

REPORT ON BOILERS.

Received at London Office DEC 11 1937
NEWCASTLE-ON-TYNE

Date of writing Report 19 When handed in at Local Office 19 Port of

No. in Survey held at Walsend Date, First Survey 24 March Last Survey 6 Dec 1937
Reg. Book. on the "AFIAN" (Number of Visits) Gross 4876 Tons Net 2865

Master Built at Haxton Hill By whom built Farness Shipbuilding Co. Ltd. Yard No. 274 When built 1937
Engines made at Walsend By whom made N.S. Marine Engineering Co. Ltd. Engine No. 2888 When made 1937
Boilers made at Walsend By whom made N.S. Marine Engineering Co. Ltd. Boiler No. 2888 When made 1937
Nominal Horse Power 456 Owners United Africa Co. Ltd. Port belonging to Freetown

MULTITUBULAR BOILERS ~~MAIN~~, AUXILIARY, OR ~~DONKEY~~.

Manufacturers of Steel Steel Co of Scotland. (Letter for Record 5)
Total Heating Surface of Boilers 1400 sq ft Is forced draught fitted no Coal or Oil fired Oil

No. and Description of Boilers One single ended multitubular Working Pressure 220 lbs

Tested by hydraulic pressure to 380 lbs Date of test 15-10-37 No. of Certificate 742 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 36 sq ft No. and Description of safety valves to each boiler Two spring loaded
Area of each set of valves per boiler { per Rule 7.3 sq ft as fitted 7.9 sq ft Pressure to which they are adjusted 225 lbs Are they fitted with easing gear Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 10'-0" Is oil fuel carried in the double bottom under boilers Yes

Smallest distance between shell of boiler and tank top plating 2'-0" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 12'-3 5/8" Length 10'-6" Shell plates: Material Steel Tensile strength 29-33 tons L.D.R.

Thickness 1 3/16" Are the shell plates welded or flanged no Description of riveting: circ. seams { end 35/32" inter. --- }
long. seams Shell Straps T.R. Diameter of rivet holes in { circ. seams 1 1/4" long. seams 1 1/4" } Pitch of rivets { 8 21/32" }

Percentage of strength of circ. end seams { plate 65.5 rivets 45.2 } Percentage of strength of circ. intermediate seam { plate --- rivets --- }

Percentage of strength of longitudinal joint { plate 85.5 rivets 88.8 combined 88.5 } Working pressure of shell by Rules 220 lbs

Thickness of butt straps { outer 2 9/32" inner 1 3/32" } No. and Description of Furnaces in each Boiler Two Brighton

Material Steel Tensile strength 26-30 tons Smallest outside diameter 41 7/16"
Length of plain part { top --- bottom --- } Thickness of plates { crown 2 1/32" bottom --- } Description of longitudinal joint weld

Dimensions of stiffening rings on furnace or c.c. bottom --- Working pressure of furnace by Rules 230 lbs

End plates in steam space: Material Steel Tensile strength 26-30 tons Thickness 1 13/32" Pitch of stays 23" x 16"

How are stays secured Double nuts Working pressure by Rules 226 lbs

Tube plates: Material { front Steel back Steel } Tensile strength { 26-30 tons } Thickness { 3 1/32" } Working pressure { front 222 lbs back 245 lbs }

Mean pitch of stay tubes in nests 9" Pitch across wide water spaces 14 1/2"

Girders to combustion chamber tops: Material Steel Tensile strength 29-33 tons Depth and thickness of girder at centre 9" x 2 @ 13/16" Length as per Rule 29" Distance apart 11" No. and pitch of stays in each 2 @ 8 1/2" Working pressure by Rules 247 lbs Combustion chamber plates: Material Steel Tensile strength 26-30 tons Thickness: Sides 2 5/32" Back 3/4" Top 2 5/32" Bottom 2 5/32"

Pitch of stays to ditto: Sides 10" x 8 1/2" Back 10" x 8 1/2" Top 11" x 8 1/2" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 223 lbs Front plate at bottom: Material Steel Tensile strength 26-30 tons Thickness 3 1/32" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 1 5/16"

Pitch of stays at wide water space 15" x 10" Are stays fitted with nuts or riveted over nuts

Working Pressure 222 lbs Main stays: Material Steel Tensile strength 28-32 tons Diameter { At body of stay 3 1/4" or Over threads --- } No. of threads per inch 6 Area supported by each stay 368 sq in

Working pressure by Rules 252 lbs Screw stays: Material Steel Tensile strength 26-30 tons Diameter { At turned off part 1 7/8" or Over threads --- } No. of threads per inch 9 Area supported by each stay 93.5 sq in

Working pressure by Rules 238 lbs Are the stays drilled at the outer ends no Margin stays: Diameter ^{At turned off part,} 2 1/8" ^{or} 2 1/8" ^{Over threads}

No. of threads per inch 9 Area supported by each stay 117.5 sq" Working pressure by Rules 250 lbs

Tubes: Material Steel External diameter ^{Plain} 3 1/4" ^{Stay} 3 1/4" Thickness 5/16" + 3/8" No. of threads per inch 9

Pitch of tubes 11 3/4" x 9" Working pressure by Rules 253 lbs Manhole compensation: Size of opening in END 16" x 12" Section of compensating ring — No. of rivets and diameter of rivet holes —

Outer row rivet pitch at ends — Depth of flange if manhole flanged 4 1/8" 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 — Working pressure by Rules — Thickness of crown — No. and diameter of stays —

How connected to shell — Inner radius of crown — Working pressure by Rules —

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 — Working pressure as per Rules — 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

The foregoing is a correct description,
 THE NORTH EASTERN MARINE ENGINEERING CO., LTD.
John Neill Manufacturer.

Dates of Survey ^{During progress of work in shops - - -} See Weekly Report Are the approved plans of boiler and superheater forwarded herewith Yes ^(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. "Conabrian" Report No. 95604

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under Special Survey, in accordance with the Rules and approved plan. The materials and workmanship are good: on completion it was tested by water pressure to 380 lbs per square inch and found tight and satisfactory. It has been fitted on board in a satisfactory manner, tried under working conditions and found satisfactory.

Survey Fee £ Charged on Weekly Report. } When applied for, 19
 Travelling Expenses (if any) £ : : } When received, 19

J. Seller
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 17 DEC 1937
 Assigned See Ind. 76. 16175

