

EXHAUST  
REPORT ON STEAM TURBINE MACHINERY.

No. 10617

Date of writing Report June 19 38 When handed in at Local Office

Port of Copenhagen

Received at London Office 12 1938

No. in Survey held at Copenhagen, Glinae, Nalborg

Date, First Survey 14. September 1937 Last Survey June 19 38

(Number of Visits)

Reg. Book.

39064 on the Steel Single Screw Steamer LOTTA

Built at Nalborg

By whom built Nalborg Verft A/S

Yard No. 58

Tons { Gross  
Net

When built 1938.

Engines made at Glinae

By whom made A/S Helsingørsk Maskinfabrik

Engine No. 341

When made 1938.

EXHAUST STEAM TURBINE AND GEAR

By whom made A/S Atlas

TURBINE No. 159

When made 1938

Boilers made at Copenhagen

By whom made A/S Atlas

Boiler No. 159

Shaft Horse Power at Full Power TURBINE 375

Owners Pampstøbselskabet, København

Port belonging to

Nom. Horse Power as per Rule 234

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

Trade for which Vessel is intended Ocean going service

EXHAUST  
STEAM TURBINE ENGINES, &c.—Description of Engines

Exhaust steam turbine connected by chain drive to the thrust shaft.

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

direct coupled to { Alternating Current Generator phase periods per second } rated Kilowatts Volts at revolutions per minute;  
for supplying power for driving { Direct Current Generator }  
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.		
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.
						above wheel					
						88.5 3/4	78 1 3/4	1			
						133 5 3/4	829 3/4	1			

Shaft Horse Power at each turbine { H.P. 375 IHP. } Revolutions per minute, at full power, of each Turbine Shaft { H.P. 365 1/4 }  
1st reduction wheel  
main shaftRotor Shaft diameter at journals { H.P. 75 1/4 } Pitch Circle Diameter { 1st pinion 97.25 1/4 } 1st reduction wheel 1062.75 1/4 Width of Face { 1st reduction wheel 2x125 1/4 }  
main wheelDistance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 204 1/4 } 1st reduction wheel 198 1/4  
main wheelFlexible Pinion Shafts, diameter { 1st 130 1/4 } Pinion Shafts, diameter at bearings { 1st 80 1/4 } diameter at bottom of pinion teeth { 1st 89.79 1/4 }  
2ndWheel Shafts, diameter at bearings { 1st 180.78 1/4 - 165 1/4 } Generator Shaft, diameter at bearings  
main Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter as per rule Thrust Shaft, diameter at collars as fitted Tube Shaft, diameter as fitted

Screw Shaft, diameter as per rule Is the tube shaft fitted with a continuous liner Bronze Liners, thickness in way of bushes as per rule  
as fitted

Thickness between bushes 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 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. Turbine 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 Lubricating Oil Pumps, including Spare Pump, No. and size

Ballast Pumps, No. and size Are two independent means arranged for circulating water through the Bilge Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room

In Holds, &amp;c. Main Water Circulating Pump Direct Bilge Suctions, No. and size Independent Power Pump Direct Suctions to the Engine 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 the Overboard Discharges above or below the deep water line

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Blow Off Cocks fitted with a spigot and brass covering plate

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel How are they protected Have they been tested as per rule

What pipes pass through the bunkers What pipes pass through the deep tanks 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

W1158-0128

BOILERS, &c.—(Letter for record)

Total Heating Surface of Boilers

Is Forced Draft fitted

No. and Description of Boilers

Working Pressure

Is a Report on Main Boilers now forwarded?

Is a Donkey  
(an Auxiliary) Boiler fitted?

If so, is a report now forwarded?

Plans. Are approved plans forwarded herewith for Shafting  
(If not state date of approval)

Main Boilers

Auxiliary Boilers

Donkey Boilers

Superheaters

General Pumping Arrangements

Oil Fuel Burning Arrangements

Spare Gear.

State the articles supplied:—

2 set of bearing brasses for turbine shaft - 1 ball bearing for  
the pinion shaft - 6 links for 3 inch Rendel chain - 2 springs for friction clutch  
2 springs for flexible chain wheel, 24 bushes for elastic coupling.

AKTIESELSKABET ATLAS

Manufacturer.

The foregoing is a correct description,

Dates  
of Survey  
while  
building

(During progress of  
work in shops - -  
During erection on  
board vessel - - -  
Total No. of visits

1937. 14/9 - 20/9 - 16/11 - 24/11 - 2/12 - 4/12 - 16/12 - 28/12 1938 13/1 - 1/2 - 10/2 - 12/2 - 2/3 - 9/3 - 14/3 - 18/3

Dates of Examination of principal parts—Casings

14/9 - 24/11 - 2/12

Rotors

16/11 - 24/11 - 4/12

Blading

16/12 - 28/12

Gearing

16/11 - 24/11 - 4/12 - 12/12

Wheel shaft

16/11 - 24/11 - 1/2

Thrust shaft

Intermediate shafts

Tube shaft

Screw shaft

Propeller

Stern

Engine and boiler settings

Engine holding down bolts

Completion of pumping arrangements

Boilers fixed

Engines tried under steam

Main boiler safety valves adjusted

Thickness of adjusting washers

LLOYD'S No 12681

ROTOR AND  
Rotor shaft, Material and tensile strength

Siemens Martin high tensile steel forging : 57.8 Tons 10"

Identification Mark 4.4.12.37

Flexible Pinion Shaft, Material and tensile strength

Identification Mark

LLOYD'S No 12628

Pinion shaft, Material and tensile strength

Siemens Martin high tensile steel forging : 62.2 Tons 10"

Identification Mark 4.13.1.38

1st Reduction Wheel Shaft, Material and tensile strength

Siemens Martin high tensile steel forging : 62.6 Tons 10"

Identification Mark 4.1.2.38

Wheel

2145

Material

Steel forging

46.1 Tons 10"

Identification Mark 4.13.1.38

Thrust shaft, Material

Identification Mark

LLOYD'S No 4078

SHALL CHAIN WHEEL : S.H. high tensile steel

49.3 Tons 10"

Identification Marks 4.9.3.38

Tube shaft, Material

Steel forging

32.3 Tons 10"

Identification Marks 4.9.3.38

Intermediate shafts, Material

Siemens Martin high tensile steel forging

49.3 Tons 10"

Identification Marks 4.9.3.38

BOSS FOR FLEXIBLE CHAIN WHEEL

31.0 Tons 10"

Identification Marks 4.9.3.38

LLOYD'S No 918

LAY

Screw shaft, Material

32.1 Tons 10"

Identification Marks 4.9.3.38

Steam Pipes, Material

Cast steel

31.0 Tons 10"

Test pressure

4.9.3.38

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 carrying and burning oil fuel been complied with

Is this machinery a duplicate of a previous case

If so, state name of vessel

Lindholmen Motala Yarn No 960  
(Copenhagen Report No 10556)

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

The exhaust steam turbine and the gear has been built by Messrs P. S. Møller, Copenhagen, the remaining of the installation by Messrs P. S. Møller, Frankrig af Maskinbyggeri, Elsinore, and installed on board by the builders Messrs Halsborg Værft P. S. Halsborg, under Special Survey and in accordance with the Rules, the approved plans and the Secretary's letter E dated 11/5-9/6-9/7-1937

The material has been tested as required by the Rules as per certificates produced as by us and the workmanship is good. On the trial trip the installation was tested under full power and found satisfactory

Recommend the notation of "L.D. turbine with S.R. gearing and chain drive" to be made in the Register Book included in fee on machinery report.

The amount of Entry Fee

£

When applied for,

11.7.38

Special

£

4.8.00

Donkey Boiler Fee

£

When received,

Travelling Expenses (if any)

£

4.5.00

10.12.38

L. S. Hansen

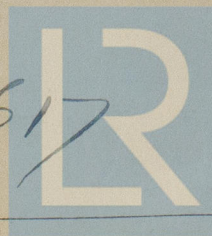
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 15 JUL 1938

Assigned

See Spec. J.E. 10617



© 2020

Lloyd's Register  
Foundation

Surveyor Office, Copenhagen

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

Is a Report also sent on the Hull of the Ship?

[2m, 37. Copyable Ink.]