

REPORT ON BOILERS.

No. 98396.

11 MAR 1931

Received at London Office

Date of writing Report

19

When handed in at Local Office

9 MAR. 1931

Port of

LIVERPOOL

No. in Survey held at
Reg. Book.

Birkenhead

Date, First Survey

19th March/30

Last Survey

3rd March 1931

(Number of Visits

86

Gross

6450

Net

89440 on the

S. S. 'Athelbeach'

Master

Built at

Birkenhead

By whom built

Cammell Laird & Co. Ltd.

Yard No.

973

When built

1930

Engines made at

Greenock

By whom made

John Kincaid & Co. Ltd.

Engine No.

760

When made

1930

Boilers made at

Birkenhead

By whom made

Cammell Laird & Co. Ltd.

Boiler No.

973

When made

1930

Nominal Horse Power

490

Owners

United Industral Co. Ltd.

Port belonging to

Liverpool

MULTITUBULAR BOILERS ~~MAIN, AUXILIARY, OR DONKEY.~~

Manufacturers of Steel

David Colville & Sons; Earl of Dudley

(Letter for Record S.)

Total Heating Surface of Boilers

1221 sq. ft.

Is forced draught fitted

Yes

Coal or Oil fired

oil

No. and Description of Boilers

One Cylindrical Multitubular

Working Pressure

180 lb. sq. in.

Tested by hydraulic pressure to

320 lb.

Date of test

27.6.30

No. of Certificate

2365

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

✓

No. and Description of safety valves to each boiler

Two spring loaded

Area of each set of valves per boiler

{ per Rule

48 sq. in.

Pressure to which they are adjusted

185 lb. sq. in.

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

2'3"

Is oil fuel carried in the double bottom under boilers

Yes

Smallest distance between shell of boiler and tank top plating

on 2nd deck

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

11'2 1/16"

Length

10'7"

Shell plates: Material

steel

Tensile strength

28-32 tons sq. in.

Thickness

15/16"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

{ end

OR lap

long. seams

treble Riv. double butt

Diameter of rivet holes in

{ circ. seams

1 1/8"

{ long. seams

1"

Pitch of rivets

{ 3-786"

{ 7"

Percentage of strength of circ. end seams

{ plate

70

{ rivets

46

Percentage of strength of circ. intermediate seam

{ plate

✓

{ rivets

✓

Percentage of strength of longitudinal joint

{ plate

85.7

{ rivets

92

{ combined

89.8

Working pressure of shell by Rules

183 lb. sq. in.

Thickness of butt straps

{ outer

23/32"

{ inner

27/32"

No. and Description of Furnaces in each Boiler

two Corrugated

Material

steel

Tensile strength

26-30 tons sq. in.

Smallest outside diameter

37"

Length of plain part

{ top

✓

{ bottom

✓

Thickness of plates

{ crown

15/32"

{ bottom

✓

Description of longitudinal joint

weld

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

none

Working pressure of furnace by Rules

182 lb. sq. in.

End plates in steam space: Material

steel

Tensile strength

26-30 tons sq. in.

Thickness

31/32"

Pitch of stays

16 1/2" x 16 1/2"

How are stays secured

double nuts & plain washers

Working pressure by Rules

181 lb. sq. in.

Tube plates: Material

{ front

steel

{ back

steel

Tensile strength

{ 26-30 tons sq. in.

{ 26-30

Thickness

{ 31/32"

{ 23/32"

Mean pitch of stay tubes in nests

9.5"

Pitch across wide water spaces

14"

Working pressure

{ front

243 lb. sq. in.

{ back

193 lb. sq. in.

Girders to combustion chamber tops: Material

steel

Tensile strength

28-32 tons sq. in.

Depth and thickness of girder

at centre

2 plates 8 1/4" x 3 1/4"

Length as per Rule

2'7 5/8"

Distance apart

8"

No. and pitch of stays

in each

2 @ 10"

Working pressure by Rules

200 lb. sq. in.

Combustion chamber plates: Material

steel

Tensile strength

26-30 tons sq. in.

Thickness: Sides

21/32"

Back

21/32"

Top

21/32"

Bottom

13/16"

Pitch of stays to ditto: Sides

10" x 8"

Back

9 3/16" x 9"

Top

10" x 8"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

181 lb. sq. in.

Front plate at bottom: Material

steel

Tensile strength

26-30 tons sq. in.

Thickness

31/32"

Lower back plate: Material

steel

Tensile strength

26-30 tons sq. in.

Thickness

31/32"

Pitch of stays at wide water space

13 3/4" x 9"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

240 lb. sq. in.

Main stays: Material

steel

Tensile strength

28-32 tons sq. in.

Diameter

{ At end of stay,

2 7/8"

No. of threads per inch

6

Area supported by each stay

272 sq. in.

Working pressure by Rules

181 lb. sq. in.

Screw stays: Material

steel

Tensile strength

26-30 tons sq. in.

Diameter

{ At end of part,

1 5/8"

No. of threads per inch

9

Area supported by each stay

83 sq. in.

Working pressure by Rules *184 lb* Are the stays drilled at the outer ends *no* Margin stays: Diameter { At head of part. *1 1/4"* Over threads *1 1/4"*
No. of threads per inch *9* Area supported by each stay *99 sq"* Working pressure by Rules *182 lb*
Tubes: Material *Lapped Iron* External diameter { Plain *3"* Thickness *1/4"* No. of threads per inch *9* Stay *3"*
Pitch of tubes *4 1/4" x 4 3/16"* Working pressure by Rules *210 lb* Manhole compensation: Size of opening in shell plate *21" x 17"* Section of compensating ring *8 7/8" x 1 1/32"* No. of rivets and diameter of rivet holes *38 @ 1 1/8"*
Outer row rivet pitch at ends *7 1/2"* Depth of flange if manhole flanged *3 1/2"* Steam Dome: Material *Iron*
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 *None* 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 ✓
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,
GAMMELL LAIRD AND COMPANY LIMITED. Manufacturer.

Dates of Survey { During progress of work in shops - - } *See Machy report.* Are the approved plans of boiler and superheater forwarded herewith *Yes* while { During erection on board vessel - - - }
building (If not state date of approval.)
Total No. of visits

Is this Boiler a duplicate of a previous case *Yes* If so, state Vessel's name and Report No. *Atchellaird Lw 96791*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
This boiler has been constructed under special Survey, and is in accordance with the Rules and the approved plan. It has been examined under steam and found satisfactory, and is in my opinion, eligible for record of 18 lb 160 lb in Register book.

Survey Fee ... £ *8 : 3 : 0* When applied for, *10 MAR. 1931*
Travelling Expenses (if any) £ : : When received, *18.3.1931*
J. J. Milton.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *LIVERPOOL 10 MAR. 1931*
Assigned *See Machy rpt.*

