

REPORT ON BOILERS.

No. 54023

Received at London Office

28 NOV 1933

Date of writing Report

19

When handed in at Local Office

27.11.33

Port of

Glasgow

No. in Survey held at

Glasgow

Date, First Survey

22-2-33

Last Survey

23-11-

1933

(Number of Visits

60

Tons

Gross 3081

Net 3033

on the new steel S/S "HARCALO"

Master

Built at Port Glasgow

By whom built

Lithgow & Co

Yard No. 863

When built 1933

Engines made at

Glasgow

By whom made

David Rowan & Co Ltd

Engine No. 958

When made 1933

Boilers made at

Glasgow

By whom made

David Rowan & Co Ltd

Boiler No. 958

When made 1933

Nominal Horse Power

444

Owners

J. C. Harrison Ltd

Port belonging to

London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Chillies & Co

(Letter for Record (r))

Total Heating Surface of Boilers

1706 sq ft

Is forced draught fitted

yes

Coal or Oil fired

coal

No. and Description of Boilers

One single ended

Working Pressure 220

Tested by hydraulic pressure to

380

Date of test

12-9-33

No. of Certificate

19278

Can each boiler be worked separately

Area of Firegrate in each Boiler

48 sq ft

No. and Description of safety valves to each boiler

2 Improved High Lift

Area of each set of valves per boiler

per Rule 4.5370

as fitted 4.80

Pressure to which they are adjusted

225

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

2'-0"

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

2'-6"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

13'-0"

Length

11'-6"

Shell plates: Material

steel

Tensile strength 29-33 tons

Thickness

1 1/4"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end

intgr.

plate

rivets

long. seams

WBS. TR

Diameter of rivet holes in

circ. seams

F 1 3/16" B 1 7/16"

Pitch of rivets

F 3.21

B 3.58

Percentage of strength of circ. end seams

plate F 63.1 B 63.3

rivets F 43.7 B 47.9

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate 85.4

rivets 90.7

combined 88.9

Working pressure of shell by Rules

222

Thickness of butt straps

outer 1 5/16"

inner 1 1/16"

No. and Description of Furnaces in each Boiler

Three Deighton 3 Cf

Material

steel

Tensile strength 26-30 tons

Smallest outside diameter

36.218"

Length of plain part

top

bottom

Thickness of plates

crown 3/32"

bottom 1/16"

Description of longitudinal joint

welded

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

Working pressure of furnace by Rules

245

End plates in steam space: Material

steel

Tensile strength 26-30 tons

Thickness

1 5/32"

Pitch of stays 18" x 15 1/2"

How are stays secured

WN

Working pressure by Rules

220

Tube plates: Material

front steel

back "

Tensile strength

26-30 tons

Thickness

1 5/16"

25/32"

Mean pitch of stay tubes in nests

9 1/2"

Pitch across wide water spaces

14"

Working pressure

front 229

back 242

Girders to combustion chamber tops: Material

steel

Tensile strength 28-32 tons

Depth and thickness of girder

at centre

20 7/8" x 7/8"

Length as per Rule

31.56"

Distance apart

8"

No. and pitch of stays

in each

2 @ 10"

Working pressure by Rules

221

Combustion chamber plates: Material

steel

Tensile strength

26-30 tons

Thickness: Sides

2 3/32"

Back

2 1/32"

Top

2 3/32"

Bottom

2 3/32"

Pitch of stays to ditto: Sides

10" x 8"

Back

8 1/2" x 8"

Top

10" x 8"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

220

Front plate at bottom: Material

steel

Tensile strength 26-30 tons

Thickness

1 5/16"

Lower back plate: Material

steel

Tensile strength 26-30 tons

Thickness

13/16"

Pitch of stays at wide water space

13 7/16"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

220

Main stays: Material

steel

Tensile strength 28-32 tons

Diameter

At body of stay, 2 3/4"

or Over threads

No. of threads per inch

6

Area supported by each stay

280 sq in

Working pressure by Rules

233

Screw stays: Material

iron

Tensile strength

21 1/2 tons

Diameter

At turned off part, 1 3/4" & 1 1/8"

or Over threads

No. of threads per inch

9

Area supported by each stay

68 & 80 sq in

Working pressure by Rules 266 & 266 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, or Over threads 1 7/8"

No. of threads per inch 9 Area supported by each stay 83 sq" Working pressure by Rules 257

Tubes: Material Iron External diameter { Plain 3" Stay 3" Thickness { 8 W.G. No. of threads per inch 9

Pitch of tubes 4 3/16" x 4 7/8" Working pressure by Rules 250 Manhole compensation: Size of opening in shell plate 19 1/2" x 15 1/2" Section of compensating ring 9 1/2" x 1 1/4" No. of rivets and diameter of rivet holes 34 @ 1 7/16"

Outer row rivet pitch at ends 9" Depth of flange if manhole flanged 3" Steam Dome: Material none

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 none 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 David Rouben & Co. Ltd Manufacturer.
Arch. H. Grierson

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

while building { During erection on board vessel - - - } **SEE ACCOMPANYING MACHINERY REPORT** Total No. of visits

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. Harbury. El. Rpt. No. 5396

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

The materials and workmanship are good.

The boiler has been constructed under special survey, satisfactorily fitted in the vessel and its safety valves adjusted under steam.

27/11/33

Survey Fee ... £ See Machinery Rpt When applied for, 19

Travelling Expenses (if any) £ : : When received, 19

S. Davis
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 28 NOV 1933 JRH

Assigned SEE ACCOMPANYING MACHINERY REPORT

Rpt. 13.

RE

Date of writing

No. in Su Reg. Book. 39918 on

Built at PO

Owners NA

Electric Lig

Is the Vessel

System of

Pressure of s

Direct or Al

If alternating

Has the Auto

Generators,

are they over

Where more th

series with each

Are all termin

short circuited,

Position of

is the ventilati

if situated n

are their axes

Earthing, ar

their respective

Main Switch

a fuse on each

Switchboard

are they protec

woodwork or

are they const

permanently h

with mica or n

and is the fra

Yuo

bars

Main Switch

Main Fuse

Aux. gener

Instruments

Earth Testi

fuse on

Switches, C

Joint Boxes