

REPORT ON BOILERS.

Date of writing Report *Octbr. 1916* When handed in at Local Office *191* Port of *Hamburg*
 No. in Survey held at *Hamburg* Date, First Survey *4. Decbr. 1915* Last Survey *22. Septbr. 1916*
 Reg. Book. on the *S.S. Tiurao* (Number of Visits *15*) Gross Tons }
 Net Tons }
 Master Built at By whom built When built
 Engines made at By whom made When made
 Boilers made at *Hamburg* By whom made *clg. Blohm & Voß* When made *1916*
 Registered Horse Power Owners Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY.—Manufacturers of Steel *Thyssen & Co., Düsseldorf*

(Letter for record *S.*) Total Heating Surface of Boilers *9851, 2 sq. ft.* Is forced draft fitted *no* No. and Description of Boilers *4 single ended multitubular* Working Pressure *180 lbs.* Tested by hydraulic pressure to Date of test
 No. of Certificate — Can each boiler be worked separately — Area of fire grate in each boiler No. and Description of safety valves to each boiler — Area of each valve — Pressure to which they are adjusted
 Are they fitted with easing gear — 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 — Mean dia. of boilers *15.5 1/2"* Length *11.11"*
 Material of shell plates *steel* Thickness *1.25"* Range of tensile strength *28-32, 1/2* Are the shell plates welded or flanged —
 Descrip. of riveting: cir. seams *lap doub. end* long. seams *triple riveted* Diameter of rivet holes in long. seams *1.28"* Pitch of rivets *8.81"*
 Lap of plates or width of butt straps *3.25 x 1.25* Per centages of strength of longitudinal joint rivets *85.62%* Working pressure of shell by rules *184.90 lbs.* Size of manhole in shell *15.25 x 12.8"* Size of compensating ring *40.25 x 37.20 x 1.65"* plate *85.48%*
 No. and Description of Furnaces in each boiler *3 horizontal* Material *steel* Outside diameter *47.25"* Length of plain part top } *6"* Thickness of plates crown } *0.59"* bottom }
 Description of longitudinal joint *welded* No. of strengthening rings *none* Working pressure of furnace by the rules *199.25 lbs.* Combustion chamber plates: Material *steel* Thickness: Sides *0.62"* Back *0.635"* Top *0.62"* Bottom *0.62"* Pitch of stays to ditto: Sides *8.81 x 8.5"* Back *8.125 x 8.5"*
 Top *8.8 x 8.5"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *198.14 lbs.* Material of stays *steel* Diameter at smallest part *1.52"* Area supported by each stay *1.936 sq. ft.* Working pressure by rules *252.25 lbs.* End plates in steam space: Material *steel* Thickness *1.4"*
 Pitch of stays *21 x 23"* How are stays secured *double nuts & wash.* Working pressure by rules *207.0 lbs.* Material of stays *steel* Diameter at smallest part *3.3"*
 Area supported by each stay *8.55 sq. ft.* Working pressure by rules *183.20 lbs.* Material of Front plates at bottom *steel* Thickness *1.02"* Material of Lower back plate *steel* Thickness *0.945"* Greatest pitch of stays *18 x 12.5"* Working pressure of plate by rules *312.24 lbs.* Diameter of tubes *3"*
 Pitch of tubes *4.25 x 4.18"* Material of tube plates *steel* Thickness: Front *1.78-1.02"* Back *0.83"* Mean pitch of stays *8.50"* Pitch across wide water spaces *14.25"* Working pressures by rules *349.05 lbs.* Girders to Chamber tops: Material *steel* Depth and thickness of girder at centre *9.25 x 1.5"* Length as per rule *34.25"* Distance apart *8"* Number and pitch of Stays in each *3-8.8"*
 Working pressure by rules *196.22 lbs.* Superheater or Steam chest: how connected to boiler — Can the superheater be shut off and the boiler worked separately — Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet holes — Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —
 If stiffened with rings — Distance between rings — Working pressure by rules — End plates: Thickness — How stayed —
 Working pressure of end plates — Area of safety valves to superheater — Are they fitted with easing gear —

The foregoing is a correct description,
Katze Manufacturer.

Dates of Survey } During progress of } 1915: *4/10, 14/10, 4/11, 12/11*
 while building } work in shops -- } 1916: *13/1, 5/2, 12/3, 8/4, 8/5, 3/6, 8/7, 8/8, 24/8, 11/9 and 22/9.*
 } During erection on }
 } board vessel --- }
 Is the approved plan of boiler forwarded herewith *no*
 Total No. of visits *15.*

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. — So far as the boilers were constructed here, workmanship and materials are of best description and the boilers are eligible to be fitted on board a vessel classed with Pentas Austro Ungarica after having been riveted up and tested with 360 lbs. gaseous pressure. — The results of tests of the material will be found attached. —*

Survey Fee £ *400-00* : : } When applied for, *23/9* 191*6*
 Travelling Expenses (if any) £ : : } When received, *16/10* 191*6*

Committee's Minute
 Assigned
 TUE. 11 JAN. 1921
 Engineer Surveyor to Lloyd's Register of British and Foreign Shipping.
 FRI. APR. 1 1921
 FRI. APR. 29 1921

