

# REPORT ON MACHINERY.

No. 1991

Received at London Office

Date of writing Report 12 Nov 1920 When handed in at Local Office

Port of Stockholm

No. in Survey held at Saltsjö-järta, Stockholm lida

Date, First Survey 15 Nov 1918

Last Survey 26 Oct 1920

THU. NOV. 18 1920

Reg. Book.

(Number of Visits 13)

Tons } Gross

Net

Master Built at Landskrona By whom built Ketubofaget Öresundsvarvet Nr 18 When built 1920

Engines made at Stockholm By whom made A.B. de Laval's Ångturbin when made 1920

Boilers made at By whom made when made

Registered Horse Power Owners Det Överröiske Compagnie when made

Shaft Horse Power at Full Power 2000 Is Refrigerating Machinery fitted for cargo purposes Port belonging to Copenhagen

Is Electric Light fitted

TURBINE ENGINES, &c.—Description of Engines 2 de Laval Geared Steam Turbines No. of Turbines Two

Diameter of Rotor Shaft Journals, H.P. 110 mm L.P. 110 mm Diameter of Pinion Shafts First Gears LP } 90 mm Second gears 200 mm

Diameter of Journals First gears 90 mm Second gears 200 mm Distance between Centres of Bearings First gears 1105 mm Second gears 1085 mm Diameter of Pitch Circle First pinions HP 101.036 mm Second pinions 249.863 mm

Diameter of Wheel Shaft First gears 150-200 mm Second gears 320 mm Distance between Centres of Bearings First gears 1160 mm Second gears 1160 mm Diameter of Pitch Circle of Wheel First gears 933.576 mm Second gears 1629.54 mm

Width of Face First gear two 265 mm Second gear two 325 mm Diameter of Thrust Shaft under Collars 250 mm Diameter of Tunnel Shaft as per rule

No. of Screw Shafts Diameter of same as fitted Diameter of Propeller Pitch of Propeller

No. of Blades State whether Moveable Total Surface Diameter of Rotor Blade rings H.P. 730 mm L.P. 900 mm Astern 850 mm

Thickness at Bottom of Groove, H.P. L.P. Astern Revs. per Minute at Full Power, Turbine HP 4520 LP 4035 Propeller 75

## PARTICULARS OF BLADING.

|           | H.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. |
| EXPANSION | 24 mm             | 757 mm           | 1            | 38 mm             | 861 mm           | 1            | HP 1 exp. 140 mm           | 699 mm           | 1            |
| "         | 15 "              | 748 "            | 1            | 55 "              | 898 "            | 1            | 7 in L.P. exp. 78 to 87 mm | 932 to 940 mm    | 1            |
| "         | 18 "              | 751 "            | 1            | 85 "              | 949 "            | 1            | " 2 exp. 112 to 120 mm     | 966 to 974 mm    | 1            |
| "         | 24 "              | 757 "            | 1            | 110 "             | 994 "            | 1            |                            |                  |              |
| "         | 33 "              | 766 "            | 1            | 135 "             | 1039 "           | 1            |                            |                  |              |

and size of Feed pumps  
and size of Bilge pumps  
and size of Bilge suction in Engine Room

In Holds, &c.

of Bilge Injections sizes Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine Room & size

all the bilge suction pipes fitted with roses. Are the roses in Engine room always accessible

all connections with the sea direct on the skin of the ship. Are they Valves or Cocks

they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates. Are the Discharge Pipes above or below the deep water line

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

at pipes are carried through the bunkers. How are they protected

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

the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

Screw Shaft Tunnel watertight. Is it fitted with a watertight door. worked from

ERS, &c.—(Letter for record ) Manufacturers of Steel

Heating Surface of Boilers Is Forced Draft fitted No. and Description of Boilers

Working Pressure Tested by hydraulic pressure to Date of test No. of Certificate

each boiler be worked separately. Area of fire grate in each boiler No. and Description of Safety Valves to

Area of each valve. Pressure to which they are adjusted. Are they fitted with easing gear

distance between boilers or uptakes and bunkers or woodwork. Mean dia. of boilers. Length. Material of shell plates

Range of tensile strength. Are the shell plates welded or flanged. Descrip. of riveting: cir. seams

Diameter of rivet holes in long. seams. Pitch of rivets. Lap of plates or width of butt straps

ages of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell

plates No. and Description of Furnaces in each Boiler Material Outside diameter

top crown Thickness of plates Description of longitudinal joint No. of strengthening rings

bottom bottom pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom

of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules

Material of stays. Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space

Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays

water at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom

Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules

pitch of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays

across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and

ness of girder at centre Length as per rule Distance apart Number and pitch of stays in each

ing pressure by rules Steam dome: description of joint to shell % of strength of joint Diameter

ness of shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets

ing pressure of shell by rules Crown plates: Thickness How stayed



SUPERHEATER. Type

Date of Approval of Plan

Tested by Hydraulic Pressure to

Date of Test

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Diameter of Safety Valve

Pressure to which each is adjusted

Is Easing Gear fitted

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:-

In accordance with the Standard List of the de Laval Turbine Works, which has been approved by Owners. The spare gear will be inspected when the machinery is being fitted in ship.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building

15.2/11 1918 21/2 27/7 8/9 7.9/10 11/11 18/12 1919 28/1 7.13/9 26/10 1920

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts

Casings 7/10 11/11 1919

Turbine blades

Blading 7/9 20

Gearing 7/9 20

Rotor shaft

Wheel and Thrust shaft 28.7.19

Tunnel shafts

Screw shaft

Propeller

Stern tube

Steam pipes tested

Engine and boiler seatings

Engines holding down bolts

Completion of pumping arrangements

Boilers fixed

Engines tried under steam 27.8.1920

Main boiler safety valves adjusted

Thickness of adjusting washers

Material and tensile strength of Rotor shaft

HP S.M. Steel 646 kg/cm2

Identification Mark on DoLP

Material and tensile strength of Pinion shaft

HP Chromnickel-electrosteel 80.6 kg/cm2

Identification Mark on Do

Materials of Wheel shafts

Identification Mark on Do

Material of Thrust shaft S.M. Steel

Identification Mark on Do

Material of Tunnel shafts

Identification Marks on Do

Material of Screw shafts

Identification Marks on Do

Material of Steam Pipes

Test pressure

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 Section 49 of the Rules 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. These steam turbines have been constructed in special survey in accordance with the Society's Rules and as approved in correspondence (see Secretary's E. dated 18 Oct. 14th Nov. and 13th Dec. 1918). The materials of the shafting are Siemens Martin Steel and Chromnickel-electrosteel, tested and found to agree with the approved specifications of Material. The condensers have been tested with water and found tight. The workmanship is good. The machinery has been tested in shop and found to work well. I am of opinion, that this machinery is eligible to be classed as soon as it has been fitted in ships in accordance with the Society's Rules for

\*LMC

Certificate (if required) to be sent to Committee's Minute.

Table with columns for fees: The amount of Entry Fee, Special survey in shop, Donkey Boiler Fee, Travelling Expenses, Total. Includes dates for when applied for and when received.

Signature of A. Bakson, Engineer Surveyor to Lloyd's Register of Shipping, assisted by Mr. T. J. Anderson.

Committee's Minute FRI. 4 MAR. 1921

Assigned

