

# REPORT ON WATER TUBE BOILERS.

No. 48696

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No. in Survey held at *Glydebank* Date, First Survey *1.8.27* Last Survey *22.12.1928*  
 g. Bk. on the *Twin Screw "Duchess of Richmond"* Number of Visits *143* Tons { Gross  
 ster Built at *Glydebank* By whom built *John Brown & Co. Ltd.* When built *1928*  
 gines made at *Glydebank* By whom made *Do* When made *1928*  
 ilers made at *do* By whom made *Do* When made *1928*  
 gistered Horse Power Owners *Canadian Pacific Ry Co.* Port belonging to *London*

WATER TUBE BOILERS—MAIN, AUXILIARY, OR DONKEY. Manufacturers of Steel *D. Colville & Sons, John Brown*

etter for Record *8.* Date of Approval of plan *16-11-27* Number and Description or Type  
 Boilers *Six - Tarrow* Working Pressure *370* Tested by Hydraulic Pressure to *605* Date of Test *See below*  
 of Certificate *See below* Can each boiler be worked separately *Yes* Total Heating Surface of Boilers *90248 sq. ft.*  
 forced draught fitted *Yes* Area of fire grate (coal) in each Boiler *Oil* Total grate area of boilers in vessel including  
 in and Auxiliary No. and type of burners (oil) in each boiler *4 - Wallsend* No. and description of safety valves on  
 ch boiler *2 - S. L. H. L.* Area of each valve *5.5 sq. ft.* Pressure to which they are adjusted *375*  
 e 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 *Nil clear* Height of Boiler *18'-7 1/2"* Width and Length *22'-3 1/2" x 15'-3"*  
 eam Drums:—Number in each boiler *One* Inside diameter *49 1/8"* Material of plates *8* Thickness *2 3/32"*  
 ange of Tensile Strength *28-32* Are drum shell plates welded or flanged *No* Description of riveting:—  
 ir. seams *J. R.* long. seams *None* Diameter of rivet holes in long. seams *✓* Pitch of Rivets *✓*  
 ap of plate or width of butt straps *4 rows 1 3/4"* Thickness of straps *5 rows 3 3/8" x 2 1/8"* Percentage strength of long. joint:—Plate *✓* Rivet *✓*  
 iameter of tube holes in drum *11" 1 1/4"* Pitch of tube holes *4" 2 5/8" x 2 1/8"* Percentage strength of shell in way of tubes  
 Drum has a flat side state method of staying *Not flat. 11" 1 7/8" x 1 1/16"* Depth and thickness of girders at centre  
 fitted) *✓* Distance apart *✓* Number and pitch of stays in each *✓* Working pressure  
 rules *✓* Steam Drum Heads or Ends:—Material *8* Thickness *1 1/32"* Radius or how stayed *radius*  
 Size of Manhole or Handhole *16" x 12"* Water Drums:—Number in each boiler *3* Inside Diameter *22 3/4"*  
 Material of plates *8* Thickness *1 1/4", 1 3/16", 1 1/8"* Range of tensile strength *28-32* Are drum shell plates welded  
 flanged *No* Description of riveting:—Cir. seams *J. R.* long. seams *None* Diameter of Rivet Holes *3 3/8" x 2 1/8"*  
 ng. seams *✓* Pitch of rivets *✓* Lap of plates or width of butt straps *4 rows 1 3/4"* Thickness of straps *4 rows 2 5/8" x 2 1/8"*  
 Percentage strength of long. joint:—Plate *✓* Rivet *✓* Diameter of tube holes in drum *11" 1 1/4"* Pitch of tube holes *4" 1 7/8" x 1 1/16"*  
 Percentage strength of drum shell in way of tubes *✓* Water Drum Heads or Ends:—Material *8* Thickness *7/8"*  
 Radius or how stayed *radius* Size of manhole or handhole *16" x 12"* Headers or Sections:—Number *None*  
 Material Thickness Tested by Hydraulic Pressure to Material of Stays  
 Area at smallest part Area supported by each stay Working Pressure by Rules Tubes:—Diameter  
 Thickness Number Steam Dome or Collector:—Description of Joint to Shell *None*  
 Percentage strength of Joint Diameter Thickness of shell plates Material  
 Description of longitudinal joint Diameter of Rivet Holes Pitch of Rivets Working Pressure of shell  
 y Rules Crown or End Plates:—Material Thickness How stayed  
 SUPERHEATER. Type *Tarrow* Date of Approval of Plan *16-11-27* Tested by Hydraulic Pressure to *605*  
 Date of Test Is a safety valve fitted to each section of the superheater which can be shut off from the Boiler *Can not be shut off*  
 Diameter of Safety Valve *✓* Pressure to which each is adjusted *✓* Is easing gear fitted  
 Is a drain cock or valve fitted at lowest point of superheater *Yes* Number, diameter, and thickness of tubes *368 - 1 1/2" - 11 w. G.*  
 Spare Gear. Tubes *80 for Ber* Gaskets or joints:—Manhole *4* Handhole *✓* Handhole plates

*John Brown & Company Limited* The foregoing is a correct description,  
*J. Henderson* Manufacturers,  
 Glydebank Secretary *Yes*  
 Is the approved plan of boiler forwarded herewith *Yes*  
 Total No. of visits *143*

Dates of Survey { During progress of work in shops - - } *See Accompanying*  
 while { During erection on board vessel - - - } *Machinery Report*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *These boilers have been built under special survey in accordance with the approved plans, and the Society's Rules and requirements, the materials & workmanship are good, they are then securely fitted on board, & their safety valves adjusted under steam.*  
*See Nos. 17811, 17822, 17842, 17851, 17869, 17895. Dates 8-3-28, 15-3-28, 29-3-28, 5-4-28, 19-4-28, 1-5-28.*

Survey Fee ... £ *Charged* When applied for, 191  
 Travelling Expenses (if any) *None* When received, 191

Committee's Minute *GLASGOW 27 DEC 1928*  
 Assigned *See Accompanying Machy. Report*

*J. Cairns*  
 Engineer Surveyor to Lloyd's Register of Shipping.