

REPORT ON BOILERS.

No. 18

Date of writing Report 8th Oct 1927 When handed in at Local Office

Received at London Office

Port of Leningrad

No. in Reg. Book. Survey held at Leningrad

Date, First Survey 27th April 1926 Last Survey 7th Oct 1927

on the S^S Tokaristch Krassin

(Number of Visits 42)

Gross Tons
Net

Master Built at Leningrad By whom built Baltic Shipbuilding Yard No. 168 When built 1927

Engines made at Leningrad By whom made Baltic Shipbuilding Eng^y Yard Engine No. 168 When made 1927

Boilers made at Leningrad By whom made Baltic Shipbuilding Eng^y Yard Boiler No. 168 When made 1927

Nominal 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))

Total Heating Surface of Boilers 128 sq mt. each

Is forced draught fitted YES

Coal or Oil fired COAL

No. and Description of Boilers Two Marine Return Tube

Working Pressure 13 kg/cm²

Tested by hydraulic pressure 327.5 lb Date of test 14-1-27 No. of Certificate 1003 Can each boiler be worked separately YES

Area of Firegrate in each Boiler 35 sq mt. No. and Description of safety valves to each boiler Two Spring Loaded

Area of each set of valves per boiler per Rule 5620 sq in as fitted 6640 sq in Pressure to which they are adjusted 13 kg/cm² 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 or woodwork 450 mm Is oil fuel carried in the double bottom under boilers No

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

Largest internal dia. of boilers 3560 mm Length 3097 mm Shell plates: Material STEEL Tensile strength 44/51 kg/mm²

Thickness 26 mm Are the shell plates welded or flanged No Description of riveting: circ. seams end DOUBLE inter TREBLE

long. seams T.R.D.B.S Diameter of rivet holes in circ. seams 29 mm long. seams 29 mm Pitch of rivets 73.58 mm 194 mm

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/cm²

Thickness of butt straps outer 20 mm inner 23 mm No. and Description of Furnaces in each Boiler Two Morrison

Material STEEL Tensile strength 41/47 kg/mm² Smallest outside diameter 1017 mm

Length of plain part top bottom Thickness of plates crown bottom 13.5 mm 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/cm²

End plates in steam space: Material STEEL Tensile strength 41/47 kg/mm² Thickness 25.21 mm Pitch of stays 375 x 360 mm

How are stays secured Front Double Nuts, Back Double Nuts & Riveted Washers Working pressure by Rules 14.9 kg/cm² & 13.2 kg/cm²

Tube plates: Material front STEEL back STEEL Tensile strength 41/47 kg/mm² Thickness 25 mm 21 mm

Mean pitch of stay tubes in nests 208 mm Pitch across wide water spaces 350 mm Working pressure front 13.25 kg/cm² back 26.8 kg/cm²

Girders to combustion chamber tops: Material STEEL Tensile strength 44/51 kg/mm² Depth and thickness of girder

at centre 200 mm x 13 mm double Length as per Rule 664 mm Distance apart 200 mm No. and pitch of stays

in each 2 @ 210 mm Working pressure by Rules 14.4 kg/cm² Combustion chamber plates: Material STEEL

Tensile strength 41/47 kg/mm² Thickness: Sides 15 mm Back 15 mm Top 15 mm Bottom 18 mm

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

Working pressure by Rules 13 kg/cm² Front plate at bottom: Material STEEL Tensile strength 41/47 kg/cm²

Thickness 22 mm Lower back plate: Material STEEL Tensile strength 41/47 kg/mm² Thickness 22 mm

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

Working Pressure 15.6 kg/cm² Main stays: Material STEEL Tensile strength 44/51 kg/mm²

Diameter At body of stay 60.58 mm No. of threads per inch 6 Area supported by each stay 35000 & 121000 sq mm

Working pressure by Rules 13.1 kg/cm² Screw stays: Material STEEL Tensile strength 41/47 kg/mm²

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

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 $58000 \frac{sq}{mm}$ Working pressure by Rules $13.6 \frac{kg}{cm^2}$ ✓
 Tubes: Material *STEEL* ✓ External diameter { Plain $76 \frac{mm}{mm}$ ✓ Thickness $3.75 \frac{mm}{mm}$ ✓ No. of threads per inch *9* ✓
 Pitch of tubes $104 \times 104 \frac{mm}{mm}$ ✓ Working pressure by Rules $13.5 \frac{kg}{cm^2}$ ✓ Manhole compensation: Size of opening in
 shell plate $400 \times 500 \frac{mm}{mm}$ ✓ Section of compensating ring $250 \times 28 \frac{mm}{mm}$ ✓ No. of rivets and diameter of rivet holes $38 @ 32 \frac{mm}{mm}$ ✓
 Outer row rivet pitch at ends $203 \frac{mm}{mm}$ ✓ Depth of flange if manhole flanged $90 \frac{mm}{mm}$ ✓ Steam Dome: Material *✓*
 Tensile strength *✓* Thickness of shell *✓* Description of longitudinal joint *✓*
 Diameter of rivet holes *✓* Pitch of rivets *✓* Percentage of strength of joint { Plate *✓*
 Rivets *✓*
 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.* ✓
 Steel castings *BOLSHEVIK STEEL WORKS, LENINGRAD.* ✓
 Number of elements *32* ✓ Material of tubes *5/8 STEEL* Internal diameter and thickness of tubes $16 \times 3 \frac{mm}{mm}$ ✓
 Material of headers *CAST STEEL* ✓ Tensile strength $4/55 \frac{kg}{mm^2}$ Thickness *Body 20/11, APE 15/11* 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 $314 \frac{sq}{mm}$ ✓ Are the safety valves fitted with easing gear *YES* ✓ Working pressure as per
 Rules $13.5 \frac{kg}{cm^2}$ Pressure to which the safety valves are adjusted $13.3 \frac{kg}{cm^2}$ 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,
H. T. Popov Manufacturer.

Dates { During progress *1926. 2/4, 13/17/5, 3/5, 14/17/6, 15/16, 23/27, 30/6*
 work in shops - - - *1/10, 11, 20, 24, 27, 30/8, 6, 7, 10, 13, 14, 18/9.* Are the approved plans of boiler and superheater forwarded herewith *No*
 while { During erection *1/5, 18, 25/10, 8/11, 15/18, 25, 29/11, 8, 27, 28/12* (If not state date of approval.) *APPROVED 3/6/25 + 7/5/26.*
 building { board vessel - - - *9/7/27, 7/10/27.* Total No. of visits *42*

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. 10-27

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

For *H. R. Howells* & self
H. M. Critch.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute 10th. 18 OCT 1927

Assigned *see minute on*
Leningrad Rpt No. 16
attached



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