

## REPORT ON MACHINERY.

No. 581

REC'D NEW YORK April 23-1918. Received at London Office

Date of writing Report 19 Port of Seattle, Wash. U.S.A.

No. in Survey held at Seattle Date, First Survey June 15, 1917 Last Survey March 9 1918

Reg. Book 17 ENTRY on the Steel Screw Steamer "WESTLAKE" Builders Yard No. 16. (Number of Vessels 25)

Master C. W. Ames Built at Seattle By whom built Skinner & Eddy Corporation Tons { Gross 5852. Net 4438

Engines made at Schenectady N.Y. By whom made General Electric Company when made 1918

Boilers made at Seattle By whom made Commercial Boiler Works when made 1918

Registered Horse Power 2500 Owners U.S. Shipping Board Emergency Fleet Corp. Port belonging to Seattle

Com. Horse Power as per Section 28 417 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Curtis Type Turbine with Reduction Gear No. of Cylinders 1 No. of Cranks 1

Dia. of Cylinders — Length of Stroke — Revs. per minute 90 Dia. of Screw shaft 13.8 as per rule 13.85 Material of shaft as fitted 14 screw shaft Steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes Is the after end of the liner made water tight

Is the propeller boss Yes If the liner is in more than one length are the joints burned Yes If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive — If two liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 4'-7"

Dia. of Tunnel shaft as per rule 12.49 as fitted 12.75 Dia. of Crank shaft journals as per rule — as fitted — Dia. of Crank pin — Size of Crank webs — Dia. of thrust shaft under collars 13.25 Dia. of screw 16.5 Pitch of Screw 12'-6" No. of Blades 4 State whether moveable Yes Total surface 80.5 sq

No. of Feed pumps 2 Diameter of ditto 8 Stroke 18 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 1 Duplex Diameter of ditto 5 3/4 Stroke 6 Can one be overhauled while the other is at work —

No. of Donkey Engines 1 Duplex Sizes of Pumps 12" x 8 1/2" x 12" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Four 3 1/2" Boiler Room Four 3 1/2" In Holds, &c. No. 1 Hold Two 3 1/2" No. 2 Hold Two 3 1/2" No. 3 Hold Four 3 1/2" Shaft Tunnel One 3 1/2"

No. of Bilge Injections 1 sizes 10 Connected to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 3 1/2"

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

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

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes 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 Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes

What pipes are carried through the bunkers Bridge Deck Fore, Fresh Water Deck Machinery Steam & Exhaust How are they protected Hood & Bungs

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Engine Room - Line of Upper Deck

BOILERS, &c.—(Letter for record Dec. 11, 1916 Manufacturers of Steel Lukens & Sons & Steel Co.)

Total Heating Surface of Boilers 8105 Is Forced Draft fitted No No. and Description of Boilers 3 Single end Scotch Marine

Working Pressure 210 Tested by hydraulic pressure to 315 Date of test Feb 11 No. of Certificate —

Can each boiler be worked separately Yes Area of fire grate in each boiler 65 sq No. and Description of Safety Valves to each boiler 2 Lunkheimer Area of each valve 9.6 Pressure to which they are adjusted 210 Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers 12" Mean dia. of boilers 14'-10 1/16 Length 11'-0" Material of shell plates Steel

Thickness 1 3/8 Range of tensile strength 60,000 to 70,000 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Double long. seams Triple Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 10 Top of plates width of butt straps 22 3/8

Per centages of strength of longitudinal joint rivets 95 plate 84.4 Working pressure of shell by rules 228 Size of manhole in shell 12" x 16"

Size of compensating ring Flanged No. and Description of Furnaces in each boiler 3 Morrison Superheater Material Steel Outside diameter 48 1/2

Length of plain part top — bottom — Thickness of plates crown 3/32 Description of longitudinal joint Welded No. of strengthening rings —

Working pressure of furnace by the rules 222 Combustion chamber plates: Material Steel Thickness: Sides 1/8 Back 1/8 Top 1/8 Bottom 1/8

Pitch of stays to ditto: Sides 7" x 8" Back 7 1/4" x 7 3/8" Top 7" x 8" If stays are fitted with nuts or riveted heads 1 1/2 Nuts Riveted Working pressure by rules 214

Material of stays Wrought Area at smallest part 15.1722 Area supported by each stay 56.25 Working pressure by rules 225 End plates in steam space: Material Steel Thickness 1 1/4 Pitch of stays 16 3/8 x 18 How are stays secured Double Nuts Working pressure by rules 237 Material of stays Steel

Area at smallest part 8.29 Area supported by each stay 294.7 Working pressure by rules 237 Material of Front plates at bottom Steel Thickness 1 3/8 Material of Lower back plate Steel Thickness 1 3/8 + 1/2 Greatest pitch of stays 12 Working pressure of plate by rules 222

Diameter of tubes 3 Pitch of tubes 4 x 4 1/2 Material of tube plates Steel Thickness: Front 1 3/8 Back 1 3/8 Mean pitch of stays 8 1/2 x 12

Pitch across wide water spaces 13 Working pressures by rules 268 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 11" x 1 1/2 Length as per rule 34 Distance apart 8 Number and pitch of stays in each 4-7"

Working pressure by rules 292 Steam dome: description of joint to shell None % 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 3 Water Date of Approval of Plan — Tested by Hydraulic Pressure to 630 lbs

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

Diameter of Safety Valve 1 1/2 Pressure to which each is adjusted 211 Is Easing Gear fitted Yes



IS A DONKEY BOILER FITTED *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

1 Duplex lubricating oil pump installed complete ✓  
1 Tail shaft complete ✓  
1 Propeller blade ✓  
1 Set shaft coupling bolts for one coupling ✓  
1 Set of Feed pump valves ✓  
40 Condenser tubes and ferrules ✓

20 Plain boiler tubes ✓  
A quantity of assorted bolts and nuts for  
Turine and Gears ✓  
A quantity of assorted bolts, nuts & iron  
Set of parts for electric generators and  
Steam engines.

The foregoing is a correct description,

*Skinner & Eddy Corporation*

Manufacturer.

*Commercial Boiler Works*  
*J. H. Jot*

Dates of Survey while building { During progress of work in shops -- } *Dec 15-22-27 (1917) Jan 5-8-11-16-23-30 (9)*  
{ During erection on board vessel -- } *Jan 5-11-23-30 Feb 2-4-8-9-11-14-20-25-28 March 5-8-9 (16)*  
Total No. of visits *25*

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Cylinders — Slides — Covers — Pistons — Rods —

Connecting rods — Crank shaft — Thrust shaft *Jan 16-30* Tunnel shafts *Dec 15 to 27* Screw shaft *Feb 4-8* Propeller *Feb 4*

Stern tube *Jan 23* Steam pipes tested *March 5* Engine and boiler seatings *Feb 4* Engines holding down bolts *March 5*

Completion of pumping arrangements *March 8* Boilers fixed *Feb 14* Engines tried under steam *March 9*

Completion of fitting sea connections *Feb 2-8* Stern tube *Feb 2-8* Screw shaft and propeller *Feb 8*

Main boiler safety valves adjusted *March 8* Thickness of adjusting washers *Port 1.018-713 Center 727-827 S/A 755-392*

Material of Crank shaft — Identification Mark on Do. *110708 N° 334-17-9-17068* Material of Thrust shaft *Steel* Identification Mark on Do. *N° 12466*

Material of Tunnel shafts *Steel* Identification Marks on Do. *537-20-9-17068* Material of Screw shafts *Steel* Identification Marks on Do. *N° 310*

Material of Steam Pipes *Steel* Identification Marks on Do. *559-35-9-17* Test pressure *630* SPARE *N° 410 15-18-17*

Is an installation fitted for burning oil fuel *yes* Is the flash point of the oil to be used over 150°F. *yes*

Have the requirements of Section 49 of the Rules been complied with *yes*

Is this machinery duplicate of a previous case *yes* If so, state name of vessel *"WEST ARROW"*

General Remarks (State quality of workmanship, opinions as to class, &c. *The Turbine and reductive Gears inspected*

*by a Surveyor to the Society during construction at Schenectady N.Y., and installed on board together with shafting, auxiliaries, fittings and connections under special survey in accordance with the approved plans.*

*The Boilers built and installed under special survey together with all mountings and fittings in accordance with the approved plans.*

*Manufacturers Serial N° Turbine 12466*

*" " " Gears 2572*

It is submitted that  
this vessel is eligible for  
THE RECORD. + LMC 3. 18. 1 Geared Steam Turbine.  
FITTED FOR OIL FUEL 3. 18 F.P. ABOVE 150°F.

The amount of Entry Fee ... \$ 73 : 05 :  
Special ... \$ 204 : 25 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) \$ 53 : 00 :  
When applied for, *March 30, 1918*  
When received, *June 1918*

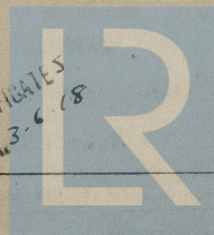
Committee's Minute New York MAY 14 1918

Assigned *See*

*+ LMC 3. 18*

*elec. light*

*James Fowler*  
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation