

REPORT ON BOILERS.

No. 52197

Received at London Office 8 NOV 1943

Date of writing Report 17-8-43

When handed in at Local Office 4 NOV 1943

Port of HULL

No. in Survey held at HULL

Date, First Survey 29.1.43

Last Survey 9.10.1943

on the STEAM TUG ASSIDUOUS

J2533

(Number of Visits)

Gross 597
Net 712

Built at SELBY

By whom built

Cochrane & Sons Ltd

Yard No. 1269

When built 1943

Engines made at HULL

By whom made

Chas D. Holmes Ltd

Engine No. 1646

When made

Boilers made at HULL

By whom made

Chas D. Holmes Ltd

Boiler No. 1650

When made

Nominal Horse Power 222

Owners

Admiralty

Port belonging to

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Corporation of Scotland

(Letter for Record 5)

Total Heating Surface of Boilers 3550 sq ft

Is forced draught fitted Yes

Coal or Oil fired Oil

No. and Description of Boilers One S.B.

Working Pressure 210 lb/sq in

Tested by hydraulic pressure to 365 lb/sq in Date of test 16-8-43 No. of Certificate 4198 Can each boiler be worked separately

Area of Firegrate in each Boiler — (or) No. and Description of safety valves to each boiler

2 Spring loaded High Lift

Area of each set of valves per boiler

per Rule 16.14

Pressure to which they are adjusted 210 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 24"

Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating None

Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 17'-0" Length 11'-6"

Shell plates

Material Steel

Tensile strength 31-35 tons/sq in

Thickness 1 1/2"

Are the shell plates welded or flanged No

Description of riveting: circ. seams

inter. D.R. lat.

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

Diameter of rivet holes in

circ. seams 1 7/16"

long. seams 1 7/32"

Pitch of rivets 3 13/16"

10 1/16"

Percentage of strength of circ. end seams

plate 62.4%

rivets 43.1%

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate 85.0%

rivets 86.7%

combined 87.3%

Thickness of butt straps

outer 1 1/8"

inner 1 1/4"

No. and Description of Furnaces in each Boiler

3 - c.f. Deighlan Section

Material Steel

Tensile strength 26-30 tons/sq in

Smallest outside diameter 4'-3 1/2"

Length of plain part

top

bottom

Thickness of plates

crown 3 3/4"

bottom 3 3/4"

Description of longitudinal joint Weld

Dimensions of stiffening rings on furnace or c.c. bottom None

End plates in steam space: Material Steel

Tensile strength 26-30 tons/sq in

Thickness 1 3/16"

Pitch of stays 16" x 20 3/4"

How are stays secured Double Nuts and Washers

Tube plates: Material

front Steel

back Steel

Tensile strength

26-30 tons/sq in

Thickness

15/16"

29/32"

Mean pitch of stay tubes in nests 9 1/16"

Pitch across wide water spaces 13 1/2" x 8 1/2"

Girders to combustion chamber tops: Material Steel

Tensile strength 29-33 tons/sq in

Depth and thickness of girder

at centre 9" x 7 1/8" Double

Length as per Rule 2'-8 3/32"

Distance apart 9 3/4"

No. and pitch of stays

in each 3 @ 7 3/4"

Combustion chamber plates: Material Steel

Tensile strength 26-30 tons/sq in

Thickness: Sides 2 3/32"

Back 2 3/32"

Top 1 1/16"

Bottom 7/8"

Pitch of stays to ditto: Sides 8 1/2" x 10" Back 9 1/2" x 8 7/8" Top 7 3/4" x 9 3/4" Are stays fitted with nuts or riveted over Nuts

Front plate at bottom: Material Steel

Tensile strength 26-30 tons/sq in

Thickness 15/16"

Lower back plate: Material Steel

Tensile strength 26-30 tons/sq in

Thickness 2 3/32"

Pitch of stays at wide water space 13 3/4" x 8 7/8"

Are stays fitted with nuts or riveted over Nuts

Main stays: Material Steel

Tensile strength 28-32 tons/sq in

Diameter

At body of stay

or Over threads 3 1/8"

No. of threads per inch 8

crew stays: Material Steel

Tensile strength 26-30 tons/sq in

Diameter

At turned off part

or Over threads 1 3/4"

No. of threads per inch 9

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Are the stays drilled at the outer ends No.

Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part} \\ \text{or} \\ \text{Over threads} \end{array} \right. \underline{1\frac{1}{8}'' - 2'' - 2\frac{1}{8}''}$

No. of threads per inch 9.

Tubes: Material L.W. Iron. External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. \underline{3''}$ Thickness $\left\{ \begin{array}{l} \text{S.W.G.} \\ \text{or} \\ \text{5/16}'' - 3/8'' \end{array} \right. \underline{3/8''}$ No. of threads per inch 10.

Pitch of tubes 4 1/4" x 4 1/4"

Manhole compensation: Size of opening in shell plate 12" (x 16") Section of compensating ring 13 7/16" x 1 15/32" No. of rivets and diameter of rivet holes 16 @ 1 1/32"

Outer row rivet pitch at ends 10 1/16" Depth of flange if manhole flanged 3 3/8" 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 $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right. \underline{\quad}$

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 _____

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,
FOR CHARLES D. HOLMES & CO., LTD.
H.R. Evans Manufacturer.

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops} \end{array} \right. \underline{1943. Mar. 26. May 20. Aug 6. 12. 16. 27}$ Are the approved plans of boiler and superheater forwarded herewith Yes.

while building $\left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel} \end{array} \right. \underline{\text{See machinery report.}}$ (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. Frisky. Hul. Rpt. 51413.

With the exception of amendment to arrangement of C.C. Piping Rules.

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

This Boiler has been constructed under special survey in accordance with the approved plans and the rules.

The Workmanship and materials are good and, when subjected to a hydraulic test of 265 lbs / sq. in. it was found satisfactory in every respect.

Above boiler installed in "ASSIDUOUS" under special survey, safety valves adjusted to 210 lbs, accumulation test held, tried under working conditions and found on examination to be satisfactory after all tests. W.S. Shields

Survey Fee £ _____

Travelling Expenses (if any) £ _____

When applied for, 19 _____

When received, 19 _____

H. R. Evans
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

see minute
on 10. Rpt.

TUES. 16 NOV 1943



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