

REPORT ON MACHINERY.

No. 13

SAT. DEC. 14 1912

Received at London Office

MON. SEP. 9 - 1912

Date of writing Report 29 Aug 1912 When handed in at Local Office 29 Aug 1912 Port of Cleveland, Ohio
No. in Survey held at Buffalo, N.Y. Date, First Survey 25 April Last Survey 19 Aug 1912
Reg. Book. on the S/S 'NELSON' (Number of Visits 10)
Master ✓ Built at Quincy, Mass. By whom built Fore River Shipbuilding Co. When built 1912
Engines made at Quincy, Mass. By whom made Fore River Shipbuilding Co. when made 1912
Boilers made at Buffalo, N.Y. By whom made Lake Erie Boiler Works when made 1912
Registered Horse Power ✓ Owners Cuba Distilling Company Port belonging to ✓
Nom. Horse Power as per Section 28 ✓ Is Refrigerating Machinery fitted for cargo purposes ✓ Is Electric Light fitted ✓

ENGINES, &c.—Description of Engines
Dia. of Cylinders ✓ Length of Stroke ✓ Revs. per minute ✓ Dia. of Screw shaft ✓ as per rule ✓ Material of screw shaft ✓
Is the screw shaft fitted with a continuous liner the whole length of the stern tube ✓ Is the after end of the liner made water tight in the propeller boss ✓ 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 ✓ Length of stern bush ✓
Dia. of Tunnel shaft ✓ as per rule ✓ Dia. of Crank shaft journals ✓ as per rule ✓ Dia. of Crank pin ✓ Size of Crank webs ✓ Dia. of thrust shaft under collars ✓ Dia. of screw ✓ Pitch of Screw ✓ No. of Blades ✓ State whether moveable ✓ Total surface ✓
No. of Feed pumps ✓ Diameter of ditto ✓ Stroke ✓ Can one be overhauled while the other is at work ✓
No. of Bilge pumps ✓ Diameter of ditto ✓ Stroke ✓ Can one be overhauled while the other is at work ✓
No. of Donkey Engines ✓ Sizes of Pumps ✓ No. and size of Suctions connected to both Bilge and Donkey pumps ✓
In Engine Room ✓ In Holds, &c. ✓
No. of Bilge Injections ✓ sizes ✓ Connected to condenser, or to circulating pump ✓ Is a separate Donkey Suction fitted in Engine room & size ✓
Are all the bilge suction pipes fitted with roses ✓ Are the roses in Engine room always accessible ✓ Are the sluices on Engine room bulkheads always accessible ✓
Are all connections with the sea direct on the skin of the ship ✓ Are they Valves or Cocks ✓
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates ✓ 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 ✓ Are the Blow Off Cocks fitted with a spigot and brass covering plate ✓
What pipes are carried through the bunkers ✓ How are they protected ✓
Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times ✓
Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges ✓
Dates of examination of completion of fitting of Sea Connections ✓ of Stern Tube ✓ Screw shaft and Propeller ✓
Is the Screw Shaft Tunnel watertight ✓ Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Plates Lukens & S. Co. Stays Lackawanna Steel Co.
Total Heating Surface of Boilers 6501 Is Forced Draft fitted ✓ No. and Description of Boilers 3 Scotch type
Working Pressure 190 lbs. Tested by hydraulic pressure to 380 lbs. Date of test 19 Aug 1912 No. of Certificate 16
Can each boiler be worked separately ✓ Area of fire grate in each boiler 51.5 sq 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 13'-9" Length 11'-10" Material of shell plates steel
Thickness 1 5/16" Range of tensile strength 28/32 Are the shell plates welded or flanged no. Descrip. of riveting: cir. seams double butt
long. seams butt Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 8" Lap of plates or width of butt straps 18 1/2"
Per centages of strength of longitudinal joint 86.9 Working pressure of shell by rules 211 lbs. Size of manhole in shell 12" x 16"
Size of compensating ring 8" x 1 5/16" No. and Description of Furnaces in each boiler 3 Morrison Material steel Outside diameter 46 3/16"
Length of plain part top alt 6" Thickness of plates bottom 19/32 Description of longitudinal joint welded No. of strengthening rings ✓
Working pressure of furnace by the rules 304 Combustion chamber plates: Material steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 5/8"
Pitch of stays to ditto: Sides 7 3/4 x 7 1/2" Back 7 3/4" Top 7 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 225
Material of stays steel Diameter at smallest part 1 3/8" Area supported by each stay 60 sq Working pressure by rules 197 End plates in steam space: ✓
Material steel Thickness 1 5/16" Pitch of stays 15" x 13" How are stays secured double nuts riveted washers Working pressure by rules 228 Material of stays steel
Diameter at smallest part 2 1/2" Area supported by each stay 195 sq Working pressure by rules 260 Material of Front plates at bottom steel
Thickness 1 5/16" Material of Lower back plate steel Thickness 1 5/16" Greatest pitch of stays 16" x 7 3/4" Working pressure of plate by rules 340
Diameter of tubes 2 1/2" Pitch of tubes 3 1/2" x 3-33" Material of tube plates steel Thickness: Front 1 5/16" Back 3/4" Mean pitch of stays 10 1/2"
Pitch across wide water spaces 13" Working pressures by rules 192 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 8 1/2" x 1 7/16" Length as per rule 30' Distance apart 7 1/2" Number and pitch of stays in each 5-7 1/2"
Working pressure by rules 205 Superheater or Steam chest; how connected to boiler ✓ Can the superheater be shut off and the boiler worked separately ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet holes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓
If stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ✓ How stayed ✓
Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓

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VERTICAL DONKEY BOILER— Manufacturers of Steel

No. Description
Made at By whom made When made Where fixed
Working pressure tested by hydraulic pressure to Date of test No. of Certificate Fire grate area Description of Safety
Valves No. of Safety Valves Area of each Pressure to which they are adjusted Date of adjustment
If fitted with easing gear If steam from main boilers can enter the donkey boiler Dia. of donkey boiler Length
Material of shell plates Thickness Range of tensile strength Descrip. of riveting long. seams
Dia. of rivet holes Whether punched or drilled Pitch of rivets Lap of plating Per centage of strength of joint Rivets
Working pressure of shell by rules Thickness of shell crown plates Radius of do. No. of stays to do. Dia. of stays
Diameter of furnace Top Bottom Length of furnace Thickness of furnace plates Description of joint
Working pressure of furnace by rules Thickness of furnace crown plates Radius of do. Stayed by
Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

Safe One Boiler Works Manufacturer.
Richard Hammond Port

Dates of Survey while building
During progress of work in shops - April 25, May 4, 23 June 7, 22 July 15, 20, 29 Aug 3, 19
During erection on board vessel -
Total No. of visits 10
Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders Slides Covers Pistons Rods
Connecting rods Crank shaft Thrust shaft Tunnel shafts Screw shaft Propeller
Stern tube Steam pipes tested Engine and boiler seatings Engines holding down bolts
Completion of pumping arrangements Boilers fixed Engines tried under steam
Main boiler safety valves adjusted Thickness of adjusting washers
Material of Crank shaft Identification Mark on Do. Material of Thrust shaft Identification Mark on Do.
Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Identification Marks on Do.
Material of Steam Pipes Test pressure

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

These boilers have been built under Special Survey in accordance with the Rules & approved plan. The workmanship & material are good & the boilers are eligible, in our opinion, to receive the notation * L.M.C with date in the Register Book when the vessel has been completed.

The amount of Entry Fee .. £ 1/3 Special Survey Fee to be credited to Cleveland.
Donkey Boiler Fee ..
Travelling Expenses (if any) \$37.00
When applied for, When received, 29.8.1913
John S. Heck. French
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUE. DEC. 17. 1912

TUE. DEC. 24. 1912

Assigned

see Minute on Bos. RM 712

FRI. APR. 11. 1913

TUE. DEC. 9. 1913

TUE. DEC. 15. 1913

FRI. OCT. 30. 1914 FRI. MAY. 2. 1913
06.29.1913

FRI. JAN. 10. 1914
TUE. NOV. 10. 1911

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