

REPORT ON BOILERS.

No. 52302

Received at London Office

2 FEB 1944

Date of writing Report 21-12-1943

When handed in at Local Office

Port of HULL.

No. in Survey held at HULL.

Date, First Survey 31. 5. 43.

Last Survey 18. 1. 1944

Reg. Book.

on the Steam Tug.

EMPIRE VINCENT.

A/MS. 623.

(Number of Visits 24)

Gross 274

Tons

Net nie

Built at SELBY.

By whom built Cochrane & Son.

Yard No. 1274. When built 1944

Engines made at HULL

By whom made Amos & Smith Ltd

Engine No. 734 When made

Boilers made at HULL.

By whom made Amos & Smith Ltd

Boiler No. 734 When made

Nominal Horse Power

Owners

Ministry of War Transport

Port belonging to

MULTITUBULAR BOILERS MAIN, AUXILIARY OR DONKEY.

Manufacturers of Steel Appleby Frodingham Steel Co. Ltd. & Colvilles.

(Letter for Record S.

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 8.12.43. No. of Certificate 4215. Can each boiler be worked separately -

Area of Firegrate in each Boiler - (O.F.) 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 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 1/4" 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"

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

Percentage of strength of circ. intermediate seam {plate 4 3/16" rivets 9 7/8"

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 and out.

Tube plates: Material {front Steel back Steel Tensile strength {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" x 7 7/8" 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 Steel

Tensile strength 26-30 tons/sq in Thickness: Sides 3/4" Back 23/32" Top 23/32" 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 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, 1 3/4" or Over threads -

No. of threads per inch 9

E. VINCENT.

Are the stays drilled at the outer ends NO Margin stays: Diameter { At turned off part, 1 7/8" x 2"
or Over threads
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 7/32"
Outer row rivet pitch at ends 9 7/8" Depth of flange if ^{bottom} 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

For AMOS & SMITH LTD.
The foregoing is a correct description,
W. C. Brown Manufacturer.

Dates of Survey { During progress of work in shops - - 1943, May 31, Aug 10, 11, Sept 25, 28, Nov 26.
while building { During erection on board vessel - - - Dec. 1, 1943.
See machinery report. Are the approved plans of boiler and superheater forwarded herewith 3.7-41.
(If not state date of approval.)
Total No. of visits 24

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. Empire Pat. Hull Rpt. No 51723.

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 plans.

The workmanship and materials are good and, when subjected to an hydraulic test of 350 lbs / sq in it was found satisfactory in every respect.

The above boiler installed in EMPIRE VINCENT at Hull, Hamms 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, 19

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 8 FEB 1944

Assigned See fe. machy rpt