

REPORT ON BOILERS.

Received at London Office DEC 28 1938

Date of writing Report 19 1938 When handed in at Local Office 14.12.1938 Port of Belfast
 Visits included in 7. E. mch.
 No. in Reg. Book 73547 Survey held at Belfast Date, First Survey _____ Last Survey _____ 19____
 on the T.W.S. DURBAN CASTLE GIL ENGINES (Number of Visits _____) Gross Tons _____ Net Tons _____
 Built at Belfast By whom built Harland & Wolff Ltd Yard No. 987 When built 1938
 Engines made at Belfast By whom made Harland & Wolff Ltd Engine No. 987 When made 1938
 Boilers made at Belfast By whom made Harland & Wolff Ltd Boiler No. 987 When made 1938
 Owners Union Castle Mail Steamship Co Port belonging to London

VERTICAL DONKEY BOILER.

Made at Belfast By whom made Harland & Wolff Ltd Boiler No. 987 When made 1938 Where fixed Upper Deck in E.R.
 Manufacturers of Steel Culivell Ltd

Total Heating Surface of Boiler 1200 sq ft. Is forced draught fitted yes Coal or Oil fired Exh gas
 No. and Description of Boilers One Clarkson Exhaust gas Working pressure 100 lbs
 Tested by hydraulic pressure to 200 lbs Date of test 27.7.38 No. of Certificate 1047

Area of Firegrate in each Boiler ✓ No. and Description of safety valves to each boiler 2-2 1/4" C.I. double spring Marine Imp. H.L.
 Area of each set of valves per boiler per rule 6.5 sq ft. as fitted 7.96 sq ft. Pressure to which they are adjusted 100 lbs Are they fitted with easing gear yes

State whether steam from main boilers can enter the donkey boiler ✓ Smallest distance between boiler or uptake and bunkers or woodwork ✓
 Is oil fuel carried in the double bottom under boiler ✓ Smallest distance between base of boiler and tank top plating ✓
 Is the base of the boiler insulated no Largest internal dia. of boiler 8'-6 1/4" Height 18'-3"

Shell plates: Material S Tensile strength 25/32 Thickness 1/2"

Are the shell plates welded or flanged Butt strap ends Description of riveting: circ. seams end top SR but DR long. seams DR
 Dia. of rivet holes in circ. seams 7/8" long. seams 7/8" Pitch of rivets 2" to 2 1/8" 3 1/4" Percentage of strength of circ. seams plate 56.25 rivets 49.3 of Longitudinal joint plate 73.1 rivets 113 combined 103.2

Working pressure of shell by rules 101.25 lbs Thickness of butt straps outer 7/16" inner 7/16"

Shell Crown: Whether complete hemisphere, dished partial spherical, or flat yes Material S
 Tensile strength 26/30 tons Thickness 27/32" Radius 7'-0" Working pressure by rules 102 lbs

Description of Furnace: Plain, spherical, or dished crown Material _____ Tensile strength _____
 Thickness _____ External diameter top _____ bottom _____ Length as per rule _____ Working pressure by rules _____
 Pitch of support stays circumferentially _____ and vertically _____ Are stays fitted with nuts or riveted over _____
 Diameter of stays over thread _____ Radius of spherical or dished furnace crown _____ Working pressure by rule _____
 Thickness of Ogee Ring _____ Diameter as per rule D _____ d _____ Working pressure by rule _____

Combustion Chamber: Material S Tensile strength 26/30 Thickness of top plate 3/4"
 Radius if dished 5'-0" Working pressure by rule 104 Thickness of back plate 1 1/8" Diameter if circular 5'-8 21/32"
 Length as per rule 10'-11 1/2" Pitch of stays ✓ Are stays fitted with nuts or riveted over ✓
 Diameter of stays over thread ✓ Working pressure of back plate by rules 135 lbs

Tube Plates: Material front _____ back _____ Tensile strength _____ Thickness _____ Mean pitch of stay tubes in nests _____
 If comprising shell, Dia. as per rule front _____ back _____ Pitch in outer vertical rows _____ Dia. of tube holes FRONT stay _____ plain _____ BACK stay _____ plain _____

Is each alternate tube in outer vertical rows a stay tube _____ Working pressure by rules front _____ back _____

Girders to combustion chamber tops: Material _____ Tensile strength _____
 Depth and thickness of girder at centre _____ Length as per rule _____
 Distance apart _____ No. and pitch of stays in each _____ Working pressure by rule _____



Crown stays: Material _____ Tensile strength _____ Diameter { at body of stay,
or
over threads..... }
No. of threads per inch _____ Area supported by each stay _____ Working pressure by rules _____

Screw stays: Material _____ Tensile strength _____ Diameter { at turned off part,
or
over threads..... } No. of threads per inch _____
Area supported by each stay _____ Working pressure by rules _____ Are the stays drilled at the outer ends _____

Tubes: Material **S** External diameter { plain _____ 4" ✓
stay _____ } Thickness { **9.344** ✓

No. of threads per inch _____ Pitch of tubes **8 3/4" x 7.55** Working pressure by rules _____

Manhole Compensation: Size of opening in shell plate **12 x 16"** ✓ Section of compensating ring **5 1/8 x 3/4"** ✓ No. of rivets and diameter _____
of rivet holes **40 - 7/8"** ✓ Outer row rivet pitch at ends **3 1/2"** ✓ Depth of flange if manhole flanged **Crown plate 3/8"** ✓

Uptake: External diameter **3' - 5 3/8"** ✓ Thickness of uptake plate **1/16"** ✓

Cross Tubes: No. _____ External diameters { _____ } Thickness of plates _____

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with _____

The foregoing is a correct description,
For HARLAND AND WOLFF, LIMITED.
A. J. Marshall Manufacture
Secretary

Dates of Survey { During progress of work in shops - - } Is the approved plan of boiler 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 **No** If so, state Vessel's name and Report No. _____

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
This boiler was constructed under special survey to an approved design. The materials & workmanship are good. It was tested by hydraulic pressure, efficiently installed & fastened on an upper deck in the Motor room. The safety valves were adjusted under steam accumulation tests were satisfactory. It is adapted for use of exhaust gas only. In our opinion it is eligible for use in a classed vessel.

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

See machinery report

Committee's Minute **TUE 3 JAN 1933**
Assigned *See FE machy rpt.*

Charles H. Hunter. Rlee Arneer
Engineer-Surveyor to Lloyd's Register of Shipping.
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