

Rpt. 5a.

## REPORT ON BOILERS.

No. 933

Date of writing Report

192

When handed in at Local Office

192

Received at London Office

9 FEB 1929

key Boilers

No. in Reg. Book

Survey held at *Fegel & Stettin.*Port of *STETTIN*Date, First Survey *6th Jan. 1928.* Last Survey *7th February 1929*(Number of Visits *33.*)Gross *4338*Tons Net *2314*plate of each size  
shell must be  
complete.Master ☒Built at *Stettin*By whom built *Nuscher & Co. A. G.* Yard No. *286* When built *1928/29*Engines made at *Zurich*By whom made *Escher, Wyss & Cie*Engine No. *68241a* When made *1928.*Boilers made at *Berlin - Fegel*By whom made *A. Borsig & Co. H.*Boiler No. *25911/14* When made *1928.*Nominal Horse Power *653*Owners *Verenigde Nederlandsche  
Schepvaars Maatschappij.*Port belonging to *The Hague.*MULTITUBULAR BOILERS—MAIN, ~~AUXILIARY~~, OR ~~DONKEY~~.Manufacturers of Steel *Kraussmann Röhrenwerke, Abt. Schulz-Knandt, Hückingen* (Letter for Record *S.*)Total Heating Surface of Boilers *784 sqm = 8439 sq ft.* Is forced draught fitted *yes* Coal or Oil fired *oil.*No. and Description of Boilers *4, Multitubular Single end* Working Pressure *15.8 kgs = 225 lbs.*Tested by hydraulic pressure to *340 lbs* Date of test *9.5.28.* No. of Certificate *83-86* Can each boiler be worked separately *yes.*Area of Firegrate in each Boiler *4.4 sqm.* No. and Description of safety valves to each boiler *2 spring loaded (high stroke)*Area of each set of valves per boiler *per Rule 8546 sq mm* Pressure to which they are adjusted *15.8 kgs* Are they fitted with easing gear *yes.*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~~ *540 mm* Is oil fuel carried in the double bottom under boilers *yes.*Smallest distance between shell of boiler and tank top plating *490* Is the bottom of the boiler insulated *yes.*Largest internal dia. of boilers *4050 mm* Length *3720 mm* Shell plates: Material *steel* Tensile strength *45.2-46.8 kgs.*Thickness *35 mm* Are the shell plates welded or flanged *—* Description of riveting: circ. seams *end double riveted*long. seams *double butt straps, double riveted.* Diameter of rivet holes in circ. seams *37 mm* Pitch of rivets *140 mm*Percentage of strength of circ. end seams *plate 66.4%* rivets *44.5%* Percentage of strength of circ. intermediate seam *plate —* rivets *—*Percentage of strength of longitudinal joint *plate 85.2%* rivets *91.7%* combined *—* Working pressure of shell by Rules *16.5 kgs/sqm.*Thickness of butt straps *outer 32 mm* inner *32* No. and Description of Furnaces in each Boiler *3, Dighton*Material *steel* Tensile strength *41.9-49 kgs* Smallest outside diameter *933 mm.*Length of plain part *top 150 mm* bottom *—* Thickness of plates *crown 16.5 mm* bottom *16.5* Description of longitudinal joint *welded.*Dimensions of stiffening rings on furnace or c.c. bottom *—* Working pressure of furnace by Rules *18.2 kgs.*End plates in steam space: Material *steel* Tensile strength *41.9-43.2 kgs* Thickness *31.5 mm* Pitch of stays *440 mm.*How are stays secured *double nuts and riveted washers* Working pressure by Rules *17.4 kgs*Tube plates: Material *front steel* back *—* Tensile strength *41.5-43 kgs* Thickness *23 mm*Mean pitch of stay tubes in nests *210 mm* Pitch across wide water spaces *355 mm* Working pressure *front 15.8 kgs* back *30.5*Girders to combustion chamber tops: Material *steel* Tensile strength *47.2-48.6 kgs* Depth and thickness of girderat centre *240 mm, 18 mm* Length as per Rule *770 mm* Distance apart *200 mm* No. and pitch of staysin each *3, 190 mm* Working pressure by Rules *21.1 kgs* Combustion chamber plates: Material *steel*Tensile strength *41.8-43.8 kgs* Thickness: Sides *17 mm* Back *17 mm* Top *17 mm* Bottom *25.5 mm.*Pitch of stays to ditto: Sides *200 mm* Back *200 mm* Top *200 x 190 mm* Are stays fitted with nuts or riveted over *Inside nuts.*Working pressure by Rules *17.7 kgs* Front plate at bottom: Material *steel* Tensile strength *42.4-43.2 kgs*Thickness *23 mm* Lower back plate: Material *steel* Tensile strength *42.1-44.2 kgs* Thickness *23 mm*Pitch of stays at wide water space *375 mm* Are stays fitted with nuts or riveted over *margin stays nuts, others riveted over*Working Pressure *19.1 kgs* Main stays: Material *steel* Tensile strength *44.3-48 kgs*Diameter *At body of stay, 76-65 x 60 mm* No. of threads per inch *6* Area supported by each stay *2068 sq cm*Over threads *89-76-72* Screw stays: Material *steel* Tensile strength *44.7-44.3 kgs*Working pressure by Rules *20.9 kgs* Diameter *At turned off part, 40 x 37 mm* No. of threads per inch *9* Area supported by each stay *400 sq cm*Over threads *45 x 42*

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Working pressure by Rules 17.9 kgs Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 48 mm or Over threads 48 }  
 No. of threads per inch 9 Area supported by each stay 580 sq cm Working pressure by Rules 17.0 kgs  
 Tubes: Material steel External diameter { Plain 76 mm Stay 76 } Thickness { 4 mm 8.5 & 7 mm } No. of threads per inch 9  
 Pitch of tubes 105 mm Working pressure by Rules 17.5 mm Manhole compensation: Size of opening in shell plate 580 x 480 mm Section of compensating ring 1050 x 950 mm No. of rivets and diameter of rivet holes 36; 37 mm  
 Outer row rivet pitch at ends 230 mm Depth of flange if manhole flanged 90 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 { 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 Schmidt's Patent Manufacturers of { Tubes Benseler Werke, Bielefeld Steel castings Atlas Werke A.G. Bremen }  
 Number of elements 12 Material of tubes steel Internal diameter and thickness of tubes 16 mm, 2 1/2 mm  
 Material of headers cast steel Tensile strength — Thickness 18 mm Can the superheater be shut off and the boiler be worked separately yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler yes  
 Area of each safety valve 1063 sq mm Are the safety valves fitted with easing gear yes Working pressure as per Rules 15.8 kgs Pressure to which the safety valves are adjusted 15.8 kgs = 225 lbs Hydraulic test pressure: tubes 200 kgs castings 48 kgs and after assembly in place 50 kgs Are drain cocks or valves fitted to free the superheater from water where necessary yes  
 Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with yes

The foregoing is a correct description,

**A. BORSIG**

Manufacturer.

Dates of Survey { During progress of work in shops - - { 6.7.20.7.27.1.8.2.16.2.2.22.2.8.3.16.3.27.3. }  
 while building { During erection on board vessel - - { 29.3.7.4.24.4.2.5.9.5.28. }  
 Are the approved plans of boiler and superheater forwarded herewith 21.10.27. (If not state date of approval.)  
 Total No. of visits 33.

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

These boilers have been built out of tested material under Special Survey in accordance with the approved plan and in conformity with the Society's Rules. Material and workmanship are of good quality.

All 4 boilers were tested by hydraulic pressure to 340 lbs and were found tight and sound at that pressure. also under steam they were tight, adjusted their safety valves to 225 lbs. The safety valves have been tried under steam during 15 minutes constantly firing with closed stop valves and found efficient.

Marks on boilers: No. 83 - 84 - 85 - 86  
 LLOYD'S TEST  
 340 lbs.  
 W.P. 225 lbs.  
 N.S. 9.5.28.

Survey Fee ... £ 40 : 13 :

When applied for 22nd May 1928

Travelling Expenses (if any) £ 10 : 12 :

When received, 27th June 1928, London.

*M. Rolfe*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

JUE. 12 FEB 1929

Assigned

*No. 16. upl. attached*



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