

REPORT ON BOILERS.

Received at London Office - 4 NOV 1941

Date of writing Report 10 When handed in at Local Office 10 Port of BELFAST

Visits included in 7. 2. 1941

No. in Reg. Book Survey held at BELFAST Date, First Survey Last Survey 19

on the "EMPIRE HOPE" (Number of Visits) Tons Gross Net

Built at Belfast By whom built Harland + Wolff Ltd. Yard No. 1050 When built 1941

Engines made at Belfast By whom made Harland + Wolff Ltd. Engine No. 1050 When made 1941

Boilers made at Belfast By whom made Harland + Wolff Ltd. Boiler No. 1050 When made 1941

Owners Port belonging to

VERTICAL DONKEY BOILER.

Made at Belfast By whom made Harland + Wolff Ltd. Boiler No. 1050 When made 1941 Where fixed upper deck main Room

Manufacturers of Steel Colville's Ltd.

Total Heating Surface of Boiler 300 sq. ft. Is forced draught fitted Yes Cooler Oil fired - waste Heat

No. and Description of Boilers Two Blacken type Begato/300 Working pressure 100 lbs

Tested by hydraulic pressure to 200 lbs Date of test 2. 12. 40 & 13. 12. 40 No. of Certificate 119 - 1122

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 1 1/2" Double S.L. marine ordinary lift type

Area of each set of valves per boiler per rule 1.26 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 Is oil fuel carried in the double bottom under boiler No

Smallest distance between boiler or uptake and bunkers or woodwork Is the base of the boiler insulated No Largest internal dia. of boiler 6' 11 1/16" Height 17' 1 1/2"

Shell plates: Material Steel Tensile strength 29372 tons Thickness 13/32"

Are the shell plates welded or flanged Description of riveting: circ. seams end... top single... bottom double L. inter... single L. long. seams D.R. D.S.S.

Dia. of rivet holes in circ. seams 25/32" Pitch of rivets 1 1/2" - mid 1 1/16" blue 2 7/8" Percentage of strength of circ. seams plate 16.9 rivets 53.5 of Longitudinal joint plate 72.75 rivets 76.5 combined

Working pressure of shell by rules 113.6 lbs Thickness of butt straps outer 3/8" inner 3/8"

Shell Crown: Whether complete hemisphere, dished partial spherical, or flat Yes Material Steel

Tensile strength 26/30 tons Thickness 1/16" Radius 66" Working pressure by rules 101.3 lbs

Description of Furnace: Plain, spherical or dished crown Yes Material Steel Tensile strength 26/30 tons

Thickness 9/8" External diameter top 55 1/2" bottom 55 1/16" Length as per rule 2' 4 1/2" Working pressure by rules 125.3 lbs

Pitch of support stays circumferentially none fitted and vertically Are stays fitted with nuts or riveted over

Diameter of stays over thread Radius of spherical or dished furnace crown 48" Working pressure by rule 170.6 lbs

Thickness of Ogee Ring 13/16" Diameter as per rule D a Working pressure by rule 147.7

Combustion Chamber: Material Steel Tensile strength 26/30 tons Thickness of top plate 5/8"

Radius if dished 36" Working pressure by rule Thickness of back plate 25/32" Diameter if circular 3' 1 9/16" dia

Length as per rule 7' 0" Pitch of stays 6" Are stays fitted with nuts or riveted over

Diameter of stays over thread Working pressure of back plate by rules 111.5 lbs

Tube Plates: Material front back Tensile strength Thickness Mean pitch of stay tubes in nests

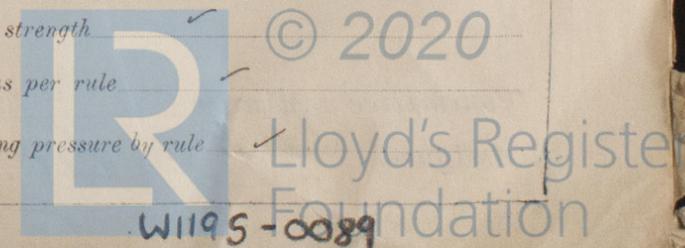
If comprising shell, Dia. as per rule front back Pitch in outer vertical rows Dia. of tube holes FRONT stay plain BACK stay plain

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 Steel humble tubes External diameter { plain _____ 2 3/4" dia holes Thickness { _____ 9 B.W. _____
 No. of threads per inch _____ Pitch of tubes 6" vertical 6.42 circum. Working pressure by rules as appraised

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

Uptake: External diameter 21 1/8" Thickness of uptake plate 1 7/32"

Cross Tubes: No. none fitted External diameters { _____ Thickness of plates _____

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

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

Dates of Survey { During progress of work in shops - - }
 while building { During erection on board vessel - - }
 Is the approved plan of boiler forwarded herewith (If not state date of approval.) _____
 Total No. of visits _____

Is this Boiler a duplicate of a previous case Yes. If so, state Vessel's name and Report No. "Maichua" Bel. Rpt No. 12500

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been constructed under special survey in accordance with the Rules and approved plans. The materials and workmanship are good. These boilers have been efficiently installed on board, examined under steam and the safety valves adjusted to 100 lbs. pressure, accumulation test carried out with satisfactory results. The boilers are eligible in our opinion to have record of + 2 DB 100 lbs. pressure.

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

Committee's Minute Assigned
 See: Bel. R. E. 13091
 FRL 21 NOV 1941
Alec Amner, S. Shaw
 Engineer Surveyors to Lloyd's Register of Shipping.
 Lloyd's Register Foundation