

Rpt. 5c.

REPORT ON WATER TUBE BOILERS.

No. 51410

22 APR 1931

Received at London Office

Date of writing Report 7-4-1931 When handed in at Local Office 17-4-1931 Port of Glasgow

No. in Survey held at Glydebank Date, First Survey 25-3-29 Last Survey 13-4-1931

Reg. Bk. on the Quadruple Screw "Empress of Britain" Number of Visits 239

Master Built at Glydebank By whom built John Brown & Co. Ltd. When built 1931

Engines made at Glydebank By whom made John Brown & Co. Ltd. When made 1931

Boilers made at " By whom made " When made 1931

Registered Horse Power Owners Canadian Pacific S.S. Co. Port belonging to London

WATER TUBE BOILERS—MAIN, AUXILIARY, OR DONKEY—Manufacturers of Steel J. Brown & Co. Ltd.

(Letter for Record 8.) Date of Approval of plan 1-3-29. Number and Description or Type of Boilers 8 - narrow Working Pressure 425 Tested by Hydraulic Pressure to 608 Date of Test 13-4-31

No. of Certificate 17-4-31 Can each boiler be worked separately? yes Total Heating Surface of Boilers 99553. Boilers Is forced draught fitted? yes Area of fire grate (coal) in each Boiler 7 - Walsend No. and description of safety valves on Main and Auxiliary 3 - S. L. S. H. L. on Super Area of each valve 9-6211" Pressure to which they are adjusted 3-1416" Are they fitted with easing gear? yes on S&S drum In case of donkey boilers state whether steam from main boilers can enter the donkey boiler no

Smallest distance between boilers or uptakes and bunkers or woodwork Will clear Height of Boiler 25'-9" Width and Length 25'-10" x 22'-0"

Steam Drums:—Number in each boiler One Inside diameter 54" Material of plates 8 Thickness 2 1/32" Range of Tensile Strength 34538 Are drum shell plates welded or flanged? no Description of riveting:—

Cir. seams none long. seams none Diameter of rivet holes in long. seams Pitch of Rivets Lap of plate or width of butt straps Thickness of straps Percentage strength of long. joint:—Plate Rivet Diameter of tube holes in drum 17 rows = 14 rows 1 3/8, 3 rows 2" Pitch of tube holes 2" = 3 1/8" Percentage strength of shell in way of tubes 33-3, 33-3

If Drum has a flat side state method of staying none flat Depth and thickness of girders at centre (if fitted) Distance apart Number and pitch of stays in each Working pressure by rules Steam Drum Heads or Ends:—Material 8 Thickness 3 1/2" Radius or how stayed 14 3/4" Size of Manhole or Handhole 16" x 12" Water Drums:—Number in each boiler 3 Inside Diameter 36" = 17 rows Thickness 2" 1 3/8, 1 1/2" Range of tensile strength 28-32 Are drum shell plates welded or flanged? no Description of riveting:—Cir. seams Solid long. seams Solid Diameter of Rivet Holes in long. seams Pitch of rivets Lap of plates or width of butt straps Thickness of straps Percentage strength of long. joint:—Plate Rivet Diameter of tube holes in drum See steam drum Pitch of tube holes See steam drum

Percentage strength of drum shell in way of tubes 33-3, 33-3. Water Drum Heads or Ends:—Material 8 Thickness 2" 3 1/2, 2" Radius or how stayed none Size of manhole or handhole 16" x 12" Headers or Sections:—Number none (4 rows) (7 rows) (10 rows) 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 by Rules Crown or End Plates:—Material Thickness How stayed

SUPERHEATER. Type narrow Date of Approval of Plan 7-10-29. Tested by Hydraulic Pressure to 608

Date of Test See separate sheet Is a safety valve fitted to each section of the superheater which can be shut off from the Boiler? yes

Diameter of Safety Valve Pressure to which each is adjusted Is easing gear fitted? yes

Is a drain cock or valve fitted at lowest point of superheater? no Number, diameter, and thickness of tubes 1030 x 1 1/8 x 9 L.S.C.

Spare Gear. Tubes Gaskets or joints:—Manhole Handhole Handhole plates

See attached list John Brown & Company, Limited.

The foregoing is a correct description,

Glydebank Secretary

Dates of Survey
During progress of work in shops
while building
During erection on board vessel

Is the approved plan of boiler forwarded herewith? yes.

SEE ACCOMPANYING MACHINERY REPORT

Total No. of visits

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 and workmanship are good, they have been securely fitted on board, and their safety valves adjusted under steam.

Survey Fee ... £ : : When applied for, 191

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

Committee's Minute GLASGOW 21 APR 1931

Assigned SEE ACCOMPANYING MACHINERY REPORT.

W392-0096 1/2

Jas. Cairns
Engineer Surveyor to Lloyd's Register of Shipping.

Lloyd's Register
Foundation

Glasgow

22 APR 1931

8 - Yarrow Boilers.

Boiler Art N ^o .	Date test	Superheater Art N ^o .	Date test
18542.	12-12-29.	18542.	24-3-30.
18552.	16-12-29.	18552.	17-2-30.
18561.	20-12-29.	18561.	25-2-30.
18579.	10-1-30.	18579.	6-3-30.
18590.	23-1-30.	18590.	13-3-30.
18601.	6-2-30.	18601.	10-4-30.
18624.	3-3-30.	18624.	17-4-30.
18678.	14-4-30.	18678.	1-5-30.

Suctions connected to both main bilge pumps, and Auscy bilge pumps. N^o 1 Size in Engine and Boiler Rooms.

after Engine room, 3-3½", 1-3", 2-2½", Forward Engine room, 3-3½", 3-3", 2-2½", Diesel Generator room, 3-3½", oily bilge 1-3½", after boiler room, 1-3½", 3-3", oily bilge, 1-3½", 1-2½", 2-2". Passage between boiler rooms 1-3", oily bilge 1-3", Forward boiler room, 1-3½", 6-3", oily bilge 1-2½", 1-3", -", Pipe Passage 1-3".

Suctions in Holds, etc. Chain locker 1-2½", cofferdam 1-2½", N^o 1 hold, 1-3½", N^o 2 hold, 1-3½", 2-2½", Wing deep tank P 1-2½", S. 1-2½", Centre 1-3½". Baggage room 1-3". Cofferdam between frames 172-173. 1-3", 2-2½". Tunnels Forward Compartments, 4-3½", 1-3". Tunnels after compartments, 1-4", 5-2". Steering engine Compartment 2-2". Swimming bath 1-5".

Main water Circulating Pumps direct Suctions, after Engine room. Bilge Injection 2-18", Forward Engine room. Bilge Injection 2-18".

Independent Power Pumps Direct Suctions, after Engine room. 1-7½", 1-3½" hose conn. Forward engine room 2-7½", 2-3½" hose conn. After boiler room 1-7", Forward boiler room 2-7½".

Safety Valve Washers.

Yarrow Boilers. N^o 1. F. 9/16", C. 3/64", A. 35/64", Johnson Boiler N^o 4 P. 5/16", C. 5/16", S. 5/16"
 " " " 2. " 39/64", " 9/16", " 5/8".
 " " " 6. " 19/32", " 9/16", " 19/32". Multitubular " N^o 3. P. 3/8", S. 3/8". N^o 5. P. 13/32", S. 13/32"
 " " " 7. " 33/64", " 19/32", " 9/16".
 " " " 8. " 37/64", " 35/64", " 35/64".
 " " " 9. " 9/16", " 9/16", " 17/32".
 " " " 10. " 39/64", " 19/32", " 19/32".
 " " " 11. " 5/8", " 39/64", " 19/32".

Jas. Cairns.



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