

REPORT ON BOILERS.

No. 20926

6 OCT 1933

Received at London Office

pt. 5a.

Port of Hamburg
 Date, First Survey 24th September Last Survey 21. Septemb 1933.
 Survey held at Hamburg (Number of Visits 17.)
 on the M.V. "D.L. Harper" (Oil engine) Tons { Gross 72336
 Net 7020
 Built at Hamburg By whom built Deutsche Werft A.G. Yard No. 149 When built 1933
 Engine No. 330620 When made 1932/33
 Engines made at Augsburg By whom made M.A.V. Boiler No. 464/5 When made 1933
 Boilers made at Hamburg By whom made Deutsche Werft A.G. Owners Baltisch amerik. Petrol. Imp. Ges Port belonging to Danzig.
 Indicated Horse Power 335

MULTITUBULAR BOILERS [MAIN, AUXILIARY, OR DONKEY.]

Manufacturers of Steel Vereinigte Stahlw. A. G. Stahl+Walzw. Thyssen, Muhlheim-Ruhr. (Letter for Record S.)
 Total Heating Surface of Boilers 2 x 233 = 466 m². Is forced draught fitted yes Coal or Oil fired oil fired.
 No. and Description of Boilers 2; Multitubular Donkey Boilers Working Pressure 200 lbs.
 Tested by hydraulic pressure to 350 lbs Date of test 8-3-1933 No. of Certificate 569/70 Can each boiler be worked separately yes
 Area of Firegrate in each Boiler 7 No. and Description of safety valves to each boiler 7; two spring loaded
 Area of each set of valves per boiler { per Rule 77386 mm² Pressure to which they are adjusted 200 lbs Are they fitted with easing gear yes
 In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler no.
 Smallest distance between boilers or uptakes and bunkers or woodwork 950 mm Is oil fuel carried in the double bottom under boilers no.
 Smallest distance between shell of boiler and ^{deck} top plating 400 mm Is the bottom of the boiler insulated yes
 Largest internal dia. of boilers 4300 mm Length 3600 mm Shell plates: Material O.H. Steel Tensile strength 47/53 Kg/mm²
 Thickness 37 mm Are the shell plates welded or flanged Flanged Description of riveting: circ. seams { inter. 777 mm
 long. seams double butt strapped Diameter of rivet holes in { circ. seams 35 mm Pitch of rivets { 277 mm
 { long. seams 35 mm Percentage of strength of circ. intermediate seam { plate +
 Percentage of strength of circ. end seams { plate 68.5 % rivets 40.4 % Working pressure of shell by Rules 74.02 Kg/cm²
 Percentage of strength of longitudinal joint { plate 84.0 % rivets 96.5 % combined 87.0 %
 Thickness of butt straps { outer 27.2 mm inner 27.2 mm No. and Description of Furnaces in each Boiler 3; Morison Furnaces
 Material O.H. Steel Tensile strength 47/47 Kg/mm² Smallest outside diameter 1084 mm
 Length of plain part { top 270 mm bottom 270 mm Thickness of plates { crown 17 mm bottom 17 mm Description of longitudinal joint welded.
 Dimensions of stiffening rings on furnace or c.c. bottom + Working pressure of furnace by Rules 76.74 Kg/cm²
 End plates in steam space: Material O.H. Steel Tensile strength 47/47 Kg/mm² Thickness 26.5 mm Pitch of stays 470/420 mm
 How are stays secured nuts outside; nuts inside, doubling plate Working pressure by Rules 20.2 Kg/cm²
 Tube plates: Material { front O.H. Steel back O.H. Steel Tensile strength { 47/47 Kg/mm² Thickness { 23.0 mm
 Mean pitch of stay tubes in nests 1-200 mm; 2-204 mm Pitch across wide water spaces 361 mm Working pressure { front 35.3 Kg/cm²
 { back 22.9 Kg/cm²
 Girders to combustion chamber tops: Material O.H. Steel Tensile strength 47/53 Kg/mm² Depth and thickness of girder
 at centre 230 mm; 2 x 13 mm Length as per Rule 776.5 mm Distance apart 200 mm No. and pitch of stays
 in each 2; 210 mm Working pressure by Rules 13.85 Kg/cm² Combustion chamber plates: Material O.H. Steel
 Tensile strength 47/47 Kg/mm² Thickness: Sides 17 mm Back 20.5 mm Top 17.0 mm Bottom 23 mm
 Pitch of stays to ditto: Sides 200 x 220 mm Back 208 x 200 mm Top 200 x 210 mm Are stays fitted with nuts or riveted over all stays riveted over.
 Working pressure by Rules 16.1; 16.8; 16.8 Kg/cm² Front plate at bottom: Material O.H. Steel Tensile strength 47/47 Kg/mm² Thickness 23.0 mm
 Thickness 25.5 mm Lower back plate: Material O.H. Steel Tensile strength 47/47 Kg/mm² Thickness 23.0 mm
 Pitch of stays at wide water space dia = 400 mm Are stays fitted with nuts or riveted over with nuts.
 Working Pressure 22.6 Kg/cm² Main stays: Material O.H. Steel Tensile strength 47/47 Kg/mm²
 Diameter { At body of stay, 70.5 mm No. of threads per inch 6 Area supported by each stay 420 x 470 = 197400 mm²
 { Over threads 70.0 mm Screw stays: Material O.H. Steel Tensile strength 47/47 Kg/mm²
 Working pressure by Rules 14.7 Kg/cm² No. of threads per inch 9 Area supported by each stay 200 x 200 = 40000 mm²
 Diameter { At turned off part, 38.4 mm { Over threads 42.0 mm

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Working pressure by Rules 77.97 1/2 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 44.4; 47.4 5b.
No. of threads per inch 9 Area supported by each stay 56000 + 70000 mm² Working pressure by Rules 77.59 16.2
Tubes: Material O.H. steel External diameter { Plain 70.0 mm Thickness 4.0 mm No. of threads per inch 9
Pitch of tubes 102 x 100 mm Working pressure by Rules 79.5 kg/cm² Manhole compensation: Size of opening
shell plate 460 x 560 mm Section of compensating ring 240 x 37 mm No. of rivets and diameter of rivet holes 42; 35.0 φ
Outer row rivet pitch at ends 790 mm Depth of flange if manhole flanged 700 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 ✓
Internal diameter ✓ Working pressure by Rules ✓ Thickness of crown ✓ No. and diameter
stays ✓ Inner radius of crown ✓ Working pressure by Rules ✓
How connected to shell ✓ Size of doubling plate under dome ✓ Diameter of rivet holes and
of rivets in outer row in dome connection to shell ✓

Type of Superheater
Number of elements ✓ Material of tubes ✓ Manufacturers of { Tubes ✓
Material of headers ✓ Tensile strength ✓ Steel castings ✓
the boiler be worked separately ✓ Is a safety valve fitted to every part of the superheater which can be shut off ✓
Area of each safety valve ✓ Are the safety valves fitted with easing gear ✓ Working pressure as
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

DEUTSCHE WERFT
KALLENBESSEL-SCHIFFBAU
The foregoing is a correct description,
3.10.1933
Dates of Survey { During progress of work in shops - 24/9/33, 7/10/33, 31/10/33, 2/11/33, 25/11/33, 7/12/33, 25/12/33, 8/3/34
while building { During erection on board vessel - 22/3/33, 29/3/33, 13/4/33, 25/4/33, 17/5/33, 6/6/33, 20/6/33
Are the approved plans of boiler and superheater forwarded herewith yes (If not state date of approval.)
Total No. of visits 17

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. MT. Franz Klasen, Hamb. Report No. 20455 dated 8-9-32

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
These Donkey Boilers have been built under Special Survey in accordance with the approved plans, the Society's Letters and instructions thereto and the Society's Rules. The materials used the constructions are made at works recognized by the Committee and have been tested by the Society's Surveyors. Workmanship and materials are of good quality. The safety valves have been adjusted to 200 lbs. pressure.
In my opinion these Donkey Boilers are eligible for notation of:
- "D.B. pressure 200 lbs."
Distance of washers of safety valves:-

	port side	starb. side
Port D.B.	<u>27.8 mm</u>	<u>28.0 mm</u>
Starb. D.B.	<u>27.1 mm</u>	<u>25.0 mm</u>

The approved plans are forwarded herewith. [M 70 47d]

Survey Fee ... £ 29 : 5 : 0 When applied for, 19
Travelling Expenses (if any) £ : : When received, 31.10.1933
W. H. Schmeider
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 13 OCT 1933
Assigned See F.B. Rpt.
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