

## REPORT ON MACHINERY.

No. 472

Received at London Office

WED. DEC. 27. 1916

Date of writing Report Nov. 18<sup>th</sup> 1916 When handed in at Local Office Nov 20<sup>th</sup> 1916 Port of Seattle Wash U.S.A.No. in Survey held at Seattle Date, First Survey May 18<sup>th</sup> 1916 Last Survey November 3<sup>rd</sup> 1916

Reg. Book. on the S.S. "Niels Nielsen"

(Number of Visits)

Tons } Gross 5589.9  
Net 4270.5

Master D. Dietrichsen Built at Seattle By whom built Skinner &amp; Eddy Corporation When built 1916

Engines made at Schenectady, N.Y. By whom made General Electric Company when made 1916

Boilers made at Seattle By whom made Commercial Boiler Works when made 1916

Registered Horse Power 2500 SHP Owners Dampskibsselskabet Niels Nielsen's Port belonging to Haugesund

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

## ENGINES, &amp;c.—Description of Engines Geared Turbine

No. of Cylinders

No. of Cranks

Dia. of Cylinders Length of Stroke Revs. per minute 100 Dia. of Screw shaft as per rule 13.44 Material of forged steel  
as fitted 13.5 screw shaft

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

in 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 12.05 Dia. of Crank shaft journals as per rule Dia. of Crank pin Size of Crank webs Dia. of thrust shaft under

collars 12 3/4 Dia. of screw 16'-5" Pitch of Screw 13'-0" No. of Blades 4 State whether moveable Yes Total surface 70.5 projected

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 2 Diameter of ditto Stroke Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps (1) 12"x18"x12" dup (2) 6"x5"x6" dup No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4-3 1/2" eng room - 4-3 1/2" Fire room In Holds, &amp;c. 2 in each fore hold - 4 in after hold

No. of Bilge Injections 1 sizes 10 Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room &amp; 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

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

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 below

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 Steam Smothering - Steam heat - Sanitary line How are they protected Wood Casings

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 upper deck

(S) March 16<sup>th</sup> 1916BOILERS, &c.—(Letter for record Apr. 16<sup>th</sup> 1916) Manufacturers of Steel Lukens Iron & Steel Co

Total Heating Surface of Boilers 7509 sq ft Is Forced Draft fitted No No. and Description of Boilers 3 Scotch Marine

Working Pressure 190 lbs Tested by hydraulic pressure to 380 lbs Date of test Sep. 20-21-23, 1916 No. of Certificate

Can each boiler be worked separately Yes Area of fire grate in each boiler 69 sq ft No. and Description of Safety Valves to

each boiler 2 Ashton Area of each valve 9.6 sq ft Pressure to which they are adjusted 190 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers 12" Mean dia. of boilers 14'-10 1/2" Length 11'-0" Material of shell plates Steel

Thickness 1 1/2" Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged Descrip. of riveting: cir. seams Double Lap

long. seams Triple Butt Diameter of rivet holes in long. seams 1 7/16 Pitch of rivets 9 1/2" Lap of plates or width of butt straps 20 7/8"

Per centages of strength of longitudinal joint rivets 94.5 plate 84.6 Working pressure of shell by rules 204 Size of manhole in shell Back Head 12" x 16"

Size of compensating ring No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 47.875"

Length of plain part top Thickness of plates crown 19 bottom 32 Description of longitudinal joint weld No. of strengthening rings

Working pressure of furnace by the rules 197 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/16 Back 1/16 Top 1/16 Bottom 7/8"

Pitch of stays to ditto: Sides 7" x 8" Back 7 1/2" x 7 3/4" Top 7" x 8" If stays are fitted with nuts or riveted heads Nuts in Wide Water space &amp; Crown

Material of stays Steel Area at smallest part 1.76 Area supported by each stay 56 Working pressure by rules 235 1/2 End plates in steam space:

Material Steel Thickness 1 3/16 Pitch of stays 17 1/2" x 16 3/8 How are stays secured Double Nuts Working pressure by rules 270 lbs Material of stays Steel

Area at smallest part 6.49 Area supported by each stay 286.5 Working pressure by rules 270 Material of Front plates at bottom Steel

Thickness 3/4 Material of Lower back plate Steel Thickness 3 1/2 Greatest pitch of stays 13 Working pressure of plate by rules 311

Diameter of tubes 3 Pitch of tubes 4" x 4 1/8 Material of tube plates Steel Thickness: Front 3/4 Back 25/32 Mean pitch of stays 10 3/16"

Pitch across wide water spaces 13 Working pressures by rules 239 Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 10 1/2" x 12 Length as per rule 34 Distance apart 8 Number and pitch of stays in each 4 - 7ers

Working pressure by rules 267 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 Foster Wheeler Date of Approval of Plan New York Nov. 1916 Tested by Hydraulic Pressure to 570 lbs

Date of Test November 3<sup>rd</sup> 1916 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 190 lbs Is Easing Gear fitted Yes

006067-006074-0115



IS A DONKEY BOILER FITTED? No If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied:— 1 Tail shaft complete. 1 Propeller blade— 20 Plain Tubes—

8 Coupling bolts— 1 set feed pump valves— 1 set bilge pump valves— assortment of bolts nuts & iron— 40 condenser tubes.

Turbine spares— 1 high speed pinion complete with flexible shaft & coupling— 1 complete set bearings for turbine & reduction gear— 1 complete set labyrinth packing rings for turbine heads & diaphragms— 1 diaphragm for unloading valve— 1 complete emergency governor— 1 set turbine thrust bearing rings

The foregoing is a correct description,

*Skinner & Eddy Corporation*  
*by E. M. McCallum* Manufacturer.

Dates of Survey while building { During progress of work in shops -- } May 18<sup>th</sup> to August 1<sup>st</sup> 1916  
{ During erection on board vessel -- } August 2<sup>nd</sup> to November 3<sup>rd</sup> 1916  
Total No. of visits

Is the approved plan of main boiler forwarded herewith yes ✓

" " " donkey " " " "

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

Connecting rods Crank shaft Thrust shaft June 6<sup>th</sup> Tunnel shafts May 18<sup>th</sup> to June 24<sup>th</sup> Screw shaft July 17 Propeller Sept. 1<sup>st</sup>

Stern tube July 31<sup>st</sup> Steam pipes tested Oct 28<sup>th</sup> Engine and boiler seatings August 1<sup>st</sup> Engines holding down bolts Oct 28<sup>th</sup>

Completion of pumping arrangements Oct 28<sup>th</sup> Boilers fixed Oct 24<sup>th</sup> Engines tried under steam November 1<sup>st</sup>

Completion of fitting sea connections August 1<sup>st</sup> Stern tube September 1<sup>st</sup> Screw shaft and propeller September 9<sup>th</sup>

Main boiler safety valves adjusted November 1<sup>st</sup> Thickness of adjusting washers F. 405-A. 512 / F. 646-A. 661 / F. 667-A. 665

Material of Turbine Crank shaft Steel Identification Mark on Do. W W Material of Thrust shaft Steel Identification Mark on Do. ATT 28-2-16

Material of Tunnel shafts Steel Identification Marks on Do. ATT 422 Material of Screw shafts Steel Identification Marks on Do. ATT 7-2-16

Material of Steam Pipes Steel ✓ Test pressure 570 lbs sq in

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 If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery and boilers and all shafting, auxiliaries and connections were inspected by me during construction in the shops and during erection on board the vessel. The propelling engines are of the Curtis geared turbine type manufactured by the General Electric Company, Schenectady, New York. The parts came here knocked down and were assembled and erected on board. The machinery and boilers were tried under steam at various times and speeds and found satisfactory.

The material and workmanship are of the very best quality and in my opinion, the vessel eligible to have the record of + LMC 11.16. Fitted for oil fuel 11-16 F.P. above 150° and Electric Light made in the Register Book in the case of this vessel.

It is submitted that  
this vessel is eligible for  
THE RECORD. + LMC 11.16.

Fitted for oil fuel 11.16. F.P. above 150° F.

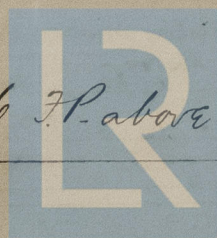
1 Geared Steam Turbine.

The amount of Entry Fee ... \$ 73.05: When applied for,  
Special ... \$ 204.25: Nov. 20 1916  
Donkey Boiler Fee ... £ 277.30: When received,  
and other NY 10-14  
Travelling Expenses (if any) £ 60.55: 1. 10 1916  
(over)

Committee's Minute New York DEC 14 1916

Assigned + Lmc 11.16 Fitted for oil fuel 11.16 F.P. above 150° F  
Elec Light

MACHINERY CERTIFICATE  
WRITTEN, 27-12-16



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Lloyd's Register  
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