

REPORT ON BOILERS.

No. 16613

Received at London Office

3 JUN 1931

Date of writing Report 1-6-1931

When handed in at Local Office

2-6-1931

Port of Aberdeen

No. in Survey held at

Aberdeen

Date, First Survey 18-11-30

Last Survey 26-5-1931

on the S.S.

"ST. SUNNIVA"

(Number of Visits 20.)

Gross 1367.64
Tons Net 668.53

Master

Built at Aberdeen

By whom built

Hall, Russell & Co. Ltd. Yard No. 723 When built 1931

Engines made at

Aberdeen

By whom made

Hall, Russell & Co. Ltd.

Engine No. 723 When made 1931

Boilers made at

Aberdeen

By whom made

Hall, Russell & Co. Ltd.

Boiler No. 723 When made 1931

Nominal Horse Power

255

Owners

North of Scotland & Orkney & Shetland
Steam Navigation Co. Ltd.

Port belonging to Aberdeen

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

The Steel Co. of Scotland Ltd.

(Letter for Record T.)

Total Heating Surface of Boilers

4440 sq. ft.

Is forced draught fitted

no

Coal or Oil fired

Coal

No. and Description of Boilers

Two S.E. Main.

Working Pressure 200 lb.

Tested by hydraulic pressure to 350 lb.

Date of test 18-3-31

25-3-31

No. of Certificate 1106

1107

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler 67.5 sq. ft.

No. and Description of safety valves to each boiler

2 spring loaded

Area of each set of valves per boiler

per Rule 12.9 sq. ft.

as fitted 14.14 sq. ft.

Pressure to which they are adjusted

200 lb.

Are they fitted with easing gear

yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

3'-0"

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

no tank

Is the bottom of the boiler insulated

no

Largest internal dia. of boilers

15'-3"

Length

10'-9"

Shell plates: Material

Steel

Tensile strength 29/33 tons

Thickness

1 1/32"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end D.R.

long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

1 7/16"

long. seams

Pitch of rivets

4"

Percentage of strength of circ. end seams

plate 64.06

rivets 47.8

Percentage of strength of circ. intermediate seam

plate 85.06

rivets 93.33

Percentage of strength of longitudinal joint

plate 85.06

rivets 93.33

Working pressure of shell by Rules

201 lb.

Thickness of butt straps

outer 1 1/32"

inner 1 5/32"

No. and Description of Furnaces in each Boiler

3 Deighton 3 C.F.

Material

Steel

Tensile strength

26/30 tons

Smallest outside diameter

3'-10 9/32"

Length of plain part

top

bottom

Thickness of plates

crown 4 1/2"

bottom 6 1/4"

Description of longitudinal joint

welded

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

yes

Working pressure of furnace by Rules

202 lb.

End plates in steam space: Material

Steel

Tensile strength

26/30 tons

Thickness

1 3/16"

Pitch of stays 19" x 19 1/4"

How are stays secured

Double nuts & washers

Working pressure by Rules

203 lb.

Tube plates: Material

front Steel

back Steel

Tensile strength

26/30 tons

Thickness

1 5/16"

Mean pitch of stay tubes in nests

10.96

Pitch across wide water spaces

14 1/2" x 9 1/2"

Working pressure

front 201.3 lb.

back 213.8 lb.

Girders to combustion chamber tops: Material

Steel

Tensile strength

29/33 tons

Depth and thickness of girder

at centre 8 5/8" x 1 3/4" (wings)

Length as per Rule

32 7/16"

Distance apart

11 7/8" (centre)

No. and pitch of stays

in each 3 @ 7 7/8"

Working pressure by Rules

Centre 208.7 lb.

Wing 201.6"

Combustion chamber plates: Material

Steel

Tensile strength

26/30 tons

Thickness: Sides

25"

Back

23"

Top

25"

Bottom

25"

Pitch of stays to ditto: Sides

8 3/8" x 10 1/4"

Back

9 1/4" x 9 3/4"

Top

9 3/8" x 7 5/8"

Wing

9 3/8" x 7 5/8"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

c.c. tubes, 201 lb.

Front plate at bottom: Material

Steel

Tensile strength

26/30 tons

Thickness

1 5/16"

Lower back plate: Material

Steel

Tensile strength

26/30 tons

Thickness

29"

Pitch of stays at wide water space

15 1/4" x 9 3/4"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

206 lb. at bottom 202.5 lb.

Main stays: Material

Steel

Tensile strength

28/32 tons

Diameter

At body of stay,

or

Over threads

3" dia & 3 1/4" dia & 3 3/8"

No. of threads per inch

6

Area supported by each stay 322.5 sq. in. 399 sq. in.

Working pressure by Rules

202 lb.

Screw stays: Material

Iron

Tensile strength

21 1/2 tons

Diameter

At turned off part,

or

Over threads

1 3/4"

No. of threads per inch

9

Area supported by each stay 90.25 sq. in.

Lloyd's Register
Foundation

3120-0063

Working pressure by Rules 201 lb. Are the stays drilled at the outer ends no Margin stays: Diameter 2"
 No. of threads per inch 9 Area supported by each stay 119.5 sq" Working pressure by Rules 207 lb.
 Tubes: Material Iron External diameter 3 1/2" Thickness 8 W.G. No. of threads per inch 9
 Pitch of tubes 4 3/4" Working pressure by Rules 215 lb. Manhole compensation: Size of opening in
 shell plate 20" x 16" Section of compensating ring 3-1 3/8" x 2-9 1/4" x 1 1/8" No. of rivets and diameter of rivet holes 36 @ 1 7/8"
 Outer row rivet pitch at ends 9 7/8" 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
 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
 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,
 FOR HALL, RUSSELL & CO., LTD.

James H. Hunter Manufacturer.
 DIRECTOR.

Dates of Survey { During progress of work in shops - - - Nov. 18. Dec. 1. 16. 24. 29. Jan. 14. 20. 1930.
 { During erection on board vessel - - - Feb. 6. 16. 20. 23. Mar. 6. 10. 18. 25. 1931.
 Are the approved plans of boiler and superheater forwarded herewith yes
 (If not state date of approval.)
 Total No. of visits 20.

Is this Boiler a duplicate of a previous case no If so, state Vessel's name and Report No. ✓

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

These boilers have been constructed under special survey in accordance with the approved plan & the Rules of this Society. The materials and workmanship are good. The boilers have been satisfactorily fitted on board the vessel, the safety valves adjusted under steam and tried for accumulation, and the boiler examined under working conditions and found satisfactory.

Survey Fee ... £ See Report When applied for, 19
 Travelling Expenses (if any) £ on Machinery When received, 19

P. Fitzgerald
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 9 JUN 1931

Assigned See F.B. Rpt.