

Rpt. 4a.

Report on Steam Turbine Machinery. No. 480

Date of writing Report 7.3.1955 When handed in at Local Office 14.3.1955 Port of NANTES Received at London Office 21 MAR 1955
 No. in Survey held at SAINT NAZAIRE Date, First Survey 24.10.52 Last Survey 17.2.1955
 Reg. Book 906655 on the Single Screw Vessel "ISANDA" (Number of Visits 66)

Built at SAINT NAZAIRE By whom built CH. AT. DE SAINT NAZAIRE (PENHOET) Yard No. K.15 When built 1955
 Engines made at SAINT NAZAIRE By whom made CH. AT. DE SAINT NAZAIRE (PENHOET) Engine No. K.15 When made 1955
 Boilers made at SAINT NAZAIRE By whom made CH. AT. DE SAINT NAZAIRE (PENHOET) Boiler No. 1822 When made 1955
 Shaft Horse Power Maximum 15,000 Owners SOCIETE MARITIME SHELL Port belonging to LE HAYRE
 M.N. as per Rule Service 3,000 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 DOUBLE REDUCTION GEARED TURBINES
 No. of Turbines Ahead 2 Astern 2 Direct coupled, single reduction geared to 1 propelling shafts. No. of primary pinions to each set of reduction gearing 2
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.	H. P. ASTERN	L. P.	L. P. ASTERN.
Impulse Blading	No. of rows <u>2</u>	<u>2</u>		
Reaction Blading	No. of stages <u>22</u>		<u>21</u>	<u>7</u>
	No. of rows in each stage <u>1</u>		<u>2</u>	<u>1</u>

Shaft Horse Power at each turbine H.P. 7600 I.P. ✓ L.P. 9000 Revolutions per minute, at full power, of each Turbine Shaft H.P. 5040 I.P. ✓ L.P. 3220
 Rotor Shaft diameter at journals H.P. 160 I.P. ✓ L.P. 250 Pitch Circle Diameter HP 261.215 LP 408.148 1st reduction wheel 703.340 1st reduction wheel 770 main shaft 108
 2nd pinion 547.341 main wheel 3907.590 Width of Face 1st reduction wheel 760 main wheel 1230

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 540 2nd pinion 860 1st reduction wheel Fw° 680 Aft 630
 Flexible Pinion Shafts, diameter 1st 170 2nd 170 Pinion Shafts, diameter at bearings External HP 160 LP 200 Internal 1st 400 2nd 225 diameter at bottom of pinion teeth 1st HP 251.615 LP 398.728 2nd 535.341

Wheel Shafts, diameter at bearings 1st 280 main 600 diameter at wheel shroud, 1st 420/370 2nd 756/676 Generator Shaft, diameter at bearings ✓
 Intermediate Shafts, diameter as per rule 526 as fitted 543 Propelling Motor Shaft, diameter at bearings ✓
 Tube Shaft, diameter as per rule 570.5 as fitted 590 Thrust Shaft, diameter at collars as per rule 552 as fitted 554

Bronze Liners, thickness in way of bushes as per rule 26 as fitted 28 Thickness between bushes as per rule 26 as fitted 28 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 ✓
 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 NO If so, state type ✓

Propeller, diameter 6400 Pitch 4944 No. of Blades 5 State whether Moveable NO Total Developed Surface 201750 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 2 Feed Pumps No. and size 3 x 95mm³/hr How driven STEAM TURBINES

Pumps connected to the Main Bilge Line No. and size 2 x 118mm³/hr How driven ELECTRIC MOTORS
 Ballast Pumps, No. and size 2 x 118mm³/hr Lubricating Oil Pumps, including Spare Pump, No. and size 2 x 110mm³/hr
 Are two independent means arranged for circulating water through the Oil Cooler YES Branch Bilge Suctions, No. and size:—In Engine and Boiler Rooms 3 x 50 5 x 90 In Pump Room Fw° 1 x 69 Aft 2 x 100

In Holds, &c. COFFERDAMS IN ER (AFT, UNDER GEARING & ECHO SOUNDERS) 3 x 50
 Main Water Circulating Pump Direct Bilge Suctions, No. and size 2 x 300
 Bilges, No. and size 2 x 125 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 NO WATER BOXES & DISTANCE PIPES 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 BOTH 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 STEEL covering plate YES What pipes pass through the bunkers ✓ How are they protected ✓

What pipes pass through the deep tanks FORE PEAK SUCTION 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 ✓ Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—Total Heating Surface of Boilers 22800
 Is Forced Draught fitted YES No. and Description of Boilers TWO WATERTUBE Working Pressure 50 Kgs
 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 YES Main Boilers YES Auxiliary Boilers ✓ Donkey Boilers ✓
(If not, state date of approval)
Superheaters YES General Pumping Arrangements YES Oil Fuel Burning Arrangements YES
Geared turbines situated aft. Have torsional vibration characteristics of system been approved YES Date of approval 26.1.54

SPARE GEAR.

Has the spare gear required by the Rules been supplied YES
State the principal additional spare gear supplied PROPELLER SHAFT, IMPELLERS & SHAFTS FOR MAIN CIR, AUX CIR, EXTRACTION, AUX. CONDENSATE PUMPS



The foregoing is a correct description.

Dates of Survey while building
During progress of work in shops - 1954 24.10-30.10-28.11-1953 27.5-22.4-30.4-25.5-27.5-30.6-24.9-30.9-3.11-15.11-1954 13.1-10.2-16.2-18.2-8.3-9.3-22.3-21.4-26.4-24.5-18.6-25.6-30.6-9.7-16.7-27.7-3.8-5.8-6.8-10.8-4.10-6.10-12.10-20.10-25.10-26.10-29.10-4.11-6.11-8.11-10.11-17.11-25.11-6.12-7.12-14.12-20.12
During erection on board vessel - 1954 9.7-27.7-19.10-25.10-14.12-29.12 1953 7.1-24.1-25.1-27.1-31.1-1.2-12.2-14.2-15.2-17.2
Total No. of visits 66

Dates of Examination of principal parts—Casings 23.3.54-26.10.54 Rotors 10.11.54 Blading — Gearing 26.10.54
Wheel shaft 26.10.54 Thrust shaft 26.10.54 Intermediate shafts 26.10.54 Tube shaft ✓ Screw shaft 18.6.54
Propeller 9.7.54 Stern tube 29.6.54 Engine and boiler seatings 19.10.54-27.7.54 Engine holding down bolts 14.12.54

Completion of fitting sea connections 27.7.54 Completion of pumping arrangements 1.2.54 Boilers fixed 19.10.54 Engines tried under steam 15.2.55

Main boiler safety valves adjusted 12.2.54 & 14.2.54 Thickness of adjusting washers PORT FWD 25.6 AFT 22.5 S.T. 25.5 STAR FWD 22.2 AFT 23.9 S.T. 23.9

Rotor shaft, Material and tensile strength ELEC. FURNACE HP. 59.7/58.4 LP. 59.8/60.4 Identification Mark HP V. 395 LP V. 633

Flexible Pinion Shaft, Material and tensile strength — 1ST RED. WHEEL SHAFTS Identification Mark ✓

Pinion shaft, Material and tensile strength HP. N.C.R. Mo 80/90 LP. N.C.R. Mo 80/90 2nd RED. N.C.R. Mo 80/90 Identification Mark HP. 328 LP 247 2nd RED. 610 - 656 (BV)

; Chemical analysis HP C. 23 Mn. 60 S. 38 P. 0.06 Ni 2.83 CR. 73 Mo. 28 LP C. 22 Mn. 51 S. 25 P. 0.06 Ni 2.83 CR. 73 Mo. 28

If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment 4.1.54

1st Reduction Wheel Shaft, Material and tensile strength N.C.R. Mo 80/90 Identification Mark 302

Wheel shaft, Material MILD STEEL Identification Mark PAR. 543 Thrust shaft, Material AS WHEEL SHAFT Identification Mark ✓

Intermediate shafts, Material MILD STEEL Identification Marks 309 Tube shaft, Material ✓ Identification Marks ✓

Screw shaft, Material MILD STEEL Identification Marks 309 Steam Pipes, Material MILD STEEL & CR. Mo Test pressure 94 & 112 Kgf

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

Full description of Fire Extinguishing Apparatus fitted in machinery spaces STEAM & FROTH

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo NO 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 NO If so, state name of vessel ✓

General Remarks. (State quality of workmanship, opinions as to class, &c.) The machinery of this vessel has been constructed under special survey in accordance with approved plans, rule requirements & Secretary's letter. The quality of materials & workmanship is good.

The machinery has been satisfactorily installed on board, examined under full working conditions during sea trials.

During sea trials the main machinery was specially examined at engine speeds of 30 to 50 Rpm (per Sec. letter 28.1.54) over periods and no evidence of gear hammer or rough running was observed. During & after sea trials the welded gear case was examined & found satisfactory.

The gearing was subsequently opened up, examined & found satisfactory.

The machinery of this vessel is, in my opinion, eligible to be classed with the notation of +LMC-2.55.

The amount of Entry Fee £ 300.800 When applied for 19

Installation £ 296.000 When received 19

Special additional for welded gear case £ 17.500

Donkey Boiler Fee £ :

Travelling Expenses (if any) £ 36.125

Committee's Minute Deferred.

Assigned Deferred.

Engineer Surveyor to Lloyd's Register of Shipping.



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