

## REPORT ON BOILERS.

No. 18266

Received at London Office

10 APR 1942

Date of writing Report 7/4/1942 When handed in at Local Office 7/4/1942 Port of WEST HARTLEPOOL

No. in Survey held at WEST HARTLEPOOL

Date, First Survey 17<sup>th</sup> MarchLast Survey 30<sup>th</sup> March 1942

on the single screw tug "EMPIRE MEADOW"

(Number of Visits 3)

Gross 242  
Tons Net nil

Built at Gainsborough

By whom built

J.S. Watson (Gainsborough) Ltd

Yard No. 1528 When built 1942

Engines made at Hull

By whom made

C.D. Holmes Ltd

Engine No. 1604 When made "

Boilers made at West Hartlepool

By whom made

Central Marine Engine Works

Boiler No. R344 When made 1942

Nominal Horse Power 177

Owners

Ministry of War Transport

Port belonging to

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Messrs. Colvilles Ltd Glasgow.

(Letter for Record S. ✓)

Total Heating Surface of Boilers 2,778 sq ft

Is forced draught fitted

yes

Coal or Oil fired Coal.

No. and Description of Boilers

One single ended multitubular

Working Pressure 210 lbs.

Tested by hydraulic pressure to 365 lbs.

Date of test 30.3.42

No. of Certificate 3963.

Can each boiler be worked separately One only

Area of Firegrate in each Boiler 64 sq ft

No. and Description of safety valves to each boiler

Two Spring loaded

Area of each set of valves per boiler

per Rule 15.43 sq ft

as fitted 16.6 sq ft

Pressure to which they are adjusted 213 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

3'-0"

Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and

floor reverse frame } 9"

Is the bottom of the boiler insulated No

Largest internal dia. of boilers 15'-9 1/4"

Length 11'-6"

Shell plates: Material Steel

Tensile strength 31-35 tons

Thickness 1 3/8"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end D.R. LAP

long. seams TR Double butt straps

Diameter of rivet holes in

circ. seams 1 1/32"

long. seams 1 1/16"

Pitch of rivets

3 3/8"

9 3/8"

Percentage of strength of circ. end seams

plate 63.7

rivets 43.2

Percentage of strength of circ. intermediate seam

plate -

rivets -

Percentage of strength of longitudinal joint

plate 84.6

rivets 85.3

combined 86.3

Thickness of butt straps

outer 1 1/16"

inner 1 3/16"

No. and Description of Furnaces in each Boiler

3 Corrugated Dighton section.

Material Steel

Tensile strength 26-30 tons

Smallest outside diameter 3'-10"

Length of plain part

top -

bottom -

Thickness of plates

crown 1 1/16"

bottom 1 1/16"

Description of longitudinal joint Welded.

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

End plates in steam space: Material

Steel

Tensile strength 26-30 tons

Thickness 1 3/8"

Pitch of stays 19 1/4" x 18 5/8"

How are stays secured

Double nuts and washers.

Tube plates: Material

front Steel

back Steel

Tensile strength

26-30 tons

26-30 tons

Thickness

15/16"

3/8"

Mean pitch of stay tubes in nests

8 1/2" x 10 5/8"

Pitch across wide water spaces

13 1/2"

Girders to combustion chamber tops: Material

Steel

Tensile strength

29-33 tons

Depth and thickness of girder

at centre 9 1/4" x 1 3/4" 2-3/8" plates

Length as per Rule

2-8 3/32"

Distance apart

9 1/2"

No. and pitch of stays

in each

3 @ 7 1/2"

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

3 3/8"

Back

3 3/8"

Top

1 1/16"

Bottom

3/8"

Pitch of stays to ditto: Sides

9 3/4" x 8 1/4"

Back

9 1/2" x 8 1/2"

Top

9 1/2" x 7 1/2"

Are stays fitted with nuts or riveted over Nuts

Front plate at bottom: Material

Steel

Tensile strength 26-30 tons

Thickness

15/16"

Lower back plate: Material

Steel

Tensile strength 26-30 tons

Thickness

3/8"

Pitch of stays at wide water space

13 3/4" x 9 1/2"

Are stays fitted with nuts or riveted over Nuts

Main stays: Material

Steel

Tensile strength 28-32 tons

Diameter

At body of stay, or Over threads

3 1/4"

No. of threads per inch

6

Screw stays: Material

Steel

Tensile strength 26-30 tons

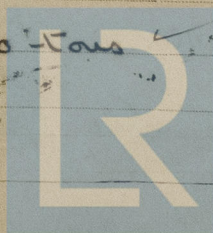
Diameter

At turned off part, or Over threads

1 3/4"

No. of threads per inch

9



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# EMPIRE MEADOW

Are the stays drilled at the outer ends No. ✓ Margin stays: Diameter { At turned off part, 2" or Over threads 2" ✓

No. of threads per inch 9 ✓

Tubes: Material LW 5-ton External diameter { Plain 3" Stay 3" Thickness { 8 SWG ✓ 5/16 3/8 7/16 No. of threads per inch 9 ✓

Pitch of tubes 2 1/4" x 4 1/4" Manhole compensation: Size of opening in shell plate 16 x 12" ✓ Section of compensating ring 2-10" x 2-3" x 1 3/8" ✓ No. of rivets and diameter of rivet holes 32 @ 1 1/2" ✓

Outer row rivet pitch at ends 9 1/8" ✓ 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 \_\_\_\_\_ Thickness of crown \_\_\_\_\_ No. and diameter of stays \_\_\_\_\_ Inner radius of crown \_\_\_\_\_

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 forgings \_\_\_\_\_ 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 \_\_\_\_\_

Pressure to which the safety valves are adjusted \_\_\_\_\_ Hydraulic test pressure: tubes \_\_\_\_\_ forgings and 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,

W. J. G. & Co. Ltd. Manufacturer.

Dates of Survey { During progress of work in shops - - March 17. 25. 30. while building { During erection on board vessel - - -

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

Total No. of visits 3

Is this Boiler a duplicate of a previous case No ✓ If so, state Vessel's name and Report No. \_\_\_\_\_

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been constructed under special survey and in accordance with the approved plans for a working pressure of 210 lbs per square inch.

The materials and workmanship have been found good.

Upon completion the boiler was tested in the presence of the undersigned by a hydraulic pressure of 365 lbs per square inch, showed no signs of weakness and was found tight and sound in every respect at that pressure.

This boiler is to fitted in Messrs G. & D. Holmes, No 1628, and J. Watson (Gainsborough) Ltd No 1528. 1604 (machy.)

This boiler was fitted at Hull to single screw tug "Empire Meadow". The safety valves were adjusted to 213 1/2 and the boiler was found satisfactory in every respect at basin trials.

W. J. Shields.

Survey Fee ... .. £ 18 : 10 : 0 When applied for, 7/4/ 1942

Travelling Expenses (if any) £ : : When received, 19

Arthur W. Oxford.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 15 SEP 1942

Assigned

See Index J.E. 51716



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