

REPORT ON BOILERS.

No. 30385

Received at London Office

12 JUN 1930

Date of writing Report

192

When handed in at Local Office

11 JUNE 1930

Port of Sunderland.

No. in Survey held at
Reg. Book.

Sunderland.

Date, First Survey

Last Survey

June 3 1930

on the

S.S. "IRON CHIEF"

(Number of Visits)

Gross 4560

Tons Net 2677

Master

Built at

Sunderland

By whom built

Wm. Douglas & Co.

Card No. 607

When built 1930

Engines made at

Sunderland

By whom made

George Rank Ltd.

Engine No. 1186

When made 1930

Boilers made at

Do

By whom made

Do

Boiler No. 1186

When made 1930

Nominal Horse Power

479

Owners

Interstate Steamships Co

Port belonging to

Sunderland.

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

Manufacturers of Steel Phoenix Works.

(Letter for Record S)

Total Heating Surface of Boilers

7002 sq. ft.

Is forced draught fitted

Yes

Coal or Oil fired

Coal

No. and Description of Boilers

Three Multitubular S.E. - 3 SB

Working Pressure 180 lbs.

Tested by hydraulic pressure to

320 lbs.

Date of test

19/3/30

No. of Certificate

4089

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

55.5 sq. ft.

No. and Description of safety valves to each boiler

Two S.P.L. Cockburn high lift

Area of each set of valves per boiler

(per Rule 1.48 = 3.74 sq. ft. each valve)

Pressure to which they are adjusted

185 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

3'-6"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

2'-0"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

14'-3 1/2"

Length

11'-6"

Shell plates: Material

Steel

Tensile strength

29 to 33 tons

Thickness

1 1/8"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end DR

long. seams

TR. JAS.

Diameter of rivet holes in

circ. seams

FE 1 1/8" BE 1 1/8"

Pitch of rivets

3 1/8"

8 1/8"

Percentage of strength of circ. end seams

plate

63.6%

rivets

44.8%

Percentage of strength of circ. intermediate seam

plate

-

Percentage of strength of longitudinal joint

plate

85.1%

rivets

89.4%

combined

88.1%

Working pressure of shell by Rules

180 lbs.

Thickness of butt straps

outer 1 1/8"

inner 1"

No. and Description of Furnaces in each Boiler

Three for freighters - 94

Material

Steel

Tensile strength

26 to 30 tons

Smallest outside diameter

3'-5 1/2"

Length of plain part

top

bottom

Thickness of plates

crown

1 1/8"

bottom

3/32"

Description of longitudinal joint

Welded

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

Working pressure of furnace by Rules

185 lbs.

End plates in steam space: Material

Steel

Tensile strength

26 to 30 tons

Thickness

1 1/8"

Pitch of stays

2 1/4" x 19 1/4"

How are stays secured

DN & Washers

Working pressure by Rules

186 lbs.

Tube plates: Material

front Steel

back Steel

Tensile strength

26 to 30 tons

Thickness

F 1 1/8"

B 3/4"

Working pressure

front 185 lbs.

back 234 lbs.

Mean pitch of stay tubes in nests

9 1/4" x 9 1/4"

Pitch across wide water spaces

13 1/2"

Working pressure

front 185 lbs.

back 234 lbs.

Girders to combustion chamber tops: Material

Steel

Tensile strength

29 to 33 tons

Depth and thickness of girder

at centre

7 5/8" x 1 3/4"

Length as per Rule

33"

Distance apart

9"

No. and pitch of stays

in each

2 @ 10 1/4"

Working pressure by Rules

186 lbs.

Combustion chamber plates: Material

Steel

Tensile strength

26 to 30 tons

Thickness

Sides 23/32"

Back 4/8"

Top 45/64"

Bottom 23/32"

Pitch of stays to ditto: Sides

10 1/4" x 9 1/4"

Back

10" x 8 3/4"

Top

10 1/4" x 9"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

180 lbs.

Front plate at bottom: Material

Steel

Thickness

15"

Lower back plate: Material

Steel

Tensile strength

26 to 30 tons

Thickness

15"

Pitch of stays at wide water space

15" x 9 1/8"

Working Pressure

224 lbs.

Main stays: Material

Steel

Tensile strength

28 to 32 tons

Diameter

At body of stay, 2 3/4" x 3"

Over threads, 3 7/8" x 3 7/8"

Working pressure by Rules

186 lbs.

Screw stays: Material

Steel

Tensile strength

26 to 30 tons

Diameter

At turned off part, 1 3/4"

Over threads, 1 3/4"

No. of threads per inch

6

Area supported by each stay

21" x 20"

Working pressure by Rules

186 lbs.

No. of threads per inch

9

Area supported by each stay

10 1/4" x 9 1/4"

Working Pressure

224 lbs.

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Working pressure by Rules 180 Are the stays drilled at the outer ends No Margin stays: Diameter ^{At turned off part.} 1 1/8", 2", 2 1/8"
 No. of threads per inch 9 Area supported by each stay 11 3/4" x 9 3/4" Working pressure by Rules 180 2050
 Tubes: Material S. D. STEEL External diameter ^{Plain} 2 1/2" Thickness ^{Stay} 3/16" No. of threads per inch 9
 Pitch of tubes 3 5/8" x 3 3/4" Working pressure by Rules 210 1350 Manhole compensation: Size of opening in shell plate - Section of compensating ring - No. of rivets and diameter of rivet holes -
 Outer row rivet pitch at ends - Depth of flange if manhole flanged 3 5/8" 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 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 -, 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,

FOR GEORGE CLARK LIMITED

W. J. P. P. P.

Manufacturer.

Dates of Survey ^{During progress of work in shops - -} Please see Mch. Rpt.
^{while building} ^{During erection on board vessel - - -}

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 boilers of this vessel have been built under Special Survey & the materials & workmanship are good. On completion the boilers were satisfactorily fitted in the vessel & the safety valves adjusted under steam. For notation see machinery report.
F. D. Fitted

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

Charlotte
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 17 JUN 1930

Assigned

See F. E. Rpt.



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