

Report on Steam Turbine Machinery.

No. 11340.

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Date of writing Report 18/12 1957 When handed in at Local Office 19 Port of Stockholm
No. in Survey held at Stockholm Date, First Survey 27.10.56 Last Survey 16.8 1957.
Reg. Book (Number of Visits 11)
on the Single Twin Triple Quadruple Screw Vessel "MELINE" Tons (Gross - Net -)
Built at Gothenburg By whom built A/B Götaverken Yard No. 716 When built 1957
Engines made at Stockholm (Rotors) By whom made A/B de Lavals Ångturbin Engine No. 44412 When made 1957
Boilers made at - By whom made - Boiler No. - When made -
Shaft Horse Power { Maximum 9800 Service 1960 Owners Messrs. Torvald Berg Port belonging to Tönsberg
M.N. as per Rule 1960 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
Trade for which Vessel is intended -

STEAM TURBINE ENGINES, &c.—Description of Engines. Impulse for main propelling machinery.
No. of Turbines Ahead HP & LP (2) Direct coupled, single reduction geared to 1 propelling shafts. No. of primary pinions to each set of reduction gearing 2
Astern LP (1) double reduction geared
direct coupled to { Alternating Current Generator - phase - periods per second rated - Kilowatts - Volts at - revolutions per minute;
Direct Current Generator }
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 { No. of rows 10			6	3
Reaction Blading { No. of stages				
No. of rows in each stage				

Shaft Horse Power at each turbine { H.P. 4900 I.P. - L.P. 4900 }
Revolutions per minute, at full power, of each Turbine Shaft { H.P. 4773 1st reduction wheel 760.2 I.P. - main shaft 115 L.P. 3994 HP & LP 530 }
Rotor Shaft diameter at journals { H.P. 130 mm Pitch Circle Diameter 1st pinion 287.654 mm 1st reduction wheel LP=1511.198 mm LP=2900.308 mm 2nd pinion 438.750 mm main wheel 2900.308 mm }
Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 357.5 mm 1st reduction wheel 435 mm 2nd pinion 665 mm main wheel 705 mm }
Flexible shafts between turbines & Pinions OD=150 mm ID=125 mm External 1st 130 mm 2nd 349.55 mm diameter at bottom of pinion teeth 1st HP=237.340 mm LP=277.854 mm 2nd 252.0 mm
Flexible Pinion { 1st 224.75 mm 210 mm at Pinion Shafts, diameter at bearings HP & LP 2nd coupling 225 mm }
Wheel Shafts, diameter at bearings { 1st 225 mm 2nd 500 mm }
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 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 Branch Bilge Suctions, No. and size:—In Engine In Pump Room
In Holds, &c.
Main Water Circulating Pump Direct Bilge Suctions, No. and size Direct Bilge Suctions to the Engine and/or Boiler Room
Bilges, No. and size Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes
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.—Total Heating Surface of Boilers
Is Forced Draught fitted No. and Description of Boilers Working Pressure
Is a Report on Main Boilers now forwarded?

Is { a Donkey } Boiler fitted? - 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. 6.9.56 Main Boilers. - Auxiliary Boilers. - Donkey Boilers. -
(If not, state date of approval) & Gearing
Superheaters. - General Pumping Arrangements. - Oil Fuel Burning Arrangements. -
Geared turbines situated aft. Have torsional vibration characteristics of system been approved. - Date of approval. 12th Feb. 1957. ✓
For a service speed of 112 r.p.m. and a maximum speed of 115 r.p.m. ✓
SPARE GEAR.
Has the spare gear required by the Rules been supplied. -
State the principal additional spare gear supplied. -

The foregoing is a correct description.

AB DE LAVALS ANGTURBIN

Manufacturer.

Dates of Survey while building During progress of work in shops - 11 visits
During erection on board vessel - 17.1.57
Total No. of visits 27.2.57
Dates of Examination of principal parts - Casings - HP & LP 25.1.57 Blading 6.5.57 Gearing 16.8.57
Wheel shaft 1.7.57 Thrust shaft 1.7.57 Intermediate shafts - 2.4.57 Tube shaft - 6.5.57 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 - HP No. 4868 SKM WAC 22.11.
Rotor shaft, Material and tensile strength Electro steel 67.6-74.7 kg/mm² Identification Mark LP No. 3693 SKM WAC 1
Interm. shafts betwn. turbine & pinions Electro-steel. 68.2 kg/mm² Identification Mark Nos. 5039 & 5090 SKM.WAC. 27.2.57.
Pinion shaft, Material and tensile strength S.M. steel 88.4 - 87.7 81.2-85.8 81.2-85.5 kg/mm² Identification Mark HP 1st No.87 DMT IL
HP 2nd No.90 DMT KE
LP 2nd No.89 DMT KE
; Chemical analysis C=0.30-0.35 P=0.035 max. S=0.035 max
CR=2.5-3.0 Mo=0.50 min.
If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment 27th August, 1956.
1st Reduction Wheel Shaft, Material and tensile strength S.M. steel 65.6 kg/mm² Identification Mark HP=No.159 SKM IL 1.7.57.
LP=No. 160 SKM IL 1
Wheel shaft, Material S.M. steel Identification Mark No.32.SKM IL 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 -
Full description of Fire Extinguishing Apparatus fitted in machinery spaces -
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. No If so, state name of vessel -

General Remarks. (State quality of workmanship, opinions as to class, &c.) The machinery items as detailed above have been built under Special Survey and in accordance with the approved plans, Secretary's letters and the requirements of the Rules. The workmanship and materials are good and material certificates in respect of all important forgings are attached to this report.

To complete the survey during construction, the final assembly of the turbines and gearing in the shop remain to be examined, the shop trials to be witnessed and bedding of the gears after the trials. The survey will be completed at the Shipbuilders' Yard by the Gothenburg Surveyors to whom a copy of this report has been forwarded.

The amount of Entry Fee ... £ : When applied for.
Special (50%) ... £ 1,425.- 19/57
Donkey Boiler Fee ... £ : When received.
Travelling Expenses (if any) ... £ 68.- 19

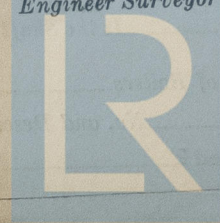
Committee's Minute

TUESDAY - 6 MAY 1958

Assigned

See Rpt. 7

W.A. Look & W. Hamer
Engineer Surveyor to Lloyd's Register of Shipping.



Lloyd's Register
Foundation