

## REPORT ON BOILERS.

No. 19980

DEC 12 1939

Received at London Office

Date of writing Report 9-12-1939 When handed in at Local Office 9-12-1939 Port of Leith

No. in Survey held at Leith

Date, First Survey 16-11-39

Last Survey 2-12-1939

5626 on the S.S. "CROWN ARUN" ex "HANNAH BÖGE"

(Number of Visits)

(Gross Tons) 2372

(Net Tons) 1371

Master Built at Kistock By whom built Neptunwerft, Kistock, G.M.B.H. No. When built 1938

Engines made at Altona By whom made Ottensener, Mel. G.M.B.H. Engine No. When made

Boilers made at By whom made Neptun G.M.B.H. Kistock Boiler No. When made

Nominal Horse Power Owners Ministry of Shipping Port belonging to London

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

Manufacturers of Steel

(Letter for Record)

Total Heating Surface of Boilers 2933

Is forced draught fitted Yes

Coal or Oil fired Coal

No. and Description of Boilers Two cylindrical, single-ended

Working Pressure 228 lbs.

Tested by hydraulic pressure to

Date of test

No. of Certificate

Can each boiler be worked separately YES

Area of Firegrate in each Boiler 30.67

No. and Description of safety valves to each boiler Two spring loaded

Area of each set of valves per boiler

per Rule

as fitted 10.30

Pressure to which they are adjusted 228 lbs.

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 8' 0" to bulkhead

Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 1' 4"

Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 11' 5 3/4"

Length 11' 1 13/16"

Shell plates: Material Steel

Tensile strength Assumed 28/32 Tons

Thickness 1.22"

Are the shell plates welded or flanged No

Description of riveting: circ. seams

end Double riveted

Long. seams T.R.A.B.S.

Diameter of rivet holes in

circ. seams 1.378"

long. seams 1.378"

Pitch of rivets

4.173"

8.819"

Percentage of strength of circ. end seams

plate 66.9

rivets 48.0

Percentage of strength of circ. intermediate seam

plate

Percentage of strength of longitudinal joint

plate 84.3

rivets 89.9

Working pressure of shell by Rules

230 lbs/sq. in.

Thickness of butt straps

outer 1.22"

inner 1.22"

No. and Description of Furnaces in each Boiler Two corrugated

Material Steel

Tensile strength Assumed 26/30 Tons

Smallest outside diameter 39.37"

40.73

Length of plain part

top

bottom

Thickness of plates

crown

bottom .669"

Description of longitudinal joint Weld

Dimensions of stiffening rings on furnace or c.c. bottom

Working pressure of furnace by Rules

243 lbs/sq. in.

End plates in steam space: Material Steel

Tensile strength Assumed 26/30 Tons

Thickness .984"

Pitch of stays 15.748"

14.17

How are stays secured Nuts &amp; riveted washers

Working pressure by Rules

234 lbs.

Tube plates: Material

front Steel

back Steel

Tensile strength Assumed 26/30 Tons

Thickness

.787"

.945"

Mean pitch of stay tubes in nests 8.347"

8.27

Pitch across wide water spaces 13.858"

Working pressure

front 288 lbs.

back over 288 lbs.

Girders to combustion chamber tops: Material Steel

Tensile strength Assumed 28/32 Tons

Depth and thickness of girder

at centre 7.48" — .709"

Length as per Rule

25.85"

Distance apart 7.874"

No. and pitch of stays

in each 2 — 7.874"

Working pressure by Rules

256 lbs/sq. in.

Combustion chamber plates: Material Steel

Tensile strength Assumed 26/30 Tons

Thickness: Sides .709"

Back .787"

Top .709"

Bottom .906"

Pitch of stays to ditto: Sides 7.874" x 7.874"

Back 7.874" x 7.244"

Top 7.874" x 7.874"

Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules

282 lbs.

Front plate at bottom: Material Steel

Tensile strength Assumed 26/30 Tons

Thickness .984"

Lower back plate: Material Steel

Tensile strength Assumed 26/30 Tons

Thickness .984"

Pitch of stays at wide water space 11.811"

13.80"

Are stays fitted with nuts or riveted over Nuts

Working Pressure

248 lbs.

Main stays: Material Steel

Tensile strength Assumed 28/32 Tons

Diameter

At body of stay, 2.677"

Over threads 2.835"

No. of threads per inch 6

Area supported by each stay 15.748" x 14.173"

Working pressure by Rules

264 lbs/sq. in.

Screw stays: Material Steel

Tensile strength Assumed 26/30 Tons

Diameter

At turned off part, 1.5"

Over threads 1.625"

No. of threads per inch

Area supported by each stay 62 sq. in.



Working pressure by Rules 245 lbs. Are the stays drilled at the outer ends No. Margin stays: Diameter { At turned off part, 1.75"  
or Over threads 1.875"  
No. of threads per inch \_\_\_\_\_ Area supported by each stay 62 sq" Working pressure by Rules over 245 lbs.  
Tubes: Material Steel or Iron External diameter { Plain 3" Thickness { \_\_\_\_\_ No. of threads per inch \_\_\_\_\_  
Stay 3"  
Pitch of tubes STAY = 8.347" PLAIN = 4.173" Working pressure by Rules over 230 lbs. Manhole compensation: Size of opening \_\_\_\_\_  
shell plate 15.748" x 11.811" Section of compensating ring 6 1/2" WIDE x 1 1/4" THICK No. of rivets and diameter of rivet holes 32 - 1.378"  
Outer row rivet pitch at ends 4.331" Depth of flange if manhole flanged \_\_\_\_\_ Steam Dome: Material Steel  
Tensile strength Assumed 28/32 tons Thickness of shell .787" Description of longitudinal joint riveted strap  
Diameter of rivet holes 1.142" Pitch of rivets 2.835" Percentage of strength of joint { Plate 59  
Rivets \_\_\_\_\_  
Internal diameter 31.496" Working pressure by Rules over 230 lbs/sq" Thickness of crown .827" No. and diameter of stays None  
Inner radius of crown 25.19" Working pressure by Rules over 230 lbs.  
How connected to shell riveted Size of doubling plate under dome 4' - 4" DIA. Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell 1.378", 8.071"

Type of Superheater \_\_\_\_\_ Manufacturers of { Tubes \_\_\_\_\_  
Steel castings \_\_\_\_\_  
Number of elements \_\_\_\_\_ Material of tubes Steel Internal diameter and thickness of tubes .875" outside dia.  
Material of headers Steel Tensile strength \_\_\_\_\_ Thickness \_\_\_\_\_ Can the superheater be shut off the boiler be worked separately yes  
Is a safety valve fitted to every part of the superheater which can be shut off from the boiler yes  
Area of each safety valve 1.49 sq" Are the safety valves fitted with easing gear yes Working pressure as Rules \_\_\_\_\_ Pressure to which the safety valves are adjusted 228 lbs/sq" Hydraulic test pressure \_\_\_\_\_ tubes \_\_\_\_\_, castings \_\_\_\_\_ and after assembly in place \_\_\_\_\_ Are drain cocks or valves fitted to free the superheater from water where necessary yes  
Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with \_\_\_\_\_

The foregoing is a correct description,

Dates { During progress of work in shops - - -  
of Survey while { During erection on board vessel - - -  
building {  
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
Total No. of visits \_\_\_\_\_

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

The above information is forwarded for the consideration of the Committee.  
See Report 9.

Survey Fee ... £ See : When applied for, 192  
Travelling Expenses (if any) £ Rpt 9. : When received, 192

J. J. Campbell  
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute FRI. 29 DEC 1939

Assigned

See Lth. J.E. 19980



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