

REPORT ON BOILERS.

No. 52761.

Received at London Office

30 FEB 1945

Date of writing Report

19

When handed in at Local Office

19

Port of HULL

No. in Survey held at HULL

Date, First Survey 1. 11. 44

Last Survey 13. 2. 1945.

g. Book.

on the STEAM TUG.

EMPIRE BARBARA.

(Number of Visits 27.)

Gross 274.35

Tons

Net 144

Built at SELBY.

By whom built Cochrane & Sons Ltd

Yard No. 1292 When built 1945

Engines made at HULL.

By whom made Amos & Smith Ltd

Engine No. 758 When made

Boilers made at HULL.

By whom made Amos & Smith Ltd

Boiler No. 758 When made

Nominal Horse Power 132

Owners Ministry of War Transport.

Port belonging to Hull

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Appleby, Frodingham, Freeland & Co. Ltd. and Colvilles.

(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 lb./sq. in. ✓

Tested by hydraulic pressure to 350 lb./sq. in. ✓ Date of test 12/12/44. No. of Certificate 4241. Can each boiler be worked separately —

Area of Firegrate in each Boiler — (6.5) 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. in. ✓ Pressure to which they are adjusted 200 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 None ✓

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 Freeland ✓ 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. ✓

Long. seams T.R., D.B.S. ✓ Diameter of rivet holes in {circ. seams 1 13/32" ✓

Pitch of rivets {9 3/8". ✓

Percentage of strength of circ. end seams {plate 66-4%.

Percentage of strength of circ. intermediate seam {plate 42.7%.

Percentage of strength of longitudinal joint {plate 85.7%.

Percentage of strength of longitudinal joint {rivets 85.0%.

Thickness of butt straps {outer 1 1/16".

No. and Description of Furnaces in each Boiler 3 C.F. Deighan feet ✓

Material Freeland

Tensile strength 26-30 tons/sq. in. ✓ Smallest outside diameter 3 11 3/8". ✓

Length of plain part {top — Thickness of plates {crown 3 1/16".

Description of longitudinal joint Weld ✓

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

End plates in steam space: Material Freeland

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 & out. ✓

Tube plates: Material {front Freeland

Tensile strength {26-30 tons/sq. in. ✓ Thickness 1 5/16". ✓

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 Freeland

Tensile strength 29-33 tons/sq. in. ✓

Depth and thickness of girder

At centre 9 1/2" x 7 1/8" Double Length as per Rule 2'-11". ✓

Distance apart 9" ✓

No. and pitch of stays

In each 3 @ 8 3/4". ✓

Combustion chamber plates: Material Freeland

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 3/4". Top 9" x 8 3/4". ✓ Are stays fitted with nuts or riveted over Nuts. ✓

Front plate at bottom: Material Freeland

Tensile strength 26-30 tons/sq. in. ✓

Thickness 1 5/16".

Lower back plate: Material Freeland

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 Freeland

Tensile strength 28-32 tons/sq. in. ✓

Diameter {At body of stay, 3 1/2". ✓

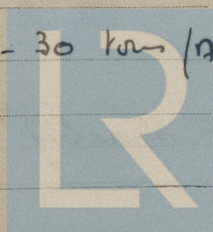
No. of threads per inch 6. ✓

Crew stays: Material Freeland

Tensile strength 26-30 tons/sq. in. ✓

Diameter {At turned off part, 1 3/4". ✓

No. of threads per inch 9. ✓



Lloyd's Register Foundation

EMPIRE BARBARA.

Are the stays drilled at the outer ends No. ✓

Margin stays: Diameter { At turned off part, or Over threads 1 7/8" = 2" ✓

No. of threads per inch 9.

Tubes: Material Iron. External diameter { Plain 3 1/2" Stay 3 1/2" ✓ Thickness { 8 w.g. 5/16" No. of threads per inch 9. ✓

Pitch 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 1/32"

Outer row rivet pitch at ends 9 7/8" Depth of flange of manhole flanged 3 3/8" ✓ Steam Dome: Material NONE ✓

Tensile strength _____ Thickness of shell _____ Description of longitudinal joint _____

Diameter of rivet holes 5/16" 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.

For AMOS & SMITH LTD.
The foregoing is a correct description,
A. S. Keenley Manufacturer.

Dates of Survey { During progress of work in shops - - - See Rpt 4 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) _____

while building { During erection on board vessel - - - _____ Total No. of visits 27.

Is this Boiler a duplicate of a previous case Yes. If so, state Vessel's name and Report No. EMPIRE JOSEPHINE Hull Rpt. 5258

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

This Boiler has been constructed under Special Survey in accordance with the Rules and the approved plans.

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

The above boiler fitted on board under Special Survey, examined under Pressure Safety Valves adjusted as overleaf, accumulator test held, trial carried out and boiler found satisfactory on completion.

Survey Fee ... £ : : When applied for, 19 _____

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

W. Shields & J. P. H. ...
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 2 MAR 1945

Assigned See F.E. Mackay. rpt.