

REPORT ON BOILERS.

No. 70230

JAN 1946

Received at London Office

Date of writing Report..... 19..... When handed in at Local Office..... 15.12.1945 Port of Glasgow

No. in Reg. Book..... Survey held at GLASGOW Date, First Survey 7.11.44 Last Survey 27th November 45.

on the S.S. "EMPIRE GROSVENOR" (Number of Visits 27) Tons { Gross 890 Net 370

Master..... Built at GLASGOW By whom built A & J. INGLIS LTD. Yard No. 1302 When built 1945.

Engines made at GLASGOW By whom made BRITISH POLAR ENGINES LTD. Engine No. 574 When made 1945.

Boilers made at CARFIN. By whom made ALEX. ANDERSON & SONS LTD. Boiler No. 3873/4 When made 1945.

Nominal Horse Power..... Owners Howe Port belonging to Glasgow

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel..... Colvilles Ltd. (Letter for Record (S))

Total Heating Surface of Boilers 1038 sq.ft. Is forced draught fitted No Coal or Oil fired Oil.

No. and Description of Boilers 2 - Marine Return tube. Working Pressure 180 lbs/sq.in.

Tested by hydraulic pressure to 320 lbs. Date of test 6:6:45 No. of Certificate 21959 Can each boiler be worked separately Yes.
20:6:45 21968

Area of Firegrate in each Boiler - No. and Description of safety valves to each boiler 1-2" Double Spring.

Area of each set of valves per boiler { per Rule 3.33 sq.in. Pressure to which they are adjusted 180 lbs. Are they fitted with easing gear Yes.
as fitted 6.28 sq.in.

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 20 inches. Is oil fuel carried in the double bottom under boilers -

Smallest distance between shell of boiler and tank top plating 12 inches. Is the bottom of the boiler insulated -

Largest internal dia. of boilers 8'0" Length 8'0" Shell plates: Material Steel Tensile strength 29-33 tons.
D.R.

Thickness 23/32 Are the shell plates welded or flanged No Description of riveting: circ. seams { end -
inter -

long. seams D.R. D.B.S Diameter of rivet holes in { circ. seams 15/16" Pitch of rivets { 2 7/8"
long. seams 15/16" 4.699"

Percentage of strength of circ. end seams { plate 67.6 Percentage of strength of circ. intermediate seam { plate -
rivets 54.9 rivets -

Percentage of strength of longitudinal joint { plate 80 Working pressure of shell by Rules -
rivets 94.5 combined -

Thickness of butt straps { outer 13/16" No. and Description of Furnaces in each Boiler 1 Morison.
inner 13/16"

Material Steel Tensile strength 26-30 tons Smallest outside diameter 3-5 1/4"

Length of plain part { top - Thickness of plates { crown 17/32" Description of longitudinal joint Welded.
bottom - bottom -

Dimensions of stiffening rings on furnace or c.c. bottom - Working pressure of furnace by Rules -

End plates in steam space: Material Steel Tensile strength 28-30 tons Thickness 13/16" Pitch of stays 13" & 14"

How are stays secured Double nuts and rivetted doubler. Working pressure by Rules -

Tube plates: Material { front Steel Tensile strength { 26-30 tons. Thickness { 13/16"
back Steel 3/4"

Mean pitch of stay tubes in nests 10" Pitch across wide water spaces 10 1/2" Working pressure { front -
back -

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 tons Depth and thickness of girder

at centre 2 @ 5" x 6" Length as per Rule 20 11/16" Distance apart 7" & 8" No. and pitch of stays

in each 2 @ 7" Working pressure by Rules - Combustion chamber plates: Material Steel

Tensile strength 26-30 tons Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 9/16"

pitch of stays to ditto: Sides 8" x 7" Back 8" x 7" Top 8" x 7" Are stays fitted with nuts or riveted over Yes.

Working pressure by Rules - Front plate at bottom: Material Steel Tensile strength 26-30 tons.

Thickness 13/16" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 13/16"

Pitch of stays at wide water space - Are stays fitted with nuts or riveted over -

Working pressure - Main stays: Material Steel Tensile strength 28-32 tons.

Diameter { At body of stay 2 1/8" No. of threads per inch 6 Area supported by each stay -
or 2 1/2"
Over threads 2 1/2"

Working pressure by Rules - Screw stays: Material Steel Tensile strength 26-30 tons.

Diameter { At turned off part 1 5/8" No. of threads per inch 9 Area supported by each stay -
or 1 5/8"
Over threads 1 5/8"



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Working pressure by Rules... Are the stays drilled at the outer ends... No. Top Margin stays: Diameter { At turned off part... or Over threads... } 1 5/8"

No. of threads per inch 9 Area supported by each stay... Working pressure by Rules... 9

Tubes: Material Iron/welded External diameter { Plain... 2 1/2" Stay... 2 1/2" } Thickness { 5/16" x 5/8" } No. of threads per inch 46 - 15/16"

Pitch of tubes 3 5/8" x 3 5/8" Working pressure by Rules... Manhole compensation: Size of opening in shell plate 15 1/2" x 19 1/2" Section of compensating ring (6 1/2" x 7/8") 2 No. of rivets and diameter of rivet holes... 46 - 15/16"

Outer row rivet pitch at ends 4.6" Depth of flange if manhole flanged 3" Steam Dome: Material None.

Tensile strength... Thickness of shell... Description of longitudinal joint...

Diameter of rivet holes... Pitch of rivets... Percentage of strength of joint { Plate... Rivets... }

Internal diameter... Working pressure by Rules... Thickness of crown... No. and diameter of stays... Inner radius of crown... Working pressure by Rules...

How connected to shell... Size of doubling plate under dome... Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell...

Type of Superheater... Manufacturers of { Tubes... Steel forgings... Steel castings... }

Number of elements... Material of tubes... Internal diameter and thickness of tubes...

Material of headers... Tensile strength... Thickness... Can the superheater be shut off and the boiler be worked separately... Is a safety valve fitted to every part of the superheater which can be shut off from the boiler...

Area of each safety valve... Are the safety valves fitted with easing gear... Working pressure as per Rules... Pressure to which the safety valves are adjusted... Hydraulic test pressure: tubes... forgings and castings... and after assembly in place... Are drain cocks or valves fitted to free the superheater from water where necessary...

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with...

The EMPIRE BELGRAVE is a steam boiler, constructed by EMPIRE BELGRAVE STEEL WORKS LTD, Glasgow, Scotland.
Per J.W.B. Fleming Manufacturer.

Dates of Survey while building { During progress of work in shops - { 1945 Nov 7, 1945 Jan 4, 24, Feb 19, Mar 1, Apr 4, 19, May 19, Jun 6, 20, Jul 11, 18, 23, 31, Aug 7, 30, Sep 19, Oct 14, 15, 22, 26, Nov 2, 12, 14, 19, 26, 27 } } Are the approved plans of boiler and superheater forwarded herewith... No. 5: 8: 44. (If not state date of approval.)
Total No. of visits 27.

Is this Boiler a duplicate of a previous case... YES... If so, state Vessel's name and Report No. EMPIRE BELGRAVE. GLS. RPT. 69670

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been constructed under Special survey in accordance with the Society's rules, the approved plans and the specification.

The materials and workmanship are good.
The boilers have been securely fitted on board Messrs. A & J. Inglis No. 1302 and tried under steam and found satisfactory. Safety valves adjusted to 180 lbs per sq. inch.

Survey Fee ... £ 6 : 18 : 0 } When applied for, 19. 12. 45.
Travelling Expenses (if any) £ 1 : 14 : 6 } When received, 19.

M. Dale
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute... GLASGOW 28 DEC 1945

Assigned.....

