

REPORT ON BOILERS

No. 81934

Received at London Office

SAT. 26 FEB. 1921

Date of writing Report 24-2-1921 When handed in at Local Office

24 FEB 1921 Port of

LIVERPOOL

No. in Survey held at Durken head.

Date, First Survey May 19th/1920. Last Survey Feb 23rd 1921.

Reg. Book. on the Mm. H.C. Grayson's Vessel No 110, s/s "Barpio"

(Number of Visits 17) Gross Tons Net

Master Built at Garston

By whom built Messrs H.C. Grayson & Co. When built

Engines made at

By whom made

When made

Boilers made at Durken head

By whom made Cammell Laird & Co. Ltd

When made 1921.

Registered Horse Power

Owners

Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY.—Manufacturers of Steel David Colville & Sons, The Earl of Dudley's Patent Oak Works.

Letter for record 5. Total Heating Surface of Boilers 820 sq ft Is forced draft fitted No. and Description of

Boilers One Cylindrical Multitubular. (S.B.) Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs Date of test 9. VII. 20.

No. of Certificate 2131. Can each boiler be worked separately Area of fire grate in each boiler 27 sq ft No. and Description of

Safety valves to each boiler 2 inc. No. Spring loaded. Area of each valve 3.14 sq in Pressure to which they are adjusted

Are they fitted with easing gear 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 Inside dia. of boilers 10'-0" Length 9'-6"

Material of shell plates Steel. Thickness 3/32" Range of tensile strength 28-32 tons Are the shell plates welded or flanged No.

Description of riveting: cir. seams D.R. lap. long. seams T.R. Double Strap Diameter of rivet holes in long. seams 15/16" Pitch of rivets 6 5/8"

Percentage of plates or width of butt straps 14" Per centages of strength of longitudinal joint rivets 92.25% Working pressure of shell by plate 85.84%

Rules 181 lbs. Size of manhole in shell 16" x 12" Size of compensating ring 29" thick No. and Description of Furnaces in each

Boilers 2 Morrison's with material Steel Outside diameter 36 3/4" Length of plain part top Corrugated Thickness of plates crown 15/32" bottom

Description of longitudinal joint Welded No. of strengthening rings Working pressure of furnace by the rules 188.5 Combustion chamber

Plates: Material Steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 1/16" Pitch of stays to ditto: Sides 9" x 9 1/2" Back 9" x 10"

Top 9 1/2" x 9 1/2" If stays are fitted with nuts or riveted heads No. Working pressure by rules 180.7 lbs Material of stays Steel Area at

Smallest part 2.03 sq ft Area supported by each stay 90.25 sq in Working pressure by rules 202 lbs End plates in steam space: Material Steel Thickness 3/32"

Pitch of stays 14 1/2" x 16" How are stays secured Nuts & Washers Working pressure by rules 191 lbs Material of stays Steel Area at smallest part 4.11 sq ft

Area supported by each stay 232 sq in Working pressure by rules 184.5 lbs Material of Front plates at bottom Steel Thickness 3/32" Material of

Lower back plate Steel Thickness 3/32" Greatest pitch of stays 14" x 9" Working pressure of plate by rules 234 lbs Diameter of tubes 5" ex.

Pitch of tubes 4 1/4" x 4 1/8" Material of tube plates Steel Thickness: Front 3/32" Back 3/4" Mean pitch of stays 10 1/2" Pitch across wide

Water spaces 14" Working pressures by rules 184 lbs Girders to Chamber tops: Material Steel Depth and thickness of

Girder at centre 6 5/8" x 1 3/4" Length as per rule 26 1/8" Distance apart 9 1/2" Number and pitch of Stays in each 2 m No. - 9 1/2"

Working pressure by rules 186.5 lbs 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.

CAMMELL LAIRD & COMPANY, LIMITED.

Manufacturer.

Dates of Survey During progress of May 19, 26, June 4, 12, 13, 23, 24, 29, July 2, 8, 9, 16, 17, Aug 20, Oct 6, 14. Is the approved plan of boiler forwarded herewith Yes

while building During erection on board vessel - - -

Total No. of visits 17.

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

This Boiler has now been built under Special Survey and is in accordance with the approved plan & Secretary's letter (E) dated 30th December 1919. The workmanship & materials are good and when tested to twice the working pressure it was found satisfactory in every respect.

Survey Fee ... £ 4 : 4 : When applied for, 24 FEB 1921

Travelling Expenses (if any) £ : : When received, 24 FEB 1921

Committee's Minute

Assigned

Transmit to London. Mr.

John Dykes, Engineer Surveyor to Lloyd's Register of Shipping.

Lloyd's Register Foundation