

# REPORT ON BOILERS.

No. 9

Received at London Office

12 SEP 1927

Date of writing Report 6<sup>th</sup> AUGUST 1927 When handed in at Local Office

192 Port of Leningrad

No. in Survey held at Leningrad

Date, First Survey 1<sup>st</sup> MARCH 1926 Last Survey 4<sup>th</sup> AUGUST 1927

(Number of Visits 44) Gross Tons Net

on the S<sup>s</sup> GREGORY ZINOVIEFF

ster Built at Leningrad By whom built BALTIC SHIPBUILDING YARD Yard No. 165 When built 1927

gines made at Leningrad By whom made BALTIC SHIPBUILDING & ENG<sup>s</sup> YARD Engine No. 165 When made 1927

ilers made at Leningrad By whom made BALTIC SHIPBUILDING & ENG<sup>s</sup> YARD Boilers No. 165 When made 1927

iminal Horse Power 192 Owners SOVIET MERCANTILE FLEET Port belonging to Leningrad.

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel JORSKY STEEL WORKS, KOLPINO, RUSSIA. (Letter for Record (S))

otal Heating Surface of Boilers 28 Sq. MT. EACH 2 SB. Is forced draught fitted YES Coal or Oil fired COAL

No. and Description of Boilers TWO MARINE RETURN TUBE Working Pressure 13 kg/cm<sup>2</sup> 185#

ested by hydraulic pressure to 327.5 lbs Date of test 18/9/26 No. of Certificate 1000 Can each boiler be worked separately YES

rea of Firegrate in each Boiler 35 sq. m No. and Description of safety valves to each boiler TWO SPRING LOADED

rea of each set of valves per boiler per Rule 5620 sq. m High lift. Pressure to which they are adjusted 13 kg/cm<sup>2</sup> Are they fitted with easing gear YES

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler NONE

Smallest distance between boilers or uptakes and bunkers 450 m/m Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 330 m/m Is the bottom of the boiler insulated No

Largest internal dia. of boilers 3560 m/m Length 3097 m/m Shell plates: Material STEEL Tensile strength 44/51 kg/mm<sup>2</sup>

Thickness 26 m/m Are the shell plates welded or flanged No Description of riveting: circ. seams end DOUBLE

Long. seams T. R. D. B. S. Diameter of rivet holes in circ. seams 29 m/m Pitch of rivets 73.58 m/m

Percentage of strength of circ. end seams plate 60.7% rivets 57% Percentage of strength of circ. intermediate seam plate 60.7% rivets 84.8%

Percentage of strength of longitudinal joint plate 85% rivets 100% combined 93.3% Working pressure of shell by Rules 13.33 kg/cm<sup>2</sup>

Thickness of butt straps outer 20 m/m inner 23 m/m No. and Description of Furnaces in each Boiler TWO MORRISON

Material STEEL Tensile strength 41/47 kg/mm<sup>2</sup> Smallest outside diameter 1017 m/m

Length of plain part top bottom Thickness of plates crown 13.5 m/m bottom Description of longitudinal joint WELD

Dimensions of stiffening rings on furnace or c.c. bottom NONE Working pressure of furnace by Rules 13.5 kg/cm<sup>2</sup>

End plates in steam space: Material STEEL Tensile strength 41/47 kg/mm<sup>2</sup> Thickness 25 x 21 m/m Pitch of stays 375 x 360 m/m

How are stays secured FRONT DOUBLE NUTS. BACK DOUBLE NUTS & RIVETED WASHERS Working pressure by Rules 14.9 kg/cm<sup>2</sup> & 13.2 kg/cm<sup>2</sup>

Tube plates: Material front STEEL back STEEL Tensile strength 41/47 kg/mm<sup>2</sup> Thickness 25 m/m

Mean pitch of stay tubes in nests 208 m/m Pitch across wide water spaces 350 m/m Working pressure front 13.25 kg/cm<sup>2</sup> back 26.8 kg/cm<sup>2</sup>

Girders to combustion chamber tops: Material STEEL Tensile strength 44/51 kg/mm<sup>2</sup> Depth and thickness of girder

at centre 200 m/m x 13 m/m Double Length as per Rule 664 m/m Distance apart 200 m/m No. and pitch of stays

in each 2 @ 210 m/m Working pressure by Rules 14.4 kg/cm<sup>2</sup> Combustion chamber plates: Material STEEL

Tensile strength 41/47 kg/mm<sup>2</sup> Thickness: Sides 15 m/m Back 15 m/m Top 15 m/m Bottom 18 m/m

Pitch of stays to ditto: Sides 200 x 210 m/m Back 200 x 200 m/m Top 200 x 210 m/m Are stays fitted with nuts or riveted over NUTS FITTED

Working pressure by Rules 13 kg/cm<sup>2</sup> Front plate at bottom: Material STEEL Tensile strength 41/47 kg/mm<sup>2</sup>

Thickness 22 m/m Lower back plate: Material STEEL Tensile strength 41/47 kg/mm<sup>2</sup> Thickness 22 m/m

Pitch of stays at wide water space 350 m/m Are stays fitted with nuts or riveted over NUTS FITTED

Working Pressure 15.6 kg/cm<sup>2</sup> Main stays: Material STEEL Tensile strength 44/51 kg/mm<sup>2</sup>

Diameter At body of stay, 60 x 58 m/m No. of threads per inch 6 Area supported by each stay 136000 & 121000 sq. m/m

Working pressure by Rules 13.1 kg/cm<sup>2</sup> Screw stays: Material STEEL Tensile strength 41/47 kg/mm<sup>2</sup>

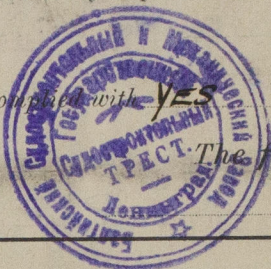
Diameter At turned off part, 1 1/2 No. of threads per inch 9 Area supported by each stay 42000 sq. m/m



Working pressure by Rules  $13 \frac{kg}{cm^2}$  Are the stays drilled at the outer ends *No* Margin stays: Diameter *At turned off part.*  
 No. of threads per inch *9* Area supported by each stay  $58000 \frac{sq}{m}$  Working pressure by Rules  $13.6 \frac{kg}{cm^2}$   
 Tubes: Material *STEEL* External diameter *Plain 76  $\frac{m}{m}$  Stay 76  $\frac{m}{m}$*  Thickness  $3.75 \frac{m}{m}$  No. of threads per inch *9*  
 Pitch of tubes  $104 \times 104 \frac{m}{m}$  Working pressure by Rules  $13.5 \frac{kg}{cm^2}$  Manhole compensation: Size of opening in  
 shell plate  $400 \times 500 \frac{m}{m}$  Section of compensating ring  $250 \frac{m}{m} \times 28 \frac{m}{m}$  No. of rivets and diameter of rivet holes  $38 @ 32 \frac{m}{m} \text{ DIA}$   
 Outer row rivet pitch at ends  $203 \frac{m}{m}$  Depth of flange if manhole flanged  $90 \frac{m}{m}$  Steam Dome: Material  
 Tensile strength Thickness of shell Description of longitudinal joint  
 Diameter of rivet holes Pitch of rivets Percentage of strength of joint  
 Internal diameter Working pressure by Rules Thickness of crown No. and diameter of  
 stays Inner radius of crown Working pressure by Rules  
 How connected to shell Size of doubling plate under dome Diameter of rivet holes and pitch  
 of rivets in outer row in dome connection to shell

Type of Superheater *SMOKE TUBE TYPE* Manufacturers of Tubes *SOUTHERN STEEL TRUST, RUSSIA.*  
 Number of elements *32* Material of tubes *S/D STEEL* Steel castings *BOLSHEVIK STEEL WORKS Leningrad.*  
 Material of headers *CAST STEEL* Tensile strength  $41/55 \frac{kg}{cm^2}$  Thickness *Body 20  $\frac{m}{m}$  PIPE 15  $\frac{m}{m}$*  Can the superheater be shut off and  
 the boiler be worked separately *YES* Is a safety valve fitted to every part of the superheater which can be shut off from the boiler *YES*  
 Area of each safety valve  $314 \frac{sq}{m}$  Are the safety valves fitted with casing gear *YES* Working pressure as per  
 Rules Pressure to which the safety valves are adjusted  $13.4 \frac{kg}{cm^2}$  Hydraulic test pressure:  
 tubes  $39 \frac{kg}{cm^2}$  castings  $39 \frac{kg}{cm^2}$  and after assembly in place  $26 \frac{kg}{cm^2}$  Are drain cocks or valves fitted  
 to free the superheater from water where necessary *YES*

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with *YES*



The foregoing is a correct description,  
*N. P. Pospelov* Manufacturer.

Dates of Survey: During progress of work in shops - *1926-1/3, 6/3, 13/3, 5/4, 8/4, 19/4, 22/4, 27/4, 13/5, 17/5, 20/5, 27/5, 8/6, 17/6, 28/6, 5/7* Are the approved plans of boiler and superheater forwarded herewith *3/6/25 & 7/5/26*  
 while building: During erection on board vessel - *13/7, 16/7, 20/7, 26/7, 30/7, 4/8, 5/8, 11/8, 20/8, 24/8, 27/8, 30/8, 31/8, 6/9, 7/9, 14/9, 13/9, 18/9, 19/27-21/4, 27/4, 29/4, 23/5, 26/5, 27/5* Total No. of visits *44*  
*10/6, 27/6, 28/6, 4/8/27*

#### GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

These boilers have been constructed under special survey in accordance with the rules and approved plans. The materials and workmanship are sound and good. The boilers have now been fitted on board the above vessel in a satisfactory manner, examined under steam and safety valves adjusted to  $13 \frac{kg}{cm^2}$ . They are in our opinion eligible to be included with the machinery for record of *L.M.C. 8-27*

Survey Fee ... £ : : When applied for. 192  
 Travelling Expenses (if any) £ : : When received. 192

For *H. R. Howells & self*  
*H. M. Crinick*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

*FRI. 7 OCT 1927*

*TUES. 18 OCT 1927*  
*FRI. 17 FEB 1928*

Assigned

*See Minute on*

*Leningrad Rpt No 7*



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