

REPORT ON BOILERS.

No. 53696.

Received at London Office

74 SEP 1946

Date of writing Report 10 When handed in at Local Office 12 SEP 1946 19 Port of HULL.

No. in Survey held at Hull Reg. Book. 56876 on the "EMPIRE JUNA". Date, First Survey 3. 9. 45. Last Survey 21. 8. 19 46.

(Number of Visits 38) Gross 296.45 Tons Net Nil

Built at Selby By whom built Cochrane & Sons Ltd. Yard No. 1315 When built 1946

Engines made at Hull By whom made Amos & Smith Ltd. Engine No. 778 When made 1946

Boilers made at Hull By whom made Amos & Smith Ltd. Boiler No. 778 When made 1946

Nominal Horse Power 154 Owners Ministry of War Transport Port belonging to Hull

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Appleby Frodingham Co. Ltd. (Letter for Record S)

Total Heating Surface of Boilers 2400 ft.² Is forced draught fitted Yes Coal or Oil fired Oil

No. and Description of Boilers 1 S.B. Working Pressure 200 lbs

Tested by hydraulic pressure to 350 lbs Date of test 25.5.46 No. of Certificate 4268 Can each boiler be worked separately -

Area of Firegrate in each Boiler - No. and Description of safety valves to each boiler One D.S. Ordinary. See letter 30.9.46

Area of each set of valves per boiler {per Rule 17.4 13.48 as fitted 19.2 Pressure to which they are adjusted 206 lbs 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 5'0" Is oil fuel carried in the double bottom under boilers No. DBT under 51".

Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 14'9 3/8" Length 10'10.3/16" Shell plates: Material Steel Tensile strength 29-33 tons/in²

Thickness 1.5/16" 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 1.5/16" Pitch of rivets {3 3/4" long. seams 1.5/16" 8 1/2"

Percentage of strength of circ. end seams {plate 64.9 rivets 43.5 Percentage of strength of circ. intermediate seam {plate - rivets -

Percentage of strength of longitudinal joint {plate 84.5 rivets 90.1 combined 88

Thickness of butt straps {outer 1" inner 1.1/8" No. and Description of Furnaces in each Boiler Three corrugated Deighton. Section.

Material Steel Tensile strength 26-30 tons/in² Smallest outside diameter 3' 7 1/4"

Length of plain part {top - bottom - Thickness of plates {crown 5/8" bottom 5/8" Description of longitudinal joint welded

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

End plates in steam space: Material Steel Tensile strength 26-30 tons/in² Thickness 1.3/16" Pitch of stays 1'8"x1'6"

How are stays secured Double nuts and washers.

Tube plates: Material {front Steel back Steel Tensile strength {26-30 tons/in² -do- Thickness {15/16" 7/8"

Mean pitch of stay tubes in nests 7.3/8" Pitch across wide water spaces 1'1 1/2"

Girders to combustion chamber tops: Material Steel Tensile strength 29-33 tons/in² Depth and thickness of girder at centre 9 1/2. 2 at 7/8" Length as per Rule 2'10" Distance apart 10" & 9" No. and pitch of stays in each Three 8"

Combustion chamber plates: Material Steel

Tensile strength 26-30 tons/in² Thickness: Sides 23/32" Back 11/16" Top 23/32" Bottom 23/32"

Pitch of stays to ditto: Sides 9 1/2"x8" Back 9 1/2"x8 1/2" Top 8"x10" 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/in² Thickness 7/8"

Pitch of stays at wide water space 1'1 1/2" x 8 1/2" Are stays fitted with nuts or riveted over nuts

Main stays: Material Steel Tensile strength 28-32 tons/in²

Diameter {At body of stay, or Over threads } 3 1/4" No. of threads per inch 6

Screw stays: Material Steel Tensile strength 26-30 tons/in²

Diameter {At turned off part, or Over threads } 1 3/4" No. of threads per inch 9

"EMPIRE JUNA".

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 Steel External diameter { Plain 2 1/2" Stay 2 1/2" } Thickness { 9 W.G. 5/16" 3/8" 7/16" } No. of threads per inch 9 ✓

Pitch of tubes 4" x 3.11/16" ✓

Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 2'3"x2'10" x 1.5/16" No. of rivets and diameter of rivet holes 28 -1.5/16"

Outer row rivet pitch at ends 8 1/2" ✓ Depth of flange if manhole flanged 3 3/8" ✓ Steam Dome: Material -

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 _____ 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. E. Brown Manufacturer.
DIRECTOR

Dates of Survey { During progress of work in shops - - } 1945. Sept 3. Dec. 7. 1946 Jan. 25. Feb 19. 23. Mar. 5. 13. 21. 27. Apr. 4. 15. 23. May 9. 25.
while building { During erection on board vessel - - - } see Machinery Report
Are the approved plans of boiler and superheater forwarded herewith 2.2.45.
(If not state date of approval.)
Total No. of visits 35.

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. "EMPIRE FAUN" and "ATLAS".

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

This boiler has been constructed and installed in accordance with the Secretary's letters, approved plans, the Rules & the specification, of good materials and workmanship.
Boiler tried under working conditions and found satisfactory on completion of all tests.

Survey Fee See Machinery Report. £ : : 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 27 SEP 1946

Assigned See F.E. machy. rpt.