

## REPORT ON BOILERS.

No. 4599.

23 DEC 1927

Received at London Office

of reporting Report 26 November 1927 When handed in at Local Office

192 Port of Copenhagen

Survey held at

Elsinore

Date, First Survey

29 April

Last Survey

24 November 1927

Book.

on the Steel Twin Screw Motor Vessel, NYHOLM

(Number of Visits 20)

Gross 5843

Tons Net 3294

ter

Built at

Odense

By whom built

Odense Skibskonstruktør ved N. P. Möller

Yard No.

27

When built

1927

ines made at

Copenhagen

By whom made

M. B. Burmeister &amp; Wain's Maskin- og Skibbyggeri

Engine No.

1326

When made

1927

ers made at

Elsinore

By whom made

M. Helsingør's Jernstøbe- og Maskinbyggeri

Boiler No.

717

When made

1927

Minimal Horse Power (S. F. C.)

145

Owners

Christian Haaland

Port belonging to

Haugesund

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

PLATES—FURNACES—STAYS—SCREW STAYS: Witkowitz Bergbau &amp; Eisenhütten Gesellschaft, Witkowitz

Manufacturers of Steel

RIVETS: Rührle's Nieten- und Schrauben Werke, Haltingen

(Letter for Record S.)

Total Heating Surface of Boilers

 $2 \times 1088.6 \text{ sq. ft.} = 2177.2 \text{ sq. ft.}$ 

Is forced draught fitted

yes.

Coal or Oil fired

Oil fired

and Description of Boilers

2 off - single ended return multitubular

Working Pressure

150 lbs per sq. in.

Tested by hydraulic pressure to

275 lbs per sq. in.

Date of test

30.7.1927

No. of Certificate

467-468

Can each boiler be worked separately

yes.

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

99 sq. in.

Pressure to which they are adjusted

150 lbs per 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

18 in.

Is oil fuel carried in the double bottom under boilers

yes.

Smallest distance between shell of boiler and tank top plating

10' 3"

Is the bottom of the boiler insulated

yes.

Largest internal dia. of boilers

11' 0"

Length

10' 3"

Shell plates: Material

Siemens Martin Steel

Tensile strength

44.3-44.9 kg/mm<sup>2</sup>

Thickness

13/16 + 1/32 in.

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end lap joint, double

g. seams

double butt straps

double riveted.

Diameter of rivet holes in

circ. seams

1 1/8 in.

Pitch of rivets

3 5/16 in.

Percentage of strength of circ. end seams

plate 66%

rivets 58%

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate 77.86%

rivets 85.6%

combined 84.27%

Working pressure of shell by Rules

150.1 lbs per sq. in.

Thickness of butt straps

outer 1 1/16 in.

inner 1 1/16 in.

No. and Description of Furnaces in each Boiler

2 off Morris's corrugated section

Material

Siemens Martin Steel

Tensile strength

41.8-43.0 kg/mm<sup>2</sup>

Smallest outside diameter

36 7/8 in.

Length of plain part

top

bottom

Thickness of plates

crown 7/16 in.

bottom 7/16 in.

Description of longitudinal joint

yes.

Dimensions of stiffening rings on furnace or c.c. bottom

yes.

Working pressure of furnace by Rules

169.2 lbs per sq. in.

d plates in steam space: Material

Siemens Martin Steel

Tensile strength

42.0-46.7 kg/mm<sup>2</sup>

Thickness

1 1/8 in.

Pitch of stays

22" x 14 1/2"

How are stays secured

Screwed into plates, nuts inside, and washers outside

Working pressure by Rules

169.4 lbs per sq. in.

Boiler plates: Material

front Siemens Martin Steel

back Siemens Martin Steel

Tensile strength

42.5-46.0 kg/mm<sup>2</sup>

Thickness

7/8 + 1/32 in.

Pitch of stay tubes in nests

12" x 8"

Pitch across wide water spaces

14 in.

Working pressure

front 196 lbs per sq. in.

back 289.2 lbs per sq. in.

Orders to combustion chamber tops: Material

Siemens Martin Steel

Tensile strength

45.7 kg/mm<sup>2</sup>

Depth and thickness of girder

yes.

Centre

6 1/4" - 2 x 3/4"

Length as per Rule

29 1/2 in.

Distance apart

7 3/8 in.

No. and pitch of stays

Each

2 off, 8 3/4"

Working pressure by Rules

153.7 lbs per sq. in.

Combustion chamber plates: Material

Siemens Martin Steel

Tensile strength

44.4-46.9 kg/mm<sup>2</sup>

Thickness: Sides

1 1/16 in.

Back

5/8 in.

Top

1 1/16 in.

Bottom

1 1/16 in.

Pitch of stays to ditto: Sides

8 3/4" x 7 3/8"

Back

6 1/16" x 7 1/4"

Top

8 3/4" x 7 3/8"

Are stays fitted with nuts or riveted over

nuts in - and outside

Working pressure by Rules

TOP - 168 lbs per sq. in.

Front plate at bottom: Material

Siemens Martin Steel

Tensile strength

42.5-46.0 kg/mm<sup>2</sup>

Thickness

7/8 + 1/32 in.

Lower back plate: Material

Siemens Martin Steel

Tensile strength

44.3-46.5 kg/mm<sup>2</sup>

Thickness

1 1/16 in.

Pitch of stays at wide water space

d = 16 1/2 in.

Are stays fitted with nuts or riveted over

Nuts in - and outside.

Working Pressure

155.5 lbs per sq. in.

Main stays: Material

Siemens Martin Steel

Tensile strength

44.6-44.9 kg/mm<sup>2</sup>

Gage

At body of stay,

2 7/8 in.

Over threads

3 1/8 - 2 7/8 in.

No. of threads per inch

6

Area supported by each stay

TOP 3190 sq. in. BOTTOM 21380 sq. in.

Working pressure by Rules

TOP 191.4 lbs per sq. in. BOTTOM 162.4 lbs per sq. in.

Screw stays: Material

Siemens Martin Steel

Tensile strength

43.6-46.7 kg/mm<sup>2</sup>

Gage

At turned off part,

BACK 1 1/4 in.

Over threads

TOP &amp; SIDES 1 3/8 in.

No. of threads per inch

9

Area supported by each stay

BACK 4940 sq. in. TOP 506450 sq. in.

002674-002681-0209

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TOP & SIDES 157 16/0  
 Working pressure by Rules BACK 16, 44 Are the stays drilled at the outer ends No ✓ Margin stays: Diameter { At turned off part, ✓  
 or  
 Over threads 1 1/2" (corner 1 3/4")  
 No. of threads per inch 9 ✓ Area supported by each stay 707 0" Working pressure by Rules 177.4 lbs per 0" ✓  
 Tubes; Material Steel ✓ External diameter { Plain 2 3/4" ✓ Thickness { 5/16 and ✓ No. of threads per inch 9  
 Stay 2 3/4 ✓  
 Pitch of tubes 4" x 4" ✓ Working pressure by Rules 215 lbs per 0" ✓ Manhole compensation: Size of open  
 shell plate 15 1/2 x 19 1/2 ✓ Section of compensating ring Flanged 32 1/2 x 28 1/2" No. of rivets and diameter of rivet holes 36 off - 1 1/8"  
 Outer row rivet pitch at ends 5 1/8" ✓ Depth of flange if manhole flanged 3 1/2" ✓ 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  
 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	✓	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					Can the superheater be shut off
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 of					Working pressure of
Rules	✓	Pressure to which the safety valves are adjusted			✓
Hydraulic test pressure					Hydraulic test pressure
tubes	✓	, castings	✓	and after assembly in place	✓
Are drain cocks or valves					Are drain cocks or valves
to free the superheater from water where necessary	✓				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,*

ACTIESELSKABET

HELSINGØRS JERNSKIPS- OG MASKINBYGGERI

*Manufact*

Dates of Survey while building	During progress of work in shops - -	1927: { 29/4 - 6/5 - 9/6 - 25/6 - 28/6 - 2/7 - 6/7 - 8/7 2/7 - 26/7 - 30/7 - 6/8	Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)	yes.
	During erection on board vessel - - -	1927: { 20/10 - 7/11 - 8/11 - 14/11 - 15/11 - 20/11 - 21/11 - 24/11		
Total No. of visits			20	

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

The boxes have been built under Special Survey in accordance with the Rules, the approved plan and the requirements contained in the Secretary's letter E dated 24.12.1926

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

The boilers have been fitted onboard the above named vessel and completed to our satisfaction

Whit's patent low pressure oil burning system has been installed in accordance with the requirements of the Rules, the approved plan and the requirements contained in the Secretary's letter E dated 16.9.1927

Two Westinghouse feed pumps 5" x 7" x 12" have been installed.

Recommend the vessel to have notation of 2 DB-150 lbs. ✓

Survey Fee ... 14 £ 10 s 8 d 2 c 1/4 263.90

Travelling Expenses (if any) £ *Rs 43:00.*

When applied for, <sup>17/12</sup> 1927

When received, 17. 1. 1928

Christoph. Mause.

*Engineer Surveyor to Lloyd's Register of Shipping*

## Committee's Minute

*Assigned*

Sec<sup>y</sup>. Encl. attached

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Foundation