

# REPORT ON BOILERS.

No. 19522

Date of writing Report 9<sup>th</sup> Sept 1930 When handed in at Local Office

Received at London Office 15 SEP 1930

Port of HAMBURG.

No. in Survey held at Reg. Book.

HAMBURG.

Date, First Survey 13<sup>th</sup> MARCH

Last Survey 29<sup>th</sup> AUGUST 1930

on the Steel Twin Sc. "KAJA KNUTSEN"

Number of Visits 27

Gross Tons Net

Crews, Master

Built at HAMBURG By whom built BLOHM & VOSS

Yard No. 488 When built 1930

Engines made at GOTHENBURG By whom made AKTIEBOLAGET GÖTAVERKEN

Engine No. When made

Boilers made at HAMBURG By whom made BLOHM & VOSS

Boiler No. 1378 When made 1930

Nominal Horse Power

Owners KNUTSEN, KNUT, O. A. S.

Port belonging to HAUGESUND.

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

Manufacturers of Steel Maunermann röhren Werke. Akt. Schulz Krauss - Kunkingen. Gütehoffnungshülle AG - Oberhausen

Total Heating Surface of Boilers 2 x 120 sq. m.

(Letter for Record S.)

No. and Description of Boilers 2 single end. multitubular S. boilers

Coal or Oil fired oil

Tested by hydraulic pressure to 277 lbs. Date of test 27.6.30

Working Pressure 10.5 kgr (150 lbs)

Area of Firegrate in each Boiler - No. and Description of safety valves to each boiler 2 spring loaded

Can each boiler be worked separately yes

Area of each set of valves per boiler (per Rule 7648  $\frac{1}{2}$  in<sup>2</sup> as fitted 11348  $\frac{1}{2}$  in<sup>2</sup>) Pressure to which they are adjusted 10.5 kgr. Are they fitted with easing gear yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

Smallest distance between boilers or uptakes and bunkers or woodwork 690 mm.

Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 3550 mm. Length 3310 mm.

Shell plates: Material S. M. Steel Tensile strength 44-50 kgr

Thickness 23 mm. Are the shell plates welded or flanged flanged

Description of riveting: circ. seams end 100 mm. Pitch of rivets 145 mm.

Long. seams Double butt S. double Diameter of rivet holes in circ. seams 29 mm. long. seams 29 mm.

Percentage of strength of circ. end seams (plate 71% rivets 47%)

Percentage of strength of circ. intermediate seam (plate 80% rivets 91.2% combined 94%)

Percentage of strength of longitudinal joint (plate 80% rivets 91.2% combined 94%)

Working pressure of shell by Rules 11.05 kgr/cm<sup>2</sup>

Thickness of butt straps (outer 20 mm. inner 23 mm.)

No. and Description of Furnaces in each Boiler 2 - Morrison

Smallest outside diameter 1050 mm. 1080

Material S. M. Steel Tensile strength 41-47 kgr

Length of plain part (top bottom) Thickness of plates (crown 15 mm. bottom 15 mm.)

Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.e. bottom

Working pressure of furnace by Rules 13.56 kgr/cm<sup>2</sup>

Head plates in steam space: Material S. M. Steel Tensile strength 41-47 kgr

Are stays secured Double butt - riveted outside washers Thickness 23 mm. Pitch of stays 420 x 420 mm.

Head plates: Material (front back) S. M. Steel Tensile strength 41-47 kgr

Working pressure by Rules 14.3 kgr/cm<sup>2</sup> Thickness 23 mm.

Angle of pitch of stay tubes in nests 192 x 192 mm. Pitch across wide water spaces 370 mm.

Working pressure (front 10.6 kgr/cm<sup>2</sup> back 23.7 kgr/cm<sup>2</sup>)

Stays to combustion chamber tops: Material S. M. Steel Tensile strength 41-47 kgr

Centre 180 mm. - 2 x 15 mm. Length as per Rule 700 mm

Distance apart 220 mm.

Each 2 - 200 mm. Working pressure by Rules 10.55 kgr/cm<sup>2</sup>

Combustion chamber plates: Material S. M. Steel.

Tensile strength 41-47 kgr Thickness: Sides 17 mm. Back 17 mm. Top 17 mm. Bottom 22 mm.

Angle of stays to ditto: Sides 225 x 200 mm. Back 220 x 205 mm. Top 220 x 200 mm. Are stays fitted with nuts or riveted over plates riveted over

Working pressure by Rules 10.5 kgr/cm<sup>2</sup> Front plate at bottom: Material S. M. Steel Tensile strength 41-47 kgr

Thickness 23 mm. Lower back plate: Material S. M. Steel Tensile strength 41-47 kgr

Angle of stays at wide water space 420 mm. Are stays fitted with nuts or riveted over Double butt

Working Pressure 14.3 kgr/cm<sup>2</sup> Main stays: Material S. M. Steel Tensile strength 44-51 kgr

Angle of stays (At body of stay or Over threads) 64 mm. No. of threads per inch 6 Area supported by each stay 420 x 420 mm.

Working pressure by Rules 11.66 kgr/cm<sup>2</sup> Screw stays: Material S. M. Steel Tensile strength 41-47 kgr

Angle of stays (At turned off part or Over threads) 32 mm. No. of threads per inch 9 Area supported by each stay 220 x 205 mm.



Working pressure by Rules 12.3 kg. Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 39 mm. / or 45 mm. / Over threads

No. of threads per inch 9 Area supported by each stay 220 x 205 mm. Working pressure by Rules 18.75 kg/cm<sup>2</sup>

Tubes: Material wt. iron External diameter { Plain 70 mm. / Stay 70 mm. / Thickness 7-8.5 mm. No. of threads per inch 9

Pitch of tubes 96 x 96 mm. Working pressure by Rules 19.5 kg/cm<sup>2</sup> Manhole compensation: Size of opening in shell plate 420 x 520 mm. Section of compensating ring 800 x 800 x 24 mm. No. of rivets and diameter of rivet holes 44 - 29 mm.

Outer row rivet pitch at ends 127 mm. Depth of flange if manhole flanged 88 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 — Manufacturers of { Tubes — / Steel castings —

Number of elements — Material of tubes — Internal diameter and thickness of tubes —

Material of headers — Tensile strength — Thickness — Can the superheater be shut off and the boiler be worked separately —

Is a safety valve fitted to every part of the superheater which can be shut off from the boiler —

Area of each safety valve — Are the safety valves fitted with easing gear — Working pressure as per Rules —

Pressure to which the safety valves are adjusted — Hydraulic test pressure: tubes —, castings — and after assembly in place — Are drain cocks or valves fitted to free the superheater from water where necessary —

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with yes.

The foregoing is a correct description, BLOHM & CO. KÖLN Manufacturer.

Dates of Survey { During progress of work in shops - - 12/3-17/3-25/3-31/3-7/4-14/4-25/4-30/4-2/5 / while building { During erection on board vessel - - 8/5-10/5-15/5-17/5-20/5-23/5-26/5-30/5 / 2/6-24/6-23/6-25/6-27/6-30 / 12/8-13/8-16/8-20/8-29/8-30

Are the approved plans of boiler and superheater forwarded herewith yes (If not state date of approval.)

Total No. of visits 27

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) material and workmanship of these Donkey Boilers are of good quality. The materials used in the construction are made at Works recognized by the Committee and tested by the Society's Surveyors in accordance with the requirements of the Rules. These Donkey Boilers having been constructed under Special Survey in accordance with the approved plan, the Secretary's Letter and otherwise in conformity with the requirements of the Rules are eligible in my opinion to be classed in the Society's Reg. Bk with record "150 lbs."

THICKNESS OF R.D. WELDS.

St. L. D. Boiler: Stb: 26 mm. Port 27 mm.

Port " " 29.5 mm " 25.5 mm.

Survey Fee ... .. £ 14 : 4 : 0 When applied for, 19.1.1921

Travelling Expenses (if any) £ 1 : 16 : 0 When received, 3/24/20

AMB

Ernest Hill  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute Phi. 30 JAN 1931

Assigned Stk + Lmb. 1.31 oil Eng  
CL 2 SB-150 lbs

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