

REPORT ON STEAM TURBINE MACHINERY.

No. 9339

Rpt. 4a.

Date of writing Report 30th Nov 1942 When handed in at Local Office 3rd Dec 1942 Port of Dundee Received at London Office 10 DEC 1942

No. in Survey held at Dundee Date, First Survey 23rd Oct Last Survey 30th Nov 1942

Reg. Book. 18302 on the s/s "MARISO" ex "Bitterfeld" (Number of Visits 11)

Built at Kiel By whom built Fried. Krupp Akt. Ges. Yard No. 504 Tons Gross 7659
Net 4482

Engines made at Hamburg By whom made Blohm & Voss Engine No. 1923 When built 1930

Boilers made at Kiel By whom made Fried. Krupp Boiler No. 1930 When made 1930

Shaft Horse Power at Full Power 6200 Owners Netherlands Government Port belonging to Willemstad

Nom. Horse Power as per Rule 1286 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 Steam Turbines

No. of Turbines 4 Ahead 2 Astern 2 Direct coupled, single reduction geared to one propelling shafts. No. of primary pinions to each set of reduction gearing 1

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.

T. P.			H. P.			I. P.			L. P.			ASTERN.		
LOADING.			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. I.P. L.P. 1st reduction wheel main shaft 105

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

Wheel Shafts, diameter at bearings 1st main 400 mm diameter at wheel shroud 1st main Generator Shaft, diameter at bearings Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter as per rule as fitted 383 mm Thrust Shaft, diameter at collars as per rule as fitted 450 mm at journal

Tube Shaft, diameter as per rule as fitted Screw Shaft, diameter as per rule as fitted 393 mm Is the tube screw shaft fitted with a continuous liner Is the after end of the liner made watertight in the propeller boss

Bronze Liners, thickness in way of bushes as per rule as fitted 25 mm for d 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 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

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 6-6 in 20855

Propeller, diameter 5350 mm Pitch 4650 mm No. of Blades 4 State whether Moveable yes Total Developed Surface 9.1 square feet.

Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Can the H.P. or L.P. Turbine exhaust direct to the condenser no No. of Turbines fitted with astern wheels 2 Feed Pumps No. and size 2 off 240-180-450 mm Rotary Pumps How driven Steam Elec. Motor

Pumps connected to the Main Bilge Line No. and size Rotary Bilge Pumps 40 tons/hr Rotary Ballast Pumps 100 tons/hr How driven Electric Motor Electric Motor

Ballast Pumps, No. and size Rotary Pumps 100 tons/hr Lubricating Oil Pumps, including Spare Pump, No. and size 2 Duplex 190-220-330 mm

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 In E.R. 1-2 1/2" P. 1-2 1/2" S. In Stokehold 1-2 1/2" P. 1-2 1/2" S. In Wells 1-2 1/2" P. 1-2 1/2" S. In Pump Room well 1-2 1/2"

Holds, &c. nos 1, 2, 3, 4: 1-2 3/8" P. 1-2 3/8" S. nos 5, 6. 1-2 1/2" P. 1-2 1/2" S.

Main Water Circulating Pump Direct Bilge Suctions, No. and size 1-15" Independent Power Pump Direct Suctions to the Engine Room

Bilges, No. and size 1-2 1/2" P. 1-2 1/2" S. Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes

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

all Sea Connections fitted direct on the skin of the ship fitted on wells Are they fitted with Valves or Cocks Both

they sized 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

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

at pipes pass through the bunkers Suctions to fore holds How are they protected In the limbers

at pipes pass through the deep tanks none Have they been tested as per rule yes

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

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 yes worked from top platform

W104-0144

BOILERS, &c.—(Letter for record (5)) Total Heating Surface of Boilers 16452 ft.
Is Forced Draft fitted yes No. and Description of Boilers 2 S.E. + 2 D.E. Multitubular fitted with superheaters Working Pressure 213 lbs
Is a Report on Main Boilers now forwarded? yes
Is a Donkey Boiler fitted? No If so, is a report now forwarded? ✓
an Auxiliary
Is the donkey boiler intended to be used for domestic purposes only ✓
Plans. Are approved plans forwarded herewith for Shafting ✓ Main Boilers yes Auxiliary Boilers ✓ Donkey Boilers ✓
(If not state date of approval)
Superheaters ✓ General Pumping Arrangements yes Oil Fuel Burning Arrangements ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied } This appeared to be plentiful.
State the principal additional spare gear supplied

The foregoing is a correct description, ✓ Manufacturer.

Dates of Survey During progress of work in shops - -
whole During erection on board vessel - - -
building Total No. of visits

1942 Oct 23-27-29 Nov. 3-6-10-13-17-19-25-30

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 fitting sea connections Completion of pumping arrangements Boilers fixed Engines tried under steam
Main boiler safety valves adjusted 30-11-42 Thickness of adjusting washers Port S.E. P.V. 1 7/16" S.V. 1 3/8" Start S.E. P.V. 3/4" S.V. 1" Super 3/8"
Port D.E. F.V.P. 1 1/16" F.V.S. 1 1/16" Super 3/4" Start D.E. F.V.P. 7/8" F.V.S. 1" Super 7/8"
AV.P. 1 1/16" AV.S. 1 3/16" Identification Mark
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 No

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 ✓ If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c.)

The Main Machinery consists of 4 Turbines 1-H.P. + 1st M.P. on the port side, counting from aft, + 2nd M.P. + L.P. on the starboard side, counting from fore, driving through single-reduction gearing the main line shafting + propeller. Aster turbines are incorporated in the H.P. + L.P. casings only. Nothing was opened up for survey at this time, but the Chief Engineer stated that no trouble had been experienced in the turbines of gearing.
For recommendations for class see Rpt 9 - Dundee Report No 9342

The amount of Entry Fee ... £ : : When applied for, 19
Special (See op. fee collector) £ 35- : :
Donkey Boiler Fee ... £ : : When received, 19
Travelling Expenses (if any) £ : : 19

Committee's Minute GLASGOW 8 DEC 1942

Assigned See J.C. Dun. 9339 (Dundee)

John Houston
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation