

REPORT ON BOILERS.

No. 29526

Received at London Office

-8 OCT. 1927

Date of writing Report

192

When handed in at Local Office

-7 OCT. 1927

Port of

Sunderland

No. in Reg. Book. Survey held at

Sunderland

Date, First Survey

Last Survey

Sep 29 1927

on the

S. S. "IRENE. S. EMBIRICOS"

(Number of Visits)

Gross

4164

Net

3754

Master

Built at

Sunderland

By whom built

Messrs. Short Bros

Yard No. 426

When built 1927

Engines made at

Sunderland

By whom made

Messrs. J. Dickinson & Sons Ltd

Engine No. 884

When made 1927

Boilers made at

Sunderland

By whom made

Messrs. J. Dickinson & Sons Ltd

Boiler No. 1088

When made 1927

Nominal Horse Power

396

Owners

S. S. Embiricos

Port belonging to

Athens

MULTITUBULAR BOILERS: ~~MAIN, AUXILIARY, OR~~ DONKEY.

Manufacturers of Steel

The Steel Company of Scotland Limited

(Letter for Record)

(S)

Total Heating Surface of Boilers

1447 sq

Is forced draught fitted

No

Coal or Oil fired

Coal

No. and Description of Boilers

One - Single ended Marine type - Plain furnace

Working Pressure

100 lbs/sq"

Tested by hydraulic pressure to

200 lbs/sq"

Date of test 11-8-27

No. of Certificate 3952

Can each boiler be worked separately

Area of Firegrate in each Boiler

41.5 sq

No. and Description of safety valves to each boiler

Two - Direct Spring loaded

Area of each set of valves per boiler

per Rule 15.772 sq"

as fitted 16.59 sq"

Pressure to which they are adjusted

105 lbs/sq"

Are they fitted with easing gear

Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

No. Non-return valve fitted

Smallest distance between boilers or uptakes and bunkers or woodwork

5' 9"

Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating

Fitted in main Deck

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

12' 4 5/16"

Length 10' 11 1/4"

Shell plates: Material

Steel

Tensile strength

28 to 32 tons/sq"

Thickness

23/32"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end D. R.

Long. seams

D. R. D. B. S.

Diameter of rivet holes in

circ. seams 15/16"

long. seams 15/16"

Pitch of rivets

3 5/8"

4 5/16"

Percentage of strength of circ. end seams

plate 70

rivets 50.5

Percentage of strength of circ. intermediate seam

plate 81.01

rivets 89.86

Percentage of strength of longitudinal joint

plate 81.01

rivets 89.86

combined 91.98

Working pressure of shell by Rules

116.5 lbs/sq"

Thickness of butt straps

outer 19/32"

inner 23/32"

No. and Description of Furnaces in each Boiler

Two - Plain Furnaces

Material

Steel

Tensile strength

26 to 30 tons/sq"

Smallest outside diameter

3' 10 1/2"

Length of plain part

top

bottom

Thickness of plates

crown 5/8"

bottom 5/8"

Description of longitudinal joint

Welded

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

Working pressure of furnace by Rules

102 lbs/sq"

And plates in steam space: Material

Steel

Tensile strength

26 to 30 tons/sq"

Thickness

3/4"

Pitch of stays 1' 6" x 1' 4 1/2"

How are stays secured

Double Nuts and Washers.

Working pressure by Rules

104 lbs/sq"

Side plates: Material

front Steel

back Steel

Tensile strength

26 to 30 tons/sq"

Thickness

4 1/8"

Can pitch of stay tubes in nests

Pitch across wide water spaces

14 1/4"

Working pressure

front 172 lbs/sq"

back 165 lbs/sq"

Orders to combustion chamber tops: Material

Steel

Tensile strength

28 to 32 tons/sq"

Depth and thickness of girder

centre 6 1/4" x 1 1/2"

Length as per Rule

33 5/32"

Distance apart

9 3/8"

No. and pitch of stays

each 2 x 12"

Working pressure by Rules

105 lbs/sq"

Combustion chamber plates: Material

Steel

Tensile strength

26 to 30 tons/sq"

Thickness: Sides

19/32"

Back

5/8"

Top

19/32"

Bottom

7/8"

Pitch of stays to ditto: Sides

10 1/2" x 11 1/2"

Back

9" x 12"

Top

9 3/8" x 12"

Are stays fitted with nuts or riveted over

fitted with nuts

Working pressure by Rules

Sides 100.2 lbs/sq"

Back 120 lbs/sq"

Top 104.5 lbs/sq"

Front plate at bottom: Material

Steel

Tensile strength

26 to 30 tons/sq"

Thickness

25/32"

Lower back plate: Material

Steel

Tensile strength

26 to 30 tons/sq"

Thickness

23/32"

Pitch of stays at wide water space

13 1/2" x 12"

Are stays fitted with nuts or riveted over

fitted with nuts.

Working Pressure

127 lbs/sq"

Main stays: Material

Steel

Tensile strength

28 to 32 tons/sq"

Pitch of stays

At body of stay,

or Over threads

2 1/8"

No. of threads per inch

6

Area supported by each stay

297 sq ins.

Working pressure by Rules

108 lbs/sq"

Screw stays: Material

Steel

Tensile strength

26 to 30 tons/sq"

Pitch of stays

At turned off part,

or Over threads

1 1/2" & 1 5/8"

No. of threads per inch

9

Area supported by each stay

Sides 120.75 sq"

Back 108 sq"

Working pressure by Rules ^{Sides 104 lbs 0"} ~~Back 113 lbs 0"~~ are the stays drilled at the outer ends ^{No} ✓ Margin stays: Diameter { At turned off part, ^{1 5/8"} ✓
 No. of threads per inch ⁹ ✓ Area supported by each stay ^{Sides 120.75 0"} ~~Back 135 0"~~ Working pressure by Rules ^{113 lbs 0"} ✓
 Tubes: Material ^{Wrought Iron} External diameter { Plain ^{3 1/4"} ✓ Stay ^{3 1/4"} ✓ Thickness { ^{10 W.B.} ^{5/16"} ✓ No. of threads per inch ⁹ ✓
 Pitch of tubes ^{4 1/2" x 4 1/2"} ✓ Working pressure by Rules ^{203 lbs 0"} ✓ Manhole compensation: Size of opening in
 shell plate ^{16" x 12"} ✓ Section of compensating ring ^{7 7/8" x 23/32"} ✓ No. of rivets and diameter of rivet holes ^{26 @ 1 5/16"} ✓
 Outer row rivet pitch at ends ^{6"} ✓ Depth of flange if manhole flanged ✓ 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
 Internal diameter Working pressure by Rules Thickness of crown Rivets 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
 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, 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 23 inclusive for boilers been complied with ^{yes} ✓
 The foregoing is a correct description,
 J. Dickson Manufacturer.

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *The Materials and workmanship are good. The Donkey Boiler has been constructed under Special Survey and satisfactorily fitted in the vessel. For notation see Machinery Report.*

Survey Fee ... £ ^{charged} ^{on Machinery Report} When applied for, 192
 Travelling Expenses (if any) £ When received, 192

A. T. Griffith.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute 10E8. 18 OCT 1927

Assigned *see minute on*
Sld. Rpt 29525 attached



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