

REPORT ON BOILERS.

Received at London Office

DEC 28 1938

Date of writing Report 19 10 When handed in at Local Office 24. 12. 1938 Port of Belfast
 No. in Reg. Book 73547 on the TW. S. DURBAN CASTLE GIL ENGINES (Number of Visits) Gross Net
 Date, First Survey 1938 Last Survey 19 Visits included in 7. E. mch
 Survey held at Belfast
 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 Colvilles Ltd

Total Heating Surface of Boiler 1200 sq ft. Is forced draught fitted Yes Coal or Oil fired or Exhaust gas
 No. and Description of Boilers One Clarksons Alternative Exhaust gas or oil fired Working pressure 100 lbs
 Tested by hydraulic pressure to 200 lbs Date of test 31-8-38 No. of Certificate 1049

Area of Firegrate in each Boiler ✓ No. and Description of safety valves to each boiler 1 - 2 1/2" C.I. double opening Marine Improved H.L.
 Area of each set of valves per boiler { per rule 6.5 as fitted 9.82 sq" 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'-7 1/2" Height 2.4'

Shell plates: Material S Tensile strength 28/32 tons Thickness 1/2"
 Are the shell plates welded or flanged Butt or trap joints Description of riveting: circ. seams { end top S.R. L & D.R inter. S.R. long. seams D.R.

Dia. of rivet holes in { circ. seams 5 1/2" long. seams 5 1/2" Pitch of rivets { 2 1/4" x 2 7/8" 3 1/4" Percentage of strength of circ. seams { plate 57 rivets 42.7 of Longitudinal joint { plate 73.5 rivets 98.5 combined 96.5

Working pressure of shell by rules 100.5 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 24/30 tons Thickness 27/32" Radius 7'-0" Working pressure by rules 102 lbs

Description of Furnace: Plain, spherical, or dished crown Plain Material S Tensile strength 24/30 tons
 Thickness 3/4" External diameter { top 7'-1 5/8" bottom 7'-1 5/8" Length as per rule 3'-7 1/2" Working pressure by rules 133 lbs
 Pitch of support stays circumferentially ✓ and vertically - Are stays fitted with nuts or riveted over -

Diameter of stays over thread ✓ Radius of ~~spherical~~ dished furnace crown 7' Working pressure by rule 100.2 lbs
 Thickness of Ogee Ring 1" Diameter as per rule { D 8'-7 3/4" d 7'-1 5/8" Working pressure by rule 100.2 lbs

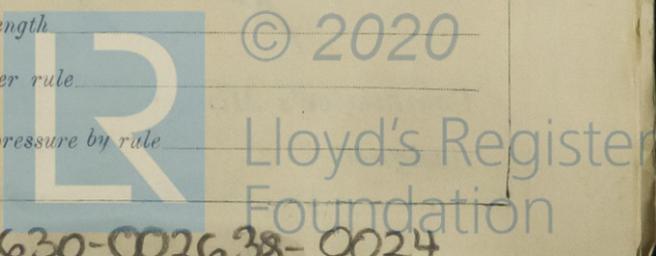
Combustion Chamber: Material S Tensile strength 24/30 tons Thickness of top plate 3/4"
 Radius if dished 5'-0 3/4" Working pressure by rule 104 lbs Thickness of ~~back~~ tube plate 1 3/8" Diameter if circular 5'-8 1/2"
 Length as per rule 10'-11 1/2" Pitch of stays ✓ Are stays fitted with nuts or riveted over -

Diameter of stays over thread ✓ Working pressure of ~~back~~ tube plate by rules 136.5 lbs

Tube Plates: Material { front S back S Tensile strength { front 24/30 tons back 24/30 tons Thickness { front 3/4" back 3/4" Mean pitch of stay tubes in nests { front 7'-0" back 7'-0"

of comprising shell, Dia. as per rule { front 8'-7 3/4" back 7'-1 5/8" Pitch in outer vertical rows { front 7'-0" back 7'-0" Dia. of tube holes FRONT { stay 7'-0" plain 7'-0" BACK { stay 7'-0" plain 7'-0"
 Is each alternate tube in outer vertical rows a stay tube ✓ Working pressure by rules { front 100.2 lbs back 100.2 lbs

Girders to combustion chamber tops: Material S Tensile strength 24/30 tons
 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 _____
Thimbles
Tubes: Material *S* External diameter { plain *4"* ✓ stay _____ } Thickness { *9/32"* ✓ }
 No. of threads per inch *Plain* ✓ 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 *5/16" x 3/4"* ✓ No. of rivets and diameter of rivet holes *40 x 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 5/8"* ✓ Thickness of uptake plate *11/16"* ✓
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 built under special survey & to an approved design. The material and 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 or oil fuel. In our opinion it is eligible for use on a vessel classed with the Society.

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

Charles J. Hunter & R. Lee Arnold
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **TUE 3 JAN 1939**
 Assigned *See FE machy rpt.*

