

REPORT ON BOILERS.

No. 28782

MON. APR. 7 1924

Received at London Office

Date of writing Report

192

When handed in at Local Office

3 APR 1924

Port of

Sunderland

No. in Survey held at

Sunderland

Date, First Survey

Last Survey

1st April 1924

g. Book.

(Number of Visits)

Gross 3821

on the new steel S/S "GOATHLAND"

Tons Net 2273

Master

Built at Sunderland

By whom built R. Thompson & Sons

Yard No. 320

When built 1924

Engines made at

Sunderland

By whom made

North Eastern Marine Eng Co Ltd

Engine No. 2540

When made 1924

Donkey

Boilers made at

Sunderland

By whom made

North Eastern Marine Eng Co Ltd

Boiler No. 2548

When made 1924

Nominal Horse Power

340

Owners

Rawland & Marwood & Co Ltd

Port belonging to

London

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

John Spencer & Sons Limited

(Letter for Record (S))

Total Heating Surface of Boilers

930 sq ft

Is forced draught fitted

no

Coal or Oil fired

coal

No. and Description of Boilers

one single ended marine

Working Pressure

180

Tested by hydraulic pressure to

320

Date of test

25-2-24

No. of Certificate

3865

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

28 sq ft

No. and Description of safety valves to each boiler

two direct spring

Area of each set of valves per boiler

per Rule

5.96 sq ft

as fitted

6.28 sq ft

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

no

Smallest distance between boilers or uptakes and bunkers or woodwork

15 1/2"

Is oil fuel carried in the double bottom under boilers

no tanks

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated

no

Largest internal dia. of boilers

10' 4 3/4"

Length

10' 6"

Shell plates: Material

Steel

Tensile strength

28-32 tons

Thickness

55" / 64"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end

inter.

Long. seams

DBS. TR

Diameter of rivet holes in

circ. seams

15" / 16"

Pitch of rivets

3"

6 3/4"

Percentage of strength of circ. end seams

plate

68.75

rivets

44

Percentage of strength of circ. intermediate seam

plate

86.11

rivets

100

Percentage of strength of longitudinal joint

plate

86.11

rivets

91.75

combined

90.5

Working pressure of shell by Rules

180

Thickness of butt straps

outer

2 1/2"

inner

2 5/8"

No. and Description of Furnaces in each Boiler

two. Bighton

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

2' 9 5/8"

Length of plain part

top

bottom

Thickness of plates

crown

7/16"

Description of longitudinal joint

welded

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

Working pressure of furnace by Rules

185

End plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

15"

Pitch of stays

18 1/2" x 14 3/8"

How are stays secured

WN & Washers

Working pressure by Rules

180

Tube plates: Material

front

back

Steel

Tensile strength

26-30 tons

Thickness

15"

2 5/8"

Working pressure

189

189

Mean pitch of stay tubes in nests

10.75"

Pitch across wide water spaces

14 1/2" (23/32")

Working pressure

189

189

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons

Depth and thickness of girder

at centre

2 @ 8" x 2 3/4"

Length as per Rule

29 1/4"

Distance apart

9 1/2"

No. and pitch of stays

in each

2 @ 9 1/2"

Working pressure by Rules

190

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

23/32"

Back

23/32"

Top

23/32"

Bottom

23/32"

Working pressure

189

189

Pitch of stays to ditto: Sides

10 1/2" x 9 1/2"

Back

10 1/4" x 9 3/4"

Top

9 1/2" x 9 1/2"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

181

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

15"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

15"

Pitch of stays at wide water space

14 1/2" x 10 1/4"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

235

Main stays: Material

Steel

Tensile strength

28-32 tons

Diameter

At body of stay,

2 3/8"

Over threads

No. of threads per inch

6

Area supported by each stay

262 sq in

Working pressure by Rules

184

Screw stays: Material

Steel

Tensile strength

26-30 tons

Diameter

At turned off part,

1 3/4"

Over threads

No. of threads per inch

9

Area supported by each stay

100 sq in

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Working pressure by Rules 203 lb 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 117 sq" Working pressure by Rules 181

Tubes: Material Wrought iron ✓ External diameter { Plain 3 1/4" ✓ Stay 3 1/4" ✓ Thickness { 8 B.W.G. ✓ 5/16 & 1/4" ✓ No. of threads per inch 9 ✓

Pitch of tubes 4 1/2" x 4 1/2" ✓ Working pressure by Rules 180 Manhole compensation: Size of opening in shell plate 16" x 20" ✓ Section of compensating ring 9" x 1 1/8" flanged ✓ No. of rivets and diameter of rivet holes 32 @ 15/16" ✓

Outer row rivet pitch at ends 6 3/4" ✓ Depth of flange if manhole flanged ✓ ✓ 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 _____ 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 _____

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 _____

FOR THE NORTH EASTERN MARINE ENGINEERS LE

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

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

while building { During erection on board vessel - - - } Machinery Total No. of visits _____

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

The materials and workmanship are good

The boiler has been constructed under special survey, satisfactorily fitted in vessel (upper deck) and its safety valves adjusted under steam. ✓

Survey Fee £ 6 : 4 : _____ When applied for. - 1 APR 1924

Travelling Expenses (if any) £ : : _____ When received. 1. 5. 1924

S. C. Davis

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 11 APR 1924

Assigned _____