

## REPORT ON MACHINERY.

No. 780

Received at London Office

21 FEB 1927

Date of writing Report *18<sup>th</sup> Feb. 1927* When handed in at Local Office *19<sup>th</sup> Feb. 1927* Port of *Malmo*  
 No. in Survey held at *Malmo* Date, First Survey *12<sup>th</sup> Feb. 1926* Last Survey *1<sup>st</sup> Feb. 1927*  
 Reg. Book *19180* on the *Steel single screw steamer "Gertrud Bratt"* (Number of Visits *47*)  
 Master *✓* Built at *Malmo* By whom built *Kockums Mek. V. 903* Tons { Gross *1511*  
 Engines made at *Malmo* By whom made *Kockums Mek. V. 903* when made *1927* Net *843*  
 Boilers made at *Malmo* By whom made *Kockums Mek. V. 903* when made *1927*  
 Registered Horse Power *✓* Owners *Angfartings No. Osterjörn* Port belonging to *Göteborg*  
 Nom. Horse Power as per Section 28 *140* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines *Triple expansion* No. of Cylinders *3* No. of Cranks *3*  
 Dia. of Cylinders *18 1/2, 29 1/8, 48* Length of Stroke *33 1/16* Revs. per minute *90* Dia. of Screw shaft *280<sup>m</sup>* as per rule *280<sup>m</sup>* Material of *Steel*  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube *No liner fitted* Is the after end of the liner made water tight  
 Is the propeller boss *✓* If the liner is in more than one length are the joints burned *✓* 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 *Oil gland fitted* Length of stern bush *1150<sup>m</sup>*  
 Dia. of Tunnel shaft *232<sup>m</sup>* as per rule *232<sup>m</sup>* Dia. of Crank shaft journals *248<sup>m</sup>* as per rule *248<sup>m</sup>* Dia. of Crank pin *248<sup>m</sup>* Size of Crank webs *376 x 180<sup>m</sup>* Dia. of thrust shaft under  
 collars *248<sup>m</sup>* Dia. of screw *393<sup>m</sup>* Pitch of Screw *3.72 meter* No. of Blades *4* State whether moveable *No* Total surface *4.61 meter*  
 No. of Feed pumps *2* Diameter of ditto *70<sup>m</sup>* Stroke *420* Can one be overhauled while the other is at work *Yes*  
 No. of Bilge pumps *2* Diameter of ditto *70<sup>m</sup>* Stroke *420* Can one be overhauled while the other is at work *Yes*  
 No. of Donkey Engines *3* Sizes of Pumps *190 x 125 x 125*  
*170 x 200 x 250*  
*150 x 100 x 150* No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room *Four - 2 1/2* In Holds, &c. *Main hold, two - 2 1/2. After hold, two - 2 1/2.*  
 No. of Bilge Injections *1* sizes *4 1/2"* Connected to condenser, or to circulating pump *circ. pump* a separate Donkey Suction fitted in Engine room & size *Yes 3 1/2"*  
 Are all the bilge suction pipes fitted with roses *Yes* Are the roses in Engine room always accessible *Yes* Are the sluices on Engine room bulkheads always accessible  
 Are all connections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *Both*  
 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*  
 That pipes are carried through the bunkers *Fore hold suction* How are they protected *Fitted below bilge ceiling*  
 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 level with main deck *Yes*

BOILERS, &c.—(Letter for record *S*) Manufacturers of Steel *Mannesmannröhren Werke AGt Schulz Knapp*  
 Total Heating Surface of Boilers *2068* Is Forced Draft fitted *No* No. and Description of Boilers *2 single ended multitubular*  
 Working Pressure *185 lbs. per sq. in.* Tested by hydraulic pressure to *328 lbs. per sq. in.* Date of test *22<sup>nd</sup> Dec. 1926* No. of Certificate *48849*  
 Can each boiler be worked separately *Yes* Area of fire grate in each boiler *35 sq. feet* No. and Description of Safety Valves to  
 each boiler *Two, spring loaded* Area of each valve *33 1/8 sq. in.* Pressure to which they are adjusted *190 lbs. per sq. in.* Are they fitted with easing gear *Yes*  
 Smallest distance between boilers or uptakes and bunkers or woodwork *12"* Mean dia. of boilers *3305.5<sup>m</sup>* Length *3400<sup>m</sup>* Material of shell plates *Steel*  
 Thickness *23.5<sup>m</sup>* Range of tensile strength *28-32 tons* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams *all in lap*  
 Butt straps of equal width *Yes* Diameter of rivet holes in long. seams *25<sup>m</sup>* Pitch of rivets *72.4<sup>m</sup>* Lap of plates or width of butt straps *380<sup>m</sup>*  
 Percentages of strength of longitudinal joint *97.0%* Working pressure of shell by rules *186 lbs. per sq. in.* Size of manhole in shell *390 x 490<sup>m</sup>*  
 Size of compensating ring *210 x 235<sup>m</sup>* No. and Description of Furnaces in each boiler *2 corrugated* Material *S.M. Steel* Outside diameter *1050<sup>m</sup>*  
 Length of plain part *2513* Thickness of plates *13* Description of longitudinal joint *Welded* No. of strengthening rings *type*  
 Working pressure of furnace by the rules *185 lbs.* Combustion chamber plates: Material *S.M. Steel* Thickness: Sides *17* Back *17* Top *17* Bottom *19*  
 Pitch of stays to ditto: Sides *200 x 170* Back *86 x 186* Top *200 x 200* If stays are fitted with nuts or riveted heads *Both* Working pressure by rules *185 lbs.*  
 Material of stays *Steel* Outside diam. *1 1/2"* Area supported by each stay *62 sq. in.* Working pressure by rules *199 lbs.* End plates in steam space:  
 Material *Steel* Thickness *24* Pitch of stays *320 x 414* How are stays secured *as per plan* Working pressure by rules *185 lbs.* Material of stays *Steel*  
 Area at smallest part *49 sq. in.* Area supported by each stay *205.4 sq. in.* Working pressure by rules *185 lbs.* Material of Front plates at bottom *Steel*  
 Thickness *24<sup>m</sup>* Material of Lower back plate *Steel* Thickness *24<sup>m</sup>* Greatest pitch of stays *as per plan* Working pressure of plate by rules *185 lbs.*  
 Diameter of tubes *3"* Pitch of tubes *08 x 105* Material of tube plates *Steel* Thickness: Front *24<sup>m</sup>* Back *20<sup>m</sup>* Mean pitch of stays *as per plan*  
 Pitch across wide water spaces *356<sup>m</sup>* Working pressures by rules *185 lbs.* Girders to Chamber tops: Material *Steel* Depth and  
 thickness of girder at centre *160 x 24* Length as per rule *695<sup>m</sup>* Distance apart *200<sup>m</sup>* Number and pitch of stays in each *Two - 200<sup>m</sup>*  
 Working pressure by rules *185 lbs.* Steam dome: description of joint to shell *✓* % of strength of joint *✓*  
 Thickness of shell plates *✓* Material *✓* Description of longitudinal joint *✓* Diam. of rivet holes *✓*  
 Working pressure of shell by rules *✓* Crown plates *✓* Thickness *✓* How stayed *✓*

SUPERHEATER. Type *✓* Date of Approval of Plan *✓* Tested by Hydraulic Pressure to *✓*  
 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?

No

If so, is a report now forwarded?

✓

SPARE GEAR.

State the articles supplied:— 2 connecting rod top end bolts with nuts, 2 main bearing bolts, 6 connecting bolts, 2 bilge and 2 feed pump valves, 3 H.P., 3 I.P. and 1 L.P. piston ring, 16 piston springs. A supply of bolts and nuts. Iron of various sizes. Check valves, cylinder cover bolts, junkie ring bolts and slide valve chest bolts. Boiler tubes and condenser tubes with glands in sufficient number. 2 safety valve springs.

2 bow rod bottom end bolts?

The foregoing is a correct description,

KOCKUMS MEKANISK VERKSTADS

A. Muel

C.B. Manufacturer.

Dates of Survey while building { During progress of work in shops - - 26/4, 17/5, 1/6, 3/6, 11/6, 29/6, 14/7, 16/7, 30/7, 10/8, 12/8, 17/8, 18/8, 23/8, 26/8, 2/9, 4/9, 18/9, 30/9  
During erection on board vessel - - 11/10, 2/10, 13/10, 19/10, 26/10, 29/10, 30/10, 11/11, 11/11, 21/11, 5/12, 9/12, 10/12, 15/12, 16/12, 13/1, 24/1, 26/1, 30/1 - 1926 13/1, 13/2  
Total No. of visits 47  
Is the approved plan of main boiler forwarded herewith retained in London. yes

Dates of Examination of principal parts—Cylinders 26/4, 17/5, 1/6, 3/6, 11/6, 30/7/26 Covers 18/6/26 Pistons 17/5, 30/7/26 Rods 17/5, 30/7/26

Connecting rods 30/7/26 Crank shaft 10/8/26 Thrust shaft 26/8/26 Tunnel shafts 26/8/26 Screw shaft 26/8/26 Propeller 22/1/27

Stern tube 18/6/26 Steam pipes tested 25/1/27 Engine and boiler seatings 17/5/26 Engines holding down bolts 22/1/27

Completion of pumping arrangements 22/1/27 Boilers fixed 3/1/27 Engines tried under steam 3/1/12-1927

Completion of fitting sea connections 22/1/27 Stern tube 22/1/27 Screw shaft and propeller 22/1/27

Main boiler safety valves adjusted 3/1/27 Thickness of adjusting washers Double nuts fitted.

Material of Crank shaft Steel Identification Mark on Do. 18/26 G.W. 7 Material of Thrust shaft Steel Identification Mark on Do. 26/8/26

Material of Tunnel shafts Steel Identification Marks on Do. 26/8/26 G.W. 7 Material of Screw shafts Steel Identification Marks on Do. 26/8/26

Material of Steam Pipes Steel ✓ Test pressure 555 lbs. per sq. in.

Is an installation fitted for burning oil fuel No ✓ 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 duplicate of a previous case Yes ✓ If so, state name of vessel "Tyra Bratt" ✓

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel is eligible in my opinion to be classed in the Register Book with the notation of L.M.C. 2.27 O.G. in column 7. Boiler pressure 185 lbs. per sq. in.

It is submitted that this vessel is eligible for THE RECORD. + LMC 2. 27. OG.

21/2/27

The amount of Entry Fee ... £ 54:60 ✓ When applied for, 18/2, 1927  
Special ... £ 641:55 ✓  
Donkey Boiler Fee ... £ : ✓  
Examination of fitting ... £ : ✓  
Travelling Expenses (if any) £ 140:00 ✓ When received, 21. 3. 27

Committee's Minute FRI. 25 FEB 1927  
Assigned + L.M.C. 2:27 O.G.

Quin Jensen  
Engineer Surveyor to Lloyd's Register of Shipping.