

## REPORT ON BOILERS.

No. 3574 B

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No. in Reg. Book *Survey held at* *Fredrikstad* Date, First Survey *2.11.1930* Last Survey *7.3.1931*  
*on the single screw steamer "R.H. SANDERS" HERMA GORTON* (Number of Visits *13*) Gross *1255.45* Tons Net *586.38*  
 Master *By whom built* *Fredrikstad* *Fredrikstad mech. Workshop* Yard No. *296* When built *1931*  
 Engines made at *Fredrikstad* By whom made *Fredrikstad mech. Workshop* Engine No. *1049* When made *1931*  
 Boilers made at *Fredrikstad* By whom made *Fredrikstad mech. Workshop* Boiler No. *1244/45* When made *1931*  
 Nominal Horse Power *25-2* Owners *A/B. Banantransport* Port belonging to *Stockholm.*

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *Apogon works* (Letter for Record *8*)  
 Total Heating Surface of Boilers *3000 sq feet* Is forced draught fitted *yes* Coal or Oil fired *coal*  
 No. and Description of Boilers *Two, single ended* Working Pressure *220 lb*  
 Tested by hydraulic pressure to *380* Date of test *11/12 30, 7/1-31* No. of Certificate *106/107* Can each boiler be worked separately *yes*  
 Area of Firegrate in each Boiler *4.25 m<sup>2</sup>* No. and Description of safety valves to each boiler *one Danlee*  
 Area of each set of valves per boiler *12.56 m<sup>2</sup>* Pressure to which they are adjusted *220* 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 *See above plan* Is oil fuel carried in the double bottom under boilers *no*  
 Smallest distance between shell of boiler and tank top plating *365 mm* Is the bottom of the boiler insulated *yes*  
 Largest internal dia. of boilers *14'-0"* Length *11'-11"* Shell plates: Material *steel* Tensile strength *44-55 kg/cm<sup>2</sup>*  
 Thickness *32.5 mm* Are the shell plates welded or flanged *flanged* Description of riveting: circ. seams *end double*  
 long. seams *double* Diameter of rivet holes in *circ. seams 36 mm* Pitch of rivets *105 mm*  
 Percentage of strength of circ. end seams *plate 65* rivets *43.8* Percentage of strength of circ. intermediate seam *plate 84.68* rivets *91.8*  
 Percentage of strength of longitudinal joint *plate 84.68* rivets *91.8* Working pressure of shell by Rules *15.63 kg/cm<sup>2</sup>*  
 Thickness of butt straps *outer 25 mm* inner *28* No. and Description of Furnaces in each Boiler *3, Morrison 3 cf*  
 Material *steel* Tensile strength *41-47 kg* Smallest outside diameter *1083 mm*  
 Length of plain part *top* Thickness of plates *bottom 16.5 mm* Description of longitudinal joint *welded*  
 Dimensions of stiffening rings on furnace or c.e. bottom Working pressure of furnace by Rules *15.66 kg/cm<sup>2</sup>*  
 End plates in steam space: Material *steel* Tensile strength *41-47 kg* Thickness *33.5 mm* Pitch of stays *500 x 470 mm*  
 How are stays secured *filled with nuts inside & outside* Working pressure by Rules *15.66 kg/cm<sup>2</sup>*  
 Tube plates: Material *steel* Tensile strength *41-47 kg* Thickness *26 mm*  
 Mean pitch of stay tubes in nests *262.5 mm* Pitch across wide water spaces *330 mm* Working pressure *front 15.52 kg/cm<sup>2</sup>*  
 Girders to combustion chamber tops: Material *steel* Tensile strength *44-55 kg/cm<sup>2</sup>* Depth and thickness of girder *back 16.23*  
 at centre *240 x (2 x 19) mm* Length as per Rule *775 mm* Distance apart *280 mm* No. and pitch of stays  
 in each *2, 238 mm* Working pressure by Rules *16.8 kg/cm<sup>2</sup>* Combustion chamber plates: Material *steel*  
 Tensile strength *41-47 kg/cm<sup>2</sup>* Thickness: Sides *21 mm* Back *19 mm* Top *21.5 mm* Bottom *21 mm*  
 Pitch of stays to ditto: Sides *245 x 180 mm* Back *187 x 195 mm* Top *280 x 238 mm* Are stays fitted with nuts or riveted over *riveted over*  
 Working pressure by Rules *15.88, 16.33, 15.77* Front plate at bottom: Material *steel* Tensile strength *41-47 kg/cm<sup>2</sup>*  
 Thickness *26 mm* Lower back plate: Material *steel* Tensile strength *41-47 kg/cm<sup>2</sup>* Thickness *25 mm*  
 Pitch of stays at wide water space *335 x 195 mm* Are stays fitted with nuts or riveted over *riveted over*  
 Working Pressure *15.9 kg/cm<sup>2</sup>* Main stays: Material *steel* Tensile strength *44-55 kg/cm<sup>2</sup>*  
 Diameter *At body of stay 3 1/4"* No. of threads per inch *6* Area supported by each stay *470 x 500 mm*  
 Working pressure by Rules *15.6 kg/cm<sup>2</sup>* Screw stays: Material *steel* Tensile strength *41-47 kg/cm<sup>2</sup>*  
 Diameter *At head of part 1 1/2", 1 5/8"* No. of threads per inch *9* Area supported by each stay *195 x 187, 245, 180*



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Working pressure by Rules 15.58, 15.64 <sup>are the stays drilled at the outer ends</sup> *no* Margin stays: Diameter <sup>At turned off part.</sup> *13/4"*  
 No. of threads per inch 9 Area supported by each stay 195 x 244 mm Working pressure by Rules 17.2 Kg cm<sup>2</sup>.  
 Tubes: Material *steel* External diameter <sup>Plate</sup> *3"* Thickness <sup>Over threads</sup> *8 mm* No. of threads per inch 9  
 Pitch of tubes 210 x 270 mm Working pressure by Rules 15.65 Kg cm<sup>2</sup> Manhole compensation: Size of opening in  
 shell plate 400 x 300 mm section of compensating ring 460 x 325 mm No. of rivets and diameter of rivet holes 42, 36 mm.  
 Outer row rivet pitch at ends 200 mm Depth of flange if manhole flanged *✓* Steam Dome: Material *✓*  
 Tensile strength Thickness of shell Description of longitudinal joint *✓*  
 Diameter of rivet holes Pitch of rivets Percentage of strength of joint <sup>Plate</sup> *✓*  
 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 *Tredwell's Vertical* Manufacturers of Tubes *Storfoverker, Sweden*  
 Number of elements 88 Material of tubes *steel* Steel castings *Stevanger, Hordaland 18-25*  
 Material of headers *cast steel* Tensile strength 26-32 t. Thickness 20 mm Internal diameter and thickness of tubes 17 mm, 3 mm  
 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* Can the superheater be shut off and  
 Area of each safety valve 1.23 m<sup>2</sup> Are the safety valves fitted with easing gear *Yes* Working pressure as per  
 Rules Pressure to which the safety valves are adjusted 220 lb per sq inch Hydraulic test pressure:  
 tubes 660 lb. castings 660 lb. and after assembly in place 220 Are drain cocks or valves fitted  
 to free the superheater from water where necessary *Yes*  
 Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with *Yes*

The foregoing is a correct description,  
*W. H. Olafsen* Manufacturer.

Dates of Survey <sup>During progress of work in shops - -</sup> 12/11, 11/12, 16/12, 1930 Are the approved plans of boiler and superheater forwarded herewith *Yes*  
 while building <sup>During erection on board vessel - -</sup> 6/1, 7/1, 22/1, 29/1, 6/2, 7/2, 16/2, 26/2, 1931 (If not state date of approval.)  
 Total No. of visits 13

Is this Boiler a duplicate of a previous case *no* If so, state Vessel's name and Report No. *✓*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The boilers have been constructed in accordance with the approved plans. The steel material used in the construction has been manufactured at approved works and tested by the Society's Surveyors as per Rule. The boilers have been tested by hydraulic pressure to 380 lb per sq inch and found in order, examined under steam pressure and the safety valves adjusted to 220 lb per sq inch. The superheater arrangement with safety valves tested. The workmanship is of the best description. Main steam pipes made of split down steel, tested as per Rule. The steel plates delivered with the Works Venter certificate, see Secretary's letter E 27/3-1930. These plates carefully examined and found in order.

Survey Fee ... : When applied for, 19  
 Travelling Expenses (if any) £ : When received, 19

*Philip Berghin-Rohr*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 24 MAR 1931

Assigned *See F. E. Rpt.*



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Return London

Box N° 281 Freda. Mel. Verbeke  
Herma Gortman

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