

REPORT ON BOILERS.

No. 54023

Received at London Office 29 NOV 1933

State of writing Report

19

When handed in at Local Office

27. 11. 1933

Port of

Glasgow

No. in Survey held at

Glasgow

Date, First Survey

22. 2. 33

Last Survey

23-11-1933

g. Book.

(Number of Visits 60)

Gross 5081
Net 3033

on the new steel S/S "HARCALO".

Master

Built at Port Glasgow

By whom built

Lithgow & Co

Yard No. 862

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

Bohiller 161

(Letter for Record (r))

Total Heating Surface of Boilers

4642 ft

Is forced draught fitted

yes

Coal or Oil fired

coal

No. and Description of Boilers

Two single ended

Working Pressure

220

Tested by hydraulic pressure to

380

Date of test

12-9-33

No. of Certificate

19277

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

48.3 ft

No. and Description of safety valves to each boiler

Two Improved High Lift.

Area of each set of valves per boiler

per Rule 6.170"
as fitted 6.280"

Pressure to which they are adjusted

220 lb

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

15'-0"

Length

11'-6"

Shell plates: Material

steel

Tensile strength

29.33 tons

Thickness

1 1/16"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end

inter

long. seams

DRS. TR

Diameter of rivet holes in

circ. seams 1 1/8"

long. seams 1 1/2"

Pitch of rivets

10 1/4"

Percentage of strength of circ. end seams

plate F59.5 863.6
rivets F48.4 847.3

Percentage of strength of circ. intermediate seam

plate 85.36
rivets 89

Percentage of strength of longitudinal joint

plate 85.36
rivets 89
combined 88.5

Working pressure of shell by Rules

222

Thickness of butt straps

outer 1 3/32"
inner 1 1/32"

No. and Description of Furnaces in each Boiler

Three Weigh-ton 3 cf.

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

44.46"

Length of plain part

top
bottom

Thickness of plates

crown 1 1/16"
bottom 1 1/16"

Description of longitudinal joint

welded

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

Working pressure of furnace by Rules

243

End plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

1 1/2"

Pitch of stays

21/4 x 17 3/4"

How are stays secured

DN

Working pressure by Rules

220

Tube plates: Material

front Steel
back "

Tensile strength

26-30 tons

Thickness

15/16"

Working pressure

front 230
back 235

Mean pitch of stay tubes in nests

9 1/2"

Pitch across wide water spaces

14"

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons

Depth and thickness of girder

at centre

2 @ 9 1/8 x 7 1/8"

Length as per Rule

34.43"

Distance apart

8 1/2"

No. and pitch of stays

in each

3 @ 8 1/4"

Working pressure by Rules

225

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

1 1/16"

Back

2 3/32"

Top

1 1/16"

Bottom

13/16"

Pitch of stays to ditto: Sides

8 1/4 x 8 1/2"

Back

10 x 8"

Top

8 1/4 x 8 1/2"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

221

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

15/16"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

13/16"

Pitch of stays at wide water space

13 1/16"

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, 3 1/4 & 3"
Over threads

No. of threads per inch

6

Area supported by each stay

420 & 352.13"

Working pressure by Rules

220 & 223

Screw stays: Material

Iron

Tensile strength

21 1/2 tons

Diameter

At turned off part, 1 3/4" & 1 7/8"
Over threads

No. of threads per inch

9

Area supported by each stay

70 & 80.19"

Working pressure by Rules 258 & 266 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, or Over threads 2" }
No. of threads per inch 9 Area supported by each stay 93.5 sq Working pressure by Rules 264
Tubes: Material Iron External diameter { Plain 3" Stay 3" } Thickness { 8 W.G. 1/4" 7/16" 3/8" } No. of threads per inch 9
Pitch of tubes 4 3/16" x 4 1/8" Working pressure by Rules 250 Manhole compensation: Size of opening in
shell plate 19 1/2" x 15 1/2" Section of compensating ring 10 1/2" x 1 7/16" No. of rivets and diameter of rivet holes 34 @ 1 1/2"
Outer row rivet pitch at ends 10 1/4" 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 Smoke tube Manufacturers of { Tubes See Nure beltipe N° C1077 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 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 1.77 sq Are the safety valves fitted with easing gear yes Working pressure as per
Rules Pressure to which the safety valves are adjusted 227 Hydraulic test pressure:
tubes, castings and after assembly in place 440 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 yes

The foregoing is a correct description,
For David Roway & Co. Ltd
Arch - H. Grierson Manufacturer.

Dates { During progress of work in shops - - } Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
of Survey while building { During erection on board vessel - - - }
SEE ACCOMPANYING MACHINERY REPORT.

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. Harbury E.R. Rpt N° 50960

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
The materials and workmanship are good.
The boilers have been constructed under special survey satisfactorily fitted in
the vessel and their safety valves adjusted under steam.

27/11/30

Survey Fee ... £ See Machinery Report When applied for, 19
Travelling Expenses (if any) £ : : When received, 19

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

Committee's Minute GLASGOW 28 NOV 1933
Assigned SEE ACCOMPANYING MACHINERY REPORT.