

# REPORT ON BOILERS.

No. 629

See S to 1st E. Mach. Rpt. No. 3575.

Date of writing Report Apr. 13 1921. When handed in at Local Office Apr. 13 1921. Port of Portland, Oregon.

No. in Survey held at Portland, Oregon. Date, First Survey Oct. 7, 1920 Last Survey Mar. 21, 1921.

Reg. Book. on the Southwestern Shipbuilding Co.'s hull No. 24 (Number of Visits 13.)

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—MAIN, ~~AUXILIARY OR DONKEY~~—Manufacturers of Steel Midvale Steel & Ordnance Co.

(Letter for record Mar. 2 '21) Total Heating Surface of Boilers 8451 Is forced draft fitted  No. and Description of Boilers 3-Single Ended Scotch Working Pressure 180 Tested by hydraulic pressure to 320 Date of test Mar. 15 '21

No. of Certificates 228, 229, 230. 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 \_\_\_\_\_ Mean dia. of boilers 15'-6" Length 11'-7"

Material of shell plates Steel Thickness 1-5/16" Range of tensile strength 62720 to 71680 Are the shell plates welded or flanged Hds. Flanged.

Descrip. of riveting: cir. seams D.R. long. seams Double Butt Strap Diameter of rivet holes in long. seams 1-7/16" Pitch of rivets 9 1/2-4 3/4

Lap of plates or width of butt straps 20" Per centages of strength of longitudinal joint \_\_\_\_\_ rivets 96.81% Working pressure of shell by rules 191 Size of manhole in shell 12"x16" Size of compensating ring 40"x36"x1 3/32"

boiler 3 Morrison Material Steel Outside diameter 49-3/16" Length of plain part \_\_\_\_\_ Thickness of plates \_\_\_\_\_

Description of longitudinal joint \_\_\_\_\_ No. of strengthening rings \_\_\_\_\_ Working pressure of furnace by the rules 192 Combustion chamber, plates: Material Steel Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 25/32" Pitch of stays to ditto: Sides 7 3/4 x 8 1/2 Back 7 3/4 x 8 1/2

Top 8 1/2" x 10 1/2" stays are fitted with nuts or riveted heads Nuts & R.H. Working pressure by rules 195 Material of stays Steel Area at smallest part 1 3/4" = 2.061 Area supported by each stay 65.87 Working pressure by rules 180 End plates in steam space: Material Steel Thickness 1-5/16"

Pitch of stays 19 x 21 1/2" How are stays secured Double Nuts Working pressure by rules 187 Material of stays Steel Area at smallest part 7.67

Area supported by each stay 408.5 Working pressure by rules 195 Material of Front plates at bottom Steel Thickness 3/4" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 13-5/8" Working pressure of plate by rules 205 Diameter of tubes 2 1/2"

Pitch of tubes Horiz. 3 3/8" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 9 1/2" Pitch across wide water spaces 14-3/8" Working pressures by rules 195 lbs. Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 3/4" x 11" Length as per rule 34" Distance apart 10 1/2" Number and pitch of Stays in each 3-8 1/2"

Working pressure by rules 203 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 \_\_\_\_\_

## UPERHEATER. 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 \_\_\_\_\_

Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ 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 \_\_\_\_\_

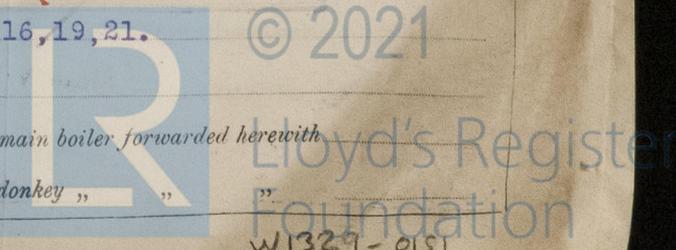
The foregoing is a correct description, W. J. Lane Manufacturer.

Dates of Survey while building { During progress of work in shops - - } Oct. 7, Nov. 23, Jan. 3, 7, Feb. 17, 19, 23, 28, Mar. 1, 15, 16, 19, 21.

{ During erection on board vessel - - - } \_\_\_\_\_

Total No. of visits 13. Is the approved plan of main boiler forwarded herewith \_\_\_\_\_

" " " donkey " " \_\_\_\_\_



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

The three Main Boilers have 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 Boilers have been forwarded to San Francisco to be fitted on board the Southwestern Shipbuilding Co.'s hull No. 24.

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

<i>see 1st E. Mach Rpt. No. 3575</i>			
The amount of Entry Fee .. £	:	:	When applied for.
2/5th Special Mach. Fee .. £	:	:	.....19.....
Donkey Boiler Fee .. .. £	:	:	When received.
Travelling Expenses (if any) £	:	:	.....19.....

Committee's Minute  
Assigned

New York AUG - 9 1921  
*see S. 70. 3575*

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

