

REPORT ON BOILERS.

No. 10953

Received at London Office

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Report of writing Report 29th Oct 1936 When handed in at Local Office 31st Oct 1936 Port of Gothenburg
 No. in Survey held at Gothenburg Date, First Survey 24th Aug. Last Survey 13th Oct. 1936
 Book. 343 on the 1/2 "FRATERNITAS" (Number of Visits 13) Gross 8179
 Tons Net 5066
 Built at Belfast By whom built Harland & Wolff Yard No. When built 1905
 Engines made at Belfast By whom made Harland & Wolff Ltd. Engine No. When made 1905
 Boilers made at Gothenburg By whom made A/B Götavarken Boiler No. 359/60 When made 1936
 Indicated Horse Power 658 Owners Fraternitaskompagniet Port belonging to Copenhagen

Hartman (Rebuilt.) MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Skövde Jernvarefabrik AB (Letter for Record)
 Heating Surface of Boilers Is forced draught fitted Coal or Oil fired
 and Description of Boilers Working Pressure 105 lbs/sq. in.
 Tested by hydraulic pressure to 105 lbs/sq. in. Date of test 25.9.26.9.36 No. of Certificate Can each boiler be worked separately Yes
 Area of Firegrate in each Boiler No. and Description of safety valves to each boiler One spring loaded
 Area of each set of valves per boiler per Rule Pressure to which they are adjusted 43 lbs/sq. in. Are they fitted with easing gear No
 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 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
 Largest internal dia. of boilers 2000 mm Length 7190 mm Shell plates: Material Soft Steel Tensile strength 44 kg/cm²
 Thickness 12 mm Are the shell plates welded or flanged No Description of riveting: circ. seams end Coclap SR
 g. seams Single butt strap Diameter of rivet holes in circ. seams 23 mm Pitch of rivets 56 mm
long. seams 23 mm 75 mm
 Percentage of strength of circ. end seams plate 60.7% Percentage of strength of circ. intermediate seam plate 59%
rivets 46.2% rivets 50.5%
 Percentage of strength of longitudinal joint plate 69% Working pressure of shell by Rules 110 lbs/sq. in.
combined 75.5%
 Thickness of butt straps outer 12 mm No. and Description of Furnaces in each Boiler
 Material Tensile strength Smallest outside diameter
 Length of plain part top Thickness of plates crown Description of longitudinal joint
bottom bottom Working pressure of furnace by Rules
 Dimensions of stiffening rings on furnace or c.c. bottom One shell plate
 and plates in steam space: Material one cast steel Tensile strength 41-47 kg/cm² Thickness 16.5 mm Pitch of stays
 How are stays secured Working pressure by Rules
 Front plates: Material front Tensile strength Thickness
back
 Pitch of stay tubes in nests Pitch across wide water spaces Working pressure front
back
 Boilers to combustion chamber tops: Material Tensile strength Depth and thickness of girder
 Centre Length as per Rule Distance apart No. and pitch of stays
 Each Working pressure by Rules Combustion chamber plates: Material
 Tensile strength Thickness: Sides Back Top Bottom
 Pitch of stays to ditto: Sides Back Top Are stays fitted with nuts or riveted over
 Working pressure by Rules Front plate at bottom: Material Tensile strength
 Thickness Lower back plate: Material Tensile strength Thickness
 Pitch of stays at wide water space Are stays fitted with nuts or riveted over
 Working Pressure Main stays: Material Tensile strength
 At body of stay, No. of threads per inch Area supported by each stay
 Over threads Screw stays: Material Tensile strength
 At turned off part, No. of threads per inch Area supported by each stay
 Over threads

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Working pressure by Rules ✓ Are the stays drilled at the outer ends ✓ Margin stays: Diameter { At turned off part, ✓
or
Over threads ✓
No. of threads per inch ✓ Area supported by each stay ✓ Working pressure by Rules ✓
Tubes: Material ✓ External diameter { Plain ✓ Thickness { ✓ No. of threads per inch ✓
Stay ✓
Pitch of tubes ✓ Working pressure by Rules ✓ Manhole compensation: Size of opening in
shell plate $\phi 1100$ mm Section of compensating ring 25×125 mm No. of rivets and diameter of rivet holes 130; 202
Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged ✓ 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
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,

Manufactured

Dates of Survey { During progress of work in shops - - Aug. 24, Sept. 2, 8, 10, 14, 17, 20, 26 Are the approved plans of boiler and superheater forwarded herewith 8.7.3
while building { During erection on board vessel - - Sept. 28, 29, Oct. 2, 7, 13 (If not state date of approval.)
Total No. of visits 13

Is this Boiler a duplicate of a previous case No If so, state Vessel's name and Report No. ✓

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These Hartman pressboilers
have been built under Special Survey in accordance with the
Society's Rules and approved plan.
The material as per list sheet attached.
The workmanship is good.
The boilers have been fitted on board under our inspection
and to our satisfaction.

Survey Fee £10 : - ✓ : When applied for, ✓ 19
Travelling Expenses (if any) £ : : : When received, ✓ 19

E. Bonvelius

P.O. Ljögren
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 4 DEC 1936

Assigned

See other fol. Rpt.
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