

REPORT ON MACHINERY.

Port of *Sunderland*

Received at London Office

18

No. in
Reg. Book.

Survey held at

*Sunderland*Date, first Survey *Mar 3*

Last Survey

Apr 18 1899(Number of Visits *3*)

on the

*Donkey Boiler for S/S "Ruapehu"*Tons {
Gross
Net

When built

Master

Built at

By whom built

when made

Engines made at

By whom made

when made

Boilers made at

By whom made

Registered Horse Power

Owners

Port belonging to

Nom. Horse Power as per Section 28

Is Electric Light fitted

ENGINES, &c.—Description of Engines

No. of Cylinders

No. of Cranks

Diameter of Cylinders Length of Stroke Revolutions per minute Diameter of Screw shaft as per rule as fitted

Diameter of Tunnel shaft as per rule as fitted Diameter of Crank shaft journals Diameter of Crank pin Size of Crank webs

Diameter of screw Pitch of screw No. of blades State whether moveable Total surface

No. of Feed pumps Diameter of ditto Stroke Can one be overhauled while the other is at work

No. of Bilge pumps Diameter of ditto Stroke Can one be overhauled while the other is at work

No. of Donkey Engines Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room In Holds, &c.

No. of bilge injections sizes Connected to condenser, or to circulating pump Is a separate donkey suction fitted in Engine room & size

Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the discharge pipes above or below the deep water line

Are they each fitted with a discharge valve always accessible on the plating of the vessel Are the blow off cocks fitted with a spigot and brass covering plate

What pipes are carried through the bunkers How are they protected

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges

When were stern tube, propeller, screw shaft, and all connections examined in dry dock Is the screw shaft tunnel watertight

Is it fitted with a watertight door worked from

BOILERS, &c.—

(Letter for record

Total Heating Surface of Boilers

Is forced draft fitted

No. and Description of Boilers

Working Pressure

Tested by hydraulic pressure to

Date of test

Can each boiler be worked separately

Area of fire grate in each boiler

No. and Description of safety valves to

each boiler

Area of each valve

Pressure to which they are adjusted

Are they fitted

with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

Mean diameter of boilers

length

Material of shell plates

Thickness

Description of riveting: circum. seams

long. seams

Diameter of rivet holes in long. seams

Pitch of rivets

Lap of plates or width of butt straps

Per centages of strength of longitudinal joint

rivets
plate

Working pressure of shell by rules

Size of manhole in shell

Size of compensating ring

No. and Description of Furnaces in each boiler

Material

Outside diameter

Length of plain part

top
bottom

Thickness of plates

crown
bottom

Description of longitudinal joint

No. of strengthening rings

Working pressure of furnace by the rules

Combustion chamber plates: Material

Thickness: Sides

Back

Top

Bottom

Pitch of stays to ditto: Sides

Back

Top

If stays are fitted with nuts or riveted heads

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

End plates in steam space:

Material

Thickness

Pitch of stays

How are stays secured

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

Material of Front plates at bottom

Thickness

Material of Lower back plate

Thickness

Greatest pitch of stays

Working pressure of plate by rules

Diameter of tubes

Pitch of tubes

Material of tube plates

Thickness: Front

Back

Mean pitch of stays

Pitch across wide water spaces

Working pressures by rules

Girders to Chamber tops: Material

Depth and

thickness of girder at centre

Length as per rule

Distance apart

Number and pitch of Stays in each

Working pressure by rules

Superheater or Steam chest; how connected to boiler

Can the superheater be shut off and the boiler worked

separately

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

holes

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

If stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

DONKEY BOILER— Description *bylded multipble 2 ribbed furnaces*
 Made at *Sunderland* By whom made *W. Allan & Co Ltd* When made *1890* Where fixed *On deck*
 Working pressure *120 lbs* tested by hydraulic pressure to *240 lbs* No. of Certificate — Fire grate area — Description of safety valves *Spring loaded*
 No. of safety valves *2* Area of each *3.97* Pressure to which they are adjusted — If fitted with easing gear — If steam from main boilers can enter the donkey boiler *No.* Diameter of donkey boiler *9' 6"* Length *11' 5"* Material of shell plates *S.* Thickness *1 1/8"*
 Description of riveting—long. seams *d. butt. 7. rivd.* Diameter of rivet holes *1 3/16"* Whether punched or drilled *d.* Pitch of rivets *6 1/2" x 3 1/2"*
 Lap of plating *15"* Per centage of strength of joint Rivets *83.5* Thickness of *top end* shell *crack* plates *1 5/16"* Radius of do. — No. of Stays to do. —
 Dia. of stays *2 1/4"* Diameter of furnace *Top 2' 8 1/2" Bottom* Length of furnace *7' 3"* Thickness of furnace plates *1 7/32"* Description of joint *welded* Thickness of furnace crown plates — Stayed by — Working pressure of shell by rules *120 1/2*
 Working pressure of furnace by rules *120 1/2* Diameter of *uptake* *2 1/2* Thickness of uptake plates — Thickness of water tubes —

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,
 Manufacturer.

Dates { During progress of work in shops - - }
 of Survey { During erection on board vessel - - }
 while building { Total No. of visits

General Remarks (State quality of workmanship, opinions as to class, &c.)

ENGINES—Length of stern bush — Diameter of crank shaft journals *as per rule* — Diameter of thrust shaft under collars *as fitted*

BOILERS—Range of tensile strength — Are they welded or flanged — **DONKEY BOILERS**—No. — Range of tensile strength

Is the approved plan of main boiler forwarded herewith — Is the approved plan of donkey boiler forwarded herewith —

This boiler was made by Messrs W Allan & Co in 1890 and fitted as a main boiler into the S/S "Orchardess" 2383 in Register Book. it has now been efficiently repaired and retested by hydraulic pressure to 240 lbs per sq for a working pressure, fixed by R.I. of 120 lbs.

The following repairs were done;— 92 seams stays renewed; all C.C. girders renewed & 3 stay rods fitted in defective tubes.

To complete the survey; this boiler has to be fitted on board; mountings fitted examined under steam & safety valves adjusted to the working pressure.

This Boiler has now been fitted on board & all mountings fitted. By opportunity afforded to adjust safety valves. The vessel has now proceeded to Liverpool where the Survey will be completed. Liverpool Surveyors advised

See Limit List

It is submitted this case be deferred until this Boiler has been fitted on board and the safety valves adjusted under steam

The amount of Entry Fee. £ : : When applied for, 20.3.18.99
 Special £ 1 : - : :
 Donkey Boiler Fee £ : : :
 Travelling Expenses (if any) £ : : : 2.11.99

J. J. Findlay
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
 Assigned

TUES, 11 APR 1899

As now subject
no 690