

Rpt. 5a.

REPORT ON BOILERS.

No. 51964

Date of writing Report 10-2-1943. When handed in at Local Office 16 APR 1943. Received at London Office 19 APR 1943. Port of HULL.

No. in Survey held at HULL. Date, first Survey 22-9-42. Last Survey 3-4-43.

Reg. Book. on the H.M.T. BREAM. (Number of Visits 44.) Gross 389 Tons Net 128

Built at SELBY. By whom built Cochran & Sons Ltd. Yard No. 1259 When built 1943
Engines made at HULL. By whom made Amos & Smith Ltd. Engine No. 717. When made
Boilers made at HULL. By whom made Amos & Smith Ltd. Boiler No. 717. When made
Nominal Horse Power Owners THE ADMIRALTY. Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Appleby Frodingham & Co. Ltd. (Letter for Record 5.
Total Heating Surface of Boilers 1873. Is forced draught fitted Yes. Coal or Oil fired Coal
No. and Description of Boilers One S.B. Working Pressure 210 lb./sq. in.

Tested by hydraulic pressure to 265 lb./sq. in. Date of test 2-1-43. No. of Certificate 4175. Can each boiler be worked separately
Area of Firegrate in each Boiler 50 sq. ft. No. and Description of safety valves to each boiler 2 Spring loaded 3"
Area of each set of valves per boiler {per Rule 12.57.0" as fitted 14.12.0". Pressure to which they are adjusted 210 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 9". Is oil fuel carried in the double bottom under boilers No.
Smallest distance between shell of boiler and tank top plating

Largest internal dia. of boilers 14'-3 1/2". Length 10'-6". Shell plates: Material Steel. Tensile strength 31-35 lb./sq. in.
Thickness 1 1/4". Are the shell plates welded or flanged No. Description of riveting: circ. seams {end D.R. Cap. 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 1/32" 9 1/8"

Percentage of strength of circ. end seams {plate 64.9% rivets 42.8% Percentage of strength of circ. intermediate seam {plate 85.1% rivets 85.8% combined 87.66%
Percentage of strength of longitudinal joint {plate 85.1% rivets 85.8% combined 87.66%

Thickness of butt straps {outer 3 1/32" inner 1 3/32" No. and Description of Furnaces in each Boiler 3 of Deighman Section
Material Steel Tensile strength 26-30 tons/sq. in. Smallest outside diameter 3'-6 3/4"
Length of plain part {top Thickness of plates {crown 3 5/8" bottom 3 5/8" Description of longitudinal joint Weld
Dimensions of stiffening rings on furnace or c.c. bottom None

End plates in steam space: Material Steel Tensile strength 26-30 tons/sq. in. Thickness 1 3/32" Pitch of stays 17 x 17 1/2"
How are stays secured Nuts & washers inside and out.

Tube plates: Material {front Steel Tensile strength 26-30 tons/sq. in. Thickness 7/8" 1 5/16" back Steel Tensile strength 26-30 tons/sq. in.
Mean pitch of stay tubes in nests 9 1/4" x 9". Pitch across wide water spaces 14" x 9". with 3/4" doublers

Girders to combustion chamber tops: Material Steel Tensile strength 29-33 tons/sq. in. Depth and thickness of girder
at centre 9" x 7/8" Double Length as per Rule 2'-10 23/32" Distance apart 8". No. and pitch of stays
on each 3 @ 8 1/4".

Combustion chamber plates: Material Steel Tensile strength 26-30 tons/sq. in. Thickness: Sides 23/32" Back 23/32" Top 21/32" Bottom 25/32"
Pitch of stays to ditto: Sides 8 1/2" x 9 3/4". Back 9 1/4" x 9". Top 8 1/4" x 8". 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" x 9". 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". No. of threads per inch 6.
Over threads

Draw stays: Material Steel Tensile strength 26-30 tons/sq. in.
Diameter {At turned off part, 1 3/4". No. of threads per inch 9.
Over threads

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Are the stays drilled at the outer ends No. Margin stays: Diameter { At turned off part, or Over threads 1 3/4", 1 7/8", 2".

No. of threads per inch 9.

Tubes: Material L.W. Iron. External diameter { Plain 3 1/4" Stay 3 1/4" Thickness { 8 W.G. 5/16", 3/8", 7/16" No. of threads per inch 9.

Pitch of tubes 4 1/2" x 4 7/8" Manhole compensation: Size of opening in shell plate 12" (x 16") Section of compensating ring 3 5/8" x 1 1/4" No. of rivets and diameter of rivet holes 122 @ 1 1/32"

Outer row rivet pitch at ends 10.45" 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.

For AMOS & SMITH LTD.
The foregoing is a correct description,
A. E. Kershley 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. H.M.T. GRAYLING (except mission of Steam Lane).

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

This Boiler has been constructed under special survey in accordance with the approved plans and the Rules.

The Workmanship and materials are good and, when subjected to an hydraulic test of 365 lb 10" it was found satisfactory in every respect.

[The above boiler examined under steam, safety valves adjusted as above, accumulation test held and boiler examined after all trials WSS]

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

J. F. Fenton
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute _____
Assigned See F.E. machinery

WED. 28 APR 1943