

REPORT ON BOILERS.

No. 28717

Date of writing Report

192

When handed in at Local Office

14 JAN 1924

Received at London Office

TUE. 15 JAN. 1924

No. in Survey held at

Sunderland

Date First Survey

16 Feb 23

Last Survey

19 June 1923

Reg. Book.

on the

S.S. "ALACRITY"

(Number of Visits 10)

Tons

Gross

Net

Master

Built at Middlesbrough

By whom built

Smiths Dock Co. Ltd.

Yard No. 781

When built

1923

Engines made at

Middlesbrough

By whom made

Smiths Dock Co. Ltd.

Engine No. 237

When made

1923

Boilers made at

Sunderland

By whom made

N.E. Marine Eng Co. Ltd.

Boiler No. 2523

When made

1923

Nominal Horse Power

Owners

Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

John Spencer & Sons Ltd.

(Letter for Record (S) ✓)

Total Heating Surface of Boilers

4462 sq ft

Is forced draught fitted

no

Coal or Oil fired

Coal

No. and Description of Boilers

Two single ended marine

Working Pressure

180

Tested by hydraulic pressure to

320

Date of test

19-6-23

No. of Certificate

3844

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

60.75 sq ft

No. and Description of safety valves to each boiler

2 direct spring

Area of each set of valves per boiler

per Rule 14.3

as fitted 16.59

Pressure to which they are adjusted

180

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

2'-0"

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

2'-0"

Is the bottom of the boiler insulated

no

Largest internal dia. of boilers

15'-6"

Length

11'-0 1/2"

Shell plates: Material

steel

Tensile strength

28-32 tons

Thickness

1 1/4"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end DR

Long. seams

DBS, TR

Diameter of rivet holes in

circ. seams

1 1/2"

Pitch of rivets

3 3/4"

Percentage of strength of circ. end seams

plate

65.8%

Percentage of strength of circ. intermediate seam

plate

45.2%

Percentage of strength of longitudinal joint

plate

85.1%

Working pressure of shell by Rules

180

Thickness of butt straps

outer 1"

inner 1 1/8"

No. and Description of Furnaces in each Boiler

3 Deighton 3cf.

Material

steel

Tensile strength

26-30 tons

Smallest outside diameter

3'-8 3/8"

Length of plain part

top

bottom

Thickness of plates

crown

9"

Description of longitudinal joint

welded

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

Working pressure of furnace by Rules

183

End plates in steam space: Material

steel

Tensile strength

26-30 tons

Thickness

1 1/2"

Pitch of stays

22 1/8" x 21 1/2"

How are stays secured

DN swasher

Working pressure by Rules

181

Tube plates: Material

front

back

steel

Tensile strength

26-30

Thickness

7/8"

3/4"

Lean pitch of stay tubes in nests

11.4

Pitch across wide water spaces

14 1/2"

Working pressure

front 184

back 182

Girders to combustion chamber tops: Material

steel

Tensile strength

28-32 tons

Depth and thickness of girder

centre

2 @ 8 3/4" x 15"

Length as per Rule

32 1/2"

Distance apart

11 3/4"

No. and pitch of stays

each

3 @ 8"

Working pressure by Rules

180

Combustion chamber plates: Material

steel

Tensile strength

28-32 tons

Thickness: Sides

2 3/32"

Back

2 3/32"

Top

2 3/32"

Bottom

2 3/32"

Pitch of stays to ditto: Sides

10" x 10"

Back

9 3/4" x 10 1/2"

Top

11 3/4" x 8"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

180

Front plate at bottom: Material

steel

Tensile strength

26-30 tons

Thickness

7/8"

Lower back plate: Material

steel

Tensile strength

26-30 tons

Thickness

7/8"

Pitch of stays at wide water space

14 1/2"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

194

Main stays: Material

steel

Tensile strength

28-32 tons

Diameter

At body of stay,

3 1/8"

No. of threads per inch

6

Area supported by each stay

480 sq in

Working pressure by Rules

180

Screw stays: Material

steel

Tensile strength

26-30 tons

Diameter

At turned off part,

1 3/4"

No. of threads per inch

9

Area supported by each stay

100 sq in

Working pressure by Rules

180

Screw stays: Material

steel

Tensile strength

26-30 tons

Diameter

At turned off part,

1 3/4"

No. of threads per inch

9

Area supported by each stay

100 sq in

Lloyd's Register Foundation

Working pressure by Rules 181 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, or Over threads 17/8" ✓
 No. of threads per inch 9 Area supported by each stay 118 sq" Working pressure by Rules 180
 Tubes: Material Iron External diameter { Plain 3 1/2" ✓ Stay 3 1/2" Thickness { 8 W.G. ✓ 5/16 & 1/4" No. of threads per inch 9
 Pitch of tubes 4 5/8" x 4 5/8" Working pressure by Rules 182 Manhole compensation: Size of opening in shell plate 20 9/16" x 16 9/16" ✓ Section of compensating ring 7 1/32" x 1 9/32" flanged No. of rivets and diameter of rivet holes 34 @ 1 9/32" ✓
 Outer row rivet pitch at ends 9" ✓ Depth of flange if manhole flanged 4" ✓ Steam Dome: Material none
 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
 Number of elements Material of tubes Manufacturers of { Tubes Steel castings
 Material of headers Tensile strength Internal diameter and thickness of tubes 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

The foregoing is a correct description,
C. T. Adams Manufacturer.
Manager

Dates of Survey { During progress of work in shops - 1923 Mar. 16, Apr. 9, 10, 19, 27, May 12, 1924
 while building { During erection on board vessel - 24 June 6, 11, 13, 1924
 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
 Total No. of visits 10

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

The materials and workmanship are good.
 The boilers have been constructed under special survey 12-1-24. The boilers are about to be sent to Middlesbrough to be fitted in the vessel.
 These boilers have been satisfactorily fitted on board, examined under steam and the safety valves adjusted to 180 lbs.

Survey Fee ... £ 27 : 7 :
 Travelling Expenses (if any) £ : :
 When applied for, 14 JAN 1924
 When received, 19 JAN 1924

S. C. Davis AD Manager
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute WFO 23 APR 1924
 Assigned