pt. 5a.

REPORT ON BOILERS.

MDB 17824
No. 17743.

Received at London Office 13 NOV 1944

Date of writing Report 6th Nov. 1944 When handed in at Local Office 10th Nov. 1944 Port of Middlesbrough.

No. in Survey Book. Survey held at Stockton-on-Tees. Date, First Survey 28th March Last Survey 2nd Nov. 1944

(Number of Visits 24.) Tons Gross 8196, Net 4568

on the S/S "WAVE GOVERNOR"

Built at Haverton-Hill-on-Tees By whom built Furness Shipbuilding Co. Ld. Yard No. 362 When built 1945-3

Engines made at West Hartlepool. By whom made Richardsons Westgarth's Engine No. 2751. When made 1945

Boilers made at Stockton-on-Tees By whom made Stockton C.E. & Riley Boilers Ld. Boiler No. 6828 When made 1944.

Nominal Horse Power Owners Admiralty Port belonging to London.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel The Steel Company of Scotland. (Letter for Record S. ✓

Total Heating Surface of Boilers 2080 ☐' ✓ Is forced draught fitted Coal or Oil fired

No. and Description of Boilers 1. SE. Marine ✓ Working Pressure 180 lb/p" ✓

Tested by hydraulic pressure to 320 lb ✓ Date of test 2/11/44 No. of Certificate 7128 Can each boiler be worked separately

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 2'¼" Double Spring - High Lift.

Area of each set of valves per boiler {per Rule 6.670" for I.H.L. / as fitted 7.95 0" ✓} Pressure to which they are adjusted 185 lb/p" 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 3'-6" ✓ Is oil fuel carried in the double bottom under boilers ✓

Smallest distance between shell of boiler and tank top plating 18" ✓ Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 13'-3 13/16" ✓ Length 11'-6" ✓ Shell plates: Material Steel ✓ Tensile strength 29-33 ✓

Thickness 1 3/32" ✓ Are the shell plates welded or flanged No. ✓ Description of riveting: circ. seams {end DR. / inter.}

Long. seams TR.-DBS. ✓ Diameter of rivet holes in {circ. seams 1 3/16" ✓ / long. seams 1 3/16" ✓} Pitch of rivets {3.59" ✓ / 8 3/16" ✓}

Percentage of strength of circ. end seams {plate 66.9% / rivets 44.7} Percentage of strength of circ. intermediate seam {plate / rivets}

Percentage of strength of longitudinal joint {plate 85.5 / rivets 91.85 / combined 87.36}

Thickness of butt straps {outer 7/8" / inner 1" ✓} No. and Description of Furnaces in each Boiler 3 Deighton Corrugated. ✓

Material Steel ✓ Tensile strength 26-30 ✓ Smallest outside diameter 3'-1¼" ✓

Length of plain part {top / bottom} Thickness of plates {crown / bottom} ½" ✓ Description of longitudinal joint Welded. ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓

End plates in steam space: Material Steel ✓ Tensile strength 26-30 ✓ Thickness 1 5/32" ✓ Pitch of stays 19" × 17½"

How are stays secured Stays screwed into back end. Stemmed front end. Double nuts & washers. ✓

Tube plates: Material {front / back} Steel Tensile strength 26-30 Thickness {1 3/16" / 11/16"}

Mean pitch of stay tubes in nests 9 3/8" ✓ Pitch across wide water spaces 13½" ✓

Girders to combustion chamber tops: Material Steel ✓ Tensile strength 28-32 Depth and thickness of girder at centre 8 3/8" - 2 @ 13/16" ✓ Length as per Rule 2'-8" ✓ Distance apart 10" ✓ No. and pitch of stays in each 2 - 10" ✓

Combustion chamber plates: Material Steel ✓

Tensile strength 26-30 ✓ Thickness: Sides 21/32 ✓ Back 11/16" ✓ Top 23/32" ✓ Bottom 21/32" ✓

Pitch of stays to ditto: Sides 10" × 8" ✓ Back 10½" × 7½" ✓ Top 10" × 10" ✓ Are stays fitted with nuts or riveted over Margin stays nutted each end. Others " " CC's only.

Front plate at bottom: Material Steel ✓ Tensile strength 26-30 ✓

Thickness 13/16" Lower back plate: Material Steel ✓ Tensile strength 26-30 ✓ Thickness 27/32" ✓

Pitch of stays at wide water space 15" ✓ Are stays fitted with nuts or riveted over Nuts.

Main stays: Material Steel Tensile strength 28-32 ✓

Diameter {At body of stay, or Over threads} 2 7/8" No. of threads per inch 6 ✓

Screw stays: Material Steel Tensile strength 26-30 ✓

Diameter {At turned off part, or Over threads} 1 3/16" ✓ No. of threads per inch 9 ✓

Are the stays drilled at the outer ends No ✓ Margin stays: Diameter { At turned off part, or Over threads 1⅛" ✓

No. of threads per inch 9. ✓

Tubes: Material Seamless Steel. External diameter { Plain 2½" Stay 2½" } Thickness { 9 S.G. ✓ ¾" & 5/16" ✓ } No. of threads per inch 9. ✓

Pitch of tubes 3¾" × 3¾" ✓ **Manhole compensation:** Size of opening in shell plate 20½" × 16½" ✓ Section of compensating ring 6¾" × 1⅛" ✓ No. of rivets and diameter of rivet holes 36 - 1 3/16" ✓

Outer row rivet pitch at ends 8 3/16" ✓ Depth of flange if manhole flanged ✓ **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 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.

The foregoing is a correct description,

G. H. Wilson

Manufacturer.

Dates of Survey while building { During progress of work in shops - - - } 1944 March 28, April 19, May 4, 10, 22, June 6, 12, 20, 28, July 3, 12, 20, Aug. 2, 9, 16, 30, Sept 8, 15, 21, Oct 5, 13, 19, 25, Nov. 2

{ During erection on board vessel - - - }

Are the approved plans of boiler and superheater forwarded herewith (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. Ridley report No. 17673. Empire Protector

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under Special Survey & in accordance with the Rule Requirements & approved plans.

The materials & workmanship are good & on completion the boiler was hydraulically tested to 320 lbs/in² & found satisfactory.

This boiler is being dispatched to the Furness Shipbuilding Co., Haverton Hill, for Richardsons Westgarth's Contract No 2751.

This boiler has now been securely fitted on board & examined under working conditions & found satisfactory.

On completion the SVs were adjusted under steam to 185 lbs/in².

MDB 29-3-45

Survey Fee ... ... £ 13 : 18 :

~~Travelling Expenses (if any)~~ Superheater Fee £ 3 : 9 : 6

When applied for, 11-11- 1944.

When received, 19

L. Norman Stuart

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 13 APR 1945

Assigned See F.E. machy. rpt