

REPORT ON MACHINERY.

No. 477

TUE. 23 JAN. 1917

REC'D NEW YORK

Jan. 8. 1917

Received at London Office

Date of writing Report Dec. 29 1916 When handed in at Local Office January 2 1917 Port of Seattle Wash. U.S.A.No. in Survey held at Seattle Date, First Survey May 18th 1916 Last Survey Dec 21st 1916

Reg. Book.

(Number of Visits)

on the S S "HANNA NIELSEN"Tons } Gross 5755
Net 4430Master L. J. Danielsen Built at Seattle By whom built Skinner & Eddy Corporation When built 1916-12Engines made at Schenectady, N.Y. By whom made General Electric Company when made 1916-12Boilers made at Seattle By whom made Commercial Boiler Works when made 1916-12Registered Horse Power 2500 Owners Dampskibsselskabet (S. Sten Nielsen) Port belonging to HaugesundNom. Horse Power as per Section 28 417 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted YesENGINES, &c.—Description of Engines 2500 S.H.P. Geared Turbine No. of Cylinders — No. of Cranks —Dia. of Cylinders — Length of Stroke — Revs. per minute Propeller 180 Dia. of Screw shaft as per rule 13.49 Material of steel
as fitted 13.2 screw shaftIs 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 tightin 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 partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive — If twoliners 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 12.14 Dia. of Crank pin — Size of Crank webs — Dia. of thrust shaft undercollars 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 sq. projectedNo. of Feed pumps 2 Diameter of ditto 8" Stroke 18" Can one be overhauled while the other is at work yes (12"x8"x18" simplex)No. of Bilge pumps 2 Diameter of ditto — Stroke — Can one be overhauled while the other is at work yesNo. of Donkey Engines 1 Sizes of Pumps (1) 12"x8 1/2"x12" duplex No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room 4-3 1/2" in Eng. room - 4-3 1/2" in fire room In Holds, &c. 2-3 1/2" in each fore hold - 4-3 1/2" in aft holdNo. of Bilge Injections 1 sizes 10" Connected to condenser, or 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 —Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Valves except boiler blow cocksAre 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 belowAre 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 yesWhat pipes are carried through the bunkers deck steam, exhaust, steam heating, sanitary How are they protected boxed inAre all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yesIs the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Upper deck & Turst recessBOILERS, &c.—(Letter for record March 16 1916) Manufacturers of Steel Lukens Iron & Steel Co.Total Heating Surface of Boilers 7509 Is Forced Draft fitted No No. and Description of Boilers 3 Multitubular Scotch MarineWorking Pressure 190 lbs Tested by hydraulic pressure to 380 lbs Date of test Oct 18-1916 No. of Certificate —Can each boiler be worked separately yes Area of fire grate in each boiler 69 sq No. and Description of Safety Valves toeach boiler 2 Ashton Area of each valve 9.6 sq Pressure to which they are adjusted 190 lbs Are they fitted with easing gear yesSmallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 14-10 3/32 Length 11-0" Material of shell plates SteelThickness 1 1/32 Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged — Descrip. of riveting: cir. seams Double Laplong. 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 7/8Per centages of strength of longitudinal joint 94.5 Working pressure of shell by rules 204 lbs Size of manhole in shell 12" x 16"Size of compensating ring — No. and Description of Furnaces in each boiler 3 Horizontal Corrugated Material Steel Outside diameter 47.87"Length of plain part top Thickness of plates crown Description of longitudinal joint weld No. of strengthening rings —Working pressure of furnace by the rules 197 Combustion chamber plates: Material Steel Thickness: Sides 1/16 Back 1/16 Top 1/16 Bottom 7/8Pitch of stays to ditto: Sides 7"x8" Back 7 1/4"x7 1/4" Top 7"x8" If stays are fitted with nuts or riveted heads 22 others Riveted Working pressure by rules 214Material of stays Steel Area at smallest part 1.76 Area supported by each stay 56 sq Working pressure by rules 235 End plates in steam space:Material Steel Thickness 1 3/16 Pitch of stays 17 1/2"x16 3/8" How are stays secured Double Nuts Working pressure by rules 220 Material of stays SteelArea at smallest part 6.49 Area supported by each stay 286.5 Working pressure by rules 270 Material of Front plates at bottom SteelThickness 3/4 Material of Lower back plate Steel Thickness 3/4 Greatest pitch of stays 13 1/2 Working pressure of plate by rules 311Diameter of tubes 3" Pitch of tubes 4"x4 1/8" Material of tube plates Steel Thickness: Front 3/4 Back 25/32 Mean pitch of stays 10 3/16Pitch across wide water spaces 13" Working pressures by rules 239 lbs Girders to Chamber tops: Material Steel Depth andthickness of girder at centre 10 1/2"x1 1/2" Length as per rule 34 Distance apart 8" Number and pitch of stays in each 4-7ersWorking 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 & Lue Date of Approval of Plan — Tested by Hydraulic Pressure to 570 lbsDate of Test December 19th 1916 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler yesDiameter of Safety Valve 1 1/2" Pressure to which each is adjusted 190 lbs Is Easing Gear fitted yes

IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 20 plain boiler tubes - 8 Coupling bolts - 1 Set feed pump valves - 1 set bilge pump valves - 40 Condenser tubes - Assortment of bolts, nuts & iron
Turbine spare 1 High speed pinion complete with flexible shaft & coupling - 1 Complete set bearings for turbine & reducing 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
1 Tail shaft complete - 1 Propeller blade

The foregoing is a correct description,

Commercial Boiler Works

Skinner & Eddy Corporation

C. N. McCallum
Ch. Engr.

BOILERS Manufacturer. MACHINERY

Dates of Survey while building { During progress of work in shops - - May 18th to October 18th 1916
During erection on board vessel - - September 23rd to December 21st 1916
Total No. of visits. Three weekly

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 July 11 Tunnel shafts June 20th Screw shaft August 23 Propeller Oct 4th
Stern tube Oct 10th Steam pipes tested Dec 16th Engine and boiler seatings Oct 20th Engines holding down bolts Dec 20th
Completion of pumping arrangements Nov. 24th Boilers fixed Nov. 3rd Engines tried under steam Dec 17th & 20th
Completion of fitting sea connections Oct 18th Stern tube Oct 10th Screw shaft and propeller Oct 4th - 16th
Main boiler safety valves adjusted Dec 20th Thickness of adjusting washers S. 525-304. C. 570-369. P. 746-718
Material of Crank shaft Steel Identification Mark on Do. ✓ Material of Thrust shaft Steel Identification Mark on Do. ✓
Material of Tunnel shafts Steel Identification Marks on Do. ✓ Material of Screw shafts Steel Identification Marks on Do. ✓
Material of Steam Pipes Steel ✓ Test pressure 570 lbs ✓

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 "NIELS NIELSEN" ✓

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

The main Engines, Curtis geared Turbine type manufactured by the General Electric Co. Schenectady, New York, cannot here be broken down, were assembled and erected on board under special survey. The shafting, auxiliaries, fittings, pipes and pumping arrangements manufactured and installed in accordance with the approved plans, the material and workmanship of the best quality.

The boilers have been built and installed under special survey in accordance with the approved plan, the mountings, material and workmanship are of good quality. On completion they were tested by hydraulic pressure to 380 lbs and found tight and sound. Safety valves adjusted under steam at 190 lbs. The machinery and boilers tried under steam and found satisfactory.

The machinery eligible in my opinion to have the record of +LMC 12.16 made in the Register Book in the case of this vessel.

It is submitted that this vessel is eligible for THE RECORD +LMC 12.16.

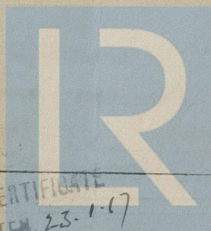
The amount of Entry Fee ... \$ 73 : 05 :
Special ... \$ 204 : 25 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ 61 : 93 :
When applied for, January 2 1917
When received, ✓ 19

1 Geared Steam Turbine.

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

Committee's Minute New York JAN 11 1917

Assigned +Lmb 12.16 Elec Light



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MACHINERY CERTIFICATE
WRITTEN 23.1.17