

REPORT ON BOILERS.

No. 5350

3, 19/10/33, 2:

Received at London Office

4 OCT 1934

Date of writing Report 1st September 1934 When handed in at Local Office

1/9/ 1034 Port of Yokohama

No. in Reg. Book

Survey held at

Yokohama

Date, First Survey

13th December 1933

Last Survey

27th August 1934

(Number of Visits

16

Gross

7142

Net

4246

1654 on the S.S M/V "NAGARA MARU"

built at Yokohama

By whom built

Yokohama Dock Co Ltd

Yard No. 220

When built 1934-8

Engines made at

do

By whom made

do

Engine No. 4702

When made 1934

Boilers made at

✓

By whom made

✓

Boiler No.

When made

Owners Nippon Yusen K. K.

Port belonging to

Tokio

VERTICAL DONKEY BOILER.

Made at Uraga

By whom made

Uraga Dock Co Ltd

Boiler No.

✓

When made 1934

Where fixed above Thrust Recess

Manufacturers of Steel

Imperial Steel Works Japan.

Total Heating Surface of Boiler

632.4 sq ft.

Is forced draught fitted

No

Coal or Oil fired

oil & exhaust gas.

No. and Description of Boilers

One, Thimble Tube

Working pressure

7 Kg/cm²

Tested by hydraulic pressure to

14 Kg/cm²

Date of test

2/4/34

No. of Certificate

39

Area of Firegrate in each Boiler

✓

No. and Description of safety valves to each boiler

2-70 mm dia Spring loaded

Area of each set of valves per boiler

per rule 8.270"

as fitted 10.950"

Pressure to which they are adjusted

7 Kg/cm²

Are they fitted with easing gear

Yes

State whether steam from main boilers can enter the donkey boiler

✓

Smallest distance between boiler or uptake and bunkers

Is oil fuel carried in the double bottom under boiler

✓

Is the base of the boiler insulated

✓

Smallest distance between base of boiler and tank top plating

Largest internal dia. of boiler

✓

Height

2600 mm

Height

4460 mm

Shell plates: Material

Steel

Tensile strength

44/55 Kg/cm²

Thickness

14 mm

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end S.R. & D.R. Lap.

inter. S.R. Lap

long. seams D.R. D.B.S.

Dia. of rivet holes in

circ. seams 26.5 mm

long. seams 23 mm

Pitch of rivets

55 & 70.3 mm

Percentage of strength of circ. seams

plate 51.8 & 62.4

rivets 58.5 & 91.5

of Longitudinal joint

plate 77

rivets 136

combined 99.5

Working pressure of shell by rules

8.1 Kg/cm²

Thickness of butt straps

outer 14 mm

inner 16 mm

Shell Crown: Whether complete hemisphere, dished partial spherical, or flat

flat

Material

Steel

Tensile strength

41/47 Kg/cm²

Thickness

25 mm

Radius

Working pressure by rules

13.1 Kg/cm²

Description of Furnace: Plain, spherical, or dished crown

included in tube plate plain

Material

Steel

Tensile strength

41/47 Kg/cm²

Thickness

30 mm

External diameter

top 1620 mm

bottom

Length as per rule

2550 mm

Working pressure by rules

14.7 Kg/cm²

Pitch of support stays circumferentially

✓

and vertically

✓

Are stays fitted with nuts or riveted over

✓

Diameter of stays over thread

✓

Radius of spherical or dished furnace crown

✓

Working pressure by rule

✓

Thickness of

end plate (flat)

25 mm

Diameter as per rule

D

a

Working pressure by rule

✓

Combustion Chamber: Material

✓

Tensile strength

✓

Thickness of top plate

✓

Radius if dished

✓

Working pressure by rule

✓

Thickness of back plate

✓

Diameter if circular

✓

Length as per rule

✓

Pitch of stays

✓

Are stays fitted with nuts or riveted over

✓

Diameter of stays over thread

✓

Working pressure of back plate by rules

✓

Tube Plates: Material

front

back

Tensile strength

✓

Thickness

✓

Mean pitch of stay tubes in nests

If comprising shell, Dia. as per rule

front

back

Pitch in outer vertical rows

✓

Dia. of tube holes FRONT

stay

plain

BACK

stay

plain

Is each alternate tube in outer vertical rows a stay tube

Working pressure by rules

front

back

Girders to combustion chamber tops: Material

✓

Tensile strength

✓

Depth and thickness of girder at centre

Length as per rule

Distance apart

No. and pitch of stays in each

Working pressure by rule

Lloyd's Register Foundation

009570 - 009579 - 0010

Crown stays: Material ✓ Tensile strength Diameter { at body of stay, or over threads. No. of threads per inch Area supported by each stay Working pressure by rules

Screw stays: Material ✓ Tensile strength Diameter { at turned off part, or over threads. No. of threads per inch Area supported by each stay Working pressure by rules Are the stays drilled at the outer ends

Tubes: Material Steel Thimble Tubes. ✓ External diameter 82.55 mm. ✓ Thickness 6 L.S.G. No. of threads per inch ✓ Pitch of tubes 203.6 x 139 mm ✓ Working pressure by rules 19.3 Kg.

Manhole Compensation: Size of opening in shell plate 445 x 546 mm Section of compensating ring 225 x 14 mm No. of rivets and diameter of rivet holes 36 @ 28.5 mm Outer row rivet pitch at ends 140 mm Depth of flange if manhole flanged ✓

Uptake: External diameter 1032 mm ✓ Thickness of uptake plate 16 mm

Cross Tubes: No. ✓ External diameters { Thickness of plates

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with yes

The foregoing is a correct description,

C. J. O'Connell for Uraga Manufacturer
Dock Co. Ltd.

Dates of Survey { During progress of work in shops - - 13/12/1933 10, 23, 26/1, 1/12/2 1, 7, 20/3 2/4/1934
while building { During erection on board vessel - - 19, 26/6 2, 9/7 8, 27/8/1934

Is the approved plan of boiler forwarded herewith 24/5/33. (If not state date of approval.)

Total No. of visits 16

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This Boiler has been built under Special Survey in accordance with the Rules and approved plan. Material and Workmanship good. On completion of fitting on board, the Boiler was examined under full working conditions, and also accumulation trials were carried out with satisfactory results.

The Donkey Boiler of this Vessel is eligible in my opinion to be classed with the machinery + L.M.C. 8.34.

Survey Fee ... £ 5-5-0: When applied for, 8th Sept 1934
Travelling Expenses (if any) £ : : When received, 3.12 1934

Committee's Minute
Assigned See other Ma. & E. Rpt.

FRL-12 OCT 1934