Rpt. 5a.

# REPORT ON BOILERS.

No. 26181

Received at London Office FRI. JUL. 24. 1914

Date of writing Report 18-7-1914 When handed in at Local Office 21-7-1914 Port of Sunderland.

No. in Reg. Book. 5-11 Survey held at Sunderland Date, First Survey 23 Jany Last Survey 21-7-1914 (Number of Visits ✓) Gross 4791 Tons Net 3067

on the New Steel S.S. "Benrinnes"

Master A. Wallace Built at Sunderland By whom built Bartram + Sons Ld 233 5/12 When built 1914

Engines made at Sunderland By whom made North Eastern Marine Eng Co Ld 2150 When made 1914

Key Boilers made at Sunderland By whom made North Eastern Marine Engg Co Ld R. 243 When made 1914

Registered Horse Power Owners W. Thomson & Co Port belonging to Leith.

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**MULTITUBULAR BOILERS ~~MAIN, AUXILIARY OR~~ DONKEY.**—Manufacturers of Steel Spencer & Sons Ld. Newburn

Letter for record (S.) **Total Heating Surface of Boilers** 903 ft Is forced draft fitted No **No. and Description of Boilers** One single ended **Working Pressure** 120 lbs. Tested by hydraulic pressure to 240 lbs Date of test 29-5-14

No. of Certificate 3231 Can each boiler be worked separately yes **Area of fire grate in each boiler** 31 ft No. and Description of safety valves to each boiler Two spring loaded. Area of each valve 49 □" Pressure to which they are adjusted 125 lbs

Are they fitted with easing gear yes In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler No

Smallest distance between boilers ~~or uptakes~~ and between decks bunkers ~~or woodwork~~ 10" (on main deck) Mean dia. of boilers 10'-6" Length 10'-6"

Material of shell plates Steel Thickness 5/8" Range of tensile strength 28 3/4 & 32 tons Are the shell plates welded or flanged No

Descrip. of riveting: cir. seams D.R. long. seams D.R.D.B.S. Diameter of rivet holes in long. seams 15/16" Pitch of rivets 5 15/15"

~~Cup of plates or~~ width of butt straps 10 5/8" Per centages of strength of longitudinal joint rivets 83 plate 84.2 Working pressure of shell by rules 120 lbs. Size of manhole in shell 16" × 12" Size of compensating ring 9½" × 5/8"

**No. and Description of Furnaces in each boiler** Two plain Material Steel Outside diameter 3'-4 1/4" Length of plain part top 6" bottom 16 3/4" Thickness of plates crown 19/32" bottom 19/32"

Description of longitudinal joint weld No. of strengthening rings None Working pressure of furnace by the rules 120 lbs Combustion chamber plates: Material Steel Thickness: Sides 11/16" Back 23/32" Top 11/16" Bottom 11/16" Pitch of stays to ditto: Sides 14" × 8½" Back 13" × 11¼" Top 14" × 8½" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 120½ lbs Material of stays Steel Area ~~Diameter~~ at smallest part 2.141 Area supported by each stay 15" × 8" 119 □" Working pressure by rules 120 lbs & 135 lbs End plates in steam space: Material Steel Thickness 24/32" Pitch of stays 19" × 14" How are stays secured D.N. Work Working pressure by rules 121 lbs. Material of stays Steel Area ~~Diameter~~ at smallest part 3.14 Area supported by each stay 266 □" Working pressure by rules 123 lbs Material of Front plates at bottom Steel Thickness 24/32" Material of Lower back plate Steel Thickness 24/32" Greatest pitch of stays 15" × 11¼" Working pressure of plate by rules 139 lbs Diameter of tubes 3¼" Pitch of tubes 14 5/8" × 14 7/16" Material of tube plates Steel Thickness: Front 24/32" Back 23/32" Mean pitch of stays 12.3" Pitch across wide water spaces 14½" Working pressures by rules 122 lbs. Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 2 @ 3/4 × 8 1/8" Length as per rule 29½" Distance apart 14" Number and pitch of Stays in each 2 @ 8½" Working pressure by rules 121 lbs. ~~Superheater or~~ Steam chest; how connected to boiler riveted Can the superheater be shut off and the boiler worked separately No Diameter 3'-1" Length 2'-9" Thickness of shell plates ½" Material Steel Description of longitudinal joint weld Diam. of rivet holes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓ If stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ½ How stayed dished Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓

*The foregoing is a correct description,*
NORTH EASTERN MARINE ENGINEERING CO LTD
T. T. Harrison Secy. per F.C. Manufacturer.

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Dates of Survey while building: During progress of work in shops — see Machinery report During erection on board vessel —

Is the approved plan of boiler forwarded herewith yes.

Total No. of visits ✓

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

This Boiler has been built under special survey, the materials and workmanship are of good quality & the hydraulic test proved satisfactory. It has been securely fixed in place, mounted & its safety valves have been adjusted under steam. (See also machinery rept)

Survey Fee ... ... £ 2 : 2 : When applied for, 21-7-1914

Travelling Expenses (if any) £ ✓ : When received, ... 191...

William Butler.
Engineer Surveyor to Lloyd's Register of British and Foreign Shipping.

**Committee's Minute** TUE. JUL. 28. 1914

**Assigned** See minute on rpt. attached

W510-0292