Rpt. 5a.

REPORT ON BOILERS.

No. 7063.

Received at London Office THU. APR 11 1912

Date of writing Report 2nd April 1912 When handed in at Local Office 19 Port of Belfast

No. in Reg. Book. Survey held at Belfast Date, First Survey see other sheet 19

on the S.S. "Patriotic" (Number of Visits) Tons Gross 2254 Net 937

Master Built at Belfast By whom built Harland & Wolff Ltd When built 1912

Engines made at Belfast By whom made when made

Boilers made at By whom made when made

Registered Horse Power ✓ Owners Belfast S.S. Co Ltd Port belonging to Belfast

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

Manufacturers of Steel D. Colville & Sons Ltd

(Letter for record S) **Total Heating Surface of Boilers** 2987 sq ft Is forced draft fitted Yes **No. and Description of Boilers** One - Single End Cylr. **Working Pressure** 195 lbs Tested by hydraulic pressure to 390 lbs Date of test 27-10-11

No. of Certificate 448 Can each boiler be worked separately Yes **Area of fire grate in each boiler** 77 sq ft No. and Description of safety valves to each boiler Two - Direct Spring Area of each valve 10·32 sq" Pressure to which they are adjusted 195 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 Adjt 14" Mean dia. of boilers 16'-6" Length 11'-3"

Material of shell plates Steel Thickness $1\frac{37}{64}$" Range of tensile strength 29-33 tons Are the shell plates welded or flanged No

Descrip. of riveting: cir. seams Lap Dble long. seams Butt Dble Diameter of rivet holes in long. seams $1\frac{37}{64}$" Pitch of rivets $10\frac{1}{2}$"

~~Lap of plates or~~ width of butt straps $22\frac{3}{4}$" Per centages of strength of longitudinal joint rivets 87·5 plate 85·0 Working pressure of shell by rules 227 lbs Size of manhole in shell 16" x 12" Size of compensating ring Mc Neils **No. and Description of Furnaces in each boiler** 4 - Morisons Material Steel Outside diameter $45\frac{7}{16}$" Length of plain part top 3" bottom 5" Thickness of plates crown bottom $\frac{19}{32}$"

Description of longitudinal joint Weld No. of strengthening rings ✓ Working pressure of furnace by the rules 208 lbs Combustion chamber plates: Material Steel Thickness: Sides $\frac{21}{32}$" Back $\frac{21}{32}$" Top $\frac{21}{32}$" Bottom $\frac{15}{16}$" Pitch of stays to ditto: Sides $8\frac{3}{4}$" x $8\frac{1}{2}$" $8\frac{1}{2}$" x $8\frac{1}{2}$" Back $8\frac{1}{2}$" x $8\frac{1}{2}$" Top $8\frac{1}{2}$" x $8\frac{1}{2}$" $8\frac{1}{2}$" x 7" If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 206 lbs Material of stays Steel Diameter at smallest part $1\frac{7}{16}$" x $1\frac{5}{8}$" Area supported by ~~each~~ stay 72 sq" Working pressure by rules 219 lbs Plates in steam space: Material Steel Thickness $1\frac{5}{32}$" Pitch of stays Various How are stays secured Nuts + Washers Working pressure by rules 248 lbs Material of stays Steel Diameter at smallest part $3\frac{9}{16}$" x $2\frac{9}{16}$" Area supported by each stay Various Working pressure by rules ~~as approved~~ Material of Front plates at bottom Steel Thickness $\frac{7}{8}$" Material of Lower back plate Steel Thickness $\frac{7}{8}$" Greatest pitch of stays $12\frac{3}{4}$" Working pressure of plate by rules 225 lbs Diameter of tubes $2\frac{1}{2}$" Pitch of tubes $3\frac{3}{4}$" x $3\frac{3}{4}$" Material of tube plates Steel Thickness: Front $\frac{7}{8}$" Back $\frac{25}{32}$" Mean pitch of stays $7\frac{1}{2}$" x $7\frac{1}{2}$" Pitch across wide water spaces $13\frac{3}{4}$" Working pressures by rules 195 lbs Girders to Chamber tops: Material Steam Depth and thickness of girder at centre 9" x ($\frac{7}{8}$" x 2) Length as per rule $32\frac{1}{2}$" Distance apart $8\frac{1}{2}$" x 7" Number and pitch of Stays in each 3 - $8\frac{1}{2}$"

Working pressure by rules 192 lbs Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked separately Diameter Length Thickness of shell plates Material Description of longitudinal joint 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 How stayed Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

The foregoing is a correct description,

For Harland & Wolff Ltd

Manufacturer.

Dates of Survey while building: During progress of work in shops - - - During erection on board vessel - - - See other sheet

Is the approved plan of boiler forwarded herewith Yes

Total No. of visits

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

See other sheet

Survey Fee ... ... £ : : When applied for, 19

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

R. F. Bennicl Jr

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

Committee's Minute FRI. APR. 12. 1912

Assigned see minute on Rel. Rpt. 7063 attached

If a Report also sent on the Hull of the Ship?

If not, state whether, and when, one will be sent?

[1 m, 4,7—Copyable Ink.]

002151-002156-0077

List of Pumps

1	Pair Main Feed Pumps	14" × 10½" × 26"
2	Main Circulating -	12" bore
2	- Air Dual -	11½" × 18" × 15"
1	Duplex Ballast -	4" × 4" × 8"
1	- General -	6" × 4½" × 9"
1	- Sanitary -	4" × 4" × 8"
1	- F. Water -	4" × 4" × 5"
1	- Bilge -	4" × 4" × 8"

Spare Gear

1 Complete inner & outer stern bush
1 Pair each size bottom end bearings
2 - - top - -
1 Spare eccentric strap each size
1 Air pump rod & bucket complete
2 Bronze centrifugal pump spindles
2 Spare sets patent packing H. P. piston rods
2 - - - - valve spindles
2 sets air pump head valves
100 Condenser tubes
2 Main safety valves & springs
50 Boiler blow tubes
2 Sets bilge pump valves & seats
4 main & 2 donkey check valves etc.
and all gear to Lloyds Rules extra.