

REPORT ON BOILERS.

No. 400

Received at London Office 29 MAY 1929

Date of writing Report 14th May 1929 When handed in at Local Office 14th May 1929 Port of DANZIG
No. in Survey held at DANZIG Date, First Survey 28th July 1928 Last Survey 14th May 1929
Pg. Book. (Number of Visits 19) Gross 2400
2146 on the Steel Co. SORVANGEN Tons Net 1863
Master — Built at DANZIG By whom built The Ins. L. B. & Eng. Co. Ltd No. 54 When built 1929
Engines made at DANZIG By whom made The Ins. L. B. & Eng. Co. Ltd Engine No. 362 When made 1929
Boilers made at DANZIG By whom made The Ins. L. B. & Eng. Co. Ltd Boiler No. 574 1/2 When made 1929
Nominal Horse Power 215 Owners Skibsaktieselskabet Karabien Port belonging to Pol.
(Gorisson & Co. Agents, Agos)

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Vereinigte Stahlwerke A.G. Stahl u. Holzwerkzeugfabrik, Düsseldorf (Letter for Record 5)
Total Heating Surface of Boilers 314 sqm. = 3380 sq ft. Is forced draught fitted yes Coal or Oil fired Coal
No. and Description of Boilers Two, Multitubular Single end Working Pressure 14.5 kgs = 206 lbs.
Tested by hydraulic pressure to 360 lbs. Date of test 14.1.29 No. of Certificate 93-94 Can each boiler be worked separately yes
Area of Firegrate in each Boiler 3.56 sqm. No. and Description of safety valves to each boiler 2, spring loaded
Area of each set of valves per boiler { per Rule 4426 sq mm Pressure to which they are adjusted 14.5 kgs Are they fitted with easing gear yes
as fitted 8836
In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler 7
Smallest distance between boilers or uptakes and bunkers 410 mm Is oil fuel carried in the double bottom under boilers no
Smallest distance between shell of boiler and tank top plating 400 mm Is the bottom of the boiler insulated yes
Largest internal dia. of boilers 4100 mm Length 3500 mm Shell plates: Material steel Tensile strength 49.5-51 kgs.
Thickness 31 mm Are the shell plates welded or flanged - Description of riveting: circ. seams { end double
long. seams double butt str. Diameter of rivet holes in { circ. seams 35 mm Pitch of rivets { 113 mm
long. seams 35 { rivets 220
Percentage of strength of circ. end seams { plate 69-70 Percentage of strength of circ. intermediate seam { plate -
rivets 44.2 70 rivets -
Percentage of strength of longitudinal joint { plate 84.7 70 Working pressure of shell by Rules 14.6 kgs.
rivets 106 70 combined -
Thickness of butt straps { outer 28 mm No. and Description of Furnaces in each Boiler 3, Morison 3.Cf.
inner 23 Tensile strength 42.3-44.2 kgs Smallest outside diameter 978 mm
Material steel Description of longitudinal joint welded
Length of plain part { top 200 mm Thickness of plates { crown 14 mm
bottom - bottom - Working pressure of furnace by Rules 14.6 kgs.
Dimensions of stiffening rings on furnace or c.c. bottom -
End plates in steam space: Material steel Tensile strength 43.1-45.5 kgs Thickness 26 mm Pitch of stays 400 x 370 mm
How are stays secured double nuts & washers Working pressure by Rules 14.8 kgs
Tube plates: Material { front steel Tensile strength { 43.5 kgs Thickness { 24 mm
back - 42.8 23
Mean pitch of stay tubes in nests 240 mm Pitch across wide water spaces 373 mm Working pressure { front 15.4 kgs
back 23.4
Girders to combustion chamber tops: Material steel Tensile strength 46.7-47.4 kgs Depth and thickness of girder
at centre 230 x 18 mm Length as per Rule 830 mm Distance apart 200 mm No. and pitch of stays
in each 3, 200 mm Working pressure by Rules 15.7 kgs Combustion chamber plates: Material steel
Tensile strength 43.2-44.8 kgs Thickness: Sides 16 mm Back 16.5 mm Top 16 mm Bottom 23 mm
Pitch of stays to ditto: Sides 200 mm Back 190 x 216 mm Top 200 mm Are stays fitted with nuts or riveted over nuts
Working pressure by Rules 15.6 kgs Front plate at bottom: Material steel Tensile strength 44.2-44.6 kgs
Thickness 24 mm Lower back plate: Material steel Tensile strength 43.5-44 kgs Thickness 22 mm
Pitch of stays at wide water space 345 mm Are stays fitted with nuts or riveted over nuts
Working Pressure 14.5 kgs Main stays: Material steel Tensile strength 48.4-49.3 kgs
Diameter { At body of stay, 60 x 70 mm No. of threads per inch 6 Area supported by each stay 1480 sq cm
Over threads 58.4 x 68.3 Screw stays: Material steel Tensile strength 46.3-46.9 kgs
Working pressure by Rules 16.8 kgs Diameter { At turned off part, 41 x 36 mm No. of threads per inch 9 Area supported by each stay 400 sq cm
Over threads 44.5 x 29.7

Working pressure by Rules 15.8 kgs Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 44 mm or Over threads 44.5 }
No. of threads per inch 9 Area supported by each stay 542 sq cm Working pressure by Rules 15.2 kgs
Tubes: Material steel External diameter { Plain 89 mm Stay 89 } Thickness { 4 mm 5-6 } No. of threads per inch 9
Pitch of tubes 120 mm Working pressure by Rules 15 kgs Manhole compensation: Size of opening in shell plate 400 x 500 mm Section of compensating ring 860 x 460 x 31 mm No. of rivets and diameter of rivet holes 36 of 25 mm
Outer row rivet pitch at ends 220 mm Depth of flange if manhole flanged 100 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 Schmidt's Patent Manufacturers of { Tubes - Steel castings Nordische Stahlwerke, Hamm }
Number of elements 6 Material of tubes steel Internal diameter and thickness of tubes 21 mm, 2.5 mm
Material of headers cast steel Tensile strength 41-55 kgs Thickness 35/20 mm 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 1964 sq mm Are the safety valves fitted with easing gear yes Working pressure as per Rules 14.5 kgs Pressure to which the safety valves are adjusted 14.5 kgs Hydraulic test pressure: tubes 200 kgs, castings 50 kgs and after assembly in place 50 kgs 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 INTERNATIONAL
SHIPBUILDING AND ENGINEERING CO. LTD**
The foregoing is a correct description,
E. Bingham Manufacturer.

Dates of Survey { During progress of work in shops - 1928 July 28, Sept 19, Oct 2, Nov 17, Dec 8, 1929 Jan 14, 16, 30 Feb. 2, 4, 6, 7, 28 Mar 11 } Are the approved plans of boiler and superheater forwarded ind. sep. cover App. 14.9.28 (If not state date of approval.)
while building { During erection on board vessel - 1929 Mar 27, Apr. 5, 6, May 11, 14 } Total No. of visits 19

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

These boilers have been built under Special Survey in accordance with the approved plan and the requirements of the Rules. Material and workmanship are of good quality.

Both boilers were tested by hydraulic pressure to 360 lbs and were found tight and sound at that pressure. Also under steam they were tight, adjusted their safety valves to 206 lbs.

Mark on boilers: No. 93 - 94.
LLOYD'S TEST
360 lbs.
W.P. 206 lbs
N.S. 14.1.29.
J.G.D.

Survey Fee ... £ : : When applied for, 192
Travelling Expenses (if any) £ : : When received, 192
Please see Machinery Rep.

M. Holle

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 4 JUN 1929

Assigned See Minute on Eng Rpt 700
attached