

REPORT ON MACHINERY.

No. 534

REC'D NEW YORK
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 1st on the Wood Ave. Twin Screw 5 Mast Sch. "H.C. HANSEN" (Number of Vents 6) Tons 1660
Master J.P. Hansen Built at Lacoma By whom built Seaborn Shipbuilding Co When built 1917
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 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 4
Dia. of Cylinders 11.75" Length of Stroke 15.748 Revs. per minute 300 Dia. of Screw shaft 7" 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 12 Duplex No. and size of Suctions connected to both Bilge and Donkey pumps 1 Centrifugal Motor 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 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 — Are they fitted with easing gear —
Area of each valve — Pressure to which they are adjusted — Length — Material of shell plates —
Smallest distance between boilers or uptakes and bunkers or woodwork — Mean dia. of boilers — Descrip. of riveting: cir. seams —
Thickness — Range of tensile strength — Are the shell plates welded or flanged — Lap of plates or width of butt straps —
long. seams — Diameter of rivet holes in long. seams — Pitch of rivets — Size of manhole in shell —
Per centages of strength of longitudinal joint — Working pressure of shell by rules — Material — Outside diameter —
Size of compensating ring — No. and Description of Furnaces in each boiler — No. of strengthening rings —
Length of plain part — Thickness of plates — Description of longitudinal joint — Top — Bottom —
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 — 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 — How stayed —
Pitch of rivets — Working pressure of shell by rules — Crown plates — Thickness —
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 —

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

SPARE GEAR. State the articles supplied:—

| | |
|---------------------------------|--------------------------------------|
| 2 Cylinder Heads Complete ✓ | 2 Fuel pumps Complete ✓ |
| 1 Piston Complete ✓ | 2 Sets Valves for circulating pump ✓ |
| 1 Set piston rings ✓ | 2 " " " Bilge pumps ✓ |
| 1 Set skew Sheels Complete ✓ | 2 " " " Leaffenging pump ✓ |
| 2 Connecting rod Bolts & nuts ✓ | 2 " main journal Brasses ✓ |
| 2 Main bearing Bolts & nuts ✓ | 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

" " " donkey " " "

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 August 8 Engine and boiler seatings August 8 Engines holding down bolts August 8

Completion of pumping arrangements August 8 Boilers fixed August 8 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. P. 109 RB

Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Steel Identification Marks on Do. 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 1/16" - 15 3/4"

D.B. 160 lbs.

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, 1917
 Travelling Expenses (if any) \$ 22 : 50 :

Committee's Minute New York NOV 27 1917

Assigned + dmb 9, 17 Subject

Engineer Surveyor to Lloyd's Register of Shipping.



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MACHINERY CERTIFICATE
 WRITTEN 1-18