

## REPORT ON BOILERS.

No. 19951

Received at London Office

23 JUN 1931

Date of writing Report 11<sup>th</sup> June 1931 When handed in at Local Office

193

Port of HAMBURG

No. in Reg. Book. Survey held at

KIEL

Date, First Survey 28<sup>th</sup> Jan 1931 Last Survey 22<sup>nd</sup> May 1931

on the STEEL TWIN S. 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 AGESIDENS REDERI A/S

Port belonging to ARENDAL

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

Manufacturers of Steel *Messrs. Vereinigte Stahlwerke A.G. Hahl & Watzmuth Thyssen* *Mittelrhein/Roder* (Letter for Record *5*)

Total Heating Surface of Boilers *2 x 111 m<sup>2</sup>* Is forced draught fitted *yes* Coal or Oil fired *oil fired*

No. and Description of Boilers *2 Multitubular Donkey Boilers* Working Pressure *8 kg/cm<sup>2</sup> 114 lb*

Tested by hydraulic pressure to *22.1 kg* Date of test *16.3.31* 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 *9040 m<sup>2</sup>* as fitted *10052 m<sup>2</sup>* 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 *no 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 twin 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/cm<sup>2</sup>*

Thickness *17 mm* Are the shell plates welded or flanged *flanged* Description of riveting: circ. seams *end* *40 mm* *inter.* *✓*

Long. seams *double butt strap* Diameter of rivet holes in {circ. seams *23 mm* long. seams *23 mm* Pitch of rivets { *89.5 mm* *92.0 mm*

Percentage of strength of circ. end seams {plate *74%* rivets *91%* Percentage of strength of circ. intermediate seam {plate *74%* rivets *81%*

Percentage of strength of longitudinal joint {plate *74%* rivets *81%* combined *✓* Working pressure of shell by Rules *8.4 kg/cm<sup>2</sup>*

Thickness of butt straps {outer *12 mm* inner *15 mm* No. and Description of Furnaces in each Boiler *2 corr. furnaces (Morison)*

Material *S. M. Steel* Tensile strength *41-47 kg/cm<sup>2</sup>* Smallest outside diameter *920 mm*

Length of plain part {top *150 mm* bottom *250 mm* Thickness of plates {crown *10 mm* bottom *10 mm* Description of longitudinal joint *welded*

Dimensions of stiffening rings on furnace or c.c. bottom *✓* Working pressure of furnace by Rules *10.8 kg/cm<sup>2</sup>*

End plates in steam space: Material *S. M. Steel* Tensile strength *41-47 kg/cm<sup>2</sup>* 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/cm<sup>2</sup>*

Tube plates: Material {front *S. M. Steel* back *S. M. Steel* Tensile strength { *41-47 kg/cm<sup>2</sup>* *41-47 kg/cm<sup>2</sup>* Thickness { *21 mm* *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/cm<sup>2</sup>* back *12.1 kg/cm<sup>2</sup>*

Girders to combustion chamber tops: Material *S. M. Steel* Tensile strength *44-50 kg/cm<sup>2</sup>* Depth and thickness of girder

At centre *150 mm x 127 mm* Length as per Rule *600 mm* Distance apart *190 mm* No. and pitch of stays

Each *2 of 200 mm pitch* Working pressure by Rules *9.8 kg/cm<sup>2</sup>* Combustion chamber plates: Material *S. M. Steel*

Tensile strength *41-47 kg/cm<sup>2</sup>* 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*

Working pressure by Rules *8.4 kg/cm<sup>2</sup>* Front plate at bottom: Material *S. M. Steel* Tensile strength *41-47 kg/cm<sup>2</sup>*

Thickness *21 mm* Lower back plate: Material *S. M. Steel* Tensile strength *41-47 kg/cm<sup>2</sup>* 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/cm<sup>2</sup>* Main stays: Material *S. M. Steel* Tensile strength *44-50 kg/cm<sup>2</sup>*

Diameter {At body of stay, *54 mm & 60 mm* No. of threads per inch *6* Area supported by each stay *380 x 380 mm*

Working pressure by Rules *11.9 kg/cm<sup>2</sup>* Screw stays: Material *S. M. Steel* Tensile strength *41-47 kg/cm<sup>2</sup>*

Diameter {At turned off part, *28 mm* No. of threads per inch *9* Area supported by each stay *200 x 200 mm*

Working pressure by Rules 9 kg/cm<sup>2</sup> Are the stays drilled at the outer ends yes Margin stays: Diameter { At turned off part, 38 or 34 Z Over threads

No. of threads per inch 9 Area supported by each stay 56400 2 2 Working pressure by Rules 8.2 kg/cm<sup>2</sup>

Tubes: Material P. M. Steel External diameter { Plain 51 2 Thickness { 3 2 No. of threads per inch 9 Stay 51 2

Pitch of tubes 76 x 76 2 Working pressure by Rules 11 kg/cm<sup>2</sup> Manhole compensation: Size of opening in shell plate 510 x 410 Section of compensating ring 810 25 x 17 2 No. of rivets and diameter of rivet holes 36 rivets of 13 2

Outer row rivet pitch at ends 215 2 Depth of flange if manhole flanged 74 2 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 { Plate — Rivets —

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 { 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 —

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  
Maschinenbau*

The foregoing is a correct description,

Manufacturer.

Dates of Survey { 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 { During erection on board vessel - - 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 boiler:

No. 539 & 540  
Lloyd's Test  
221 lbs  
WP 114 lbs  
A.C. 16.3.31

Height of washers

Starb. Boiler: forw. 21.4 2 aft 20.7 2  
Port Boiler: a 21.7 2 + 22.5 2

Survey Fee please 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 J.B. Rpt.*



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