

REPORT ON BOILERS.

No. 51723

Received at London Office - 8 SEP 1942

Date of writing Report 20-8-1942 When handed in at Local Office 20 SEP 1942 Port of HULL.

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

Date, First Survey 7.4.42.

Last Survey 29.8.1942.

on the STEAM TUG.

EMPIRE PAT.

(Number of Visits 49.)

Tons { Gross 275
Net Nil

Built at SELBY.

By whom built Cochrane & Co Ltd

Yard No. 1249. When built 1942

Engines made at HULL.

By whom made Amos & Smith Ltd

Engine No. 710. When made

Boilers made at HULL.

By whom made Amos & Smith Ltd

Boiler No. 710. When made

Nominal Horse Power 132.

Owners Ministry of War Transport.

Port belonging to

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Appleby Frodingham Steel Co. Ltd and Colville Ltd

(Letter for Record)

Total Heating Surface of Boilers 2390.

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 16-7-42. No. of Certificate 4153. 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

Area of each set of valves per boiler { per Rule 13.9.0
as fitted 14.137.0 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

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 9 7/8".

Percentage of strength of circ. end seams { plate 66.4%
rivets 42.7%.Percentage of strength of circ. intermediate seam { plate —
rivets —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 of Delighta 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 3 11/16"
bottom 3 11/16".

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" dia.

How are stays secured Nuts inside and out.

Tube plates: Material { front Steel
back SteelTensile strength { 26-30 tons/sq in.
26-30 tons/sq in.Thickness { 1 5/16"
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 29-33 tons/sq in.

Depth and thickness of girder

at centre 9 1/2".

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

Front plate at bottom: Material Steel.

Tensile strength 26-30 tons/sq in.

Thickness 1 5/16".

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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" E. PAT.

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", 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 12" (x 16") 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 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. S. Shields Manufacturer.

Dates of Survey { During progress of work in shops - - - See machinery report attached. 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 ✓

Is this Boiler a duplicate of a previous case Yes. If so, state Vessel's name and Report No. Empire Fairy H.W. Rpt. 5166

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

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

The Workmanship and Materials are good and, when subjected to a hydraulic test of 350 lb/10" it was found satisfactory in every respect.

An installation has been fitted for oil burning (above 150°F)

The safety valves adjusted to 200 lb.

Survey Fee ... £ : : When applied for, 19
Travelling Expenses (if any) £ : : When received, 19

W. S. Shields Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

See H.W. Rpt. 51723



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