

REPORT ON BOILERS.

No. 31716

Date of writing Report

1935

When handed in at Local Office

2 NOV. 1935

Port of

Received at London Office

-4 NOV 1935

No. in Survey held at
Reg. Book.

Sunderland

Date, First Survey

Last Survey

Oct 30 1935

on the

S/S "CORBRAE"

(Number of Visits)

Gross
Tons
Net

Master

Built at

Burntisland

By whom built

Burntisland S.B. Co. Ltd.

Yard No.

When built 1935

Engines made at

Sunderland

By whom made

J. H. North East & Son, Eng. Co. Ltd.

Engine No.

When made 1935

Boilers made at

Sunderland

By whom made

J. H. North East & Son, Eng. Co. Ltd.

Boiler No.

When made 1935

Nominal Horse Power

141

Owners

Levy Colliers Ltd.

Port belonging to

London.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

The Steel Company of Scotland Ltd.

(Letter for Record S. ✓)

Total Heating Surface of Boilers

2854 sq ft

Is forced draught fitted

No.

Coal or Oil fired

Coal

No. and Description of Boilers

Two Single Ended Multitubular

Working Pressure

220.

Tested by hydraulic pressure to

380

Date of test

16.9.35

No. of Certificate

4165

Can each boiler be worked separately

Yes.

Area of Firegrate in each Boiler

38 sq ft

No. and Description of safety valves to each boiler

Two Direct Spring

Area of each set of valves per boiler

per Rule

4.41 sq in

Pressure to which they are adjusted

220 lb

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

10"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

2'-11"

Is the bottom of the boiler insulated

Yes.

Largest internal dia. of boilers

12'-3 5/8"

Length

11'-0"

Shell plates: Material

Steel

Tensile strength

29-33

Thickness

1 3/16"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end

D.R. Lap.

Long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

1 1/4"

long. seams

1 1/4"

Pitch of rivets

3 5/8"

end

8 3/4"

Percentage of strength of circ. end seams

plate

65.4

rivets

45.0

Percentage of strength of circ. intermediate seam

plate

85.4

rivets

Percentage of strength of longitudinal joint

plate

84.8

rivets

88.9

Working pressure of shell by Rules

220.4

Thickness of butt straps

outer

15/16"

inner

1 1/16"

No. and Description of Furnaces in each Boiler

Three Corrugated (Beighton).

Material

Steel

Tensile strength

26-30

Smallest outside diameter

2'-9 25/32"

Length of plain part

top

✓

Thickness of plates

crown

33/64"

bottom

Description of longitudinal joint

weld.

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

✓

Working pressure of furnace by Rules

220.2

End plates in steam space: Material

Steel

Tensile strength

26-30

Thickness

1 1/8"

Pitch of stays

1'-4 3/8" x 1'-4 1/4"

How are stays secured

Double nuts

Working pressure by Rules

220.9

Tube plates: Material

front

Steel

back

Tensile strength

26-30

Thickness

3 1/32"

13/16"

Lean pitch of stay tubes in nests

10.375.

Pitch across wide water spaces

1'-2 1/2"

Working pressure

front

228

222.4

back

220.6

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32

Depth and thickness of girder

At centre

8 3/8" x 2 1/8"

Length as per Rule

2'-4 29/32"

Distance apart

10 1/4"

No. and pitch of stays

In each

3 @ 4 3/4"

Working pressure by Rules

224.

Combustion chamber plates: Material

Steel

Tensile strength

26-30

Thickness: Sides

25/32"

Back

25/32"

Top

25/32"

Bottom

25/32"

Pitch of stays to ditto: Sides

10" x 9 5/8"

Back

10 5/16" x 8 3/4"

Top

10 1/4" x 4 3/4"

Are stays fitted with nuts or riveted over

nuts.

Working pressure by Rules

223.8, 220.2, 260

Front plate at bottom: Material

Steel

Tensile strength

26-30.

Thickness

3 1/32"

Lower back plate: Material

Steel

Tensile strength

26-30

Thickness

15/16"

Pitch of stays at wide water space

1'-2 3/4"

Are stays fitted with nuts or riveted over

nuts.

Working Pressure

245 220

Main stays: Material

Steel

Tensile strength

28-32.

Diameter

At body of stay,

2 5/8"

or

Over threads

3"

No. of threads per inch

6.

Area supported by each stay

16 3/8" x 16 1/4"

Working pressure by Rules

223

Screw stays: Material

Steel

Tensile strength

26-30.

Diameter

At turned off part,

1 3/4", 1 7/8", 2", 2 1/8"

or

Over threads

No. of threads per inch

9.

Area supported by each stay

10 1/4" x 7 3/4"

10 5/16" x 8 3/4"

12 27/32" x 8 3/4"

12.68" x 10.18"

Working pressure by Rules ²²⁸ 222 ²²⁰ Are the stays drilled at the outer ends *no.* Margin stays: Diameter { At turned off part, ^{2"} 2 1/8"
 No. of threads per inch ^{9.} 9 Area supported by each stay ^{12-8-8-1/5"} 12-6-10-1" Working pressure by Rules ²²⁰ 222
 Tubes: Material *Steel* External diameter { Plain ^{3 1/4"} 3 1/4" Thickness { 8 H.C. ^{1/4"} 1/4" 5/16" 3/8" 7/16" No. of threads per inch ^{9.} 9
 Pitch of tubes ^{4 1/2"} 4 1/2" Working pressure by Rules ^{256, 260, 220, 254} 256, 260, 220, 254 Manhole compensation: Size of opening
 shell plate (in end plate) Section of compensating ring No. of rivets and diameter of rivet holes
 Outer row rivet pitch at ends Depth of flange if manhole flanged Steam Dome: Material *house.*
 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
 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 *N.E.M. Smoke tube* Manufacturers of Tubes *Tubes L'd*
 Number of elements ^{30 each blw.} 30 each blw. Material of tubes *Solid drawn steel* Steel castings *Gradingham Steel Co*
 Material of headers *Forged steel* Tensile strength ²⁶⁻³⁰ 26-30 Thickness ^{1 1/8"} 1 1/8" Can the superheater be shut off at
 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"} 3.1416 sq" Are the safety valves fitted with easing gear *Yes.* Working pressure as per
 Rules ²²⁰ 220 Pressure to which the safety valves are adjusted ^{220 lbs.} 220 lbs. Hydraulic test pressure
 tubes ^{1500 lbs/sq"} 1500 lbs/sq" castings ^{660 lbs/sq"} 660 lbs/sq" and after assembly in place ^{550 lbs/sq"} 550 lbs/sq" Are drain cocks or valves fitted
 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.*

The foregoing is a correct description,
 FOR THE NORTH EASTERN MARINE ENGINEERING CO. LTD.
 Manufacture

Dates of Survey { During progress of work in shops - - - } Please see *Eng. Rpt.* 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 Constructed under Special Survey in accordance with the approved plan & the rules of the Society.

The materials & workmanship are good.
On completion the boilers have been satisfactorily tested by hydraulic pressure in accordance with the Rules & found tight & sound.

The boilers have been despatched to Buttrick Island for installation on board the vessel.

These boilers have been efficiently fitted on board, examined under steam & safety valves adjusted 220 lbs. ^{OKR.}

Survey Fee ... *Charged on* When applied for, 192
 Travelling Expenses (if any) *Eng. Rpt.* When received, 192

J. H. K. A. S. W.
 Engineer-Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 8 JAN 1936**
 Assigned *See Std. J.E. 18977*