

REPORT ON BOILERS.

No. **6635**

Received at London Office THIR. 2 III 1000

Date of writing Report **3rd July 1909** When handed in at Local Office **Belfast** 19 **Port of Belfast**
 No. in Survey held at **Belfast** Date, First Survey **5th May 1908** Last Survey **30th June 1909**
 Reg. Book. **S.S. "Astrants"** (Number of Visits **131**) Gross **12124** Tons Net **7433**
 on the **Belfast** Built at **Belfast** By whom built **Workman Clark & Co. Ltd.** When built **1909**
 Engines made at **Belfast** By whom made **"** when made **"**
 Boilers made at **"** By whom made **"** when made **"**
 Registered Horse Power **✓** Owners **Queen's Steam Navigation Co. Ltd.** Belonging to **Belfast**

MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY. Manufacturers of Steel **Workman Clark & Co. Ltd.**
 Letter for record **S** Total Heating Surface of Boilers **Simple End 6378 sq. ft.** forced draft fitted **Yes** No. and Description of Boilers **Two-Simple End Cylindrical** Working Pressure **215 lbs.** Tested by hydraulic pressure to **430 lbs.** Date of test **26-1-09**
 No. of Certificate **415** Can each boiler be worked separately **Yes** Area of fire grate in each boiler **737 sq. ft.** No. and Description of Safety valves to each boiler **Two-Safety Spring** Area of each valve **9.62 sq. in.** Pressure to which they are adjusted **215 lbs.**
 Are they fitted with casing gear **Yes** In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler **✓**
 Greatest distance between boilers or uptakes and bunkers or woodwork **About 20"** Mean dia. of boilers **16'-4 1/2"** Length **11'-6"**
 Material of shell plates **Steel** Thickness **1 1/8"** Range of tensile strength **31 1/2 - 35 tons** the shell plates welded or flanged **No**
 Description of riveting: cir. seams **Lap W. Y.** long. seams **Butt Lap** Diameter of rivet holes in long. seams **1 1/8"** Pitch of rivets **10"**
 Width of plates or width of butt straps **23 1/2"** Per centages of strength of longitudinal joint rivets **102.5** Working pressure of shell by rules **83.2**
 Size of manhole in shell **16" x 12"** Size of compensating ring **No. 2** No. and Description of Furnaces in each boiler **4 - 6 sight flues** Material **Steel** Outside diameter **44 1/4"** Length of plain part top **2"** Thickness of plates crown **3/4"** bottom **5/8"**
 Description of longitudinal joint **Weld** No. of strengthening rings **✓** Working pressure of furnace by the rules **234 lbs.** Combustion chamber: Material **Steel** Thickness: Sides **5/8"** Back **5/8"** Top **5/8"** Bottom **1"** Pitch of stays to ditto: Sides **8 x 7 1/2"** Back **8 1/2 x 8 1/2"**
 If stays are fitted with nuts or riveted heads **Nuts in ends** Working pressure by rules **218 lbs.** Material of stays **Steel** Diameter at smallest part **1 1/2"** Area supported by each stay **68 sq. in.** Working pressure by rules **272 lbs.** plates in steam space: Material **Steel** Thickness **1 1/4"**
 How are stays secured **W. Nuts** Working pressure by rules **217 lbs.** Material of stays **Steel** Diameter at smallest part **2 1/2"**
 Area supported by each stay **330 sq. in.** Working pressure by rules **247 lbs.** Material of Front plates at bottom **Steel** Thickness **1 1/8"** Material of lower back plate **Steel** Thickness **1 1/8"** Greatest pitch of stays **13 1/2"** Working pressure of plate by rules **227 lbs.** Diameter of tubes **2 1/2"**
 Pitch of tubes **3 1/8" x 3 3/4"** Material of tube plate **Steel** Thickness: Front **29/32"** Back **13/16"** Mean pitch of stays **7 1/2" x 7 1/4"** Pitch across wide inter spaces **13 1/2"** Working pressures by rule **259 lbs. with 32 Doublets** Girders to Chamber tops: Material **Steel** Depth and thickness of girder at centre **9 1/4" x (3/4" x 2)** Length as per rule **31 1/8"** Distance apart **8 1/4" x 7 1/2"** Number and pitch of Stays in each **3 - 7 1/4"**
 Working pressure by rules **258 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 **"**
 Pitch of rivets **"** Working pressure of shell by rules **"** Diameter of flue **"** Material of flue plates **"** Thickness **"**
 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 casing gear **"**

The foregoing is a correct description,
FOR WORKMAN, CLARK & CO., LIMITED
W. W. Bell Manufacturer.

Dates } During progress of }
 Survey } work in shops - - }
 while } During erection on }
 building } board vessel - - - }
 Is the approved plan of boiler forwarded herewith **Yes**
 Total No. of visits **131**

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

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

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

Committee's Minute **FRI. 30 JUL 1909**
 Assigned **see minute on attached**
Bel Rpt No. 6635



M2806-0052

Pumps (Independent)

- | | | |
|-----|-------------------------|-------------------|
| 2 | Hotwell pumps | 9 x 11 x 24 |
| 3 | Main Feed pumps | 14 x 12 1/2 x 26 |
| 1 | Duplex Aux ^y | 6 x 4 1/2 x 9 |
| 2 | Fresh Water | 4 1/2 x 3 1/2 x 7 |
| 1 | General | 12 x 9 x 12 |
| 1 | Ballast | 10 x 12 x 10 |
| Set | Triple Pumps | 7 1/2 x 9 |
| 1 | Duplex | 6 x 8 x 8 |
| 2 | Centrifugal Sanitary | 5 |
| 1 | Duplex Fire etc | 7 x 7 x 7 |
| 1 | Compa ^r | 4 x 4 1/2 x 10 |



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