

REPORT ON BOILERS.

No. 43595

Received at London Office WED. 7 MAY 1924

Date of writing Report 192 When handed in at Local Office 1924 Port of Glasgow.

No. in Reg. Book. Survey held at Dalmeir. Date, First Survey 18th June 1923 Last Survey 19th October 1923.

on the Steel Marine Boiler for s/s "AGILITY" (Number of Visits 16) Tons { Gross 522 Net 183

Master Built at Greenock By whom built G. Brown & Co. Yard No. 141 When built 1923

Engines made at Coathra By whom made A. Bearamore & Co. Engine No. 592 When made 1923.

Boilers made at Dalmeir. By whom made A. Bearamore & Co. Boiler No. N359 When made 1923.

Nominal Horse Power 134 Owners J. J. Bearamore & Sons Port belonging to London.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel A. Bearamore & Co. (Letter for Record S)

Total Heating Surface of Boilers 2015 ft^2 Is forced draught fitted No Coal or Oil fired Coal

No. and Description of Boilers Single ended cylindrical multitubular Working Pressure 180 lbs.

Tested by hydraulic pressure to 320 lbs Date of test 19/10/23 No. of Certificate 16357 Can each boiler be worked separately

Area of Firegrate in each Boiler 61 ft^2 No. and Description of safety valves to each boiler one double spring

Area of each set of valves per boiler { per Rule 12.1 sq. ins. as fitted 14.1 sq. ins. Pressure to which they are adjusted 185 lbs Are they fitted with easing gear No

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 on woodwork passage about 2 ft Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated No

Largest internal dia. of boilers 14'6" Length 10'6" Shell plates: Material Steel Tensile strength 28/32 tons

Thickness 1 3/16" Are the shell plates welded or flanged No Description of riveting: circ. seams { end double enter. 3.718" long. seams { 8.75" Pitch of rivets {

Diameter of rivet holes in { circ. seams 1/4" long. seams 1/4" Percentage of strength of circ. end seams { plate 66.5 rivets 45.7 Percentage of strength of circ. intermediate seam { plate 85.7 rivets 91.0

Percentage of strength of longitudinal joint { plate 85.7 rivets 91.0 combined 89.5 Working pressure of shell by Rules 180.5 lbs.

Thickness of butt straps { outer 1 5/16" inner 1 1/16" No. and Description of Furnaces in each Boiler 3 Morrison. 3 cf.

Material Steel Tensile strength 26/30 tons Smallest outside diameter 3'7 1/8"

Length of plain part { top bottom Thickness of plates { crown 9/16" bottom 9/16" Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 189 lbs.

End plates in steam space: Material Steel Tensile strength 26/30 tons Thickness 1 3/16" Pitch of stays 18 3/4" x 18 3/4"

How are stays secured Nuts Working pressure by Rules 186 lbs.

Tube plates: Material { front Steel back Steel Tensile strength { 26/30 tons Thickness { 7/8" 7/8"

Mean pitch of stay tubes in nests 4 5/32" x 9 1/4" Pitch across wide water spaces 14 1/2" Working pressure { front 183 lbs back 202 lbs.

Girders to combustion chamber tops: Material Steel Tensile strength 28/32 tons Depth and thickness of girder

at centre 8 1/8" x 1 1/2" Length as per Rule 29 7/16" Distance apart stays 9 1/2", centre 10 3/8" No. and pitch of stays

in each 2 - 8 3/4" Working pressure by Rules 200 lbs Combustion chamber plates: Material Steel

Tensile strength 26/30 tons Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 1/16"

Pitch of stays to ditto: Sides 9 1/2" x 9 1/2" Back 9 1/2" x 9 1/2" Top 8 3/4" x 9 1/2" Are stays fitted with nuts or riveted over Nuts at c.c. end only

Working pressure by Rules 183 lbs Front plate at bottom: Material Steel Tensile strength 26/30 tons

Thickness 7/8" Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 7/8"

Pitch of stays at wide water space 14 1/2" Are stays fitted with nuts or riveted over Nuts.

Working Pressure 211 lbs Main stays: Material Steel Tensile strength 28/32 tons

Diameter { At body of stay, 3" No. of threads per inch 6 Area supported by each stay 351 in^2

Working pressure by Rules 191 lbs Screw stays: Material Steel Tensile strength 26/30 tons

Diameter { At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 90 in^2

Working pressure by Rules 201 lb Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 7/8" or Over threads 1 7/8"
No. of threads per inch 9 Area supported by each stay 114" Working pressure by Rules 186 lb
Tubes; Material iron External diameter { Plain 3 1/2" Stay 3 1/2" Thickness { 8 L.S.G. 5/16" 1/4" No. of threads per inch 9
Pitch of tubes 4 23/32" Working pressure by Rules 215 lb Manhole compensation: Size of opening in shell plate 20" x 16" Section of compensating ring 32" x 28" x 1 3/16" No. of rivets and diameter of rivet holes 34 - 1 1/4"
Outer row rivet pitch at ends 8 3/4" Depth of flange if manhole flanged 3 1/2" Steam Dome: Material iron
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 _____ Working pressure by Rules _____ Thickness of crown _____ No. and diameter of stays _____
Inner radius of crown _____ Working pressure by Rules _____
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 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 _____ Working pressure as per Rules _____ Pressure to which the safety valves are adjusted _____ Hydraulic test pressure: tubes _____, 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 23 inclusive for boilers been complied with yes

FOR WILLIAM BEARDMORE & CO., LIMITED

The foregoing is a correct description,

Manufacturer.

Survey Request no 2623 attached

W. Bayon

Dates of Survey { During progress of work in shops - - - 1923 Jun 18 Jul 2 Dec Aug 6 28 Sep 3-10 1923 the approved plans of boiler and superheater forwarded herewith yes (If not state date of approval.)
while building { During erection on board vessel - - - Oct 1-5 12 16 17
Total No. of visits 16

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

This boiler has been built under Special Survey and the material tested in accordance with the rules of this Society. The material and workmanship, as far as can be seen, are sound and good.
This boiler has now been fitted on board the above vessel in an efficient manner, safety valves adjusted under steam to 185 lb/s and everything found satisfactory.

Survey Fee ... £ 13 : 8 : 0

When applied for 6/57 192 4

Travelling Expenses (if any) £

When received, 3/17 192 4

W. A. Campbell
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW - 6 MAY 1924

Assigned See accompanying machinery report

H. M. Crick 2020

J. H. Lloyd's Register Foundation