

REPORT ON BOILERS.

No. 7549.

Received at London Office 19 SEP 1927

Date of writing Report 31 August 1927 When handed in at Local Office 1927

Port of Copenhagen

No. in Reg. Book Survey held at Copenhagen

Date, First Survey 14th October 1926 Last Survey 24th August 1927

40220 on the Steel Turret "CHRISTIAN" (Number of Visits 27) Gross 9118.63 Tons Net 5605.41

Master _____ Built at Copenhagen By whom built Mks Burmeister & Wain's Yard No. 348 When built 1927-8
 Engines made at Copenhagen By whom made Mks Burmeister & Wain's Engine No. 1310 When made 1927
 Boilers made at Copenhagen By whom made Mks Burmeister & Wain's Boiler No. 1800 When made 1927
 Nominal Horse Power 173.9 Owners "S. Myren" (Helm of Worsled) Port belonging to Copenhagen

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

PLATES AND FURNACES: David Colville and Sons Ltd. Motherwell. STAYS & SCREW STAYS: Hammer Letter for Record S.
 Manufacturers of Steel Tubes: Harnsche Werke 76 of Rosenbaum PLAIN TUBES: Hammer Letter for Record S.
 Total Heating Surface of Boilers 2 x 1304 sq ft - 2608 sq ft Is forced draught fitted yes Coal or Oil fired Oil fired
 No. and Description of Boilers 2 off single ended, multitubular Working Pressure 180 lbs per sq in
 Tested by hydraulic pressure to 320 lbs per sq in Date of test 6 and 7/6/27 No. of Certificate 465 and 466 Can each boiler be worked separately yes
 Area of Firegrate in each Boiler 10.03 sq ft No. and Description of safety valves to each boiler 2 off - directly spring loaded
 Area of each set of valves per boiler as fitted 14.14 sq ft Pressure to which they are adjusted 180 lbs per sq in Are they fitted with easing gear yes
 In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler No main boilers
 Smallest distance between boilers or uptakes and bunkers or woodwork No wood work Is oil fuel carried in the double bottom under boilers No
 Smallest distance between shell of boiler and tank top plating level with top of engine Is the bottom of the boiler insulated No
 Largest internal dia. of boilers 11' - 2" Length 11' - 1 1/8" Shell plates: Material Premium Martin Steel Tensile strength 28-32 Tons per sq in
 Thickness 1" Are the shell plates welded or flanged No Description of riveting: circ. seams end lap joint, double
 long, seams double welded Diameter of rivet holes in circ. seams 1 1/16" Pitch of rivets 3 1/4" 7 5/8"
 Percentage of strength of circ. end seams plate 67.3 rivets 45.0 Percentage of strength of circ. intermediate seam plate 86.06 rivets 89.9
 Percentage of strength of longitudinal joint plate 78" combined 90.11 Working pressure of shell by Rules 196.1 lbs per sq in
 Thickness of butt straps outer 7/8" inner 1" No. and Description of Furnaces in each Boiler 2 off corrugated Morrison's section
 Material Premium Martin Steel Tensile strength 26-30 Tons per sq in Smallest outside diameter 3'
 Length of plain part top bottom Thickness of plates crown 5/8" bottom 5/8" Description of longitudinal joint
 Dimensions of stiffening rings on furnace or c.e. bottom Working pressure of furnace by Rules 253.3 lbs per sq in
 End plates in steam space: Material Premium Martin Steel Tensile strength 26-30 Tons per sq in Thickness 1 1/16" Pitch of stays 17"
 How are stays secured Secured in both plates, nuts in - and outside Working pressure by Rules 197.6 lbs per sq in
 Tube plates: Material front Premium Martin Steel back Premium Martin Steel Tensile strength 26-30 Tons per sq in Thickness 1 1/16"
 Mean pitch of stay tubes in nests 7" x 10 7/8" Pitch across wide water spaces 14 1/2" Working pressure front 218 lbs per sq in back 420 lbs per sq in
 Girders to combustion chamber tops: Material Cast steel Tensile strength 27.3-30 Tons per sq in Depth and thickness of girder at centre Depth 8" x 1" Cast Length as per Rule 2'-3" Distance apart 8 1/2" No. and pitch of stays in each 2 off - 9" Working pressure by Rules 180.4 lbs per sq in
 Tensile strength Sides, TOP, BOTTOM 28-32 Tons per sq in Thickness: Sides 1 1/16" Back 5/8" Top 1 1/16" Bottom 1 1/16"
 Pitch of stays to ditto: Sides 8 1/4" x 9, 8 1/4" x 10 Back 7 1/2" x 7 1/2" Top 8 1/2" x 9" Are stays fitted with nuts or riveted over Nuts in - and outside
 Working pressure by Rules 190.8 lbs per sq in Front plate at bottom: Material Premium Martin Steel Tensile strength 26-30 Tons per sq in Thickness 1 1/16"
 Lower back plate: Material Premium Martin Steel Tensile strength 26-30 Tons per sq in Thickness 1 1/16"
 Pitch of stays at wide water space 14 1/2" 18" Are stays fitted with nuts or riveted over Nuts in - and outside
 Working Pressure 261 lbs per sq in Main stays: Material Premium Martin Steel Tensile strength 32.1 Tons per sq in
 Diameter At body of stay, or Over threads 2 3/4" 3'-2 3/4" No. of threads per inch 11 Area supported by each stay 263.5 sq in
 Working pressure by Rules 239.3 lbs per sq in Screw stays: Material Premium Martin Steel Tensile strength 27.8 Tons per sq in - 29.0 Tons per sq in
 Diameter At turned off part, or Over threads 1 1/2" No. of threads per inch 11 Area supported by each stay 56.25 sq in

Working pressure by Rules 222 lbs 10" Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1 3/4" or Over threads 1 3/4"
No. of threads per inch 11 Area supported by each stay 82.50" Working pressure by Rules 220 lbs per sq in
Tubes: Material Siemens-Martin External diameter { Plain 2 1/2" Stay 2 1/2" Thickness { 3/16" 5/16" No. of threads per inch 11
Pitch of tubes 3 1/2" x 3 5/8" Working pressure by Rules 230 lbs 10" Manhole compensation: Size of opening 15" x 18 7/8"
shell plate 15" x 18 7/8" Section of compensating ring Flanged No. of rivets and diameter of rivet holes 40 of 1 1/16"
Outer row rivet pitch at ends 7 5/8" Depth of flange if manhole flanged 2 1/4" 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 diameters 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 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 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 ✓
Rules ✓ Pressure to which the safety valves are adjusted ✓ Hydraulic test pressure ✓
tubes ✓ castings ✓ and after assembly in place ✓ Are drain cocks or valves to free the superheater from water where necessary ✓

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with yes

The foregoing is a correct description, yes

Dates of Survey { During progress of work in shops - - - 1926: 14/10 - 16/11 - 1/12 - 27/12 1927: 28/1 - 12/3 - 3/3 - 16/4 - 25/4 - 9/5 - 24/5 - 1/6 - 17/6
while building { During erection on board vessel - - - 1927: 9/6 - 13/7 - 18/7 - 23/7 - 29/7 - 3/8 - 6/8 - 10/8 - 15/8 - 18/8 - 19/8 - 23/8 - 24/8
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.)
The boilers have been built under Special Survey in accordance with the Rules, the approved plan and the requirements contained in the Secretary's letter E dated 12/10 and 7/6 1926.
The material has been tested as required by the Rules, as per certificates produced or by us, and workmanship is of good description throughout.
The boilers have been fitted on board the above named vessel and completed to our entire satisfaction.
Oil fuel burning arrangement has been installed in accordance with the requirements of the Rules and the plan approved as per the Secretary's letter E dated 5.7.1927.
Two horizontal duplex feed pumps (G. Hartmann's System) 5 1/4" x 3" x 8" have been installed. The capacity of each pump is 10 Tons.

Recommend the vessel to have record in the Register Book of 2DB 1854BS.

Survey Fee ... 315.89 : When applied for, 17.9.1927
Travelling Expenses (if any) £ : : When received, 20.10.1927

A. F. Driscoll S. W. Lauren
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute TUES. 27 SEP 1927
Assigned See Report attached