

## REPORT ON BOILERS.

No. 104543

Received at London Office

19 AUG 1950

Date of writing Report 19... When handed in at Local Office 11 JUL 1950 19... Port of NEWCASTLE-on-TYNE

No. in Survey held at Wallsend Tyne. Date, First Survey... Last Survey... 19...

36504 (Appen) on the S.S. ESSO LIVERPOOL Ex John D. Archibald (Number of Visits... 14539 Tons Gross 8683 Net 8683)

Master... Built at Newport News USA By whom built Newport News Ship &amp; D.D. Co. Yard No. When built 1921

Engines made at Newport News USA By whom made Newport News Ship &amp; D.D. Co. Engine No. When made 1921

Boilers made at Newport News USA By whom made " " " " " Boiler No. When made 1921

Nominal Horse Power 858 Owners Anglo American Oil Co Ltd. Port belonging to London

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel... (Letter for Record...)

Total Heating Surface of Boilers 3 boilers: 12090 sq ft. Is forced draught fitted yes Coal or Oil fired yes

No. and Description of Boilers 3 Scotch boilers Working Pressure 200 lb/sq in

Tested by hydraulic pressure to 300 lb/sq in Date of test... No. of Certificate... Can each boiler be worked separately yes

Area of Firegrate in each Boiler Oil burning No. and Description of safety valves to each boiler 3 1/2" Dia. twin:

Area of each set of valves per boiler 19.24 sq in Pressure to which they are adjusted 200 lb/sq in Are they fitted with easing gear yes

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 10" Is oil fuel carried in the double bottom under boilers yes

Smallest distance between shell of boiler and tank top plating 1' 6" Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 17 ft. Length 12 ft. Shell plates: Material OH Steel Tensile strength 26.7-32.5 tons/sq in

Thickness 1 3/32 Are the shell plates welded or flanged Flanged Description of riveting: circ. seams end DR Lap joint

long. seams T.R.D. Butt Strap Diameter of rivet holes in circ. seams 1 1/16 long. seams 1 5/8 Pitch of rivets 9 1/2

Percentage of strength of circ. end seams plate 67.14% rivets 53.43% Percentage of strength of circ. intermediate seam plate 83.49% rivets 92.0%

Percentage of strength of longitudinal joint plate 92.0% rivets 85.3% Working pressure of shell by Rules 210.7 lb/sq in

Thickness of butt straps outer 1 1/32 inner 1 1/32 No. and Description of Furnaces in each Boiler 4 per boiler: Morrison Suspension

Material OH Steel Tensile strength 24.5 to 29.9 tons/sq in Smallest outside diameter 48 5/16" 45 5/16"

Length of plain part top 5 9/16 bottom 5 9/16 Thickness of plates crown 2 1/32 bottom 2 1/32 Description of longitudinal joint

Dimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules 198.7 lb/sq in

End plates in steam space: Material OH Steel Tensile strength 24.5 to 29.0 tons/sq in Thickness 1 3/32 Pitch of stays 16" x 16"

How are stays secured Screwed &amp; Nutted with washers Working pressure by Rules 216.8 lb/sq in

Tube plates: Material front OH Steel back OH Steel Tensile strength 24.5 to 29.0 tons/sq in Thickness 2 5/32 1 3/16

Mean pitch of stay tubes in nests 9 3/8 Pitch across wide water spaces 12 3/4 Working pressure front 237 lb/sq in back 208 lb/sq in

Girders to combustion chamber tops: Material OH Steel Tensile strength 28.5 to 32.5 tons/sq in Depth and thickness of girder

at centre 10" x 7 1/2" Length as per Rule 2' 11" Distance apart 4 1/2" x 8" No. and pitch of stays

in each 4 7" Working pressure by Rules 300 lb/sq in Combustion chamber plates: Material OH Steel

Tensile strength 24.5 to 29.0 tons/sq in Thickness: Sides 2 1/32 Back 2 1/32 Top 2 1/32 Bottom 1 5/16

Pitch of stays to ditto: Sides 7" x 7 1/2" Back 7 1/2" x 7" Top 8" x 7" Are stays fitted with nuts or riveted over Margins Nutted

Working pressure by Rules 384 Front plate at bottom: Material OH Steel Tensile strength 24.5 to 29.0 lb/sq in

Thickness 3/4 Lower back plate: Material OH Steel Tensile strength 24.5 to 29.0 tons/sq in Thickness 3/4

Pitch of stays at wide water space 12 7/8 14" x 9" Are stays fitted with nuts or riveted over Nuts

Working pressure Main stays: Material OH Steel Tensile strength 25.8 to 29.9 tons/sq in

Diameter At body of stay 2 3/4 Over threads 2 1/2 No. of threads per inch 6 T/in Area supported by each stay 256 sq. ins.

Working pressure by Rules 384 Screw stays: Material Tested Steel Tensile strength 25.8 to 29.9 tons/sq in

Diameter At turned off part 1 1/2 Over threads 1 1/2 No. of threads per inch 10 T/in Area supported by each stay 50 3/4 sq. ins.



Working pressure by Rules... Are the stays drilled at the outer ends... *yes* ✓ Margin stays: Diameter { At turned off part, *1 1/8"* ✓ or Over threads, *1 3/4"* ✓

No. of threads per inch *10 1/2* ✓ Area supported by each stay *56.13"* Working pressure by Rules... ✓

Tubes: Material *Lophelia Iron* ✓ External diameter { Plain *2 3/4"* ✓ Stay *2 3/4"* ✓ Thickness { *9 BWC* ✓ *5/16"* ✓ No. of threads per inch *12 1/2* ✓

Pitch of tubes *4" x 3 3/4"* ✓ Working pressure by Rules... ✓ Manhole compensation: Size of opening in shell plate *23" x 19"* ✓ Section of compensating ring *11 1/2" x 1 23/32"* ✓ No. of rivets and diameter of rivet holes *40. 1 5/8"* ✓

Outer row rivet pitch at ends *10"* ✓ Depth of flange if manhole flanged *4 1/2"* ✓ Steam Dome: Material... ✓

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... *yes* ✓ ?

The foregoing is a correct description,  
..... Manufacturer.....

Dates of Survey while building { During progress of work in shops - - } ✓ Are the approved plans of boiler and superheater forwarded herewith... ✓ (If not state date of approval.)

{ During erection on board vessel - - - } ✓ Total No. of visits... ✓

Is this Boiler a duplicate of a previous case... ✓ If so, state Vessel's name and Report No... ✓

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *These boilers were built & installed under the supervision of the American Bureau of shipping. The scantlings & arrangements have been checked as far as practicable & found to conform to the attached drawing. The boilers have been examined internally & externally & under working conditions & found in good order. Accumulation tests have been carried out with efficient results.*

Survey Fee ... £ : : } When applied for... 19...  
Travelling Expenses (if any) £ : : } When received... 19...

*James W. Walker.*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute... *FRI, 6 OCT 1950*  
Assigned... *See minute on p. 101.*