

Rpt. 4.

# REPORT ON MACHINERY.

2251

NyK No. 11985

FRI. DEC. 24. 1915

Date of writing Report

19

When handed in at Local Office

19

Port of *New York and San Francisco*

No. in Survey held at  
Reg. Book.

Date, First Survey

Last Survey

19

on the *Union Iron Works Co. No. 119.*

(Number of Visits)

Gross  
Tons  
Net  
When built

Safety

Built at

By whom built

Engines made at

*Schenectady*

By whom made

*General Electric Company*

when made

*1915.*

Boilers made at

By whom made

when made

Registered Horse Power

Owners

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

*Burk's Turbine geared*

No. of Cylinders

No. of Cranks

Dia. of Cylinders

Length of Stroke

Revs. per minute

Dia. of Screw shaft

as per rule

Material of

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  
as fitted

Dia. of Crank shaft journals  
as per rule  
as fitted

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)

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

Percentages of strength of longitudinal joint

rivets

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

top

Thickness of plates

crown

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

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

End plates in steam space

Material

Thickness

Pitch of stays

How are stays secured

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

Material of Front plates at bottom

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

Thickness 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

Working pressure by rules

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

es

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

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

W67-0168 (1/2)



# VERTICAL DONKEY BOILER—

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 Sg

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.

General Electric Co. Manufacturer.

Dates of Survey while building

During progress of work in shops --

During erection on board vessel --

Total No. of visits

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 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.) This installation consists of a Curtis Turbine having five stages ahead and two stages reverse, the turbine speed being reduced by two stages to a speed of 90 revolutions per minute at the propeller. The turbine shaft is coupled to a straight shaft which passes through the central hole of a hollow shaft. The hollow shaft is run on two bearings. At the centre of its length it is secured into a gear wheel, and this wheel gears into two other wheels each of which takes off half the power. The shafts to which each of the gear wheels is mentioned is coupled to straight shafts placed inside hollow shafts. Each of these hollow shafts is fitted with a wheel gearing into a large wheel on the screw shaft. Dia. of turbine shaft 6". Dia. of flexible shaft 3 1/2". Dia. of pinion shaft 6" with hole 4 1/8". Dia. of second speed shaft 6". Dia.

The amount of Entry Fee .. £ .. When applied for,

Special .. £ 3500

Donkey Boiler Fee .. £ 90

Travelling Expenses (if any) £ 826.20

Committee's Minute

Assigned

When received,

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Rpt. 9a.

Port of

Continuation of Report No. 11985 dated

on the

Machinery for Amori Iron Works Co. No. 1119.

Second speed flexible shaft 4 3/4". Dia. of pinion shaft 9" with 6" hole. Low speed shaft 1 1/4" diameter. Diameter of bucket wheels:— No. 1. 2' 9 3/4". No. 2. 3' 7 3/8". No. 3. 3' 8 1/4". No. 4. 3' 8 1/2". No. 5. 3' 7". Length of buckets No. 1. 2' 4 6/9". No. 2. 2' 9 4/4". No. 3. 2' 9 6/9". No. 4. 4' 2 5/5". No. 5. 7' 7 5/5". Diameter of bucket wheels, astern:— No. 1. 3' 1 3/16". No. 2. 2' 10 3/4". Length of buckets No. 1. 2' 5 3/1". No. 2. 4' 9 6/9".

Size of bearings

Turbine shaft. Head end 8" dia. 8" long. Exhaust end 8" " 10" "

High speed pinion 6" " 8" " (2)

2nd speed shaft. Head end 6" " 8" " (2)

Low speed shaft L.S. 9" " 14" " (2)

1 1/4" " 18" " (2)

Bears

H. S. Pinion Pitch dia. 6' 5"

H. S. pinion, flexible 32' 6 6/7"

L. S. pinion 10' 15"

L. S. wheel 78' 6 5/5"

The material and workmanship are of good quality. The machinery has been tested under steam at the works, and has now been sent to San Francisco to be fitted on board.

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