

REC'D NEW YORK OCT 17 1921  
Rpt. 5.

# REPORT ON BOILERS.

No. 631

Received at London Office

Date of writing Report May 6 1921 When handed in at Local Office May 6 1921 Port of Portland, Oregon

FRI. 18 NOV. 1921

No. in Survey held at Portland, Oregon Date, First Survey Jan. 3, 1921 Last Survey March 15 1921  
Reg. Book. (Number of Visits 9) } Gross  
on the } Net

Master Built at By whom built When built

Engines made at By whom made When made

Boilers made at Portland, Oregon By whom made Willamette Iron & Steel Works When made 1921

Registered Horse Power Owners Port belonging to

MULTITUBULAR BOILERS ~~MANUFACTURED BY~~ DONKEY. — Manufacturers of Steel Midvale Steel & Ordnance Co.

(Letter for record ) Total Heating Surface of Boilers 1272 Coal burning Is forced draft fitted No. and Description of Boilers One Single End Scotch Working Pressure 120 Tested by hydraulic pressure to 230 Date of test Mar. 15 '21

No. of Certificate 227 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 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 62720 Mean dia. of boilers 11'-3" Length 10'-7 1/2"

Material of shell plates Steel Thickness 11/16" Range of tensile strength 71680 Are the shell plates welded or flanged Hds. Flanged

Descrip. of riveting: cir. seams D.R. long. seams Double Butt Straps Diameter of rivet holes in long. seams 1-3/16" Pitch of rivets 7 1/2" & 3 1/2"

Lap of plates or width of butt straps 17" Per centages of strength of longitudinal joint rivets 159.7% Working pressure of shell by rules 123 Size of manhole in shell 12x16 Size of compensating ring 28 1/2 x 32 1/2 x 11/16" No. and Description of Furnaces in each boiler 2 Morrison Material Steel Outside diameter 39-7/8" Length of plain part top 7/16" Thickness of plates crown bottom

Description of longitudinal joint No. of strengthening rings Working pressure of furnace by the rules 157.8 Combustion chamber plates: Material Steel Thickness: Sides 1/2" Back 5/8" Top 1/2" Bottom 13/16" Pitch of stays to ditto: Sides 6 1/2" x 8" Back 8 1/2" x 9"

Top 7 1/2" x 8" If stays are fitted with nuts or riveted heads R.H. Working pressure by rules 120.4 Material of stays Steel Area at smallest part 1.217 Area supported by each stay 76.5 Working pressure by rules 143 End plates in steam space: Material Steel Thickness 3/4"

Pitch of stays 14 x 14 1/2" How are stays secured Double Nuts Working pressure by rules 121.8 Material of stays Steel Area at smallest part 4.095

Area supported by each stay 206.5 Working pressure by rules 217 Material of Front plates at bottom Steel Thickness 3/4" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 12 1/4" Working pressure of plate by rules 124.6 Diameter of tubes 2 3/4"

Pitch of tubes 3 3/4" x 38 Material of tube plates Steel Thickness: Front 3/4" Back 9/16" Mean pitch of stays 9 1/2" x 9 1/2" Pitch across wide water spaces 12-7/8" Working pressures by rules 121.6 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 11/16" x 9" Length as per rule 30" Distance apart 7 1/2" Number and pitch of Stays in each 3-8"

Working pressure by rules 203.1 Steam dome: description of joint to shell % of strength of joint

Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes

Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

SUPERHEATER. Type Date of Approval of Plan Tested by Hydraulic Pressure to

Date of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Diameter of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted

VERTICAL DONKEY BOILER— No. Description Manufacturers of steel

Made at By whom made When made Where fixed Working pressure

Tested by hydraulic pressure to Date of test No. of Certificate Fire grate area Description of safety valves

No. of safety valves Area of each Pressure to which they are adjusted If fitted with easing gear If steam from main boilers can enter the donkey boiler

Dia. of donkey boiler Length Material of shell plates Thickness Range of tensile strength

Descrip. of riveting long. seams Dia. of rivet holes Whether punched or drilled Pitch of rivets

Up of plating Per centage of strength of joint Rivets Plates Working pressure of shell by rules Thickness of shell crown plates

Radius of do. No. of Stays to do. Dia. of stays Diameter of furnace Top Bottom Length of furnace

Thickness of furnace plates Description of joint Working pressure of furnace by rules Thickness of furnace crown plates

Radius of do. Stayed by Diameter of uptake Thickness of uptake plates

Thickness of water tubes

The foregoing is a correct description,  
Willamette Iron & Steel Works Manufacturer.

Dates During progress of work in shops -- Jan. 3, Feb. 23, 28, Mar. 3, 7, 8, 9, 14, 15.  
Survey While building During erection on board vessel --  
Total No. of visits 9

Is the approved plan of main boiler forwarded herewith

" " " donkey " "

W13214-0078



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

The Donkey Boiler has been constructed under Special Survey in accordance with the Rules at Portland, Oregon and to the approved plan. The material, tested by the Society's Surveyors, is sound and good and the workmanship good. The Boiler has been forwarded to San Francisco to be fitted on board the Southwestern Shipbuilding Co.'s hull No. 26.

Certificate (if required) to be sent to  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

See S. to 1st E. Mach. Rpt. No. 3726.

The amount of Entry Fee .. £	:	:	When applied for.
Special .. .. £	:	:	.....19.....
Donkey Boiler Fee .. .. £	:	:	When received.
Travelling Expenses (if any) £	:	:	.....19.....

Committee's Minute  
Assigned

New York NOV - 1 1921

See S. to 3627

*J. H. Yates*  
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation