

Report on Steam Turbine Machinery.

No. 639

Rpt. 4a.

Received at London Office 26th June 1954

Date of writing Report 28/9/ 1954 When handed in at Local Office 28/9/ 1954 Port of ROUEN
 No. in Survey held at Le Bourget (Seine) Date, First Survey 3.3.54 Last Survey 7.7.54 19
 Reg. Book "Sphigonia" (Number of Visits 8)
 on the Tons (Gross Net)
 Built at La Ciotat By whom built Chantiers de la Ciotat Yard No. 175 When built
 Engines made at La Seyne By whom made Forges & Ch. de la Mediterranee
 Ring & L.P. Turbine Order No. 6161/MT When made
 Boilers made at Le Bourget (Seine) By whom made Cie. Electro Mecanique Order No. 2262103 When made 1954
 Shaft Horse Power at Full Power 7800/8200 Owners Port belonging to
 Nom. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
 Trade for which Vessel is intended

STEAM TURBINE ENGINES, &c.—Description of Engines

No. of Turbines Ahead ~~Discontinued~~ ~~single reduction geared~~ to propelling shafts. No. of primary pinions to each set of reduction gearing TWO
 Astern double reduction geared
 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.

TURBINE BLADING.	H. P.	I. P.	L. P.	ASTERN.
Impulse Blading				2
No. of rows				
Reaction Blading			3	1
No. of stages				
No. of rows in each stage			5/7/8	4

Shaft Horse Power at each turbine H.P. 3600 L.P. 4200
 H.P. 4800 1st reduction wheel B.P. 620
 L.P. 3100 main shaft 100
 H.P. 680
 B.P. 620

Rotor Shaft diameter at journals H.P. ϕ 160 L.P. ϕ 160
 Pitch Circle Diameter 1st pinion H.P. = 223,121 L.P. = 315,635
 2nd pinion H.P. = 498,842 L.P. = 547,341
 H.P. 1583,617 L.P. 1583,617
 Width of Face 1st reduction wheel 580
 main wheel 930

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings
 1st pinion 470 1st reduction wheel 560
 2nd pinion 750 main wheel 940

Flexible Pinion Shafts, diameter at bearings External H.P. ϕ 160 L.P. ϕ 200
 Internal ϕ 155
 H.P. ϕ 315,295 ϕ central hole
 L.P. ϕ 315
 diameter at bottom of pinion teeth
 1st HP=210,314 LP=302,855
 2nd HP=481,742 LP=530,241

Wheel Shafts, diameter at bearings 1st ϕ 200 main ϕ 500 diameter at wheel shroud, 1st 1480 main 3280
 Generator Shaft, diameter at bearings
 Propelling Motor Shaft, diameter at bearings
 Intermediate Shafts, diameter as per rule as fitted Thrust Shaft, diameter at collars as per rule as fitted 500

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
 Is the screw shaft fitted with a continuous liner

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
 Propeller, diameter Pitch No. of Blades State whether Moveable Total Developed Surface square feet
 If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Can the H.P. or I.P. Turbines exhaust direct to the

Condenser No. of Turbines fitted with astern wheels Feed Pumps No. and size How driven

Pumps connected to the Main Bilge Line No. and size How driven
 Ballast Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size

Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected both to Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room In Pump Room
 In Holds, &c. Independent Power Pump Direct Suctions to the Engine Room

Main Water Circulating Pump Direct Bilge Suctions, No. and size Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes
 Bilges, No. and size 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

Are all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Overboard Discharges above or below the deep water line
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate
 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

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 Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record) Total Heating Surface of Boilers Working Pressure
 Is Forced Draft fitted No. and Description of Boilers
 Is a Report on Main Boilers now forwarded?



Is a Donkey Boiler fitted? If so, is a report now forwarded?
 an Auxiliary Boiler fitted? If so, is a report now forwarded?
 Is the donkey boiler intended to be used for domestic purposes only?

Plans. Are approved plans forwarded herewith for Shafting 12.4.54 Main Boilers Auxiliary Boilers Donkey Boilers
 (If not, state date of approval)

Superheaters General Pumping Arrangements Oil Fuel Burning Arrangements
 Geared turbines situated aft. Have torsional vibration characteristics of system been approved? Date of approval 18/3/54 for 100 + 103 1/2
? Gear hammer.

SPARE GEAR.

Has the spare gear required by the Rules been supplied for L.P. Turbine - Yes
 State the principal additional spare gear supplied -

The foregoing is a correct description,

C^o Electro-Mécanique *A. Ruyck* Manufacturer.
 ETABLISSEMENT LE BOURG
 Département MARINE

Dates of Survey while building During progress of work in shops - - 3.3.54, 8.3.54, 23.3.54, 1.4.54, 27.4.54, 4.5.54, 24.6.54, 7.7.54
 During erection on board vessel - - -
 Total No. of visits 8

Dates of Examination of principal parts—Casings 27.4.54, 24.6.54, 4.5.54, 24.6.54 Rotors 4.5.54, 24.6.54 Blading 4.5.54 Gearing 3.3. & 23.3.54

Wheel shaft 1.4.54 Thrust shaft 1.4.54 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 _____ Thickness of adjusting washers _____

Rotor shaft, Material and tensile strength Forged Steel (Electric Furnace) 56.8 Kg/mm² Identification Mark 1118 R.F

Flexible Pinion Shaft, Material and tensile strength " " " " 81.1 & 82.8 " Identification Mark HP V545, LP V546

Pinion shaft, Material and tensile strength Electric Steel, 84.5, 83.1, 91.0, 89.0 Kg/mm² Identification Mark V607, V609, V638, V639
respectively
for HP & LP 1st & 2nd reduc. ; Chemical analysis

If Pinion Shafts are made of special steel state date of approval of chemical analysis, physical properties and heat treatment 12.4.54

1st Reduction Wheel Shaft, Material and tensile strength As for flexible pinion shafts Identification Mark as above.

Wheel shaft, Material Forged Steel Identification Mark RR 412 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?

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?

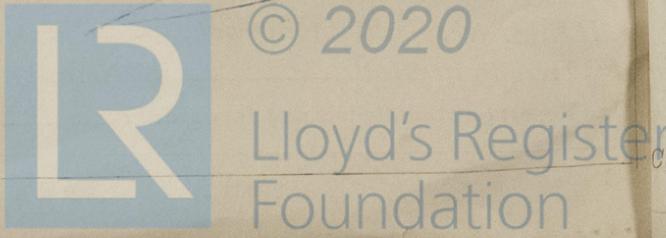
If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with?

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 gearing and shafting detailed in the foregoing and L.P. Turbine have been built under special Survey at the works of Cie. Electro-Mécanique, Le Bourget, Seine, in accordance with the Society's Rules, approved plans and the Secretary's letters. The workmanship is good.
The above mentioned parts have been dispatched to Forges et Chantiers de la Méditerranée at La Seyne, for subsequent installation in Chantiers de la Ciotat, Yard No. 175.

The amount of Entry Fee	£rs. 160.750.	When applied for
Special	£ : :	19
Donkey Boiler Fee	£ : :	When received
Travelling Expenses (if any)	£ 32.000.	19

E. J. Green
 Engineer Surveyor to Lloyd's Register of Shipping.



Committee's Minute FRIDAY 25 NOV 1955
 Assigned Sue Rpt. 4a

Certificate (if required) to be sent to

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

Rpt. 5
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