

REPORT ON BOILERS.

No. 14005

15 MAR 1930

Date of writing Report

192

When handed in at Local Office

192

Port of MIDDLESBROUGH

No. in

Reg. Book

Survey held at STOCKTON.

Date, First Survey 27 Nov/29

Last Survey 11 March 1930

84543 on the T.W. Se. "SIR JAMES CLARK ROSS"

(Number of Visits 16)

Gross 14361.

Tons Net 8127.

Master

Built at Haverton Hill on Tees By whom built Furness S.B. Co Ltd

Yard No. 158

When built 1930

Engines made at Copenhagen

By whom made Burmeister & Wain

Engine No. 1833-4 When made 1930

Boilers made at Stockholm

By whom made Blair & Co (1926) Ltd.

Boiler No. C. 687 When made 1930

Nominal Horse Power 709.

Owners Hvalfangerskieselskabet Roskilde Port belonging to Sandefjord

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Appleby Iron Co. Ltd.

Total Heating Surface of Boilers

9650 sq. ft.

Is forced draught fitted Yes

(Letter for Record S.)

No. and Description of Boilers

4 S.B.

Coal or Oil fired oil

Tested by hydraulic pressure to

370 lbs.

Date of test Two 3.3.30

Two 11.3.30

No. of Certificate

Two 6768

Working Pressure 185 lbs.

Area of Firegrate in each Boiler

✓

No. and Description of safety valves to each boiler

9.04 2

Two 6771

Can each boiler be worked separately Yes.

Area of each set of valves per boiler

per Rule

9.82 2

as fitted

Pressure to which they are adjusted

Pau Cockburns Improved High Lift

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

✓

Smallest distance between boilers or tubes and bunkers or woodwork

1'-9"

Is oil fuel carried in the double bottom under boilers

Yes.

Smallest distance between shell of boiler and tank top plating

✓

Is the bottom of the boiler insulated

Yes.

Largest internal dia. of boilers

13'-9 3/4"

Length 12'-0"

Shell plates: Material Steel

Tensile strength 29/33.

Thickness

1 1/8"

Are the shell plates welded or flanged

no.

Description of riveting: circ. seams

end

inter.

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

Diameter of rivet holes in

circ. seams

1 3/16"

long. seams

1 3/16"

Pitch of rivets

3.54"

8 3/8"

Percentage of strength of circ. end seams

plate

66.5

rivets

44.3.

Percentage of strength of circ. intermediate seam

plate

✓

Percentage of strength of longitudinal joint

plate

85.8.

rivets

87.5

combined

89.1.

Working pressure of shell by Rules 185 lbs.

Thickness of butt straps

outer 7/8"

inner 1"

No. and Description of Furnaces in each Boiler

3 C.F.

Material

Steel

Tensile strength

26/30.

Smallest outside diameter

3'-3 13/16"

Length of plain part

top

✓

bottom

Thickness of plates

crown 1 1/4"

bottom 3/2"

Description of longitudinal joint

weld.

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

✓

Working pressure of furnace by Rules 192 lbs.

End plates in steam space: Material

Steel

Tensile strength

26/30.

Thickness

1 1/8"

Pitch of stays 18 1/2" x 18 1/2"

How are stays secured

D.N. & W.

Working pressure by Rules 191 lbs.

Tube plates: Material

front

Steel

back

Tensile strength

26/30.

Thickness

3 1/32"

Mean pitch of stay tubes in nests

9 7/16"

Pitch across wide water spaces

13 1/2" x 7 1/4"

Working pressure

front 196 lbs.

back 225 lbs.

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32.

Depth and thickness of girder

at centre 9" x 13/16" (double)

Length as per Rule 2'-11 1/2"

Distance apart 8 1/2"

No. and pitch of stays

in each 3'-8 1/2"

Working pressure by Rules 191 lbs.

Tensile strength

26/30.

Thickness: Sides

2 1/32"

Back

2 1/32"

Top

2 1/32"

Bottom

3/4"

Pitch of stays to ditto: Sides

8 3/4" x 8 3/4"

Back

9" x 8 1/4"

Top

8 1/2" x 8 1/2"

Are stays fitted with nuts or riveted over

nuts.

Working pressure by Rules

195 lbs.

Front plate at bottom: Material

Steel

Tensile strength

26/30.

Thickness

3 1/2"

Lower back plate: Material

Steel

Tensile strength

26/30.

Thickness

7/8"

Pitch of stays at wide water space

13 5/8" x 8 1/4"

Are stays fitted with nuts or riveted over

nuts.

Working Pressure

247 lbs.

Main stays: Material

Steel

Tensile strength

28/32.

Diameter

At body of stay,

or

3"

No. of threads per inch

6.

Area supported by each stay

335 1/4 sq. in.

Working pressure by Rules

200 lbs.

Screw stays: Material

Steel

Tensile strength

26/30.

Diameter

At turned off part,

or

1 5/8"

No. of threads per inch

8.

Area supported by each stay

74 1/2 sq. in.

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Working pressure by Rules 203 lbs. Are the stays drilled at the outer ends no. Margin stays: Diameter ^{At turned off part.} 1 7/8"
 No. of threads per inch 8. Area supported by each stay 90.6
 Tubes: Material iron External diameter ^{Plain} 2 1/2" to 2 5/8" ^{Stay} 2 1/2" to 2 3/4" Thickness ^{9wg.} 1/4", 5/16" & 3/8" Working pressure by Rules 228 lbs.
 Pitch of tubes 3 7/8" x 3 5/8" Working pressure by Rules p. 230 lbs. s. 192 lbs. No. of threads per inch 9.
 shell plate 16" x 12" Section of compensating ring 7 1/2" x 1 1/8" Manhole compensation: Size of opening 28-1 1/4"
 Outer row rivet pitch at ends 8 3/4" Depth of flange if manhole flanged ✓ No. of rivets and diameter of rivet holes 28-1 1/4"
 Tensile strength Thickness of shell Description of longitudinal joint
 Diameter of rivet holes Pitch of rivets Percentage of strength of joint ^{Plate}
 Internal diameter Working pressure by Rules ^{Rivets}
 stays Inner radius of crown Thickness of crown No. and diameter of
 How connected to shell Working pressure by Rules
 of rivets in outer row in dome connection to shell Size of doubling plate under dome
 Diameter of rivet holes and pitch

Type of Superheater
 Number of elements Material of tubes Manufacturers of ^{Tubes}
 Material of headers ^{Steel castings}
 Tensile strength Internal diameter and thickness of tubes
 the boiler be worked separately Thickness
 Area of each safety valve Is a safety valve fitted to every part of the superheater which can be shut off from the boiler
 Rules Are the safety valves fitted with easing gear
 tubes Pressure to which the safety valves are adjusted Working pressure as per
 , castings and after assembly in place Hydraulic test pressure
 to free the superheater from water where necessary Are drain cocks or valves fitted

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes.
 The foregoing is a correct description,
 For BLAIR & CO. (1926) LIMITED.
 Dates of Survey { During progress of work in shops - - - 1929: Nov 27, Dec 29, 13, 19, 1930: Jan 6, 14, 21, 27, Feb 4, 12, 18, 27, Mar 6, 7, 11
 while building { During erection on board vessel - - - }
 Are the approved plans of boiler and superheater forwarded herewith Yes.
 (If not state date of approval.)
 Total No. of visits 16

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

The materials and workmanship are good.
 These boilers have been built under special survey in accordance with the Rules and approved Plan. They will be installed in this district.

These boilers have been securely fitted aboard and their safety valves adjusted and tested under steam with satisfactory results.

Survey Fee ... £ 44-13-0
 Travelling Expenses (if any) £ : :
 When applied for, 14 Mar 1930
 When received, 27 Mar 1930

M. J. Mac
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 19 AUG 1930

Assigned See Indb. JE 14181



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