

REPORT ON BOILERS.

No. 30422

Received at London Office

23 JUL 1930

Date of writing Report

1930

When handed in at Local Office

22 JULY 1930

Port of SUNDERLAND.

No. in
Reg. Book.

Survey held at SUNDERLAND.

Date, First Survey

Last Survey

1932

on the

S.S. "SONJA."

(Number of Visits

Tons

Gross
Net

Master

Built at ANTWERP.

By whom built ANTWERP ENG. CO. LD.

Yard No. 114

When built 1930.

Engines made at

SUNDERLAND.

By whom made

N.E. MARINE ENG. CO. LD.

Engine No. 2740

When made 1930.

Boilers made at

SUNDERLAND.

By whom made

N.E. MARINE ENG. CO. LD.

Boiler No. 2740

When made 1930.

Nominal Horse Power

242.

Owners

Port belonging to

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

Manufacturers of Steel STEEL CO. OF SCOTLAND.

(Letter for Record (S).)

Total Heating Surface of Boilers

4044

Is forced draught fitted

No.

Coal or Oil fired

COAL

No. and Description of Boilers

2. CYLINDRICAL MULTITUBULAR MARINE TYPE.

Working Pressure 180 lbs.

Tested by hydraulic pressure to

320 lbs.

Date of test

4-7-30.

No. of Certificate

4106.

Can each boiler be worked separately

Yes.

Area of Firegrate in each Boiler

52½

No. and Description of safety valves to each boiler

2 Spring Loaded.

Area of each set of valves per boiler

6.48

Pressure to which they are adjusted

7.06

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

Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated

Largest internal dia. of boilers

14'-0¾"

Length

11'-0"

Shell plates: Material

STEEL

Tensile strength 29/33 Tm.

Thickness

1½"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end

D.R. LAP

g. seams T.R.D.B. STRAP.

Diameter of rivet holes in

circ. seams

1½"

long. seams

1½"

Pitch of rivets

3½"

8½"

Percentage of strength of circ. end seams

plate

66.9

rivets

42.3.

Percentage of strength of circ. intermediate seam

plate

-

rivets

-

Percentage of strength of longitudinal joint

plate

85.7

rivets

85.3

combined

88.5.

Working pressure of shell by Rules

181.2 lbs.

Thickness of butt straps

outer 7/8"

inner 1"

No. and Description of Furnaces in each Boiler 3 CORRUGATED, DEIGHTON SECTION.

Material

STEEL.

Tensile strength 26/30 Tm.

Smallest outside diameter 3'-2¼"

Length of plain part

top

Thickness of plates

crown ½"

bottom ½"

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 Tm.

Thickness

1½"

Pitch of stays 1'-9" x 1'-10"

How are stays secured

D. NUTS.

Working pressure by Rules 183 lbs.

End plates: Material

front STEEL

back STEEL.

Tensile strength 26/30 Tm.

Thickness

7/8"

3/4"

Pitch of stay tubes in nests

10 9/16"

Pitch across wide water spaces 1'-2½" x 9"

Working pressure

front 191 lbs.

back 180.1 lbs.

Girders to combustion chamber tops: Material

STEEL.

Tensile strength 28/32 Tm.

Depth and thickness of girder

Centre

8¼" x 1½"

Length as per Rule

2'-7½"

Distance apart

10¼"

No. and pitch of stays

Each

2 at 10"

Working pressure by Rules

189 lbs.

Combustion chamber plates: Material

STEEL.

Tensile strength

26/30 Tm.

Thickness: Sides

¾"

Back

¾"

Top

¾"

Bottom

¾"

Pitch of stays to ditto: Sides

10 7/8" x 10"

Back

11" x 9 7/8"

Top

10 1/4" x 10"

Are stays fitted with nuts or riveted over

NUTS.

Working pressure by Rules

181.5 lbs.

Front plate at bottom: Material

STEEL.

Tensile strength 26/30 Tm.

Thickness

7/8"

Lower back plate: Material

STEEL.

Tensile strength 26/30 Tm.

Thickness

7/8"

Pitch of stays at wide water space

1'-2½" x 10¼"

Pitch

18¼"

Are stays fitted with nuts or riveted over

NUTS.

Working Pressure

188 lbs.

Main stays: Material

STEEL.

Tensile strength 28/32 Tm.

Pitch of stays

At body of stay, 3½"

Over threads 3½"

No. of threads per inch

6.

Area supported by each stay 462 sq.

Working pressure by Rules

185 lbs.

Screw stays: Material

STEEL.

Tensile strength 26/30 Tm.

Pitch of stays

At turned off part, 1 7/8"

Over threads 1 7/8"

No. of threads per inch

9

Area supported by each stay 108.75 sq.

002883-002890-017

Lloyd's Register
Foundation

Working pressure by Rules 194 lbs. Are the stays drilled at the outer ends No. Margin stays: Diameter ^{At turned off part,} 2" ^{or} Over threads

No. of threads per inch 9. Area supported by each stay 128.125 sq Working pressure by Rules 193 lbs.

Tubes: Material STEEL. External diameter ^{Plain} 3 1/4" ^{Stay} 3 1/4" Thickness ^{8 w.g.} 5/16" & 3/4" No. of threads per inch 9.

Pitch of tubes 4 1/2" x 4 5/8" Working pressure by Rules 196. Manhole compensation: Size of opening 16" x 12" Section of compensating ring ✓ No. of rivets and diameter of rivet holes ✓

Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged 4" 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 of rivets in outer row in dome connection to shell ✓

Type of Superheater N.E.M. Smoke tube Type. Manufacturers of ^{Tubes} TALBOT STEAD. ^{Forgings} FRODINGHAM STEEL CO.

Number of elements 88 Material of tubes S.D. STEEL. Internal diameter and thickness of tubes 17mm x 2.5mm

Material of headers STEEL. Tensile strength 26/30 Tms. Thickness 1 1/8" Can the superheater be shut off the boiler be worked separately Yes. Is a safety valve fitted to every part of the superheater which can be shut off from the boiler Yes.

Area of each safety valve 3.1416 sq Are the safety valves fitted with easing gear Yes. Working pressure as Rules 180 lbs. Pressure to which the safety valves are adjusted 540 lbs. Hydraulic test pressure 9-7-30.

tubes for forgings and after assembly in place 400 lbs. Are drain cocks or valves to free the superheater from water where necessary Yes.

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes.

FOR THE NORTH EASTERN MARINE ENGINEERING CO. LD.
The foregoing is a correct description,
John Nall Manufact

Dates of Survey ^{During progress of work in shops - -} Please see Mech. Report. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

^{while building} ^{During erection on board vessel - - -} ✓ Total No. of visits ✓

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These Boilers have been built under Special Survey & the materials & workmanship are good. On completion they were tested hydraulically & found sound & tight. It is stated that these boilers are intended to be fitted in the S.S. "SONJA" building by the Antwerp Engineering Co. Ltd. of Antwerp. For notation, see Machinery report.

Survey Fee £ 192 When applied for, 192

Travelling Expenses (if any) Shaped in Machinery Report. When received, 192

Committee's Minute FRI. 3 OCT 1930

Assigned Sec. F. I. Rpt.

J. D. Scott.
Engineer Surveyor to Lloyd's Register of Shipping