AS REQUIRED

The foregoing is a correct description,

Dates of Examination of principal parts—Casings Rotors Blading Gearing
Wheel shaft Thrust shaft Intermediate shafts Tube shaft Screw shaft
Propeller Stern tube Engine and boiler seatings Engine holding down bolts
Completion of pumping arrangements Boilers fixed Engines tried under steam
Main boiler safety valves adjusted Thickness of adjusting washers
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 Identification Mark
Intermediate shafts, Material Identification Marks Tube shaft, Material Identification Marks
Screw shaft, Material Identification Marks Steam Pipes, Material Test pressure
Date of test 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 —
Is this machinery a duplicate of a previous case If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery & boilers of this vessel were installed under British Corporation Survey. They have been opened out & examined in their entirety & found or placed in good condition. Please see report 9 Liverpool.

0723

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee	£	:	:	When applied for,
Special	£	:	:	19.....
Donkey Boiler Fee	£	:	:	When received,
Travelling Expenses (if any)	£	:	:	19.....

J.B. Gray
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 31 MAY 1949
Assigned SEE ACCOMPANYING MACHINERY REPORT.