

# REPORT ON BOILERS.

No. 22940

First Entry

NOV 18 1938

Received at London Office

Date of writing Report 21<sup>st</sup> Nov. 1938 When handed in at Local Office

Port of **HAMBURG**

No. in Survey held at **HAMBURG**

Date, First Survey 27<sup>th</sup> June 1938 Last Survey 9<sup>th</sup> Novemb. 1938.

76500 on the Steel Single Screw Motor Tanker **INVERSUIR**

(Number of Visits 16.) Tons { Gross 9456 Net 5561

Master Built at **HAMBURG** By whom built Deutsche Werft A.G. Yard No. 203 When built 1938

Engines made at Augsburg By whom made Maschinenfabrik Augsburg - Nürnberg Engine No. 690/80 When made 1938

Boilers made at **HAMBURG** By whom made Deutsche Werft A.G. Boiler No. 6799680 When made 1938

Nominal Horse Power 1000 Owners Inver Tankers, Ltd. Port belonging to Dublin

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Stay tubes: Press & Walzenwerk A.G. Düsseldorf - Reisholz.

Manufacturers of Steel Plates: Gutehoffnungshütte A.G. Abt. Walzwerk Oberhausen (Letter for Record S.)

Total Heating Surface of Boilers each 150 sq. metres Is forced draught fitted yes Coal or Oil fired oil fired.

No. and Description of Boilers two single ended multitubular donkey boilers Working Pressure 180 lbs

Tested by hydraulic pressure to 320 lbs Date of test 10.9.38 No. of Certificate 706, 707 Can each boiler be worked separately yes

Area of Firegrate in each Boiler - No. and Description of safety valves to each boiler each boiler two double spring loaded safety valves

Area of each set of valves per boiler { per Rule 6644 sq. mm as fitted 8836 sq. mm Pressure to which they are adjusted 180 lbs 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 - 900 mm Is oil fuel carried in the double bottom under boilers <sup>boilers in</sup> tweendeck

Smallest distance between shell of boiler and <sup>tweendeck</sup> tank top plating 450 mm Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 3600 mm Length 3198 mm Shell plates: Material S-TC-Steel Tensile strength 47-53 kg/mm<sup>2</sup>

Thickness 24 mm Are the shell plates welded or flanged flanged, double Description of riveting: circ. seams { end double row, zigzag inter. -

long. seams treble row, double buttstrapped Diameter of rivet holes in { circ. seams 29 mm long. seams 29 mm Pitch of rivets { 94.8 mm 185 mm

Percentage of strength of circ. end seams { plate 69.4 % rivets 44.5 % Percentage of strength of circ. intermediate seam { plate - rivets -

Percentage of strength of longitudinal joint { plate 84.3 % rivets 106.8 % combined 90.02 % Working pressure of shell by Rules 12.84 kg/cm<sup>2</sup>

Thickness of butt straps { outer 24 mm inner 24 mm No. and Description of Furnaces in each Boiler two corrugated furnaces (Morison type)

Material S-TC-Steel Tensile strength 41-47 kg/mm<sup>2</sup> Smallest outside diameter 1036 mm

Length of plain part { top 190 mm bottom 240 mm Thickness of plates { crown 13 mm bottom Description of longitudinal joint water gas lapwelded

Dimensions of stiffening rings on furnace or c.c. bottom - Working pressure of furnace by Rules 12.84 kg/cm<sup>2</sup>

End plates in steam space: Material S-TC-Steel Tensile strength 41-47 kg/mm<sup>2</sup> Thickness 24 mm Pitch of stays 400 x 400 mm

How are stays secured washers and strips riveted to shell, nuts inside and outside Working pressure by Rules 14.5 kg/cm<sup>2</sup>

Tube plates: Material { front S-TC-Steel back S-TC-Steel Tensile strength { 41-47 kg/mm<sup>2</sup> Thickness { 24 mm 22 mm

Mean pitch of stay tubes in nests 312 x 212 mm Pitch across wide water spaces 360 mm Working pressure { front 16.4 kg/cm<sup>2</sup> back 17.9 kg/cm<sup>2</sup>

Girders to combustion chamber tops: Material S-TC-Steel Tensile strength 47-53 kg/mm<sup>2</sup> Depth and thickness of girder at centre 200 mm, 2 x 14 mm Length as per Rule 658.5 mm Distance apart 210 mm No. and pitch of stays in each 2, 200 mm Working pressure by Rules 15.7 kg/cm<sup>2</sup> Combustion chamber plates: Material S-TC-Steel

Tensile strength 41-47 kg/mm<sup>2</sup> Thickness: Sides 16 mm Back 19 mm Top 16 mm Bottom 24 mm

Pitch of stays to ditto: Sides 200 x 200 mm Back 205 x 200 mm Top 210 x 200 mm Are stays fitted with nuts or riveted over margin stays with nuts in nests riveted over

Working pressure by Rules 15.6-15.5-14.8 kg/cm<sup>2</sup> Front plate at bottom: Material S-TC-Steel Tensile strength 41-47 kg/mm<sup>2</sup>

Thickness 24 mm Lower back plate: Material S-TC-Steel Tensile strength 41-47 kg/mm<sup>2</sup> Thickness 24 mm

Pitch of stays at wide water space / main stay, pitch 525 mm diam. Are stays fitted with nuts or riveted over doubling plate, nuts inside & outside

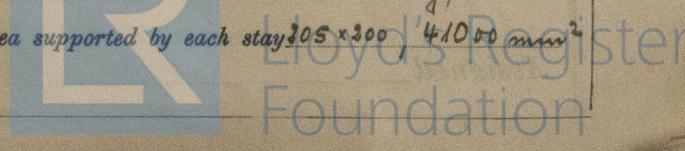
Working Pressure 14.2 kg/cm<sup>2</sup> Main stays: Material S-TC-Steel Tensile strength 41-47 kg/mm<sup>2</sup>

Diameter { At body of stay, 62.58 mm Over threads 68.0 mm No. of threads per inch 6 Area supported by each stay 16 000 mm<sup>2</sup>

Working pressure by Rules 13.77 kg/cm<sup>2</sup> Screw stays: Material S-TC-Steel Tensile strength 41-47 kg/mm<sup>2</sup>

Diameter { At turned off part, 35.38 mm Over threads 39.0 mm No. of threads per inch 9 Area supported by each stay 305 x 300, 41000 mm<sup>2</sup>

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Working pressure by Rules  $16.67 \text{ kg/cm}^2$  Are the stays drilled at the outer ends no Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part } 44.38 - 38.38 \text{ mm} \\ \text{or} \\ \text{Over threads } 48.0 - 42.0 \text{ mm} \end{array} \right.$

No. of threads per inch 9 Area supported by each stay  $\frac{383 \times 300}{2} = 56600 \text{ mm}^2$  Working pressure by Rules  $12.7 - 13.3 \text{ kg/cm}^2$

Tubes: Material S-TC-Steel External diameter  $\left\{ \begin{array}{l} \text{Plain } 76 \text{ mm} \\ \text{Stay } 76 \text{ mm} \end{array} \right.$  Thickness  $\left\{ \begin{array}{l} 3.75 \text{ mm} \\ 8 + 11 \text{ mm} \end{array} \right.$  No. of threads per inch 9

Pitch of tubes 106 x 104 mm Working pressure by Rules 14.9 kg/cm<sup>2</sup> Manhole compensation: Size of opening in shell plate 300 x 400 mm Section of compensating ring 2 x 24 x 200 No. of rivets and diameter of rivet holes 32 - 29 mm

Outer row rivet pitch at ends 112 mm Depth of flange if manhole flanged - Steam Dome: Material S-TC-Steel

Tensile strength 41-47 kg/mm<sup>2</sup> Thickness of shell 14 mm Description of longitudinal joint oxy-acetylene welded, secured by straps

Diameter of rivet holes 26 mm Pitch of rivets 84 mm Percentage of strength of joint  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right. \text{welding } 60\%$

Internal diameter 800 mm Working pressure by Rules 16.5 kg/cm<sup>2</sup> Thickness of crown 16 mm No. and diameter of stays - Inner radius of crown 640 mm Working pressure by Rules 16.5 kg/cm<sup>2</sup>

How connected to shell pressed flange, riveted to shell Size of doubling plate under dome - Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell 29 mm - 202 mm

**Type of Superheater**

Manufacturers of

Tubes

Steel forgings

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

forgings and 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

The foregoing is a correct description,

DEUTSCHE WERKE  
AKTIEGESELLSCHAFT

Manufacturer.

Dates of Survey while building  $\left\{ \begin{array}{l} \text{During progress of } 1938 \text{ June } 27^{\text{th}}, \text{ July } 5^{\text{th}}, 16^{\text{th}}, 19^{\text{th}}, 23^{\text{rd}}, 29^{\text{th}} \\ \text{work in shops - -} \end{array} \right.$  Aug. 1<sup>st</sup>, Sept. 1<sup>st</sup>, 10<sup>th</sup>

Are the approved plans of boiler and superheater forwarded herewith 27. Febr. 1936.  
(If not state date of approval.)

During erection on board vessel  $\left\{ \begin{array}{l} 1938 \text{ Sept. } 13, 15, 17, 19, \text{ Oct } 11, \text{ Nov. } 4, 11 \\ \text{board vessel - -} \end{array} \right.$  Total No. of visits 16

Is this Boiler a duplicate of a previous case yes

If so, state Vessel's name and Report No.

ELEONORE MÆRSK Hambg. Rep. No. 29166  
HOESH GIANT " " 22252  
INVERLIFFEY " " 22830  
INVERDARLE " " 22865

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

Material and workmanship of these donkey boilers are of good quality. The materials used in their construction are made at works recognized by the Committee and tested by the Society's Surveyors in accordance with the requirements of the Rules.

These donkey boilers having been made under Special Survey in conformity with the approved plan, the Secretary's letter and otherwise in compliance with the requirements of the Rules are eligible in my opinion to be classed with notation in the Register Book:

Two Donkey Boilers - 180 lbs/sq. inch pressure.

Thickness of adjusting washers of safety valves: Port boiler - port: 22 mm, starbd 23 mm  
Starbd. boiler - port 27.4 mm starbd 37 mm

Survey Fee ... .. £ R.T.C. 432 :-

When applied for, 16<sup>th</sup> Nov. 1938.

Travelling Expenses (if any) £ : :

When received, 29/12 1938

H. Rohrs

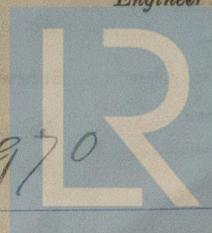
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 2 DEC 1938

Assigned

See Ham. Rpt. J.C. 22970



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