

Rpt. 5a.

REPORT ON BOILERS.

No. 76425

Received at London Office 8 - MAR 1926

Date of writing Report 27th Feb. 1926

When handed in at Local Office

192

Port of HAMBURG

No. in Survey held at

HAMBURG

Date, First Survey 10th July 1925Last Survey 2nd February 1926

40723 on the Steel S.S. Motor V. "RENSBURG"

(Number of Visits 14)

Gross 6200

Tons Net 3716

Master Built at HAMBURG By whom built VULCANWERKE-F.G. Yard No. 639 When built 1926

Engines made at HAMBURG By whom made VULCANWERKE-F.G. Engine No. 639 When made 1926

Boilers made at HAMBURG By whom made VULCANWERKE-F.G. Boiler No. 3310 When made 1926

Nominal Horse Power 993 Owners DEUTSCH-ANSTRAL-LINIESCHIFFS GES Port belonging to HAMBURG

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Heubrich & Sohn - Halingen

(Letter for Record S.)

Total Heating Surface of Boilers 45.89 sq. m.

Is forced draught fitted yes

Coal or Oil fired oil

No. and Description of Boilers 1 Donkey Boiler multitubular.

Working Pressure 7.5 kg/cm²

Tested by hydraulic pressure to 15 kg (214 lb) Date of test 5.10.25

No. of Certificate 399

Can each boiler be worked separately yes

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler 2 Spring loaded

Area of each set of valves per boiler { per Rule 3960 sq. m. as fitted 5654 sq. m. }

Pressure to which they are adjusted 7.5 kg. Are they fitted with easing gear yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler no.

Smallest distance between boilers or uptakes and bunkers 800 mm

Is oil fuel carried in the double bottom under boilers yes

Smallest distance between shell of boiler and tank top plating 500 mm

Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 2100 mm

Length 2300 mm

Shell plates: Material Steel

Tensile strength 47-54 kg.

Thickness 10.5 mm

Are the shell plates welded or flanged flanged

Description of riveting: circ. seams { end 68 mm inter. 76 mm }

long. seams Double butt. double.

Diameter of rivet holes in { circ. seams 20 mm long. seams 20 mm }

Pitch of rivets { 76 mm }

Percentage of strength of circ. end seams { plate 70.6 % rivets 67.4 % }

Percentage of strength of circ. intermediate seam { plate 73.7 % rivets 113 % }

Percentage of strength of longitudinal joint { plate 73.7 % rivets 113 % combined 104 % }

Working pressure of shell by Rules 8.13 kg/cm²

Thickness of butt straps { outer 10.5 mm inner 10.5 mm }

No. and Description of Furnaces in each Boiler 1 - plain

Material Steel

Tensile strength 41 kg

Smallest outside diameter 825 mm

Length of plain part { top 1615 mm bottom 1675 mm }

Thickness of plates { crown 12.5 mm bottom 12.5 mm }

Description of longitudinal joint welded.

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

Working pressure of furnace by Rules 7.57 kg/cm²

End plates in steam space: Material Steel

Tensile strength 41-47 kg

Thickness 18.5 mm Pitch of stays 350 mm

How are stays secured Double nut & washer

Working pressure by Rules 8.92 kg/cm²

Tube plates: Material { front Steel back Steel }

Tensile strength 41-47 kg

Thickness { 18.5 mm }

Mean pitch of stay tubes in nests 255 mm

Pitch across wide water spaces 300 mm

Working pressure { front 9.86 kg back 8.92 kg }

Girders to combustion chamber tops: Material Steel

Tensile strength 41-47 kg

Depth and thickness of girder

at centre 135 mm - 2 x 10 mm

Length as per Rule 480 mm

Distance apart 215 mm

No. and pitch of stays

in each 1

Working pressure by Rules 7.8 kg/cm²

Combustion chamber plates: Material Steel

Tensile strength 41-47 kg

Thickness: Sides 13 mm

Back 12 mm

Top 13 mm

Bottom 13 mm

Pitch of stays to ditto: Sides 207 mm

Back 190 x 200 mm

Top 215 mm

Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 8.9 kg/cm²

Front plate at bottom: Material Steel

Tensile strength 41-47 kg

Thickness 18.5 mm

Lower back plate: Material Steel

Tensile strength 41-47 kg

Thickness 18.5 mm

Pitch of stays at wide water space

Are stays fitted with nuts or riveted over

Working Pressure

Main stays: Material Steel

Tensile strength 40-47 kg

Diameter { At body of stay, 51 mm or Over threads

No. of threads per inch 6

Area supported by each stay 350 x 350 mm

Working pressure by Rules 9.16 kg/cm²

Screw stays: Material Steel

Tensile strength 41-47 kg

Diameter { At turned off part, 29.63 mm or Over threads

No. of threads per inch 9

Area supported by each stay 190 x 200 mm

W1060-0040

Working pressure by Rules 7.97 kg/cm^2 Are the stays drilled at the outer ends ☒ Margin stays: Diameter { At turned off part 34.23 mm or Over threads }
No. of threads per inch 9 Area supported by each stay $190 \times 200 \text{ mm}$ Working pressure by Rules 11.5 kg/cm^2
Tubes: Material *Stamler Mild Steel* External diameter { Plain 63.5 mm Stay 63.5 mm } Thickness { 4 mm 6.5 mm } No. of threads per inch 9
Pitch of tubes 85 mm Working pressure by Rules 21 kg/cm^2 Manhole compensation: Size of opening in
shell plate $300 \times 400 \text{ mm}$ Section of compensating ring $19 \times 520 \times 620 \text{ mm}$ No. of rivets and diameter of rivet holes $36 - 20 \text{ mm}$
Outer row rivet pitch at ends 90 mm Depth of flange if manhole flanged ☒ Steam Dome: Material *Steel*
Tensile strength $41-47 \text{ kg/cm}^2$ Thickness of shell 10 mm Description of longitudinal joint *Single riv.*
Diameter of rivet holes 20 mm Pitch of rivets 48 mm Percentage of strength of joint { Plate 58.4% Rivets 57.5% }
Internal diameter 700 mm Working pressure by Rules 12.25 kg/cm^2 Thickness of crown 14 mm No. and diameter of
stays ☒ Inner radius of crown 700 mm Working pressure by Rules 12.25 kg/cm^2
How connected to shell *Up. double riveted* Size of doubling plate under dome ☒ Diameter of rivet holes and pitch
of rivets in outer row in dome connection to shell $20 \text{ mm} - 66 \text{ mm}$

Type of Superheater
Number of elements ☒ Material of tubes ☒ Manufacturers of { Tubes Steel castings } 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 23 inclusive for boilers been complied with ☒

The foregoing is a correct description,

VULCAN-WERKE
Hamburg and Berlin, Germany

Dates of Survey { During progress of work in shops - $10/7-25/7-17/8-24/8-31/8-14/9-25/9-5/10/25$ Are the approved plans of boiler and superheater forwarded herewith *Yes* (If not state date of approval.)
while building { During erection on board vessel - $19/11-10/12/25-6/1-21/1-1/2-2/2/26$ Total No. of visits 14

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *Material & workmanship of this Donkey Boiler are of good quality and the materials used in the construction are made at works recognized by the Committee and tested in accordance with the Rules. The Donkey Boiler has been made under Special Survey in accordance with the approved plan, the Secretary's letter, and otherwise in conformity with the requirements of the Rules and is eligible in my opinion for record. N.D.B.-36*

Survey Fee *Please see attached report* When applied for 192
Travelling Expenses (if any) *on Machinery* When received 192

Friedrich Hilt
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 12 MAR 1926**
Assigned *See M.E. rpt on Machy attached*