

REPORT ON BOILERS.

No. 14083

Received at London Office

21 DEC 1945

Date of writing Report 18th Dec 1945 When handed in at Local Office 18th Dec. 1945 Port of Belfast

No. in Survey held at Belfast.

Date, First Survey 6 Aug. 1943 Last Survey 17th Dec 1945

on the M/V. "Empire Granada" (Number of Visits 19) Gross Tons Net

Built at Glasgow. By whom built Harland & Wolff Ltd. Yard No. 1197 When built 1946
 Engines made at Glasgow By whom made Harland & Wolff Ltd. Engine No. 9507 When made 1946
 Boilers made at Belfast By whom made Messrs Harland & Wolff Ltd. Boiler No. 900840 When made 1943.
 Nominal Horse Power 490 Owners H. B. Moss & Co. Port belonging to ✓

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Colvilles Ltd. (Letter for Record S. ✓)
 Total Heating Surface of Boilers 1918 sq ft Is forced draught fitted yes ✓ Coal or Oil fired & Blast. gas.
 No. and Description of Boilers One single ended multitubular Working Pressure 150 lb/sq in.
 Tested by hydraulic pressure to 275 lb/sq in. Date of test 16.12.43 No. of Certificate 1266 Can each boiler be worked separately yes.
 Area of Firegrate in each Boiler ✓ No. and Description of safety valves to each boiler 2 1/4" Double Spring & High Lift valves.
 Area of each set of valves per boiler { per Rule 3.63 sq ft x 2 = 7.26 sq ft as fitted 3.98 sq ft x 2 = 7.96 sq ft Pressure to which they are adjusted 150 lb. Are they fitted with easing gear yes.
 In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler X ✓
 Smallest distance between boilers or uptakes and bunkers or woodwork well clear Is oil fuel carried in the double bottom under boilers No.
 Smallest distance between shell of boiler and tank top plating well clear Is the bottom of the boiler insulated yes. (mats)
 Largest internal dia. of boilers 12'-6" Length 11'-0" Shell plates: Material Steel Tensile strength 29/33 tons/sq in.
 Thickness 7/8" Are the shell plates welded or flanged no. Description of riveting: circ. seams { end D.R. inner.
 long. seams T.R. D.B.S. Diameter of rivet holes in { circ. seams 1 3/32" ✓ long. seams 1 1/32" ✓ Pitch of rivets { 3.038" ✓ 6 1/16" ✓
 Percentage of strength of circ. end seams { plate 64% rivets 56.1% Percentage of strength of circ. intermediate seam { plate ✓ rivets ✓
 Percentage of strength of longitudinal joint { plate 84.6% rivets 106.7% combined 90.5% Working pressure of shell by Rules 154.6 lb/sq in.
 Thickness of butt straps { outer 1 1/16" ✓ inner 1 3/16" ✓ No. and Description of Furnaces in each Boiler Two. Corrugated "Waghton" section
 Material Steel Tensile strength 26/30 tons/sq in. Smallest outside diameter 42" ✓
 Length of plain part { top ✓ bottom ✓ Thickness of plates { crown 1/2" ✓ bottom ✓ Description of longitudinal joint Fire weld. ✓
 Dimensions of stiffening rings on furnace or c.c. bottom ✓
 End plates in steam space: Material Steel Tensile strength 26/30 tons/sq in. Thickness 15/16" ✓ Pitch of stays various
 How are stays secured Nuts & washers inside & outside
 Tube plates: Material { front Steel Tensile strength 26/30 tons/sq in. Thickness 7/8" ✓ back Steel Tensile strength 26/30 tons/sq in. Thickness 13/16" ✓
 Mean pitch of stay tubes in nests 9.25" Pitch across wide water spaces 13 1/2"
 Girders to combustion chamber tops: Material Steel Tensile strength 28/32 tons/sq in. Depth and thickness of girder at centre Two @ 8 1/4" x 3/4" Length as per Rule 29.94" Distance apart 11" No. and pitch of stays in each 3 @ 7 1/4"
 Combustion chamber plates: Material Steel Tensile strength 26/30 tons/sq in. Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 3/4" Marginal & girder stays nutted, remainder riveted.
 Pitch of stays to ditto: Sides 9 3/4" x 8 1/4" Back 9 1/4" x 8" Top 11" x 7 1/4" Are stays fitted with nuts or riveted over remainder riveted.
 Front plate at bottom: Material Steel Tensile strength 26/30 tons/sq in.
 Thickness 7/8" Lower back plate: Material Steel Tensile strength 26/30 tons/sq in. Thickness 15/16" ✓
 Pitch of stays at wide water space 13" x 9 1/4" Are stays fitted with nuts or riveted over nutted ✓
 Main stays: Material Steel Tensile strength 28/32 tons/sq in.
 Diameter { At body of stay, or over threads 2 1/2" No. of threads per inch 6 ✓
 Screw stays: Material Steel Tensile strength 26/30 tons/sq in.
 Diameter { At turned off part, or over threads 1 1/2", 1 5/8", 2" No. of threads per inch 9. ✓

Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 5/8" or Over threads 1 5/8" ✓

No. of threads per inch 9 ✓

Tubes: Material Weldless Steel External diameter { Plain 2 1/2" Stay 2 1/2" Thickness { 10 L.S.G. 1 1/4" 5/16" 3/8" No. of threads per inch 9 ✓

Pitch of tubes 3 3/4" x 3 5/8" Manhole compensation: Size of opening

shell plate 16 1/2" x 12 1/2" Section of compensating ring 2 [(10 x 3/4") + (1 x 1")] No. of rivets and diameter of rivet holes 28 @ 1 7/32" ✓

Outer row rivet pitch at ends 9" Depth of flange if manhole flanged front end plate 3 3/8" 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 Thickness of crown No. and diameter

stays Inner radius of crown

How connected to shell 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 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 at

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

Pressure to which the safety valves are adjusted Hydraulic test pressure

tubes forgings and castings and after assembly in place Are drain cocks

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,

Dates of Survey { During progress of work in shops - Aug 6, Sept 17, 30 Oct 1, 4, 7, 13, 18 Are the approved plans of boiler and superheater forwarded herewith 26.5.41 (If not state date of approval.)

while building { During erection on board vessel - Dec 17 Total No. of visits 19

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. M.V. "NORRISIA" Self Rpt No. 13626

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been constructed under Special Survey in accordance with the Society's Rules & approved plans. The materials & workmanship are good.

This boiler has been shipped to Glasgow where it is understood it will be fitted on board Messrs Harland & Wolff's Yark No. 1197 G

This boiler has been satisfactorily secured on board the vessel and its safety valves adjusted under steam to 150 lbs per sq. inch and found Satisfactory. Safety valve compression washer size P.S. 7/16"

G. E. Murdoch
Glasgow.

Survey Fee £ 12 : 15 : 0 When applied for, 19 12 45

Travelling Expenses (if any) £ : - : When received, 19

G. D. Philston
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned Not for Classing Committee

FRI. 10 MAY 1946

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