

Complimentary report to Stockholm report No. 1991.
" " " Bremen " " 466.

Rpt. 4a.

REPORT ON MACHINERY.

No. 248.

Received at London Office FEB. 29 1921

Date of writing Report 31st Jan. 1921 When handed in at Local Office 31st Jan. 1921, Port of Malmö
No. in Survey held at Landskrona Date, First Survey 31st March, 1920 Last Survey 11th January 1921.
Reg. Book. 77433 on the Steel h.s. "ATLANTIC" (Number of Visits 12)
Master A. Seger Jensen Built at Landskrona By whom built AB. Öresundsvarvet When built 1921-1
Engines made at Stockholm By whom made AB. de Laval's Ångturbin when made 1921
Boilers made at Vegesack By whom made Bremer Vulkan when made 1921
Now Registered Horse Power 420 Owners A/S Det Oversøiske Compagnie Port belonging to Copenhagen
Shaft Horse Power at Full Power 2000 Is Refrigerating Machinery fitted for cargo purposes no. Is Electric Light fitted yes.

TURBINE ENGINES, &c.—Description of Engines 2 de Laval Geared Steam Turbines No. of Turbines 2
Diameter of Rotor Shaft Journals, H.P. ✓ L.P. ✓ Diameter of Pinion Shaft ✓
Diameter of Journals ✓ Distance between Centres of Bearings ✓ Diameter of Pitch Circle ✓
Diameter of Wheel Shaft ✓ Distance between Centres of Bearings ✓ Diameter of Pitch Circle of Wheel ✓
Width of Face ✓ Diameter of Thrust Shaft under Collars ✓ Diameter of Tunnel Shaft as per rule 325 mm.
No. of Screw Shafts 1 No. of same as fitted 385 mm. Diameter of Propeller 5270 mm Pitch of Propeller 4750 mm.
No. of Blades 4 State whether Moveable No. Total Surface 9.1 m² Diameter of Rotor Drum, H.P. ✓ L.P. ✓ Astern ✓
Thickness at Bottom of Groove, H.P. ✓ L.P. ✓ Astern ✓ Revs. per Minute at Full Power, Turbine 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.
1ST EXPANSION									
2ND "									
3RD "									
4TH "									
5TH "									
6TH "									
7TH "									
8TH "									

No. and size of Feed pumps Two 7" x 9 1/2" x 21 Weirs. One auxiliary pump 150 x 115 x 250 mm Duplex.
No. and size of Bilge pumps Two 130 mm x 150 mm. Ballast pump 200 x 300 x 400 mm Duplex. Auxiliary condenser pump 180 x 130 x 150 mm capable of pumping in from bilge system to over board.
No. and size of Bilge suction in Engine Room Four 3 1/2". One on each side of pump room. retained in hold.
In Holds, &c. Seven 3 1/2". One on each side of pump room. retained in hold.

No. of Bilge Injections 1 sizes 10" Connected to condenser circulating pump yes Is a separate Donkey Suction fitted in Engine Room & size as per plan.
Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes
Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks both yes
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes Are the Discharge Pipes above or below the deep water line above
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 brass covering plate yes
What pipes are carried through the bunkers none How are they protected
Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes
Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes
Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from upper deck.

BOILERS, &c.—(Letter for record S) Manufacturers of Steel
Total Heating Surface of Boilers 5580 Is Forced Draft fitted yes No. and Description of Boilers 3 S.B.
Working Pressure 200 Tested by hydraulic pressure to yes Date of test No. of Certificate
Can each boiler be worked separately yes Area of fire grate in each boiler No. and Description of Safety Valves to each boiler Two spring-loaded Area of each valve 2 x 12.6 m² Pressure to which they are adjusted 204 lbs per sq. in. Are they fitted with easing gear yes
Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers Length Material of shell plates
Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams
long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps
Per centages of strength of longitudinal joint rivets plates Working pressure of shell by rules Size of manhole in shell
Size of compensating ring No. and Description of Furnaces in each Boiler Material Outside diameter
Length of plain part top crown bottom Thickness of plates Description of longitudinal joint No. of strengthening rings
Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom
Pitch 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
Diameter 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
Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays
Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each
Working pressure by rules Steam dome; description of joint to shell % of strength of joint Diameter
Thickness of shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets
Working 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 yes
Diameter of Safety Valve 1 1/2" Pressure to which each is adjusted 204 lbs. per sq. in. Is Easing Gear fitted No.

IS A DONKEY BOILER FITTED? No. If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied:— 2 bolts and nuts for each size of rotor bearing; 2 bolts and nuts main gear wheel bearing; 2 bolts and nuts pinion bearing; 1 set of coupling bolts of each size used; One twentieth of total number of bolts and nuts for each gear case joint; One twentieth of total number for each turbine chain joint; 2 thermometers for oil circulating system; 1 set of bearing bushes for one gear wheel shaft; 1 set of bearing bushes for rotor; 1 set of bearing bushes for pinion shafts. One half set of packing rings for each gland of rotor shafts so fitted and half the number of springs fitted. Sufficient pads for one face of Mitchell type of main thrust block; One set of pads of Mitchell type for one turbine of each size fitted; 1 set of liners for adjusting blocks of different thicknesses; 1 set of feed pump valves; 1 set of valves for lubricating oil pump; 1 bucket and hood for lubricating oil pump; 1 escape valve spring of each size fitted; A quantity of assorted bolts, studs and nuts, bars and plates of iron or mild steel. — One propeller; one propeller shaft; Suitable spare gear for all auxiliary pumps; 20 ordinary boiler tubes, 5 stay tubes, 10 workshop tubes and packing glands for same; 1 set of boiler feed check valves; 1 set of safety valve springs etc. etc.

The foregoing is a correct description,
AKTIEBOLAGET ÖRESUNDSVARVET Manufacturer.
Lundström & Söner

Dates of Survey while building { During progress of work in shops -- 3 1/3, 23/9, 29/9, 29/9, 24/10, 29/10, 7/12, 30/12, 1920 3/1, 4/1, 10/1, 11/1 1921
During erection on board vessel --- 12
Total No. of visits 12
Is the approved plan of main boiler forwarded herewith No. Copy retained in hands

Dates of Examination of principal parts—Casings ✓ Rotors ✓ Blading ✓ Gearing ✓
Rotor shaft ✓ Thrust shaft 29/9/20 Tunnel shafts 29/9/20 Screw shaft 29/9/20 Propeller 29/9/20
Stern tube 29/9/20 Steam pipes tested 7/12/20 Engine and boiler seatings 30/12/20 Engines holding down bolts 30/12/20
Completion of pumping arrangements 10/1/21 Boilers fired 10/1/21 Engines tried under steam 11/1/21
Main boiler safety valves adjusted 10/1/21 Thickness of adjusting washers Double nuts fitted
Material and tensile strength of Rotor shaft ✓ Identification Mark on Do. ✓
Material and tensile strength of Pinion shaft ✓ Identification Mark on Do. ✓
Material of Wheel shaft ✓ Identification Mark on Do. ✓ Material of Thrust shaft ✓ Identification Mark on Do. ✓
Material of Tunnel shafts Steel Identification Marks on Do. 3101, 4102, 4189, 5093, 5094 Steel Identification Marks on Do. No. 5106
Material of Steam Pipes Steel Test pressure 600 lbs. " " " " No. 5176
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 Section 49 of the Rules been complied with yes
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.) This machinery has been fitted on board under the usual conditions of Special Survey. The workmanship appears to be good in every respect.
No liners fitted on propeller shaft.
The machinery, having been tried under steam and found working satisfactorily, is eligible in my opinion to be classed LMC 1,21 in the Society's Register Book.
The Stockholm report No. 199, forwarded to Malmö for our guidance is returned herewith.

The amount of Entry Fee	... \$kr. ✓ 109.20	When applied for,
Special	... \$kr. ✓ 400.00	17/1 1921
Donkey Boiler Fee	... £ :	When received,
Travelling Expenses (if any)	£ :	28/1 1921

Engineer Surveyor to Lloyd's Register of Shipping.
G. J. J. J. J.

Committee's Minute FRI. 4 MAR. 1921
Assigned + LMC 1.21
Listed for oil fuel 1.21
F. P. above 150°F.