Rpt. 5a.

REPORT ON BOILERS.

No. 9962

Received at London Office 28 APR 1928

Date of writing Report ____ 192 ____ When handed in at Local Office 27th April 1928 Port of Belfast

No. in Reg. Book. Survey held at Belfast Date, First Survey ____ Last Survey ____ 192

See F.E. Mech. Rpt.

on the STEEL TWIN Sc. "HOOIBERG" (Number of Visits ____) Tons { Gross ____ Net ____

Master ____ Built at Belfast By whom built Harland & Wolff Ld. Yard No. 834 When built 1928

Engines made at Glasgow By whom made Harland & Wolff Ld. Engine No. 834 When made 1928

Boilers made at Belfast By whom made Harland & Wolff Ld. Boiler No. 834 When made 1928

Nominal Horse Power 196 Owners Lago Shipping Co. Ld. (A. Weir & Co. Agts) Port belonging to London

MULTITUBULAR BOILERS—MAIN, ~~AUXILIARY, OR DONKEY~~.

Manufacturers of Steel Dd. Colville & Sons Ld. (Letter for Record S.)

Total Heating Surface of Boilers 3702 ☐ft Is forced draught fitted No. Coal or Oil fired Oil

No. and Description of Boilers Two single ended cylindrical S.B. **Working Pressure** 180 lbs.

Tested by hydraulic pressure to 320 lbs Date of test 29.2.28 No. of Certificate 919 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 49 ☐ft No. and Description of safety valves to each boiler Two Spring-loaded

Area of each set of valves per boiler { per Rule 14.24 ☐" / as fitted 2×9.62 ☐" Pressure to which they are adjusted 180 lbs. Are they fitted with easing gear Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler ____

Smallest distance between boilers or uptakes and bunkers ~~or woodwork~~ Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating ____ Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 14'-0 11/16" Length 10'-6" **Shell plates:** Material Steel Tensile strength 28-32 Tons.

Thickness 1 5/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams { end double / inter. ____

Long. seams Keble d.b.s. Diameter of rivet holes in { circ. seams 1¼" / long. seams 1¼" Pitch of rivets { 3.6" / 8 3/8"

Percentage of strength of circ. end seams { plate 65.2 / rivets 48.5 Percentage of strength of circ. intermediate seam { plate ____ / rivets ____

Percentage of strength of longitudinal joint { plate 85.07 / rivets 97.8 / combined 97.1 Working pressure of shell by Rules 180 lbs.

Thickness of butt straps { outer 29/32" / inner 1 1/16" **No. and Description of Furnaces in each Boiler** Three Morison 3 ft

Material Steel Tensile strength 26-30 Tons Smallest outside diameter 40 1/16"

Length of plain part { top / bottom — Thickness of plates { crown 17/32" / bottom ____ Description of longitudinal joint Weld

Dimensions of stiffening rings on furnace or c.c. bottom ____ Working pressure of furnace by Rules 191 lbs.

End plates in steam space: Material Steel Tensile strength 26-30 Tons Thickness 1⅛" Pitch of stays 17½" × 20½"

How are stays secured double nuts-screwed into end plates-& washers Working pressure by Rules 184 lbs.

Tube plates: Material { front Steel / back Steel Tensile strength { 26-30 Tons / 26-30 Tons Thickness { 7/8" / 13/16" Working pressure { front 187 lbs / back 190 lbs.

Mean pitch of stay tubes in nests 11.2" Pitch across wide water spaces 14¼" × 8¾"

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 Tons Depth and thickness of girder

Pitch centre 8¼" - 1½" Length as per Rule 30 5/8" Distance apart 8⅛" No. and pitch of stays

Stays each Three 8" Working pressure by Rules 215 lbs. **Combustion chamber plates:** Material Steel

Tensile strength 26-30 Tons. Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 3/4"

Pitch of stays to ditto: Sides 8½" × 8" Back 9¼" × 7½" Top 8⅛" × 8" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 190 lbs **Front plate at bottom:** Material Steel Tensile strength 26-30 Tons

Thickness 7/8" **Lower back plate:** Material Steel Tensile strength 26-30 Tons Thickness 13/16"

Pitch of stays at wide water space 13½" × 7½" Are stays fitted with nuts or riveted over Nuts

Working Pressure 225 lbs. **Main stays:** Material Steel Tensile strength 28-32 Tons

Diameter { At body of stay, or Over threads 3" No. of threads per inch five Area supported by each stay 308.4 ☐"

Working pressure by Rules 211 lbs **Screw stays:** Material Steel Tensile strength 26-30 Tons

Diameter { At turned off part, or Over threads 1 5/8" No. of threads per inch ten Area supported by each stay 69.375 ☐"

Working pressure by Rules 219 lbs. Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, or Over threads 1 3/4" 1 7/8"

No. of threads per inch ten Area supported by each stay 990" Working pressure by Rules 183 lbs.

Tubes: Material Iron External diameter { Plain 3 1/4" Stay 3 1/4" Thickness { no. 7 W.G. 1/4" 5/16" ✓ No. of threads per inch ten

Pitch of tubes 4 1/2" x 4 3/8" Working pressure by Rules plain 280 lbs ✓ Stay 225 lbs **Manhole compensation:** Size of opening in

shell plate 16" x 12" ✓ Section of compensating ring 3 1/2" x 2 1/2" x 1/8" double No. of rivets and diameter of rivet holes 28 - 1 1/4" ✓

Outer row rivet pitch at ends 8" ✓ Depth of flange if manhole flanged ✓ **Steam Dome:** Material none

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 Working pressure by Rules Thickness of crown No. and diameter of

stays Inner radius of crown Working pressure by Rules

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 none Manufacturers of { Tubes 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 and

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 Working pressure as per

Rules Pressure to which the safety valves are adjusted Hydraulic test pressure

tubes , castings and after assembly in place Are drain cocks or valves fitted

to free the superheater from water where necessary .

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with Yes.

The foregoing is a correct description.

For HARLAND AND WOLFF, LIMITED.

A. Marshall Manufacturer

R.

Dates of Survey while building { During progress of work in shops - - - During erection on board vessel - - - }

Are the approved plans of boiler and superheater forwarded herewith 7.11.27
(If not state date of approval.)

Total No. of visits

GENERAL REMARKS (*State quality of workmanship, opinions as to class, &c.*)

These boilers have been constructed under special survey and to an approved plan. The material and workmanship are sound and good. They have been tested by hydraulic pressure with satisfactory results, have been efficiently fastened on board the vessel and the safety valves have been adjusted under steam.

Survey Fee ... ... £ See Yacht Report

Travelling Expenses (if any) £ : :

When applied for, 192

When received, 192

R Lee Ames

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 4 MAY 1928

Assigned See Rpt. attached