

REPORT ON BOILERS.

No. 12276

Received at London Office DEC 28 1938

Date of writing Report 10 When handed in at Local Office 14. 12. 1938 Port of Belfast
 Visits included in 7. E. mch.
 No. in Reg. Book 73547 on the T.W. S. "DURBAN CASTLE" GIL ENGINES Date, First Survey Last Survey 19
 (Number of Visits) Tons } Gross
 Net
 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 DK in E.R.
 Manufacturers of Steel Culivillers 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'd H.L.

Area of each set of valves per boiler { per rule 6.5" as fitted 7.96" 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 inter. SR long. seams DR

Dia. of rivet holes in { circ. seams 7/8" long. seams 7/8" Pitch of rivets 2" x 2 1/8" 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 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 Working pressure by rule

Combustion Chamber: Material S Tensile strength 25/30 Thickness of top plate 3/4"

Radius if dished 5'-0" Working pressure by rule 104 Thickness of back plate 1 3/8" Diameter if circular 5'-8 23/32"

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 Tensile strength Thickness Mean pitch of stay tubes in nests

If comprising shell, Dia. as per rule { front Pitch in outer vertical rows { Dia. of tube holes FRONT { stay BACK { stay

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 B.W.K.

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 1/8"

Uptake: External diameter 3' - 5 1/2" 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 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 Amear
Engineer-Surveyor to Lloyd's Register of Shipping.

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