

REPORT ON BOILERS.

No. 2505.

Received at London Office... 20 OCT 1947

Date of writing Report 17th Oct. 1947. When handed in at Local Office 18th Oct. 1947. Port of Maharrö.
 No. in Reg. Book 66712. Survey held at Maharrö. Date, First Survey 9th Sept. 1946. Last Survey 9th Oct. 1947.
 on the M/T "GAUTHIOD" (Number of Visits 30) Tons Gross 8650 Net 5093.
 Master Built at Maharrö By whom built Hockemus msk. V. G. B. Yard No. 288 When built 1947.
 Engines made at Maharrö By whom made Hockemus msk. V. G. B. Engine No. 413 When made 1947.
 Boilers made at Maharrö By whom made Hockemus msk. V. G. B. Boiler No. 1020 When made 1947.
 Nominal Horse Power 1361 Owners Stockholm Rederi A. B. Sora Port belonging to Stockholm.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Dommarfjells Jernvare, Dommarfjells & Arvola Jernvare, Arvola Letter for Record.
 Total Heating Surface of Boilers 122 m². Is forced draught fitted Yes. Coal or Oil fired Oil.
 No. and Description of Boilers One S.O. Working Pressure 17.1 kg/cm².
 Tested by hydraulic pressure to 306 kg/cm² Date of test 13.1.1947 No. of Certificate 139 Can each boiler be worked separately Yes.
 Area of Firegrate in each Boiler No. and Description of safety valves to each boiler Two direct spring loaded.
 Area of each set of valves per boiler per Rule 5690 mm² as fitted 7697 " Pressure to which they are adjusted 17.3 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 The boiler placed on a platform in after end of engine room.
 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 Yes.
 Largest internal dia. of boiler 3400 mm. Length extra 3400 mm. Shell plates: Material S.M. steel Tensile strength 44.6-49.7 kg/mm².
 Thickness 22.5 mm. Are the shell plates welded or flanged No. Description of riveting: circ. seams end inter. 8.3 mm.
 Long. seams T.R. S.S. str. Diameter of rivet holes in circ. seams 26 mm. long. seams 23.5 " Pitch of rivets 171.5 " rivets.
 Percentage of strength of circ. end seams plate 68.6% rivets 45.7% Percentage of strength of circ. intermediate seam plate 86.3% rivets 84.8% Working pressure of shell by Rules 12.1 kg/cm².
 Percentage of strength of longitudinal joint rivets 89.5% combined 89.5%
 Thickness of butt straps outer 17 mm. inner 20 " No. and Description of Furnaces in each Boiler Two corrugated.
 Material S.M. steel Tensile strength 41.3-42.4 kg/mm² Smallest outside diameter 1076 mm.
 Length of plain part top bottom Thickness of plates crown bottom Description of longitudinal joint Welded.
 Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 12.2 kg/cm².
 End plates in steam space: Material S.M. steel Tensile strength 41.0-41.9 kg/mm² Thickness 22 mm. Pitch of stays 350 x 406 mm.
 How are stays secured Single washers stays welded in & outside Working pressure by Rules 13 kg/cm².
 Tube plates: Material front S.M. steel back S.M. steel Tensile strength 41.3-44.3 kg/mm² Thickness 22 mm.
 Lean pitch of stay tubes in nests 240 mm. Pitch across wide water spaces 330 mm. Working pressure front 16.6 kg/cm² back 19.4 " rivets.
 Girders to combustion chamber tops: Material S.M. steel Tensile strength 44.0 kg/mm² Depth and thickness of girder
 t centre 2 (180 x 20) mm. Length as per Rule 735 mm. Distance apart 210 mm. No. and pitch of stays
 n each 2 - 228 mm. Working pressure by Rules 13.8 kg/cm². Combustion chamber plates: Material S.M. steel.
 Tensile strength 42.3-46.5 kg/mm² Thickness: Sides 17.5 mm. Back 18 mm. Top 17.5 mm. Bottom 17.5 mm.
 Pitch of stays to ditto: Sides 228 x 176 mm. Back 216 x 203 mm. Top 228 x 210 mm. Are stays fitted with nuts or riveted over No.
 Working pressure by Rules 12.1 kg/cm². Front plate at bottom: Material S.M. steel Tensile strength 41.3-44.3 kg/mm².
 Thickness 22 mm. Lower back plate: Material S.M. steel Tensile strength 41.3-44.3 kg/mm² Thickness 22 mm.
 Pitch of stays at wide water space 330 x 216 mm. Are stays fitted with nuts or riveted over Nuts.
 Working pressure 17.8 kg/cm². Main stays: Material S.M. steel Tensile strength 44.50 kg/mm².
 Diameter At body of stay 2 3/8 " No. of threads per inch None Area supported by each stay 142100 mm².
 Over threads Working pressure by Rules 17.2 kg/cm². Screw stays: Material S.M. steel Tensile strength 41-47 kg/mm².
 Diameter At turned off part 1 1/2 " 2 1/8 " No. of threads per inch 9 Area supported by each stay 43848 mm².

Working pressure by Rules. 12.9 kg. cm^2 Are the stays drilled at the outer ends. ☒ No. Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part} \\ \text{or} \\ \text{Over threads} \end{array} \right. 1.58"$
No. of threads per inch. 9 Area supported by each stay. 57560 mm^2 Working pressure by Rules. 12.0 kg. cm^2
Tubes: Material. *S. M. Steel* External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. 2.12"$ Thickness 3.25 mm No. of threads per inch. 9
Pitch of tubes. $92 \times 89 \text{ mm}$ Working pressure by Rules. 12.5 kg. cm^2 Manhole compensation: Size of opening
shell plate. $500 \times 400 \text{ mm}$ Section of compensating ring. 14040 mm^2 No. of rivets and diameter of rivet holes. $44-26 \text{ mm}$
Outer row rivet pitch at ends. 190 mm Depth of flange if manhole flanged. 82 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 $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$
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
of rivets in outer row in dome connection to shell.

Type of Superheater. Manufacturers of $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel forgings} \\ \text{Steel castings} \end{array} \right.$
Number of elements. Material of tubes. Internal diameter and thickness of tubes.
Material of headers. Tensile strength. Thickness. Can the superheater be shut off
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
Rules. Pressure to which the safety valves are adjusted. Hydraulic test press
tubes. forgings and castings. and after assembly in place. Are drain cock
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.

The foregoing is a correct description,

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops} - - \end{array} \right. \text{from } 9^{\text{th}} \text{ Sept. } 1946 - 13^{\text{th}} \text{ Jan. } 1947$ are the approved plans of boiler and superheater forwarded herewith. 29.5.19
while building $\left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel} - - \end{array} \right. \text{" } 19^{\text{th}} \text{ Aug. } 1947 - 9^{\text{th}} \text{ Oct. } 1947$ (If not state date of approval.)
Total No. of visits. 30

Is this Boiler a duplicate of a previous case. *Yes* If so, state Vessel's name and Report No. *M/T "SECURUS" 7.6 Rpt 23*

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

This donkey boiler has been built under special survey in accordance with the Rules and approved plans.

The material used have been tested as per Rule and the workmanship is good.

An exhaust gas economiser, as per Cert. 7544 enclosed herewith, heated by exhaust gas from top end of the main engine cylinders, has also been installed.

The economiser is fitted with a double 75 mm safety valve which has been adjusted to the safe working pressure.

Survey Fee ... *Rs.* : 360:- / When applied for. *18th Oct. 47*
Travelling Expenses (if any) £ : : When received. *19*

A. Boring

Engineer Surveyor to Lloyd's Register of Shipping

FRI. 21 NOV 1947

Committee's Minute.

Assigned. *See F.E. mch. rpt.*



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Foundation