

# REPORT ON MACHINERY.

REC'D NEW YORK *Nov 17 1917* Received at London Office

Date of writing Report *Nov 6 1917* When handed in at Local Office *Nov 10 1917* Port of *Seattle Wash U.S.A.*  
 No. in Survey held at *Lacoma Seattle* Date, First Survey *May 2* Last Survey *Sept 21 1917*  
 Reg. Book *113* on the *Wood Ave. Twin Screw 5 Mast Sch. "H.C. HANSEN"* (Number of Vents *6*)  
 Master *J.P. Hansen* Built at *Lacoma* By whom built *Seaborn Shipbuilding Co* Tons *1660*  
 Engines made at *Oakland California* By whom made *Skandia Pacific Oil Engine Co* when made *1917*  
 Boilers made at *Seattle* By whom made *Washington Iron Works* when made *1917*  
 Registered Horse Power *240 each* Owners *Capt. H.C. Hansen* Port belonging to *Oslo Norway*  
 Nom. Horse Power as per Section 28 *240 each* Is Refrigerating Machinery fitted for cargo purposes *—* Is Electric Light fitted *Yes*

**ENGINES, &c.**—Description of Engines *Crude Oil Engine, 2 stroke cycle* No. of Cylinders *8* No. of Cranks *8*  
 Dia. of Cylinders *11.51"* Length of Stroke *15.748* Revs. per minute *300* Dia. of Screw shaft *5.51"* Material of screw shaft *Steel*  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube *No* Is the after end of the liner made water tight in the propeller boss *Yes*  
 If the liner is in more than one length are the joints burned *—* 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 *Yes lapped* Length of stern bush *24"*  
 Dia. of Tunnel shaft *as per rule none* Dia. of Crank shaft journals *as per rule 5.2"* Dia. of Crank pin *6.69"* Size of Crank webs *15.9x8.6x3.8* Dia. of thrust shaft under collars *6.69"* Dia. of screw *6.6"* Pitch of Screw *38"* No. of Blades *3* State whether moveable *No* Total surface *14.5 sq*  
 No. of Feed pumps *—* Diameter of ditto *—* Stroke *—* Can one be overhauled while the other is at work *—*  
 No. of Bilge pumps *2* Diameter of ditto *2 3/4"* Stroke *8* Can one be overhauled while the other is at work *Yes*  
 No. of Donkey Engines *1-20 HP* Sizes of Pumps *5" x 10 Duplex* No. and size of Suctions connected to both Bilge and Donkey pumps *1 Centrifugal Metal driven*  
 In Engine Room *3-3"* In Holds, &c. *3-3"*  
 No. of Bilge Injections *—* sizes *—* Connected to condenser, or to circulating pump *—* Is a separate Donkey Suction fitted in Engine room & size *Yes 3"*  
 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 *—*  
 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 *stakehold* plates *Yes* Are the Discharge Pipes above or below the deep water line *above*  
 Are they each fitted with a Discharge Valve always accessible on the *sides* plating of the vessel *Yes* Are the Blow Off Cocks fitted with a spigot and brass covering plate *—*  
 What pipes are carried through the bunkers *None* How are they protected *—*  
 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 *None* Is it fitted with a watertight door *—* worked from *—*

**BOILERS, &c.**—(Letter for record) Manufacturers of Steel

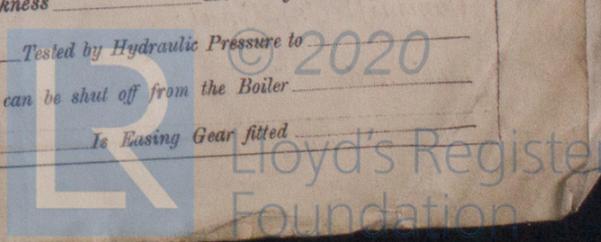
Total Heating Surface of Boilers *—* Is Forced Draft fitted *—* No. and Description of Boilers *—*  
 Working Pressure *—* Tested by hydraulic pressure to *—* Date of test *—* No. of Certificate *—*  
 Can each boiler be worked separately *—* Area of fire grate in each boiler *—* No. and Description 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 dia. of boilers *—* Length *—* Material of shell plates *—*  
 Thickness *—* Range of tensile strength *—* Are the shell plates welded or flanged *—* Descrip. of riveting: cir. 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 *—* 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 *—* Thickness of plates *—* 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 *—* End plates in steam space: *—*  
 Material of stays *—* Area at smallest part *—* Area supported by each stay *—* Working pressure by rules *—* Material of stays *—*  
 Material *—* Thickness *—* Pitch of stays *—* How are stays secured *—* Working pressure by rules *—* Material of Front plates at bottom *—*  
 Area at smallest part *—* Area supported by each stay *—* Working pressure by rules *—* Material of Front plates at bottom *—* Working pressure of plate by rules *—*  
 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 *—* % of strength of joint *—*  
 Working pressure by rules *—* Steam dome: description of joint to shell *—* Diam. of rivet holes *—*  
 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 *—*

If not, state whether, and when, one will be sent

Is a Report also sent on the Hull of the ship?

1656-0788



IS A DONKEY BOILER FITTED? Yes If so, is a report now forwarded? Attached to this report

SPARE GEAR. State the articles supplied:—  
2 Fuel pumps Complete ✓  
2 Cylinder Heads Complete ✓  
1 Piston Complete ✓  
1 Set Piston rings ✓  
1 Set Skew Sheels Complete ✓  
2 Connecting rod Bolts & Nuts ✓  
2 Main bearing Bolts & nuts ✓  
2 Sets Valves for Circulating pump ✓  
2 " " " Bilge pumps ✓  
2 " " " Scuffing pump ✓  
2 " Main journal Brasses ✓  
1 " Top and Bottom end Brasses ✓

The foregoing is a correct description,  
Seaborn Shipyard Co  
C N Seaborn Manufacturer.

Dates of Survey while building { During progress of work in shops -- } Shafts & fittings May 2-8-11  
{ During erection on board vessel --- } May 17 August 8- Sept 21  
Total No. of visits 6 Is the approved plan of main boiler forwarded herewith \_\_\_\_\_

Dates of Examination of principal parts—Cylinders \_\_\_\_\_ Slides \_\_\_\_\_ Covers \_\_\_\_\_ Pistons \_\_\_\_\_ Rods \_\_\_\_\_  
Connecting rods \_\_\_\_\_ Crank shaft \_\_\_\_\_ Thrust shaft \_\_\_\_\_ Tunnel shafts \_\_\_\_\_ Screw shaft \_\_\_\_\_ Propeller \_\_\_\_\_  
Stern tube May 11 Steam pipes tested \_\_\_\_\_ Engine and boiler seatings August 8 Engines holding down bolts August 8  
Completion of pumping arrangements August 8 Boilers fixed \_\_\_\_\_ Engines tried under steam Sept 21  
Completion of fitting sea connections May 17 Stern tube May 17 Screw shaft and propeller May 17  
Main boiler safety valves adjusted \_\_\_\_\_ Thickness of adjusting washers \_\_\_\_\_  
Material of Crank shaft Steel Identification Mark on Do. (+) Material of Thrust shaft Steel Identification Mark on Do. \_\_\_\_\_  
Material of Tunnel shafts \_\_\_\_\_ Identification Marks on Do. \_\_\_\_\_ Material of Screw shafts Steel Identification Marks on Do. P-109 RB S-110 RB  
Material of Steam Pipes \_\_\_\_\_ Test pressure \_\_\_\_\_  
Is an installation fitted for burning oil fuel \_\_\_\_\_ Is the flash point of the oil to be used over 150°F. \_\_\_\_\_  
Have the requirements of Section 49 of the Rules been complied with \_\_\_\_\_  
Is this machinery duplicate of a previous case \_\_\_\_\_ If so, state name of vessel \_\_\_\_\_

General Remarks (State quality of workmanship, opinions as to class, &c.)  
Twin engines built in California under special survey, shipped to Tacoma and installed on board with shafting, auxiliaries, fittings and connections all under special survey in accordance with the rules; the material and workmanship found good. When completed the machinery tested under working conditions on a continuous 3 1/2 hours run. Speed made about 7 1/2 knots, revolutions 250 to 280 per minute. Draft mean 17'-10", air pressure in receiver adjusted at 300 lbs. Starting and reversing of engines easily accomplished with 150 lbs air pressure.  
The machinery eligible in my opinion, to be classed and to have the record of Oil Engine + LMC 9.17 made in the Register Book

It is submitted that this vessel is eligible for Oil Engines 2SC.SA. THE RECORD. + LMC 9.17.

8 Cy. 11 13/16" - 15 3/4" D.B. 160 lbs. J.W.D. 20/12/17

Skandia Pacific Oil Eng. Co. Cal.

The amount of Entry Fee ... \$ 20 : 00 : When applied for, Nov 10 1917  
Special ... \$ : :  
Donkey Boiler Fee ... \$ 25 : 00 : When received,  
Travelling Expenses (if any) \$ 22 : 50 : 19

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

Committee's Minute New York NOV 27 1917

Assigned + dmb 9, 17 Subject

MACHINERY CERTIFICATE WRITTEN 1-18



Date of writing  
No. in Survey Reg. Book.  
Master  
Engines made  
Boilers made  
Registered  
Nom. Horse  
ENGINES  
Dia. of Cyl  
Is the screw  
in the prop  
between the  
liners are  
Dia. of Tun  
collars 6  
No. of Fee  
No. of Bil  
No. of Do  
In Engine  
No. of Bil  
Are all the  
Are all co  
Are they  
Are they  
What pi  
Are all  
Are the  
Is the S  
BOILER  
Total B  
Workin  
Can ea  
each bo  
Smalles  
Thickn  
long. s  
Per ce  
Size of  
Lengt  
Work  
Pitch  
Mate  
Mate  
Area  
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