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2 JUL 1945

LIVERPOOL F.E. Report No 123744.

## REPORT ON BOILERS.

No. 69772

Date of writing Report 19 When handed in at Local Office 7.7.1945 Port of GLASGOW.  
No. in Survey held at ANNAN Date, First Survey 24.11.44 Last Survey 29.6.1945  
Reg. Book. on the Cochran Boiler for SS "City of Carlisle" (Number of Visits 10) Tons { Gross  
Built at Birkenhead By whom built CAMMELL LAIRD & CO., LTD. Yard No. 1156 When built 1945.  
Boilers made at ANNAN By whom made COCHRAN & CO. (ANNAN) LD Boiler No. 16068 When made 1945.  
Owners Ellerman Lines Ltd Port belonging to London.

VERTICAL DONKEY BOILER— No. One Description Cochran Manufacturers of steel Colvilles Ltd.  
Made at Annan By whom made Cochran & Co. (Annan) Ltd. When made 1945 Where fixed 29:6:45 Working pressure 105 lbs.  
tested by hydraulic pressure to 208 Date of test 29:6:45 No. of Certificate 21967 Fire grate area 011 Description of safety valves Ordinary.  
No. of safety valves 2 Area of each sq. in. 4.9 Pressure to which they are adjusted 105.5 If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler no Diameter of donkey boiler 6'6" Length 16'3" Material of shell plates S Thickness 15/32" 19/32"  
Range of tensile strength 28/32 Description of riveting long. seams D.R. Lap Diameter of rivet holes 27/32" Whether punched or drilled drilled Pitch of rivets 2.66" 2 11/16" 27/32" Lap of plating 4 1/4" Per centage of strength of joint Rivets 68.9 Working pressure of shell by rules 109.9 Thickness of shell crown plates 13/32" 7/8" Radius of do. 3' 3" No. of stays to do. - Diameter of stays - Diameter of furnace—Top - Bottom 5'6" Length of furnace - Thickness of furnace side plates 1/2" Description of joint Seamless Working pressure of furnace by rules 125 Thickness of Ogee ring 7/8" Working pressure of Ogee ring by rules 1 09 Thickness of furnace crown plates 1/2" Radius of do. 2' 9" Stayed by Hemisphere Diameter of uptake 15" x 23" Thickness of uptake plates 9/16" Thickness of tube plates front 27/32" back 32/32" Mean pitch of stay tubes in nest 11.54" Pitch in outer vertical rows 8  
Diameter of tube holes FRONT stay 2 11/16" BACK stay 2 1/2" Working pressure of tube plates by rules F106 B107 Tubes: Material S  
External diameter stay 2 1/2" plain 2 1/2" Thickness stay 11/32" plain 10 L.S.G. No. of threads per inch 9 Pitch of tubes 4" x 3.9/16"  
Working pressure by rules 175 Manhole compensation; Size of opening in shell plate 21" x 17" Section of compensating ring 7 1/2" x 1" No. of rivets and diameter of rivet holes 40 @ 27/32" Outer row pitch at ends 4 1/8"

The foregoing is a correct description, *gm3*

FOR COCHRAN &amp; CO. ANNAN, LTD. Manufacturer

Dates of Survey while building { During progress of work in shops - 1944 Nov 24 Dec 8 21 1945 Jan 10 21 22 29 21 Mar 7 16 29 Apr 13 28 May 11 24 Drawing No. 28542A  
During erection on board vessel - Jan 8 15 21 29  
Total No. of visits 20

Is the approved plan of boiler forwarded herewith Yes.

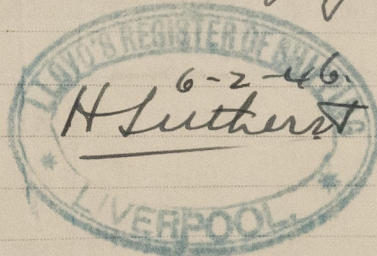
## GENERAL REMARKS (State quality of workmanship, opinions as to class, &amp;c.)

The materials and workmanship are good.

The boiler has been constructed under Special Survey.

The boiler will be sent to Birkenhead to be fitted in the vessel.

The above noted boiler has been fitted in the "City of Carlisle", examined under working conditions, and its safety valves adjusted under steam to 105 lbs/p.



Survey Fee ... £ 4 : 4 : - When applied for 10 JUL 1945  
Travelling Expenses (if any) £ : : - When received

Committee's Minute GLASGOW 10 JUL 1945

Assigned Deferred.

L.C. Davis  
Engineer Surveyor to Lloyd's Register of Shipping.

LIVERPOOL 26 FEB 1946

See Minute re Liverpool & Machinery Report.

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