

# REPORT ON BOILERS.

No. 14326

Received at London Office

WED. JUL. 10. 1918

Date of writing Report 25 June 1918 When handed in at Local Office 1 July 1918 Port of Greenock  
 No. in Survey held at Greenock Date, First Survey 19<sup>th</sup> Febry, 1918: Last Survey 5 July 1918  
 Reg. Book. Greenock (Number of Visits) 25 Gross 5334.24  
 on the Steel Steamer Ardgowan Tons Net 3415.02  
 Master Built at Stn Glasgow By whom built W Hamilton & Co When built 1915  
 Engines made at Greenock By whom made John S Kincaid & Co When made 1918  
 Boilers made at Greenock By whom made Rankin & Blackmore Ltd When made 1918  
 Registered Horse Power                      Owners Ard Steamers Ltd. Port belonging to Greenock.

## MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY.

Manufacturers of Steel Glasgow S. S. & S. G. Scotland  
 (Letter for record S) Total Heating Surface of Boilers 6697 sq ft Is forced draft fitted Yes No. and Description of Boilers Two single ended  
 Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 20-21/5/18  
 No. of Certificate 1342, 1343 Can each boiler be worked separately Yes Area of fire grate in each boiler 78.5 sq ft No. and Description of safety valves to each boiler Two Spring Area of each valve 12.56 sq in Pressure to which they are adjusted 185 lb  
 Are they fitted with easing gear Yes In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 10' Mean dia. of boilers 17'0" Length 12'0"  
 Material of shell plates Steel Thickness 1 1/2" Range of tensile strength 28-32 Are the shell plates welded or flanged Yes  
 Descrip. of riveting: cir. seams                      long. seams with clip 3/16" Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9 1/2"  
 Lap of plates or width of butt straps 20 3/4" Per centages of strength of longitudinal joint 87.1 Working pressure of shell by rules 181 lb Size of manhole in shell 16" x 12" Size of compensating ring Flanged ring 1 1/2" No. and Description of Furnaces in each boiler 4 Brighton Material Steel Outside diameter 45 1/2" Length of plain part                      Thickness of plates 17/32"  
 Description of longitudinal joint Indented No. of strengthening rings None Working pressure of furnace by the rules 181 lb Combustion chamber plates: Material Steel Thickness: Sides 10/16" Back 10/16" Top 10/16" Bottom 11/16" Pitch of stays to ditto: Sides 9 1/8" Back 8 1/2"  
 Top 9 1/8" If stays are fitted with nuts or riveted heads None Working pressure by rules 186 lb Material of stays Steel Area at smallest part 1.73 Area supported by each stay 72 Working pressure by rules 192 lb End plates in steam space: Material Steel Thickness 1 1/8"  
 Pitch of stays 19 1/2" How are stays secured with nuts Working pressure by rules 186 lb Material of stays Steel Area at smallest part 5.79  
 Area supported by each stay 219 Working pressure by rules 189 lb Material of Front plates at bottom Steel Thickness 15/16" Material of Lower back plate Steel Thickness 25/32" Greatest pitch of stays 12 1/8" Working pressure of plate by rules 194 lb Diameter of tubes 2 1/2"  
 Pitch of tubes 3 1/2" - 3 5/8" Material of tube plates Steel Thickness: Front 15/16" Back 1 1/16" Mean pitch of stays 9 1/4" Pitch across wide water spaces 15" Working pressures by rules 186 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 1/2" x 1 1/4" Length as per rule 32 1/16" Distance apart 9' Number and pitch of Stays in each Three 8"  
 Working pressure by rules 186 lb Steam dome: description of joint to shell                      % of strength of joint                       
 Diameter                      Thickness of shell plates                      Material                      Description of longitudinal joint                      Diam. of rivet holes                       
 Pitch of rivets                      Working pressure of shell by rules                      Crown plates                      Thickness                      How stayed                     

**SUPERHEATER.** Type                      Date of Approval of Plan                      Tested by Hydraulic Pressure to                       
 Date of Test                      Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler                       
 Diameter of Safety Valve                      Pressure to which each is adjusted                      Is Easing Gear fitted                     

The foregoing is a correct description,  
**RANKIN & BLACKMORE, LTD.,**  
*H. J. Ferrier* Director. Manufacturer.

Dates of Survey                      During progress of work in shops (1918) Feb. 19, 21, 25, 27, Mar. 5, 7, 11, 19, 27, Apr. 1, 4, 9, 12, 16, 18. Is the approved plan of boiler forwarded herewith Yes  
 while building                      During erection on board vessel                      Total No. of visits 25

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) Workmanship good.  
These two main boilers have been constructed under special  
Order in accordance with the approved Trade Patent. Tested by hydraulic  
pressure and found good. They have now been efficiently fitted on board  
the above named steamer.

Survey Fee                      £                      When applied for, 191  
 Travelling Expenses (if any) £                      When received, 191  
See Report attached hereto.

Committee's Minute GLASGOW 9 JUL 1918  
 Assigned See attached machinery report.

*James Brown*  
 Engineer Surveyor to Lloyd's Register of Shipping.

