

REPORT ON BOILERS.

No. 7942

Received at London Office

-2 MAY 1929

Date of writing Report 16 April 1929. When handed in at Local Office

192

Port of

Copenhagen

No. in Reg. Book.

Survey held at

Copenhagen

Date, First Survey

23rd October 1928

Last Survey

28th March 1929.

92088

on the

Steel Twin Screw Motor Vessel SANTA INEZ

(Number of Visits 16.)

Gross 5538.4

Net 3371.14

Master

Built at

Copenhagen

By whom built

Mehinck & Søn, Copenhagen

Yard No.

552

When built

1929.

Engines made at

Copenhagen

By whom made

H. Burmeister & Wain's Maskin- og Skibsbyggeri

Engine No.

1506

When made

1929.

Boilers made at

Copenhagen

By whom made

H. Burmeister & Wain's Maskin- og Skibsbyggeri

Boiler No.

1827

When made

1929.

Nominal Horse Power

for Sea 423.

Owners

Grace Steamship Company Incorporated
W. R. Grace & Co.

Port belonging to

New York U.S.A.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel PLATES: Wilkowitz Bergbau & Eisenhütten Gen. of Wilkowitz
TUBES: Newall, Glasgow RIVETS: Hays Bros. Copenhagen (Letter for Record S ✓)Total Heating Surface of Boilers 59 m² & 635 sq ft Is forced draught fitted No. Coal or Oil fired Waste heat 5.6 kg/cm² ✓

No. and Description of Boilers One off - multitubular Working Pressure 80 lbs per sq in ✓

Tested by hydraulic pressure to 160 lbs/sq in Date of test 12.1.1929 No. of Certificate 500 Can each boiler be worked separately ✓

Area of Firegrate in each Boiler ✓ No. and Description of safety valves to each boiler 2 off, directly spring loaded.

Area of each set of valves per boiler { per Rule 3.54 sq ft as fitted 3.54 sq ft Pressure to which they are adjusted 80 lbs/sq in 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 No bunkers or woodwork oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating The boiler is placed on the deck Is the bottom of the boiler insulated yes ✓

Largest internal dia. of boilers 1500 mm Length 3200 mm Shell plates: Material Siemens M. Steel Tensile strength 45.2-46.6 kg/cm²

Thickness 10 mm Are the shell plates welded or flanged No. Description of riveting: circ. seams { end lap - single riveting 44.5 - 45.5 mm ✓

long. seams lap joint, double riveting Diameter of rivet holes in { circ. seams 3/4" rivets 3/4" Pitch of rivets { 60 mm ✓

Percentage of strength of circ. end seams { plate 57.7% rivets 51.5% Percentage of strength of circ. intermediate seam { plate 57.7% rivets 51.5% ✓

Percentage of strength of longitudinal joint { plate 68.3% rivets 77.3% combined 75.2% Working pressure of shell by Rules 8.29 kg/cm² & 117.9 lbs per sq in ✓

Thickness of butt straps { outer ✓ inner ✓ No. and Description of Furnaces in each Boiler ✓

Material ✓ Tensile strength ✓ Smallest outside diameter ✓

Length of plain part { top ✓ bottom ✓ Thickness of plates { crown ✓ bottom ✓ Description of longitudinal joint ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules ✓

End plates in steam space: Material ✓ Tensile strength ✓ Thickness ✓ Pitch of stays ✓

How are stays secured Working pressure by Rules ✓

Tube plates: Material { front Siemens Martin Steel Tensile strength 45.2 kg/cm² Thickness 18 mm ✓Mean pitch of stay tubes in nests 360 mm x 360 mm Pitch across wide water spaces d = 500 mm Working pressure { front 25 kg/cm² 5.7 kg/cm² ✓

Girders to combustion chamber tops: Material ✓ Tensile strength ✓ Depth and thickness of girder

at centre ✓ Length as per Rule ✓ Distance apart ✓ No. and pitch of stays

in each ✓ Working pressure by Rules ✓ Combustion chamber plates: Material ✓

Tensile strength ✓ Thickness: Sides ✓ Back ✓ Top ✓ Bottom ✓

Pitch of stays to ditto: Sides ✓ Back ✓ Top ✓ Are stays fitted with nuts or riveted over ✓

Working pressure by Rules ✓ Front plate at bottom: Material ✓ Tensile strength ✓

Thickness ✓ Lower back plate: Material ✓ Tensile strength ✓ Thickness ✓

Pitch of stays at wide water space ✓ Are stays fitted with nuts or riveted over ✓

Working Pressure ✓ Main stays: Material ✓ Tensile strength ✓

Diameter { At body of stay, ✓ No. of threads per inch ✓ Area supported by each stay ✓

Working pressure by Rules ✓ Screw stays: Material ✓ Tensile strength ✓

Diameter { At turned off part, ✓ No. of threads per inch ✓ Area supported by each stay ✓

660
410
250
125

335
305
250

Working pressure by Rules ☒ Are the stays drilled at the outer ends ☒ Margin stays: Diameter { At turned off part, ☒
or
Over threads ☒

No. of threads per inch ☒ Area supported by each stay ☒ Working pressure by Rules ☒

Tubes: Material *Steel* External diameter { Plain *2 1/2"* ☒
Stay *2 1/2"* ☒ Thickness { *S.W.G. No 9* ☒
5/16" ☒ No. of threads per inch *11* ☒

Pitch of tubes *90" x 90"* ☒ Working pressure by Rules *230 lbs per sq. in.* ☒ Manhole compensation: Size of opening in shell plate *305" x 410"* ☒ Section of compensating ring *Steel (125 x 20)* ☒ No. of rivets and diameter of rivet holes *48 of 3/4"* ☒

Outer row rivet pitch at ends ☒ 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 { 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 23 inclusive for boilers been complied with *yes*

The foregoing is a correct description,
BURMEISTER & WAINSKJØBBER Manufacturer.

Dates of Survey { During progress of work in shops - - - *1928: 23/10 - 30/10 - 12/11 - 26/11 - 15/12*
while building { During erection on board vessel - - - *1929: 2/12 - 8/12 - 1929: 8/1 - 12/1*

Are the approved plans of boiler and superheater forwarded herewith *No. - 24/28*
(If not state date of approval.)

Total No. of visits *16*

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

This boiler has been built under Special Survey in accordance with the Rules, the approved plan, and the requirements contained in the Secretary's letter E dated 24.7.1928.

The material has been tested as required by the Rules as per certificates produced or by us, and the workmanship is of good description throughout.

The boiler has been fitted on board the above named vessel and completed to our entire satisfaction.

Two Weir's patent feed pumps 4" x 6" x 8" have been fitted for feeding purpose.

Survey Fee ... *£ 77.35* : : When applied for, *27.4.1929*

Travelling Expenses (if any) £ : : When received, *27.5.1929*

A. S. Jacobsen
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE 7 MAY 1929*

Assigned *See 6. apt. attached*



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Foundation