

REPORT ON BOILERS.

Lot. 8030.

No. 13989

23 AUG 1930

Date of writing Report

24. 2. 1930.

When handed in at Local Office

24. 2. 1930.

Port of

MIDDLESBROUGH.

Received at London Office

26 FEB 1930

No. in Survey held at

STOCKTON & Gothenburg

Date, First Survey

26 Nov/29

Last Survey

24. 2. 1930.

on the

(boiler for Aktiebolaget Gotaverken) Steel Twin L. Motor "VELMA"

(Number of Visits 17 + 4)

Gross 9780

Net 5861

Master

Built at

Gothenburg

By whom built

AB. Gotaverken

Yard No.

432

When built

1930

Engines made at

Gothenburg

By whom made

AB. Gotaverken

Engine Nos

887

When made

1930

Boilers made at

Stockton

By whom made

Riley Bros. (Boilermakers) Ltd

Boiler No.

5945

When made

1930

Nominal Horse Power

Owners

Skibs A/S Nordheim

Port belonging to

Oslo

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Wirkowitzer Bergbau- und Eisenhütten Gewerkschaft.

(Letter for Record S.)

Total Heating Surface of Boilers

1415 ft²

Is forced draught fitted

yes

Coal or Oil fired

oil

No. and Description of Boilers

15R.

Working Pressure 180 lbs.

Tested by hydraulic pressure to

320 lbs.

Date of test

24. 2. 30.

No. of Certificate

6767.

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

11' x 8"

No. and Description of safety valves to each boiler

Double springloaded

Area of each set of valves per boiler

3"

Pressure to which they are adjusted

185 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 main boilers.

Smallest distance between boilers or uptakes and

bulkhead 25"

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

11'-8"

Length

11'-3"

Shell plates: Material

Steel

Tensile strength

29/33

Thickness

15/16"

Are the shell plates welded or flanged

no.

Description of riveting: circ. seams

end

D.R.

Long. seams T.R.D.B.S. (5 rivets)

Diameter of rivet holes in

circ. seams

1 1/2"

Pitch of rivets

3 1/2" x 7"

Percentage of strength of circ. end seams

plate 65.1

rivets 42.5

Percentage of strength of circ. intermediate seam

plate 86

rivets 86.7

Percentage of strength of longitudinal joint

plate 86

rivets 86.7

combined 89.4

Working pressure of shell by Rules 181 lbs.

Thickness of butt straps

outer 3/4"

inner 7/8"

No. and Description of Furnaces in each Boiler

2 C.F.

Material

Steel

Tensile strength

26/30.

Smallest outside diameter

3'-7 3/8"

Length of plain part

top

bottom

Thickness of plates

crown 9/16"

bottom 7/16"

Description of longitudinal joint

weld.

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

Working pressure of furnace by Rules

188 lbs.

End plates in steam space: Material

Steel

Tensile strength

26/30.

Thickness

7/8"

Pitch of stays 16 1/2" x 14"

How are stays secured

D.N.W.

Working pressure by Rules

180 lbs.

Tube plates: Material

front Steel

back Steel

Tensile strength

26/30.

Thickness

7/8"

Mean pitch of stay tubes in nests

10 1/16"

Pitch across wide water spaces

13" x 7"

Working pressure

front 233 lbs.

back 273

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32.

Depth and thickness of girder

at centre 7 1/2" x 3/4" (double).

Length as per Rule

2'-6"

Distance apart

8 1/2"

No. and pitch of stays

in each 2-9"

Working pressure by Rules

187 lbs.

Combustion chamber plates: Material

Steel

Tensile strength

26/30.

Thickness: Sides

11/16"

Back

11/16"

Top

11/16"

Bottom

11/16"

Pitch of stays to ditto: Sides

10" x 9"

Back

10" x 9"

Top

8 1/2" x 9"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

182 lbs.

Front plate at bottom: Material

Steel

Tensile strength

26/30.

Thickness

7/8"

Lower back plate: Material

Steel

Tensile strength

26/30.

Thickness

7/8"

Pitch of stays at wide water space

13" x 9"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

229 lbs.

Main stays: Material

Steel

Tensile strength

28/32.

Diameter

At body of stay, 2 1/2"

or Over threads

No. of threads per inch

6.

Area supported by each stay

226

Working pressure by Rules

196 lbs.

Screw stays: Material

Steel

Tensile strength

26/30.

Diameter

At turned off part, 1 3/4"

or Over threads

No. of threads per inch

9

Area supported by each stay

87.6

Working pressure by Rules **207 lb.** Are the stays drilled at the outer ends **no.** Margin stays: Diameter { At turned off part, **1 3/8"** or Over threads **1 3/8"** ✓

No. of threads per inch **9.** ✓ Area supported by each stay **100.7** ✓ Working pressure by Rules **211 lb.** ✓

Tubes: Material **iron** ✓ External diameter { Plain **2 1/2" to 2 3/4"** Stay **2 1/2" to 2 3/4"** Thickness { **9/16"** No. of threads per inch **9.** ✓

Pitch of tubes **3 3/4" x 3 1/2"** ✓ Working pressure by Rules **p. 230 lb. s. 235 lb.** ✓ Manhole compensation: Size of opening in shell plate **20" x 16"** ✓ Section of compensating ring **8" x 1 1/2"** ✓ No. of rivets and diameter of rivet holes **48-1 7/32"** ✓

Outer row rivet pitch at ends **8 3/4"** ✓ 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 22 inclusive for boilers been complied with **Yes.**

The foregoing is a correct description.

J. H. Shields Manufacturer.

Dates of Survey { During progress of work in shops - - 1929 Nov. 26 Dec 5, 10, 17, 20, 24, 30, 1930 ✓ Are the approved plans of boiler and superheater forwarded herewith 3.9.29. (If not state date of approval.)

while building { During erection on board vessel - - - 1930 July 30 Aug 8, 12, 14 ✓ Total No. of visits 17 + 4.

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

This boiler is a duplicate of Messrs Riley Bros' No. 59-14 (Ind. Rpt. 13981)

The material and workmanship are good

This boiler has been built under special survey in accordance with the Rules and Approved Plan. It is being shipped to Sweden.

This donkey boiler has been fitted in this vessel under my inspection and to my satisfaction.

Survey Fee ... £ **9-8-0.** When applied for, **Monthly**

Travelling Expenses (if any) £ : : When received, 192

P. J. Macdonald
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 29 AUG 1930**

Assigned **See F. E. Rpt.**