

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

Rpt. 4a.

REPORT ON MACHINERY.

No. 278

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 Ängturbin when made 1921

Boilers made at Vegesack By whom made Bremer Vulkan when made 1921

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 liners as per rule 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 200 x 400 mm Duplex. Auxiliary condenser pumps 180 x 120 x 200 mm Duplex. Sanitary 120 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". Clear one place of pumping arr. retained in hold. In Holds, &c. seven 3 1/2". Place one place of pumping arr. 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 bunks 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 cm² Pressure to which they are adjusted 207 lbs per sq. in. Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunks 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 ✓ Description of longitudinal joint ✓ No. of strengthening rings ✓
 bottom ✓ bottom ✓
 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 joints. 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 shaft. 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 Michell type of main thrust block. One set of pads of Michell type for one turbine of each size fitted; 1 set of liners for adjusting block 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 water or 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.
Manufactured by Öresund

Dates of Survey while building
 During progress of work in shops --- *3/3, 23/9, 29/9, 29/9, 24/10, 29/10, 7/12, 30/12, 1920 3/1, 7/1, 10/1, 11/2 1921*
 During erection on board vessel ---
 Total No. of visits *12* Is the approved plan of main boiler forwarded herewith *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 fixed *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. *Lloyd's No. 3101, 4102, 4189, 5093, 5094* Material of Screw shafts *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	£	109.20	When applied for,
Special	£	400.00	17/1 19/31
Donkey Boiler Fee	£	:	When received,
Travelling Expenses (if any)	£	:	28/1 19/21

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

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



Certificate (if required) to be sent to the Registrar of Shipping, Malmö.