

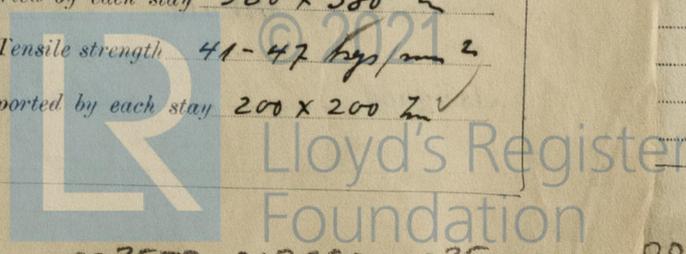
REPORT ON BOILERS.

Received at London Office 23 JUN 1931

Date of writing Report 11th June 1931 When handed in at Local Office 1931 Port of HAMBURG
 No. in Reg. Book. Survey held at KIEL Date, First Survey 28th Jan 1931 Last Survey 22nd May 1931
 on the STEEL TWIN S.C. TANKER FJORDAAS (Number of Visits 13) Gross 7361 Tons Net 4360
 Master _____ Built at KIEL By whom built DEUTSCHE WERKE KIEL A.G. Yard No. 227 When built 1931
 Engines made at KIEL By whom made DEUTSCHE WERKE KIEL A.G. Engine No. 491-98 When made 1931
 Boilers made at KIEL By whom made DEUTSCHE WERKE KIEL A.G. Boiler No. 1073-74 When made 1931
 Nominal Horse Power 726 Owners AGRESIDENS REDERI A/S Port belonging to ARENDAL

MULTITUBULAR BOILERS ~~MAIN, AUXILIARY, OR DONKEY.~~

Manufacturers of Steel Messrs. Vereinigte Stahlwerke A.G. Hahl & Watzwinkel Thyssen Mittelheim/Roder (Letter for Record 5)
 Total Heating Surface of Boilers 2 x 111 m² Is forced draught fitted yes Coal or Oil fired oil fired & exhaust gas
 No. and Description of Boilers 2 Multitubular Donkey Boilers Working Pressure 8 kg/cm² 114 lb
 Tested by hydraulic pressure to 221 lb Date of test 10.3.31 No. of Certificate 539-540 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 safety valves
 Area of each set of valves per boiler {per Rule 9048 m² as fitted 10052 m² Pressure to which they are adjusted 114 lb Are they fitted with easing gear yes
 In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler in main boilers
 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 in Tween Deck Is the bottom of the boiler insulated yes
 Largest internal dia. of boilers 3100 mm Length 3188 mm Shell plates: Material S. M. Steel Tensile strength 44-50 kg/cm²
 Thickness 17 mm Are the shell plates welded or flanged flanged Description of riveting: circ. seams end lap double
 Long. seams double butt strap Diameter of rivet holes in {circ. seams 23 mm Pitch of rivets { 89.5 mm
 {long. seams 23 mm { 92.0 mm
 Percentage of strength of circ. end seams {plate 74% Percentage of strength of circ. intermediate seam {plate ✓
 {rivets 91% {rivets ✓
 Percentage of strength of longitudinal joint {plate 74% Working pressure of shell by Rules 8.4 kg/cm²
 {rivets 81% {combined ✓
 Thickness of butt straps {outer 12 mm No. and Description of Furnaces in each Boiler 2 corr. furnaces (Morison)
 {inner 15 mm Material S. M. Steel Tensile strength 41-47 kg/cm² Smallest outside diameter 920 mm
 Length of plain part {top 150 mm Thickness of plates {crown 10 mm Description of longitudinal joint welded
 {bottom 250 mm {bottom 10 mm Working pressure of furnace by Rules 10.8 kg/cm²
 Dimensions of stiffening rings on furnace or c.c. bottom ✓ End plates in steam space: Material S. M. Steel Tensile strength 41-47 kg/cm² Thickness 17 mm Pitch of stays 380 x 380 mm
 How are stays secured nuts in outside washers outside Working pressure by Rules 10.0 kg/cm²
 Tube plates: Material {front S. M. Steel Tensile strength { 41-47 kg/cm² Thickness { 21 mm
 {back S. M. Steel { 41-47 kg/cm² { 16 mm
 Lean pitch of stay tubes in nests 228 x 228 Pitch across wide water spaces 334 x 152 mm Working pressure {front 11.2 kg/cm²
 Girders to combustion chamber tops: Material S. M. Steel Tensile strength 44-50 kg/cm² Depth and thickness of girder {back 12 kg/cm²
 at centre 150 mm x 127 mm Length as per Rule 600 mm Distance apart 190 mm No. and pitch of stays
 at each 2 of 200 mm pitch Working pressure by Rules 9.8 kg/cm² Combustion chamber plates: Material S. M. Steel
 Tensile strength 41-47 kg/cm² Thickness: Sides 14.5 mm Back 14.5 mm Top 14.5 mm Bottom 14.5 mm
 Pitch of stays to ditto: Sides 200 x 380 mm Back 200 x 200 mm Top 200 x 190 mm Are stays fitted with nuts or riveted over nuts riveted over
 Working pressure by Rules 8.4 kg/cm² Front plate at bottom: Material S. M. Steel Tensile strength 41-47 kg/cm²
 Thickness 21 mm Lower back plate: Material S. M. Steel Tensile strength 41-47 kg/cm² Thickness 17 mm
 Pitch of stays at wide water space 364 x 200 mm Are stays fitted with nuts or riveted over fitted with nuts
 Working Pressure 9.4 kg/cm² Main stays: Material S. M. Steel Tensile strength 44-50 kg/cm²
 Diameter {At body of stay, 54 mm & 60 mm No. of threads per inch 6 Area supported by each stay 380 x 380 mm
 {Over threads ✓ Working pressure by Rules 11.9 kg/cm² Screw stays: Material S. M. Steel Tensile strength 41-47 kg/cm²
 Diameter {At turned off part, 28 mm No. of threads per inch 9 Area supported by each stay 200 x 200 mm
 {Over threads ✓



REPORT ON BOILERS

Working pressure by Rules 9 kg/cm² Are the stays drilled at the outer ends yes Margin stays: Diameter 38 or 34
 No. of threads per inch 9 Area supported by each stay 56400 Working pressure by Rules 8.2 kg/cm²
Tubes: Material P. M. Steel External diameter 51 Thickness 3 No. of threads per inch 9
 Pitch of tubes 76 x 76 Working pressure by Rules 11 kg/cm² Manhole compensation: Size of opening in
 shell plate 510 x 410 Section of compensating ring 810 x 172 No. of rivets and diameter of rivet holes 36 rivets of 33
 Outer row rivet pitch at ends 215 Depth of flange if manhole flanged 74 **Steam Dome:** Material no steam dome
 Tensile strength ✓ Thickness of shell ✓ Description of longitudinal joint ✓
 Diameter of rivet holes ✓ Pitch of rivets ✓ Percentage of strength of joint ✓
 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 no superheater Manufacturers of ✓
 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
Deutsche Werke Kiel
Werkzeugmaschinenfabrik
Dr. Frunz
 The foregoing is a correct description, Manufacturer.

1931
 Dates of Survey 1931 During progress of work in shops Jan. 29, Feb. 16, March 9, 11, 13, 16 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
 while building March 25, April 24, 27, 29, May 4, 11, 22 Total No. of visits 13

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been built under Special Survey in accordance with the approved plan, the Secretary's letter and otherwise in conformity with the requirements of the Rules. The materials used in the construction are made at works recognized by the Committee and tested by the Port Surveyor. Materials and workmanship are of good quality. Under steam these boilers were found tight and their Safety Valves have been adjusted to 114 lbs of pressure.

Marks on boilers:

No. 539 & 540 Lloyd's Test 221 lbs WP 114 lbs A.C. 16.3.31	Height of washers Starb Boiler: fore. 21.4" aft 20.7" Port Boiler: " 21.7" " 22.5"
--	--

Survey Fee see Machinery Report £ : : When applied for, 192
 Travelling Expenses (if any) £ : : When received, 192

A. Carstensen
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 30 JUN 1931
 Assigned See F.C. Rpt.

