

REPORT ON BOILERS.

No. 33270

Received at London Office 19 DEC 1941

Date of writing Report

When handed in at Local Office

11 DEC 1941

Port of

SUNDERLAND.

No. in Survey held at
Reg. Book.

SUNDERLAND.

Date, First Survey

Last Survey 9 Dec 1941

on the

Ss. EMPIRE HALLEY

(Number of Visits

Gross 7168
Tons Net 4290

Master

Built at Sunderland.

By whom built

J. L. Thompson & Co. Ltd.

Card No. 612

When built 1941

Engines made at

Sunderland

By whom made

H. F. Hume Eng. Co. (1918), Ltd.

Engine No. 4008

When made 1941

Boilers made at

do.

By whom made

do.

Boiler No. do.

When made do.

Nominal Horse Power

506

Owners

W. J. Gould & Co. Ltd

Port belonging to

Sunderland

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

Manufacturers of Steel

Steel Co. of Scotland.

(Letter for Record S)

Total Heating Surface of Boilers

5716 sq

Is forced draught fitted

yes

Coal or Oil fired coal

No. and Description of Boilers

2 Single-ended cylindrical

Working Pressure 220 lbs.

Tested by hydraulic pressure to

380 lbs.

Date of test

10/10/41

No. of Certificate

4380

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

64.5 sq

No. and Description of safety valves to each boiler

2 direct spring

Area of each set of valves per boiler

per Rule 15.4 sq

as fitted 16.58"

Pressure to which they are adjusted

220 lbs.

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

8' 0"

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

2' 3"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

15' 11 1/2"

Length 12' 4 1/2"

Shell plates: Material

Steel

Tensile strength

29/33

Thickness

1 1/32"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end D.R.L.

Long. seams T.R.D.B.S.

Diameter of rivet holes in

circ. seams

19/16"

Pitch of rivets

4 1/8"

Percentage of strength of circ. end seams

plate 62.1

rivets 48.4

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate 85.11

rivets 88.2

combined 88.1

Working pressure of shell by Rules

220 lbs.

Thickness of butt straps

outer 13/16"

inner 15/16"

No. and Description of Furnaces in each Boiler

3 slighter: Stephen-gowray niches

Material

Steel

Tensile strength

26/30

Smallest outside diameter

3' 11 1/2"

Length of plain part

top

Thickness of plates

crown

4 1/4"

Description of longitudinal joint

Weld

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

Working pressure of furnace by Rules

228 lbs.

End plates in steam space: Material

Steel

Tensile strength

26/30

Thickness

1 1/2"

Pitch of stays 23" x 20 13/16"

How are stays secured

double nuts

Working pressure by Rules

220 lbs.

Tube plates: Material

front Steel

Tensile strength

26/30

Thickness

15/16"

Lean pitch of stay tubes in nests

8.7"

Pitch across wide water spaces 14 1/2" x 7 1/2"

Working pressure

front 227 lbs.

back 364 lbs.

Girders to combustion chamber tops: Material

Steel

Tensile strength

29/33

Depth and thickness of girder

centre

11 1/2" x 2"

Length as per Rule

3' 10 1/2"

Distance apart

8 1/2"

No. and pitch of stays

each 3 x 11 1/8"

Working pressure by Rules

233 lbs.

Combustion chamber plates: Material

Steel

Tensile strength

26/30

Thickness: Sides

w. 5 1/64"

c. 25/32"

Back 25/32"

Top 25/32"

Bottom 29/32"

Pitch of stays to ditto: Sides

8 1/2" x 11 1/8"

Back

9 5/16" x 9 3/4"

Top

8 1/2" x 11 1/8"

Are stays fitted with nuts or riveted over

Nuts fitted

Working pressure by Rules

220 lbs.

Front plate at bottom: Material

Steel

Tensile strength

26/30

Thickness

15/16"

Lower back plate: Material

Steel

Tensile strength

26/30

Thickness

31/32"

Pitch of stays at wide water space

14 3/4" x 8 3/4"

9 15/16"

Are stays fitted with nuts or riveted over

Nuts fitted

Working Pressure

220 lbs.

Main stays: Material

Steel

Tensile strength

28/32

Diameter

At body of stay,

3 1/2"

or

3 3/4"

No. of threads per inch

6

Area supported by each stay 23 x 20 13/16"

Working pressure by Rules

220 lbs.

Screw stays: Material

Steel

Tensile strength

26/30

Diameter

At turned off part,

1 7/8"

or

1 7/8"

No. of threads per inch

9

Area supported by each stay 9 5/16" x 9 3/4"

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Working pressure by Rules 220 lb. Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part. 2 1/8" or Over threads
No. of threads per inch 9 Area supported by each stay 12 5/8" x 9 5/16" Working pressure by Rules 228 lb.
Tubes: Material Steel External diameter { Plain 2 1/2" Thickness 8 N.G. No. of threads per inch 9
(Stay 2 1/2" 7/16", 3/8"
Pitch of tubes 3 3/4" x 3 3/4" Working pressure by Rules 252 lb. Manhole compensation: Size of opening in
END shell plate 16" x 12" Section of compensating ring _____ No. of rivets and diameter of rivet holes _____
Outer row rivet pitch at ends _____ Depth of flange if manhole flanged 4 5/16" Steam Dome: Material _____
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 _____ 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,

J. L. Smith

Manufacturer

RESIDENT MANAGER.

Dates of Survey { During progress of work in shops - - } Please see Rpt 4. Are the approved plans of boiler and superheater forwarded herewith
while building { During erection on board vessel - - } (If not state date of approval.)
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 plans, Secretary's letters and the requirements of the Rules. Workmanship and materials are good. For recommendations please see Rpt 4.

L. R. Horne

Survey Fee £ : : When applied for, 192
Travelling Expenses (if any) £ : : When received, 192

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 6 JAN 1942

Assigned

See J.E. machy report



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