

REPORT ON BOILERS.

No. 52248.

Received at London Office

JAN 1944

Date of writing Report 21-12-1943. When handed in at Local Office 10 JAN 1944

Port of HULL.

No. in Survey held at HULL.
Reg. Book.

Date, First Survey 31. 5. 43. Last Survey 3. 1. 44

on the STEAM TUG.

EMPIRE HUMPHREY

(Number of Visits 28.)
A/MS 622.Gross 274
Net NIL

Built at SELBY.

By whom built Cochrane & Co. Ltd

Yard No. 1273. When built 1944

Engines made at HULL

By whom made Amos & Smith Ltd

Engine No. 733. When made

Boilers made at HULL

By whom made Amos & Smith Ltd

Boiler No. 733. When made

Nominal Horse Power

Owners Ministry of War Transport

Port belonging to Hull

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Appleby F. & Wigham Steel Co. Ltd & Colville.

(Letter for Record 5.

Total Heating Surface of Boilers 2390 sq. ft.

Is forced draught fitted No.

Coal or Oil fired OIL.

No. and Description of Boilers One S.B.

Working Pressure 200 lbs/sq. in.

Tested by hydraulic pressure to 3500 lbs/sq. in. Date of test 24-11-43. No. of Certificate 4211. Can each boiler be worked separately

Area of Firegrate in each Boiler — (S.B.) No. and Description of safety valves to each boiler 2. Spring loaded

Area of each set of valves per boiler {per Rule 13.9 sq. ft. as fitted 14.137 sq. ft. Pressure to which they are adjusted 200 lbs/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 1'-6".

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 15'-6 1/2". Length 11'-6".

Shell plates: Material Steel

Tensile strength 29-33 tons/sq. in.

Thickness 1 3/8"

Are the shell plates welded or flanged No.

Description of riveting: circ. seams {end D.R. Lap. inter.

long, seams T.R. D.B.S.

Diameter of rivet holes in {circ. seams 1 13/32" long, seams 1 13/32"

Pitch of rivets {4 3/16" 9 7/8"

Percentage of strength of circ. end seams {plate 66.4% rivets 42.7%

Percentage of strength of circ. intermediate seam {plate 85.7% rivets 85.0%

Percentage of strength of longitudinal joint {plate 85.7% rivets 85.0% combined 90.15%

Thickness of butt straps {outer 1 1/16" inner 1 3/16"

No. and Description of Furnaces in each Boiler 3. Cf. Deighton Section.

Material Steel

Tensile strength 26-30 tons/sq. in.

Smallest outside diameter 3'-11 3/8"

Length of plain part {top — bottom —

Thickness of plates {crown 1 1/16" bottom 1 1/16"

Description of longitudinal joint WELD.

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

End plates in steam space: Material Steel

Tensile strength 26-30 tons/sq. in. Thickness 1 3/16"

Pitch of stays 18 3/4" x 18 1/2"

How are stays secured Nuts inside ear.

Tube plates: Material {front Steel back Steel

Tensile strength {26-30 tons/sq. in. 26-30 tons/sq. in.

Thickness {15/16" 7/8"

Mean pitch of stay tubes in nests 9 1/2" x 9 1/2" Pitch across wide water spaces 14 1/4" x 9 1/2"

Girders to combustion chamber tops: Material STEEL

Tensile strength 29 x 33 tons/sq. in.

Depth and thickness of girder

at centre 9 1/2" x 7 1/8" I-beam Length as per Rule 2'-11"

Distance apart 9"

No. and pitch of stays

in each 3 @ 8 3/4"

Combustion chamber plates: Material Steel

Tensile strength 26-30 tons/sq. in. Thickness: Sides 3/4"

Back 2 3/32"

Top 2 3/32"

Bottom 3/4"

Pitch of stays to ditto: Sides 9 1/2" x 8 3/4" Back 9 1/2" x 8 1/2" Top 9' x 8 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 7/8"

Pitch of stays at wide water space 14 1/4" x 8 1/2"

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, 3 1/4" or Over threads —

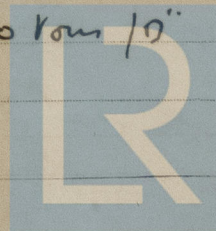
No. of threads per inch 6

Screw 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 { At turned off part, 1 7/8" or 2" Over threads 1 7/8" x 2"No. of threads per inch 9Tubes: Material IRONExternal diameter { Plain 3 1/2" Stay 3 1/2"Thickness { S.W.G. 5/16"No. of threads per inch 9Pitch of tubes 4 3/4"

Manhole compensation: Size of opening in

shell plate 16" x 12"Section of compensating ring 1 3/8" x 15"No. of rivets and diameter of rivet holes 28 @ 1 3/32"Outer row rivet pitch at ends 9 7/8"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 { 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. E. Brown Manufacturer.

Dates of Survey { During progress of work in shops - - - 1943 May 31, Aug 10, 11, Sept 30, Nov 15, 16, 19, 24, while building { During erection on board vessel - - - See machinery report

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) 3.7.41.Total No. of visits 28.Is this Boiler a duplicate of a previous case Yes.If so, state Vessel's name and Report No. EMPIRE PAT. HUL RPT. 51723.

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

The Boiler has been constructed under special survey in accordance with the Rule and the approved plan.

The Workmanship & materials are good and, when subjected to a hydraulic test of 350 lb/sq in it was found satisfactory in every respect.

The above boiler installed in "EMPIRE HUMPHREY" at Hull, examined under steam, safety valves adjusted as overleaf, accumulation test held and found satisfactory on completion of all tests. W. S. Shields.

Survey Fee ... £ : : When applied for, 19
Travelling Expenses (if any) £ : : When received, 19J. Shields
Engineer Surveyor to Lloyd's Register of Shipping.

TUES. 18 JAN 1944

Committee's Minute

Assigned

See fe. machy rpt.



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