

REPORT ON BOILERS.

Gothenburg 8090
No. 14054

Date of writing Report *28.4.30* When handed in at Local Office *28.4.30* Port of *MIDDLESBROUGH*
 No. in Reg. Book *71434* Survey held at *STOCKTON* Date, First Survey *30 January* Last Survey *28.4.1930*
 on the boiler for *Aktiebolag Gotaverken* No. *437* "G.C. BRÖVIG" (Number of Visits *18+2*) Gross *9718* Tons Net *5860*
 Master _____ Built at *Gothenburg* By whom built *A.B. Gotaverken* Yard No. *437* When built *1930*
 Engines made at *Gothenburg* By whom made *A.B. Gotaverken* Engine No. *193* When made *1930*
 Boilers made at *Stockton* By whom made *Riley Bros. (Boilermakers) Ltd* Boiler No. *5946* When made *1930*
 Nominal Horse Power *724* Owners *Th. Brövig* Port belonging to *Farsund*

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *Wittkowitz Bergbau und Eisenhütten Gesellschaft.* (Letter for Record *S.*)
 Total Heating Surface of Boilers *1415* Is forced draught fitted *Yes* Coal or Oil fired *Oil*
 No. and Description of Boilers *1 S.B.* Working Pressure *180 lbs.*
 Tested by hydraulic pressure to *320 lbs.* Date of test *28.4.30* No. of Certificate *6779* Can each boiler be worked separately *Yes*
 Area of Firegrate in each Boiler *Oil fired* No. and Description of safety valves to each boiler *Double spring loaded.*
Diam of each set of valves per boiler *per Rule* as fitted *3"* Pressure to which they are adjusted *180 lbs/p"* 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 *25"* Is oil fuel carried in the double bottom under boilers *No*
 Smallest distance between shell of boiler and tank top plating *✓* Is the bottom of the boiler insulated *Yes*
 Largest internal dia. of boilers *11'-8"* Length *11'-3"* Shell plates: Material *Steel* Tensile strength *29/30*
 Thickness *15"* Are the shell plates welded or flanged *no* Description of riveting: circ. seams *end DR*
 long. seams *T.R.D.B.S. (5 rivets)* Diameter of rivet holes in *circ. seams* *1 3/32"* Pitch of rivets *2 1/2"*
 Percentage of strength of circ. end seams *plate 65.1* rivets *42.5.* Percentage of strength of circ. intermediate seam *plate 86* rivets *86.7.*
 Percentage of strength of longitudinal joint *combined 89.4.* Working pressure of shell by Rules *181 lbs.*
 Thickness of butt straps *outer 3/4"* inner *1/8"* No. and Description of Furnaces in each Boiler *2 C.F.*
 Material *Steel* Tensile strength *26/30* Smallest outside diameter *3'-7 3/8"*
 Length of plain part *top* *✓* Thickness of plates *crown 9"* bottom *16"* Description of longitudinal joint *weld.*
 Dimensions of stiffening rings on furnace or c.c. bottom *✓* Working pressure of furnace by Rules *188 lbs.*
 End plates in steam space: Material *Steel* Tensile strength *26/30* Thickness *7/8"* Pitch of stays *16 1/2" x 14"*
 How are stays secured *D.N.W.* Working pressure by Rules *180 lbs.*
 Tube plates: Material *Steel* Tensile strength *26/30* Thickness *7/8"*
 Mean pitch of stay tubes in nests *10 1/16"* Pitch across wide water spaces *13'-7"* Working pressure *front 233 lbs.* back *273.*
 Girders to combustion chamber tops: Material *Steel* Tensile strength *28/32* Depth and thickness of girder
 at centre *7 1/2" x 5/4" (double)* Length as per Rule *2'-6"* Distance apart *8 1/2"* No. and pitch of stays
 in each *2.9"* Working pressure by Rules *187 lbs.* Combustion chamber plates: Material *Steel*
 Tensile strength *26/30* Thickness: Sides *16"* Back *16"* Top *16"* Bottom *16"*
 Pitch of stays to ditto: Sides *10" x 9"* Back *10" x 9"* Top *8 1/2" x 9"* Are stays fitted with nuts or riveted over *nuts*
 Working pressure by Rules *182 lbs.* Front plate at bottom: Material *Steel* Tensile strength *26/30*
 Thickness *7/8"* Lower back plate: Material *Steel* Tensile strength *26/30* Thickness *7/8"*
 Pitch of stays at wide water space *13" x 9"* Are stays fitted with nuts or riveted over *nuts*
 Working Pressure *229 lbs.* Main stays: Material *Steel* Tensile strength *28/32*
 Diameter *At body of stay, or over threads* *2 1/2"* No. of threads per inch *6.* Area supported by each stay *226"*
 Working pressure by Rules *196 lbs.* Screw stays: Material *Steel* Tensile strength *26/30*
 Diameter *At turned off part, or over threads* *1 3/4"* No. of threads per inch *9.* Area supported by each stay *87.6"*

Working pressure by Rules **207 lbs.** Are the stays drilled at the outer ends **no.** Margin stays: Diameter ^{At turned off part,} **1 7/8"** or ^{Over threads} **1 7/8"**
 No. of threads per inch **9.** / Area supported by each stay **100.7 sq** / Working pressure by Rules **211 lbs.**
 Tubes: Material **iron** External diameter ^{Plain} **2 1/2" to 2 3/4"** Thickness ^{Stay} **9 w.g.** / No. of threads per inch **9.**
 Pitch of tubes **3 3/4" x 3 1/2"** / Working pressure by Rules **p. 230 lbs. s. 235 lbs.** Manhole compensation: Size of opening in shell plate **20" x 16"** / Section of compensating ring **8" x 1 1/2"** / No. of rivets and diameter of rivet holes **48 - 1 3/32"**
 Outer row rivet pitch at ends **8 3/4"** / Depth of flange if manhole flanged
 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 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
 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.** FOR
RILEY BROS. (BOILERMAKERS) LIMITED.
 The foregoing is a correct description,
J. H. Shields SECRETARY, Manufacturer.

Dates of Survey ^{During progress of work in shops - - -} **1930 Jan 5, 12, 14, 19, 21 Mar 4, 6** Are the approved plans of boiler and superheater forwarded herewith **39. 29.**
^{while building} ^{During erection on board vessel - - -} **12, 19, 25, 28, 31 Apr 1, 11, 16, 23, 28** (If not state date of approval.)
Aug. 8 Sept 11, 12 Total No. of visits **18 + 3**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
 This boiler is a duplicate of Messrs Riley Bros. No. 5944 (Nat. Rpt. 13981).
 The materials and workmanship are good. This boiler has been built under special survey in accordance with the Rules and Approved Plan. It is being shipped to Sweden.
 This donkey boiler has been fitted in this vessel under my inspection and to my satisfaction.

Survey Fee ... £ **9.8-0** / When applied for, **Monthly**
 Travelling Expenses (if any) £ : : / When received, **192**
 Committee's Minute **TUE. 21 OCT 1930**
 Assigned **See F.E. Rpt.**
P. J. Mann. G. Grandeur.
 Engineer-Surveyor to Lloyd's Register of Shipping.